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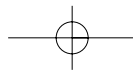
# Fires in the Home:

findings from the 2002/3 British Crime Survey

February 2004

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Office of the Deputy Prime Minister: London



The findings and recommendations in this report are those of the consultant authors and do not necessarily represent the views or proposed policies of the Office of the Deputy Prime Minister.

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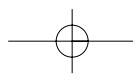
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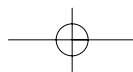
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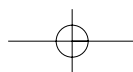
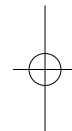
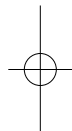
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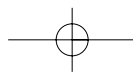




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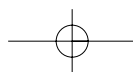
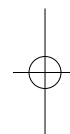
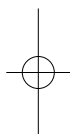
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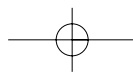




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# CHAPTER 1

## INTRODUCTION

The British Crime Survey (BCS) is a large, continuous, nationally representative survey, which is primarily concerned with measuring the extent and nature of crime against adults living in private households in England and Wales. However, in addition, the BCS asks respondents about other issues, one of which is domestic fire<sup>1</sup>. The BCS has included questions on domestic fires on seven previous occasions. Findings from the 2001/2 BCS were published in April 2003. This Bulletin reports the responses to the latest fire-related questionnaire.

This BCS Bulletin has been published at the same time as the latest quarterly Statistical Monitor on fires attended by the fire and rescue service in the United Kingdom<sup>2</sup>. BCS data on domestic fires serve as a useful supplement to records kept by fire brigades. Firstly, the BCS provides a fuller measure of the number of domestic fires in England and Wales. This is because many of the fires measured by the BCS result in little or no damage and consequently are often not brought to the attention of fire brigades, thus escaping official recording. Even fires involving property damage or injury are not always brought to the attention of fire brigades. Secondly, the BCS collects a wide range of social and demographic information, which then enables those groups within the population who are most likely to experience a domestic fire to be identified. Furthermore, the BCS also asks respondents about ownership of smoke alarms, enabling those least likely to own an alarm to be identified.

### METHODOLOGICAL NOTE

Since January 2001 the British Crime Survey has been conducted on a continuous basis, with over 35,000 respondents being surveyed during a 12-month period. The data in this report are based on responses between 1st April 2002 and 31st March 2003.

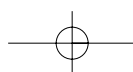
As a consequence of the move to a continuous survey methodology, respondents were asked to report on any domestic fires they had suffered in the 12 months prior to the interview. The recall period therefore effectively covers 24 months, 1st April 2001 to 31st March 2003. (Sweeps of the BCS carried out before 2001 asked respondents to report domestic fires that occurred since a specified date.) As a result, no estimates of the number of domestic fires can be made for a specified time period. For example, fires reported in the 2002/3 BCS cannot be used to provide an estimate of fires that occurred during the period 1st April 2001 to 31st March 2002.

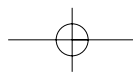
In 2002 the full fire questionnaire which had been used in 2000 was re-introduced into the BCS (a shortened version was used in 2001). This means that in some cases it has been necessary to recode responses from 2002/3 to ensure compatibility with the responses available to respondents in 2001 and thus enable comparisons to be made with the findings of the 2001/2 BCS.

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<sup>1</sup> Domestic fire refers to any fire that may have occurred on the householder's property, either inside or outside the structural property.

<sup>2</sup> ODPM (2004) *Fire Statistics Monitor – Q1 2003*, London: ODPM.





In 2001 the BCS adopted non-response weighting. This adjusts for known differentials in response according to age and gender and regional sub-groups of the population. This has been applied from 1996 onwards and estimates from these years were re-calculated and published in the findings from the 2001/2 BCS. The effect on trends since 1996 has been limited. For example, before reweighting 3.0% of respondents reported a fire in the previous 12 months in the 2000 BCS. After reweighting, the figure was 3.1%.

Further details on BCS methodology can be found in the main 2002/3 BCS publication<sup>3</sup> and the 2001 BCS Technical Report<sup>4</sup>.

## MEASURING EXPERIENCES OF DOMESTIC FIRES

The 2002/3 BCS first asked householders whether they had experienced a domestic fire in the previous 12 months, and if so how many fires had occurred in that period. The first question asked was:

*I would now like to ask about fires in the home. This means all sorts of fires, including chip pan fires and very minor fires and includes fires in sheds, garages or greenhouses.*

*In the last 12 months, that is since the first of [^DATE^], have you had a fire of any sort where you live?*

The question was designed to capture as many experiences of domestic fire as possible. Even so, some very minor fires may have been forgotten or felt not worthy of reporting. It is difficult to accurately assess the extent to which this may have occurred, though reassuringly the majority of fires householders reported were not serious and many resulted in little or no financial loss.

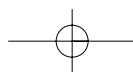
Those who reported experiencing a fire were asked details about the fire, for example its cause and location. Those who reported having more than one fire were asked about the most recent fire.

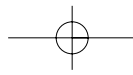
It is possible that some householders who experienced more than one fire may have given details of the most serious, rather than the most recent, simply because it was more salient to them. As a consequence some bias may have been introduced into the findings. However, given that only a small proportion of householders reported having more than one fire, any bias is likely to be slight. It is also likely to be relatively consistent across all sweeps.

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<sup>3</sup> Simmons, J and Dodd, T (2003) *Crime in England and Wales 2002/2003*, London: Home Office.

<sup>4</sup> Bolling, K, Clemens, S, Phelps, A and Smith, P (2002) *2001 British Crime Survey (England and Wales): Technical Report*, London: Home Office.





## **MACHINERY OF GOVERNMENT CHANGES**

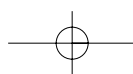
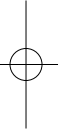
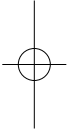
Responsibility for the fire and rescue service was transferred from the Home Office in June 2001 to the Department for Transport, Local Government and the Regions (DTLR), and subsequently the Office of the Deputy Prime Minister (ODPM) (May 2002).

Under an arrangement with the Research Development and Statistics Directorate at the Home Office, the British Crime Survey continued to contain questions on domestic fires until March 31st 2003. This is therefore the last publication of these findings from the BCS. From April this year a questionnaire concerning experience of fires in the home will be included in the Survey of English Housing and future publications will be produced from this.

This bulletin has been produced by the Fire Statistics and Research Branch of ODPM.

## **THANKS**

I am very grateful to Stuart Deaton (Home Office) and Martin Wood (Home Office) for their advice and assistance. Thanks also to David Champion (ODPM) and Katharine Thorpe (Home Office) for their input.



## CHAPTER 2

# EXTENT AND TRENDS OF FIRE

This chapter examines the incidence and prevalence<sup>5</sup> of domestic fires in England and Wales based on fires reported in the 2002/3 BCS and compares them with estimates from previous BCS sweeps. It also provides an estimate of the number and proportion of all domestic fires attended by the fire and rescue service.

### THE EXTENT OF DOMESTIC FIRES (TABLE 2.1)

The 2002/3 BCS shows that 1.5% of respondents reported experiencing a domestic fire in the previous 12 months. This prevalence rate is equal to that reported in the previous sweep (2001/2) and represents a stabilising of the downward trend in fires reported in the BCS since 1994. The equivalent figures for prior sweeps were 3.1% in 1999 (2000 BCS), 3.4% in 1995 (1996 BCS) and 3.9% in 1993 (1994 BCS). However, it must be noted that prevalence rates in these sweeps have been based on an average recall period of approximately 14 months.

**Table 2.1: Reported occurrences of domestic fires**

<i>Percentage of households experiencing:</i>	1993 <sup>1</sup> (1994 BCS)	1995 <sup>1</sup> (1996 BCS)	1999 <sup>1</sup> (2000 BCS)	2001/2 <sup>2</sup> BCS	2002/3 <sup>2</sup> BCS
1 fire	3.5	3.0	2.8	1.3	1.4
2 or more fires	0.4	0.4	0.4	0.2	0.1
<b>1 or more</b>	<b>3.9</b>	<b>3.4</b>	<b>3.1</b>	<b>1.5</b>	<b>1.5</b>

Notes:

<sup>1</sup> Based on a recall period of approximately 14 months, no adjustment.

<sup>2</sup> Based on a recall period of 12 months.

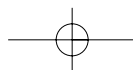
<sup>3</sup> Source: 1994, 1996, 2000, 2001/2 and 2002/3 BCS (weighted data). Covers England and Wales.

### NUMBER OF FIRES (TABLE 2.2)

Most respondents who reported a fire stated they had experienced only one in the previous 12 months. In the 2002/3 BCS 7% of households who reported a fire experienced more than one. The equivalent figure in the 2001/2 BCS was 12%.

The incidence rate for fires reported in 2002/3 was 1.7 per 100 households. As with the prevalence rate, this represents no change on the rate recorded in the 2001/2 BCS. In 1999 the incidence rate was 3.7 per 100 households, while equivalent figures for 1995 and 1993 were 4.0 and 4.6 per 100 households respectively.

<sup>5</sup> Prevalence rates refer to the percentage of households reporting a domestic fire in the previous 12 months. Incidence rates are determined by the total number of fires reported by households, and therefore take into account multiple victimisation.

**Table 2.2: Number of domestic fires experienced**

Percentage of households experiencing:	1993 <sup>2</sup> (1994 BCS)	1995 <sup>2</sup> (1996 BCS)	1999 <sup>2</sup> (2000 BCS)	2001/2 <sup>3</sup> BCS	2002/3 <sup>3</sup> BCS
One	88.4	88.0	88.8	88.3	92.6
Two	8.9	8.3	7.8	8.6	5.2
Three	1.4	2.4	1.4	2.0	1.3
Four	0.7	0.8	0.4	0.5	0.3
Five or more	0.7	0.6	1.6	0.7	0.5
<i>Unweighted N</i>	283	563	559	485	537
<b>Fires per 100 households<sup>1</sup></b>	<b>4.6</b>	<b>4.0</b>	<b>3.7</b>	<b>1.7</b>	<b>1.7</b>

Notes:

<sup>1</sup> Incidence rates assume that those who said that they had five or more fires in the year had five.<sup>2</sup> Based on a recall period of about 14 months, no adjustment.<sup>3</sup> Based on recall period of 12 months.<sup>4</sup> Due to rounding columns do not necessarily total to 100%.<sup>5</sup> Source: 1994, 1996, 2000, 2001/2 and 2002/3 BCS (weighted data). Covers England and Wales.

## ESTIMATE OF THE TOTAL NUMBER OF DOMESTIC FIRES IN ENGLAND AND WALES

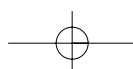
The 2002/3 BCS estimates that there were 372,300 domestic fires in England and Wales over a 12-month period. This figure is derived by multiplying the incidence rate by the estimated 22,117,400 domestic properties in England and Wales in 2002<sup>6</sup>. The equivalent estimate from fires reported in the 2001/2 BCS is 383,300. The figure of 372,300 is the best estimate of the true number of fires, but as it is derived from a sample survey of the population it may differ from the true number. It is possible to calculate the range within which the true value is likely to fall. Using a 95% confidence interval, the true value lies between 338,900 and 405,700.

As in previous years, the proportion of domestic fires attended by fire brigades has been estimated by two separate measurements. Firstly, respondents reporting a fire were simply asked whether or not the fire brigade was called<sup>7</sup>. In 2002/3, 28% of respondents stated that the fire brigade was called to the last reported fire, which is equal to the percentage reported in the 2001/2 BCS. However, to ensure the figures are comparable with those 'primary' domestic fires reported by the fire and rescue service via FDR1 returns, fires reported in the 'garden', 'dustbin' or 'elsewhere outdoors' have to be excluded from the analysis<sup>8</sup>. Excluding these fires, the fire brigade was called to 23% of all domestic fires reported in 2002/3. The equivalent figure in the 2001/2 BCS was 22%.

<sup>6</sup> Source: *Fire Service Statistics 2003*, published by the Chartered Institute of Public Finance and Accountancy. Domestic property figures are derived from CTB1 form in England and CT1 form in Wales.

<sup>7</sup> The last reported fire in the case of those respondents who reported more than one fire.

<sup>8</sup> If they are attended by the fire brigade, fires in gardens, dustbins or 'elsewhere outdoors' are usually recorded as 'secondary' fires. Secondary fires are reported on an aggregated basis via the FDR3 return so it is not possible to determine what proportion of them occur in domestic premises. For further details on the definition of primary and secondary fires see ODPM (2003) *Fire Statistics, United Kingdom, 2001*, London: ODPM.



An alternative estimate can be made by comparing the BCS estimate of the number of fires in England and Wales with the number of fires recorded by official fire and rescue service FDR1 returns (Table 2.3). To ensure comparability, 'outdoor' fires are excluded from the BCS estimate, as such fires are not classified as domestic property fires in official fire statistics (row b). The percentage of BCS 'last' fire incidents said by respondents to have been attended by brigades (row c) is applied to the new grossed-up total. This results in an estimated 75,400 BCS fires having been attended by brigades (row d). The number of domestic property fires attended by the fire and rescue service in 2002/3<sup>9</sup> was actually lower, at 70,200 (row e), but represents 22% of the total number of fires estimated by the BCS (row f). This suggests that the estimates derived from the direct BCS question on fire brigade attendance are reasonably accurate<sup>10</sup>. The 2002/3 figure of 22% also represents no change on the estimate of 2001/2.

**Table 2.3: 2001/2 & 2002/3 BCS estimates of the number of domestic fires**

	2001/2 BCS	2002/3 BCS
(a) BCS estimates of fires in England and Wales	383,300	372,300
(b) BCS estimates of fires in England and Wales, less 'outdoor' fires	334,900	325,600
(c) % of fires to which BCS respondents said that the brigade was called	22	23
(d) Estimated BCS number of fires to which the brigade was called	73,200	75,400
(e) Fires attended by fire brigades occurring in dwellings, domestic sheds and garages	74,300	70,200
(f) % of fires attended by fire brigades of BCS best estimate	22	22

Notes:

<sup>1</sup> Fires attended by the fire and rescue service included in the analysis are 'primary' fires in dwellings and private sheds and garages reported via FDR1 returns, plus chimney fires in dwellings as reported via FDR3 returns.

<sup>2</sup> Source: 2001/2 & 2002/3 BCS (weighted data). Covers England and Wales.

<sup>9</sup> As determined by FDR1 and FDR3 returns. Figure is provisional.

<sup>10</sup> As a specific time period can no longer be ascribed to the BCS 12-month estimate, the comparison to fires attended by the fire and rescue service in 2002/3 should be seen as indicative only.

# CHAPTER 3

## NATURE OF FIRE

This chapter examines the nature of those domestic fires reported in the 2002/3 BCS. It covers the following areas:

- cause of fire
- the location of the fire
- fire brigade attendance and tackling the fire

It also looks at the consequences of those fires in terms of:

- personal injury
- financial cost

As previously mentioned, the 2002/3 BCS used a longer version of the fire questionnaire than was employed in 2001. In 2002 respondents were able to give details of the last fire experienced in the previous 24 months, whereas in 2001 these questions were only asked of fires reported in the previous 12 months. In the 2001/2 BCS therefore analysis had to be based only on the last fire reported by respondents in the 12 months prior to the interview. In order to enable comparability with these results it has been necessary to adopt the same approach for the 2002/3 findings.

### CAUSE OF FIRE (TABLES 3.1 AND 3.2)

The 2002/3 BCS estimates that just over half (54%) of all reported fires were caused by accidents while cooking. This is consistent with the equivalent figure of 53% in the 2001/2 BCS. Of all reported fires, 9% were caused by heating appliances (including chimneys), and a further 8% were caused by electrical equipment or wiring. There were no statistically significant changes in the reported cause of fires between the 2001/2 and 2002/3 BCS sweeps.

**Table 3.1: Causes of domestic fires, 2001/2 and 2002/3 BCS**

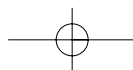
<i>Cause</i>	2001/2 BCS	2002/3 BCS
	%	%
Accidents while cooking	53	54
Heating appliance fires (incl. chimney fires)	9	9
Electrical equipment/wiring fires	9	8
Arson	6	5
Candles	4	5
Accidents with matches and other smoking materials	6	5
Children playing with fire (not matches/cigarette lighters)	4	4
All other causes of fires	9	11
<i>Unweighted N</i>	487	534

Notes:

<sup>1</sup> Due to rounding, columns do not necessarily total to 100%.

<sup>2</sup> 'Last' fire reported in previous 12 months.

<sup>3</sup> Source: 2001/2 and 2002/3 BCS (weighted data). Covers England and Wales.



Respondents who stated that the cause of the last fire they had experienced was a cooking accident were asked to describe in more detail what happened. In 35% of these cases, the fire was attributed to a pan of fat or oil catching fire and in 28% the fire stemmed from a grill pan. Leaving something too close to the cooker was responsible for 11% of fires whilst 9% involved leaving something in the oven or on the hob for too long.

**Table 3.2: Detailed causes of fires started by cooking accidents, 2002/3 BCS**

	%
Pan of fat/oil catching fire	35
Grill pan	28
Leaving something too close to the cooker	11
Leaving something in oven/on hob for too long	9
Toaster	8
Forgot to turn cooker off	5
Microwave	3
Clothes caught on fire/burnt self on while cooking	2
Other	6
<i>Unweighted N</i>	283

Notes:

<sup>1</sup> Respondents allowed to state more than one answer.

<sup>2</sup> 'Last' fire reported in previous 12 months.

<sup>3</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

## LOCATION OF FIRE (TABLE 3.3)

Overall the 2002/3 BCS estimates that 86% of all domestic fires occurred inside the house. The equivalent figure in 2001/2 was 85%.

The 2002/3 BCS finds that the majority of fires started in the kitchen (62%). This is consistent with previous years and in particular represents no change on the figure recorded in 2001/2.

**Table 3.3: Where the domestic fires started, 2001/2 & 2002/3 BCS**

<i>Location</i>	2001/2 BCS	2002/3 BCS
	%	%
Kitchen	62	62
Lounge/dining room	12	13
Bedroom	6	6
Hallway or landing	1	2
Other place in the house	3	3
<b>All inside the house</b>	<b>85</b>	<b>86</b>
Garage	2	1
Shed or greenhouse	1	1
Garden	5	6
Dustbin	1	1
Elsewhere outside the house	6	6
<b>All outside the house</b>	<b>15</b>	<b>14</b>
<i>Unweighted N</i>	487	537

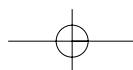
Notes:

<sup>1</sup> Due to rounding, columns do not necessarily total to 100%.

<sup>2</sup> 'Last' fire reported in previous 12 months.

<sup>3</sup> Source: 2001/2 and 2002/3 BCS (weighted data). Covers England and Wales.

As in 2001/2, just over a tenth of all domestic fires started in the lounge (13%). In general the responses given in the 2002/3 BCS to the question of where the fire started are very similar to those reported in the previous sweep.



## FIRE BRIGADE ATTENDANCE AND TACKLING THE FIRE (TABLES 3.4 TO 3.6)

The 2002/3 BCS estimates that the fire and rescue service was called to 28% of last reported fires. This figure is equal to that reported in 2001/2. Overall, it would appear that the estimate based on the direct questioning of respondents on fire brigade attendance provides a reasonably accurate measure of fire and rescue service activity. Chapter 2 provides a more detailed discussion on estimating the proportion of fires attended by brigades.

In 2002/3 the fire brigade was most likely to be called when the fire started outside the property. The fire brigade was called to 59% of all fires that started outside the house, compared to just 23% of fires that started inside the house. Equivalent figures for 2001/2 were 73% and 20% respectively. However, it should be noted that the numbers of outdoor fires reported are very small and so care should be taken when interpreting these figures.

The small proportion of kitchen fires to which the fire brigade was called (17% of fires reported in 2002/3) possibly reflects the relatively minor nature of many cooking-related fires. In most cases it would appear that the respondents dealt with the incidents themselves (also see Table 3.6).

**Table 3.4: Proportion of fires to which fire brigade called by where the domestic fires started, 2001/2 & 2002/3 BCS**

<i>Location</i>	2001/2 BCS	2002/3 BCS
	%	%
Kitchen	13	17
Lounge/dining room	40	37
Bedroom	32	47
Hallway or landing	18	34
Other place in the house	67	42
<b>All inside the house</b>	<b>20</b>	<b>23</b>
Garage	70	34
Shed or greenhouse	77	20
Garden	54	53
Dustbin	100	100
Elsewhere outside the house	82	68
<b>All outside the house</b>	<b>73</b>	<b>59</b>
<b>Overall % of fires attended</b>	<b>28</b>	<b>28</b>
<i>Unweighted N</i>	487	535

Notes:

<sup>1</sup> 'Last' fire reported in previous 12 months.

<sup>2</sup> Source: 2001/2 and 2002/3 BCS (weighted data). Covers England and Wales.

The fire brigade was most likely to be called when the fire was started deliberately. (Please note respondents were not asked if arson was proven.) Of those respondents who stated that the fire was started deliberately, 72% said that the fire brigade was called. The fire brigade was called to a relatively small proportion of cooking-related incidents (16%). These results are consistent with the findings from the 2001/2 BCS. However, in 2002/3 there was a statistically significant increase in the proportion of fires caused by accidents with matches and other smoking materials which were attended by the fire brigade (from 27% to 53%). There was also a statistically significant fall (68% to 34%) in brigade attendance to fires started by children playing with fire. However, it should be noted that these causes of fire were responsible for only 5% and 4%, respectively, of fires reported.

**Table 3.5: Proportion of fires to which fire brigade called by cause of fire, 2001/2 & 2002/3 BCS**

<i>Cause of fire</i>	2001/2 BCS	2002/3 BCS
	%	%
Arson	76	72
Accidents with matches and other smoking materials	27	53
Heating appliances (including chimney fires)	54	48
Electrical equipment/wiring	30	36
Children playing with fire (not matches/cigarette lighters)	68	34
Accidents while cooking	12	16
Candles	10	8
All other causes of fire	56	40
<b>Overall % of fires that were attended</b>	<b>28</b>	<b>28</b>
<i>Unweighted N</i>	487	532

Notes

<sup>1</sup> 'Last' fire reported in previous 12 months.

<sup>2</sup> Source: 2001/2 and 2002/3 BCS (weighted data). Covers England and Wales.

In total, over half of all reported fires were extinguished by the respondent (58%), and a further 26% were extinguished by someone else in the household. This does suggest that the majority of domestic fires are not serious and are tackled adequately without the need for fire brigade involvement. In total, the fire brigade was responsible for extinguishing 9% of all domestic fires. When the fire brigade was called to an incident, it was responsible for extinguishing the fire in 61% of cases, while the remaining fires were either extinguished by someone else or went out before the fire brigade arrived.

**Table 3.6: Who put out the fire by whether the fire brigade was called, 2002/3 BCS**

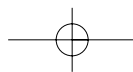
<i>Who put out fire</i>	All fires	Fires to which fire brigade called	Fires to which fire brigade not called
	%	%	%
Fire brigade	9	61	–
Respondent	58	22	65
Someone else in household	26	12	29
Someone from outside household (other than fire brigade)	8	10	8
Went out by itself	1	3	1
Don't know	<1	–	<1
<i>Unweighted N</i>	404	61	343

Notes

<sup>1</sup> Respondents allowed to state more than one answer.

<sup>2</sup> 'Last' fire reported in previous 12 months.

<sup>3</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.



## PERSONAL INJURY (TABLE 3.7)

The vast majority of reported fires resulted in no personal injury to the respondent or anyone else in the household (92%). The most common injury received was smoke inhalation, accounting for 63% of all injuries.

**Table 3.7: Injury caused by fire, 2002/3 BCS**

<i>Type of injury</i>	Of those injured	Of all incidents
	%	%
Smoke inhalation	63	5
Burns & scalds	32	2
Other injuries	9	1
Don't know	3	<1
No one in household injured	–	92
<i>Unweighted N</i>	46	537

Notes:

<sup>1</sup> Respondents allowed to state more than one injury caused by the fire.

<sup>2</sup> 'Last' fire reported in previous 12 months.

<sup>3</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

Similar to the findings in the 2001/2 BCS, only 4% of fires resulted in someone in the household seeking medical attention and 3% resulted in someone in the household requiring hospital treatment.

## COST OF FIRE (TABLES 3.8 AND 3.9)

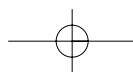
As in previous years, respondents were also asked to estimate the total cost of damage caused by the last reported fire. In 2002/3, 43% of respondents stated that the fire resulted in no financial loss. This suggests that many respondents have simply discounted any negligible costs, such as ruined food in a cooking-related fire. A further 19% stated that the fire resulted in minimal financial loss (less than £25), while 11% reported losses of between £25 and £99.

The average cost of last fires reported in 2002/3 is estimated to be £980. This represents a 31% increase on the 2001/2 figure of £750.

Due to the relatively low number of respondents reporting a domestic fire in the BCS, any analysis of costs should be treated as indicative rather than conclusive. In particular, estimates on the average cost of fire can be greatly skewed by a very small number of relatively costly fires. Consequently, inferences should be made with care, particularly with regard to year-on-year comparisons.

Applying the average cost of fires to the estimated number of fires suggests that the total cost of domestic fires in England and Wales based on responses in the 2002/3 BCS was approximately £360 million. The equivalent figure for the 2001/2 BCS was £290 million. This increase in the estimated total cost is due to the higher estimate for the average cost based on fires reported in 2002/3. This is a broad estimate based on property losses only, and takes no account of, for example, the cost of any injuries, insurance administration costs or costs to the fire and rescue service<sup>11</sup>. The small numerical base of fires reported should also be borne in mind when considering this estimate.

<sup>11</sup> For a more detailed examination of the cost of fire in England and Wales see: ODPM (2003) *The Economic Cost of Fire, Estimates for 2000*, London: ODPM.



**Table 3.8: Total cost of damage caused by the fire, 2001/2 & 2002/3 BCS**

Cost	2001/2 BCS	2002/3 BCS
	%	%
£0	42	43
£1 – £24	19	19
£25 – £99	11	11
£100 – £499	12	13
£500 – £999	7	6
£1,000 +	9	8
<b>Mean cost</b>	<b>£750</b>	<b>£980</b>
<i>Unweighted N</i>	419	479

## Notes:

- <sup>1</sup> Cases where the value of the fire was unknown are excluded.
- <sup>2</sup> Mean costs are rounded to the nearest £10.
- <sup>3</sup> 'Last' fire reported in previous 12 months.
- <sup>4</sup> Source: 2001/2 and 2002/3 BCS (Weighted data). Covers England and Wales.

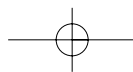
Of all respondents who reported a fire in the previous 12 months, 65% were covered by household insurance at the time of the fire. Of those covered by insurance, only 23% made a claim for the damage caused, reflecting the fact that most fires resulted in no major financial loss. The average cost of fires for which a claim was made was £6,630. This represents a large increase on the equivalent figure in the 2001/2 BCS of £3,350, which is partly as a result of a very small number of relatively costly fires for which claims were made in the 2002/3 BCS. The average cost of fires for which no claim was made was just £40, which compares with £60 in 2001/2.

**Table 3.9: Cost of the fire damage by whether the damage was claimed for, 2001/2 & 2002/3 BCS**

Cost	2001/2 BCS		2002/3 BCS	
	Made claim	No claim	Made claim	No claim
	%	%	%	%
£0	–	50	–	53
£1 – £24	–	23	2	24
£25 – £99	6	15	1	13
£100 – £499	21	10	32	7
£500 – £999	33	1	18	2
£1,000 +	40	1	48	1
<b>Mean cost</b>	<b>£3,350</b>	<b>£60</b>	<b>£6,630</b>	<b>£40</b>
<i>Unweighted N</i>	56	201	68	238

## Notes:

- <sup>1</sup> 'Last' fire reported in previous 12 months.
- <sup>2</sup> Mean cost rounded to the nearest £10.
- <sup>3</sup> Due to rounding, columns do not necessarily total to 100%.
- <sup>4</sup> Source: 2001/2 and 2002/3 BCS (weighted data). Covers England and Wales.



## CHAPTER 4

# RISK OF FIRE

This chapter considers the risk of experiencing a domestic fire for different types of household and for different groups in the community. The results show that, as with criminal victimisation, there is considerable variation in risk among different groups of the population. Identification of those groups at highest risk is vital for the development of effective strategies to reduce the incidence of fire in the home.

### THE ROLE OF THE BCS

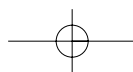
As discussed in the introduction, the BCS is an important additional source of information in assessing risks of domestic fire. The fire and rescue service does not routinely record personal or social information about those who have suffered fires to which it was called. In contrast the BCS collects a wealth of information about the characteristics of both those who have experienced a fire and those who have not. This allows the survey to identify how risks of fire vary across different types of household.

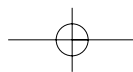
There are however, some limitations. Firstly, the BCS is primarily concerned with measuring criminal victimisation, and many of the household level characteristics measured are devised with this in mind. The BCS does not record information about some factors that are likely to be associated with fire risk. For example, information about the physical characteristics of the property is limited, and detail about behaviour likely to increase risk of fire is not collected (e.g. use of chip pans). Furthermore, some relevant information is only collected at an individual level (for example, educational qualifications), whereas risk of fire may be more affected by the behaviour patterns of the household as a whole. Finally, while the BCS is a large survey, the relatively small number of domestic fires identified means that it is not possible to determine reliably whether some groups are more at risk from certain types of fire than others.

The BCS findings on risk of fire are presented below. First the results of bivariate analysis are given. This technique examines a series of relationships between fire victimisation and various personal, household and community characteristics. However, because many of the characteristics overlap it is difficult to judge their unique contribution to the risk of domestic fire. To address this, the results obtained from multivariate analysis, a statistical technique used to ascertain each characteristic's unique contribution to the risk of fire, are then presented. Finally, a comparison of the variables identified by both bivariate and multivariate analysis in both the 2001/2 and 2002/3 BCS is made.

### BIVARIATE ANALYSIS

Overall, 1.5% of respondents in the 2002/3 BCS experienced a domestic fire in the previous 12 months. This figure provides the benchmark against which the risk of experiencing a domestic fire is measured for different sub-groups of the population. Those sub-groups most at risk are given below (prevalence rates in brackets). Full details on all the variables included in the bivariate analysis can be found in Appendix A, Tables A4.1 to A4.3.





## ACCOMMODATION TYPE

Households in the following property types are most at risk of experiencing a domestic fire:

- in poor physical condition (2.4%)<sup>12</sup>
- rented socially (2.2%)
- terraced property (1.8%)

## LOCATION

Households located in the following areas are most at risk of experiencing a domestic fire:

- areas of high physical disorder (2.0%)<sup>13</sup>
- council estates (1.9%)<sup>14</sup>

Risks are also higher in the following ACORN<sup>15</sup> areas:

- council estates, greatest hardship (2.6%)
- council estates, high unemployment (2.4%)
- better-off executives, inner-city areas (2.2%)

and are slightly higher in the Government Office Regions of South East (1.9%), Yorkshire and the Humber (1.9%), and South West (1.8%).

## HOUSEHOLD STRUCTURE

The following households are most at risk of experiencing a domestic fire:

- households where the head of the household is young (16-24) (2.5%)
- households containing children, either adults and children (2.2%) or lone parent households (2.7%)

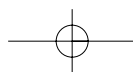
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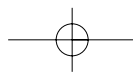
<sup>12</sup> Based on the interviewer's assessment of the condition of the property in the area and the condition of the respondent's property relative to other properties in the area.

<sup>13</sup> Based on the interviewer's assessment of the physical condition of the area in which the respondent lives.

<sup>14</sup> Based on ACORN classification.

<sup>15</sup> ACORN is 'A Classification of Residential Neighbourhoods' developed by CACI Ltd, through the technique of cluster analysis of variables from the 1991 Census. It classifies households according to demographic, employment and housing characteristics of the surrounding neighbourhood. There are a total of 54 ACORN groups which can be aggregated to two broader groups of 17 and 6. Analysis presented here is based on the 17-group classification.





## OTHER FACTORS

Other factors associated with a greater risk of experiencing a domestic fire are:

- the household has been a victim of crime (2.4%)
- the respondent has a non-limiting disability (2.4%)
- someone in the household smokes (2.1%)
- the household is financially unstable (2.1%)<sup>16</sup>
- the respondent's socio-economic classification is 'never worked' (2.0%) or 'higher professional' (1.9%)
- the respondent is of Mixed race (2.1%) or Black (1.8%)<sup>17</sup>

## MULTIVARIATE ANALYSIS

Results from the bivariate analysis can often show a somewhat inconclusive picture.

Apparently contradictory findings can be found within a single variable (for example, both households within 'council estates, greatest hardship' and 'better-off executives, inner-city' ACORN areas had a greater risk of experiencing a domestic fire). They can also be found between different variables (for example, households where the respondent is in the 'higher professional' social class have a higher risk of experiencing a domestic fire, but so do financially unstable households. In addition to this, some of the identified risk factors overlap, for example living in an area of high physical disorder may be correlated to being a victim of household crime.

By subjecting the data to multivariate analysis, it is possible to isolate the particular importance of different factors in predicting a household's overall risk from domestic fire. Logistic regression is the technique used here<sup>18</sup>.

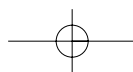
The factors independently associated with domestic fires are discussed below. The most intuitive way to interpret the results is to consider two households identical in every way, except in terms of the factor under consideration. The figures given below show the value of EXP ( $\beta$ ), or the *odds ratio*. This figure represents the change in the odds of experiencing a domestic fire if we increase the value of the variable under consideration by one unit (controlling for all other independent variables). If the value of EXP ( $\beta$ ) is greater than one, then the odds are increased; if the value of EXP ( $\beta$ ) is less than one, then the odds of experiencing a domestic fire are decreased.

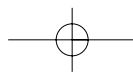
As the odds ratio increases, the relative risk of the event also increases. However, the *change in odds* should not be interpreted as the *change in the relative risk* (e.g. an *odds ratio* of 2 does not mean that the relative risk of an event occurring is doubled). For example, if two groups have respective risks of 75% and 60% for a particular outcome, they have an odds ratio equal to 2 (i.e. the respective odds are 3:1 and 3:2 and the odds ratio is  $(3/1)/(3/2)=2$ ). Similarly two groups with respective risks of 33% and 20% also have an odds ratio equal to 2 (i.e. the respective odds are 1:2 and 1:4 and the odds ratio is  $(1/2)/(1/4)=2$ ). The value of EXP ( $\beta$ ) should therefore be interpreted as a multiplicative increase.

<sup>16</sup> Respondents were asked how easy it would be to find £100 at short notice if required, and were given three options: i) impossible to find, ii) a bit of a problem to find and iii) no problem to find. Those respondents who stated that it would be impossible to find £100 have been deemed financially unstable.

<sup>17</sup> Analysis based on the ethnic boost sample to improve reliability.

<sup>18</sup> For further details of the logistic regression procedure and the full results see Appendix B.





Whether the variables entered into the model are binary (i.e. have only two possible outcomes, for example whether the respondent smokes or not) or categorical (i.e. have three or more exclusive outcomes, for example household tenure) it is necessary to identify one of the outcomes as a *reference* or *base* category. For example, when interpreting the odds of experiencing a domestic fire for people renting their property, their odds are considered relative to owner-occupiers.

*The variables below are presented in order of 'predictiveness', i.e. the most important factor in explaining a household's high odds of experiencing a domestic fire is given first (the exact odds ratio is given in brackets). A full breakdown of the variables identified by logistic regression can be found in Appendix B, Table B4.1.*

#### **VICTIM OF HOUSEHOLD CRIME**

Relative to non-victim households, those households who had been the victim of household crime had higher odds of experiencing a domestic fire (1.72).

#### **HOUSEHOLD STRUCTURE**

Relative to those households headed by someone over 60, all other types of household structure had higher odds of experiencing a domestic fire. Those with the highest odds were lone parent households (2.11) and households containing adults and children (2.23).

#### **DISABILITY**

Relative to those households where the respondent does not have a disability, the odds of experiencing a domestic fire increased for those households where the respondent has a non-limiting disability (1.77) or a limiting disability (1.85).

#### **SMOKING**

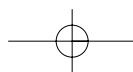
Relative to non-smoking households, smoking households had higher odds of experiencing a domestic fire (1.39).

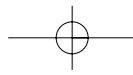
#### **EDUCATION**

Relative to those households where the respondent has no qualifications, the odds of experiencing a domestic fire increased for those households where the respondent has below A-level qualifications (1.56) or has A-levels or above (1.77).

#### **HOUSEHOLD TENURE**

Relative to owner-occupied households, households which were socially rented had higher odds of experiencing a domestic fire (1.55).





## PHYSICAL CONDITION OF THE HOUSE

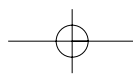
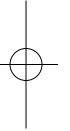
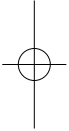
Relative to those households where the physical condition of the property was good, households where the physical condition was fair (1.25) or poor (1.52) both had higher odds of experiencing a domestic fire.

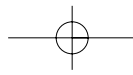
## COMPARING THE RESULTS OF THE BIVARIATE AND MULTIVARIATE ANALYSIS IN THE 2001/2 AND 2002/3 BCS

### BIVARIATE ANALYSIS

Households with the following characteristics were identified as having the greatest risk of experiencing a domestic fire in both the 2001/2 and 2002/3 BCS:

- The head of household is aged 16-24
- The property is located on a council estate
- Lone parent households
- The household was a victim of crime in the previous 12 months
- Smoking households
- The household is financially unstable
- The property is located in an area of high physical disorder
- The physical condition of the property is poor
- The property is rented socially
- The respondent has a non-limiting disability
- The respondent is of Mixed race or Black.





## MULTIVARIATE ANALYSIS

The table below shows those variables identified by multivariate analysis as increasing risk of experiencing a domestic fire in the 2001/2 and 2002/3 BCS.

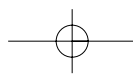
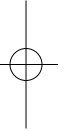
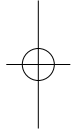
**Table 4.1: A comparison of groups with the highest odds of experiencing a domestic fire, 2001/2 & 2002/3 BCS (multivariate analysis)**

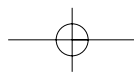
	2002/3 BCS	2001/2 BCS
The respondent has been a victim of household crime	Yes	No
The household contains adults and children	Yes	Yes
The respondent of the household has a limiting disability	Yes	No
Somebody in the household smokes	Yes	Yes
The respondent has A-Level qualifications or above	Yes	Yes
The property is rented socially	Yes	No
The physical condition of the property is poor	Yes	Yes
The household is financially unstable	No	Yes
The household is in an area of high physical disorder	No	Yes

Notes:

<sup>1</sup> Based on 'last' fire reported in previous 12 months.

<sup>2</sup> Source: 2001/2 and 2002/3 BCS (unweighted data). Covers England and Wales.





## CHAPTER 5

# SMOKE ALARM OWNERSHIP

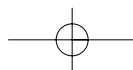
This chapter primarily discusses the findings from the BCS relating to smoke alarm ownership in domestic properties. Initial levels of ownership are determined from a general question about fire safety measures respondents currently have in their homes. Details of the alarms owned are then discussed, in particular to ascertain levels of ownership of *working* smoke alarms. Also, reasons for both non-ownership and non-functioning alarms are detailed.

The chapter then goes on to consider those types of household least likely to own working smoke alarms, using the bivariate and multivariate techniques used in the previous chapter. It will then compare findings from both bivariate and multivariate analysis in the 2001/2 and 2002/3 sweeps. Identification of those groups least likely to own a working alarm is vital for the successful targeting of smoke alarm installation and maintenance programmes and the development of campaigns designed to increase levels of smoke alarm ownership. Finally, the chapter will look at those household types identified by bivariate analysis in 2002/3 as being most likely to have a domestic fire *and* least likely to own a working smoke alarm.

### METHODOLOGICAL NOTE

In 2002/3 the detailed questions regarding smoke alarm ownership were only asked of a sub-sample of the BCS, amounting to approximately one quarter of the total sample (9,000 respondents). This sub-sample also further discounted any respondents who had experienced a fire in the previous 12 months or in the year prior to that. This therefore means that the findings discussed in this chapter relate to respondents who had not experienced a fire and so it is possible that there is some resulting bias in the analysis. However, since the response rate for fires was relatively low, it is likely that any such effects would be marginal only.

As mentioned previously, when considering the findings from the 2001/2 BCS it is necessary to take into account the change of the fire questionnaire between 2001 and 2002. For this reason, the analysis on smoke alarm ownership was based on responses given during 2001 only (6,100 respondents). In 2001 respondents were simply asked directly whether they owned a working smoke alarm. In order to permit some comparability between 2001/2 and 2002/3 findings, where possible, recoding has been carried out on the 2002/3 responses. However, the differing nature of the questions means that comparisons are limited and those that are made should still be treated as indicative only.



## OWNERSHIP OF FIRE SAFETY MEASURES (TABLE 5.1)

Respondents were shown a list of fire safety measures and asked which they currently had in their home to protect their household from fires. In total 81% stated that they owned a smoke alarm. (Please note this initial question did not ask to specify if the alarm was working.) In addition 23% of respondents stated that they owned fire escape/wide opening windows and 18% owned a fire extinguisher.

**Table 5.1: Ownership of fire safety measures, 2002/3 BCS**

	%
Smoke alarm	81
Fire escape/wide opening windows	23
Fire extinguisher	18
Fire blanket	7
Fire door	6
Practice fire drill/planned escape route	6
Ladder/rope	4
Heat sensor	2
Other fire safety measures	1
None of these	<1
<hr/>	
<i>Unweighted N</i>	<i>8,991</i>

Notes:

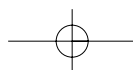
<sup>1</sup> Respondents allowed to state more than one answer.

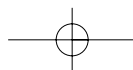
<sup>2</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

## SMOKE ALARM OWNERSHIP AND FUNCTION (TABLES 5.2 AND 5.3)

Those respondents who reported owning at least one smoke alarm were then asked if the alarms were currently working. Three answers were possible: 1) 'yes – (all) in full working order', 2) 'some in full working order, some not' and 3) 'no – (all) not working for some reason'. By combining the responses to this question with the level of smoke alarm ownership determined earlier, it is possible to ascertain the level of *working* smoke alarm ownership, see Table 5.2.

In total, it was found that 76% of respondents currently owned a working smoke alarm. A further 5% owned an alarm that was currently not working and 20% did not own an alarm. These percentages are very similar to those recorded in the 2001/2 BCS, although the differences in the nature of the questions asked means that the comparison should be treated as indicative only.



**Table 5.2: Ownership of a working smoke alarm, 2001/2 and 2002/3 BCS**

	2001/2 BCS	2002/3 BCS
	%	%
Yes – smoke alarm owned and working	76	76
No – smoke alarm owned, but not working	6	5
No – smoke alarm not owned	18	20
<i>Unweighted N</i>	<i>6,110</i>	<i>8,991</i>

## Notes:

<sup>1</sup> The questions were phrased differently in the 2001/2 and 2002/3 BCS. The 2001/2 BCS specifically asked if respondents had a working smoke alarm fitted in their home.

<sup>2</sup> 2001/2 BCS figures are for respondents questioned in 2001 only.

<sup>3</sup> Due to rounding, columns do not necessarily total to 100%.

<sup>4</sup> Source: 2001/2 and 2002/3 BCS (weighted data). Covers England and Wales.

All respondents who reported owning a smoke alarm were asked how this was powered. Multiple responses were allowed for cases where more than one alarm was owned. The majority of smoke alarms, 75%, were reported as being powered by ordinary (1 year) batteries. A further 16% were classified as mains powered and 8% used 10-year batteries.

**Table 5.3: How smoke alarm(s) powered, 2002/3 BCS**

	%
Battery – ordinary (1 year)	75
Wired to the mains/mains powered	16
Battery (10 year)	8
Don't know	4
<i>Unweighted N</i>	<i>7,398</i>

## Notes:

<sup>1</sup> Respondents allowed to state more than one answer.

<sup>2</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

## REASONS FOR NON-FUNCTIONING SMOKE ALARMS AND NON-OWNERSHIP OF ALARMS (TABLES 5.4 AND 5.5)

Those respondents who reported owning at least one non-functioning smoke alarm were asked why this was so. Just over half, 57%, stated that the battery in the alarm was flat and they had not got round to or had forgotten to replace it. In 16% of cases respondents had disabled the alarm because of false alarms and in 8% they had removed the battery to use elsewhere.

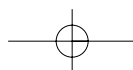
**Table 5.4: Reasons why smoke alarms not working, 2002/3 BCS**

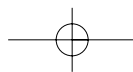
	%
Haven't got round/forgotten to replace flat battery	57
Alarm disabled because of false alarms	16
Removed battery to use elsewhere	8
Other reason	18
<i>Unweighted N</i>	<i>509</i>

## Notes:

<sup>1</sup> Respondents allowed to state more than one answer.

<sup>2</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.





The 19% of respondents who, when questioned about ownership of fire safety measures, did not state a smoke alarm as one such measure, were asked what the main reason for this was. The most frequent reason given was that the respondents had not got around to getting an alarm or kept forgetting to buy one (57%). An additional 16% felt they (and/or their family) were not at risk of fire. This finding is particularly interesting, given that the analysis below shows that there are certain types of household which are both less likely to own a working smoke alarm *and* at greater risk of experiencing a domestic fire.

**Table 5.5: Main reason for not owning a smoke alarm, 2002/3 BCS**

	%
Haven't got around to getting one/keep forgetting	57
Consider myself/my family not to be at risk	16
Dislike false alarms	4
Have got one but it is not yet fitted	3
They are annoying/go off unnecessarily	2
Cannot afford to buy one	2
Have never considered getting one/don't feel I need one	2
Don't know how or where to install one	1
Other reason	13
<i>Unweighted N</i>	<i>1,535</i>

Notes:

<sup>1</sup> Respondents permitted one reason only.

<sup>2</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

## BIVARIATE ANALYSIS

As with the risk of experiencing a domestic fire, smoke alarm ownership is not spread evenly throughout different groups of the population. It was found that 76% of respondents had at least one working smoke alarm. This provides the benchmark by which the likelihood of different population sub-groups having a working smoke alarm is measured. Those sub-groups least likely to have a working alarm are given below (ownership levels given in brackets). Full details on all the variables included in the bivariate analysis can be found in Appendix A, Tables A5.1 to A5.3.

### ACCOMMODATION TYPE

Households in the following property types are least likely to have a working smoke alarm:

- in poor physical condition<sup>19</sup> (54%)
- converted flats (65%)
- privately rented accommodation (66%)
- properties built before 1944 (71%)

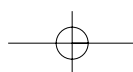
### LOCATION

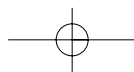
Households located in the following areas are least likely to have a working smoke alarm:

- areas of high physical disorder<sup>20</sup> (62%)
- the inner city (70%)

<sup>19</sup> See footnote 12.

<sup>20</sup> See footnote 13.





Households in the Government Office Region of London (65%) and in the following ACORN<sup>21</sup> areas are also least likely to have a working smoke alarm:

- multi-ethnic, low income areas (58%)
- better-off executives, inner city areas (61%)
- white collar workers, better off multi-ethnic areas (62%)

## HOUSEHOLD STRUCTURE

Households consisting of a single adult and no children are least likely to have a working smoke alarm (66%).

## ETHNIC GROUP<sup>22</sup>

Households where the respondent was Asian, Black or Chinese were less likely to have a working smoke alarm:

- Asian (57%)
- Black (65%)
- Chinese or other (68%)

## OTHER FACTORS

Other factors associated with a lesser likelihood of owning a working smoke alarm are:

- the household is financially unstable (65%)<sup>23</sup>
- someone in the household smokes (71%)
- the respondent has no qualifications (74%)

## MULTIVARIATE ANALYSIS

Once again, bivariate analysis of ownership of a working smoke alarm shows a slightly contradictory picture. For example, households in both ‘multi-ethnic, low income’ and ‘better-off executives, inner city’ ACORN areas have relatively low ownership levels. Furthermore, households with significantly different levels of annual income (less than £2,500 and £15,000 to £19,999) both have relatively low levels of ownership.

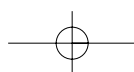
For this reason, multivariate analysis has been conducted to isolate those factors most likely to lead to non-ownership of a working smoke alarm. Once again, logistic regression is the technique used. To reiterate, the most intuitive way to interpret the results is to consider two households identical in every way, except in terms of the factor under consideration. The figures given below show the value of EXP ( $\beta$ ), or the *odds ratio*. This figure represents the change in the odds of not owning a working smoke alarm if we increase the value of the variable under consideration by one unit (controlling for all other independent variables).

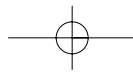
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<sup>21</sup> See footnote 15.

<sup>22</sup> Using the ethnic boost sample to improve reliability.

<sup>23</sup> See footnote 16.





The factors independently associated with non-ownership of a working smoke alarm are discussed below. The variables below are presented in order of 'predictiveness', i.e. the most important factor in explaining a household's high odds of not owning a working smoke alarm is given first (the exact odds ratio is given in brackets). A full breakdown of the variables identified by logistic regression can be found in Appendix B, Table B5.1.

#### **PHYSICAL CONDITION OF HOUSE**

Relative to those households where the physical condition of the property was good, households where the physical condition of the property was fair (1.50) or poor (1.97) both had higher odds of not owning a working alarm.

#### **HOUSEHOLD STRUCTURE**

Relative to those households consisting of adults and children, all other types of household structure had higher odds of not owning a working alarm. Those households with the highest odds were those consisting of a single adult with no children (2.43).

#### **AGE OF PROPERTY**

Relative to households where the property was modern (i.e. built after 1985), households where the property was built between 1944 and 1985 (1.75) and before 1944 (2.18) had higher odds of not owning a working alarm.

#### **ETHNIC GROUP**

Relative to households where the respondent was White, all other households had higher odds of not owning a working alarm. Households where the respondent was Asian had the highest odds (3.15).

#### **SMOKING**

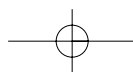
Relative to non-smoking households, smoking households had higher odds of not owning a working alarm (1.35).

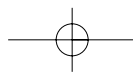
#### **TENURE**

Relative to social renters, both owner-occupiers (1.48) and private renters (1.66) had higher odds of not owning a working alarm.

#### **ACCOMMODATION TYPE**

Relative to households where the property is detached, households in all other types of property had higher odds of not owning a working alarm. Those with the highest odds were households in maisonettes (1.50) and purpose built flats (1.58).





## FINANCIAL STABILITY

Relative to those households where it would not be a problem to find £100, households where it would be a bit of a problem to find £100 (1.14) and impossible to find £100 (1.48) had higher odds of not owning a working alarm.

## LEVEL OF PHYSICAL DISORDER

Relative to households situated in areas with a low level of physical disorder, the odds of not owning a working alarm increased for those households situated in areas with a high level of physical disorder (1.29).

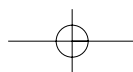
## COMPARING THE RESULTS OF THE BIVARIATE AND MULTIVARIATE ANALYSIS IN THE 2001/2 AND 2002/3 BCS

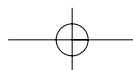
### BIVARIATE ANALYSIS

Households with the following characteristics were identified as being least likely to own a working smoke alarm in both the 2001/2 and 2002/3 BCS<sup>24</sup>:

- Households consisting of a single adult living alone
- Smoking households
- The household is financially unstable
- The property is privately rented
- The property is located in an area of high physical disorder
- The property is located in the inner city
- The property was built before 1944
- The physical condition of the property is poor
- The respondent has no qualifications

<sup>24</sup> Due to the change in questionnaire between 2001 and 2002 these comparisons should be seen as indicative only (see the introduction to the chapter for further details).





## MULTIVARIATE ANALYSIS

The table below shows those variables identified by multivariate analysis as increasing the odds of not owning a working smoke alarm in the 2001/2 and 2002/3 BCS.

**Table 5.6: A comparison of groups with the highest odds of not owning a working smoke alarm, 2001/2 & 2002/3 BCS (multivariate analysis)**

	2002/3 BCS	2001/2 BCS
The physical condition of the property is poor	Yes	Yes
The household contains a single adult living alone	Yes	Yes
The property was built before 1945	Yes	No
The respondent is Asian	Yes	Yes
Somebody in the household smokes	Yes	Yes
The property is privately rented	Yes	No
The property is a purpose-built flat	Yes	No
The household is financially unstable	Yes	No
The household is in an area of high physical disorder	Yes	No
The respondent has no qualifications	No	Yes
The property was built between 1944 and 1985	No	Yes
The household is located in an 'affluent urban' ACORN area	No	Yes
The property is a maisonette	No	Yes
The property is owner-occupied	No	Yes

Notes:

<sup>1</sup> Due to the change in the questionnaire between 2001 and 2002 these comparisons should be seen as indicative only.

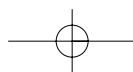
<sup>2</sup> Source: 2001/2 and 2002/3 BCS (unweighted data). Covers England and Wales. For 2001/2 BCS, respondents questioned in 2001 only.

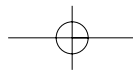
## RISK OF FIRE AND SMOKE ALARM OWNERSHIP

The 2002/3 BCS bivariate analysis has identified a number of household characteristics that are associated with both an increased risk of experiencing a domestic fire and a lesser likelihood of owning a working smoke alarm. It could be argued that these types of household are particularly vulnerable and warrant special attention.

Those characteristics are:

- Smoking households
- Financially unstable households
- Households located in areas of high physical disorder
- Properties in poor physical condition





## CHAPTER 6

# CONCLUSION

The findings from the 2002/3 BCS are generally consistent with those from the previous sweep. The prevalence rate remains at 1.5% which suggests that the long-term downward trend in domestic fires reported in the BCS is stabilising.

Cooking-related accidents remain by far the biggest cause of domestic fires in England and Wales. Once again, the vast majority of incidents reported had no serious consequences, in terms of either financial damage or personal injury. However, there was an increase in the average cost of fires reported in the 2002/3 BCS and consequently the estimated gross losses to householders in domestic fires in England and Wales was greater than in 2001/2.

Smoke alarm ownership has remained static at around 80%, suggesting that there is a hard core of around 20% of the population who remain particularly difficult to influence about the importance of owning an alarm. Also, a cause for concern is the 5% of respondents who owned alarms which were not working, with the main reason for this being that they had not got round to replacing flat batteries.

Almost all of the key household factors identified in the 2001/2 BCS as being associated with increased risk of experiencing a domestic fire have again been identified in 2002/3. In particular, both smoking households and households where the property is in poor physical condition have been identified as particularly high-risk households in both sweeps. The same can be said for those households least likely to own a working smoke alarm. Many of those characteristics identified in 2001/2 as increasing the likelihood that a household would not have a working alarm were identified again in 2002/3, including households in poor physical condition, adults living alone, smoking households, and ethnic minority (particularly Asian) households.

It is also interesting to note that a situation of 'double jeopardy' appears to exist in certain types of household. Some of the characteristics associated with increased risk of fire are also associated with an increased likelihood of not owning a working smoke alarm, such as smoking households and households suffering financial instability. These households would therefore appear to be particularly vulnerable.

# APPENDIX A

## ADDITIONAL TABLES

**Table A4.1: Percentage of households victim of fire in previous 12 months, once or more, by household characteristics (prevalence risks) (2002/3 BCS)**

<b>Accommodation type</b>		<b>Household smoking habits</b>	
Detached	1.4	Smoking household	2.1
Semi-detached	1.4	Non-smoking	1.2
Terraced	1.8	<b>Disability</b>	
Maisonette	1.5	None	1.3
Purpose built flat	1.7	Yes – not limiting	2.4
Converted flat	1.4	Yes – limiting	1.9
<b>Household income</b>		<b>Financial stability<sup>2</sup></b>	
£20,000 +	1.6	Impossible to find £100	2.1
£15,000 to £19,999	1.6	A bit of a problem to find £100	1.8
£10,000 to £14,999	1.8	No problem to find £100	1.4
£5,000 to £9,999	1.7	<b>Tenure</b>	
£2,500 to £4,999	1.3	Owners	1.3
Under £2,500	1.6	Social rent	2.2
<b>Age of head of household</b>		Private rent	1.6
16 – 24	2.5	<b>Level of physical disorder<sup>3</sup></b>	
25 – 44	1.9	High	2.0
45 – 64	1.5	Low	1.5
65 – 74	0.9	<b>Area type</b>	
75 +	0.6	Inner city	1.4
<b>Council estate<sup>1</sup></b>		Urban	1.6
Yes	1.9	Rural	1.3
No	1.4	<b>Physical condition of house<sup>4</sup></b>	
<b>Household structure</b>		Good	1.3
One adult no children	1.4	Fair	2.0
2 + adults no children	1.5	Poor	2.4
Adults and children	2.2	<b>Age of property</b>	
Lone parent	2.7	Pre 1944	1.6
Aged 60 +	0.9	Post 1944	1.5
<b>Social class</b>		1985 onwards	1.6
Large employers & higher managerial	1.6	<b>Qualifications</b>	
Higher professional	1.9	A-Levels & above	1.7
Lower managerial and professional	1.6	Below A-Levels	1.8
Intermediate	1.7	None	1.1
Small employers and own account	1.6	<b>Ethnicity<sup>5</sup></b>	
Lower supervisory and technical	1.2	White	1.6
Semi-routine	1.4	Black	1.8
Routine	1.4	Asian	0.9
Never worked	2.0	Mixed	2.1
<b>Victim of household crime</b>		Other	1.5
Yes	2.4		
No	1.1		
<b>Overall risk</b>			<b>1.5</b>

Notes:

<sup>1</sup> See footnote 14.

<sup>2</sup> See footnote 16.

<sup>3</sup> See footnote 13.

<sup>4</sup> See footnote 12.

<sup>5</sup> Using ethnic boost sample.

<sup>6</sup> Source: BCS 2002/3 (weighted data). Covers England and Wales.

**Table A4.2: Percentage of households victim of fire in previous 12 months, once or more, by ACORN (17) (prevalence risks) (2002/3 BCS)**

<b>Affluent suburbs and rural areas</b>	<b>1.3</b>
Wealthy achievers, suburban areas	1.3
Affluent greys, rural communities	1.4
Prosperous pensioners, retirement areas	1.2
<b>Affluent family areas</b>	<b>1.4</b>
Affluent executives, family areas	1.4
Well-off workers, family areas	1.4
<b>Affluent urban areas</b>	<b>1.7</b>
Affluent urbanites, town and city	1.2
Prosperous professionals, metropolitan areas	1.3
Better-off executives, inner city areas	2.2
<b>Mature home-owning areas</b>	<b>1.4</b>
Comfortable middle-agers, mature home-owning areas	1.3
Skilled workers, home-owning areas	1.6
<b>New home owning areas</b>	<b>1.3</b>
New home owners, mature communities	1.4
White collar workers, better off multi-ethnic areas	1.0
<b>Council estates and low income areas</b>	<b>1.9</b>
Older people, less prosperous areas	1.7
Council estates, better off homes	1.9
Council estates, high unemployment	2.4
Council estates, greatest hardship	2.6
Multi-ethnic, low income areas	1.3
<b>Overall risk</b>	<b>1.5</b>

Notes:

<sup>1</sup> ACORN is 'A Classification of Residential Neighbourhoods'. Based on 17-group classification. For further details see footnote 15.

<sup>2</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

**Table A4.3: Percentage of households victim of fire in previous 12 months, once or more, by Government Office Region (prevalence risks) (2002/3 BCS)**

North East	1.5
North West	1.3
Yorkshire/Humberside	1.9
East Midlands	1.2
West Midlands	1.5
South West	1.8
Eastern	1.2
London	1.2
South East	1.9
Wales	1.7
<b>Overall risk</b>	<b>1.5</b>

Notes:

<sup>1</sup> Based on Government Office Region (GOR).

<sup>2</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

**Table A5.1: Ownership of a working smoke alarm by household characteristics (2002/3 BCS)**

	%		%
<b>Accommodation type</b>		<b>Household smoking habits</b>	
Detached	81.9	Smoking household	71.4
Semi-detached	76.9	Non-smoking	77.9
Terraced	74.0	<b>Disability</b>	
Maisonette	70.5	None	75.6
Purpose built flat	66.9	Yes – not limiting	76.0
Converted flat	65.0	Yes – limiting	75.2
<b>Household income</b>		<b>Financial stability<sup>2</sup></b>	
£20,000 +	78.2	Impossible to find £100	65.0
£15,000 to £19,999	70.9	A bit of a problem to find £100	72.2
£10,000 to £14,999	74.4	No problem to find £100	77.6
£5,000 to £9,999	73.1	<b>Tenure</b>	
£2,500 to £4,999	72.1	Owners	77.4
Under £2,500	71.2	Social rent	74.5
<b>Age of head of household</b>		Private rent	66.0
16 – 24	73.4	<b>Level of physical disorder<sup>3</sup></b>	
25 – 44	75.2	High	62.5
45 – 64	75.6	Low	77.0
65 – 74	76.0	<b>Area type</b>	
75 +	76.7	Inner city	69.5
<b>Council estate<sup>1</sup></b>		Urban	76.0
Yes	74.4	Rural	77.3
No	75.8	<b>Physical condition of house<sup>4</sup></b>	
<b>Household structure</b>		Good	79.2
One adult no children	65.7	Fair	67.5
2 + adults no children	74.9	Poor	53.8
Adults and children	82.2	<b>Age of property</b>	
Lone parent	75.2	Pre 1944	70.9
Aged 60 +	75.7	Post 1944	76.8
<b>Social class</b>		1985 onwards	86.0
Large employers & higher managerial	80.9	<b>Qualifications</b>	
Higher professional	79.8	A-Levels & above	76.7
Lower managerial and professional	78.0	Below A-Levels	76.5
Intermediate	72.9	None	73.6
Small employers and own account	71.5	<b>Ethnicity<sup>5</sup></b>	
Lower supervisory and technical	76.9	White	76.7
Semi-routine	74.5	Black	64.7
Routine	72.3	Asian	56.7
Never worked	74.1	Mixed	75.9
<b>Victim of household crime</b>		Other	68.2
Yes	75.9		
No	75.4		
<b>Overall % who have a working smoke alarm</b>			<b>75.6</b>

Notes:

<sup>1</sup> See footnote 14.<sup>2</sup> See footnote 16.<sup>3</sup> See footnote 13.<sup>4</sup> See footnote 12.<sup>5</sup> Using ethnic boost sample.<sup>6</sup> Source: BCS 2002/3 (weighted data). Covers England and Wales.

**Table A5.2: Ownership of a working smoke alarm by ACORN (17) (2002/3 BCS)**

	%
<b>Affluent suburbs and rural areas</b>	<b>77.8</b>
Wealthy achievers, suburban areas	80.2
Affluent greys, rural communities	67.4
Prosperous pensioners, retirement areas	73.2
<b>Affluent family areas</b>	<b>80.7</b>
Affluent executives, family areas	83.0
Well-off workers, family areas	79.0
<b>Affluent urban areas</b>	<b>64.7</b>
Affluent urbanites, town and city	73.6
Prosperous professionals, metropolitan areas	63.6
Better-off executives, inner city areas	60.6
<b>Mature home owning areas</b>	<b>77.6</b>
Comfortable middle-agers, mature home-owning areas	79.5
Skilled workers, home-owning areas	75.9
<b>New home owning areas</b>	<b>73.8</b>
New home owners, mature communities	79.2
White collar workers, better off multi-ethnic areas	62.1
<b>Council estates and low income areas</b>	<b>72.8</b>
Older people, less prosperous areas	77.9
Council estates, better off homes	73.2
Council estates, high unemployment	72.1
Council estates, greatest hardship	78.1
Multi-ethnic, low income areas	58.0
<b>Overall % who have a working smoke alarm</b>	<b>75.6</b>

Notes:

<sup>1</sup> ACORN is 'A Classification of Residential Neighbourhoods'. Based on 17-group classification. For further details see footnote 15.

<sup>2</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

**Table A5.3: Ownership of a working smoke alarm by Government Office Region (2002/3 BCS)**

	%
North East	78.9
North West	76.8
Yorkshire/Humberside	70.1
East Midlands	76.9
West Midlands	77.6
South West	79.9
Eastern	76.2
London	65.2
South East	78.7
Wales	80.1
<b>Overall % who have a working smoke alarm</b>	<b>75.6</b>

Notes:

<sup>1</sup> Based on Government Office Region (GOR).

<sup>2</sup> Source: 2002/3 BCS (weighted data). Covers England and Wales.

## APPENDIX B

# LOGISTIC REGRESSION

Logistic regression allows one to assess which of a selection of relevant independent variables are statistically related to a given dependent variable when all the other variables under consideration have been taken into account<sup>25, 26</sup>.

Logistic regression is used in this report, as the response variables are binary (victim of fire versus non-victim of fire or owner of a working smoke alarm versus non-owner). The logistic regression models are based on data from the 2002/3 BCS. Weights are not used in the modelling procedure<sup>27</sup>. For simplicity, only the main effects models are presented in the main body of this report<sup>28</sup>.

## INTERPRETATION OF MODELS

The results presented here only include those variables that are statistically related to either experiencing a domestic fire or not owning a working smoke alarm, after the other factors have been controlled for. The tables present the exponential of the coefficients, EXP ( $\beta$ ), and significance levels.

- EXP ( $\beta$ ): interpreted as the change in the odds of victimisation associated with a one unit change in the independent variable, controlling for all other independent variables. The most appropriate way to interpret EXP ( $\beta$ ) is to think of two households that are identical except in respect of the factor under consideration. If EXP ( $\beta$ ) is greater than one, this means the odds of victimisation are increased, if EXP ( $\beta$ ) is less than one, the odds are decreased. For categorical variables the coefficients indicate the effect of being in the category compared to being in the pre-defined base category. The coefficients can be interpreted as the percentage increase/decrease in the odds of victimisation compared to the base category.
- Significance: all coefficients are tested to see if they are statistically different to zero. \*\*\* indicates the factor is significant at the 1% level and \*\* at the 5% level.

<sup>25</sup> Further details on logistic regression can be found in:

Dobson, A (1990) *An Introduction to Generalised Linear Models*, London: Chapman and Hall  
Demaris, A (1992) *Logit Modelling: Practical Applications*, California: Sage Publications.

<sup>26</sup> Multivariate techniques allow one to explore the association between variables. However, evidence of an association does not necessarily imply a causal relationship. The results presented here therefore identify factors associated with both high risk of fire victimisation, and separately, smoke alarm non-ownership, but these should not be interpreted as indicating a causal link.

<sup>27</sup> To account for this, those variables used in the construction of the weights can be included in the model.

<sup>28</sup> Main effects models assume that the effect of a given model is the same for all cases. No account is taken of the possible variations in how a factor may operate for different sub-groups. It is possible to test for interactions between the risk factors to see if they operate differently for different sub-groups, but interaction models are often difficult to interpret.

- The model chi-square is also given. This tests the null hypothesis that the coefficients for all of the terms in the model, except the constant, are 0. If the significance is less than 0.05 the null hypothesis is rejected, i.e. all the coefficients are non-zero.
- For ease of interpretation those factors significantly associated with *increased* risk are shaded.

**Table B4.1: Logistic regression model for risks of household fire (2002/3 BCS)**

Factor	EXP ( $\beta$ )	Significance
<b>Victim of household crime</b>		
No (BASE)	1.00	
Yes	1.72	***
<b>Household structure</b>		
Head of household aged 60 + (BASE)	1.00	
One adult no children	1.34	
2 + adults no children	1.49	***
Lone parent	2.11	***
Adults and children	2.23	***
<b>Disability</b>		
None	1.00	
Yes – not limiting	1.77	***
Yes – limiting	1.85	***
<b>Household smoking habits</b>		
Non-smoking household (BASE)	1.00	
Smoking household	1.39	***
<b>Education</b>		
No qualifications (BASE)	1.00	
Below A-levels	1.56	***
A-Levels & above	1.77	***
<b>Household tenure</b>		
Owners (BASE)	1.00	
Private rent	1.10	
Social rent	1.55	***
<b>Physical condition of house</b>		
Good (BASE)	1.00	
Fair	1.25	**
Poor	1.52	**
N = 33,944    Model Chi square = 214.69 ***		

## Notes:

<sup>1</sup> Variables are ordered according to their level of predictiveness in the model.

<sup>2</sup> EXP ( $\beta$ ) rounded to two decimal points.

<sup>3</sup> EXP ( $\beta$ ) greater than one indicates risks are higher relative to the base category.

<sup>4</sup> \*\*\* Indicates statistical significance at the 1% level, \*\* indicates significance at the 5% level.

<sup>5</sup> Shaded factors are those with statistically significant higher risks.

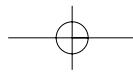
<sup>6</sup> Source: 2002/3 BCS (unweighted data). Covers England and Wales.

**Table B5.1: Logistic regression model for non-ownership of a working smoke alarm (2002/3 BCS)**

Factor	EXP ( $\beta$ )	Significance
<b>Physical condition of house</b>		
Good (BASE)	1.00	
Fair	1.50	***
Poor	1.97	***
<b>Household structure</b>		
Adults and children (BASE)	1.00	
Lone parent	1.53	***
2 + adults no children	1.63	***
Head of household aged 60 +	1.91	***
One adult no children	2.43	***
<b>Age of property</b>		
Modern (BASE)	1.00	
Post 1944	1.75	***
Pre 1944	2.18	***
<b>Ethnic group</b>		
White (BASE)	1.00	
Other	1.12	
Mixed	1.22	
Black	1.50	**
Asian	3.15	***
<b>Household smoking habits</b>		
Non-smoking (BASE)	1.00	
Smoking household	1.35	***
<b>Tenure</b>		
Social rent (BASE)	1.00	
Owners	1.48	***
Private rent	1.66	***
<b>Accommodation type</b>		
Detached (BASE)	1.00	
Terraced	1.01	
Semi-detached	1.12	
Converted flat	1.15	
Maisonette	1.50	
Purpose built flat	1.58	***
<b>Financial stability</b>		
No problem to find £100 (BASE)	1.00	
A bit of a problem to find £100	1.14	**
Impossible to find £100	1.48	***
<b>Level of physical disorder</b>		
Low (BASE)	1.00	
High	1.29	***
N = 8,390    Model Chi square = 460.37***		

## Notes:

- <sup>1</sup> Variables are ordered according to their level of predictiveness in the model.
- <sup>2</sup> EXP ( $\beta$ ) rounded to two decimal points.
- <sup>3</sup> EXP ( $\beta$ ) greater than one indicates risks are higher relative to the base category.
- <sup>4</sup> \*\*\* Indicates statistical significance at the 1% level, \*\* indicates significance at the 5% level.
- <sup>5</sup> Shaded factors are those with statistically significant higher risks.
- <sup>6</sup> Source: 2002/3 BCS (unweighted data). Covers England and Wales.



# APPENDIX C

## 2002/03 QUESTIONNAIRE

### FIRES MODULE

**AnyFire** [ASK ALL]

I would now like to ask about fires in the home. This means all sorts of fires, including chip pan fires and very minor fires and includes fires in sheds, garages or greenhouses.

In the last 12 months, that is since the first of [^DATE^], have you had a fire of any sort where you live?

INTERVIEWER: IF RESPONDENT HAS LIVED AT MORE THAN ONE ADDRESS IN THE LAST 12 MONTHS THE QUESTION SHOULD RELATE TO ALL THE ADDRESSES WHERE THE RESPONDENT HAS LIVED IN THIS TIME.

1. Yes
2. No

**NumFires** [ASK IF AnyFire=Yes]

How many fires have you had in the last twelve months?

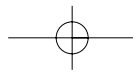
1. One
2. Two
3. Three
4. Four
5. Five or more

**HomeFire** [ASK ALL]

Has there been a fire in the place where you live in the year before that, that is [^DATE^]

INTERVIEWER: IF RESPONDENT HAS LIVED AT MORE THAN ONE ADDRESS IN THE YEAR BEFORE, THE QUESTION SHOULD RELATE TO ALL THE ADDRESSES WHERE THE RESPONDENT HAS LIVED IN THIS TIME.

1. Yes
2. No



**CauFire** [ASK IF Anyfire=Yes or HomeFire=Yes]  
**SHOW CARD F1**

What was the cause of the [last] fire you had? Please answer from this card

1. Arson
2. Accidents while cooking (including using toasters and microwaves)
3. Accidents with matches, cigarette lighters, cigarettes, cigars or pipes
4. Children playing with fire other than matches or cigarette lighters
5. Heating appliances/equipment and fires (including chimney fires and electric heaters)
6. Electrical equipment/wiring (including electric blankets)
7. Candles
8. Other

**CookAcc1** [Ask if CauFire=Cooking]

You say that the cause of the last fire you had was a cooking accident.  
Could you describe to me in a little more detail what happened?

**CODE ALL THAT APPLY**

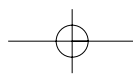
1. Pan of fat/oil catching fire
2. Grill pan
3. Leaving something too close to the cooker (e.g. tea towel)
4. Clothes caught on fire/burnt self on while cooking
5. Microwave
6. Toaster
7. Leaving something in the oven/on the hob for too long
8. Forgot to turn cooker off
9. Other (specify)

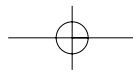
**Heating1** [Ask if CauFire=Heating]

You say the last fire you had was caused by a heating appliance/equipment or a fire. Could you describe to me in a little more detail what happened?

**CODE ALL THAT APPLY**

1. Electric fire
2. Chimney fire
3. Gas fire
4. Open hearth fire (e.g. coal on a rug)
5. Things left too close to heater/fire
6. Other (specify)





**Electr1** [Ask if CauFire=Electrical]  
You say that the cause of the last fire you had was caused by electrical equipment or wiring. Could you describe to me in a little more detail what happened?

**CODE ALL THAT APPLY**

1. Electric blankets
2. Washing machine/tumble-dryer
3. Dishwasher
4. Television/video/DVD player/computer
5. Other (specify)

**Othfire1** [Ask if CauFire=Other]  
Could you describe to me in a little more detail what the cause of the last fire was?

**CODE ALL THAT APPLY**

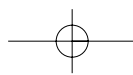
1. Gas leak
2. Blow lamps
3. Vehicle fires (wiring etc.)
4. Natural occurrences (lightning etc.)
5. Bonfires
6. Fireworks
7. Barbecue
8. Other (specify)

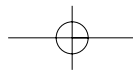
**FirStar1** [ASK IF AnyFire=Yes or HomeFire=Yes]  
[I now want to ask you about where the LAST fire you had started.]  
Did the fire first start inside or outside the house/flat?

1. Inside the house/flat
2. Outside the house/flat

**InsidFi1** [ASK IF FirStar1 = Inside home]  
Where inside the house/flat did the fire begin?

1. Kitchen
2. Lounge, living room, dining room
3. Bedroom
4. Bedsitter (bedsitting room)
5. Hallway or landing
6. Toilet/bathroom
7. Loft/roof
8. Cellar/basement
9. Elsewhere in house





**+XInsidF** [ASK IF InsidFi1=Elsewhere]  
INTERVIEWER: RECORD 'OTHER' ANSWER GIVEN

**OutsidH1** [ASK IF FirStar1=Outside home]  
Where outside the house/flat did the fire begin?

1. Garage
2. Shed or greenhouse
3. Garden
4. Dustbin
5. Communal area
6. Neighbours house/garden/garage
7. Elsewhere outside house

**+XOutSid** [ASK IF OutsidH1=Elsewhere]  
INTERVIEWER: RECORD 'OTHER' ANSWER

**FirSpr1a** [ASK IF InsidFi1 IN (1..8)]  
Did the fire spread beyond the [kitchen/lounge or dining room/ bedroom/ bedsitter/ hallway/ landing/ toilet/ bathroom/ loft/ room/ cellar or basement]?

1. Yes
2. No

**FirSpr1b** [ASK IF InsidFi1=Elsewhere]  
Did the fire spread beyond the [answer given at XInsidF1]?

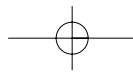
1. Yes
2. No

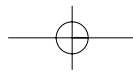
**FirSpr1c** [ASK IF OutsidH1 IN (1..6)]  
Did the fire spread beyond the [garage/shed or greenhouse/garden/dustbin/communal area neighbours house/garden/garage]?

1. Yes
2. No

**FirSpr1d** [ASK IF OutsidH1=Elsewhere]  
Did the fire spread beyond the [answer given at XOutSid1]?

1. Yes
2. No





**Whodis1 –**

**Whodis3** [Ask if AnyFire=Yes or HomeFire=Yes]

Who first discovered the fire?

**CODE ALL THAT APPLY**

1. Respondent
2. Someone else living in the/your household
3. Another person

**Howdis1 –**

**Howdis8** [Ask if Whodis in (1..3)]

**SHOW CARD F2**

How was the fire discovered?

**CODE ALL THAT APPLY**

1. Smoke alarm went off
2. Smelled smoke
3. They were in the room when it started
4. Just happened to find it
5. Saw smoke/flames/sparks
6. Heard noise
7. Burnt clothes/self
8. Other (specify)

**Smkala1**

[ASK IF NOT Smoke Alarm i.e. Howdis NE1)]

Was there a smoke alarm installed at the time of the last fire?

1. Yes
2. No

**Smkala2**

[ASK IF Smkala1=1]

Did the smoke alarm go off at all because of the fire?

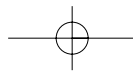
1. Yes
2. No

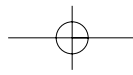
**Smkala3**

[ASK IF Smkala2=2]

Why didn't the smoke alarm go off?

1. No battery installed/not working/switched off
2. Fire too far away from the smoke alarm
3. Fire put out before the smoke alarm triggered
4. Don't know





**Smkala4** [ASK IF Smkala1=2]  
Have you had a smoke alarm installed since the [last] fire?

1. Yes
2. No

**FBrigCal** [ASK IF YES TO AnyFire or HomeFire]  
Was the Fire Brigade called?

1. Yes
2. No

**Firefig1** [ASK IF YES to FBrigCal]  
Did anyone other than the fire brigade fight the fire?

1. Yes
2. No

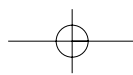
**Extfir1 –  
Extfir12** [ASK IF FBrigCal=No OR Firefig1=YES]

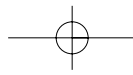
(Apart from any used by the fire brigade) What methods were used to try and put out the fire?

**CODE ALL THAT APPLY**

1. Fire extinguisher
2. Fire blanket
3. Other blanket, cloth, tea towel etc.
4. Earth, sand, salt
5. Water
6. Put outside
7. Turned power off
8. Stamped/stubbed out
9. Went out by itself
10. Cut off air supply
11. Just smoke
12. Other

**Xextfir** [ASK IF OTHER IN Extfir]  
**INTERVIEWER: RECORD 'OTHER' ANSWER**





ActExFiA –

ActExFiG [ASK IF YES TO someone other than the brigade tackled the fire and it did not go out by itself i.e. ASK IF (FBrigCal=No or Firefig1=Yes) and (Extfir WAS NOT WENT OUT BY ITSELF)]

Who actually put the fire out?

CODE ALL THAT APPLY SET [4] OF

1. Fire Brigade
2. Respondent
3. Someone else living in the/your household
4. Someone from outside the home
5. Went out by itself

Actexf2 [ASK if only the brigade tackled the fire Firefig1=No]

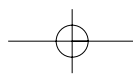
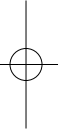
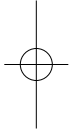
Did the fire brigade actually put out the fire or did it go out by itself?

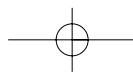
1. Fire brigade
2. Went out by itself

Mainext [ASK IF THE RESPONDENT, OTHER HH MEMBER OR SOMEONE FROM OUTSIDE THE HOME IN ANY ActExFi0-3 AND MULTICODED AT Extfir]

What was the main thing that put out the fire?

1. Fire extinguisher
2. Fire blanket
3. Other blanket, cloth, tea towel
4. Earth, sand, salt
5. Water
6. Put outside
7. Turned power off
8. Stamped/stubbed out
9. Cut off air supply
10. Just smoke
11. Other





**FireInjA –**

**FireInjK**

**[ASK IF AnyFire=Yes or HomeFire=Yes]**

**SHOW CARD F3**

Did you or anyone else in your household suffer any of these injuries as a result of this fire? Please include injuries that were caused in trying to put the fire out or in trying to escape from the fire.

**CODE ALL THAT APPLY SET [8] OF**

1. Bruises
2. Scratches/cuts
3. Broken bones
4. Burns/scalds
5. Smoke inhalation
6. Other injuries
7. No one in household injured

**FireDoc**

**[ASK IF FireInj IN (1..6)]**

Can I just check, did you or anyone else in your household have attention from a doctor or nurse as a result of the fire?

1. Yes
2. No

**FireHosp**

**[ASK IF FireDoc=Yes]**

And did you or anyone else in your household go to hospital for treatment?

1. Yes
2. No

**HhdInsur**

**[ASK IF AnyFire=Yes or HomeFire=Yes]**

At the time of the [LAST] fire did you have household insurance that covered the cost of the fire damage?

1. Yes
2. No

**ClaimFir**

**[ASK IF HhdInsur=Yes]**

Did you or anyone else in your household make a claim for damage caused by the fire?

1. Yes
2. No

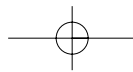
**FirDamag**

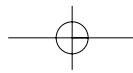
**[ASK IF AnyFire=Yes or HomeFire=Yes]**

What was the total cost of the damage done by the fire?

ENTER ANSWER IN £S

0..9999999





**Firsaf1 –** [ASK ALL IN FUC BUT NOT THOSE WHO SAID YES TO  
**Firsaf8** ANYFIRE OR HOMEFIRE]  
**SHOW CARD F4**

Looking at this card which, if any, of these things do you currently have in your home to protect your household from fires?

**CODE ALL THAT APPLY**

INTERVIEWER: LADDERS/ROPES WHICH ARE KEPT IN A GARAGE OR OUTHOUSE SHOULD NOT BE COUNTED AS FIRE SAFETY MEASURES.

1. Smoke alarm
2. Fire blanket
3. Fire extinguisher
4. Fire door
5. Ladder/rope
6. Fire escape/wide opening windows
7. Practice fire drill/planned escape route
8. Heat sensor
9. Other fire safety measures
10. None of these

**Alawork** [Ask ALL IN FUC AND if Firsaf1=smoke alarm]

How is the smoke alarm powered?

**CODE ALL THAT APPLY IF MORE THAN ONE**

1. Wired to the mains/mains powered
2. Battery – ordinary (1-year)
3. Battery (10-year)
4. Unsure

**Ownala** [Ask ALL IN FUC AND if Firsaf1=smoke alarm]

Can I just check, is your smoke alarm in working order at the moment or does it currently have no working battery, or is it broken or switched off for any reason?

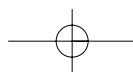
1. Yes – (all) in full working order
2. Some in full working order, some not
3. No – (all) not working for some reason

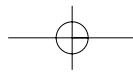
**Almbrok** [ASK ALL IN FUC AND IF Ownala=2 OR 3]

Can you tell me why your smoke alarm(s) is/are not working at the moment?

**CODE ALL THAT APPLY**

1. Alarm disabled because of false alarms
2. Haven't got round/forgotten to replace flat battery
3. Removed battery to use in other appliance
4. Other



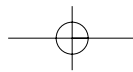
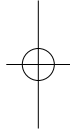


NoSmoke [ASK ALL IN FUC AND IF ((answered Firsaf, i.e. no fires) AND (NOT (Firsaf=1)) OR [Smkala4=2])

You said earlier that you have not had a smoke alarm installed since the fire. What is the main reason for not having a smoke alarm fitted in your home?

**DO NOT READ OUT. CODE ONE ONLY.**

1. Consider myself/ my family not to be at risk of fire
2. Do not know where to buy smoke alarms
3. Do not know how or where to install smoke alarm/worried about damage to other household fixtures and fittings
4. Cannot afford to buy a smoke alarm
5. Think that they look unsightly
6. Dislike 'false alarms'
7. It's my landlord's responsibility
8. Haven't got round to getting one yet
9. Other (specify)





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### Also available

#### Fire Statistics, United Kingdom, 2002

This is the latest annual bulletin presenting detailed analysis of statistics on fires, casualties and false alarms attended by local authority fire brigades in the United Kingdom in 2002.

The publication provides information for key stakeholders and the public about the causes of fires and fire-related casualties in the United Kingdom. Ten-year trends are shown, together with a breakdown of incidents by type of property and geographical location. The bulletin also contains additional analysis regarding smoke alarm ownership and function in dwelling fires attended by local authority fire brigades.

#### ORDER FORM

Ref.	Title	Price	Quantity
ISBN: 1-85112-695-3 Product code: 04FHSD01901	Fire Statistics, United Kingdom, 2002	£9.95	
ISSN: 1-85112-620-1 Product code: 03FHSD01119	Fires in the Home: findings from the 2001/2 British Crime Survey	£8.00	

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