

**LIBRARY REFERENCE ONLY**

THE LIBRARY  
FIRE RESEARCH STATION  
BOREHAM WOOD  
HERTS.

No. A99FR. N 935



# **Fire Research Note No. 935**

**PRELIMINARY ANALYSIS OF FIRE REPORTS FROM  
FIRE BRIGADES IN THE UNITED KINGDOM, 1971**

by

**S. E. CHANDLER**

**May 1972**

# **FIRE RESEARCH STATION**

**Fire Research Station,  
Borehamwood,  
Herts.  
Tel. 01-953-6177**

PRELIMINARY ANALYSIS OF FIRE REPORTS FROM  
FIRE BRIGADES IN THE UNITED KINGDOM, 1971

by

S. E. Chandler

SUMMARY

A preliminary analysis shows that there were 253 535 fires attended by fire brigades in the United Kingdom in 1971. Fatal casualties numbered 782, of which three were fire brigade personnel, the number of non-fatal casualties was 4883. The estimated direct financial loss due to fire was £128.7 M, the highest ever recorded figure.

KEY WORDS: Fire statistics, casualties.

Crown copyright

This report has not been published and should be considered as confidential advance information. No reference should be made to it in any publication without the written consent of the Director of Fire Research.

PRELIMINARY ANALYSIS OF FIRE REPORTS FROM  
FIRE BRIGADES IN THE UNITED KINGDOM, 1971

by

S. E. Chandler

INTRODUCTION

A preliminary analysis of fire reports shows that, during 1971, local authority fire brigades attended 222 070 fires in England and Wales, 25 619 in Scotland and 5846 in Northern Ireland. The United Kingdom total of 253 535 may however be an under estimate because of industrial action by fire brigades in January and fire brigades being prevented from getting to some fires in Northern Ireland. The number of incidents attended by each brigade is given in Table 1.

This report is more detailed than its predecessors and contains more information on casualties.

Two firemen in England and Wales and one in Scotland were fatally injured at, or on the way to fires. In England and Wales 350 members of the fire services were injured at fires; the corresponding figures for Scotland and Northern Ireland were 27 and 18 respectively. Fuller details of the nature of injuries are included in Table 2. Injuries attributed to explosions are included, but not injuries (other than burns or asphyxiation) in crash incidents in which there was a subsequent fire.

Information on the sex and age of fatal and non-fatal casualties is given in Tables 3A and 3B. Fatal casualties are equally distributed between the sexes but the same is not true of non-fatal casualties of which about two-thirds are male.

Tables 4, 5 and 6 give information on fatal casualties related to month of occurrence, hazard of origin and source of ignition. There were 648 fatal casualties in England and Wales, 113 in Scotland and 21 in Northern Ireland, giving a total of 782 in the United Kingdom. It is unlikely that, when all reports have been received, this total will be substantially lower than the final 1970 figure of 839. However, it appears possible that the upward trend which existed up to 1968 is levelling off. The most serious incident in 1971 was a gas explosion in a shopping area near Glasgow which gave rise to 21 deaths. Another very serious incident (which was attributed to arson) was at a London hotel and resulted in 9 deaths.

Fire brigades assisted in the rescue of 763 persons from hazardous situations in fires in buildings in England and Wales, 231 in Scotland and 25 in Northern Ireland. The corresponding figures for rescues from outdoor fires were 15, 1 and 0 respectively. At least a further 1320 persons were rescued from buildings by persons other than fire service (this includes the police) in England and Wales, 177 in Scotland and 62 in Northern Ireland. The numbers of persons rescued from outdoor fires without fire brigade assistance were 106 in England and Wales, 12 in Scotland and 7 in Northern Ireland. Four hundred and fifty nine persons escaped by unorthodox means from buildings in England and Wales, 33 in Scotland and 20 in Northern Ireland. The corresponding figures for escapes by unorthodox means from outdoor fires (mainly vehicles) were 94, 16 and 10. Full details of rescues and escapes are given in Tables 7, 7a, 7b and 7c.

Table 8 gives details of direct monetary losses estimated by the British Insurance Association and includes damage resulting from civil disturbances in Northern Ireland.

With the exception of Table 8 (direct fire damage) this analysis is based on reports received up to 21 March 1972 and all information contained in it is subject to revision when outstanding reports have been received.

Table 1

Fires attended by fire brigades  
in the United Kingdom, 1971

Fire brigades	Total fires	Total fires reported on Form K433 (1)	Total fires reported on Form K433H (2)
<u>England and Wales - County Fire Brigade</u>			
Anglesey	202	125	77
Bedfordshire	1049	615	434
Berks and Reading	2035	1052(3)	983
Brecon Co. and Radnor	234	158	76
Buckinghamshire	1810	1113	697(4)
Caernarvonshire	497	233	264
Cambridgeshire and Ely Isle of	981	615	366
Cardiganshire and Carmarthenshire	704	385	319
Cheshire	5028	2577	2451
Cornwall	1265	674	591
Cumberland	754	460(3)	294
Denbigh and Montgomery	748	457	291
Derbyshire	1915	1034	881(3)
Devonshire	1862	1091	771
Dorsetshire	1559	666	893
Durham Co.	3023	1403	1620
Essex	4567	2188	2379
Flintshire	710	408	302
Glamorganshire	3229	1570	1659
Gloucestershire	1808	1103	705
Hampshire	3799	1739	2060
Herefordshire	419	294	125
Hertfordshire	2535	1336(4)	1199(4)
Huntingdonshire and Peterborough	802	465	337
Kent and Canterbury	5070	2702	2368
Lancashire	12569	5716(3)	6853(3)
Leicestershire and Rutland	1275	787	488
Lincs. (Holland)	313	258	55
Lincs. (Kesteven)	478	303	175
Lincs. (Lindsey)	1261	842	419
London (Greater)	40163	18181	21982
Merionethshire	128	90	38
Monmouthshire	1306	638	668
Norfolk	1323	807	516
Northamptonshire	1119	700	419
Northumberland	1959	968	991
Nottinghamshire	2172	1067	1105
Oxfordshire	730	582	148
Pembrokeshire	321	196	125(4)

Table 1 (cont'd)

Fire brigades	Total fires	Total fires reported on Form K433 (1)	Total fires reported on Form K433H (2)
<u>County fire brigades (cont'd)</u>			
Shropshire	1112	696	416
Somerset	1486	989	497
Staffordshire	2454	1280	1174(3)
Suffolk(East) Suffolk(West) and Ipswich	1435	1063	372(5)
Surrey	3067	1200(4)	1861
Sussex East	1325	754	571
Sussex West	1562	1020	542
Warwickshire	2134	1182	952
Westmorland	191	161	30
Wight. Isle of	307	207	100
Wiltshire	1259	813(3)	446
Worcester Co. and Worcs. C.B.	1600	944	656
Yorks (East Riding)	595	318(5)	277
Yorks (North Riding)	1003	669	334
Yorks (West Riding)	5646	2870(6)	2776(3)
<u>England and Wales - County Borough Fire Brigades</u>			
Barnsley	243	110	133
Barrow in Furness	324	132	192
Bath	273	191	82
Birkenhead	1693	438	1255
Birmingham	5464	2414	3050
Blackburn	903	347	556
Blackpool	782	453	329
Bolton	1068	526	542
Bootle	1273	363	910
Bournemouth	651	303	348
Bradford	1597	698	899
Brighton	698	442	256
Bristol	1745	934	811
Burnley	771	268	503
Burton on Trent	160	90(6)	70
Bury	669	201	468
Cardiff	1273	423(4)	850
Carlisle	280	154	126
Chester	381	170	211
Coventry	1657	697	960
Darlington	431	187	244
Derby	816	460	356
Dewsbury	342	165	177
Doncaster	418	155(4)	263(6)
Dudley	700	294	406

Table 1 (cont'd)

Fire brigades	Total fires	Total fires reported on Form K433 (1)	Total fires reported on Form K433H (2)
<u>County Borough Fire Brigades (cont'd)</u>			
Eastbourne	207	121	86
Exeter	402	178	224
Gloucester	299	173	126
Great Yarmouth	228	103(3)	125
Grimsby	1049	244	805
Halifax	493	233	260
Hartlepool	682	273	409
Hastings	277	131	146
Huddersfield	577	353	224
Kingston upon Hull	2427	817	1610
Leeds	2776	1145	1631
Leicester	1428	558	870
Lincoln	350	138	212
Liverpool	8804	2230	6574
Luton	630	295	335
Manchester	6488	2087	4401
Merthyr Tydfil	209	111(3)	98
Newcastle on Tyne and Gateshead	2918	968	1950
Newport (Mon.)	684	350	334
Northampton	470	228	242
Norwich	492	256	236
Nottingham	1513	693(3)	820
Oldham	764	372	392
Oxford	378	292	86
Plymouth	1398	498(3)	900(3)
Portsmouth	1517	560	957
Preston	814	298	516
Rochdale	526	234(4)	292(4)
Rotherham	433	244	189
St. Helens	876	338	538
Salford	1986	540	1446
Sheffield	2134	1069	1065
Solihull	247	143	104
Southampton	1122	453	669
Southend	530	301	229
Southport	335	213	122
South Shields	587	277	310(3)
Stockport	899	387	512
Stoke on Trent	962	455	507
Sunderland	1346	512	834
Swansea	906	382	524



Table 1 (cont'd)

Fire brigades	Total fires	Total fires reported on Form K433 (1)	Total fires reported on Form K433H (2)
<u>County Borough Fire Brigades (cont'd)</u>			
Tees-side	2514	1213	1301
Tynemouth	485	203	282
Wakefield	210	119	91
Wallasey	929	296	633
Walsall	1066	354	712
Warley	876	383(3)	493
Warrington	547	207	340
West Bromwich	958	364	594
Wigan	369	184	185
Wolverhampton	1048	543	505
York	395	227	168
Total number of fires attended in England and Wales	222070	103731	118339

Fire brigades	Total fires	Total fires reported on Form K433 (1)	Total fires reported on Form K433H (2)
<u>Scotland</u>			
Glasgow	7082	2703	4379
Lanark	2987	1582	1405
Central	2239	1176	1063
Western	2267	1192	1075
South Western	1571	1096	475
South Eastern	3822	2140	1682
Fife	1347	704	643
Perth and Kinross	404	298	106
Angus	1741	875	866
North Eastern	1524	1018	506
Northern	635	354	281
Total number of fires attended in Scotland	25619	13138	12481

Table 1 (cont'd)

Fire brigades	Total fires	Total fires reported on Form K433 (1)	Total fires reported on Form K433H (2)
<u>Northern Ireland</u> (7)			
North	2867	1609(5)	1258
Belfast	2979	1434(6)	1545
Total number of fires attended in Northern Ireland	5846	3043	2803

- (1) Fires reported on K433 include all fires except those confined to derelict buildings, buildings under demolition, grassland, heathland, railway embankments, stubble, single trees, refuse, fences, lamp standards, road furniture, road surfaces, verges and telegraph poles. Because of industrial action some incidents before 1.2.71 are not included in some brigades. The figures are adjusted for blank call numbers and fires transferred by mutual agreement to category K433H (see note (2)).
- (2) Fires reported on K433H are small fires not reported on K433. Again adjustments are made for blanks and fires transferred to/from category K433.
- (3) Date of last report received 30.11.71
- (4) " " " " " 30. 9.71
- (5) " " " " " 31. 8.71
- (6) " " " " " 31.10.71
- (7) It is possible that some fires attributable to civil disturbances were not attended and not reported by these brigades.

Table 2

## Nature of injuries of casualties in fires

Casualties	England and Wales			Scotland			Northern Ireland		
	Fire brigade	Other casualties	Total	Fire brigade	Other casualties	Total	Fire brigade	Other casualties	Total
<b>FATAL CASUALTIES<sup>1</sup></b>									
Burns and scalds	0	273	273	0	31	31	0	9	9
Overcome by gas or smoke	0	316	316	0	51	51	0	10	10
Other and undefined injuries	2	57	59	1	30	31	0	2	2
Total	2	646	648	1	112	113	0	21	21
<b>NON FATAL CASUALTIES</b>									
Burns and scalds	72	2358	2430	8	191	199	6	56	62
Bruises, cuts, abrasions	132	257	389	5	38	43	3	12	15
Dislocations, sprains, fractures	20	36	56	2	12	14	3	1	4
Overcome by gas or smoke	41	542	583	5	100	105	0	8	8
More than one of the above injuries	18	108	126	1	15	16	1	9	10
Shock <sup>2</sup>	2	481	483	0	58	58	0	10	10
Other and undefined injuries	65	151	216	6	41	47	5	4	9
	350	3933	4283	27	455	482	18	100	118
<b>T O T A L</b>	352	4579	4931	28	567	595	18	121	139

1. Casualties who are certified as having died from 'Burns and asphyxiation' are included under 'Overcome by gas or smoke'

2. Casualties who suffer shock in addition to another injury are classified according to the other injury

Table 3A  
Sex and age of fatal casualties

Age (years)	England and Wales				Scotland				Northern Ireland			
	Male	Female	Not stated	Total	Male	Female	Not stated	Total	Male	Female	Not stated	Total
Under 1	8	9	0	17	0	0	0	0	0	0	0	0
1 - 4	39	33	0	72	10	2	0	12	3	4	0	7
5 - 14	20	18	0	38	1	3	0	4	0	0	0	0
15 - 24	34	17	0	51	5	1	0	6	1	0	0	1
25 - 34	24	14	0	38	2	4	0	6	3	0	0	3
35 - 44	24	17	0	41	5	12	0	17	0	0	0	0
45 - 54	35	16	0	51	6	4	0	10	2	1	0	3
55 - 64	31	27	0	58	5	10	0	15	1	1	0	2
65 - 74	47	57	0	104	7	9	0	16	0	2	0	2
75 and over	63	99	0	162	13	12	0	25	1	2	0	3
Not stated, unknown	13	2	1	16	1	0	1	2	0	0	0	0
<b>TOTAL</b>	<b>338</b>	<b>309</b>	<b>1</b>	<b>648</b>	<b>55</b>	<b>57</b>	<b>1</b>	<b>113</b>	<b>11</b>	<b>10</b>	<b>0</b>	<b>21</b>

Table 3B

## Sex and age of non-fatal casualties

Age (years)	England and Wales				Scotland				Northern Ireland			
	Male	Female	Not stated	Total	Male	Female	Not stated	Total	Male	Female	Not stated	Total
Under 1	35	37	0	72	9	3	0	12	0	2	0	2
1 - 4	131	110	0	241	18	6	0	24	3	1	0	4
5 - 14	212	122	0	334	14	11	0	25	3	5	0	8
15 - 24	524	222	0	746	50	17	0	67	12	3	0	15
25 - 34	622	242	0	864	55	22	0	77	25	8	0	33
35 - 44	402	191	0	593	37	32	0	69	13	5	0	18
45 - 54	313	148	0	461	45	30	0	75	12	3	0	15
55 - 64	188	137	0	325	25	25	0	50	6	2	0	8
65 - 74	92	134	0	226	20	21	0	41	1	0	0	1
75 and over	86	147	0	233	7	11	0	18	2	3	0	5
Not stated, unknown	127	54	7	188	11	12	1	24	9	0	0	9
<b>TOTAL</b>	<b>2732</b>	<b>1544</b>	<b>7</b>	<b>4283</b>	<b>291</b>	<b>190</b>	<b>1</b>	<b>482</b>	<b>86</b>	<b>32</b>	<b>0</b>	<b>118</b>

Table 4

Fatal casualties according to month of occurrence

Month of occurrence	England and Wales	Scotland	Northern Ireland	United Kingdom
January	66	11	1	78
February	50	10	0	60
March	79	9	2	90
April	61	3	3	67
May	68	8	5	81
June	29	4	1	34
July	33	1	3	37
August	37	6	1	44
September	41	4	5	50
October	64	28	0	92
November	58	18	0	76
December	62	11	0	73
TOTAL	648	113	21	782

Table 5

Fatal casualties according to hazard in which fire started

Hazard in which fire started	England and Wales	Scotland	Northern Ireland	United Kingdom
<u>In buildings</u>				
Industrial premises	20	0	0	20
Distributive trades	2	21	2	25
Financial, professional, scientific and miscellaneous services	18	0	0	18
Medical services	12	1	0	13
Hotels	14	1	3	18
Clubs, public houses and restaurants	15	0	0	15
Public administration and defence	1	0	0	1
Houses	345	30	13	388
Flats	119	42	0	161
Dwellings within other occupancies	12	1	1	14
Other private occupancies (e.g. sheds)	2	0	0	2
Other buildings	10	4	0	14
Total	570	100	19	689
<u>Not in buildings</u>				
Agriculture, forestry, fishing	6	0	0	6
Road vehicles	46	5	2	53
Other means of transport	14	1	0	15
Outdoor storage	0	0	0	0
Outdoor plant, machinery and equipment	0	0	0	0
Caravans	7	4	0	11
Other	5	3	0	8
Total	78	13	2	93
<b>TOTAL</b>	<b>648</b>	<b>113</b>	<b>21</b>	<b>782</b>

Table 6  
Fatal casualties according to source of ignition

Source of ignition	England and Wales	Scotland	Northern Ireland	United Kingdom
Children with fire	27	4	2	33
Crash or collision	40	5	2	47
Malicious or intentional ignition, doubtful	41	1	0	42
Matches, naked lights not elsewhere specified	31	4	0	35
Smokers materials	101	39	0	140
Candle	14	1	0	15
Electric - space heating	54	3	1	58
- wire and cable	18	6	0	24
- blanket	17	2	0	19
- other	12	5	0	17
Gas - cooking appliances	16	0	0	16
- space heating	10	0	0	10
- other	0	2	0	2
Solid fuel - fire in grate	37	2	0	39
- other	1	0	0	1
Oil - space heating	35	0	0	35
- other	9	0	0	9
Other known causes	21	2	0	23
Unknown*	164	37	16	217
<b>TOTAL</b>	<b>648</b>	<b>113</b>	<b>21</b>	<b>782</b>

\* Includes fires reported as 'unknown, pending inquest'



Table 7

## Persons rescued or escaped by emergency means

Hazard	England and Wales	Scotland	Northern Ireland	United Kingdom
<b>FIRES IN BUILDINGS*</b>				
Rescue with fire brigade assistance	763	231	25	1019
Rescue without fire brigade assistance	1320	177	62	1559
Escape by emergency means	459	33	20	512
Total	2542	441	107	3090
<b>FIRES NOT IN BUILDINGS</b>				
Rescue with fire brigade assistance from:				
Road vehicles	10	0	0	10
Caravans	0	1	0	1
Ships	4	0	0	4
Other outdoor hazards	1	0	0	1
Rescue without fire brigade assistance from:				
Road vehicles	71	8	7	86
Caravans	13	1	0	13
Ships	10	0	0	10
Other outdoor hazards	12	4	0	16
Escape by emergency means from:				
Aircraft	3	0	0	3
Road vehicles	62	10	10	82
Caravans	14	1	0	15
Ships	9	0	0	9
Other outdoor hazards	6	5	0	11
Total	215	29	17	261
Total persons rescued or escaped	2757	470	124	3351

\* For fuller details of hazards and methods used, see Tables 7A, 7B, 7C

Table 7A  
Persons rescued or escaped by emergency means from buildings  
(England and Wales)

Appliance or methods used	Hazard involved						TOTAL
	Industry	Distributive trades	Hotels	Houses	Other dwellings	Other hazards	
Rescue (fire brigade assisted)							
Snorkel, hydraulic platform	0	0	0	0	2	0	2
Escape (hand operated)	2	9	9	7	35	19	81
Ladder - extension	3	3	2	50	40	11	109
- first floor	0	4	1	21	14	6	46
- hook	0	0	2	0	7	0	9
- scaling	0	0	0	0	7	0	7
- turntable	4	4	6	0	7	0	21
- other or undefined	9	3	7	31	25	6	81
Ladder and line	0	0	0	0	1	0	1
Breathing apparatus	0	3	4	73	83	20	183
Other apparatus	0	0	0	3	0	3	6
Without apparatus	12	0	5	102	78	20	217
Total	30	26	36	287	299	85	763
Rescue (not fire brigade assisted)							
Carried out or led to safety	5	8	5	580	154	37	789
Jumping into sheet	0	0	0	7	0	0	7
Ladder	4	4	2	185	27	12	234
Lowered from window, roof, etc	0	0	0	44	3	2	49
Other or undefined methods	2	1	0	166	57	15	241
Total	11	13	7	982	241	66	1320
Escape by emergency means							
Climbing over roof, along ledges to adjoining building	0	0	0	2	0	0	2
Fixed fire escape	3	0	2	0	2	2	9
Jumping from upstairs windows, roof, etc	0	4	3	152	40	16	215
Ladder	0	0	0	17	0	0	17
Sliding down drainpipe sheets, rope, etc	4	0	2	13	7	0	26
Through ground floor windows	0	0	0	16	20	1	37
Other or undefined methods	13	2	3	88	24	23	153
Total	20	6	10	288	93	42	459
Total persons rescued or escaped	61	45	53	1557	633	193	2542

Table 7B

Persons rescued or escaped by emergency means from buildings (Scotland)

Appliance or methods used	Hazard involved						TOTAL
	Industrial premises	Distributive trades	Hotels	Houses	Other dwellings	Other hazards	
Rescue (fire brigade assisted)							
Snorkel, hydraulic platform	0	0	5	0	14	3	22
Escape (hand operated)	0	0	0	0	8	0	8
Ladder - extension	0	1	0	5	9	1	16
- turntable	0	2	0	0	29	0	31
- other or undefined	3	0	1	0	7	3	14
Breathing apparatus	0	8	3	4	39	4	58
Other apparatus	0	8	0	1	0	0	9
Without apparatus	0	7	8	9	47	2	73
Total	3	26	17	19	153	13	231
Rescue (not fire brigade assisted)							
Carried out, led to safety	0	17	0	59	42	1	119
Jumping into sheet	0	0	0	0	7	0	7
Ladder	0	0	0	13	7	0	20
Lowered from window, roof, etc	0	0	0	0	5	0	5
Other or undefined methods	0	17	0	5	4	0	26
Total	0	34	0	77	65	1	177
Escape by emergency means							
Jumping from upstairs window, roof, etc	1	0	0	9	4	0	14
Ladder	0	1	0	3	0	0	4
Sliding down drainpipe, sheets, rope, etc	0	0	2	0	1	0	3
Through ground floor windows	0	0	0	1	4	0	5
Other or undefined methods	0	4	0	2	1	0	7
Total	1	5	2	15	10	0	33
Total persons rescued or escaped	4	65	19	111	228	14	441

Table 7C

Persons rescued or escaped by emergency means from buildings (Northern Ireland)

Appliance or methods used	Hazard involved						TOTAL
	Industrial premises	Distributive trades	Hotels	Houses	Other dwellings	Other hazards	
Rescue (fire brigade assisted)							
Escape (hand operated)	0	0	2	1	2	0	5
Ladder - extension	0	0	0	0	1	0	1
- first floor	0	0	0	0	1	0	1
- turntable	0	0	1	0	0	0	1
- other or undefined	0	0	0	2	0	0	2
Breathing apparatus	0	0	0	0	0	1	1
Other apparatus	0	0	0	0	0	4	4
Without apparatus	0	1	0	7	1	1	10
Total	0	1	3	10	5	6	25
Rescue (not fire brigade assisted)							
Carried out, led to safety	0	4	0	38	2	0	44
Ladder	0	3	0	0	0	0	3
Lowered from windows, roof, etc	0	0	0	2	0	0	2
Other or undefined methods	5	0	0	8	0	0	13
Total	5	7	0	48	2	0	62
Escape by emergency means							
Jumping from upstairs window, roof, etc	0	1	0	9	0	0	10
Through ground floor windows	0	2	0	0	0	0	2
Other or undefined methods	0	0	0	8	0	0	8
Total	0	3	0	17	0	0	20
Total persons rescued or escaped	5	11	3	75	7	6	107

Table 8

Monthly estimated direct fire damage, 1971  
(BIA estimates)

Month	Loss (£M)
January	8.8
Feburary	9.8
March	11.5
April	8.1
May	13.3
June	10.5
July	8.5
August	13.3
September	9.5
October	13.6
November	9.8
December	12.0
TOTAL	128.7

