

LIBRARY REFERENCE ONLY

M.O.T. AND F.O.C. 14
FIRE RESEARCH
ORGANIZATION
REFERENCE LIBRARY 18/76
No. A99FR. N829



Fire Research Note No.829

LARGE FIRES DURING 1969

by

G. Ramachandran, Patricia Kirsop and Christine Eveleigh

July 1970

FIRE
RESEARCH
STATION

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

F.R.Note No.829
July 1970

LARGE FIRES DURING 1969

by

G. Ramachandran, Patricia Kirsop and Christine Eveleigh

SUMMARY

This note contains an analysis of large fires during 1969. These are fires which cost £10,000 or more in direct damage. There were 1118 such fires during 1969 resulting in a total loss of £78.2 million. Of these, 60 were in outdoor hazards some of which spread to buildings.

KEY WORDS: Large, fire, loss, fire statistics

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.

LARGE FIRES DURING 1969

by

G. Ramachandran, Patricia Kirsop and Christine Eveleigh

INTRODUCTION

During 1969 there were 1118 fires in the United Kingdom each estimated to have cost £10,000 or more in direct damage. The direct material damage in all these fires amounted to £78.2 million out of an estimated total of £120 million in all fires during that year. Large fires thus accounted for 65.2 per cent of the total loss, against 61.6 per cent in 1968. If inflation is taken into consideration, those in 1969 within 10 to 11 thousand loss band (98 fires) would be regarded as smaller fires. If this correction is applied the percentage loss in large fires decreases slightly to about 64.3 still showing a real increase on the previous year. Correction for the decreasing value of money, using a 5 per cent increase in retail prices, yields a figure of about £72,000 as the loss per large fire during 1969 at 1968 prices. In 1968 the loss per large fire was £61,000 (at 1968 prices).

The statistics of large fires provided in this note have been compiled from reports on these fires furnished by local authority fire brigades. Data on financial losses were received from insurance sources through the Fire Protection Association. Tables 1 to 10 with Suffix A and Table 11 relate to fires in buildings, and those with Suffix B to 60 fires in outdoor hazards. The outdoor fires include those which started outside but spread to buildings. In 1968 there were only 38 such fires. Tables 12 and 13 are consolidated and relate to both indoor and outdoor fires.

TABLE 1A - LARGE FIRE LOSSES (IN BUILDINGS)

Size group (£ thousands)	Number of fires	Total damage (£ thousands)
TOTAL	1058	74,564
10 to 15	309	3,790
16 to 20	134	2,482
21 to 25	96	2,280
26 to 30	82	2,345
31 to 35	43	1,427
36 to 40	60	2,300
41 to 50	62	2,903
51 to 75	80	5,042
76 to 100	57	5,077
101 to 150	51	6,448
151 to 200	23	3,955
201 to 250	10	2,294
251 to 500	26	11,063
501 to 1000	19	13,908
Over 1000	6	9,250

TABLE 1B - LARGE FIRE LOSSES (NOT IN BUILDINGS)

Size group (£ thousands)	Number of fires	Total damage (£ thousands)
TOTAL	60	3,648
10 to 20	29	399
21 to 50	16	531
51 to 100	6	495
101 to 150	4	457
151 to 200	-	-
201 to 500	4	1,066
501 to 1000	1	700

TABLE 2A - LARGE FIRES IN RELATION TO
HAZARD (IN BUILDINGS)

Hazard	No. of large fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,058	74,564	70.5
INDUSTRIAL PREMISES	567	47,084	83.0
Agriculture, forestry, fishing	54	884	16.4
Mining, Quarrying	-	-	-
Food, drink, tobacco	33	1,696	51.4
Coal and petroleum products	3	79	26.3
Chemicals and allied industries	41	3,168	77.3
Metal Manufacture	35	1,941	55.5
Engineering and electrical goods	54	6,343	117.5
Engineering and metal works	11	877	79.7
Unspecified			
Shipbuilding and marine engineering	8	200	25.0
Vehicles	26	5,682	218.5
Metal goods, not elsewhere specified	28	3,185	113.8
Textiles	76	8,526	112.2
Leather, leather goods and fur	8	317	39.6
Clothing and footwear	22	1,112	50.5
Bricks, pottery, glass, cement	17	817	48.1
Timber, furniture	55	2,476	45.0
Paper, printing, publishing	37	2,469	66.7
Other manufacturing industries	43	6,623	154.0
Constructions	16	689	43.1
PUBLIC UTILITIES	62	6,932	111.8
Gas, water, electricity	6	259	43.2
Transport and communications	56	6,673	119.2
DISTRIBUTIVE TRADES	169	10,395	61.5
Retail	94	5,731	61.0
Wholesale	48	2,921	60.9
Other dealers	27	1,743	64.6
OTHERS	260	10,153	39.1
Insurance, banking, finance	3	51	17.0
Professional and scientific services	74	2,763	37.3
Cinema, theatre, radio, sport	20	1,166	58.3
Catering, hotels	76	3,319	43.7
Miscellaneous services	39	1,402	35.9
Public administration and defence	10	250	25.0
Private residential houses	30	828	27.6
Private flats and maisonettes	4	96	24.0
Unoccupied premises, private	2	53	26.5
Sheds and garages			
Multiple tenure, mixed occupancies	-	-	-
Not specified	2	225	112.5

TABLE 2B - LARGE FIRES IN RELATION TO
HAZARD (NOT IN BUILDINGS)

Hazard	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
Outdoor storage	13	813	62.5
Chemical plant	4	834	208.5
Gas works, plants and mains	7	461	65.8
Transformer, electrical sub station generator	4	430	107.5
Other outdoor plant	2	26	13.0
Lorry	1	125	125.0
Railway rolling stock	1	40	40.0
Started outdoor, but spread to:			
Industry - paper manufacturer	2	59	29.5
- other manufacturing	6	318	53.0
Transport and communication	1	107	107.0
Distributive trades	4	125	31.3
Others	15	310	20.7

TABLE 3A - SOURCE OF IGNITION OF LARGE FIRES
(IN BUILDINGS)

Source of ignition	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1058	74,564	70.5
TOTAL (Known causes)	497	30,776	61.9
Malicious or intentional ignition	128	8,168	63.8
Children with fire	21	618	29.4
Mechanical heat or sparks	14	801	57.2
Naked light, taper etc	13	471	36.2
Rubbish burning	2	116	58.0
Smoking materials	80	5,237	65.5
ELECTRICAL APPLIANCES AND INSTALLATIONS	136	9,908	72.9
Cooking appliances	6	176	29.3
Space heating	19	1,282	67.5
Wire and cable	54	4,301	79.6
Others	57	4,149	72.8
GAS APPLIANCES AND INSTALLATIONS	13	554	42.6
OIL APPLIANCES AND INSTALLATIONS	16	912	57.0
ACETYLENE APPLIANCES AND INSTALLATIONS	15	1,328	88.5
OTHER KNOWN CAUSES	59	2,663	45.1
UNKNOWN	561	43,788	78.1

TABLE 3B - SOURCE OF IGNITION OF LARGE FIRES
(NOT IN BUILDINGS)

Source of ignition	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
TOTAL (known causes)	47	3,266	69.5
Intentional burning of grassland etc.	1	10	10.0
Malicious ignition	4	691	172.8
Children with fire	7	395	56.4
Mechanical heat and sparks	1	125	125.0
Natural occurrences	1	70	70.0
Rubbish burning	13	491	37.8
Smoking materials	4	90	22.5
Spontaneous combustion	1	15	15.0
Crashes (car, aircraft, loco etc)	1	12	12.0
Electric appliances and installations	7	1,108	158.3
Oil appliances - engine	1	15	15.0
Oxyacetylene welding and cutting equipment	1	27	27.0
Other known causes	5	217	43.4
Unknown	13	382	29.4

TABLE 4A - PLACE OF ORIGIN OF LARGE FIRES
(IN BUILDINGS)

Place of origin	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1058	74,564	70.5
<u>Production and maintenance</u>			
Boiler room, engine room	7	131	18.7
Drying and heat treatment	28	1,320	47.1
Dust extractor	7	534	76.3
Electrical supply equipment	5	215	43.0
Paint spraying	13	766	58.9
Workshop	54	2,275	42.1
Cyclone, dust extractor	2	80	40.0
Laboratory, research department	6	326	54.3
Other factory sections, not stated	146	17,523	120.0
<u>Assembly</u>			
Back stage room	4	202	50.5
Class room, lecture room	20	834	41.7
Bar	11	314	28.5
Lounge, common room	9	310	34.4
Dining room, canteen	7	173	24.7
Pavilion	1	15	15.0

TABLE 4A - PLACE OF ORIGIN OF LARGE FIRES
(IN BUILDINGS)- Cont'd

Place of origin	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
<u>Storage</u>			
Ashpit, refuse room	6	189	31.5
Loading bay, packing department	20	3,825	191.2
Store, stock room	248	23,381	94.3
Shop, show room	43	3,872	90.0
<u>Structure fittings</u>			
Roof space	18	1,268	70.4
<u>Miscellaneous</u>			
Animal shed, barn	44	709	16.1
Vehicle storage	8	229	28.6
Garden shed, greenhouse, summer house	1	38	38.0
Contractor's hut, workman's hut	2	42	21.0
Telephone exchange	1	32	32.0
Laundry, wash house	1	14	14.0
Cloakroom, lavatory, bathroom	5	224	44.8
Hall, corridor, stairs	20	867	43.4
Office	29	1,100	37.9
Place of worship	13	431	33.2
Bedroom, bedsitting room	12	257	21.4
Kitchen	13	337	25.9
Others	27	1,192	44.1
Not applicable (e.g. building under construction or demolition, derelict or unoccupied)	27	1,078	39.9
Unknown or not stated	200	10,461	52.3

TABLE 4B - PLACE OF ORIGIN OF LARGE FIRES
(NOT IN BUILDINGS)

Place of origin	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
Aircraft	1	12	12.0
Vehicles	1	125	125.0
Farmyard	5	90	18.0
Field	1	100	100.0
Garden	1	10	10.0
Animal shed	1	11	11.0
Barn, dutch barn	1	10	10.0
Garden shed, greenhouse	1	30	30.0
Yard unspecified	4	197	49.3
Factory yard	6	231	38.5
Rear of shop	2	46	23.0
Outdoor plant	13	1,086	83.5
Transformer	2	360	180.0
Fuel storage - liquid	1	70	70.0
Fuel storage - gas	1	285	285.0
Outdoor storage - other than fuel	13	863	66.4
External structure	1	25	25.0
Roof space	2	22	11.0
Unknown, not stated	3	75	25.0

TABLE 5A - SPREAD OF LARGE FIRES (IN BUILDINGS)

Spread of fire	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,058	74,564	70.5
Confined to:			
Appliance (item from which heat emanated)	2	42	21.0
Room of origin	74	2,865	38.7
Floor of origin	70	1,902	27.2
Building of origin-Single compartment	5	159	31.8
-Multi compartment, single storey	202	16,801	83.2
-Multi compartment, Multi storey	424	28,571	67.4
Extended to:			
Adjoining building(s)	77	8,116	105.4
Separate building(s)	44	4,848	110.2
Other hazard(s)	16	941	58.8
Adjoining and separate building(s)	10	1,365	136.5
Adjoining building(s) and other hazard(s)	5	178	35.6
Separate building(s) and other hazard(s)	12	1,847	153.9
Adjoining and separate building(s) and other hazard(s)	11	1,976	179.6
Extended from a building	1	18	18.0
Extended from a building and to building(s) and other hazard(s)	1	61	61.0
Extent unknown	104	4,874	46.9

TABLE 5B - SPREAD OF LARGE FIRES (NOT IN BUILDINGS)

Spread of fire	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
Confined to:			
Hazard of origin	15	1,370	91.3
Extended to:			
Building(s)	32	1,944	60.8
Other hazard(s)	4	84	21.0
Building(s) and other hazard(s)	4	115	28.8
Extent unknown	5	135	27.0

TABLE 6A - JETS USED TO EXTINGUISH LARGE FIRES
(IN BUILDINGS)

Number of jets	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,058	74,564	70.5
0	46	906	19.7
1	71	1,505	21.2
2	130	4,448	34.2
3	137	4,132	30.2
4	146	4,253	29.1
5	99	4,472	45.2
6	71	4,155	58.5
7	39	2,586	66.3
8	59	5,969	101.2
9	32	4,465	139.5
10	36	5,819	161.6
11	15	1,959	130.6
12	20	4,206	210.3
13	8	1,711	213.9
14	14	2,643	188.8
15 - 19	23	7,732	336.2
20 - 24	7	3,756	536.6
25 - 29	-	-	-
30 and above	5	5,034	1006.8
Not stated	100	4,813	48.1

TABLE 6B - JETS USED TO EXTINGUISH LARGE FIRES
(NOT IN BUILDINGS)

Number of jets	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
0	9	265	29.4
1	2	65	32.5
2	9	297	33.0
3	4	59	14.8
4	5	74	14.8
5	3	1,060	353.3
6	9	616	68.4
7	1	70	70.0
8	2	120	60.0
9	-	-	-
10 - 14	9	838	93.1
15 - 19	1	14	14.0
20 and above	1	35	35.0
Not stated	5	135	27.0

TABLE 7A - DATE OF CONSTRUCTION OF BUILDINGS
INVOLVED IN LARGE FIRES

Period of construction	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,058	74,564	70.5
Before 1800	24	885	36.9
1800 - 1849	21	1,583	75.4
1850 - 1899	218	15,732	72.2
19th century(unspecified)	33	1,793	54.3
1900 - 1914	167	7,289	43.6
1915 - 1918	7	680	97.1
1919 - 1939	159	9,846	61.9
1940 - 1945	16	761	47.6
1946 - 1950	59	5,845	99.1
1951 - 1955	18	2,763	153.5
1956 - 1960	66	9,578	145.1
1961 - 1965	52	5,342	102.7
1966 - 1969	63	3,579	56.8
20th century(unspecified)	20	674	33.7
Not known	135	8,214	60.8

TABLE 7B - DATE OF CONSTRUCTION OF BUILDINGS
INVOLVED IN LARGE FIRES
THAT STARTED OUTSIDE(WHERE APPLICABLE)

Period of construction	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
13th century(unspecified)	1	25	25.0
1850 - 1899	5	443	88.6
19th century(unspecified)	3	90	30.0
1900 - 1914	-	-	-
1915 - 1918	1	80	80.0
1919 - 1939	11	279	25.4
1940 - 1945	1	31	31.0
1946 - 1950	2	135	67.5
1951 - 1955	1	225	225.0
1956 - 1960	4	262	65.5
1961 - 1965	2	26	13.0
1966 - 1968	5	566	113.2
20th century(unspecified)	-	-	-
Not known, not applicable	24	1,486	61.9

TABLE 8A - TIME OF CALL TO LARGE FIRES
(IN BUILDINGS)

Time of call	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,058	74,564	70.5
00.01 - 01.00	60	5,174	86.2
01.01 - 02.00	59	4,879	82.7
02.01 - 03.00	51	2,862	56.1
03.01 - 04.00	39	1,533	39.3
04.01 - 05.00	37	1,683	45.5
05.01 - 06.00	29	1,744	60.1
06.01 - 07.00	17	573	33.7
07.01 - 08.00	22	1,350	61.4
08.01 - 09.00	15	1,289	85.9
09.01 - 10.00	14	1,389	99.2
10.01 - 11.00	29	2,466	85.0
11.01 - 12.00	24	1,223	51.0
12.01 - 13.00	35	4,380	125.1
13.01 - 14.00	45	4,473	99.4
14.01 - 15.00	38	3,601	94.8
15.01 - 16.00	43	1,913	44.5
16.01 - 17.00	37	2,891	78.1
17.01 - 18.00	48	2,998	62.5
18.01 - 19.00	63	3,867	61.4
19.01 - 20.00	55	4,910	89.3
20.01 - 21.00	47	2,547	54.2
21.01 - 22.00	52	5,078	97.7
22.01 - 23.00	57	3,455	60.6
23.01 - 00.00	44	3,598	81.8
Unknown or not stated	98	4,688	47.8

TABLE 8B TIME OF CALL TO LARGE FIRES
(NOT IN BUILDINGS)

Time of call	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
00.01 - 01.00	3	86	28.7
01.01 - 02.00	3	35	11.7
02.01 - 03.00	2	218	109.0
03.01 - 04.00	-	-	-
04.01 - 05.00	1	350	350.0
05.01 - 06.00	1	16	16.0
06.01 - 07.00	2	120	60.0
07.01 - 08.00	3	191	63.7
08.01 - 09.00	-	-	-
09.01 - 10.00	2	85	42.5
10.01 - 11.00	2	310	155.0
11.01 - 12.00	3	47	15.7
12.01 - 13.00	1	120	120.0
13.01 - 14.00	3	343	114.3
14.01 - 15.00	4	210	52.5
15.01 - 16.00	5	78	15.6
16.01 - 17.00	4	81	20.3
17.01 - 18.00	2	770	385.0
18.01 - 19.00	3	121	40.3
19.01 - 20.00	-	-	-
20.01 - 21.00	2	26	13.0
21.01 - 22.00	4	183	45.8
22.01 - 23.00	4	111	27.8
23.01 - 00.00	1	12	12.0
Unknown or not stated	5	135	27.0

TABLE 9A - MONTH IN WHICH LARGE FIRES OCCURRED
(IN BUILDINGS)

Month	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,058	74,564	70.5
January	59	5,153	87.3
February	88	6,487	73.7
March	108	8,799	81.5
April	87	7,980	91.7
May	98	5,803	59.2
June	87	4,217	48.5
July	94	6,737	71.7
August	88	7,680	87.3
September	93	5,847	62.9
October	75	3,392	45.2
November	99	7,986	80.7
December	82	4,483	54.7

TABLE 9B - MONTH IN WHICH LARGE FIRES OCCURRED
(NOT IN BUILDINGS)

Month	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
January	6	147	24.5
February	5	510	102.0
March	5	677	135.4
April	12	496	41.3
May	2	42	21.0
June	5	95	19.0
July	6	397	66.2
August	3	75	25.0
September	5	69	13.8
October	4	116	29.0
November	7	1,024	146.3
December	-	-	-

TABLE 10A - DAY OF WEEK OF LARGE FIRES
(IN BUILDINGS)

Day	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,058	74,564	70.5
Sunday	135	7,959	59.0
Monday	135	9,607	71.2
Tuesday	137	12,910	94.2
Wednesday	165	10,613	64.3
Thursday	170	11,911	70.1
Friday	153	8,450	55.2
Saturday	163	13,114	80.5

TABLE 10B - DAY OF WEEK OF LARGE FIRES
(NOT IN BUILDINGS)

Day	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	60	3,648	60.8
Sunday	7	747	106.7
Monday	10	424	42.4
Tuesday	9	331	36.8
Wednesday	12	363	30.3
Thursday	6	200	33.3
Friday	3	912	304.0
Saturday	13	671	51.6

TABLE 11 - DIRECT LOSSES IN MANUFACTURING INDUSTRIES AND DISTRIBUTIVE TRADES
Loss Range (£ thousands)

Hazard	TOTAL		10 - 20		21 - 50		51 - 100		101 - 250		251 - 500		Over 500	
	No. of fires	Total direct loss (£ thousands)	No. of fires	Total direct loss (£ thousands)	No. of fires	Total direct loss (£ thousands)	No. of fires	Total direct loss (£ thousands)	No. of fires	Total direct loss (£ thousands)	No. of fires	Total direct loss (£ thousands)	No. of fires	Total direct loss (£ thousands)
TOTAL	663	55,827	252	3,637	220	7,261	95	7,026	51	7,526	21	8,201	24	22,176
Food, drink, tobacco	33	1,696	9	123	16	558	7	540	-	-	1	475	-	-
Chemical and allied industries	41	3,168	14	212	13	440	8	649	4	542	1	325	1	1,000
Metal manufacture	35	1,941	16	220	10	327	3	184	5	710	1	500	-	-
Engineering and electrical goods	54	6,343	22	337	15	552	7	494	3	410	2	800	5	3,750
Engineering, metal works unspecified	11	877	5	65	3	78	1	60	1	183	1	491	-	-
Shipbuilding and marine engineering	8	200	3	50	5	150	-	-	-	-	-	-	-	-
Vehicles	26	5,682	9	120	7	243	5	349	1	220	-	-	4	4,750
Metal goods not elsewhere specified	28	3,185	11	167	8	259	1	64	4	695	2	725	2	1,275
Textiles	76	8,526	29	433	20	683	15	1,144	4	464	3	1,194	5	4,608
Leather, leather goods fur	8	317	6	82	-	-	1	85	1	150	-	-	-	-
Clothing, footwear	22	1,112	7	104	9	285	4	348	1	120	1	255	-	-
Bricks, pottery, glass, cement	17	817	8	110	6	190	2	127	-	-	1	390	-	-
Timber, furniture	55	2,476	23	305	21	737	8	577	2	387	1	470	-	-
Paper, printing, publishing	37	2,469	11	162	16	525	5	345	3	453	2	984	-	-
Other manufacturing industries	43	6,623	16	230	13	415	5	385	3	356	2	809	4	4,428
Distributive trade - wholesale	48	2,921	17	231	15	434	8	556	5	742	2	283	1	675
Distributive trade - Retail	94	5,731	39	572	32	1,000	11	798	9	1,171	1	500	2	1,690
Distributive trade - other dealers	27	1,743	7	114	11	385	4	321	5	923	-	-	-	-

TABLE 12 - CONTROL TIME OF LARGE FIRES

Control time	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,118	78,212	70.0
Under 10 mins	42	870	20.7
11 - 20 mins	83	2,302	27.8
21 - 30 mins	140	4,056	29.0
31 - 40 mins	133	4,311	32.9
41 - 50 mins	116	4,328	37.3
51 - 60 mins	100	5,852	58.5
61 - 70 mins	101	7,524	74.5
71 - 80 mins	62	4,408	71.1
81 - 90 mins	50	5,294	105.9
91 - 100 mins	31	3,597	116.0
101 - 110 mins	27	2,740	101.5
111 - 120 mins	15	1,476	98.4
121 - 180 mins	77	16,840	218.7
181 - 240 mins	15	3,562	237.5
241 - 300 mins	6	3,564	594.0
Over 300 mins	11	2,480	225.5
Late calls	2	31	15.5
Unknown	1107	4,977	46.5

TABLE 13 - BEHAVIOUR OF FIRE PROTECTION DEVICES IN LARGE FIRES

Fire protection devices installed	No. of fires	Total direct loss (£ thousands)	Average direct loss per fire (£ thousands)
TOTAL	1,118	78,212	70.0
Sprinklers and drenchers			
Operated	18	749	41.6
Did not operate*	3	511	170.3
CO2, foam, steam, nitrogen systems			
Operated	102	6,598	64.7
Did not operate*	-	-	-
Automatic detectors			
Operated	1	37	37.0
Did not operate*	4	994	248.5
Fire doors			
Operated	5	407	81.4
Did not operate*	2	305	152.5
Others:			
Operated	85	13,127	154.4
Did not operate*	11	680	61.8
Combination of above			
Operated	83	11,303	136.2
Did not operate*	2	103	51.5
Roof vents			
Operated	2	65	32.5
Did not operate*	-	-	-
Not installed, unknown or not applicable	800	43,333	54.1

*Includes incidents whose performance was not known

