

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH AND FIRE OFFICES' COMMITTEE  
JOINT FIRE RESEARCH ORGANIZATIONStatistical Analysis of reports of fires attended by Fire Brigades in  
the United Kingdom during 1952

Reports on form K.433 of fires attended by the Fire Brigades in the United Kingdom during 1952 have been analysed and the following ten statistical tables have been prepared for England and Wales, for Scotland and for Northern Ireland: the tables are set out in Appendices I, II and III respectively.

No.	TABLE
1	Method of calling Fire Brigades to fires.
2	Fires classified according to hazard in which fire started.
3	Supposed cause of fires.
4A	Supposed cause of fires in buildings in relation to hazard in which fire started.
4B	Supposed cause of fires other than those in buildings in relation to hazard in which fire started.
5	Material first ignited in fires.
6	Method of extinction of fires.
7	Behaviour of sprinkler systems at fires.
8	Attendance of special appliances at fires.
9	Persons rescued or escaped by emergency means from fires.
10	Nature of injuries of casualties in fires.

Zero percentages and percentages less than 0.05% are indicated by a dash (-) in the tables.

All reports were analysed to prepare Tables 8, 9 and 10. Because of shortage of staff, a random one-in-four sample of reports was analysed for Tables 1, 2, 3, 4A, 4B, 5, 6 and 7; the results of analysis of this sample were multiplied by four to obtain the figures given in the tables (except for Table 7). The method of selecting the sample and the accuracy of the estimated yearly totals and of the percentages of different types of occurrence are discussed in Appendix IV.

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APPENDIX I  
STATISTICAL TABLES FOR FIRE BRIGADES IN ENGLAND AND WALES, 1952

Table 1

## METHOD OF CALLING FIRE BRIGADES TO FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of 1 in 4 sample of reports by 4)

Method of Calling	County Fire Brigades																														
	Anglesey	Bedfordshire	Berkshire and Reading C.B.	Breconshire and Radnorshire	Buckinghamshire	Caernarvonshire	Cambridgeshire	Carmarthenshire and Cardiganshire	Cheshire	Cornwall	Cumberland	Denbighshire and Montgomeryshire	Derbyshire	Devon	Dorset	Durham	Ely, Isle of	Essex	Flintshire	Glamorgan	Gloucestershire	Hampshire	Herefordshire	Hertfordshire	Huntingdonshire	Kent and Canterbury C.B.	Lancashire	Leicestershire and Rutland	Lincolnshire, Holland	Lincolnshire, Kesteven	Lincolnshire, Lindsey
By Special Fire Service methods																															
Automatic fire alarm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fire and police pillar box	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	4	-	-	-	-	-	-	-	-	4	-	-	-	-
Police telephone	-	72	84	-	20	-	8	28	12	-	-	24	8	12	4	-	124	-	52	-	8	-	56	-	212	12	20	24	12	12	
Private fire telephone	-	-	8	-	4	-	-	-	44	-	-	4	-	4	4	56	-	28	-	24	-	20	-	20	-	72	68	-	-	-	-
Street fire alarm	-	20	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	116	-	-	-	-	-	-	-	40	-	-	4	-	-
Total	-	92	92	-	28	-	8	28	56	-	-	-	28	8	20	60	-	272	-	76	-	28	-	76	-	324	84	20	28	12	12
Exchange telephone	64	496	736	26	744	172	364	216	1112	508	200	304	704	744	796	1112	208	3264	180	660	584	1756	208	1416	180	3232	2356	348	156	188	460
Running call	4	60	40	12	24	4	28	16	100	28	44	44	44	48	54	172	28	268	28	92	20	88	4	108	12	196	260	28	24	12	28
Late call	4	4	40	-	4	16	4	28	8	8	16	4	4	4	16	28	-	172	16	68	12	104	-	36	12	168	72	-	4	-	-
Other and undefined methods	4	-	-	-	-	4	12	-	-	-	-	12	-	-	16	16	-	20	4	-	12	16	4	8	-	26	8	4	-	-	-
Total fires	76	652	908	108	800	196	416	288	1276	544	260	364	780	804	912	1308	236	3996	228	896	628	1992	216	1644	204	3948	2780	400	212	212	500

## APPENDIX I (Contd.)

Table 1 (Contd.)

## METHOD OF CALLING FIRE BRIGADES TO FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of 1 in 4 sample of reports by 4)

Method of Calling	County Fire Brigades (Contd.)																										
	London	Merioneth	Middlesex	Monmouthshire	Norfolk	Northamptonshire	Northumberland	Nottinghamshire	Oxfordshire	Pembrokeshire	Peterborough, Soke of	Salop	Scilly, Isles of	Somerset	Staffordshire	Suffolk and Ipswich C.B.	Surrey	Sussex, East	Sussex, West	Warwickshire	Westmorland	Wight, Isle of	Wiltshire	Worcestershire and Worcester C.B.	Yorkshire East Riding	Yorkshire North Riding	Yorkshire West Riding
By Special Fire Service methods																											
Automatic fire alarm	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-
Fire and police pillar box	-	-	-	-	-	4	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	4
Police telephone	16	-	24	-	-	4	20	8	16	-	12	36	-	28	100	32	92	40	16	12	4	-	8	40	8	16	64
Private fire telephone	124	-	76	-	-	-	-	4	-	-	-	20	-	-	8	4	20	4	-	4	-	-	4	12	-	32	12
Street fire alarm	308	-	312	-	-	4	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	-	-	-	-	-
Total	452	-	412	-	-	12	20	12	16	-	12	56	-	28	116	36	140	44	16	16	4	-	12	56	8	48	80
Exchange telephone	6232	36	3360	256	756	344	556	904	272	116	96	424	-	600	724	888	2448	756	568	852	84	156	588	632	212	544	2072
Running call	552	8	208	44	72	32	80	84	12	4	16	40	4	40	136	48	108	20	24	44	4	16	32	44	32	40	232
Late call	504	-	268	16	4	8	8	40	-	4	20	24	-	4	48	-	120	8	20	52	-	4	16	20	4	44	64
Other and undefined methods	20	-	-	4	-	4	16	-	-	-	4	-	-	-	-	8	4	4	8	4	28	-	4	8	-	4	28
Total fires	7760	44	4248	320	832	400	680	1040	300	124	148	544	4	672	1024	980	2820	832	636	968	120	176	652	760	256	680	2476

## APPENDIX I (Contd.)

Table 1 (Contd.)

## METHOD OF CALLING FIRE BRIGADES TO FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of 1 in 4 sample of reports by 4)

Method of Calling	County Borough Fire Brigades																																										
	Barnsley	Barrow-in-Furness	Bath	Birkenhead	Birmingham	Blackburn	Blackpool	Bolton	Bootle	Bournemouth	Bradford	Brighton	Bristol	Burnley	Burton-upon-Trent	Bury	Cardiff	Carlisle	Chester	Coventry	Croydon	Darlington	Derby	Dewsbury	Doncaster	Dudley	Eastbourne	East Ham	Exeter	Gloucester	Great Yarmouth	Grimsby	Halifax	Hastings	Huddersfield	Kings-ton-upon-Hull	Leeds	Leicester	Lincoln	Liverpool	Manchester		
By Special Fire Service methods																																											
Automatic fire alarm	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	
Fire and police pillar box	-	-	8	8	-	-	4	32	-	4	-	-	4	-	-	-	-	-	-	-	-	8	4	-	4	42	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	4
Police telephone	20	20	4	52	132	48	24	8	48	12	144	60	112	44	-	16	68	24	4	76	44	8	12	36	16	20	-	-	32	-	4	64	20	4	12	144	128	16	32	212	172		
Private fire telephone	-	8	-	8	36	-	4	4	16	-	-	-	4	4	-	4	4	-	-	-	8	4	4	-	-	-	-	8	4	-	-	8	-	-	-	-	4	-	-	8	16		
Street fire alarm	-	-	-	-	168	-	-	-	-	-	-	12	-	-	-	-	8	-	-	-	20	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	4	-	12	-	236	68	
Total	20	28	12	68	340	48	32	44	64	16	144	72	120	48	-	20	80	24	4	76	72	20	20	36	20	32	-	16	36	-	4	72	28	4	12	148	132	32	32	456	260		
Exchange telephone	64	68	148	252	1752	100	248	180	104	356	356	200	600	96	32	104	376	84	108	384	292	152	148	68	120	48	88	204	92	92	104	128	124	116	168	420	612	424	192	868	852		
Running call	20	20	20	64	176	-	32	-	24	12	8	12	36	16	12	20	20	32	-	36	16	4	-	28	24	8	4	4	-	24	12	8	8	8	16	44	56	-	4	116	116		
Late call	12	-	-	24	44	16	20	12	12	12	36	-	68	4	12	-	8	8	4	-	16	4	12	-	12	-	4	12	4	4	-	-	4	-	4	32	28	4	-	144	116		
Other and undefined methods	-	-	-	-	8	-	4	8	-	16	4	-	4	-	-	-	4	-	-	8	4	8	-	-	-	-	12	-	8	-	-	-	-	-	4	-	12	-	-	-	4	12	
Total fires	116	116	180	408	2320	164	336	244	204	412	548	284	828	164	56	144	488	148	116	504	400	188	180	132	176	88	108	236	140	120	120	208	164	132	200	656	828	460	228	1588	1356		

## APPENDIX I (Contd.)

Table 1 (Contd.)

## METHOD OF CALLING FIRE BRIGADES TO FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of 1 in 4 sample of reports by 4)

Method of Calling	County Borough Fire Brigades (Contd.)																												Total fires attended in England and Wales																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	Merthyr Tydfil	Middlesbrough	Newcastle-upon-Tyne and Gateshead	Newport	Northampton	Norwich	Nottingham	Oldham	Oxford	Plymouth	Portsmouth	Preston	Rochdale	Rotherham	St. Helens	Salford	Sheffield	Smethwick and West Bromwich	Southampton	Southend-on-Sea	Southport	South Shields	Stockport	Stoke-on-Trent	Sunderland	Swansea	Tynemouth	Wakefield	Wallasey	Walsall	Warrington	West Ham	West Hartlepool	Wigan	Wolverhampton	York	No.	Per cent.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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## APPENDIX I (Contd.)

Table 2

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent.
Fires in buildings classified according to trade or business carried on		
<u>Agriculture</u>		
Farming (not fruit or poultry) and horse and stock rearing	1,628	2.0
Allotments, market gardening, fruit and poultry farming	404	0.5
Total	2,032	2.5
<u>Mining, quarrying and treatment of non-metalliferous mine and quarry products (excluding gas works)</u>	144	0.2
<u>Manufacture of bricks, pottery, glass, etc.</u>	124	0.2
<u>Manufacture of chemicals, dyes, explosives, paints, oils</u>		
Chemicals	196	0.2
Explosives	40	-
Paints, varnish, oils, grease	120	0.1
Miscellaneous	32	-
Total	388	0.5
<u>Manufacture of metals, machines, implements, conveyances</u>		
Smelting, converting, refining, rolling of iron, steel	204	0.2
Extracting, refining, smelting of other metals	60	0.1
Founding, other secondary processes in metal working	216	0.3
Engineering (not marine or electrical)	372	0.5
Electrical installations, cables and apparatus	192	0.2
Construction and repair of vehicles	184	0.2
Shipbuilding and repairing, marine engineering	48	0.1
Cutlery and small tools	56	0.1
Other metal industries	336	0.4
Total	1,668	2.0
<u>Manufacture of textiles and textile goods (not dress)</u>		
Cotton	212	0.3
Wool, worsted, shoddy	112	0.1
Silk, natural and artificial	16	-
Other or mixed fibres	44	0.1
Miscellaneous	68	0.1
Textile dyeing, printing, bleaching, finishing	60	0.1
Total	512	0.6

## APPENDIX I (Contd.)

Table 2 (Contd.)

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent.
Fires in buildings classified according to trade or business carried on (contd.)		
<u>Preparation of skins and leather and manufacture of goods of leather and leather substitute (not clothing or footwear)</u>	112	0.1
<u>Manufacture of clothing (not knitted) including footwear</u>	280	0.3
<u>Manufacture of food, drink, tobacco</u>		
Food	404	0.5
Drink	60	0.1
Tobacco, cigars, cigarettes, snuff	8	-
Total	472	0.6
<u>Woodworking: manufacture of cane and basket ware, furniture, fittings</u>		
Woodworking and basket ware	300	0.4
Furniture (not metal or basket)	188	0.2
Fittings	28	-
Total	516	0.6
<u>Paper making: manufacture of stationery and stationery requisites, printing and book binding</u>	244	0.3
<u>Building, decorating, contracting; slate and stone cutting and dressing</u>	792	1.0
<u>Rubber and synthetic rubber</u>	44	0.1
<u>Other manufacturing industries</u>	120	0.1
<u>Gas, water, electricity, sewage</u>	208	0.3
<u>Transport and communication</u>		
Railway - stations, etc.	308	0.4
Road - garages, depots, etc.	1,032	1.3
Water - dock buildings other than warehouses	32	-
Air - aerodromes, etc.	8	-
Other communication (post, telephone, wireless)	108	0.1
Total	1,488	1.8

## APPENDIX I (Contd.)

Table 2 (Contd.)

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent.
Fires in buildings classified according to trade or business carried on (contd.)		
<u>Commerce</u>		
Departmental stores	112	0.1
Retail shops	2,612	3.2
Wholesale dealers	300	0.4
Dock and other warehouses	52	0.1
Total	3,076	3.7
<u>Offices, Government and other</u>		
Government departments	120	0.1
Local authorities	164	0.2
Other offices	324	0.4
Total	608	0.7
<u>Navy, Army and Air Force establishments</u>	344	0.4
<u>Fire Service establishments</u>	44	0.1
<u>Professional establishments (other than offices); public institutions</u>		
Educational establishments	616	0.7
Hospitals, homes, etc. for care of the sick and infirm	540	0.7
Places of worship	216	0.3
Other public and professional services	304	0.4
Total	1,676	2.0
<u>Places of public entertainment</u>		
Cinemas and theatres	240	0.3
Other places of entertainment	392	0.5
Total	632	0.8
<u>Private residential and personal service (including hotels and catering)</u>		
Private residential houses	16,236	19.7
Private residential flats	3,112	3.8
Clubs, restaurants, public houses	2,468	3.0
Private huts, unoccupied houses, personal service	1,640	2.0
Total	23,456	28.5
<u>Miscellaneous</u>	1,400	1.7
<u>Undefined</u>	4	-
Total fires in buildings	40,384	49.0



## APPENDIX I (Contd.)

Table 2 (Contd.)

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from England and Wales 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent.
Fires other than those in buildings		
<u>Agriculture and forestry</u>		
Crops, standing or stooked (including hay fields)	820	1.0
Crops, ricks and stacks	1,768	2.1
Agricultural machinery	400	0.5
Agricultural waste	204	0.2
Other agricultural hazards	396	0.5
Allotments and gardens	776	0.9
Railway embankments	4,400	5.3
Grassland, heathland	14,072	17.1
Woods, forests, plantations	936	1.1
Single trees	1,528	1.9
Felled timber	88	0.1
Total	25,388	30.8
<u>Transport and communication</u>		
Aircraft	140	0.2
Railway rolling stock, etc.	372	0.5
Road vehicles - electrically driven	148	0.2
- oil, petrol, or gas driven	5,744	7.0
- other	88	0.1
Water vessels - craft on inland waters	136	0.2
- ships in dock	268	0.3
- ships at sea	-	-
- marine structures	36	-
Total	6,932	8.4
<u>Outdoor storage</u>		
Chemicals, explosives, ammunition, oils, grease	372	0.5
Coal and coke	96	0.1
Refuse	4,172	5.1
Timber	692	0.8
Cotton, metal, packing materials, rubber etc.	780	0.9
Total	6,112	7.4
<u>Other outdoor structures</u>	3,600	4.4
Total fires other than those in buildings	42,032	51.0
Total fires attended	82,416	100.0

# APPENDIX I (Contd.)

Table 3

## SUPPOSED CAUSE OF FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying result of analysis of one-in-four sample of reports by four)

Each item in the list of supposed causes of fire given in the table represents a group of causes which have a common source of ignition. In some cases the groups have been divided into sub-groups according to the nature of the material first ignited, and in others according to the act with the source of ignition which led to the outbreak of fire.

Supposed cause of fires	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Aircraft, crashed	-	-	104	0.1	104	0.1
Ashes	660	0.8	912	1.1	1,572	1.9
Brazier	56	0.1	136	0.2	192	0.2
Candle	340	0.4	8	-	348	0.4
Chimney on fire, not confined to chimney	1,940	2.4	4	-	1,944	2.4
Chimney, sparks from (outside building)	412	0.5	48	0.1	460	0.6
Doubtful	72	0.1	32	-	104	0.1
Electric cooker	752	0.9	8	-	760	0.9
fire, heater, radiator	1,068	1.3	12	-	1,080	1.3
iron	304	0.4	-	-	304	0.4
Electric motor	300	0.4	24	-	324	0.4
refrigerator	976	1.2	4	-	980	1.2
television	156	0.2	-	-	156	0.2
wire and cable, lead to apparatus	184	0.2	248	0.3	432	0.5
wire and cable, other than lead to apparatus	2,268	2.8	2,576	3.1	4,844	5.9
wireless	384	0.5	-	-	384	0.5
Electric other apparatus	832	1.0	328	0.4	1,160	1.4
Explosives, fireworks	220	0.3	460	0.6	680	0.8
Fire in grate igniting bedding, clothing, linen	976	1.2	-	-	976	1.2
Fire in grate igniting furniture and furnishings	920	1.1	-	-	920	1.1
Fire in grate igniting structural timber under hearth	2,152	2.6	-	-	2,152	2.6
Fire in grate igniting other materials	3,300	4.0	-	-	3,300	4.0
Fish frying range (all fuels)	836	1.0	28	-	864	1.0
Flue	864	1.0	76	0.1	940	1.1
Furnace (coal or coke)	68	0.1	8	-	76	0.1
Gas (coal) burner, jet, ring	584	0.7	192	0.2	776	0.9
cooker	980	1.2	-	-	980	1.2
fire, heater						
radiator	232	0.3	-	-	232	0.3
other apparatus	388	0.5	112	0.1	500	0.6
Incendiarism	8	-	-	-	8	-

APPENDIX I (Contd.)

Table 3 (Contd.)

SUPPOSED CAUSE OF FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Supposed cause of fires	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Incubator, brooder (all fuels)	448	0.5	-	-	448	0.5
Intentional burning of grassland, gorse, etc.	4	-	360	0.4	364	0.4
Lightning	196	0.2	84	0.1	280	0.3
Lime	8	-	40	-	48	0.1
Locomotives, sparks from	212	0.3	7,312	8.9	7,524	9.1
Matches	708	0.9	636	0.8	1,344	1.6
Matches, children playing with	1,988	2.4	8,060	9.8	10,048	12.2
Mechanical heat or sparks	480	0.6	300	0.4	780	0.9
Metal, hot	240	0.3	32	-	272	0.3
Oil, blowlamp	728	0.9	72	0.1	800	1.0
Oil, engine (including petrol)	180	0.2	1,996	2.4	2,176	2.6
lamp, stove	780	0.9	188	0.2	968	1.2
tractor	72	0.1	356	0.4	428	0.5
other apparatus	172	0.2	132	0.2	304	0.4
Oxyacetylene cutting and welding apparatus	360	0.4	220	0.3	580	0.7
Rubbish burning	528	0.6	3,864	4.7	4,392	5.3
Slow combustion stove igniting structural woodwork	440	0.5	-	-	440	0.5
Slow combustion stove igniting other materials	1,032	1.3	344	0.4	1,376	1.7
Smoking materials	3,376	4.1	4,588	5.6	7,964	9.7
Spontaneous combustion in rubbish	-	-	104	0.1	104	0.1
Spontaneous combustion in other materials	204	0.2	632	0.8	836	1.0
Static electricity	8	-	-	-	8	-
Steam roller, engine, traction engine	-	-	4	-	4	-
Sun's rays	48	0.1	192	0.2	240	0.3
Taper, lighted paper or sticks	264	0.3	52	0.1	316	0.4
Taper, lighted paper or sticks, children playing with	32	-	20	-	52	0.1
Miscellaneous and undefined	1,704	2.1	1,276	1.5	2,980	3.6
Unknown source of ignition	3,940	4.8	5,848	7.1	9,788	11.9
Total number of fires	40,384	49.0	42,032	51.0	82,416	100.0

## APPENDIX I (Contd.)

Table 4A

## SUPPOSED CAUSE OF FIRES IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Row No.
	Hazard in which fire started	Agriculture	Mining, quarrying and treatment of metalliferous mine and quarry products (excluding gas works)	Manufacture of bricks, pottery, glass, etc.	Manufacture of chemicals, explosives, paints, oils	Manufacture of metals, machines, implements, conveyances	Manufacture of textiles and textile goods (not dress)	Manufacture of clothing (not knitted) including footwear, and goods of leather and leather substitutes; preparation of skins & leather	Manufacture of food, drink, tobacco	Woodworking; manufacture of cane and basket ware, furniture, fittings	Paper making; manufacture of stationery and stationary requisites, printing and bookbinding	Building, decorating, contracting; slate and stone cutting and dressing	Other manufacturing industries, including rubber and synthetic rubber	Gas, water, electricity, sewage	Transport and communication	Commerce; retail shops, including departmental stores	Commerce; wholesale dealers and warehouses	Offices; Government and other	Navy, Army, Air Force establishments	Fire Service establishments	Professional establishments (other than offices), public institutions	Places of public entertainment	Private residential houses	Private residential flats	Clubs, hotels, restaurants, public houses	Private huts, unoccupied houses, personal service	Miscellaneous and undefined	Total	
1	Ashes	8	-	-	-	8	8	4	4	4	4	4	4	4	16	44	4	28	-	-	40	4	184	96	20	160	12	660	1
2	Brazier	4	-	-	-	4	-	-	4	4	-	-	-	-	4	4	-	-	-	-	-	-	4	4	-	-	20	56	2
3	Candle	-	-	-	-	-	-	-	-	-	-	4	-	-	16	36	-	4	-	-	4	-	204	36	4	32	-	340	3
4	Chimney on fire, not confined to chimney	4	-	-	-	4	-	4	-	-	-	-	-	-	4	56	-	20	-	-	12	4	1616	124	84	8	-	1940	4
5	Chimney, sparks from (outside building)	16	-	-	-	8	4	4	8	16	-	12	4	-	8	20	8	8	8	-	-	-	248	20	4	4	12	412	5
6	Doubtful	8	-	-	-	4	-	4	-	-	-	4	-	-	4	8	-	4	-	-	8	4	4	4	12	-	4	72	6
7	Electric cooker	-	-	-	-	-	-	-	-	-	-	-	4	-	4	4	-	4	-	-	12	4	568	136	12	4	-	752	7
8	fire, heater, radiator	4	-	-	8	16	4	16	-	4	16	8	8	12	36	76	20	24	4	-	88	12	548	140	16	-	8	1068	8
9	iron	-	-	-	-	4	-	36	-	4	4	-	-	-	-	12	-	-	-	-	12	-	168	48	12	4	-	304	9
10	motor	-	4	-	12	40	4	4	16	12	4	8	4	-	16	40	20	20	-	-	12	16	16	12	32	8	-	300	10
11	Electric refrigerator	-	-	4	-	-	-	8	12	-	-	-	-	-	4	592	4	4	8	-	40	28	124	40	108	-	-	976	11
12	television	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	136	16	-	-	-	156	12
13	wire and cable, other than lead to apparatus	88	4	-	32	68	20	28	20	4	8	28	-	48	188	184	32	44	24	8	116	16	928	128	164	56	32	2268	13
14	wire and cable, lead to apparatus	4	-	-	-	8	-	-	-	-	-	-	-	-	24	12	-	-	-	-	4	-	104	24	4	-	-	184	14
15	wireless	-	4	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	8	-	316	36	16	-	-	384	15

16	Electric other apparatus	24	-	-	20	64	20	20	20	28	12	12	8	20	60	92	-	-	12	-	36	12	272	40	36	24	-	832	16
17	Explosives, fireworks	12	-	-	4	8	-	-	-	4	4	-	-	-	8	24	-	-	4	4	12	8	68	8	8	24	20	220	17
18	Fire in grate igniting bedding, clothing, linen	-	4	-	-	-	-	-	-	4	-	-	-	-	-	-	4	-	4	-	-	-	844	112	-	4	-	976	18
19	Fire in grate igniting furniture and furnishings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	16	-	728	148	24	-	-	920	19
20	Fire in grate igniting structural timber under hearth	4	-	-	-	12	-	16	4	-	-	4	-	-	-	44	-	40	8	-	32	-	1392	504	76	16	-	2152	20
21	Fire in grate igniting other materials	8	-	8	-	12	4	24	4	8	4	16	4	-	28	88	16	20	4	8	92	4	2436	376	120	12	4	3300	21
22	Fish frying range (all fuels)	-	-	-	8	4	4	-	12	-	-	-	-	8	4	8	-	-	20	-	32	12	-	4	720	-	-	836	22
23	Flue	44	4	-	-	72	16	8	28	16	8	16	-	4	24	48	-	8	36	4	72	20	248	16	120	32	20	864	23
24	Furnace (coal or coke)	12	4	-	4	16	-	-	-	4	-	4	-	-	-	-	-	8	-	-	8	-	-	4	4	-	68	24	
25	Gas (coal) burner, jet, ring	-	-	-	24	64	-	12	28	8	12	4	12	-	-	76	8	20	-	4	60	8	148	64	28	4	-	584	25
26	Gas (coal) cooker	-	-	-	-	-	4	4	8	-	-	-	4	-	-	28	4	8	-	-	20	-	576	208	108	8	-	980	26
27	fire, heater, radiator	-	-	-	-	12	-	-	-	-	-	-	4	4	-	32	-	12	4	-	28	4	92	28	12	-	-	232	27
28	other apparatus	4	8	8	20	68	-	12	16	-	8	-	4	-	4	20	4	4	-	-	20	8	96	40	20	24	-	388	28
29	Incendiarism	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	8	29	
30	Incubator, brooder (all fuels)	300	-	-	-	-	-	-	-	-	-	4	4	-	-	-	-	-	-	-	8	-	48	4	-	80	-	448	30
31	Intentional burning of grassland, gorse, etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4	31
32	Lightning	20	-	-	-	-	-	-	-	-	-	12	-	4	8	8	4	-	4	-	4	-	120	8	4	-	-	196	32
33	Lime	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	8	33
34	Locomotives, sparks from	8	-	-	-	12	-	-	-	-	-	8	-	-	144	-	4	-	-	-	-	-	16	-	-	4	16	212	34
35	Matches	36	-	4	-	12	16	-	4	-	4	32	-	-	36	28	4	8	8	4	52	12	296	60	24	44	24	708	35
36	Matches, children playing with	192	4	8	8	8	12	8	4	4	4	68	-	4	52	116	16	24	-	-	100	36	228	56	16	192	828	1988	36
37	Mechanical heat or sparks	8	-	4	24	72	212	20	28	28	20	4	4	4	12	12	12	4	-	-	4	-	-	-	-	8	-	480	37
38	Metal, hot	4	-	-	4	152	4	4	-	8	4	8	-	4	8	-	-	-	-	-	4	-	24	-	4	4	4	240	38
39	Oil, blow lamp	12	-	-	8	8	4	4	4	4	4	36	-	-	16	40	4	12	8	-	64	-	388	44	24	44	-	728	39
40	engine (including petrol)	48	-	4	-	4	-	4	-	-	-	4	-	4	52	4	4	-	4	-	-	4	20	-	-	24	-	180	40
41	Oil, lamp, stove	80	-	-	-	16	-	-	12	8	8	16	-	-	100	52	4	4	12	-	4	-	304	60	4	88	8	780	41
42	tractor	64	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	72	42
43	other apparatus	36	-	-	8	44	-	-	8	4	8	4	8	-	-	8	-	-	-	-	-	-	36	-	-	8	-	172	43
44	Oxyacetylene cutting and welding apparatus	12	8	4	36	120	12	-	4	8	-	36	8	20	56	12	-	-	4	-	12	-	-	-	-	-	8	360	44
45	Rubbish burning	84	4	-	-	24	-	-	4	44	-	12	-	-	40	36	16	4	8	-	12	20	36	-	12	144	28	528	45
	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	

## APPENDIX I (Contd.)

Table 4A (Contd.)

## SUPPOSED CAUSE OF FIRES IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Row No.
	Hazard in which fire started	Agriculture	Mining, quarrying and treatment of non-metalliferous mine and quarry products (excluding gas works)	Manufacture of bricks, pottery, glass, etc.	Manufacture of chemicals, explosives, paints, oils	Manufacture of metals, machines, implements, conveyances	Manufacture of textiles and textile goods (not dress)	Manufacture of clothing (not knitted) including footwear, and goods of leather and leather substitute; preparation of skins and leather	Manufacture of food, drink, tobacco	Woodworking; manufacture of cane and basket ware, furniture, fittings	Paper making; manufacture of stationery and stationery requisites, printing and bookbinding	Building, decorating, contracting; slate and stone cutting and dressing	Other manufacturing industries, including rubber and synthetic rubber	Gas, water, electricity, sewage	Transport and communication	Commerce; retail shops, including departmental stores	Commerce; wholesale dealers and warehouses	Offices; Government and other	Navy, Army, Air Force establishments	Fire Service establishments	Professional establishments (other than offices), public institutions	Places of public entertainment	Private residential houses	Private residential flats	Clubs, hotels, restaurants, public houses	Private huts, unoccupied houses, personal service	Miscellaneous and undefined	Total	
46	Slow combustion stove igniting structural woodwork	24	12	8	-	32	-	4	4	4	4	48	4	-	12	40	4	4	24	-	44	20	60	12	24	36	16	440	46
47	other materials	64	36	4	-	112	24	16	8	44	12	88	4	4	64	52	32	20	24	-	72	20	224	8	52	32	16	1032	47
48	Smoking materials	92	8	12	24	152	40	52	24	88	28	96	24	8	172	304	44	124	28	4	196	184	904	188	284	164	132	3376	48
49	Spontaneous combustion in other materials	56	4	-	12	32	12	4	4	-	-	-	4	-	4	4	-	-	4	-	4	4	12	-	32	12	-	204	49
50	Static electricity	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	50
51	Sun's rays	4	-	-	4	-	-	-	-	-	-	4	-	-	-	8	-	-	-	-	-	-	24	-	-	4	-	48	51
52	Taper, lighted paper or sticks	-	-	-	-	8	-	-	4	-	4	8	-	4	-	8	4	12	4	-	8	16	148	12	4	20	-	264	52
53	Taper, lighted paper or sticks, children playing with	-	-	-	-	-	-	-	-	-	-	4	-	-	4	-	-	-	-	-	-	-	16	4	-	-	4	32	53
54	Miscellaneous and undefined	124	8	24	44	120	36	8	68	40	4	48	4	16	48	104	12	28	20	4	108	48	536	80	60	64	48	1704	54
55	Unknown source of ignition	520	28	32	84	244	52	56	108	108	56	124	40	32	208	328	64	84	56	4	188	104	728	164	152	236	140	3940	55
56	Total fires in buildings	2032	144	124	388	1668	512	392	472	516	244	792	164	208	1488	2724	352	608	344	44	1676	632	16236	3112	2468	1640	1404	40384	56
	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	

## APPENDIX I (Contd.)

Table 4B

SUPPOSED CAUSE OF FIRES OTHER THAN THOSE IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED  
Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Row No.
	Hazard in which fire started  Supposed cause of fire	Crops	Agricultural machinery	Agricultural waste	Agriculture, other	Gardens and allotments	Railway embankments	Grassland, heathland	Woods, forests, plantations	Single trees	Felled timber	Transport and communications					Outdoor storage					Miscellaneous outdoor structures	Total	
												Air	Rail	Road - oil, petrol or gas driven vehicles	Road - other vehicles	Water	Chemicals, explosives, ammunition, oils, grease	Coal and coke	Refuse	Timber	Other materials			
1	Aircraft, crashed	-	-	-	-	-	-	-	-	-	-	104	-	-	-	-	-	-	-	-	-	-	104	1
2	Ashes,	12	-	12	-	8	44	16	-	-	-	-	28	68	12	16	-	24	580	28	36	28	912	2
3	Brazier	-	-	-	4	-	-	4	-	-	-	-	4	-	-	4	-	8	4	-	4	104	136	3
4	Candle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	4	8	4
5	Chimney on fire, not confined to chimney	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	5
6	Chimney, sparks from (outside building)	-	-	-	-	-	-	4	-	8	-	-	-	4	-	-	-	-	4	8	12	8	48	6
7	Doubtful	4	-	-	-	-	-	4	-	-	-	-	-	16	-	-	-	-	-	-	-	8	32	7
8	Electric cooker	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	8	8
9	fire, heater, radiator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	4	-	-	-	-	-	12	9
10	motor	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	12	24	10
11	Electric refrigerator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	11
12	wire and cable other than lead to apparatus	-	56	-	-	-	-	-	-	4	-	4	8	1780	76	20	4	-	-	-	-	624	2576	12
13	wire and cable lead to apparatus	-	8	-	-	-	-	-	-	-	-	-	-	228	4	4	-	-	-	-	-	4	248	13
14	other apparatus	-	12	-	-	-	-	-	-	-	-	-	-	196	36	28	4	-	-	-	-	52	328	14
15	Explosives, fireworks	32	-	-	4	-	4	120	-	68	-	-	-	28	4	-	-	-	12	-	-	188	460	15
16	Fish frying range (all fuels)	-	-	-	-	-	-	-	-	-	-	-	-	20	-	8	-	-	-	-	-	-	28	16
17	Flue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	68	76	17
18	Furnace (coal or coke)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4	8	18
19	Gas (coal) burner, jet, ring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	192	19
20	other apparatus	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	108	112	20

## APPENDIX I (Contd.)

Table 4B (Contd.)

SUPPOSED CAUSE OF FIRES OTHER THAN THOSE IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

[illegible]



41	Sun's rays	4	-	4	-	8	4	112	8	-	-	-	-	-	-	4	-	-	28	12	4	4	192	41
42	Taper, lighted paper or sticks	-	-	4	-	8	-	12	-	-	-	-	-	-	-	-	-	-	4	-	4	20	52	42
43	Taper, lighted paper or sticks, children playing with	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	4	-	4	8	20	43
44	Miscellaneous and undefined	68	4	8	4	-	12	552	120	64	4	-	16	108	-	44	28	12	64	24	28	116	1276	44
45	Unknown source of ignition	552	24	32	60	88	32	2600	188	248	12	16	52	456	20	64	92	-	640	148	144	380	5848	45
46	Total fires other than those in buildings	2588	400	204	396	776	4400	14072	936	1528	88	140	372	5744	236	440	372	96	4172	692	780	3600	42032	46
Column No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	

## APPENDIX I (Contd.)

Table 5

## MATERIAL FIRST IGNITED IN FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Material first ignited	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent	No.	Per cent	No.	Per cent
<u>Agriculture and Forestry</u>						
Crops, ricks, stacks						
Barley	-	-	260	0.3	260	0.3
Hay	192	0.2	728	0.9	920	1.1
Straw	148	0.2	264	0.3	412	0.5
Stubble	-	-	284	0.3	284	0.3
Other	32	-	300	0.4	332	0.4
Loose straw or hay	528	0.6	740	0.9	1,268	1.5
Grass, heather, bracken	120	0.1	10,836	13.1	10,956	13.3
Trees, hedges, undergrowth, brushwood, bushes, (including gorse), twigs, touchwood	12	-	8,204	10.0	8,216	10.0
Other agricultural materials	24	-	144	0.2	168	0.2
Total	1,056	1.3	21,760	26.4	22,816	27.7
<u>Chemicals - gases</u>						
Acetylene	68	0.1	32	-	100	0.1
Coal gas	908	1.1	408	0.5	1,316	1.6
Other gases	60	0.1	44	0.1	104	0.1
Total	1,036	1.3	484	0.6	1,520	1.8
<u>Chemicals - oils</u>						
Animal and vegetable oils	136	0.2	8	-	144	0.2
Mineral oil						
Paraffin	492	0.6	136	0.2	628	0.8
Petrol in vehicles	388	0.5	2,332	2.8	2,720	3.3
Petrol not in vehicles	400	0.5	168	0.2	568	0.7
Other mineral oils	140	0.2	20	-	160	0.2
Oil, waste and undefined	420	0.5	360	0.4	780	0.9
Total	1,976	2.4	3,024	3.7	5,000	6.1
<u>Chemicals - other</u>						
Celluloid (including films)	60	0.1	8	-	68	0.1
Paint, enamel, lacquer, varnish, stains and French polish	188	0.2	12	-	200	0.2
Pitch, tar	92	0.1	216	0.3	308	0.4
Rubber, vulcanite, ebonite	140	0.2	216	0.3	356	0.4
Other chemicals	732	0.9	308	0.4	1,040	1.3
Total	1,212	1.5	760	0.9	1,972	2.4
<u>Paper, cardboard, wood (not part of a structure)</u>						
Paper, cardboard	1,704	2.1	788	1.0	2,492	3.0
Wood chippings, flour, sawdust, shavings, wool	496	0.6	268	0.3	764	0.9
Wood barrels, boxes, cases, firewood etc.	716	0.9	196	0.2	912	1.1
Timber	128	0.2	236	0.3	364	0.4
Total	3,044	3.7	1,488	1.8	4,532	5.5

## APPENDIX I (Contd.)

Table 5 (Contd.)

## MATERIAL FIRST IGNITED IN FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Material first ignited	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent	No.	Per cent	No.	Per cent
<u>Textiles</u>						
Canvas and canvas goods	88	0.1	216	0.3	304	0.4
Clothing on person	380	0.5	24	-	404	0.5
Clothing not on person	1,252	1.5	52	0.1	1,304	1.6
Cotton	232	0.3	40	-	272	0.3
Jute, hessian, sacking	388	0.5	200	0.2	588	0.7
Rags (including oily rags)	296	0.4	144	0.2	440	0.5
Tarpaulin, waterproof sheeting, oilskins	132	0.2	344	0.4	476	0.6
Other textiles	276	0.3	92	0.1	368	0.4
Total	3,044	3.7	1,112	1.3	4,156	5.0
<u>Furniture, furnishings, household goods</u>						
Bedding	868	1.1	36	-	904	1.1
Carpets, rugs	468	0.6	16	-	484	0.6
Curtains	660	0.8	-	-	660	0.8
Furniture	1,896	2.3	12	-	1,908	2.3
Linen articles (unspecified), laundry	464	0.6	4	-	468	0.6
Seating in vehicles	48	0.1	224	0.3	272	0.3
Other furnishings	716	0.9	24	-	740	0.9
Total	5,120	6.2	316	0.4	5,436	6.6
<u>Building materials, structural woodwork</u>						
Building materials other than wood	464	0.6	12	-	476	0.6
Structural woodwork						
External	884	1.1	1,044	1.3	9,592	11.6
Internal						
Door, window frame	348	0.4				
Floor, stairs	1,992	2.4				
Partitions, linings to walls	856	1.0				
Roof	824	1.0				
Timber in chimney, flue	448	0.5				
Timber under hearth	2,192	2.7				
Other fittings	1,004	1.2				
Total	9,012	10.9	1,056	1.3	10,068	12.2
<u>Miscellaneous</u>						
Coal, coke	116	0.1	132	0.2	248	0.3
Electrical insulation	3,284	4.0	2,228	2.7	5,512	6.7
Fat (margarine, suet, butter, cooking fat, lard)	2,048	2.5	20	-	2,068	2.5
Food other than fat	280	0.3	4	-	284	0.3
Refuse, rubbish, debris	2,132	2.6	4,624	5.6	6,756	8.2
Soot	800	1.0	8	-	808	1.0
Other	2,612	2.2	1,032	1.3	3,644	4.4
<u>Unknown</u>	3,612	4.4	3,984	4.8	7,596	9.2
Total number of fires	40,384	49.0	42,032	51.0	82,416	100.0

APPENDIX I (Contd.)

Table 6

METHOD OF EXTINCTION OF FIRES

Reports from England and Wales, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Method of extinction	Fires in buildings						Fires other than those in buildings						Total No. of fires		Row No.
		Extinguished by Fire Brigade		Extinguished before arrival of Fire Brigade		Total		Extinguished by Fire Brigade		Extinguished before arrival of Fire Brigade		Total				
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	
1	Burned out	-	-	860	1.0	860	1.0	-	-	952	1.2	952	1.2	1,812	2.2	1
2	Removal	3,324	4.0	1,060	1.3	4,384	5.3	620	0.8	312	0.4	932	1.1	5,316	6.5	2
3	Automatic sprinkler system	-	-	12	-	12	-	-	-	-	-	-	-	12	-	3
4	Beating	48	0.1	228	0.3	276	0.3	5,960	7.2	836	1.0	6,796	8.2	7,072	8.6	4
5	Smothering	244	0.3	788	1.0	1,032	1.3	84	0.1	356	0.4	440	0.5	1,472	1.8	5
6	Sand, earth, etc.	44	0.1	144	0.2	188	0.2	128	0.2	268	0.3	396	0.5	584	0.7	6
7	Water from buckets	2,716	3.3	2,900	3.5	5,616	6.8	584	0.7	788	1.0	1,372	1.7	6,988	8.5	7
8	Water from stirrup or hand pumps	3,328	4.0	48	0.1	3,376	4.1	204	0.2	-	-	204	0.2	3,580	4.3	8
9	Chemicals and chemical extinguishers	1,952	2.4	1,184	1.4	3,136	3.8	1,576	1.9	1,052	1.3	2,628	3.2	5,764	7.0	9
10	Two or more of methods 4-9	188	0.2	332	0.4	520	0.6	448	0.5	240	0.3	688	0.8	1,208	1.5	10
11	Water from garden hose, etc.	-	-	140	0.2	140	0.2	-	-	68	0.1	68	0.1	208	0.3	11
12	Hose reel jets (using water in tank only)	12,312	14.9	32	-	12,344	15.0	16,308	19.8	92	0.1	16,400	19.9	28,744	34.9	12
13	Hose reel jets (using more water than that in tank)	2,320	2.8	-	-	2,320	2.8	1,812	2.2	4	-	1,816	2.2	4,136	5.0	13
14	Jets from inside hose reel or inside hydrant	88	0.1	72	0.1	160	0.2	16	-	12	-	28	-	188	0.2	14
15	Hose reel jets and jets from inside hose reel	8	-	-	-	8	-	-	-	-	-	-	-	8	-	15
16	Jets from pumps and hydrants	5,140	6.2	76	0.1	5,216	6.3	8,640	10.5	168	0.2	8,808	10.7	14,024	17.0	16
17	Other and undefined methods	392	0.5	404	0.5	796	1.0	204	0.2	300	0.4	504	0.6	1,300	1.6	17
18	Total	32,104	38.0	8,280	10.0	40,384	49.0	36,584	44.4	5,448	6.6	42,032	51.0	82,416	100.0	18

Notes on method of extinction -

1. "Removal" includes occurrences where (a) burning material was removed from the building, (b) gas supply was turned off. If the burning material was tackled with methods 3-11 before removing it from the building, then such occurrences were classified under whichever of these methods applied.
2. Methods 11-15 and method 16 include those occurrences in which methods 3-10 and 3-15 respectively may also have been used.
3. "Fires extinguished by Fire Brigade" include those fires which were tackled but not extinguished before the arrival of the Fire Brigade.

## APPENDIX I (Contd.)

Table 7

## BEHAVIOUR OF SPRINKLER SYSTEMS AT FIRES

Reports from England and Wales, 1952

(Frequencies observed in the analysis of a random one-in-four sample of reports)

Note: These figures are not on a comparable basis with those in tables 1-6 or tables 8-10

Behaviour of sprinklers	Incidents in which the following number of heads were actuated						Total number of incidents
	Nil	1-5	6-10	11-20	More than 20	Number not reported	
Installed but did not operate							
(i) because insufficient heat was generated by the fire	21	-	-	-	-	-	21
(ii) because heat did not reach heads	2	-	-	-	-	-	2
(iii) because fire was extinguished before heads operated	3	-	-	-	-	-	3
Total	26	-	-	-	-	-	26
Operated but did not control fire							
(i) because of rapid spread of heat and fire	-	-	-	-	-	1	1
(ii) because fire was extinguished by the Fire Brigade	-	-	-	-	1	-	1
(iii) because fire travelled between floor boards and sheet metal plates on ceiling underneath	-	1	-	-	-	-	1
Total	-	1	-	-	1	1	3
Controlled but did not extinguish fire	-	34	5	3	5	-	47
Extinguished fire	-	2	-	1	-	-	3
Installed but not in working order, because system was shut down and drained, due to fractured pipe	1	-	-	-	-	-	1
Number of calls to fires where sprinkler systems were installed	27	37	5	4	6	1	80

## APPENDIX I (Contd.)

Table 8

## ATTENDANCE OF SPECIAL APPLIANCES AT FIRES

Reports from England and Wales, 1952

(Frequencies obtained from results of analysis of all reports.)

Attendance	No. of * occasions	Percentage of total no. of fires
Breakdown lorries	14	-
Canteen vans	84	0.1
Control units	102	0.1
Emergency tenders	1,717	2.1
Escape carriers	507	0.6
Escape carrying units	47	0.1
Fire boats	131	0.2
Foam tenders	539	0.7
Hose carriers	73	0.1
Hose-laying lorries	298	0.4
Land Rovers	508	0.6
Pumps	45,971	55.8
Pump escapes	41,678	50.6
Pump salvage tenders	3,082	3.7
Salvage tenders	1,764	2.1
Turntable ladders (hand operated)	154	0.2
Turntable ladders (mechanical)	5,356	6.5
Utility vans or trucks	6,988	8.5
Water tenders	26,365	32.0
Wireless cars	12,664	15.4

\* The number of occasions in which fires were attended by one or more of the different special appliances is given.

## APPENDIX I (Contd.)

Table 9

## PERSONS RESCUED OR ESCAPED BY EMERGENCY MEANS FROM FIRES

Reports from England and Wales, 1952

(Frequencies obtained from results of analysis of all reports)

Appliance or method used	Number of persons
Rescue with Fire Brigade assistance from	
Aircraft	1
Buildings	
Escape (hand operated)	36
Ladder, extension	43
first floor	13
turntable (mechanical)	3
other or undefined	24
Line	1
Oxyacetylene cutting gear	1
Other apparatus	6
Without apparatus	88
Ships	2
Other locations	1
Road vehicles	-
Total	219
Rescue without Fire Brigade assistance from	
Aircraft	6
Buildings	
Carried or assisted out	149
Jumping sheet	9
Ladder	118
Lowered from window, roof etc.	55
Other or undefined methods	52
Road vehicles	2
Caravans	10
Other locations	4
Total	405
Escape by emergency means from	
Aircraft	
Baled out	20
Through exits or from debris	11
Thrown clear	-
Method not stated	3
Buildings	
Climbing over roof	3
Fixed fire escape	20
Jumping from upstairs window, roof	70
Ladder	1
Sliding down drainpipe, sheets, rope etc.	22
Through ground floor windows	17
Other or undefined methods	25
Road vehicles	3
Caravans	2
Total	197
Total persons rescued or escaped	821

APPENDIX I (Contd.)

Table 10

NATURE OF INJURIES OF CASUALTIES IN FIRES

Reports from England and Wales, 1952

(Frequencies obtained from results of analysis of all reports.)

\* Casualties who suffered shock in addition to another injury have been classified according to the nature of the other injury.

Nature of injury	Fire Brigade	Other casualties	Total
Fatal casualties			
Burns and scalds	-	334	334
Overcome by gas or smoke	-	62	62
Other and undefined injuries	-	185	185
Total	-	581	581
Non-fatal casualties			
Burns and scalds	275	2,741	3,016
Bruises, cuts, abrasions	592	369	961
Dislocations, sprains, fractures	95	42	137
Overcome by gas or smoke	51	87	138
More than one of the above injuries	33	93	126
* Shock	2	282	284
Other and undefined injuries	202	86	288
Total	1,250	3,700	4,950
Total casualties	1,250	4,281	5,531



## APPENDIX II

## STATISTICAL TABLES FOR FIRE BRIGADES IN SCOTLAND, 1952

Table 1

## METHOD OF CALLING FIRE BRIGADES TO FIRES

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four samples of reports by four)

Method of calling	Fire Brigade											Total	
	Glasgow	Lanark	Central	Western	South Western	South Eastern	Fife	Perth and Kinross	Angus	North Eastern	Northern	No.	Per cent
By Special Fire Service methods													
Automatic fire alarm	8	-	-	-	-	-	-	-	-	-	-	8	0.1
Fire and police pillar box	-	-	-	-	-	-	-	-	-	12	-	12	0.1
Police telephone	472	132	80	144	28	292	28	4	236	340	4	1,760	21.5
Private fire telephone	4	4	-	8	-	-	-	-	-	-	-	16	0.2
Street fire alarm	296	-	-	4	-	-	-	-	-	-	-	300	3.7
Total	780	136	80	156	28	292	28	4	236	352	4	2,096	25.6
Exchange telephone	996	568	444	496	500	1,012	348	172	440	252	216	5,444	66.4
Running call	212	48	40	48	40	76	20	20	24	20	8	556	6.8
Late call	24	-	8	-	-	-	4	-	4	4	-	44	0.5
Other and undefined methods	-	4	8	4	-	4	-	-	-	28	12	60	0.7
Total fires	2,012	756	580	704	568	1,384	400	196	704	656	240	8,200	100.0

## APPENDIX II (Contd.)

Table 2

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	Total No.	Per cent
Fires in buildings classified according to trade or business carried on		
<u>Agriculture</u>		
Farming (not fruit or poultry) and horse and stock rearing	252	3.1
Allotments, market gardening, fruit and poultry farming	28	0.3
Total	280	3.4
<u>Mining, quarrying and treatment of non-metalliferous mine and quarry products (excluding gas works)</u>	8	0.1
<u>Manufacture of bricks, pottery, glass, etc.</u>	12	0.1
<u>Manufacture of chemicals, dyes, explosives, paints, oils</u>		
Chemicals	16	0.2
Paints, varnish, oils, grease, etc.	16	0.2
Total	32	0.4
<u>Manufacture of metals, machines, implements, conveyances</u>		
Smelting, converting, refining, rolling of iron, steel	12	0.4
Extracting, refining, smelting, of other metals	16	0.2
Founding, other secondary processes in metal working	40	0.5
Engineering (not marine or electrical)	80	1.0
Electrical installations, cables and apparatus	28	0.3
Construction and repair of vehicles	24	0.3
Shipbuilding and repairing; marine engineering	28	0.3
Cutlery and small tools	4	-
Other metal industries	36	0.4
Total	268	3.3
<u>Manufacture of textiles and textile goods (not dress)</u>		
Cotton	4	-
Wool, worsted and shoddy	4	-
Other or mixed fibres	16	0.2
Miscellaneous	20	0.2
Textile dyeing, printing, bleaching, finishing	4	-
Total	48	0.6

## APPENDIX II (Contd.)

Table 2 (Contd.)

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent
Fires in buildings classified according to trade or business carried on (contd.)		
<u>Preparation of skins and leather and manufacture of goods of leather and leather substitute (not clothing or footwear)</u>	8	0.1
<u>Manufacture of clothing (not knitted) including footwear</u>	24	0.3
<u>Manufacture of food, drink, tobacco</u>		
Food	84	1.0
Drink	12	0.1
Tobacco, cigars, cigarettes, snuff	4	-
Total	100	1.2
<u>Woodworking: manufacture of cane and basket ware, furniture, fittings</u>		
Woodworking and basket ware	32	0.4
Furniture (not metal or basket)	4	-
Fittings	4	-
Total	40	0.5
<u>Paper making: manufacture of stationery and stationery requisites, printing and bookbinding</u>	16	0.2
<u>Building, decorating, contracting; slate and stone cutting and dressing</u>	96	1.2
<u>Rubber and synthetic rubber</u>	16	0.2
<u>Other manufacturing industries</u>	16	0.2
<u>Gas, water, electricity, sewage</u>	16	0.2
<u>Transport and communication</u>		
Railway - stations etc.	92	1.1
Road - garages, depots, etc.	96	1.2
Water - dock buildings, other than warehouses	8	0.1
Air - aerodromes, etc.	4	-
Total	200	2.4
<u>Commerce</u>		
Departmental stores	8	0.1
Retail shops	460	5.6
Wholesale dealers	32	0.4
Dock and other warehouses	8	0.1
Total	508	6.2

## APPENDIX II (Contd.)

Table 2 (Contd.)

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent
Fires in buildings classified according to trade or business carried on (contd.)		
<u>Offices, Government and other</u>		
Government departments	16	0.2
Local authorities	12	0.1
Other offices	44	0.5
Total	72	0.9
<u>Navy, Army and Air Force Establishments</u>	12	0.1
<u>Professional establishments (other than offices); public institutions</u>		
Educational establishments	56	0.7
Hospitals, homes, etc. for the care of the sick and infirm	36	0.4
Places of worship	20	0.2
Other public and professional services	24	0.3
Total	136	1.7
<u>Places of public entertainment</u>		
Cinemas and theatres	24	0.3
Other places of entertainment	44	0.5
Total	68	0.8
<u>Private residential and personal service - (including hotels and catering)</u>		
Private residential houses	976	11.9
Private residential flats	1,880	22.9
Clubs, hotels, restaurants, public houses	300	3.7
Private huts, unoccupied houses; personal service	268	3.3
Total	3,424	41.8
<u>Miscellaneous</u>	204	2.5
Total fires in buildings	5,604	68.3

## APPENDIX II (Contd.)

Table 2 (Contd.)

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent
Fires other than those in buildings		
<u>Agriculture and forestry</u>		
Crops, standing or stooked (including hayfields)	4	-
Crops, ricks and stacks	268	3.3
Agricultural machinery	44	0.5
Agricultural waste	16	0.2
Other agricultural hazards	44	0.5
Allotments and gardens	24	0.3
Railway embankments	136	1.7
Grassland, heathland	480	5.9
Woods, forests, plantations	88	1.1
Single trees	44	0.5
Felled timber	12	0.1
Total	1,160	14.1
<u>Transport and communication</u>		
Railway rolling stock, etc.	76	0.9
Road vehicles - electrically driven	48	0.6
- oil, petrol or gas driven	416	5.1
Water vessels - craft on inland waters	8	0.1
- ships in dock	56	0.7
- marine structures	16	0.2
Total	620	7.6
<u>Outdoor storage</u>		
Chemicals, explosives, ammunition, oils, grease	36	0.4
Coal and coke	4	-
Refuse	232	2.8
Timber	80	1.0
Cotton, metal, packing materials, rubber, etc.	48	0.6
Total	400	4.9
<u>Other outdoor structures</u>	416	5.1
Total fires other than those in buildings	2,596	31.7
Total fires attended	8,200	100.0

APPENDIX II (Contd.)

Table 3

SUPPOSED CAUSE OF FIRES

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Each item in the list of supposed causes of fire given in the table represents a group of causes which have a common source of ignition. In some cases the groups have been divided into sub-groups according to the nature of the material first ignited and in others according to the act with the source of ignition which led to the outbreak of fire.

Supposed cause of fires	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Aircraft, crashed	-	-	-	-	-	-
Ashes	212	2.6	60	0.7	272	3.3
Brazier	20	0.2	16	0.2	36	0.4
Candle	16	0.2	-	-	16	0.2
Chimney on fire, not confined to chimney	588	7.2	-	-	588	7.2
Chimney, sparks from (outside building)	48	0.6	12	0.1	60	0.7
Doubtful	-	-	-	-	-	-
Electric cooker	52	0.6	-	-	52	0.6
fire, heater, radiator	76	0.9	-	-	76	0.9
iron	64	0.8	-	-	64	0.8
Electric motor	24	0.3	8	0.1	32	0.4
refrigerator	136	1.7	-	-	136	1.7
television	-	-	-	-	-	-
wire and cable, lead to apparatus	8	0.1	16	0.2	24	0.3
wire and cable, other than lead to apparatus	236	2.9	228	2.8	464	5.7
Electric wireless	40	0.5	-	-	40	0.5
other apparatus	84	1.0	28	0.3	112	1.4
Explosives, fireworks	12	0.1	28	0.3	40	0.5
Fire in grate igniting bedding, clothing, linen	56	0.7	-	-	56	0.7
Fire in grate igniting furniture and furnishings	216	2.6	-	-	216	2.6
Fire in grate igniting structural timber under hearth	412	5.0	-	-	412	5.0
Fire in grate igniting other materials	480	5.9	-	-	480	5.9
Fish frying range (all fuels)	28	0.3	8	0.1	36	0.4
Flue	76	0.9	-	-	76	0.9
Furnace (coal or coke)	8	0.1	-	-	8	0.1
Gas (coal) burner, jet, ring	56	0.7	20	0.2	76	0.9
cooker	188	2.3	-	-	188	2.3
fire, heater, radiator	-	-	-	-	-	-
other apparatus	84	1.0	8	0.1	92	1.2
Incendiarism	-	-	-	-	-	-

APPENDIX II (Contd.)

Table 3 (Contd.)

SUPPOSED CAUSE OF FIRES

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Supposed cause of fires	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Incubator, brooder (all fuels)	40	0.5	4	-	44	0.5
Intentional burning of grassland, gorse, etc.	-	-	24	0.3	24	0.3
Lightning	-	-	16	0.2	16	0.2
Lime	-	-	4	-	4	-
Locomotives, sparks from	60	0.7	272	3.3	332	4.0
Matches	128	1.6	92	1.1	220	2.7
Matches, children playing with	160	1.9	420	5.1	580	7.0
Mechanical heat or sparks	36	0.4	24	0.3	60	0.7
Metal, hot	24	0.3	4	-	28	0.3
Oil, blow lamp	72	0.9	4	-	76	0.9
Oil, engine (including petrol)	20	0.2	136	1.7	156	1.9
lamp, stove	88	1.1	16	0.2	104	1.3
tractor	24	0.3	52	0.6	76	0.9
other apparatus	4	-	4	-	8	0.1
Oxyacetylene cutting and welding apparatus	36	0.4	44	0.5	80	1.0
Rubbish burning	36	0.4	176	2.1	212	2.6
Slow combustion stove, igniting structural woodwork	56	0.7	-	-	56	0.7
Slow combustion stove igniting other materials	120	1.5	48	0.6	168	2.0
Smoking materials	444	5.4	176	2.1	620	7.6
Spontaneous combustion in rubbish	-	-	-	-	-	-
Spontaneous combustion in other materials	12	0.1	12	0.1	24	0.3
Static electricity	-	-	4	-	4	-
Steam roller, engine, traction engine	-	-	-	-	-	-
Sun's rays	12	0.1	4	0.1	16	0.2
Taper, lighted paper or sticks	60	0.7	12	0.1	72	0.8
Taper, lighted paper or sticks, children playing with	64	0.8	36	0.4	100	1.2
Miscellaneous and undefined	332	4.0	276	3.4	608	7.4
Unknown source of ignition	556	6.8	304	3.7	860	10.5
Total number of fires	5,604	68.3	2,596	31.7	8,200	100.0

APPENDIX II (Contd.)  
Table 4aSUPPOSED CAUSE OF FIRES IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED  
Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

	Column No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
Row No.		Hazard in which fire started																											Total	Row No.
			Agriculture	Mining, quarrying and treatment of non-metalliferous mine and quarry products (excluding gas works)	Manufacture of bricks, pottery, glass, etc.	Manufacture of chemicals, explosives, paints, oils	Manufacture of metals, machines, implements, conveyances	Manufacture of textiles and textile goods (not dress)	Manufacture of clothing (not knitted) including footwear, and goods of leather and leather substitute; preparation of skins and leather	Manufacture of food, drink, tobacco	Woodworking; manufacture of cane and basket ware, furniture, fittings	Paper making; manufacture of stationery and stationery requisites, printing and bookbinding	Building, decorating, contracting; slate and stone cutting and dressing	Other manufacturing industries, including rubber and synthetic rubber	Gas, water, electricity, sewage	Transport and communication	Commerce; retail shops, including departmental stores	Commerce; wholesale dealers and warehouses	Offices; Government and other	Navy, Army, Air Force establishments	Fire Service establishments	Professional establishments (other than offices), public institutions	Places of public entertainment	Private residential houses	Private residential flats	Clubs, hotels, restaurants, public houses	Private huts, unoccupied houses, personal service	Miscellaneous and undefined		
1		Ashes	-	4	-	-	8	-	4	4	-	-	12	-	-	8	4	-	4	-	-	4	-	8	32	4	124	4	212	1
2		Brazier	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	2
3		Candle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	3
4		Chimney on fire, not confined to chimney	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	588	4
5		Chimney, sparks from (outside building)	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	5
6		Electric cooker	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	6
7		fire, heater, radiator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	7
8		iron motor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	8
9		refrigerator	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	9
10			-	-	-	-	-	-	-	8	-	-	-	-	-	-	112	4	-	-	-	-	-	8	-	-	4	-	136	10
11		Electric wire and cable																												
12		other than lead to apparatus	4	-	-	-	8	-	8		-	-	-	-	-	8	28	-	4	-	-	8	72	72	16	-	-	-	236	11
13		wire and cable lead to apparatus																												
14		wireless apparatus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	40	13
15		other apparatus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	14
15		Explosives, fireworks	-	-	-	-	16	-	-	-	4	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	12	15



16	Fire in grate igniting bedding, clothing, linen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	32	4	-	-	56	16	
17	Fire in grate igniting furniture and furnishings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	128	4	-	-	216	17	
18	Fire in grate igniting structural timber under hearth	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	16	-	-	4	4	84	292	8	-	-	412	18	
19	Fire in grate igniting other materials	-	-	-	-	8	-	4	-	-	-	8	-	-	24	24	-	4	-	-	4	4	108	276	8	4	4	480	19
20	Fish frying range (all fuels)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	28	20
21	Flue	8	-	-	-	4	-	-	12	-	-	4	4	-	-	-	-	4	-	8	-	16	4	12	-	-	76	21	
22	Furnace (coal or coke)	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	22	
23	Gas (coal) burner, jet, ring	-	-	-	-	4	-	-	12	-	-	-	-	-	-	8	-	-	-	4	-	4	16	4	4	-	56	23	
24	cooker	-	-	-	-	-	-	4	-	-	-	-	-	-	-	16	-	-	-	-	-	48	112	8	-	-	188	24	
25	other apparatus	-	-	-	-	8	-	-	4	-	4	-	-	4	-	24	-	-	-	-	-	-	-	8	28	4	-	84	25
26	Incubator, brooder (all fuels)	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	40	26	
27	Locomotives, sparks from	-	-	-	-	8	-	-	4	4	-	-	-	-	32	-	-	-	-	-	-	-	8	-	4	-	60	27	
28	Matches	8	-	4	-	4	-	-	-	-	-	-	-	-	-	-	4	-	-	4	-	16	44	-	16	28	128	28	
29	Matches, children playing with	20	-	4	-	-	-	-	-	-	-	12	4	-	8	4	-	-	-	-	8	8	28	4	4	56	160	29	
30	Mechanical heat or sparks	4	-	-	4	-	20	-	-	-	4	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	30	30	
31	Metal, hot	4	-	-	-	16	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	24	31	
32	Oil, blow lamp	-	-	-	-	4	-	-	-	-	-	4	4	-	4	8	-	-	-	-	-	28	16	-	4	-	72	32	
33	engine (including petrol)	4	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	4	-	-	-	-	4	-	20	33	
34	lamp, stove	24	-	-	-	-	-	-	-	-	-	4	-	-	8	4	-	-	-	-	-	24	16	4	4	-	88	34	
35	tractor	20	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	35	
36	Oil, other apparatus	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	36	
37	Oxyacetylene cutting and welding apparatus	-	4	-	-	20	-	-	-	-	-	-	-	-	8	4	-	-	-	-	-	-	-	-	-	-	36	37	
38	Rubbish burning	12	-	-	-	-	-	-	-	-	-	4	-	-	-	4	-	-	-	-	4	8	-	-	4	-	36	38	
39	Slow combustion stove igniting structural woodwork	4	-	-	-	12	-	-	-	-	-	-	-	-	8	4	4	-	-	12	-	4	-	8	-	-	56	39	
40	other materials	12	-	-	-	4	4	4	-	-	-	12	4	-	16	8	-	-	-	20	4	4	8	12	8	-	120	40	
41	Smoking materials	8	-	-	-	40	8	4	8	4	4	4	-	-	8	80	-	12	4	-	16	24	32	108	72	8	444	41	
42	Spontaneous combustion in other materials	-	-	-	-	4	-	-	-	-	-	-	4	-	-	-	-	4	-	-	-	-	-	-	-	-	12	42	
43	Sun's rays	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	4	-	-	12	43	
44	Taper, lighted paper or sticks	-	-	-	-	-	-	-	-	-	-	-	-	4	8	4	-	-	-	4	-	8	24	8	-	-	60	44	
Column No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	

APPENDIX II (Contd.)  
Table 4A (Contd.)

SUPPOSED CAUSE OF FIRES IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED  
Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.		Hazard in which fire started
	1	2	Agriculture
	3	4	Mining, quarrying and treatment of non-metalliferous mine and quarry products (excluding gas works)
	5	6	Manufacture of bricks, pottery, glass, etc.
	7	8	Manufacture of chemicals, explosives, paints, oils
	9	10	Manufacture of metals, machines, implements, conveyances
	11	12	Manufacture of textiles and textile goods (not dress)
	13	14	Manufacture of clothing (not knitted) including footwear, and goods of leather and leather substitute; preparation of skins and leather
	15	16	Manufacture of food, drink, tobacco
	17	18	Woodworking; manufacture of cane and basket ware, furniture, fittings
	19	20	Paper making; manufacture of stationery and stationery requisites, printing and bookbinding
	21	22	Building, decorating, contracting; slate and stone cutting and dressing
	23	24	Other manufacturing industries, including rubber and synthetic rubber
	25	26	Gas, water, electricity, sewage
	27	28	Transport and communication
	29	30	Commerce; retail shops, including departmental stores
	31	32	Commerce; wholesale dealers and warehouses
	33	34	Offices; Government and other
	35	36	Navy, Army, Air Force establishments
	37	38	Fire Service establishments
	39	40	Professional establishments (other than offices), public institutions
	41	42	Places of public entertainment
	43	44	Private residential houses
	45	46	Private residential flats
	47	48	Clubs, hotels, restaurants, public houses
	49	50	Private huts, unoccupied houses, personal service
	51	52	Miscellaneous and undefined
	53	54	Total
	55	56	Row No.
45	1	2	Taper, lighted paper or sticks, children playing with
46	3	4	Miscellaneous and undefined
47	5	6	Unknown source of ignition
48	7	8	Total fires in buildings
	9	10	Column No.
	11	12	1
	13	14	2
	15	16	3
	17	18	4
	19	20	5
	21	22	6
	23	24	7
	25	26	8
	27	28	9
	29	30	10
	31	32	11
	33	34	12
	35	36	13
	37	38	14
	39	40	15
	41	42	16
	43	44	17
	45	46	18
	47	48	19
	49	50	20
	51	52	21
	53	54	22
	55	56	23
	57	58	24
	59	60	25
	61	62	26
	63	64	27
	65	66	28

## APPENDIX II (Contd.)

Table 4B

SUPPOSED CAUSE OF FIRES OTHER THAN THOSE IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Row No.
	Hazard in which fire started  Supposed cause of fire	Crops	Agricultural machinery	Agricultural waste	Agriculture, other	Gardens and allotments	Railway embankments	Grassland, heathland	Woods, forests, plantations	Single trees	Felled timber	Transport and communications			Outdoor storage					Miscellaneous outdoor structures	Total		
												Rail	Road - oil, petrol or gas driven vehicles	Road - other vehicles	Water	Chemicals, explosives, ammunition, oils, grease	Coal and coke	Refuse	Timber			Other materials	
1	Ashes,	-	-	-	-	-	-	4	-	-	-	-	8	-	-	-	-	32	4	-	12	60	1
2	Brazier	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	16	2
3	Chimney, sparks from (outside building)	4	-	-	4	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	12	3
4	Electric motor	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8	4
5	wire and cable, other than lead to apparatus	-	12	-	-	-	-	-	-	-	-	-	160	16	-	-	-	-	-	-	40	228	5
6	Electric wire and cable, lead to apparatus	-	4	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	16	6
7	other apparatus	-	-	-	-	-	-	-	-	-	-	-	8	12	4	-	-	-	-	-	4	28	7
8	Explosives, fireworks	12	-	-	-	4	-	4	-	-	-	-	4	-	-	-	-	-	-	-	4	28	8
9	Fish frying range (all fuels)	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	8	9
10	Gas (coal) burner, jet, ring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	20	10
11	other apparatus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	11
12	Incubator, brooder (all fuels)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	12
13	Intentional burning of grassland, gorse, etc.	4	-	-	-	8	-	8	-	-	-	-	-	-	-	-	-	-	-	4	-	24	13
14	Lightning	8	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4	16	14
15	Lime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	15
16	Locomotives, sparks from	-	-	4	4	-	108	24	12	4	-	32	-	-	-	-	-	-	12	-	72	272	16
17	Matches	12	-	-	4	-	4	28	-	-	4	-	12	-	-	-	-	16	-	-	12	92	17
18	Matches, children playing with	56	-	-	4	4	16	176	12	8	-	12	4	-	4	4	-	68	4	16	32	420	18
19	Mechanical heat or sparks	-	-	-	-	-	-	-	-	-	-	-	16	4	-	4	-	-	-	-	-	24	19
20	Metal, hot	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4	20

## APPENDIX II (Contd.)

Table 4B (Contd.)

SUPPOSED CAUSE OF FIRES OTHER THAN THOSE IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Row No.
	Hazard in which fire started  Supposed cause of fire	Crops	Agricultural machinery	Agricultural waste	Agriculture, other	Gardens and allotments	Railway embankments	Grassland, heathland	Woods, forests, plantations	Single trees	Felled timber	Transport and communications			Outdoor storage					Miscellaneous outdoor structures	Total		
												Rail	Road - oil, petrol or gas driven vehicles	Road - other vehicles	Water	Chemicals, explosives, ammunition, oils, grease	Coal and coke	Refuse	Timber			Other materials	
21	Oil, blow lamp	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4	21
22	engine (including petrol)	-	4	-	4	-	-	-	-	-	-	-	120	-	4	-	-	-	-	-	4	136	22
23	lamp, stove	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8	16	23
24	tractor	28	16	4	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	52	24
25	other apparatus	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	25
26	Oxyacetylene cutting and welding apparatus	-	-	-	-	-	-	-	-	-	-	-	-	-	16	8	-	-	8	-	12	44	26
27	Rubbish burning	24	4	8	4	4	4	20	12	-	8	4	-	-	-	-	-	44	12	4	24	176	27
28	Slow combustion stove igniting materials other than structural woodwork	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	48	28
29	Smoking materials	32	-	-	4	-	4	44	4	4	-	4	8	4	4	-	-	12	12	8	32	176	29
30	Spontaneous combustion in materials other than rubbish	-	-	-	-	-	-	-	-	-	-	4	-	-	4	-	4	-	-	-	-	12	30
31	Static electricity	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4	31
32	Sun's rays	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4	32
33	Taper, lighted paper or sticks	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	4	-	4	12	33
34	Taper, lighted paper or sticks, children playing with	4	-	-	-	-	-	-	-	4	-	-	-	-	-	4	-	8	4	4	8	36	34
35	Miscellaneous and undefined	20	-	-	8	-	-	100	24	24	-	12	12	-	24	8	-	12	4	12	16	276	35
36	Unknown source of ignition	68	-	-	8	-	-	68	24	-	-	8	24	-	12	4	-	40	16	-	32	304	36
37	Total fires other than those in buildings	272	44	16	44	24	136	480	88	44	12	76	416	48	80	36	4	232	80	48	416	2596	37
	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

## APPENDIX II (Contd.)

Table 5

## MATERIAL FIRST IGNITED IN FIRES

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Material first ignited	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
<u>Agriculture and Forestry</u>						
Crops, ricks, stacks						
Barley	-	-	-	-	-	-
Hay	28	0.3	40	0.5	68	0.8
Straw	-	-	56	0.7	56	0.7
Stubble	-	-	8	0.1	8	0.1
Other	-	-	56	0.7	56	0.7
Loose straw or hay	88	1.1	116	1.4	204	2.5
Grass, heather, bracken	24	0.3	504	6.1	528	6.4
Trees, hedges, undergrowth, brushwood, bushes (including gorse), twigs, touchwood	-	-	272	3.3	272	3.3
Other agricultural materials	8	0.1	20	0.2	28	0.3
Total	148	1.8	1,072	13.1	1,220	14.9
<u>Chemicals - gases</u>						
Acetylene	12	0.1	4	-	16	0.2
Coal gas	228	2.8	32	0.4	260	3.2
Other gases	20	0.2	4	-	24	0.3
Total	260	3.2	40	0.5	300	3.7
<u>Chemicals - oils</u>						
Animal and vegetable oils	8	0.1	-	-	8	0.1
Mineral oil						
Paraffin	76	0.9	12	0.1	88	1.1
Petrol in vehicles	32	0.4	152	1.9	184	2.2
Petrol not in vehicles	56	0.7	16	0.2	72	0.9
Other mineral oils	16	0.2	4	-	20	0.2
Oil, waste and undefined	44	0.5	48	0.6	92	1.1
Total	232	2.8	232	2.8	464	5.7
<u>Chemicals - other</u>						
Celluloid (including films)	-	-	-	-	-	-
Paint, enamel, lacquer, varnish, stains, and French polish	8	0.1	4	-	12	0.1
Pitch, tar	8	0.1	32	0.4	40	0.5
Rubber, vulcanite, ebonite	28	0.3	32	0.4	60	0.7
Other chemicals	64	0.8	32	0.4	96	1.2
Total	108	1.3	100	1.2	208	2.5
<u>Paper, cardboard, wood (not part of a structure)</u>						
Paper, cardboard	220	2.7	48	0.6	268	3.3
Wood chippings, flour, sawdust, shavings, wool	92	1.1	8	0.1	100	1.2
Wood barrels, boxes, cases, firewood, etc.	72	0.9	28	0.3	100	1.2
Timber	12	0.1	44	0.5	56	0.7
Total	396	4.8	128	1.6	524	6.4

## APPENDIX II (Contd.)

Table 5 (Contd.)

## MATERIAL FIRST IGNITED IN FIRES

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Material first ignited	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
<u>Textiles</u>						
Canvas and canvas goods	12	0.1	16	0.2	28	0.3
Clothing on person	8	0.1	-	-	8	0.1
Clothing not on person	100	1.2	16	0.2	116	1.4
Cotton	16	0.2	4	-	20	0.2
Jute, hessian, sacking	96	1.2	32	0.4	128	1.6
Rags (including oily rags)	16	0.2	8	0.1	24	0.3
Tarpaulin, waterproof sheeting, oilskins	12	0.1	28	0.3	40	0.5
Other textiles	28	0.3	4	-	32	0.4
Total	288	3.5	108	1.3	396	4.8
<u>Furniture, furnishings, household goods</u>						
Bedding	124	1.5	4	-	128	1.6
Carpets, rugs	52	0.6	-	-	52	0.6
Curtains	56	0.7	-	-	56	0.7
Furniture	356	4.3	4	-	360	4.4
Linen articles (unspecified), laundry	4	-	-	-	4	-
Seating in vehicles	8	0.1	-	-	8	0.1
Other furnishings	112	1.4	8	0.1	120	1.5
Total	712	8.7	16	0.2	728	8.9
<u>Building materials, structural woodwork</u>						
Building materials other than wood	72	0.9	-	-	72	0.9
Structural woodwork						
External	104	1.3				
Internal						
Door, window frame	80	1.0				
Floor, stairs	260	3.2				
Partitions, linings to walls	104	1.3	200	2.4	1,772	21.6
Roof	240	2.9				
Timber in chimney, flue	68	0.8				
Timber under hearth	420	5.1				
Other fittings	296	3.6				
Total	1,644	20.0	200	2.4	1,844	22.5
<u>Miscellaneous</u>						
Coal, coke	8	0.1	12	0.1	20	0.2
Electrical insulation	272	3.3	172	2.1	444	5.4
Fat (margarine, suet, butter, cooking fat, lard)	200	2.4	-	-	200	2.4
Food other than fat	80	1.0	-	-	80	1.0
Refuse, rubbish, debris	428	5.2	224	2.7	652	8.0
Soot	156	1.9	-	-	156	1.9
Other	344	4.2	104	1.3	448	5.5
<u>Unknown</u>	328	4.0	188	2.3	516	6.3
Total number of fires	5,604	68.3	2,596	31.7	8,200	100.0

## APPENDIX II (Contd.)

Table 6

## METHOD OF EXTINCTION OF FIRES

Reports from Scotland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Method of extinction	Fires in buildings						Fires other than those in buildings						Total No. of fires		Row No.
		Extinguished by Fire Brigade		Extinguished before arrival of Fire Brigade		Total		Extinguished by Fire Brigade		Extinguished before arrival of Fire Brigade		Total				
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	
1	Burned out	-	-	32	0.4	32	0.4	-	-	40	0.5	40	0.5	72	0.9	1
2	Removal	492	6.0	80	1.0	572	7.0	52	0.6	28	0.3	80	1.0	652	8.0	2
3	Automatic sprinkler system	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
4	Beating	4	-	8	0.1	12	0.1	292	3.6	44	0.5	336	4.1	348	4.2	4
5	Smothering	12	0.1	16	0.2	28	0.3	8	0.1	4	-	12	0.1	40	0.5	5
6	Sand, earth, etc.	4	-	12	0.1	16	0.2	8	0.1	20	0.2	28	0.3	44	0.5	6
7	Water from buckets	188	2.3	224	2.7	412	5.0	44	0.5	40	0.5	84	1.0	496	6.0	7
8	Water from stirrup or hand pumps	1,412	17.2	4	-	1,416	17.3	96	1.2	-	-	96	1.2	1,512	18.4	8
9	Chemicals and chemical extinguishers	172	2.1	80	1.0	252	3.1	132	1.6	56	0.7	188	2.3	440	5.4	9
10	Two or more methods 4-9	44	0.5	32	0.4	76	0.9	44	0.5	28	0.3	72	0.9	148	1.8	10
11	Water from garden hose, etc.	-	-	24	0.3	24	0.3	-	-	24	0.3	24	0.3	48	0.6	11
12	Hose reel jets (using water in tank only)	1,524	18.6	-	-	1,524	18.6	744	9.1	4	-	748	9.1	2,272	27.7	12
13	Hose reel jets (using more water than that in tank)	284	3.5	-	-	284	3.5	96	1.2	-	-	96	1.2	380	4.6	13
14	Jets from inside hose reel or inside hydrant	-	-	-	-	-	-	4	-	-	-	4	-	4	-	14
15	Hose reel jets and jets from inside hose reel	4	-	-	-	4	-	-	-	-	-	-	-	4	-	15
16	Jets from pumps and hydrants	792	9.7	12	0.1	804	9.8	744	9.1	12	0.1	756	9.2	1,560	19.0	16
17	Other and undefined methods	100	1.2	48	0.6	148	1.8	8	0.1	24	0.3	32	0.4	180	2.2	17
18	Total	5,032	61.4	572	7.0	5,604	68.3	2,272	27.7	324	4.0	2,596	31.7	8,200	100.0	18

Notes on method of extinction

1. "Removal" includes occurrences where (a) burning material was removed from the building, (b) gas supply was turned off. If the burning material was tackled with methods 3-11 before removing it from the building, then such occurrences were classified under whichever of these methods applied.

2. Methods 11-15 and method 16 include those occurrences in which methods 3-10 and 3-15 respectively may also have been used.

3. "Fires extinguished by Fire Brigade" include those fires which were tackled but not extinguished before the arrival of the Fire Brigade.

APPENDIX II (Contd.)

Table 7

BEHAVIOUR OF SPRINKLER SYSTEMS AT FIRES

Reports from Scotland, 1952

In the one-in-four sample of reports there was one fire in which sprinklers were reported as being installed. The sprinklers failed to operate because insufficient heat was generated by the fire.

Table 8

ATTENDANCE OF SPECIAL APPLIANCES AT FIRES

Reports from Scotland, 1952

(Frequencies obtained from results of analysis of all reports)

Attendance	No. of * occasions	Percentage of total no. of fires
Breakdown lorries	1	-
Canteen vans	-	-
Emergency tenders	161	2.0
Escape carriers	6	0.1
Escape carrying units	3	-
Fire boats	69	0.8
Foam tenders	100	1.2
Hose carriers	14	0.2
Hoselaying lorries	25	0.3
Pumps	6,448	78.6
Pump escapes	3,869	47.2
Pump salvage tenders	218	2.7
Salvage tenders	268	3.3
Turntable ladders (hand operated)	305	3.7
Turntable ladders (mechanical)	1,525	18.6
Utility vans or trucks	131	1.6
Water tenders	729	8.9
Wireless cars	189	2.3

\* The number of occasions on which fires were attended by one or more of the different special appliances is given.



APPENDIX II (Contd.)

Table 9

PERSONS RESCUED OR ESCAPED BY EMERGENCY MEANS FROM FIRES

Reports from Scotland, 1952

(Frequencies obtained from results of analysis of all reports)

Appliance or method used	Number of Persons
Rescue with Fire Brigade assistance from	
Buildings	
Ladder, extension	7
Turntable (Mechanical)	2
Other apparatus	6
Without apparatus	29
Ships	1
Total	45
Rescue without Fire Brigade assistance from	
Buildings	
Jumping Sheet	2
Carried or assisted out	38
Ladder	3
Lowered from window, roof, etc.	5
Other or undefined methods	11
Total	59
Escape by emergency means from	
Aircraft	
Baled out	-
Buildings	
Sliding down drainpipe, sheets, rope, etc.	-
Through ground floor windows	4
Fixed fire escape	1
Jumping from upstairs window, roof	5
Other or undefined methods	2
Ships	3
Total	15
Total persons rescued or escaped	119

## APPENDIX II (Contd.)

Table 10

## NATURE OF INJURIES OF CASUALTIES IN FIRES

Reports from Scotland, 1952

(Frequencies obtained from results of analysis of all reports)

\*Casualties who suffered shock in addition to another injury have been classified according to the nature of the other injury.

Nature of injury	Fire Brigades	Other Casualties	Total
Fatal casualties			
Burns and scalds	-	31	31
Overcome by gas or smoke	-	15	15
Other and undefined injuries	-	3	3
Total	-	49	49
Non-fatal casualties			
Burns and scalds	25	172	197
Bruises, cuts, abrasions	79	29	108
Dislocations, sprains, fractures	10	5	15
Overcome by gas or smoke	16	22	38
More than one of above injuries	3	6	9
*Shock	-	30	30
Other and undefined injuries	19	3	22
Total	152	267	419
Total casualties	152	316	468

# APPENDIX III

## STATISTICAL TABLES FOR FIRE BRIGADES IN NORTHERN IRELAND, 1952

Table 1

### METHOD OF CALLING FIRE BRIGADES TO FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Method of calling	Fire Brigade				Total	
	North	South	West	Belfast	No.	Per cent.
By Special Fire Service methods						
Automatic fire alarm	-	-	-	-	-	-
Police telephone	-	-	4	24	28	2.4
Private fire telephone	-	-	-	4	4	0.3
Street fire alarm	-	-	-	32	32	2.8
Total	-	-	4	60	64	5.6
Exchange telephone	212	364	192	264	1,032	89.6
Running call	4	16	12	24	56	4.9
Other and undefined methods	-	-	-	-	-	-
Total fires	216	380	208	348	1,152	100.0

## APPENDIX III (Contd.)

Table 2

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent
Fires in buildings classified according to trade or business carried on		
<u>Agriculture</u>		
Farming (not fruit or poultry) and horse and stock rearing	100	8.6
Allotments, market gardening, fruit and poultry farming	4	0.3
Total	104	9.0
<u>Manufacture of metals, machines, implements, conveyances</u>	4	0.3
<u>Manufacture of textiles and textile goods (not dress)</u>	8	0.7
<u>Manufacture of clothing (not knitted) including footwear</u>	8	0.7
<u>Manufacture of food, drink, tobacco</u>		
Food	16	1.4
Drink	4	0.3
Tobacco, cigars, cigarettes, snuff	4	0.3
Total	24	2.1
<u>Wood working: manufacture of cane and basket ware</u>	12	1.0
<u>Building, decorating, contracting: slate and stone cutting, and dressing</u>	8	0.7
<u>Other manufacturing industries</u>	8	0.7
<u>Transport and communications</u>		
Railway - stations, etc.	4	0.3
Road - garages, depots, etc.	24	2.1
Water - dock buildings, other than warehouses	4	0.3
Total	32	2.8

## APPENDIX III (Contd.)

Table 2 (Contd.)

## FIRES CLASSIFIED ACCORDING TO HAZARD IN WHICH FIRE STARTED

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent
Fires in buildings classified according to trade or business carried on (contd.)		
<u>Commerce</u>		
Retail shops	48	4.2
Wholesale dealers	8	0.7
Total	56	4.9
<u>Offices, Government and other</u>		
Government Departments	8	0.7
Other offices	16	1.4
Total	24	2.1
<u>Navy, Army, and Air Force establishments</u>	20	1.7
<u>Professional establishments (other than offices)</u>		
<u>public institutions</u>		
Educational establishments	16	1.4
Hospitals, homes, etc. for the care of the sick and infirm	4	0.3
Places of worship	16	1.4
Other public and professional services	4	0.3
Total	40	3.5
<u>Places of public entertainment</u>	20	1.7
<u>Private residential and personal service</u> (including hotels and catering)		
Private residential houses	272	23.6
Private residential flats	12	1.0
Clubs, hotels, restaurants, public houses	36	3.1
Private huts, unoccupied houses; personal service	20	1.7
Total	340	29.5
Total fires in buildings	708	61.5

## APPENDIX III (Contd.)

Table 2 (Contd.)

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Hazard	Total	
	No.	Per cent.
Fires other than those in buildings		
<u>Agriculture and forestry</u>		
Crops, standing or stooked (including hayfields)	4	0.3
Crops, ricks, stacks	68	5.9
Agricultural machinery	16	1.4
Other agricultural hazards	4	0.3
Allotments and gardens	4	0.3
Railway embankments	28	2.4
Grassland, heathland	136	11.8
Single trees	8	0.7
Total	268	23.3
<u>Transport and communication</u>		
Road vehicles - electrically driven	8	0.7
- oil, petrol or gas driven	72	6.2
Water vessels - marine structures	4	0.3
Total	84	7.3
<u>Outdoor storage</u>		
Refuse	12	1.0
Cotton, metal, packing materials, rubber, etc.	12	1.0
Total	24	2.1
<u>Other outdoor structures</u>	68	5.9
Total fires other than those in buildings	444	38.5
Total fires attended	1,152	100.0

## APPENDIX III (Contd.)

Table 3

## SUPPOSED CAUSE OF FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Each item in the list of supposed causes of fire given in the table represents a group of causes which have a common source of ignition. In some cases the groups have been divided into sub-groups according to the nature of the material first ignited, and in others according to the act with the source of ignition which led to the outbreak of fire.

Supposed cause of fires	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent	No.	Per cent	No.	Per cent
Aircraft crashed	-	-	-	-	-	-
Ashes	-	-	4	0.3	4	0.3
Brazier	-	-	-	-	-	-
Candle	-	-	-	-	-	-
Chimney on fire, not confined to chimney	28	2.4	-	-	28	2.4
Chimney, sparks from (outside building)	24	2.1	4	0.3	28	2.4
Doubtful	4	0.3	8	0.7	12	1.0
Electric cooker	-	-	-	-	-	-
fire, heater, radiator	4	0.3	-	-	4	0.3
iron	4	0.3	-	-	4	0.3
Electric motor	-	-	-	-	-	-
refrigerator	12	1.0	-	-	12	1.0
television	-	-	-	-	-	-
wire and cable, lead to apparatus	8	0.7	4	0.3	12	1.0
wire and cable, other than lead to apparatus	24	2.1	68	5.9	92	8.0
Electric wireless	4	0.3	-	-	4	0.3
other apparatus	8	0.7	4	0.3	12	1.0
Explosives, fireworks	-	-	4	0.3	4	0.3
Fire in grate igniting bedding, clothing, linen	12	1.0	-	-	12	1.0
Fire in grate igniting furniture and furnishings	12	1.0	-	-	12	1.0
Fire in grate igniting structural timber under hearth	28	2.4	-	-	28	2.4
Fire in grate igniting other materials	108	9.4	-	-	108	9.4
Fish frying range (all fuels)	12	1.0	-	-	12	1.0
Flue	16	1.4	-	-	16	1.4
Furnace (coal or coke)	-	-	-	-	-	-
Gas (coal) burner, jet, ring	-	-	-	-	-	-
cooker	4	0.3	-	-	4	0.3
fire, heater, radiator	-	-	-	-	-	-
other apparatus	-	-	-	-	-	-
Incendiarism	-	-	-	-	-	-
Incubator, brooder (all fuels)	8	0.7	-	-	8	0.7

## APPENDIX III (Contd.)

Table 3 (Contd.)

## SUPPOSED CAUSE OF FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Supposed cause of fires	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Intentional burning of grassland, gorse, etc.	-	-	4	0.3	4	0.3
Lightning	-	-	-	-	-	-
Lime	4	0.3	-	-	4	0.3
Locomotives, sparks from	-	-	28	2.4	28	2.4
Matches	16	1.4	4	0.3	20	1.7
Matches, children playing with	20	1.7	32	2.8	52	4.5
Mechanical heat or sparks	8	0.7	-	-	8	0.7
Metal, hot	4	0.3	4	0.3	8	0.7
Oil, blowlamp	-	-	-	-	-	-
engine (including petrol)	4	0.3	28	2.4	32	2.8
Oil, lamp, stove	12	1.0	-	-	12	1.0
tractor	4	0.3	8	0.7	12	1.0
other apparatus	4	0.3	-	-	4	0.3
Oxyacetylene cutting and welding apparatus	4	0.3	-	-	4	0.3
Rubbish burning	12	1.0	12	1.0	24	2.1
Slow combustion stove igniting structural woodwork	-	-	-	-	-	-
Slow combustion stove igniting other materials	12	1.0	12	1.0	24	2.1
Smoking materials	56	4.9	40	3.5	96	8.3
Spontaneous combustion in rubbish	-	-	-	-	-	-
Spontaneous combustion in other materials	-	-	-	-	-	-
Static electricity	-	-	-	-	-	-
Steam roller, engine, traction engine	-	-	-	-	-	-
Sun's rays	-	-	-	-	-	-
Taper, lighted paper or sticks	8	0.7	-	-	8	0.7
Taper, lighted paper or sticks, children playing with	-	-	-	-	-	-
Miscellaneous and undefined	8	0.7	12	1.0	20	1.7
Unknown source of ignition	212	18.4	164	14.2	376	32.6
Total number of fires	708	61.5	444	38.5	1,152	100.0



## APPENDIX III (Contd.)

## Table 4A

SUPPOSED CAUSE OF FIRES IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED  
 Reports from Northern Ireland, 1952  
 (Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.	Hazard in which fire started	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Row No.
		Supposed cause of fire	Agriculture	Manufacture of metals, machines, implements, conveyances	Manufacture of textiles and textile goods (not dress)	Manufacture of clothing (not knitted) including footwear, and goods of leather and leather substitute; preparation of skins and leather	Manufacture of food, drink, tobacco	Woodworking; manufacture of cane and basket ware, furniture, fittings	Building, decorating, contracting; slate and stone cutting and dressing	Other manufacturing industries, including rubber and synthetic rubber	Gas, water, electricity, sewage	Transport and communication	Commerce; retail shops, including departmental stores	Commerce; wholesale dealers and warehouses	Offices; Government and other	Navy, Army, Air Force establishments	Professional establishments (other than offices), public institutions	Places of public entertainment	Private residential houses	Private residential flats	Clubs, hotels, restaurants, public houses	Private huts, unoccupied houses, personal service	Total	
1		Chimney on fire, not confined to chimney	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	4	-	-	28	1
2		Chimney, sparks from (outside building)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	24	2
3		Doubtful	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3
4		Electric fire, heater, radiator	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
5		Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5
6		Electric refrigerator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	6
7		wire and cable other than lead to apparatus	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	24	7
8		wire and cable lead to apparatus	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	4	-	-	-	8	8
9		wireless	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4	-	-	-	4	9
10		other apparatus	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	8	10
11		Fire in grate igniting bedding, clothing, linen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	12	11
12		furniture and furnishings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	12	12
13		structural timber under	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	13
14		hearth,	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	16	-	-	-	28	14
15		other materials	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	108	15
16		Fish frying range (all fuels)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	16
17		Flue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	17
18		Gas (coal) cooker	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	18
19		Incubator, brooder (all fuels)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	19
20		Lime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	20
		Matches	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	
		Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	21	

## APPENDIX III (Contd.)

Table 4A

SUPPOSED CAUSE OF FIRES IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED  
 Reports from Northern Ireland, 1952  
 (Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.	Hazard in which fire started	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	Row No.
		Supposed cause of fire	Agriculture	Manufacture of metals, machines, implements, conveyances	Manufacture of textiles and textile goods (not dress)	Manufacture of clothing (not knitted) including footwear, and goods of leather and leather substitute; preparation of skins and leather	Manufacture of food, drink, tobacco	Woodworking; manufacture of cane and basket ware, furniture, fittings	Building, decorating, contracting; slate and stone cutting and dressing	Other manufacturing industries, including rubber and synthetic rubber	Gas, water, electricity, sewage	Transport and communication	Commerce; retail shops, including departmental stores	Commerce; wholesale dealers and warehouses	Offices; Government and other	Navy, Army, Air Force establishments	Professional establishments (other than offices), public institutions	Places of public entertainment	Private residential houses	Private residential flats	Clubs, hotels, restaurants, public houses	Private huts, unoccupied houses, personal service	20	21
21		Matches, children playing with	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	1	1	1	20	21
22		Mechanical heat or sparks	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	22
23		Metal, hot	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	23
24		Oil, engine (including petrol) lamp, stove	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1	1	1	12	24
25																							25	
26		Cil tractor	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	26
27		other apparatus	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	27
28		Oxycetylene cutting and welding apparatus	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	28
29		Rubbish burning	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	29
30		Slow combustion stove igniting material other than structural woodwork	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	30
31		Smoking materials	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	1	1	1	56	31
32		Taper, lighted paper or sticks	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	1	1	1	8	32
33		Miscellaneous and undefined	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	33
34		Unknown source of ignition	44	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	52	1	1	1	212	34
35		Total fires in buildings	104	4	8	8	24	12	8	8	1	32	48	8	24	20	40	20	272	12	36	20	708	35
		Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

APPENDIX III (Contd.)

Table 4B

SUPPOSED CAUSE OF FIRES OTHER THAN THOSE IN BUILDINGS IN RELATION TO HAZARD IN WHICH FIRE STARTED

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Row No.
	Hazard in which fire started Supposed cause of fire	Crops	Agricultural machinery	Agriculture, other	Gardens and allotments	Railway embankments	Grassland, heathland	Single trees	Transport and communications			Outdoor storage		Miscellaneous outdoor structures	Total	
									Road - oil, petrol or gas driven vehicles	Road - other vehicles	Water	Refuse	Other materials			
1	Ashes	1	1	1	1	1	1	1	1	1	1	1	4	1	4	1
2	Chimney, sparks from (outside building)	4	1	1	1	1	1	1	1	1	1	1	1	1	4	2
3	Doubtful	8	1	1	1	1	1	1	1	1	1	1	1	1	8	3
4	Electric wire and cable other than lead to apparatus	1	1	1	1	1	1	1	24	8	1	1	1	36	68	4
5	Electric wire and cable other than lead to apparatus	1	1	1	1	1	1	1	4	1	1	1	1	1	4	5
6	Electric other apparatus	1	1	1	1	1	1	1	4	1	1	1	1	1	4	6
7	Explosives, fireworks	1	1	1	1	1	4	1	1	1	1	1	1	1	4	7
8	Intentional burning of grassland, gorse, etc.	1	1	1	1	1	4	1	1	1	1	1	1	1	4	8
9	Locomotives, sparks from	1	1	1	1	12	8	1	1	1	1	1	1	8	28	9
10	Matches	1	1	1	1	1	4	1	1	1	1	1	1	1	4	10
11	Matches, children playing with	12	1	1	1	8	8	4	1	1	1	1	1	1	32	11
12	Metal, hot	1	1	1	1	1	1	1	1	1	1	1	1	4	4	12
13	Oil, engine (including petrol)	1	1	1	1	1	1	1	28	1	1	1	1	1	28	13
14	tractor	4	4	1	1	1	1	1	1	1	1	1	1	1	8	14
15	Rubbish burning	1	1	1	1	1	8	1	1	1	1	1	1	4	12	15
16	Slow combustion stove igniting materials other than structural woodwork	1	1	1	1	1	1	1	1	1	1	1	1	12	12	16
17	Smoking materials	12	1	1	1	1	20	1	1	1	4	4	1	1	40	17
18	Miscellaneous and undefined	8	1	4	1	1	1	1	1	1	1	1	1	1	12	18
19	Unknown source of ignition	24	12	1	4	8	80	4	12	1	1	8	8	4	164	19
20	Total fires other than those in buildings	72	16	4	4	28	136	8	72	8	4	12	12	68	444	20
	Column No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	

## APPENDIX III (Contd.)

Table 5

## MATERIAL FIRST IGNITED IN FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Material first ignited	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent	No.	Per cent	No.	Per cent
<u>Agriculture and Forestry</u>						
Crops, ricks, stacks						
Hay	28	2.4	16	1.4	44	3.8
Straw	-	-	16	1.4	16	1.4
Other	-	-	4	0.3	4	0.3
Loose straw or hay	4	0.3	4	0.3	8	0.7
Grass, heather, bracken	4	0.3	60	5.2	64	5.6
Trees, hedges, undergrowth, brushwood, bushes (including gorse), twigs, touchwood	-	-	40	3.5	40	3.5
Total	36	3.1	140	12.2	176	15.3
<u>Chemicals - gases</u>						
Coal gas	8	0.7	-	-	8	0.7
Total	8	0.7	-	-	8	0.7
<u>Chemicals - oils</u>						
Petrol in vehicles	16	1.4	28	2.4	44	3.8
Petrol not in vehicles	8	0.7	-	-	8	0.7
Other mineral oils	4	0.3	-	-	4	0.3
Total	28	2.4	28	2.4	56	4.9
<u>Chemicals - other</u>						
Pitch, tar	-	-	12	1.0	12	1.0
Other chemicals	4	0.3	-	-	4	0.3
Total	4	0.3	12	1.0	16	1.4
<u>Paper, cardboard, wood (not part of a structure)</u>						
Paper, cardboard	32	2.8	8	0.7	40	3.5
Wood chippings, flour, sawdust, shavings, wool	4	0.3	-	-	4	0.3
Wood barrels, boxes, cases, firewood etc.	16	1.4	4	0.3	20	1.7
Timber	-	-	-	-	-	-
Total	52	4.5	12	1.0	64	5.6

## APPENDIX III (Contd.)

Table 5 (Contd.)

## MATERIAL FIRST IGNITED IN FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis  
of one-in-four sample of reports by four)

Material first ignited	Fires in buildings		Fires other than those in buildings		Total	
	No.	Per cent	No.	Per cent	No.	Per cent
<u>Textiles</u>						
Canvas and canvas goods	4	0.3	-	-	4	0.3
Clothing not on person	24	2.1	-	-	24	2.1
Jute, hessian, sacking	4	0.3	4	0.3	8	0.7
Tarpaulin, waterproof sheeting, oilskins	-	-	4	0.3	4	0.3
Other textiles	4	0.3	-	-	4	0.3
Total	36	3.1	8	0.7	44	3.8
<u>Furniture, furnishings, household goods</u>						
Furniture	20	1.7	-	-	20	1.7
Other furnishings	8	0.7	-	-	8	0.7
Total	28	2.4	-	-	28	2.4
<u>Building material, structural</u>						
<u>woodwork</u>						
Building materials, other than wood	52	4.5	-	-	52	4.5
Structural woodwork						
External	8	0.7	4	0.3	152	13.2
Internal						
Door, window frame	4	0.3				
Floor, stairs	44	3.8				
Partitions, linings to walls	4	0.3				
Roof	12	1.0				
Timber in chimney, flue	28	2.4				
Timber under hearth	28	2.4				
Other fittings	20	1.7				
Total	200	17.4	4	0.3	204	17.7
<u>Miscellaneous</u>						
Coal, coke	-	-	-	-	-	-
Electrical insulation	32	2.8	76	6.6	108	9.4
Fat, (margarine, suet, butter, cooking fat, lard)	20	1.7	-	-	20	1.7
Food other than fat	-	-	-	-	-	-
Refuse, rubbish, debris	-	-	4	0.3	4	0.3
Soot	12	1.0	-	-	12	1.0
Other	28	2.4	-	-	28	2.4
<u>Unknown</u>	224	19.4	160	13.9	384	33.3
Total number of fires	708	61.5	444	38.5	1,152	100.0

## APPENDIX III (Contd.)

Table 6

## METHOD OF EXTINCTION OF FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained by multiplying results of analysis of one-in-four sample of reports by four)

Row No.	Method of extinction	Fires in buildings						Fires other than those in buildings						Total No. of fires		Row No.
		Extinguished by Fire Brigade		Extinguished before arrival of Fire Brigade		Total		Extinguished by Fire Brigade		Extinguished before arrival of Fire Brigade		Total				
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	
1	Burned out	-	-	-	-	-	-	-	-	28	2.4	28	2.4	28	2.4	1
2	Removal	56	4.9	4	0.3	60	5.2	4	0.3	24	2.1	28	2.4	88	7.6	2
3	Automatic sprinkler system	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
4	Beating	-	-	4	0.3	4	0.3	96	8.3	16	1.4	112	9.7	116	10.1	4
5	Smothering	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
6	Sand, earth, etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
7	Water from buckets	8	0.7	44	3.8	52	4.5	8	0.7	20	1.7	28	2.4	80	6.9	7
8	Water from stirrup or hand pumps	128	11.1	4	0.3	132	11.5	16	1.4	-	-	16	1.4	148	12.8	8
9	Chemicals and chemical extinguishers	32	2.8	12	1.0	44	3.8	16	1.4	8	0.7	24	2.1	68	5.9	9
10	Two or more methods 4-9	-	-	-	-	-	-	12	1.0	4	0.3	16	1.4	16	1.4	10
11	Water from garden hose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
12	Hose reel jets (using water in tank only)	128	11.1	-	-	128	11.1	80	6.9	-	-	80	6.9	208	18.1	12
13	Hose reel jets (using more water than that in tank)	52	4.5	-	-	52	4.5	8	0.7	-	-	8	0.7	60	5.2	13
14	Jets from inside hose reel or inside hydrant	4	0.3	-	-	4	0.3	-	-	-	-	-	-	4	0.3	14
15	Jets from pumps and hydrants	208	18.1	-	-	208	18.1	84	7.3	4	0.3	88	7.6	296	25.7	15
16	Other and undefined methods	24	2.1	-	-	24	2.1	8	0.7	8	0.7	16	1.4	40	3.5	16
	Total	640	55.6	68	5.9	708	61.5	332	28.8	112	9.7	444	38.5	1152	100.0	

## Notes on method of extinction

1. "Removal" includes occurrences where (a) burning material was removed from the building, (b) gas supply was turned off. If the burning material was tackled with methods 3-11 before removing it from the building, then such occurrences were classified under whichever of these methods applied.
2. Methods 11-14 and method 15 include those occurrences in which methods 3-10 and 3-14 respectively may also have been used.
3. "Fires extinguished by Fire Brigade" include those fires which were tackled but not extinguished before the arrival of the Fire Brigade.

# APPENDIX III (Contd.)

Table 7

## BEHAVIOUR OF SPRINKLER SYSTEMS AT FIRES

Reports from Northern Ireland, 1952

In the one-in-four sample of reports, there were two incidents where sprinklers were reported as being installed. In each fire the sprinklers controlled but did not extinguish the fire. In the one incident two heads were actuated and in the other one head was actuated.

Table 8

## ATTENDANCE OF SPECIAL APPLIANCES AT FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained from results of analysis of all reports)

Attendance	No. of occasions <sup>*</sup>	Percentage of total no. of fires
Canteen vans	3	0.3
Emergency tenders	148	12.8
Escape carriers	2	0.2
Escape carrying units	83	7.2
Foam tenders	2	0.2
Pumps	896	77.8
Pump escapes	393	34.1
Turntable ladders (mechanical)	14	1.2
Utility vans or trucks	435	37.8
Water tenders	6	0.5

\* The number of occasions in which fires were attended by one or more of the different special appliances is given.

## APPENDIX III (Contd.)

Table 9

## PERSONS RESCUED OR ESCAPED BY EMERGENCY MEANS FROM FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained from results of analysis of all reports)

Appliance or method used	No. of persons
Rescue with Fire Brigade assistance from	
Buildings	
Escape, hand operated	1
Ladder, extension	2
Without apparatus	6
Total	9
Rescue without Fire Brigade assistance from	
Buildings	
Carried or assisted out	3
Ladder	4
Lowered from windows, roof etc.	3
Other or undefined methods	4
Caravans	5
Total	19
Escape by emergency means from	
Aircraft	
Method not stated	2
Buildings	
Jumping from upstairs window, roof	1
Through ground floor windows	1
Other or undefined methods	5
Caravans	1
Total	10
Total persons rescued or escaped	38



## APPENDIX III (Contd.)

Table 10

## NATURE OF INJURIES OF CASUALTIES IN FIRES

Reports from Northern Ireland, 1952

(Frequencies obtained from results of analysis of all reports)

\*Casualties who suffered shock in addition to another injury have been classified according to the nature of the other injury.

Nature of injury	Fire Brigade	Other Casualties	Total
Fatal casualties			
Burns and scalds	-	6	6
Total	-	6	6
Non-fatal casualties			
Burns and scalds	2	27	29
Bruises, cuts, abrasions	14	8	22
Dislocations, sprains, fractures	4	-	4
Overcome by gas or smoke	-	1	1
More than one of the above	1	-	1
* Shock	-	1	1
Other and undefined injuries	7	-	7
Total	28	37	65
Total casualties	28	43	71

## APPENDIX IV

### DISCUSSION OF SAMPLE ANALYSIS FOR PREPARATION OF TABLES 1, 2, 3, 4A, 4B, 5 & 7

#### Method of selecting sample

The procedure adopted for selecting the one-in-four sample of reports for the preparation of Tables 1, 2, 3, 4A, 4B, 5 and 6 was first to add to each of the figures 1, 5, 9, 13, 17 etc. one of the figures 0, 1, 2, 3 taken at random (tables of random numbers were used). A series of 10,000 numbers, the first ten of which were 1, 8, 9, 16, 17, 24, 28, 32, 35, 40 was obtained. These numbers were used for extracting from the reports of each Fire Brigade separately, the sample to be coded.

#### Accuracy of estimated percentages of different types of fires

Of the total number of reports in 1952, a sample, N, has been analysed: of this sample a percentage, p, has been observed to fall into a certain group e.g. fires caused by sparks from locomotives. This percentage is an estimate of the corresponding percentage which would have been obtained had the total number of reports been analysed. The accuracy of the estimate, p, can be defined by means of its 'standard error', s, which is given by the equation

$$s = \sqrt{\frac{p(1-p)(1-f)}{N}}$$

where f = sampling fraction which is  $\frac{1}{4}$  in the present instance.

This formula can be used for estimating s even if N does not denote the total number of reports in the sample, but the number in a sub-category of the sample e.g. fires in buildings and the percentage, p, is based on this number. The sampling fraction is then not exactly known to be, but is assumed to be  $\frac{1}{4}$ .

The figures in the tables have been obtained by multiplying the results of analysis of the sample by four, and therefore  $N = N'/4$  where N' is the estimated total of a particular category of fire on which p is based.

It is unlikely (only a 19 to 1 chance) that the actual percentage will differ from the sample estimate by more than  $\pm 2s = E$

$$E = \pm 3.46 \sqrt{\frac{p(100-p)}{N'}}$$

The following examples show the method of calculating the value of E.

#### Example 1

9.1% of the 82,416 fires in England and Wales were attributed to sparks from locomotives (Appendix I, Table 3).

$$E = \pm 3.46 \sqrt{\frac{9.1 \times 90.9}{82,416}} = \pm 0.3\%$$

There is therefore a 19 to 1 chance that the true percentage lies between 8.8% and 9.4%.

### Example 2

0.5% of the 8,200 fires in Scotland were extinguished with sand, earth, etc. (Appendix II, Table 6).

$$E = \pm 3.46 \sqrt{\frac{0.5 \times 99.5}{8,200}} = \pm 0.3\%$$

The sampling error in this instance is large and there is a 19 to 1 chance that the actual percentage lies between 0.2% and 0.8%.

### Accuracy of estimates of yearly totals of fires

An estimate of the returns of 1952 which would have been obtained had all reports been analysed, has been made by multiplying the results of analysis of the sample by four. The 'standard error',  $s'$ , of this estimate is given by the equation

$$s' = \sqrt{\frac{n'(N'-n')(1-f)}{N'f}}$$

where  $n'$  = figure in table.

$N'$  = estimated total of a particular category of fire e.g. incidents in England and Wales.

It is unlikely (a 19 to 1 chance) that the actual yearly total for a particular group of fires will differ from the estimated figure,  $n'$ , by more than  $\pm 2s' = E'$

$$E' = \pm 3.46 \sqrt{\frac{n'(N'-n')}{N'}}$$

The two examples considered above show the method of calculating the value of  $E'$ .

### Example 1. (Large value of $n'$ )

7,524 fires in England and Wales were attributed to sparks from locomotives. (Appendix 1, Table 3). The total number of fires in the country was 82,416.

$$E' = \pm 3.46 \sqrt{\frac{7,524 (82,416 - 7,524)}{82,416}} = \pm 286$$

There is therefore a 19 to 1 chance that the true yearly total lies between 7,238 and 7,810.

### Example 2 (Small value of $n'$ )

44 of the 8,200 fires in Scotland were extinguished with sand, earth etc. (Appendix II, Table 6).

$$E' = \pm 3.46 \sqrt{\frac{44 (8,200 - 44)}{8,200}} = \pm 23$$

The proportionate sampling error here is large: there is a 19 to 1 chance that the actual yearly total lies between 21 and 67.