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## FIRE RESEARCH NOTE

NO. 567

DEATHS IN FIRES IN 1962

J. E. Gaunt and S. E. Chandler

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DEATHS IN FIRES IN 1962

by

J. E. Gaunt and S. E. Chandler

SUMMARY

Over 50 per cent of the deaths considered in this report were due to the following four causes:- (i) open fires, (ii) oil stoves, (iii) smoking materials and (iv) electric space heaters. A further 26 per cent were due to unknown sources of ignition. Together, therefore, these causes accounted for more than three quarters of the total number of deaths.

The victims of fires caused by open fires and electric space heaters largely tended to be old people, particularly women who were on their own and whose clothing became ignited while being worn. The appliances were generally unguarded and the victims were often physically disabled.

There were 36 deaths of children under the age of 5 years and the principal cause was the overturning of oil stoves. At least 26 of these children were alone either in a room or in a building at the time of the fire. At least 8 were alone for a period of less than 10 minutes, 7 of these being alone in the building where the fire occurred.

Smoking materials were the cause of fires chiefly responsible for deaths of the remaining age group - particularly smoking materials which had been dropped onto bedclothes or upholstery. Many of the victims of these fires appeared to have been asphyxiated while asleep.

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### INTRODUCTION

The total number of deaths caused by fire and explosion in 1962 was in the order of 1 000<sup>(1)(2)</sup>. Six hundred and sixty seven were reported by United Kingdom fire brigades and 290 (or 44 per cent) of the latter were covered by special Research Reports.

The following study is based solely on the Research Reports, and there is some evidence (Appendix I) that the Research Report fatalities are a representative sample of all the deaths that occurred in fires attended by the fire brigades in 1962.

Both the fatalities themselves and the fires in which they were involved have been analysed in an attempt to provide some background information on the circumstances likely to contribute to death by fire.

### FIRES INVOLVING FATALITIES

The numbers of casualties in relation to the numbers of incidents are given in Table 1. The table shows that a very high proportion of the fires (nearly 91 per cent) involved 1 casualty only. A study of the type of fire giving rise to fatalities could therefore be based on either the total number of deaths or the total number of incidents. In this study it was based on the former.

Table 1: Number of casualties in relation to the number of incidents

Number of casualties	No. of incidents	Percentage
1	229	90.9
2	16	6.3
3	3	1.2
4	2	0.8
5	1	0.4
7	1	0.4
TOTAL	252	

The 252 incidents involved 290 fatal casualties, 85 non-fatal casualties, 73 escapes and 57 rescues (other than of fatal casualties)

### TIME OF OCCURRENCE

Of the deaths recorded, 51 per cent occurred in the 4 months January, February, March and December, i.e. during the winter months when the weather conditions were likely to have been at their worst.

The average number of deaths on the days Friday to Monday inclusive was higher than the average number on Tuesdays, Wednesdays and Thursdays, the difference between the two averages being about 20.

With regard to the time of day at which the deaths took place, about 23 per cent occurred at night during the hours midnight to 6 a.m. This compares with about 10 per cent of all fires in buildings occurring at that time.

### THE CAUSES OF FIRES INVOLVING FATALITIES

Details of the causes of fires involving fatalities are given in Appendix II, Table 15. More than 50 per cent of the deaths were due to the four causes: (i) fires in grates (i.e. the open fire place) - 16 per cent, (ii) smoking materials - 16 per cent, (iii) oil stoves - 12 per cent and (iv) electric space heaters - 7 per cent: a further 25 per cent occurred in fires of unknown source of ignition.

Twenty seven per cent of the deaths occurred as a result of clothing becoming ignited while being worn.

Fifty nine per cent of the fatalities in smoking material fires were in incidents in which bedding was first ignited and 26 per cent in incidents in which the material was upholstery. In most cases the victims appeared to have fallen asleep while smoking and to have been subsequently asphyxiated. At least 40 of the 66 fire in grate and electric space heater casualties died in fires where the appliance was unguarded.

Source of ignition in relation to occupancy

Table 16 in Appendix II gives details of the source of ignition of the fires in which the deaths occurred according to occupancy. Most of the deaths (88 per cent) occurred in dwellings (including caravans) but 4 per cent occurred in industrial premises.

Table 2: Source of ignition in relation to the occupancy in which fire started

Source of ignition of fire	Occupancy in which fire started				TOTAL
	Dwellings			Other hazards	
	Houses	Flats	Others		
Electric space heater	14	3	-	2	19
Fire in grate	34	13	-	-	47
Oil stove	14	16	2	3	35
Smoking materials	26	13	2	5	46
Other	39	17	2	11	69
Unknown	45	16	-	13	74
<b>TOTAL</b>	<b>172</b>	<b>78</b>	<b>6</b>	<b>34</b>	<b>290</b>

This information is summarised in Table 2 which shows a difference in the cause pattern between dwellings and other occupancies and also between types of dwellings. These differences are to be expected owing to differences in the general cause pattern of fires according to occupancy<sup>(3)</sup>. For example, since the incidence of oil stove fires is relatively higher in flats than in houses, it is not surprising that the number of deaths due to this cause is also relatively higher in flats.

#### Sources of ignition in relation to room of origin

Sources of ignition in relation to the room of origin of the fire are given in Appendix II, Table 17. Examination of the principal known sources of ignition shows that 79 per cent of the fire in grate deaths occurred in living rooms, dining rooms and kitchens and 63 per cent of the smoking material deaths in bedrooms. Ten of the 19 electric fire fatalities occurred in bedrooms as opposed to 6 in living rooms, dining rooms and kitchens and, of the 35 oil stove fatalities, 11 occurred in stairways and halls, 10 in living rooms, dining rooms and kitchens and 6 in bedrooms.

EXTENT OF FIRES INVOLVING FATALITIES

Table 3: Extent of fires involving fatalities

Extent	BUILDING FIRES						OUTDOOR FIRES (Inc. caravans)	
	Confined to					Not confined to building	Confined to hazard in which the fire originated	Extended to buildings
	Casualty and their clothing	Room of origin of fire	Roof or roof space	Floor of origin of fire	Building of origin of fire			
Number of deaths	21	120	1	37	71	25	11	4

More than half the deaths resulted from fires confined to the room, compartment or hazard in which they originated (Table 3), including 7 per cent confined to the casualty. More than half the deaths, therefore, occurred in comparatively small fires, indeed some 18 per cent of the incidents were extinguished before the arrival of the fire brigades and 4 per cent burnt themselves out without causing extensive damage. Of the latter, 4 fires were confined to the room in which they originated but apparently burnt themselves out due to the lack of oxygen in the room. In most of the other instances the fire was confined to the casualty or the casualty and chair etc. in which they died.

The remaining deaths occurred in larger fires involving the floor or the building of origin of the fire etc., or in outdoor fires which extended to buildings.

Extent of fire and occupancy in which the fire occurred in relation to whether the casualty was trapped

Table 4: Extent of fire in relation to trapping of casualty

Extent of fire	Whether casualty trapped				TOTAL
	Yes	No	Not applicable	Not stated or unknown	
Building fires:-					
Confined to casualty	-	-	21	-	21
Confined to					
room of origin of fire)	1	108	6	5	120
roof or roof space )	-	-	1	-	1
floor of origin of fire	1	20	6	10	37
building of origin of fire	13	39	9	10	71
Extended beyond the building	6	10	1	8	25
Outdoor fires (including caravans):-					
Confined to hazard in which fire originated	3	3	4	1	11
Extended to buildings etc.	2	-	1	1	4
<b>TOTAL</b>	<b>26</b>	<b>180</b>	<b>49</b>	<b>35</b>	<b>290</b>

A casualty was considered to have been trapped when he was unable to escape for some reason even though he was aware of the fire.

Table 4 gives details of the casualties who were trapped in relation to the extent of the fires in which they died. In many cases, however, it was unknown whether or not the victim had been trapped. Even so, it can be inferred from the figures that casualties are only rarely trapped in fires in which the spread is small.

Table 5: Occupancy in which death occurred in relation to trapping of casualty

Occupancy in which death occurred	Whether casualty trapped				TOTAL
	Yes	No	Not applicable	Not stated or unknown	
Dwellings					
Houses - detached	1	12	3	4	20
- semi-detached	-	29	4	-	33
- terrace	8	43	9	5	65
- not stated	1	37	10	6	54
Flats - in block	-	25	9	10	44
- converted	4	13	5	4	26
- over shop	-	6	1	1	8
Caravans	-	2	2	1	5
Shacks, shanty dwellings	-	-	-	1	1
Industrial premises	5	4	3	-	12
Other indoor hazards	2	9	1	2	14
Outdoor hazards (other than caravans and external industrial hazards)	5	-	2	1	8
<b>TOTAL</b>	<b>26</b>	<b>180</b>	<b>49</b>	<b>35</b>	<b>290</b>

Table 5 shows the occupancies in which the deaths occurred according to whether or not the casualties were trapped.

Of the 14 casualties trapped in dwellings, 8 were trapped in terrace houses which were probably buildings of the older type. Indeed, most of the buildings where trapping definitely occurred were 19th Century buildings.

FATALITIES IN HOUSES AND FLATS IN RELATION TO GROUND FLOOR AREA OF BUILDING.

Table 6: Casualties in houses and flats in relation to ground floor area

Type of dwelling	Ground floor area (sq. ft)										TOTAL
	200 and under	201 - 400	401 - 600	601 - 800	801 - 1000	1001 - 1200	1201 - 1400	1401 - 1600	Over 1600	Not stated or unknown	
Houses	4	35	58	41	13	6	1	2	5	7	172
Flats	-	2	5	17	9	3	1	2	2	37	78
<b>TOTAL</b>	<b>4</b>	<b>37</b>	<b>63</b>	<b>58</b>	<b>22</b>	<b>9</b>	<b>2</b>	<b>4</b>	<b>7</b>	<b>44</b>	<b>250</b>



Casualties in houses and flats according to the ground floor area of the buildings are shown in Table 6. The most common ground floor area of houses where fatalities occurred was in the 401-600 sq.ft. range and, of flats, in the 601-800 sq.ft range.

DATE OF CONSTRUCTION OF DWELLINGS (HOUSES AND FLATS) WHERE DEATHS OCCURRED

Table 7: Date of construction of dwellings (houses and flats) where deaths occurred

Date of construction	Casualties		Number of dwellings at risk (thousands) **	Death rate per million dwellings
	Frequencies in survey	Estimated numbers in fires attended by fire brigades**		
1800 and before	8	18.4	*	-
1801 - 1820	2	4.6	*	-
1821 - 1840	2	4.6	*	-
1841 - 1860	16	36.8	900	40.9
1861 - 1880	35	80.5	1200	67.1
1881 - 1900	57	131.1	1700	77.1
1901 - 1920	16	36.8	1950	18.9
1921 - 1940	41	94.3	2725	34.6
1941 or later	37	85.1	3375	25.2
19th century***	10	-	*	-
20th century***	5	-	*	-
Not stated or not applicable***	21	-	*	-
<b>TOTAL</b>	<b>250</b>	<b>667.0<sup>†</sup></b>	<b>15100</b>	<b>44.2</b>

\*No data

\*\*J.F.R.O. estimates based on data from the Ministry of Housing and Local Government

<sup>†</sup> Actual totals, not estimates

\*\*\*In these instances the date of construction was uncertain or not applicable but it is not expected that their omission will affect the general conclusions.

<sup>††</sup>Estimates obtained by applying the correction 667/290, i.e. based on the total number of deaths reported to fire brigades.

Table 7 shows distribution of the dates of construction of houses and flats in which fatalities occurred in 1962, together with data for the numbers of dwellings at risk. The distribution of the number of fatalities

per million dwellings at risk according to date of construction is shown in Fig.1. The peak of the distribution corresponds to late 19th century buildings which had nearly 80 deaths per million dwellings at risk. The number of deaths was then considerably lower for early 20th century buildings at a figure of less than 20 per million dwellings at risk. The fact that more deaths occurred in older buildings may have been partly due to the social status and to the numbers of people occupying them. It is possible too, that elderly people living on their own tended to occupy older types of dwellings.

FATALITIES IN DWELLINGS (HOUSES AND FLATS) ACCORDING TO ROOM OF ORIGIN AND WHERE THEY WERE FOUND

Table 8: Fatalities in dwellings (houses and flats) classified according to room of origin and where they were found, regardless of whether or not they were still alive on discovery

Room	Frequencies		Percentages	
	Room of origin	Where casualties were found	Room of origin	Where casualties were found
Living room	86	63	34.4	25.2
Kitchen	30	20	12.0	8.0
Dining room	3	3	1.2	1.2
Bedroom	82	110	32.8	44.0
Stairs, hall	14	11	5.6	4.4
Garden or outside	2	16	0.8	6.4
outbuildings	5	3	2.0	1.2
Other rooms	11	11	4.4	4.4
Unknown or not stated	17	13	6.8	5.2
<b>TOTAL</b>	<b>250</b>	<b>250</b>	<b>100.0</b>	<b>100.0</b>

One hundred and forty one (or 56 per cent) of the fatalities were found in the room of origin of the fire; the remaining 109 (or 44 per cent) were found elsewhere. Table 8 shows that the proportions of casualties found in bedrooms and in gardens were higher than the proportions of fires starting in those areas. Often when the casualties were found in bedrooms and the fires had started elsewhere, the casualties appeared to have been asleep at the time of the fires.

THE CASUALTY - DETAILS OF AGE, SEX ETC.

Table 9: Casualty rates according to age group

Age group	No. of casualties	Population (millions) (June 1961)	Rate per million	
			1960(4)	1962*
Under 5 years	36	4.28	16.0	19.3
5-14 years	18	8.05	} 6.0	5.1
15-39 years	48	17.32		6.4
40-65 years	69	16.91		9.4
Over 65 years	119	6.21	27.0	44.1
TOTAL	290	52.77	10.0	12.6

Details of the age of casualties in relation to the source of ignition of the fires in which they died are given in Appendix II, Table 18. Table 9 shows the casualties at particular ages in relation to the numbers at risk. A high rate of incidence (44 per million), among the fatalities considered in this report, was associated with people over the age of 65 and in this age range there were about twice as many females as were males (Table 10). The next highest rate of incidence (19 per million) was among young children (age range less than 5 years). The number of fatalities per million at risk in 1962 is compared with the 1960 figures in Table 9. The rates for the two groups are seen to be similar apart from the over 65 age group where there were 27 deaths per million at risk in 1960 and 44 in 1962. The reason for this difference is not known. It is unlikely that there was an age bias in the 290 fatalities dealt with in this report. There was, however, a greater proportion of space heating fires in 1962\*\* than in 1960 - 32 per cent in 1960 and 39 per cent in 1962 - and space heating fires normally cause many of the deaths of old people. In fact, Table 18 shows that in 1962 about

\*Rates per million for 1962 were based on frequencies corrected by the factor 667/290, i.e. based on the total number of deaths reported to fire brigades.

\*\*This proportion does not differ significantly from the total proportion of space heating casualties in dwellings in the United Kingdom in 1962.

half the fatalities of over 65 years resulted from space heating appliance fires.

Table 10: Age and sex of casualties

Age Group	Sex		TOTAL
	Male	Female	
Under 5 years	24	12	36
5-14 years	11	7	18
15-39 years	27	21	48
40-65 years	35*	34	69
Over 65 years	40	79	119
TOTAL	137*	153	290

\*Includes 2 F.B. fatalities

Figure 2 and Table 10 show the ages of the casualties in relation to sex. In the age range up to and including 14 years about twice as many males as females died in the fires and at over 65 years, twice as many females as males. This picture is rather different from that in previous years when there were consistently more females than males but it is consistent with the deaths that occurred in caravans in 1962 and in 1963<sup>(5)</sup> where there were twice as many males as females in the younger age groups. The changing pattern may be due to changes in the cause pattern of fires (due to the weather etc. and to the use of new appliances) and to changes in the types of clothing worn by women.

When the ages of casualties are related to the sources of ignition of the fires in which they died, Table 18 shows that, where the source of ignition was known, the largest single cause of death of children under 5 years was oil stove fires, of people over 65, electric heaters and fires in grates and, of people of 6-64 years, smoking material fires. Where the source of ignition was unknown it is interesting to note that there is no statistical difference between the frequency pattern of this and the frequency pattern of oil stoves and smoking materials together (Table 11) and it may be that the unknown sources of ignition consist largely of the latter items.

Table 11: Age of casualties where source of ignition was oil stoves, smoking materials or unknown

Age	Oil stoves and smoking materials	Unknown
Under 5 years	14	9
5-14 years	9	3
15-39 years	16	18
40-65 years	23	20
Over 65 years	23	24
<b>TOTAL</b>	<b>85</b>	<b>74</b>

**FATALITIES CLASSIFIED ACCORDING TO WHETHER THEY WERE ALONE AT THE TIME OF THE FIRES**

At least 60 per cent of the fatalities were alone either in the building or in the room in which the fire originated at the time of the fires (Table 12), at least 38 per cent being alone in the building. Classified according to the age of the fatality, the table shows that 72 per cent of the children under the age of 5 and 69 per cent of the persons of over 65 years were alone in the room or in the building at the time of the fires and, in particular, that of the over sixty fives who were alone at the time of the fires, three-quarters were in fact alone in the building. The figures indicate the dangers both of old people living or being alone and of young children being left unattended. Of the 26 children alone under the age of 5 at least 8 had been alone for a period of less than 10 minutes and 7 of these were alone in the building in which the fire started.

Table 12: Fatalities alone classified according to age group

Fatality alone	Age Group					TOTAL	Percentage
	Under* 5 years	5-14 years	15-39 years	40-65 years	Over 65 years		
Alone in building	13	2	8	23	63	109	37.6
Alone in room in which fire originated	13	4	10	20	19	66	22.8
Not alone in room	10	12	23	14	12	71	24.5
Not stated, un- known, or not applicable	-	-	7	12	25	44	15.2
<b>TOTAL</b>	<b>36</b>	<b>18</b>	<b>48</b>	<b>69</b>	<b>119</b>	<b>290</b>	<b>100.0</b>
Proportion of casualties alone either in building or room	0.72	0.33	0.38	0.62	0.69	0.60	

\*When a group of children are together, none of whom are over 5, they are regarded as being alone.

#### CAUSES OF DEATHS

Twenty-six per cent of the casualties died from burns, 8 per cent from asphyxiation or the effects of smoke, and 60 per cent from a combination of the two. The remainder died as a result of explosion, suicide, etc.

Table 13 indicates the incapacities (if any) of the victims.

Table 13: Incapacities of casualties

Incapacity	Frequencies	Percentages
Not incapacitated	79	27.2
Incapacitated by youth	16)	5.5)
- by age	19)	6.6)
- by physical disability	47)	16.2)
- by mental disability	8) 193	2.8) 66.6
- by sleep	53)	18.3)
- by drink	1)	0.3)
- by drugs	3)	1.0)
- by two or more of the above	46)	15.9)
Not stated	18	6.2
<b>TOTAL</b>	<b>290</b>	<b>100.0</b>

The table shows that at least two-thirds of the victims suffered from one or more of the incapacities outlined in the table. At least 16 per cent (mostly old people) suffered some physical disability and at least 18 per cent were asleep at the time of their death. At least 27 per cent of the victims were not incapacitated in any way.

#### CONCLUSIONS

The main known causes of fires involving fatalities were smoking materials, open fires, oil stoves, and electric space heaters. These accounted for more than 50 per cent of the deaths. A further 26 per cent of the casualties died in fires of unknown source of ignition.

The victims of open and electric fires were generally old people, particularly women whose clothing became ignited while being worn. The fires were generally unguarded and a high percentage of the people were alone at the time of the fires. Often, too, the victim was subject to some physical disability.

Young children were the principal victims of oil stove fires. Left unattended, often only for a short time, they overturned the oil heaters during their play.

Smoking materials were chiefly responsible for deaths in the age groups not mentioned above, particularly smoking materials which had been dropped onto bedclothes or upholstery.

It would appear, therefore, that the number of deaths by fire would be reduced by some 40 per cent if care is taken

- (i) to keep all fires guarded, especially where old people are concerned,
- (ii) to keep oil stoves out of the way of young children and to ensure that the children are not left unattended,
- (iii) to stub out cigarette ends and to refrain from smoking in bed.

#### REFERENCES

1. The Registrar General's Statistical Review of England and Wales for the year 1962. Part I, Medical Tables. London, H.M.S.O. 1964.
2. Annual Report of the Registrar General for Scotland 1962. No.108. Edinburgh, H.M.S.O. 1963.
3. United Kingdom Fire Statistics 1962. Department of Scientific and Industrial Research and Fire Offices' Committee Joint Fire Research Organization, H.M.S.O. London 1964.
4. WOOLFE, H. Deaths due to Fire in 1960, Joint Fire Research Organization F.R. Note No.500/1962.
5. GAUNT, J. E. Fire hazards of caravans. Joint Fire Research Organization F.R. Note No.535/1964.



APPENDIX I

RESEARCH REPORT FATALITIES AS A SAMPLE  
OF THE TOTAL NUMBER NOTIFIED TO FIRE BRIGADES

Sources of ignition of fires causing fatalities in dwellings

Assuming that there is no bias in the Research Report fatalities, the expected frequencies are shown in brackets in Table 14 together with the actual frequencies obtained from the Research and K433 Reports. The differences between the two tested statistically, show no evidence, at the level of significance taken of any real difference in the causes of fatalities in dwellings.

Table 14: Sources of ignition of fires causing fatalities in dwellings

Source of ignition	Research Reports	K433* Reports
Electric space heaters	17 (24)	31 (24)
Fires in grates	47 (48)	49 (48)
Oil stoves	30 (27)	24 (27)
Smoking materials	39 (34)	30 (35)
Other	56 (58)	60 (58)
Unknown	61 (60)	59 (60)
Total	250	253

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\*Here the figures are based on a one-in-two sample of K433 reports of all fires attended by fire brigades (3).

APPENDIX II : TABLES 15-18

Table 15: Source of ignition in relation to material ignited first and provision of fire guard (where applicable)

Source of ignition	Provision of guard	Material ignited first										TOTAL	
		Clothing on person	Other and unspecified textiles	Bedding	Upholstery	Other and unspecified furniture	Structure	Fuel	Paper	Fumes	Other		Unknown
Candle	-	2	-	3	1	2	-	-	-	-	-	-	8
Chimney, flue	-	-	-	1	-	-	4	-	1	-	-	-	6
Electric fire, heater, radiator	{ Yes	1	-	1	-	-	-	-	-	-	-	-	2
	{ No	10	-	-	-	-	-	-	-	-	-	-	10
	{ Not stated	4	-	-	-	2	-	-	-	-	1	-	7
Electric television	-	-	-	-	-	5	-	-	-	-	-	-	5
Electric blanket	-	-	-	4	-	-	-	-	-	-	-	-	4
Electric (other apparatus)	-	1	-	2	-	3	-	1	-	-	1	-	8
Fire in grate igniting - bedding, clothing, linen	{ Yes	6	1	-	-	-	-	-	-	-	-	-	7
	{ No	21	-	3	-	-	-	-	-	-	-	-	24
	{ Not stated	6	1	-	-	-	-	-	-	-	-	-	7
- other materials	{ No	-	-	-	2	2	-	-	1	-	-	1	6
	{ Not stated	-	-	-	-	-	-	-	-	1	1	1	3
Gas cooker	-	4	-	-	-	-	-	1	-	-	-	-	5
Gas fire, heater, radiator	{ No	2	-	-	-	-	-	-	-	-	-	-	2
	{ Not stated	1	-	-	-	-	-	-	-	-	-	-	1
Gas (other apparatus)	-	2	-	-	-	-	-	1	-	-	-	-	3
Matches	-	1	-	1	-	-	-	1	1	-	-	-	4
Matches, children with	-	3	-	-	-	-	-	-	-	-	-	2	5
Oil stove	-	4	1	1	-	1	6	13	-	-	-	9	35
Oil (other apparatus)	-	1	-	-	-	1	-	-	-	1	-	-	3
Slow combustion stove	-	2	-	-	-	-	-	-	-	1	-	-	3
Smoking materials	-	1	1	27	12	1	-	-	-	-	3	1	46
Miscellaneous	-	1	1	-	2	-	-	-	-	1	2	5	12
Unknown	-	5	-	4	2	-	1	4	-	2	2	54	74
<b>TOTAL</b>	-	<b>78</b>	<b>5</b>	<b>47</b>	<b>19</b>	<b>17</b>	<b>11</b>	<b>21</b>	<b>3</b>	<b>6</b>	<b>9</b>	<b>74</b>	<b>290</b>

Table 16: Source of ignition in relation to the occupancy where fire occurred

Source of ignition	Occupancy							TOTAL
	DWELLINGS				Industrial premises	Other indoor hazards	Outdoor hazards (other than caravans and external industrial hazards)	
	House	Flat	Caravan	Shack, shanty dwelling				
Candle:	6	1	-	-	-	1	-	8
Chimney, flue	4	2	-	-	-	-	-	6
Electric fire, heater, radiator	14	3	-	-	1	1	-	19
Electric television	5	-	-	-	-	-	-	5
Electric blanket	4	-	-	-	-	-	-	4
Electric (other apparatus)	4	4	-	-	-	-	-	8
Fire in grate igniting								
- bedding, clothing, linen	27	11	-	-	-	-	-	38
- other materials	7	2	-	-	-	-	-	9
Gas cooker	2	3	-	-	-	-	-	5
Gas fire, heater, radiator	2	1	-	-	-	-	-	3
Gas (other apparatus)	1	2	-	-	-	-	-	3
Matches	4	-	-	-	-	-	-	4
Matches, children with	3	2	-	-	-	-	-	5
Oil stove	14	16	2	-	-	-	3	35
Oil (other apparatus)	-	1	1	-	1	-	-	3
Slow combustion stove	-	-	-	-	2	1	-	3
Smoking materials	26	13	2	-	3	2	-	46
Miscellaneous	4	1	-	1	4	-	2	12
Unknown	45	16	-	-	1	9	3	74
<b>TOTAL</b>	<b>172</b>	<b>78</b>	<b>5</b>	<b>1</b>	<b>12</b>	<b>14</b>	<b>8</b>	<b>290</b>

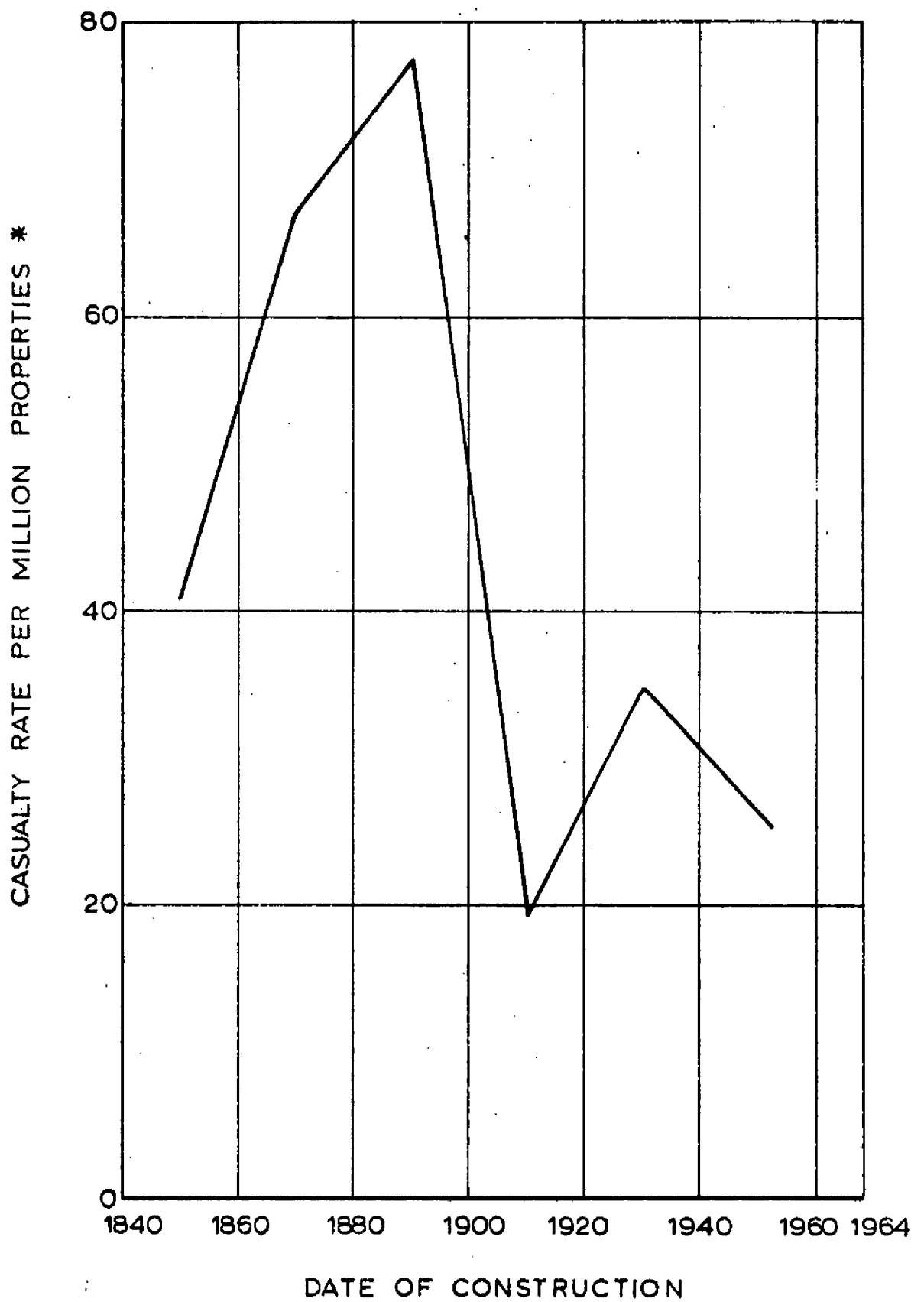
Table 17: Source of ignition in relation to the room of origin of fire

Source of ignition	Room of origin of fire									TOTAL	
	Living Room	Kitchen	Dining Room	Bedroom	Bathroom	Stairway, hall	Out buildings	Garden or outside	Other		Unknown, not stated, or not applicable*
Candle /	4	-	-	2	-	1	-	-	-	1	8
Chimney, flue	2	1	-	2	-	-	-	-	1	-	6
Electric fire, heater, radiator	3	2	1	10	-	-	-	-	-	3	19
Electric television	5	-	-	-	-	-	-	-	-	-	5
Electric blanket	-	-	-	4	-	-	-	-	-	-	4
Electric (other apparatus)	2	1	-	3	-	-	-	-	1	1	8
Fire in grate igniting											
- bedding, clothing, linen	26	2	2	4	-	-	1	-	-	3	38
- other materials	6	1	-	1	-	-	-	-	-	1	9
Gas cooker	-	5	-	-	-	-	-	-	-	-	5
Gas fire, heater, radiator	-	2	-	-	-	-	-	-	-	1	3
Gas (other apparatus)	-	1	-	1	-	-	-	-	-	1	3
Matches	1	1	-	1	-	-	1	-	-	-	4
Matches, children with	2	2	-	-	-	1	-	-	-	-	5
Oil stove	5	5	-	6	1	11	-	-	-	7	35
Oil (other apparatus)	1	-	-	1	-	-	-	-	-	1	3
Slow combustion stove	-	-	-	-	-	-	-	-	-	3	3
Smoking materials	10	-	-	29	-	-	2	-	-	5	46
Miscellaneous	2	-	-	-	-	-	1	1	-	8	12
Unknown	17	7	-	19	-	1	2	1	8	19	74
<b>TOTAL</b>	<b>86</b>	<b>30</b>	<b>3</b>	<b>83</b>	<b>1</b>	<b>14</b>	<b>7</b>	<b>2</b>	<b>10</b>	<b>54</b>	<b>290</b>

\* Not applicable includes fires not in dwellings.

Table 18: Source of ignition in relation to age group

Source of ignition	Age Group					TOTAL
	Under 5 yrs.	5-14	15-39	40-64	65 yrs. and over	
Candle	-	-	-	3	5	8
Chimney, flue	1	-	-	1	4	6
Electric fire, heater, radiator	1	3	1	3	11	19
Electric television	-	3	1	1	-	5
Electric blanket	-	-	-	-	4	4
Electric (other apparatus)	1	-	2	-	5	8
Fire in grate igniting						
- bedding, clothing, linen	4	2	2	4	26	38
- other materials	2	-	1	-	6	9
Gas cooker	1	-	1	2	1	5
Gas fire, heater radiator	-	-	-	2	1	3
Gas (other apparatus)	-	-	-	1	2	3
Matches	-	-	-	2	2	4
Matches, children with	3	2	-	-	-	5
Oil stove	14	3	4	7	7	35
Oil (other apparatus)	-	-	-	1	2	3
Slow combustion stove	-	-	1	2	-	3
Smoking materials	-	2	12	16	16	46
Miscellaneous	-	-	5	4	3	12
Unknown	9	3	18	20	24	74
<b>TOTAL</b>	<b>36</b>	<b>18</b>	<b>48</b>	<b>69</b>	<b>119</b>	<b>290</b>



\* Estimates based on data supplied by the Ministry of Housing and Local Government

FIG.1. FATALITIES IN HOUSES AND FLATS PER MILLION DWELLINGS IN RELATION TO THE DATES OF CONSTRUCTION OF DWELLINGS

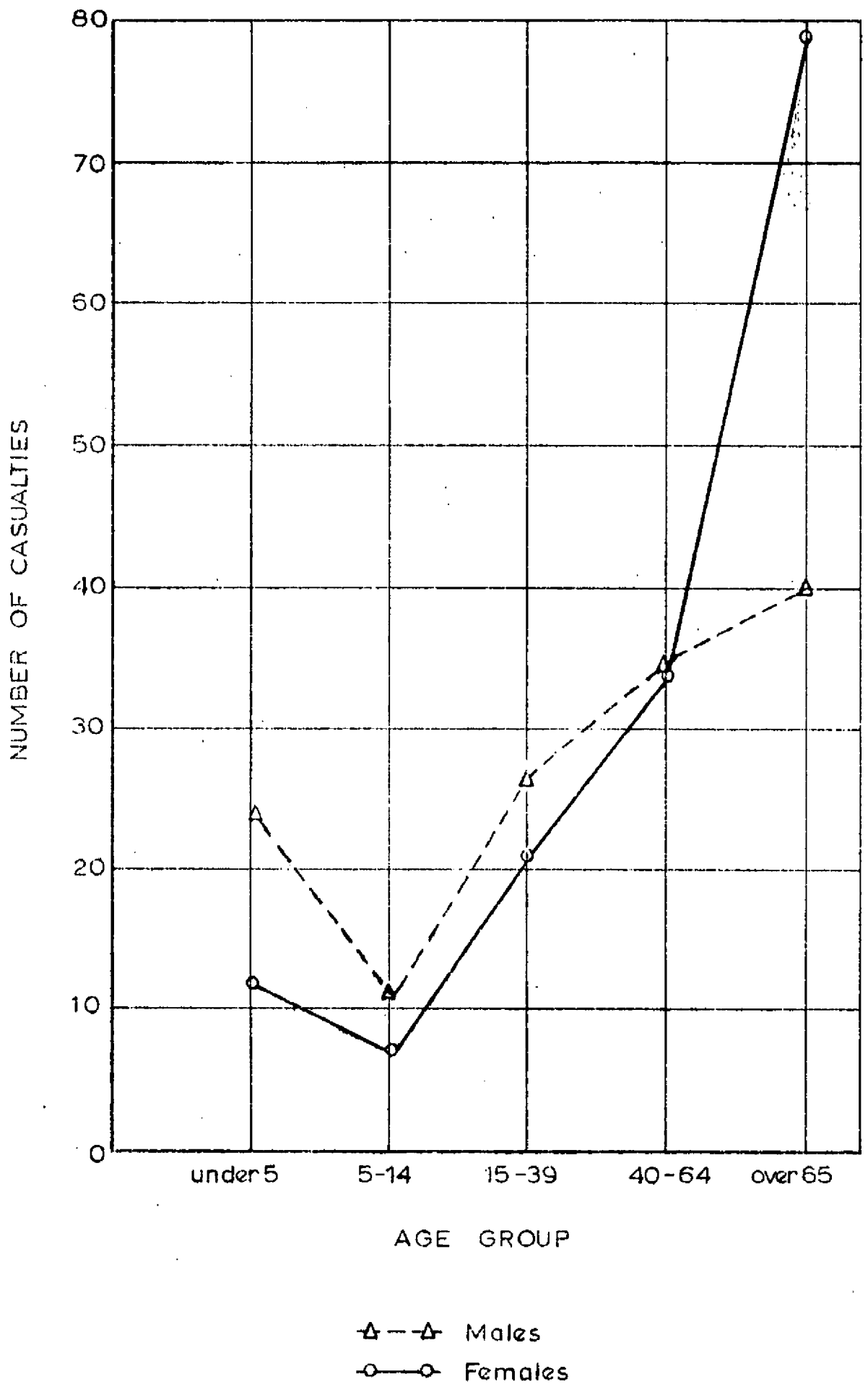


FIG. 2. AGE AND SEX OF CASUALTIES