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FIRES IN DWELLINGS OF SIX OR MORE STOREYS IN 1956

by

Nicola Savage

SUMMARY

As part of a study of fires in dwellings in 1956 an analysis has been made of those which occurred in blocks of flats of six or more storeys. There were 132 such fires reported of which twenty-seven were in buildings of post-war construction and 105 in buildings of pre-war construction. About 97% of the fires in high flats were confined to the compartment in which they originated. The analysis revealed no major differences between fires in high flats and fires in dwellings in general except that the proportion caused by heating apparatus was very much lower in the flats. None of the reports examined revealed any difficulties or deficiencies in connexion with escape from fire in post-war blocks of flats.

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## INTRODUCTION

In recent years there has been a marked increase in the number of tall buildings being erected in Great Britain and the possible danger from fire has been very much in mind in their construction. A survey is being made of fires which occurred in dwellings in 1956 and the reports of fires which occurred in blocks of flats of six or more storeys have been examined as part of this investigation. This note describes the information obtained from the reports.

One hundred and thirty-two reports have been studied and these have been examined in two groups - (a) buildings of post-war construction (twenty-seven in number) and (b) buildings of pre-war construction (105 in number).

## CAUSES OF FIRE

The supposed causes of the fires in the two groups are set out in Table I which indicates that frequent causes of fire in both groups are:- matches, cigarettes, ashes etc. Most of the fires caused by ashes were due to their careless disposal in dust and refuse chutes and were confined to the chutes.

Most of the fires in both groups of buildings were caused by thoughtlessness rather than by defective equipment. In post-war flats only two of the twenty-seven fires were caused by heating apparatus (coal fires etc.) while in pre-war flats the number was eighteen (17.1% of the fires). In dwellings as a whole about half of the fires are caused by heating equipment. While it is clear that the fire hazard of heating is lower in high flats than in other dwellings, it is not possible from the figures at present available to say why this should be so. It may be that a large proportion of tall blocks of flats, particularly those built in the post-war period, are centrally heated so that a common source of fires in dwellings is largely eliminated.

The largest single group of fires (21.0%) in the pre-war flats was attributed to cookers, both gas and electric. The proportion of fires due to cookers in the post-war flats appears to be rather lower but because of the small numbers involved it is not possible to say whether the apparent difference is a real indication of a lower hazard.

## CASUALTIES

Table II lists the casualties which occurred in these fires. In general the pattern of injuries reported does not differ from those reported in fires in other dwellings. (Every 100 fires result in about 8.5 casualties including between one and two fatalities both in high flats and other dwellings.) Detailed information on fatal casualties is being collected on a long term basis and data on casualties in high flats will be examined from time to time.

## DAMAGE

None of the twenty-seven fires in buildings of post-war construction spread beyond the compartment in which the fire originated and ten of them were extinguished before the arrival of the Fire Brigade. Fourteen of the fires originated in, and were confined to, non-residential parts of the flats such as lifts, stairs etc., six of them in dust chutes.

Of the 105 fires in buildings of pre-war construction 101 did not spread beyond the compartment of origin of the fire and twenty-seven of these were extinguished before the arrival of the Fire Brigade. Thirty-three of the fires originated in, and were confined to, non-residential parts of the buildings, fourteen of them in dust chutes. A comparison of the damage caused by the fires in pre-war and post-war buildings is given in Table III.

Of the four fires which spread beyond the compartment of origin three were under control less than twenty minutes after the arrival of the Fire Brigade; they resulted in only slight structural damage and there were no casualties and no-one had to be rescued. Two of the fires spread downwards through the floors of rooms in which they originated. It is unlikely that either of these fires would have spread beyond the room of origin had they occurred in flats built to present day standards of construction. The third fire spread from a window frame to the roof covering. The fourth fire involved the whole of a six storey terraced building which had a four storey annexe at the rear. The ground floor and basement were occupied by a fruiterer and a fancy goods dealer. On the first floor were a restaurant and private flats and the upper floors were all private flats. The fire, which was caused by malicious ignition at the rear of the premises, was discovered by an occupant of the building at 2.50 a.m. It was "under control" two hours later and the last of the ten fire appliances attending returned to the station at 8.27 p.m. the same day. Eleven people were trapped by the fire and had to be assisted to safety by members of the Fire Brigade. Details of the rescues are given in Table IV. Two people were detained in hospital after the incident and the building was very severely damaged. This was the only fire in high flats from which people had to be rescued or escaped by some special means.

#### CONCLUSIONS

In fires in dwellings as a whole in 1956 about 93% were confined to the compartment of origin while 97% were so confined in high flats. Similarly the number of casualties in high flats seems to indicate little difference between them and other dwellings in respect of the life hazard.

The proportion of fires in high flats caused by heating apparatus is very much lower than the figure for dwellings in general - especially in flats of post-war construction and this may be due to a greater use of central heating as the main source of heat. The proportion of fires caused by ashes is very high but is mainly due to fires starting in and confined to dust and refuse chutes. Where this results from the difficulty of disposing of ashes from fireplaces and boilers it is a hazard which could be avoided by the use of central heating or fixed gas or electric heating appliances.

The figure for fires started by children playing with matches etc. is rather high in flats of post-war construction. It is not clear why this should be so but it is possible that post-war flats, especially Local Authority flats, have a higher proportion of children among the occupants.

Escape from fire in high flats is presumably liable to be more difficult than escape from fire in other dwellings unless special provisions are made in the buildings. The figures contained in this analysis, however, throw no light on this question since escape was necessary in only one of the fires; the incident in question occurred in an old building of mixed occupancy in which insufficient provision for escape from fire appears to have been made. The point will be further examined as more statistics become available.

It is realised that the figures given in this note can be really informative only if rates of incidence can be calculated. This has, however, not been possible as no data on the numbers of flats at risk are at present available and attempts to obtain the information have so far proved unsuccessful. Efforts to complete the data are continuing.

TABLE I

Supposed Cause of Fire	Number of Fires	
	Pre-war Construction	Post-war Construction
Ashes	14	5
Blowlamp	3	-
Candle	2	-
Cooker		
a) electric	11)	2)
b) gas	10)	-)
c) unknown	1)	-)
	22	2
Heating apparatus		
a) coal fire	2)	1)
b) electric fire	10)	-)
c) gas fire	-)	1)
d) paraffin heater	3)	-)
e) soot-burning	3)	-)
	18	2
Electrical apparatus (other than cooking and heating)		
a) blanket	1)	1)
b) iron	-)	2)
c) lift mechanism	5)	-)
d) refrigerator motor	4)	-)
e) other	7)	-)
	17	3
Malicious ignition	1	-
Matches, cigarettes, tapers	14)	7)
Matches, cigarettes, tapers - children with	4)	6)
	18	13
Unknown or doubtful	4	-
Other	6	2
<b>TOTAL</b>	<b>105</b>	<b>27</b>

TABLE II  
CASUALTIES

CONSTRUCTION	AGE OF CASUALTY	SEX	CAUSE OF FIRE	INJURIES SUSTAINED
PRE-WAR CONSTRUCTION	77	F	Direct ignition of clothing by unknown source	<u>FATAL</u> burns
	2	F	Direct ignition of clothing by electric fire	Slight burns
	9 $\frac{1}{2}$	F	Overturned paraffin stove flared up and ignited curtains	Slight burns
	15	F	Direct ignition of clothing by electric fire	Extensive burns
	17	F	Gas supply to oven left turned on became ignited by lighted gas burner nearby	Slight burns
	84	F	Unknown	Shock
	40	F	Malicious ignition	Shock
	45	M	Malicious ignition (same fire)	Suspected fracture of spine
	29	M	Arcing between electric socket connectors	Slight burns
	36	M	Careless disposal of lighted cigarette on to armchair	Injury to right arm (FIRE BRIGADE)
POST-WAR CONSTRUCTION	61	F	Accumulation of coal gas ignited by pilot flame of gas water heater	Shock

TABLE III

DAMAGE

CONSTRUCTION	NO: OF FIRES	TYPE OF DAMAGE		
		STRUCTURAL (SERIOUS)	STRUCTURAL (SLIGHT)	CONTENTS AND/OR DECORATIONS ONLY
PRE-WAR	105	1	26	78
POST-WAR	27	-	6	21

TABLE IV

DETAILS OF RESCUES

SEX	AGE	METHOD OF RESCUES AND ESCAPE
M	-	Short ladder from first floor
F	-	Short ladder from first floor
M	65	Fire escape from second floor
F	61	Fire escape from second floor
F	25	Fire escape from third floor
M	45)	Climbed from third floor window to flat roof below, then by Fire Brigade extension ladder
F	40)	
M	50	Fire escape from fourth floor
M	61)	Escaped from fifth floor window on to adjoining roof and descended through skylight
M	63)	
M	-)	
M	-)	