

LIBRARY REFERENCE ONLY

M.O.T. AND F.O.C. 11  
FIRE RESEARCH  
ORGANIZATION  
REFERENCE LIBRARY 1/2  
No. A99FR. N 708



# Fire Research Note No.708

FIRE BRIGADE ATTENDANCE AT CHIP PAN FIRES

by

E. D. CHAMBERS

August 1968.

FIRE  
RESEARCH  
STATION

F.R. Note No. 708.  
August 1968.

FIRE BRIGADE ATTENDANCE AT CHIP PAN FIRES

by

E. D. Chambers

SUMMARY

The probability of a fire brigade having been called to a chip pan fire is obtained as a function of the size of the fire.

Key words: attendance, brigade, loss, cooker, distribution,  
domestic.

Crown copyright

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

MINISTRY OF TECHNOLOGY AND FIRE OFFICES' COMMITTEE  
JOINT FIRE RESEARCH ORGANIZATION

# FIRE BRIGADE ATTENDANCE AT CHIP PAN FIRES

by

E. D. Chambers

## INTRODUCTION

In the United Kingdom, fire statistics are usually based on local authority fire brigade reports. Insurance claims are not systematically analysed. Most small fires do not therefore get recorded in a convenient way for further study.

The Scottish Special Housing Association owns 64000 houses in and around Glasgow and in certain areas selected for economic expansion. Records are kept of requests from tenants for repair work.

The repair cost estimate for damage caused by a chip pan fire can often be associated with a fire brigade report of the incident. When this is done, a useful relationship between the eventual size of a fire and the probability of a fire brigade having attended it is obtained.

## METHOD

By courtesy of the Secretary of the SSHA, details of 97 chip pan fires that occurred in 1967 were supplied to the Joint Fire Research Organization. Dates and addresses were sufficient to locate fire brigade reports on 47 of these incidents.

These reports were classified into those that were extinguished before arrival of the fire brigade (19) and those that were not (28).

Table 1 gives the number of fires in each class for which the estimated repair cost fell in various ranges. When the cost was on the boundary of two ranges, "half" a fire was allocated to each.

Table 2 gives similar information for wider, overlapping ranges, in each of which there are more than ten fires. These figures are plotted on a log-probability scale in Figure 1.

Table 1. Fire Brigade attendance at  
chip pan fires in SSHA houses  
vs. repair cost in certain ranges - 1967

Estimate of repair costs	Not attended by FB	Attended by FB		Total number of fires
		Out on arrival of FB	Extinguished by FB	
Under 10/-	13	-	2	15
10/- to £1	$\frac{1}{2}$	1	-	$1\frac{1}{2}$
£1 to £2	2	-	-	2
£2 to £5	$10\frac{1}{2}$	2	$\frac{1}{2}$	13
£5 to £10	16	2	$3\frac{1}{2}$	$21\frac{1}{2}$
£10 to £20	6	8	$4\frac{1}{2}$	$18\frac{1}{2}$
£20 to £50	2	6	$8\frac{1}{2}$	$16\frac{1}{2}$
£50 to £100	-	-	$3\frac{1}{2}$	$3\frac{1}{2}$
£100 to £200	-	-	4	4
£200 to £500	-	-	$\frac{1}{2}$	$\frac{1}{2}$
£500 to £1000	-	-	-	-
£1000 to £2000	-	-	1	1
	50	19	28	97

Table 2. Fire brigade attendance at chip pan fires in SSHA houses vs. repair cost in certain overlapping ranges - 1967

Estimate of repair costs	Not attended by FB	Attended by FB		Total number of fires
		Out on arrival of FB	Extinguished by FB	
10/- to £5	13 (78.8%)	3 (18.2%)	½ (3.0%)	16½ (100%)
£1 to £10	28½ (78.1%)	4 (11.0%)	4 (11.0%)	36½ (100%)
£2 to £20	32½ (61.3%)	12 (22.6%)	8½ (16.0%)	53 (100%)
£5 to £50	24 (42.5%)	16 (28.3%)	16½ (29.2%)	56½ (100%)
£10 to £100	8 (20.8%)	14 (36.4%)	16½ (42.9%)	38½ (100%)
£20 to £200	2 (8.3%)	6 (25.0%)	16 (66.7%)	24 (100%)

#### DISCUSSION

Figure 1 confirms, as would be expected, that the larger a fire the more likely is a fire brigade attendance (curve A/B). Also to be expected is the increase in the percentage of fires that the fire brigade actually extinguishes (curve B/C).

Quantitatively, when the repair cost is £11 there is a 50% chance that the fire brigade will not have been called. Thus the number of fires of this size that occur is twice that suggested by fire brigade statistics.

When the repair cost is £40, there is a 50% chance that the services of the fire brigade are not actually required to extinguish the fire.

It is important to note that the repair cost to the landlord does not represent the total direct loss. It would be difficult to estimate the loss to the tenant in small fires, since this would often depend on indeterminate inconveniences like having to wash curtains. The sum of losses of this kind incurred by landlord and tenant constitutes the total direct loss (roughly speaking, the amount that might be claimed under a single fire insurance policy).

It seems not unreasonable to assume that the total direct loss might be something like twice the landlord's repair cost. In one fire, the largest examined, there is support for this, the approximate figures being £2050 and £1050 respectively.

As a matter of interest, there would seem to be a rough lower limit to the cost of a chip pan fire, since each makes some 4s. worth of fat unusable.

#### CONCLUSIONS

About half the chip pan fires that tenants report to their landlord are not attended by a fire brigade, the proportion being very much higher for the smaller fires.

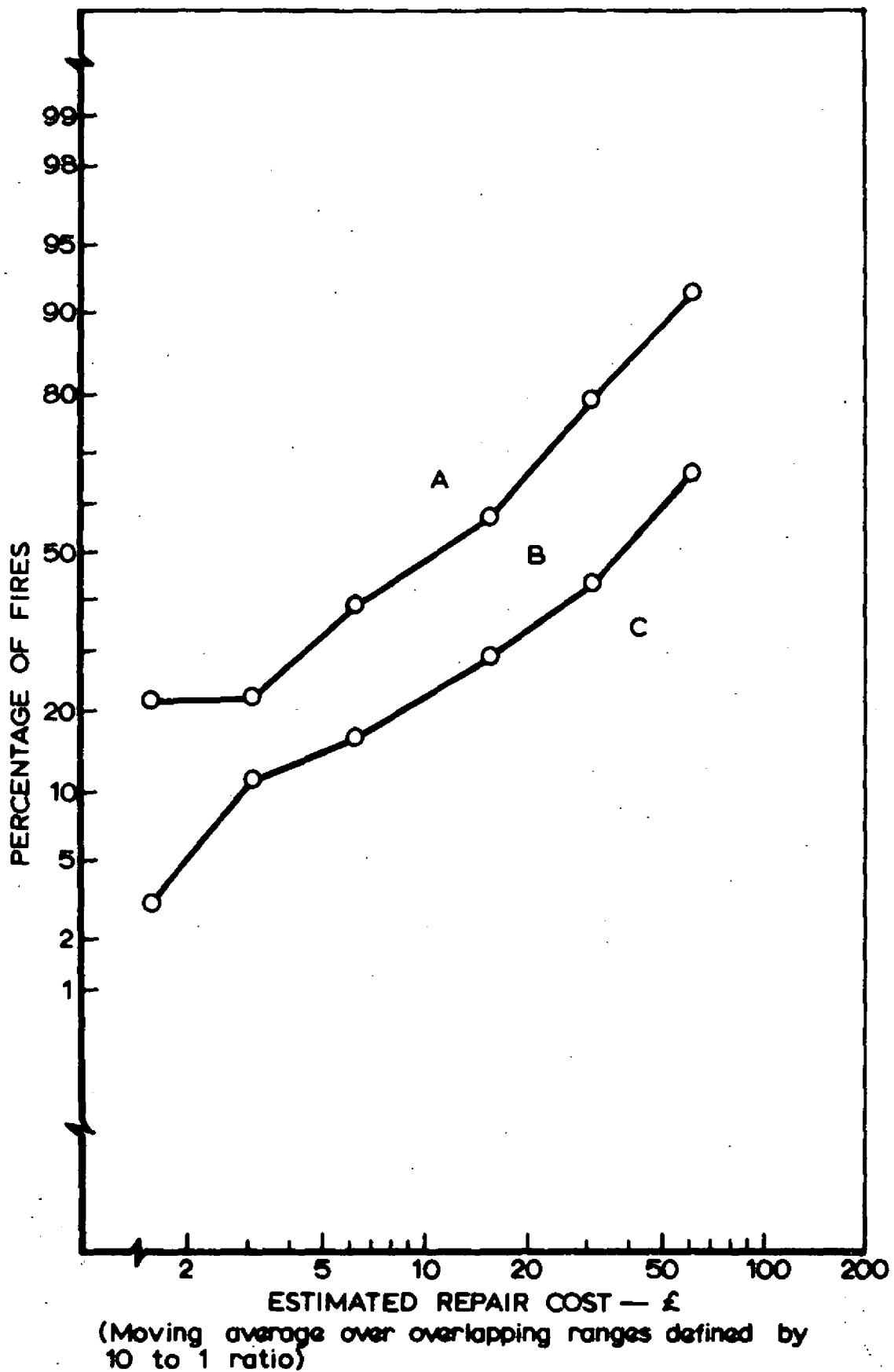
When the direct loss in a fire is about £20, there is a 50% chance that the fire brigade will not have been called.

When the direct loss is about £80, there is a 50% chance that the services of the fire brigade are not actually required to extinguish the fire.

#### ACKNOWLEDGEMENTS

The work described in this paper forms part of the programme of the Joint Fire Research Organization of the Ministry of Technology and the Fire Offices' Committee; the paper is published by permission of the Director of Fire Research.

Thanks are due to the Scottish Special Housing Association Ltd for supplying information, and to Misses J. E. Hudson and S. F. Nash of the Joint Fire Research Organization for assistance with the statistical analysis.



- A Not attended by Fire Brigade
- B Out on arrival of Fire Brigade
- C Extinguished by Fire Brigade

FIG. 1. FIRE BRIGADE ATTENDANCE AT CHIP PAN FIRES IN SCOTTISH SPECIAL HOUSING ASSOCIATION HOUSES AGAINST REPAIR COST — 1967

