# Fire Research Note No 798

STREET NUMBERS OF HOUSES WHERE FIRES OCCUR

by

E. D. CHAMBERS

February 1970

FIRE RESEARCH STATION

F.R. Note No. 798
February, 1970.

# STREET NUMBERS OF HOUSES WHERE FIRES OCCUR

by

E. D. Chambers

SUMMARY

Selecting houses with given street numbers is shown to be a convenient basis for experimental approaches to fire prevention.

Key words: Area, British, comparison, distribution, domestic, fire prevention



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

F.R. Note No. 798
February, 1970.

# STREET NUMBERS OF HOUSES WHERE FIRES OCCUR

by

E. D. Chambers

## INTRODUCTION

Little is known about the comparative effectiveness of various methods of educating private householders in fire prevention matters; for example, personal visits by firemen or the distribution of leaflets. The most convincing indication of the success of these particular approaches would be a reduction in the number or the size of fires, or both, in the houses covered, compared with similar houses not covered.

It would be convenient to select and identify houses covered by an experimental scheme more readily than from a combination of maps, gazeteers and local knowledge.

One possibility would be to concentrate the attack on those houses with a certain street number (or group of numbers), and to compare the subsequent fire record of these houses with those with higher and lower numbers. This has the advantages of automatically providing suitable "control" houses and of being administratively simple. To provide some statistical background for such a scheme, the distribution of fires by the street number of the house where the fire occurred was examined for a number of fire authority areas.

It should perhaps be noted that this will not necessarily be the same as the distribution of <u>all</u> street numbers in the same areas.

## METHOD

One of the highest street numbers in the United Kingdom is 2629 London Road, Glasgow, so Glasgow was chosen as representative of areas where long streets (continuously numbered) occur.

Five hundred Glasgow street numbers were obtained from fire reports (Forms K433) for 1967. Suffix letters to numbers were ignored.

Other areas examined, representing smaller towns and country areas, were Glamorgan, Gloucester (City), Gloucestershire, Great Yarmouth and Grimsby.

For each of these areas, one hundred street numbers were similarly obtained from fire reports.

A note was kept of how many houses in each area had names only. Table 1 and Fig. 1 illustrate the results.

Table 1

| Range of street numbers | Glasgow (1st sample) | Glasgow (2nd sample) | Glasgow (3rd sample) | Glasgow (4th sample) | Glasgow (5th sample) | Glamorgan | Gloucester | Gloucestershire | Great Yarmouth | Grimsby |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 to 10 | 16 | 21 | 13 | 17 | 15 | 34 | 18 | 35 | 25 | 14 |
| 11 to 20 | 14 | 12 | 8 | 11 | 16 | 23 | 23 | 14 | 17 | 15 |
| 21 to 50 | 21 | 25 | 28 | 17 | 23 | 22 | 27 | 32 | 32 | 31 |
| 51 to 100 | 15 | 15 | 9 | 21 | 16 | 11 | 18 | 6 | 16 | 19 |
| 101 to 200 | 21 | 16 | 23 | 12 | 13 | 7 | 12 | 11 | 8 | 14 |
| 201 to 500 | 7 | 5 | 10 | 12 | 12 | 3 | 2 | 2 | 2 | 7 |
| 501 to 1000 | 6 | 5 | 5 | 7 | 5 | - | - | - | - | - |
| 1001 and over | - | 1 | 4 | 3 | - | - | - | - | - | - |
| Total numbered houses | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Names only | - | 1 | - | - | 1 | 18 | 3 | 33 | - | 2 |

## DISCUSSION AND CONCLUSIONS

As would be expected, the larger urban areas tend to have higher street numbers, and a smaller proportion of houses with names only.

If it was decided to attempt to reduce the frequency of a well defined type of fire by a particular educational method, a useful starting point might be to construct from fire reports for the area concerned a graph similar to Fig. 1.

If it was then decided that the sample of houses to be subjected to the experimental procedure should include say 1 per cent of those in which fires could be expected to occur, a suitable batch of street numbers could readily be selected from the graph. (In doing this, it is suggested that numbers well away from 13 should be chosen, since it is known that this number is not allocated in some numbering schemes).

Any effect of the educational approach would be expected to show up as a kink in the straight line graph in subsequent years. Provided that the effect was large enough, its magnitude would be estimated from extrapolation of the straight lines on either side of the kink, and measuring their separation.

As a matter of interest, the log normal distributions fitted in Fig. 1 seem to have the same standard deviation, its antilog being a ratio of about 4.6. A parameter such as the median would thus be sufficient to specify the street number distribution for an area.

ACKNOWLEDGEMENT

Thanks are due to Miss J. E. Hudson, formerly of the Joint Fire Research Organization, for assistance in compiling the illustrative statistics.

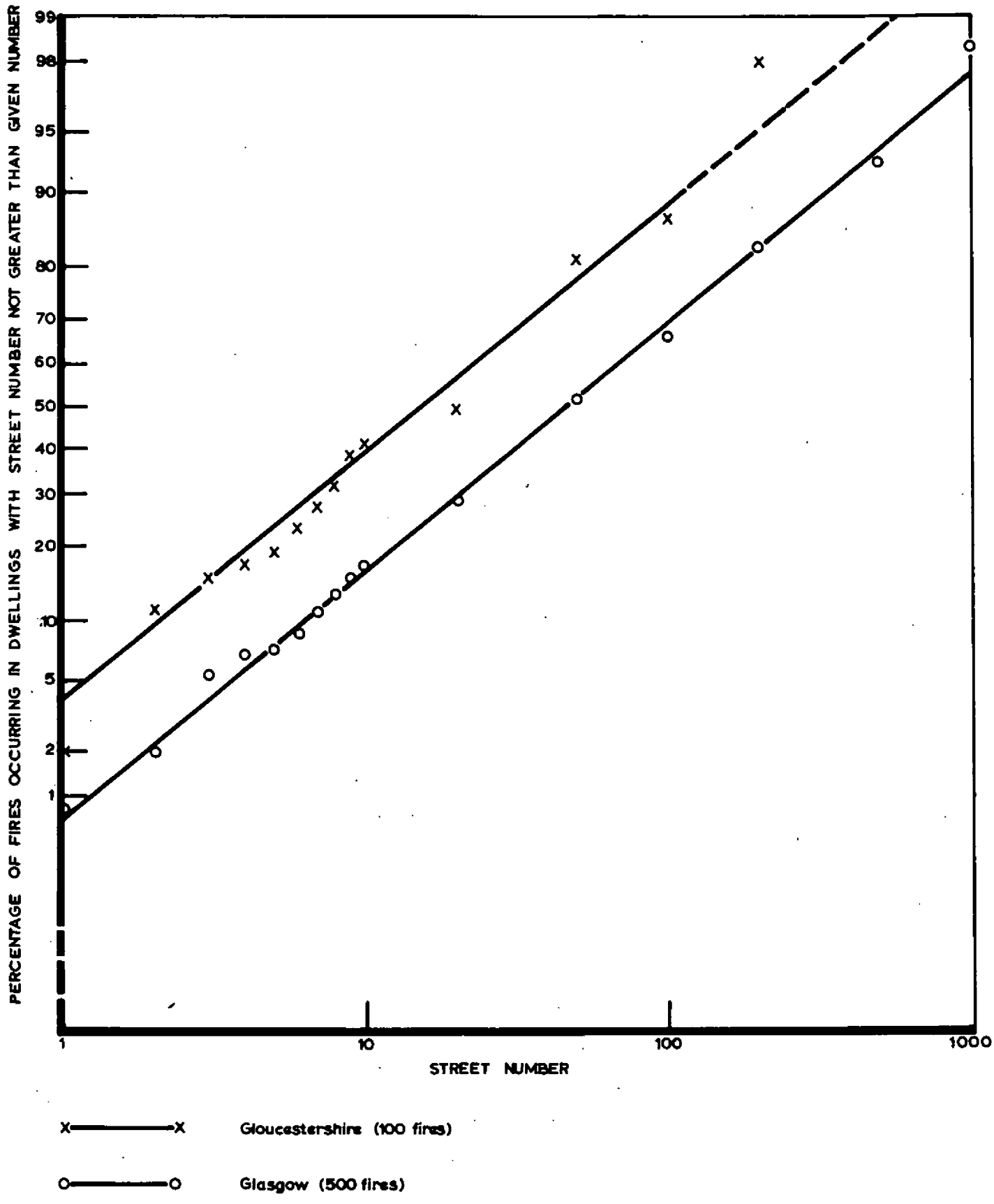


FIG. 1. STREET NUMBER DISTRIBUTIONS FOR HOUSES WHERE FIRES OCCUR: GLASGOW AND GLOUCESTERSHIRE 1967