Fire Research Note No. 801

EXETER CHIP PAN SAFETY CAMPAIGN: EFFECT ON FIRE FREQUENCY

by

E. D. CHAMBERS

March 1970

FIRE RESEARCH STATION

F.R.Note No. 801
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(Superseding F.R.Note No.679
dated September 1967)

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SUMMARY

Distribution of a leaflet on chip pan safety is, using a control chart technique, shown to have resulted in a statistically significant reduction in fire frequency. The maximum effect appears to have been about eighteen months after the campaign.

KEY WORDS: Cooker, Cost benefits, Domestic, Fire prevention, Fire statistics, Time series.

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

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INTRODUCTION

Between October 1966 and January 1967, a leaflet on the safe use of chip pans was distributed to every household in in Exeter.

If the recipients had acted on the advice given, a reduction in the number of chip pan fires might have been expected.

Reports of fires attended within the city by the City of Exeter Fire Brigade have been examined, and a comparison made with fire statistics for the United Kingdom.

An indication can be obtained that the compaign was effective in reducing the number of fires.

CAMPAIGN

At a meeting of the Exeter Home Safety Committee held on 1st October 1965, discussion took place regarding the frequency of chip pan fires. It was resolved to form a Sub-Committee to publicise the dangers of chip pan frying.

The Sub-Committee included representatives of gas, electricity, education and fire brigade interests. A leaflet was prepared.

Some 30 000 copies were distributed to all households in the city, mainly by inclusion with rates demand notices in October 1966. Other households were visited by members of voluntary organisations, and a few received the leaflet by post. Distribution was completed by January 1967.

EXETER FIRE STATISTICS

All reports of fires attended by the City of Exeter Fire Brigade since 1956 were looked through, and those in which the material first ignited appeared to be fat (or oil) used for frying were examined in detail.

Those occurring outside the city, in the area attended by the city fire brigade by agreement with Devon County Fire Service (since 1st April 1968, Devon and Torbay Joint Fire Service), were excluded.

UNITED KINGDOM FIRE STATISTICS

Figures were extracted from the annual publication 'United Kingdom Fire Statistics' (and its predecessors), for fires in buildings in which the material first ignited is described as 'Food - fat'.

GRAPH

Figure 1 shows the number of fat fires in Exeter, plotted as a moving annual total at quarterly intervals.

The analogous United Kingdom statistics have been adjusted to the population of Exeter, and are shown for comparison. Upper and lower confidence limits have also been calculated[1] such that, assuming a Poisson distribution, an annual number of fires outside each of these limits would arise by chance on less than one occasion in 40.

The boundary extensions during 1963 and 1966 did not involve large transfers of population.

DISCUSSION

It was in October 1965 that the Exeter Home Safety Committee resolved to form the sub-committee to publicise the dangers of chip pan fires. In retrospect, this can be seen to have been at a time when the Exeter fire frequency exceeded the upper confidence limit shown on the graph. Thus the concern felt can be statistically justified.

After the campaign, the frequency fell below the lower confidence limit. On average only one of the quarterly figures would do so every ten years, so the fact that one does so eighteen months after the campaign is a useful indication that the effect was then at its greatest.

Because of the proportionately large random variation in the small numbers of fires of this type occurring in Exeter, it is not possible to estimate the number of fires prevented by the campaign, only to state that, on statistical evidence, it is very likely that some were.

Even one fire prevented could have paid for the apparently quite modest cost of the campaign.

CONCLUSIONS

The distribution of a leaflet appears to have had a statistically significant effect on the frequency of chip pan fires in Exeter. The maximum effect was probably about eighteen months afterwards.

REFERENCE

(1) FISHER, R.A., and YATES, F. Statistical Tables for Biological Agricultural and Medical Research. p.6. London, 1948. Oliver and Boyd.

ACKNOWLEDGMENTS

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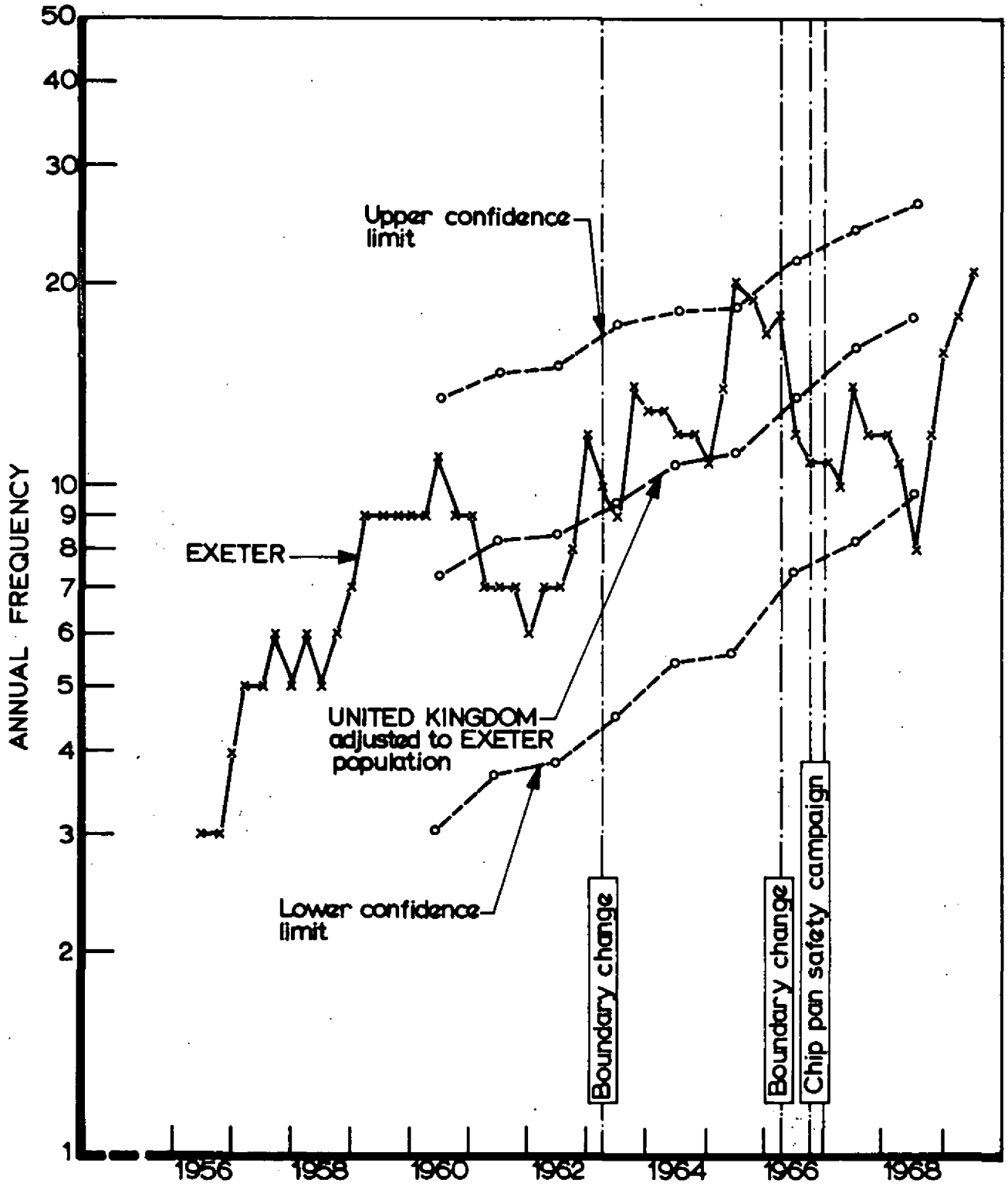

FIG. 1. ANNUAL FREQUENCY OF FIRES IN BUILDINGS IN WHICH MATERIAL FIRST IGNITED WAS FAT: EXETER, 1955–1969