

**LIBRARY REFERENCE ONLY**

THE LIBRARY  
FIRE RESEARCH STATION  
BOREHAM WOOD  
HANTS.

No. A99FR . N . 679



# Fire Research Note

## No. 679

THE STATISTICAL BACKGROUND TO THE  
EXETER CHIP PAN SAFETY CAMPAIGN

by

E. D. CHAMBERS

# FIRE RESEARCH STATION

September, 1967.

F.R. NOTE No. 679  
September, 1967.

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

THE STATISTICAL BACKGROUND TO THE  
EXETER CHIP PAN SAFETY CAMPAIGN

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

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

THE STATISTICAL BACKGROUND TO THE  
EXETER CHIP PAN SAFETY CAMPAIGN

INTRODUCTION

Between October 1966 and January 1967, a leaflet on the safe use of chip pans was distributed to every household in Exeter. (Further details are given in Appendix I).

If the recipients act on the advice given, a reduction in the number of chip pan fires might be 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.

It is hoped that it will thus be possible to observe whether the campaign is effective in reducing the number of fires.

Exeter Fire Statistics

All reports of fires attended by the City of Exeter Fire Brigade since 1955 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, 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  $2\frac{1}{2}$  per cent of occasions.

No special allowance was made for a boundary extension during 1963, which did not involve a large transfer of population.

### Discussion

In October 1965 the Exeter Home Safety Committee resolved to form a Sub-Committee to publicise the dangers of chip pan fires. This was around the period when the Exeter incidence of such fires exceeded the upper confidence limit shown on the graph, and there was, in retrospect, some cause for local concern.

Since then, the number has fallen. The campaign could be regarded as a proved success if, at some time within the next year or so, the frequency became less than say 7 or 8 in a 12-month period. This would be less than the lower confidence limit, and significantly less (in the statistical sense) than the United Kingdom "per capita" incidence.

### Conclusion

If, within a 12-month period in the near future, the City of Exeter Fire Brigade is called to fewer than about 8 fires in which the material first ignited is fat, then the Home Safety Committee's campaign will have been proved, statistically, to have been successful in reducing the number of fires.

### ACKNOWLEDGEMENTS

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

Thanks are due to the former Chief Officer of the City of Exeter Fire Brigade, for supplying details of the campaign; and to Miss J. E. Hudson of the Joint Fire Research Organization, for extracting the statistics.

### Reference

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

APPENDIX I

The 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 organizations, and a few received the leaflet by post. Distribution was completed by January 1967.

117809 FR 679

ANNUAL FIRE FREQUENCY (Fires in which fat was material first ignited)

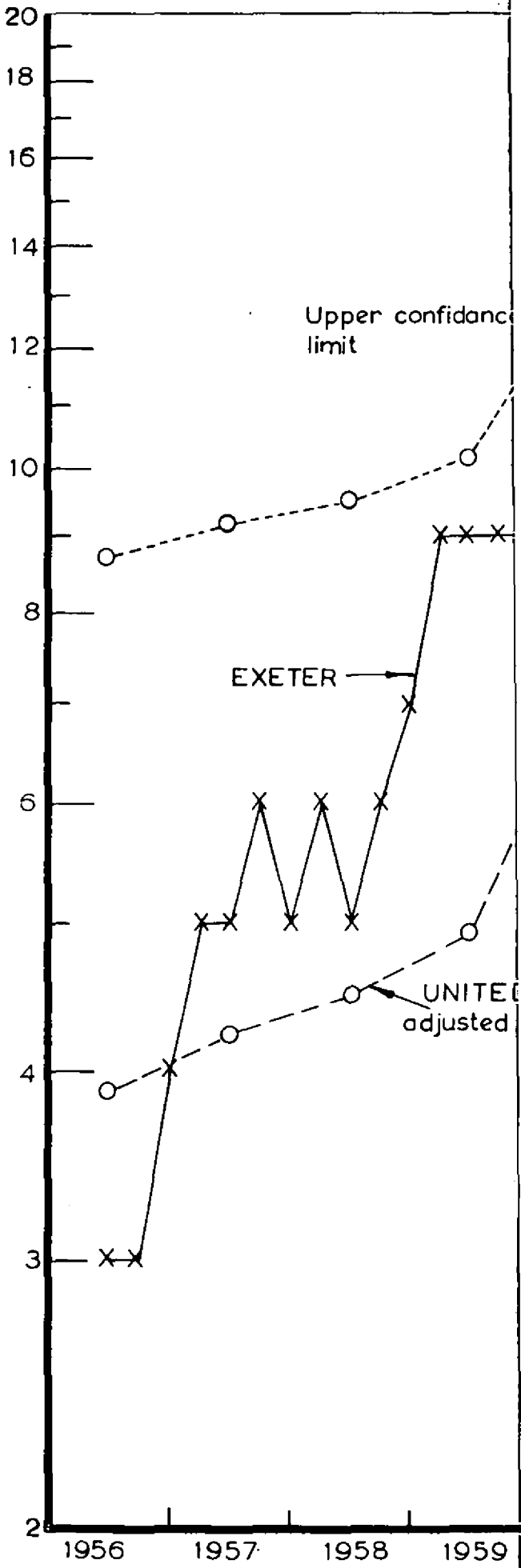


FIG.1. ANNUAL

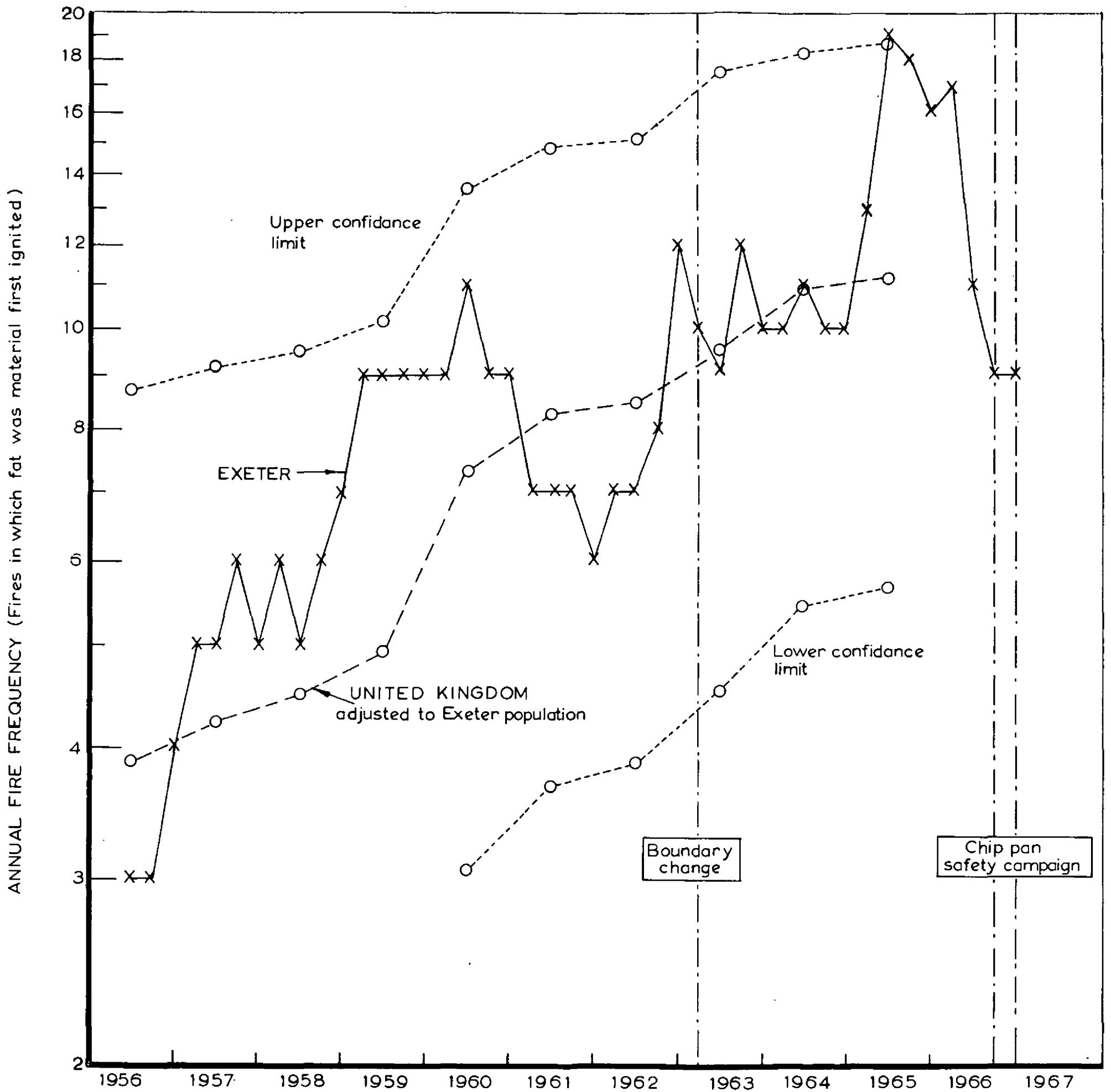


FIG.1. ANNUAL INCIDENCE OF FAT PAN FIRES, EXETER

