

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH AND FIRE OFFICES' COMMITTEE
JOINT FIRE RESEARCH ORGANIZATION

(Cunard Building, 15 Regent Street, London, S.W.1. Telephone: Whitehall 9788)

THE CAUSES OF FIRES INVOLVING ELECTRIC COOKERS.

Incidents attended by the Fire Service in the United Kingdom
during 1948 and 1950

by
D.W. Millar.

Information on fires involving electric cookers has been obtained from reports of fires attended by Fire Brigades in the United Kingdom during 1948 and 1950. There were 444 fires in 1948 in which electric cookers were the source of ignition. In 1950 a random 1 in 2 sample of all fire reports was analysed: there were 370 fires involving electric cookers in the sample.

Fires caused by defects in the cooker or its associated lead or switch box numbered 4 in 1948 and 6 in the sample for 1950. Table 1 shows in detail the causes of fire.

To obtain information on the commoner causes of fires involving electric cookers, but not reported as being due to defects in the cookers, a representative sample of the remaining reports was analysed. It was found that the reported causes for these fires were not in general sufficiently detailed to allow of any reasonable classification.

The reported causes for nearly all these fires fell into a few categories:

- (a) Cooker or oven overheating and igniting foodstuffs or contents.
- (b) Cooker or oven left switched on or unattended.
- (c) Oven or hot plate regulators turned up too high.
- (d) Food overheating and igniting.
- (e) Food boiling over and igniting.

It is considered reasonable to assume that "cooker or oven overheating", "food overheating" and "food boiling over" are generally causes not attributable to defects in the apparatus, and it follows that the majority of these fires are due to careless or incompetent handling of the equipment. There were also a few miscellaneous causes of fire; for example, heat from a cooker igniting airing linen or clothes, which are nearly all due to domestic carelessness.

THE CAUSES OF FIRES INVOLVING ELECTRIC COOKERS

Table 1

Fires caused by a defect in the cooker

Reference Number	Where the fire occurred	Cause of fire
		<u>1948. Analysis of reports of fires attended by the N.F.S. and Fire Brigades in the United Kingdom</u>
44.98	Central kitchen for schools	Container of fat overheated because of fault in electrical oven control.
20.267	Private house	Arc caused by short circuit, ignited boiling fat
107.182	Private house	Short circuit in electric cooker
86.13	Private flat	Short circuit on cable from power socket to electric cooker ignited clothing on clothes rack.
		<u>1950. Analysis of a 1 in 2 sample of reports of fires attended by the Fire Brigades in the United Kingdom</u>
10.18	Private house	Defective switch failed to switch off electric oven containing fat which burst into flames when oven door was opened.
176.177	General stores	Unstated defect in cooker led to heat from the cooker igniting clothing at the side of the cooker.
09.610	Private house	Spark from electrical short circuit in switch box of electric cooker ignited fabric of wiring.
21.160	Private house	Boil over on cooker fused an element. The conduit pipe became "live" and melted a lead gas pipe with which it was in contact, and presumably ignited the escaping gas.
27.2406	Civic theatre	Defective thermostat allowed electric oven to overheat which ignited a pan of fat in the oven.
121.302	Private flat	Poor joint in electric cable to cooker caused overheating which ignited insulation and set fire to wooden flooring.