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NATIONAL RESEARCH COUNCIL OF CANADA

DIVISION OF BUILDING RESEARCH

No.

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TECHNICAL NOTE

PREPARED BY G. Williams-Leir CHECKED BY GWS

APPROVED BY NBH

DATE January 1966

PREPARED FOR Inquiry and record purposes

SUBJECT LIFE LOSS IN BED FIRES

Eight years' records of fatal fires in Ontario (1956-63) have been examined for information relevant to ignition of mattresses and bedding.

The most relevant category in the DBR classification is: "Cause of ignition: someone fell asleep while smoking". An average of about 19 deaths per year or 153 deaths have been attributed to this cause: this is about 10 per cent of all fire deaths. The 153 deaths were in 141 separate fires.

Not all such cases are associated with bedding, as smokers often fall asleep in chairs. About 1 in 3 of the fatal fires occurred in chesterfields, etc., but this rate may be falling while the rate in bedding is steady (see Table I).

There are two clear indications from the data. Firstly, that men are more often victims than women; about 2.4 times as often. We can only guess the ratio of male smokers to female, but it is probably comparable with this. Secondly, consider the category designated by the abbreviation "D". Most "D" cases were seriously under the influence of alcohol at the time, but for the purposes of statistical analysis "D" means "it is suspected that the individual responsible for the fire was at the time under the influence of drink, drugs or sedatives, or some combination of these". Nearly half the victims were "D" cases (see Table II).

Table III shows how the cases are distributed by sex, age and the "D" factor. It indicates very little interaction; e.g., there is about the same proportion of "D" cases among the women victims as among the men.

One explanation is that victims under age 19 are not necessarily smokers or drinkers. They may be victims of fires caused by adults who are. This is the reason for the wording of the governing classification: "Someone (not necessarily the victim) fell asleep while smoking". So far as the nine victims under age seven are concerned, the following explanations have been assigned as to why the adult responsible for each child was not able to save it: in five cases the responsible person was in the "D" category; in four others, although he was in the building at the time, he was too late to save the child.

The classification system also asks why the victim was not able to escape from the fire, and in 74 per cent of the cases in this category the explanation is: "Asleep, and did not wake in time to attempt escape". From this we can infer that the people who die in these fires are also heavy sleepers. Unfortunately, we do not know how many light sleepers ignite their beds and escape.

The occupancies in which fatal fires occurred were mainly residential, but 22 died in rooming houses, hotels and motels. Only one was in a hospital, and one in a nursing home, and in both cases it is stated that clothing, not bedding, ignited first.

The reported "nature of fatal injury" should be accepted with some reserve, as burns are often reported where fatal injury has probably been previously caused by anoxia or poisoning with combustion products. For what it is worth, Table IV suggests that the "D" category is more subject to asphyxia and less to burns and carbon monoxide poisoning than other victims.

It may be that more care is given to death certificates when an inquest has been or will be held. Table V shows that, among those victims who become the subjects of an inquest, the proportion attributed to burns is much lower than otherwise.

The fatal fires that develop from cigarettes on mattresses and chairs are generally limited in extent; in 66 per cent of the cases, damage did not extend beyond the room where the fire started. A few victims

thought they had extinguished fires in chesterfields, etc., and were overcome when smouldering fire rekindled.

The individual accounts provide some food for thought. Eight victims had a previous history of causing fires, and some had been evicted from rooming houses on these grounds, or because of their drinking habits. Seven victims were paralysed, bedridden or had had legs amputated, so they would perhaps have more justification for smoking in bed.

Included in the "D" category were 19 victims of fires caused by people who had taken barbiturates or other sedatives before smoking in bed. In 12 cases these people had specified diseases, other than alcoholism, and at least two were under medical care.

Fire Deaths in Ontario, 1956-63, Attributed to:

"Someone fell asleep while smoking"

TABLE I

Year	Bedding	Chesterfields, etc.	Total
1956	5	6	11
7	15	9	24
8	14	5	19
9	15	10	25
1960	13	7	20
1	16	6	22
2	13	7	20
3	8	4	12
8 years	99	54	153

TABLE II

Year	D	Not D	Total
1956	2	9	11
7	10	14	24
8	9	10	19
9	13	12	25
1960	7	13	20
1	9	13	22
2	12	8	20
3	8	4	12
8 years	70	83	153

TABLE III

Age	D		Not D		Total
	M	F	M	F	
0 - 19	7	2	5	1	15
20 - 29	4	1	5	3	13
30 - 39	14	3	9	2	28
40 - 49	6	5	4	6	21
50 - 59	7	6	13	9	35
60 - 69	8	2	11	2	23
70 - 79	2	1	4	1	8
80 and over	2	-	7	1	10
	50	20	58	25	153

TABLE IV

	D	Not D	Total
Asphyxia	34	24	58
Burns	28	44	72
Carbon Monoxide	8	15	23
	70	83	153

TABLE V

	Inquest	No Inquest	Total
Asphyxia	11	47	58
Burns	5	67	72
Carbon Monoxide	6	17	23
	22	131	153