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**Fire Research Note  
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**AN ESTIMATE OF THE RISK OF DEATH BY FIRE  
WHEN STAYING IN AN HOTEL**

by

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Summary

The overall chance of Death by fire of a hotel guest is shown to be approximately ten times that of a person in his own home.

KEYWORDS

Fatalities; fire; hotel; risk; statistics.

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

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Introduction

Information on fires in hotels has been given in Fire Research Technical Paper No. 23<sup>(1)</sup>. The present note supplements this information by providing an estimate of the risk to the individual hotel guest. Although there is little immediately available information on which to base the calculations, amalgamation of information from several sources makes a reasonable estimate possible.

Calculation of the risk

According to an O.E.C.D. study of tourism in member countries in 1968<sup>(2)</sup> there were 193 800 beds available in hotels and motels in England and Wales; this figure, multiplied by a factor of 1.15\* gives an estimated total of about 220 000 beds available in the United Kingdom.

According to the British Travel Association, who carried out a survey in a sample of their hotels in 1967<sup>(4)</sup>, the sleeper occupancy for the year is approximately 50 per cent. Hence the total number of guest-nights per annum in the United Kingdom would appear to be  $0.5 \times 220\ 000 \times 365 = 40.2 \times 10^6$ .

The number of fires in hotels attended by fire brigades in the United Kingdom is about 700, so that the number per million guest-nights is  $700/40.2 = 17.4$ .

In 1966 there were nine deaths in 649 hotel fires in the United Kingdom<sup>(1)</sup>, or approximately one death for every 70 fires.

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\*The 1961 Census<sup>(3)</sup> showed the number of rooms of all types in hotels and guest houses in England and Wales at 444 779 and in Scotland at 60 790. Hence the total number in the United Kingdom would be approximately 510 000, or the number in England and Wales x 1.15.

Comparative data on the risk in dwellings

For several years the number of fires in dwellings in the United Kingdom<sup>(5)</sup> has been about 35 000 and this can be associated with a population of  $60 \times 10^6$  or a total of  $60 \times 10^6 \times 365 = 21\,900 \times 10^6$  dweller-nights. Hence the fire rate for the occupants of dwellings is approximately

$$\frac{35\,000}{21\,900} = 1.6 \text{ per million dweller-nights}$$

Deaths by fire in dwellings occur at the rate of about 600 per annum, or 1 death for every 60 fires.

Conclusions

Once involved in a fire it appears that the chance that the hotel guest will lose his life (1 in 70 fires) is similar to that for the person in a dwelling (1 in 60 fires). However, the chance of being involved in a fire as a hotel guest appears to be about ~~1 per 17.4 x 10~~ <sup>17.4 per million</sup> guest-nights or about 10 times the domestic dwelling figure of ~~1 per 1.6 x 10~~ <sup>1.6 per million</sup> dweller-nights. Hence the overall risk to the hotel guest appears to be some ten times as large as that to a person in his home.

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