

## **A CASE of ARSON**

An office and two computer suites were destroyed by a fire on June 1, 1989 in Bristol, Great Britain.

AN OFFICE and two computer suites occupied the whole of the top storey. Both computer suites had carpeted, tiled floors supported on metal jacks, and there were suspended ceilings of acoustic tiles throughout. A halon total flood system was installed in the rooms themselves as well as in the floor and ceiling voids, but it was not fully commissioned. Although part of the halon fire protection system operated during the incident, gas was discharged only in the floor void, so it had no effect on the fire. The fire was discovered at 0315 hours, when an automatic smoke detector operated and a direct line call was made to the fire brigade. Five major pumping appliances attended the blaze which started in a fifth-storey rest room in a computer suite. The major fire was quickly brought under control by 0421 hours. Damage was severe: 90 per cent of the computer suite was severely damaged by smoke and heat.

The investigation first seemed to indicate the fire started as a result of discarded smoking materials, which ignited either a waste paper basket or a fabric covered foam easy chair. However, the sequence of events leading up to the fire were inconsistent with the time of its discovery. Two computer operators who smoked, said they had not smoked in the rest room in the 30-40 minutes before the fire. Moreover, a cigarette end dropped in the space between the seat and back of a foam chair might have ignited the covering after smouldering for some time, but should have actuated the smoke detector at an early stage. In fact, heavy smoke was seen on the security CCTV system immediately after the alarm operated. Therefore, because of these inconsistencies, the possibility of malicious ignition had to be acknowledged.

*Main features:* Halon system activated but did not control fire.

*Premises:* Office building

*Constructed:* 1970

*Dimensions:* 100 m x 30 m

*No. of storeys:* Six plus basement

*walls:* Concrete, Internal partition of plasterboard and glass

*Floors:* Concrete, timber and chipboard

*Date:* 1 June 1989

*Time of call to brigade:* 0317 hours

*Estimated loss:* £3255000

FRAME calculation

The calculation was made with the few data of this report and supposing other characteristics similar to what is usually found in office buildings gives the following results:

$R = 0.97, R_1 = 1.01, R_2 = 1.37$

The actual damage in this case was much more than 10% of the content, which could be expected with these FRAME results. Since arson is not a natural cause of fire, it is normal that the damage in such situation is larger than expected, and in well protected buildings, the discrepancy between the FRAME - calculated damage level and the reality will be an indication of arson.

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