



Smoke damage to room resulting from TV set fire.

ONE OF SEVERAL TV SET FIRES

Motel, Pine Castle, Florida

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In the early morning of January 9, 1974, fire originated in a TV set at the Orlando South Travel Lodge in Pine Castle, Florida. The occupant of the second-floor room of origin narrowly escaped death or serious injury. This fire was the latest in a series of 20 malfunctions in TV sets at this motel in the past year; 18 had occurred in the preceding eight months. The malfunctions ranged in severity from minor electrical arcing to smoking of sets to open burning with spread to other items in the room.

The Orlando South Travel Lodge was a three-year-old motel, consisting of six separate buildings. Four of the buildings housed the motel's 175 guest rooms; the fifth building housed the restaurant and cocktail lounge, and the sixth contained the motel office.

The two-story buildings housing the guest rooms measured 60 feet by 160 feet and were of concrete construction, including floors and roof of four-inch poured concrete. Partitions between rooms were of eight-inch concrete block covered by 5/8-inch gypsumboard on wood nailers. The hallway partitions were of 5/8-inch gypsumboard on metal studding. Doors were of 1 3/4-inch solid-core wood.

This report is based on information obtained by the author, who visited the fire scene. He gratefully acknowledges the cooperation and assistance of Chief William W. Eldridge and Capt. John Fitzgerald of the Pine Castle Fire Control District, and Orange County Fire Marshal Dave Robertson. All the photographs are by Mr. Sharry.

Interior finish consisted of vinyl wall covering on gypsumboard and shag carpeting on the floors.

Means of egress was by two partially open outside stairways, one at each end of the hallway. The stairways were separated from the hallway by plate glass doors.

The buildings did not have an evacuation alarm. A fire detection system was supposedly provided as a part of a TV-set security alarm system. (This system was a nonapproved detection and alarm system.) An alarm from any set was transmitted to an annunciator panel at the motel switchboard, where there was a red indicator light for each room and an audible alarm. The alarm sounded a steady tone to indicate theft of a set and a warbling tone for fire in the set. Further examination of this system revealed that it consisted of parallel circuit loops to the TV set in each room. If the circuit was broken, the theft alarm was sounded; if the circuit was shorted, the fire alarm sounded. Thus, in order to receive a fire alarm, the circuit wiring would have to burn through, or short. The audible alarm was not in operation at the time of the fire because of a malfunction caused during a previous fire. This left only the red indicator light as the alarm signal.

On the morning of January 9, 1974, the occupant of Room 296 returned to his room at about 2:00 am and turned on the TV set. While watching a late movie he

fell asleep, leaving the set on.

At about 4:05 am, the red alarm light for Room 296 went on at the switchboard. Because the audible alarm was not functioning, the desk clerk could not tell whether it indicated a fire or a theft alarm. Since this clerk had not previously experienced a fire alarm, he assumed that it was a theft alarm. The clerk checked his guest register, saw that the occupant of Room 296 was a reputable person, and assumed that the system had malfunctioned. He took no further action.

At about 4:10 am, the occupant of Room 296 awoke, unable to catch his breath. Lifting his head slightly, he saw that the TV set was on fire. The flames, about one inch high, extended up both sides of the TV cabinet and across the top.

Rolling onto the floor, the occupant attempted to get on his hands and knees to crawl out of the room. However, when on his hands and knees he could not breathe, so he lay flat on the floor and crawled to the door. He experienced difficulty in opening the door due to his position on the floor and lack of leverage. Rising to his knees, he opened the door and fell into the hallway, where he lay on the floor for a short time to catch his breath.

After regaining some composure, he ran out the glass hallway doors, down the outside stairway, and started banging on the outside room doors on the first floor to alert the other occupants. He had done so to about 75 percent of the first-floor rooms when he realized that he should have reported the fire to the Fire Department. He then ran to the motel office and notified the room clerk of the fire.

Eight other guests occupying second-floor rooms

were awakened by the smoke and made their escape by crawling down the hallway to the exit doors.

The Pine Castle Fire Department received a call from the room clerk at 4:21 am reporting a fire in Room 296. Two engines and an aerial platform were dispatched to the scene. The crew of the first-arriving engine company searched the building for occupants. The second-arriving engine company pulled a booster line and extinguished the fire. The aerial platform's crew was used for ventilation and overhaul.

The fire was quickly extinguished.

Damage

The TV set in Room 296 was completely destroyed. The vinyl wall covering behind the set was burned for approximately two feet above the TV set (see Photo 1). The shag rug was burned under and in front of the TV set in an irregular pattern for about two feet. Heavy smoke damage occurred in the room and in the hallway immediately surrounding the room door. Minor smoke damage was sustained in other rooms, but only in rooms in which doors had been left open.

Analysis

This motel had suffered a large number of TV malfunctions during the past year. All of the TV sets, which were approximately three years old, had been manufactured by a major US company and were leased to the motel.

Nineteen of the twenty malfunctions involved a polypropylene insulating cup surrounding the base of a

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Photo 1. Damage to wall covering directly over TV set location.



Photo 2. Polypropylene insulating cup and polyethylene cap surrounding base of high voltage tube.



Building C, it is felt that if the full 173.5 feet of separation had been present, little or no damage would have resulted in Building C. The intensity of the fire in Building A was unexpected and would not normally have occurred except for the fact that the building was being demolished and had unprotected openings cut through each floor that allowed the fire to roar through the structure with blowtorch-like ferocity. The shutdown of the sprinklers in Building A can certainly be cited as one of the major factors contributing to the rapid fire involvement. Had the sprinklers been in service, the fire would have been controlled in its initial stages.

This fire is an example of the extreme exposure hazard of buildings undergoing demolition. Had NFPA No. 241, *Safeguarding Building Construction and Demolition Operations*, been followed, the entire in-

cident might have been avoided. Section 5-5-3 of the Standard indicates the desirability of keeping sprinkler systems in operation during demolition by progressively cutting off and capping the sprinkler piping as demolition proceeds through the building. The fact that the sprinkler system would have been expected to control the fire is reflected in NFPA No. 80A, which would have reduced the 173.5 feet required separation to zero separation if the building had been sprinklered.

Also of note is the exposure to Building B by fire coming from the roof of Building A. The spread of fire by this means points out the need for proper separation or protection of buildings where this hazard exists. This factor is often overlooked. Had the sprinklers in Building A been in service, NFPA No. 80A would not have required any separation between Buildings A and B. Without sprinkler protection in Building A, the recommended separation distance would be 48 feet. △

One of Several TV Set Fires (continued from page 6)

high voltage tube (see Photo 2). A search of the motel's TV repair records for the past year revealed 20 incidents of TV set malfunctions resulting in arcing, smoking, or fire. Two of those incidents resulted in major fires, while the other 18 were handled by motel personnel and damage was confined to the sets. The corrective action taken on sets able to be repaired and returned to use involved the replacement of the polypropylene insulating cup and its polyethylene cap. No injuries were sustained in the other fires, probably because they occurred at times when the room occupants were awake and able to take positive action.

The Consumer Products Safety Commission, when notified of the series of fires, checked immediately to ensure that the manufacturer was taking action to

correct the "substantial hazard." The manufacturer, upon being notified of the problem by the motel owner, began an investigation of his own and eventually issued a news release warning users of the potential fire dangers. The manufacturer also established a "national safety alert" program to improve its communications with field-service agents.

The occupant of Room 296, an NFPA technical committee chairman, was able to escape only because of his technical background and his involvement in NFPA technical committee work, which resulted in his knowledge of fire survival techniques. Further efforts to make the general public aware of fire survival techniques could provide the knowledge necessary to prevent fatalities in similar situations. △