

INVESTIGATION REPORT

HOTEL FIRE
GREECE, NEW YORK
TEN FATALITIES
NOVEMBER 26, 1978

PREPARED BY

DAVID P. DEMERS
FIRE ANALYSIS SPECIALIST
FIRE INVESTIGATIONS DEPARTMENT

IN COOPERATION WITH
NATIONAL BUREAU OF STANDARDS
AND
U.S. FIRE ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

This investigation was conducted by the National Fire Protection Association under contract to the Department of Commerce. It was jointly funded by the National Bureau of Standards, the United States Fire Administration and the NFPA. It may be freely reprinted with the customary crediting of the source.

The facts and conclusions contained in this report were developed by the National Fire Protection Association and do not necessarily represent the views of the U.S. Fire Administration or the National Bureau of Standards.

ABSTRACT

On Sunday, November 26, 1978, at 2:38 a.m., a fire was reported at the Holiday Inn - Northwest in Greece, New York, a suburb of Rochester. Ten occupants died in this fire which was most likely incendiary in nature.

The building was of ordinary construction and had an "L" configuration. The area of origin was at the base of a central stairway that was between the two wings of the building. The stairway's interior finish apparently was highly combustible, thin plywood paneling. There was no protection of the openings into the two-story north wing and fire doors protecting the openings to the three-story west wing appeared to have been blocked open at the time of the fire. These doors were held open with kick-down type door stops that were attached directly to the doors. The building was equipped with a fire alarm system. Initiating devices included manual pull stations and combination rate of rise, fixed temperature thermal detectors. These alarm-initiating devices were located only in the corridors and the alarm system was not connected directly to the fire department. There was one fire alarm bell per corridor.

The primary factors that led to the fatalities in this incident were the combination of the highly combustible interior finish, unprotected openings that existed in the stairway and inadequate alerting of occupants. Extensive rescue efforts by fire fighters prevented a much higher life loss.

TABLE OF CONTENTS

I. Introduction	3
II. Background	4
- The Building	4
- Public Protection and Code Enforcement	10
III. The Fire Incident	12
- Ignition Sequence and Discovery	12
- Fire Growth and Development	13
- Fire Fighting and Rescue	13
- Summary Time Line	16
IV. Analysis	17
- Discussion	17
- Casualties	18
- Code Review	19
- Summary	21
V. Appendices	22
A. Photos	23

II. BACKGROUND

A. The Building

Overview

The building originally opened in 1963 as a Schrafft's Restaurant and Motor Inn. The building re-opened as a Holiday Inn during July of 1967. It was reportedly redecorated and refurnished in 1972. The building had a basic "L" shape configuration and had three distinct portions. The two-story and basement easternmost part contained a bar, a restaurant, banquet rooms, and mechanical equipment rooms. This part of the building was not directly involved in the fire other than receiving some water damage.

The two other parts of the building were those that contained guest rooms. The north wing had two stories (first and second) and ran parallel to Ridge Road. Located at the eastern end of the north wing was the hotel registration lobby and a drive-through passageway to the rear of the building.

The west wing was perpendicular to the north wing and had three stories (ground, first, and second). The ground floor of this west wing was partially below grade. At the point where the two wings joined there was a two-story connecting passageway and a three-story stairway.

Building Heights and Areas

The north wing of the building had a gross area within exterior walls of approximately 9,000 square feet. The west wing's gross area was approximately 6,700 square feet. The distance from grade to the average height of the roof of the west wing was approximately 26 feet.

Building Details

Although most of the building was of masonry construction, the combustible roof system would cause the building to be classified as ordinary construction. Exterior walls were of concrete masonry units faced with brick. Interior partitions were four-inch concrete masonry units with two coats of plaster. The ceiling-floor system between floors consisted of "Doxplank" pre-cast concrete slabs. Ceilings in guest rooms were plastered and suspended ceilings had been put in the corridors below the "Doxplank." The suspended ceilings were made of acoustical tile in metal channels.

The top story of each wing had similar ceiling/roof systems. Suspended ceilings were installed in corridors and guest room ceilings were plaster on plaster board lath. It is not known whether the suspended ceilings were fire-rated. Wooden trusses with stamped metal

gusset plates (gang nailing plates) formed the pitched-roof structural system. The roof sheathing was particle board and plywood with asphalt and felt waterproofing. At the north end of the west wing there was a small area of "Doxplank" roof system. The end of this "Doxplank" was supported by an exposed steel beam. The "Doxplank" had several poke-through's in it for wiring purposes. Interior walls went only to the bottom of the wood trusses, creating an undivided combustible "attic."

The central stairway connecting the two wings was built of concrete masonry units and had a "Doxplank" ceiling/roof system. Metal stairs with poured concrete treads were used. Openings into the three-story west wing were "protected" by Class B labeled 1-1/2 hour fire doors with closers. Installed on these fire doors were kick-down type door stops. The doors at the first and second story (top two stories) appeared to have been blocked open at the time of the fire. The position of the ground story door into the stairway at the time of the fire is unknown. At the ground level within the stairway a closet had been built under the stairs. This closet, which was of combustible construction, was used to store paper goods and cleaning materials. There were several windows on the exterior wall of the stairway. The interior finish of the stairway was highly combustible, thin plywood paneling that had been applied to the concrete masonry units with an adhesive. (Only traces of the 3/16" paneling remained after the fire.)

The openings into the two-story passageway from the stairway to the north wing were not protected in any way. In the top story of the passageway above a suspended ceiling was a wooden joist and plywood roof system. Most of the exterior surface of this passageway was glass. "Doxplank" was used as the ceiling/floor system between the levels of the passageway.

The interior finish of the corridors included noncombustible suspended ceiling tiles, a "vinyl" wall covering, and carpeting with a pad on the floor.

The means of egress from the west wing was either through the central stairway to the first floor passageway with discharge to the exterior or through a stairway at the south end of the wing. This south stairway had a door directly to grade. There were storage rooms on each level opening into the south stairway. The doors on the storage areas were of hollow metal construction. There did not appear to be any indication that the doors were fire-rated or UL-labeled.

Egress from the first floor of the north wing was to the drive-through on the east or through the passageway near the central stairway. Means of egress from the second story of the north wing was through rated fire doors to a balcony in the lobby, down an open

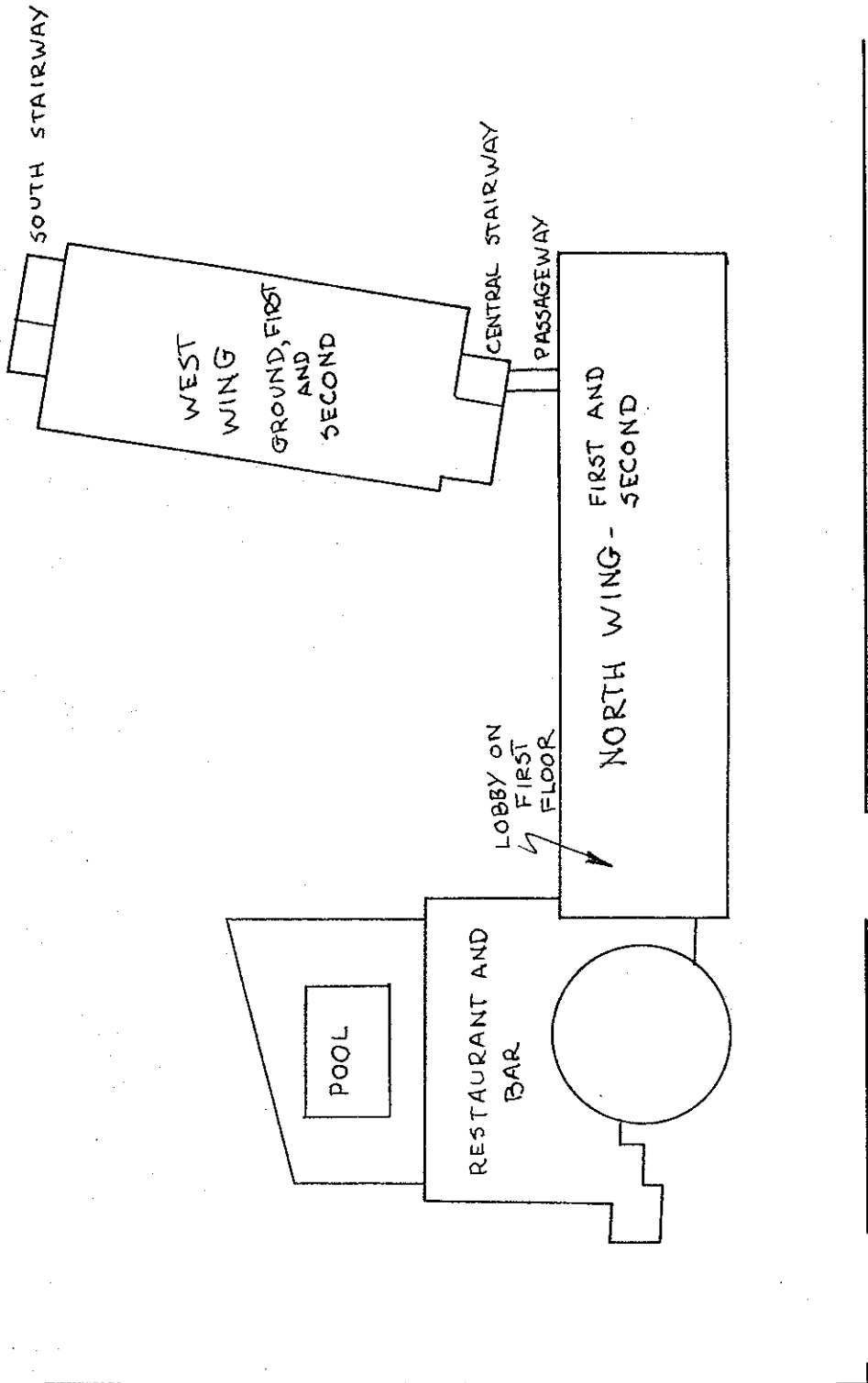
stairway and across the lobby to the drive-through, or to the central stairway and out through the first floor passageway. The maximum travel distance from the second story north wing was approximately 135 feet. The building had no emergency lighting.

The building was equipped with a fire alarm system that included manual pull stations and combination rate of rise, fixed temperature thermal detectors as initiating devices. The manual pull stations and thermal detectors were installed primarily in the corridors of the building, although heat detectors were provided in some mechanical spaces. One ten-inch gong was installed in each corridor. A manual pull station was located adjacent to the registration desk in the lobby area of the hotel and the control panel for the alarm system was in an office area behind the registration desk. The control panel had a trouble bell that could be turned on and off. The wiring for the fire alarm system in the west wing ran through the passageway between the north and west wings above the ceilings. The alarm system was set up for local alarm only and was not connected to the fire department.

Hotel Occupants and Staff

At the time of the fire, there were approximately 200 registered guests in the 91 rooms of the hotel. The exact number of hotel rooms is unknown because some guest rooms had been converted at one time to small conference rooms and there was an "innkeeper's apartment" on the second floor of the north wing. Many of the guests were together on a bus tour from Canada. Reportedly there were five employees at the hotel; a bartender and two waitresses were in the bar-restaurant side, a clerk was at the front desk, and the "innkeeper" was asleep in her apartment. Data was not available regarding hotel emergency planning or the extent and frequency of staff training.

At the time of the fire the temperature was 16⁰F and there was a strong north wind.



RIDGE ROAD WEST GREECE, NY
RT. 104



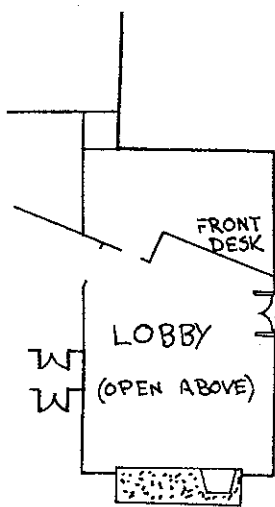
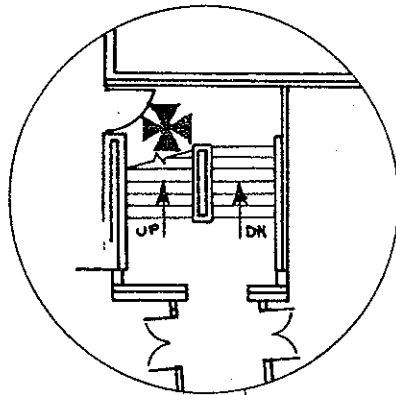
	DATE	2-12-79	DRAWN BY	DWD
	SITE PLAN			
				FIG. 1

FIRST FLOOR OF WEST WING
AT HIGHER ELEVATION THAN
FIRST FLOOR OF NORTH WING

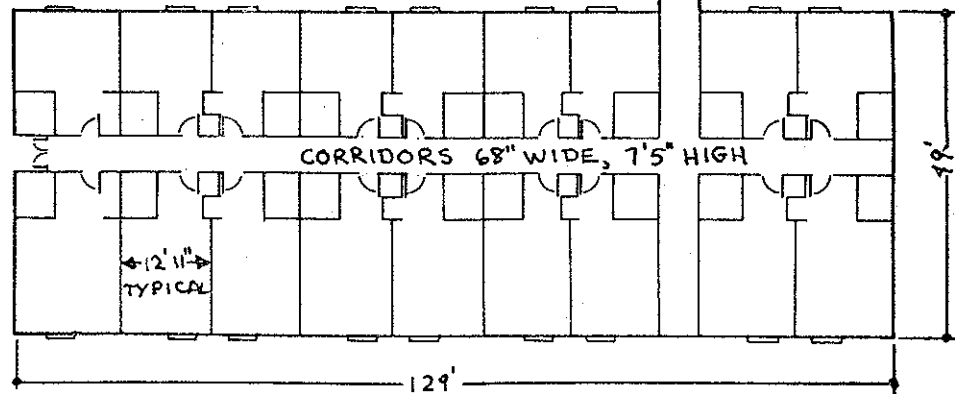
MANUAL PULL STATIONS AND
COMBINATION THERMAL
DETECTORS IN CORRIDORS

GROUND FLOOR TYPICAL

COMBUSTIBLE
CLOSET ON GROUND
FLOOR UNDER STAIRS



DRIVE THROUGH
TO REAR
UNDER 2ND
STORY



APPROXIMATE AREA OF
ORIGIN ON GROUND FLOOR

ALL DIMENSIONS APPROXIMATE



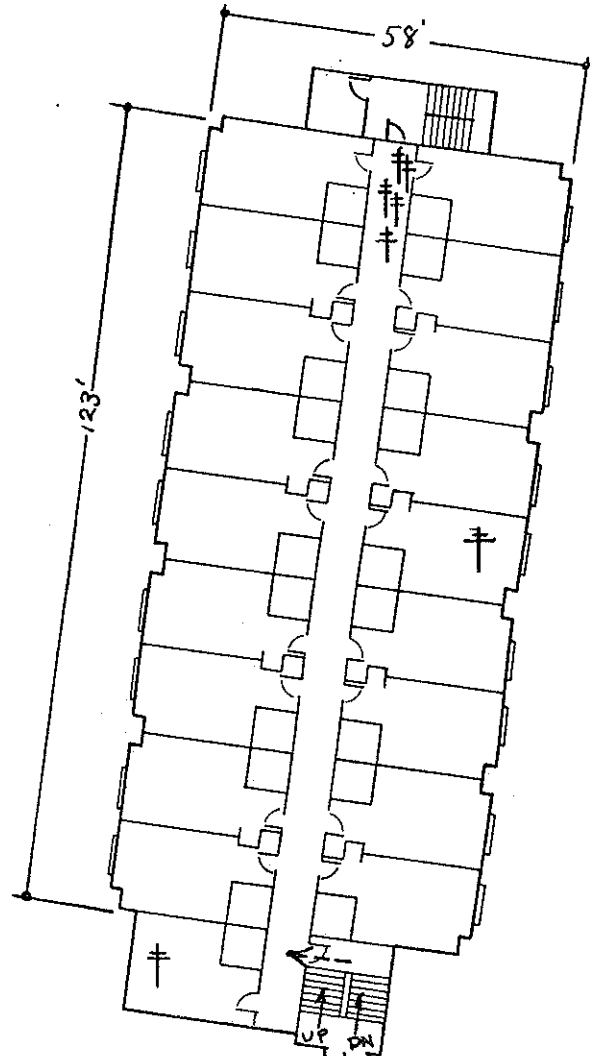
	FIRST FLOOR		FIG. 2
	DATE	DRAWN BY	
	2-12-79	DWD	

SECOND FLOOR OF WEST WING
AT HIGHER ELEVATION THAN
SECOND FLOOR OF NORTH WING

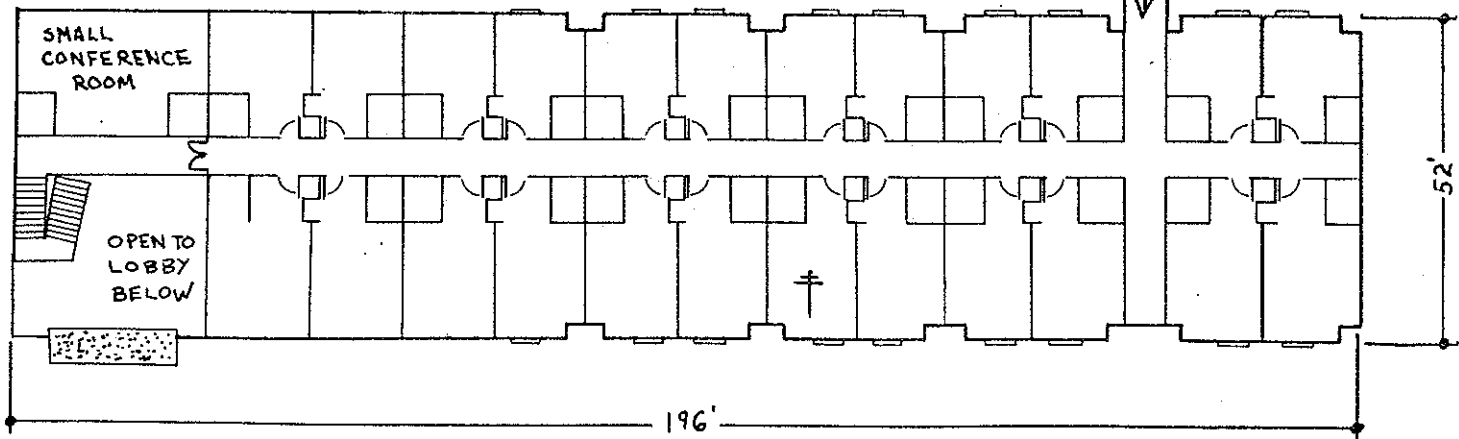
MANUAL PULL STATIONS AND
COMBINATION THERMAL
DETECTORS IN CORRIDORS

† FATALITIES, 2 WERE DOA
AND CAME FROM UNKNOWN
LOCATIONS
10 FATALITIES TOTAL

--> INITIAL FIRE SPREAD
OUT OF CENTRAL STAIRWAY




DRIVE THROUGH
BELOW



ALL DIMENSIONS APPROXIMATE



	SECOND FLR.		FIG. 3
	DATE 2-12-79	DRAWN BY DWD	

B. PUBLIC PROTECTION & CODE ENFORCEMENT

General

The town of Greece, NY is a western suburb of Rochester. It has a population of approximately 90,000 people. Ridge Road, which is also New York State Route 104, is the main road through town. The town is subdivided into four fire protection districts served by combination career-volunteer or all volunteer fire departments. The Holiday Inn - Northwest was located in the Ridge Road Fire District. This fire district is governed by an elected Board of Fire Commissioners and is independent from town government. There is a town police department and a town building department.

Fire Suppression

The Ridge Road Fire District is protected by the Greece Ridge Fire Department. It has both career and volunteer fire fighters, a part-time fire chief and a full-time deputy chief. There are six fire fighters on duty at all times. There are two fire stations, with the headquarter station having five fire fighters and the sub-station having one fire fighter. The fire department is equipped with four pumpers, one ladder truck and one light-duty rescue unit. Extensive mutual aid agreements exist between fire districts within the town of Greece, Monroe County and the City of Rochester.

Code Enforcement

There are three codes or laws that have particular relevance to this fire incident. At the time the building was built in 1963, the "1958 New York State Building Construction Code Applicable to Multiple Dwellings" was in effect in Greece, New York, in addition to the "New York Multiple Residence Law." The "Multiple Residence Law", frequently referred to as the "Mitchell Law," applies to all cities of less than 500,000 people and to all towns and villages. It establishes "reasonable protection of human life" in multiple dwellings. The Mitchell Law first took effect in July of 1952.

On July 16, 1974, the town of Greece adopted the 1973-1974 National Fire Protection Association "National Fire Codes." These volumes of the "National Fire Codes" contain the 1973 edition of NFPA No. 101, Code for Safety to Life from Fire in Buildings and Structures. The 1973 Life Safety Code is intended as a minimum code and is intended to be applied to both new and existing constructions.

Enforcement of the above requirements in the town of Greece is the responsibility of the Greece Building Department. The town

Fire Growth and Development

Fire growth and development in this fire was very rapid. The fire started within the stairway on the ground floor. Ignition of the thin plywood paneling in the stairway had already occurred and the stairway and passageway were well involved with fire when the alarm was turned in to the Greece Ridge Fire Department. The fire traveled vertically up the stairway and then into the corridors of the west wing and through the passageway into the north wing of the building. Fire caused the plain glass exterior windows of the passageway and stairway to break out fairly early in the fire development. This accelerated fire growth with a fresh supply of oxygen. Fire quickly attacked suspended ceiling systems and they failed. The pre-cast concrete "Doxplank" between stories maintained its structural integrity. Above the suspended ceiling of the upper level of the passageway the wood joist structural system quickly allowed fire spread into the north wing. On the top floor of the west wing, the fire spread into the combustible wood truss roof system. By 2:50 p.m. shortly after the arrival of fire fighters, major portions of the roof systems of the north and west wings were involved with fire. Due to the falling suspended ceilings above the corridors of the top floor of each wing, guests in these corridors were exposed to the fire. The plaster on plaster board ceilings of the guest rooms provided additional time for fire fighters rescue efforts because it maintained its structural integrity for a longer period of time.

Fire Fighting and Rescue

On receipt of the alarm of a working fire at the Holiday Inn with people trapped, the Greece Ridge Fire Department dispatched the six fire fighters on duty and all 60 volunteer fire fighters. These fire fighters responded on Greece Ridge's pumpers, ladder truck and rescue truck.

On arrival, fire fighters found an extremely serious rescue problem, with heavy fire involving the area between the two wings of the building and heavy smoke throughout. Initial rescue efforts involved raising the aerial ladder and ground ladders to windows and ledges, assisting the guests out of windows on lower floors and leading guests to safety down the smoke-filled corridors. Several unconscious victims were located in hallways and were dragged out by fire fighters with breathing apparatus. Shortly after arrival, hose lines were stretched to the top floor of the west wing to try and cut off the fire to allow additional time for rescue. Very little progress was made due to the extensive fire in the combustible attic space and the limited mobility of hose lines in the corridor.

It is estimated that on arrival of the Greece Ridge Fire Department, of the approximately 200 people in the building, 20 had evacuated on their own and 10 had been lead out by employees. The remaining 150-170 people were rescued or evacuated to safety by fire fighters. There were approximately 60 fire fighters on the scene within the first ten minutes of the alarm. Fire fighters were hampered by the cold temperatures and a heavy smoke condition in the rear of the building due to the north wind.

On arrival of the Greece Ridge Fire Chief and Deputy Chief, additional ladder trucks were requested from Barnard and the city of Rochester. The Greece Volunteer Ambulance Association also responded. Other communities and fire companies that responded included North Greece and Gates, as well as ambulances from Spencerport, Barnard, Lake Shore, Hilton, and other private ambulance companies. In all, eleven pumpers, five ladder trucks, four attack and rescue vehicles, and nine ambulances were utilized at the scene.

After initial search and rescue operations were completed, the fire was extinguished from the exterior due to the large volume of fire. Fire damage to the guest room wings was extensive, especially to the top floor. About 90% of the north wing roof and 75% of the west wing roof were burned off. The bar and restaurant portion of the building received primarily smoke and water damage.

III. THE FIRE INCIDENT

Ignition Sequence and Discovery

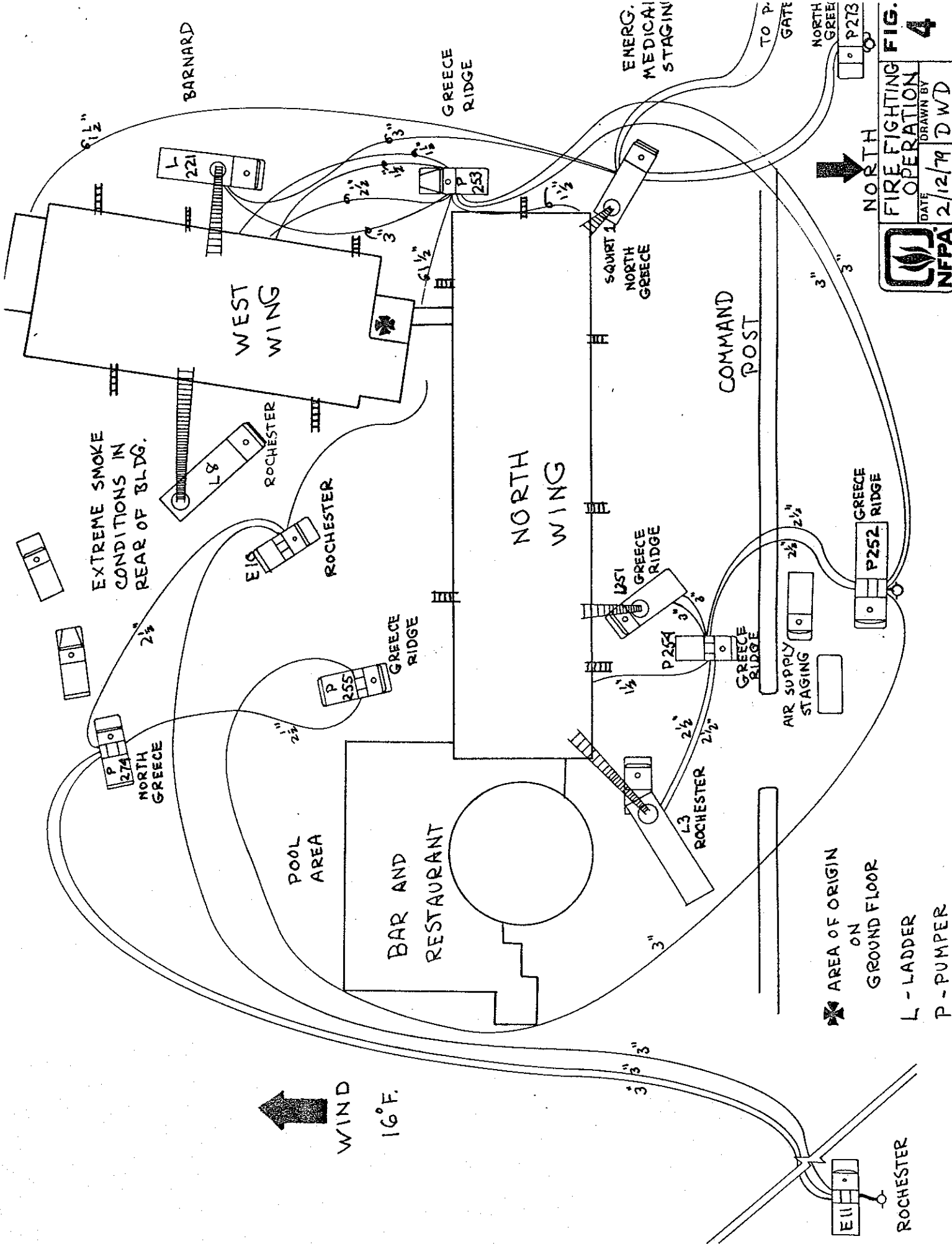
The first indication of a fire in the Holiday Inn - Northwest was at approximately 2:30 a.m. on November 26. Most employees of the hotel were first notified by the fire alarm system, although the innkeeper, who was asleep in her apartment, was notified by telephone from the front desk. Guest notification was haphazard. Some occupants were awakened by or were awake and heard a fire alarm bell. Some people reported that they heard a bell but thought it was an alarm clock or a telephone. Other guests either smelled "something burning", saw the fire through windows, were notified by people banging on doors, or awoke to smoke in their rooms. For some occupants, the first notification of the fire was from fire fighters banging on or breaking the windows of their rooms.

Most guests who were notified of the fire and opened their room doors were confronted by heavy black smoke in the corridors. Some people were able to evacuate through the corridors, although most were forced back into their rooms and to the windows.

It is not known if the initial activation of the fire alarm system was from a manual pull station or from the heat detectors in the corridor.

The first notification of the Greece Ridge Fire Department occurred at 2:38 a.m. A career fire fighter from the Greece Ridge Fire Department was returning home along Ridge Road from his second job as a security guard. When the fire fighter was passing the Holiday Inn he noticed flames above the roof in the vicinity of the central passageway and stairway. The fire fighter notified the Greece Ridge Fire Department using a two-way radio in his automobile and then proceeded to assist in the evacuation of occupants in the hotel. There were also several telephone calls received reporting the fire immediately after the radio notification.

At about the same time the fire fighter came on the scene, another passerby, a former fire chief, noticed the fire and went into the building to assist in evacuation. The passerby assisted in evacuating several occupants down the very smoky corridors of the hotel. Both the fire fighter and the former fire chief reported that they could hear no bells ringing on their arrival. Some of the first fire fighters on the scene that entered the hotel lobby also indicated that no bells were ringing and the manual pull station next to the registration desk was activated. Nothing happened when this was pulled.



WIND
16°F

↑ NORTH

FIG. 4

FIRE FIGHTING OPERATION

DATE 2/12/79 DRAWN BY DWD

★ AREA OF ORIGIN ON GROUND FLOOR

L - LADDER

P - PUMPER

III - GROUND LADDER

Summary Time Line

- 2:30 a.m. - First indication of fire alarm system operating. The driver of a charter bus is awakened by a bell ringing and he looks at his watch.
- 2:38 a.m. - Greece Ridge Fire Department notified by a fire fighter passing by. Another passerby stopped at the building to help and reports no fire alarm bells ringing. Greece Ridge Fire Department dispatches four engines, a ladder, a rescue, 6 on-duty personnel and approximately 60 volunteer fire fighters.
- 2:39 a.m. - West section of building heavily involved with fire.
- 2:43 a.m. - Two additional ladder trucks requested to the scene.
- 2:43 a.m. - Greece Volunteer Ambulance dispatches two ambulances.
- 2:44 a.m. - Ambulances from Barnard and Lake Shore dispatched.
- 2:45 a.m. - Most clocks in the building stop.
- 2:46 a.m. - Barnard Rescue requested at the scene.
- 2:46 a.m. - Greece Ridge Fire Chief requests three engines to the scene.
- 2:52 a.m. - Greece Ridge Deputy Chief requests two buses to the scene to keep hotel evacuees warm.
- 2:53 a.m. - Self-contained breathing apparatus air cylinders requested.
- 2:55 a.m. - Two North Greece pumpers to the scene.
- 3:23 a.m. - Additional ladder truck requested at the scene.
- 3:26 a.m. - Additional pumper requested at the scene.
- 3:55 a.m. - Additional pumper requested at the scene.
- 4:43 a.m. - Greece Ridge Fire Chief reports the fire under control.

IV. ANALYSIS

Discussion

This fire has been determined to be incendiary in nature by investigating authorities. The area of origin was at the base of the central stairway adjacent to the combustible storage closet.*

Lightweight paneling in the stairway most likely became involved very shortly after ignition. When this occurred, extremely rapid and intense fire development took place. As the paneling began burning, it most likely peeled off the wall, exposing both the front and back combustible surfaces of the paneling. It is not known whether the adhesive used to apply the paneling was combustible but, if it was, it would have been involved fairly early in the fire.

As the fire developed, the products of combustion would initially have travelled upward and through the unprotected openings in the stairway into the north wing via the passageway and directly into the west wing because of the blocked-open fire doors. The plain glass windows in the stairway and passageway failed, providing oxygen to the well-established fire.

The alarm system in the building was most likely activated and functioning at approximately 2:30 a.m. As the fire continued to develop, the combustible roof structure above the ceiling of the second floor passageway became involved with fire. This was also the location of much of the alarm system wiring which was soon damaged by fire as the fire spread in this combustible area to the north wing and then to the combustible truss area above the second-floor ceiling of the north wing. This would have resulted in a failure of the alarm bell circuit, at least to the west wing, soon after the involvement of the paneling in the stairway. After the incident, there were reports that an alarm bell was ringing and shut off a few hours after the initial alarm. This was most likely the trouble bell on the control panel.

Fire spread into the west wing was directly through the unprotected openings of the stairway and into the hallways. Fire quickly penetrated the suspended ceiling of the top floor and the wood truss structural system. It was most likely at this point that the passerbys arrived at the scene at 2:38 a.m. and turned in the alarm to the Greece Ridge Fire Department. It was reported that no alarm bells were ringing at this time.

* The contents of the storage closet do not appear to have been initially involved in the fire. It is noted that closets in stairways are prohibited by the NFPA Life Safety Code due to the extreme danger posed by fires originating in these locations.

It was reported by some of the first fire fighters who made it to the interior of the top floor of the west wing that much of the suspended ceiling had collapsed and that there was a great deal of fire over their heads. Attack lines were stretched through the corridor to provide more time for rescue; however, the fire was of a great intensity and hose lines could not be directed at all parts of the wood truss system because of the narrow corridor. It was also reported by fire fighters that the plaster on gypsum board ceilings of the guest rooms provided some compartmentation and increased the time for rescue.

After search and rescue procedures were completed, interior fire fighting efforts were abandoned due to the high risk involved to fire fighters and an exterior fire attack proceeded. The major fuels involved were the combustible roof structure of both wings and the contents of the guest rooms of the top floors. The fire was declared under control at approximately 4:43 a.m. through the use of exterior hand lines and master streams.

Casualties

In this fire there were ten fatalities and 34 people injured. Injuries to guests included smoke inhalation, injuries sustained in jumping from upper floor windows, burns, and cuts from breaking windows out of rooms. Seventeen of the injured were fire fighters.

Cause of death of all ten fatalities was listed as smoke inhalation and carbon monoxide poisoning. Only one of the bodies that was recovered later in the fire operation on the top floor of the building was burned. Three victims were found in guest rooms. Two were dead on arrival at local hospitals and it is unknown where they were discovered. Five bodies were found in one location in the top floor corridor of the west wing next to the south stairway. At one time it was thought that these people were trying to crawl to safety together and were unable to reach the stairway. It has since become apparent, however, that these victims were found by a fire fighter at different locations in the corridor very early after arrival and were dragged to this location.

Code Review

As previously stated, there were three codes or laws that appear to pertain to the fire safety aspects of this building. They are the "New York State Multiple Residence Law;" the "State Building Code for Multiple Dwellings, 1958 edition;" and the 1973 edition of NFPA 101, "The Life Safety Code."

The fire protection requirements for hotels in the Multiple Residence Law deal with enclosure of public halls, stairs and storage compartments; means of egress; protection of vertical and horizontal openings and fire alarm systems, among others. The Multiple Residence Law requires stairways "connecting more than two successive stories" shall be enclosed or equipped with automatic sprinklers. The law also states that, "it shall be unlawful to attach or to maintain on or about any door required to be self-closing any device which prevents the self-closing of such door." The Multiple Residence Law does not regulate interior finish, travel distance, or emergency lighting.

The 1958 edition of the State Building Code applicable to multiple dwellings includes requirements for allowable gross area (dependent on construction type), fire resistance of barriers protecting the wood truss construction, door width, ceiling height, subdivision of combustibile concealed space in the area of the wood truss, communicating floors, opening protection on vertical openings, travel distance, and interior finish.

The 1976 edition of NFPA 101, "The Life Safety Code" was used for detailed code analysis purposes. * The following summary of requirements from the 1976 "Life Safety Code" have particular relevance to this fire incident. It is not intended to be a complete description of all parts of the "Life Safety Code" that pertain to the Holiday Inn - Northwest.

Chapter 5 - Means of Egress

Par. 5 - 1.3.1: Requires the exit component of the means of egress to be separated from the building by construction having at least 1 hour fire resistance when the exit connects three stories or less. Any openings in the exit enclosure must be protected by an approved self-closing fire door. Openings in the exit enclosure shall be limited to those necessary for access from normally occupied spaces and for egress from the enclosure. (Access to storage rooms is not allowed.)

* In the interest of comparing life safety problems exemplified by this incident to current national consensus standards, the 1976 edition of NFPA 101, the "Life Safety Code" was utilized for analysis purposes. The 1973 edition of the "Life Safety Code" was in effect in Greece, NY at the time of the fire. Requirements in the two editions for existing hotels are similar.

Par. 5 - 1.3.2: Interior finish in exit enclosures shall be limited to flame spread Class A or B.

Par. 5 - 2.1.2.3: "A door designed to be kept normally closed in a means of egress, such as a door to a stair enclosure or horizontal exit, shall be a self-closing door and shall not at any time be secured in the open position." (The 1973 edition in addition required a sign saying "FIRE EXIT, Please Keep Door Closed.")

Par. 5 - 2.2.2.2: "There shall be no enclosed useable space under stairs in an exit enclosure nor shall the open space under such stairs be used for any purpose."

Chapter 6 - Features of Fire Protection

Par. 6 - 1.1.1: Requires stairways and other vertical openings between stories to be enclosed or protected to prevent the spread of fire or smoke.

Par. 6 - 3.11.1: Requires alarm signaling systems to automatically transmit an alarm to the municipal fire department.

Chapter 11 - Residential Occupancies

Section 11-2 HOTELS

Par. 11 - 2.2.6.1: The maximum travel distance to reach the nearest exit is 100 feet.

Par. 11 - 2.2.8.1: It is required that doors between guest rooms and corridors be self-closing.

Par. 11 - 2.2.10.1.: Any hotel with over 25 rooms is required to have emergency lighting.

Par. 11 - 2.3.1.1: Further requires that vertical openings shall be enclosed or protected.

Par. 11 - 2.3.21: Requires Class A or Class B interior finish in exits or exit access. Class C finish is allowed in some other areas.

Par. 11 - 2.3.3.5: Facilities are required for immediate notification of the public fire department if there is an alarm.

Summary

The combination of highly combustible interior finish in the stairway, unprotected vertical openings (lack of opening protection into the north wing and blocked open fire doors into the west wing), and inadequate alerting of building occupants were the primary factors that led to the fatalities. The combustible interior finish in the stairway provided a very fast and intense fire. The lack of opening protection into the north wing and the blocked open fire doors into the west wing allowed the products of combustion to rapidly spread into the corridors and then allowed the fire to spread to the combustible roof system. The suspended ceiling appeared to provide only a negligible degree of resistance to fire spread. The building alarm was most likely activated early in the fire development; however, the one sounding device per corridor in most cases was either not heard or not recognized as a fire alarm signal.

Contributing factors to the fatalities were the probable early failure of the fire alarm system, the delayed notification of the fire department, and the location of the area of origin. The alarm system wiring in the passageway was quickly exposed to a fire of major intensity. The rapid failure of the wiring resulted in the bells not ringing and possibly delayed notification of some building occupants. If the fire department had been notified at the time of alarm, rescue and fire suppression would have been much earlier in the fire development. This would have increased the possibility of limiting the fire to the stairway and having successful building evacuation. The area of origin within the stairway not only provided a means for vertical fire spread but use of a means of egress was immediately eliminated.

Two factors that contributed to limiting further life loss were the rescue efforts of the Greece Ridge Fire Department and the compartmentation provided by guest room ceilings. On arrival of the fire department, they were encountered with an extremely serious rescue problem. Fire fighters rescued or evacuated most of the building occupants. The plaster on plaster board lath protected top story occupants from the fire in the combustible roof system, providing more time for rescue.

The primary life safety problems exemplified by this multiple death hotel fire are not new and they have been documented in many earlier incidents. (See: "A Study of Hotel and Motel Fires - FR77-1," NFPA: Boston, 1977.) The requirements contained in the NFPA "Life Safety Code" as well as other fire safety codes and laws are intended to mitigate such multiple fatality incidents.

V. APPENDICES

A. PHOTOS