

ALBERT EINSTEIN COLLEGE OF MEDICINE
OF YESHIVA UNIVERSITY

A WITCHES BREW AT BOX 3271

by

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The North East Bronx is fortunate in having a most prestigious medical teaching facility, The Albert Einstein College of Medicine of Yeshiva University, located within its community.

Each year, the Admissions Committee of the Albert Einstein College of Medicine considers some 6,000 applicants, selecting about 179 first year medical students for admission. In recent years, 98% of the first year students had earned their baccalaureate degrees prior to enrollment. A full time faculty of more than 1,000, teaches health care, and conducts studies in every major medical specialty and area of biomedical research.

In 1985, the College of Medicine will celebrate its 30th Anniversary. In this thirty year period, the College has evolved into one of the nation's foremost centers of medical education, research, and clinical care for patients from a wide range of economic and cultural backgrounds.

At 0846 hours, on October 31, 1984, the morning of "All Hallows Eve," a telephone alarm from the Albert Einstein College of Medicine of Yeshiva University re-

ported a fire in the 13th floor penthouse machinery room of their octagonally shaped Orman Building, which carries the address of 1300 Morris Park Avenue, and is located in the Morris Park section of the Bronx.

An octagonal shape for a building is most unusual. The floor area of the Orman Building at ground level is estimated at 14,000 square feet, and the slightly smaller area of the penthouse machinery room is estimated at 10,000 square feet.

The phone alarm was immediately followed by a manual Class 3 alarm at 0847 hours, and then confirmed by the College security force via 911. It was obvious that we were being called to the aid of what is deemed a most important medical and educational asset, not only of the medical profession, but also of the people of this City, and the nation.

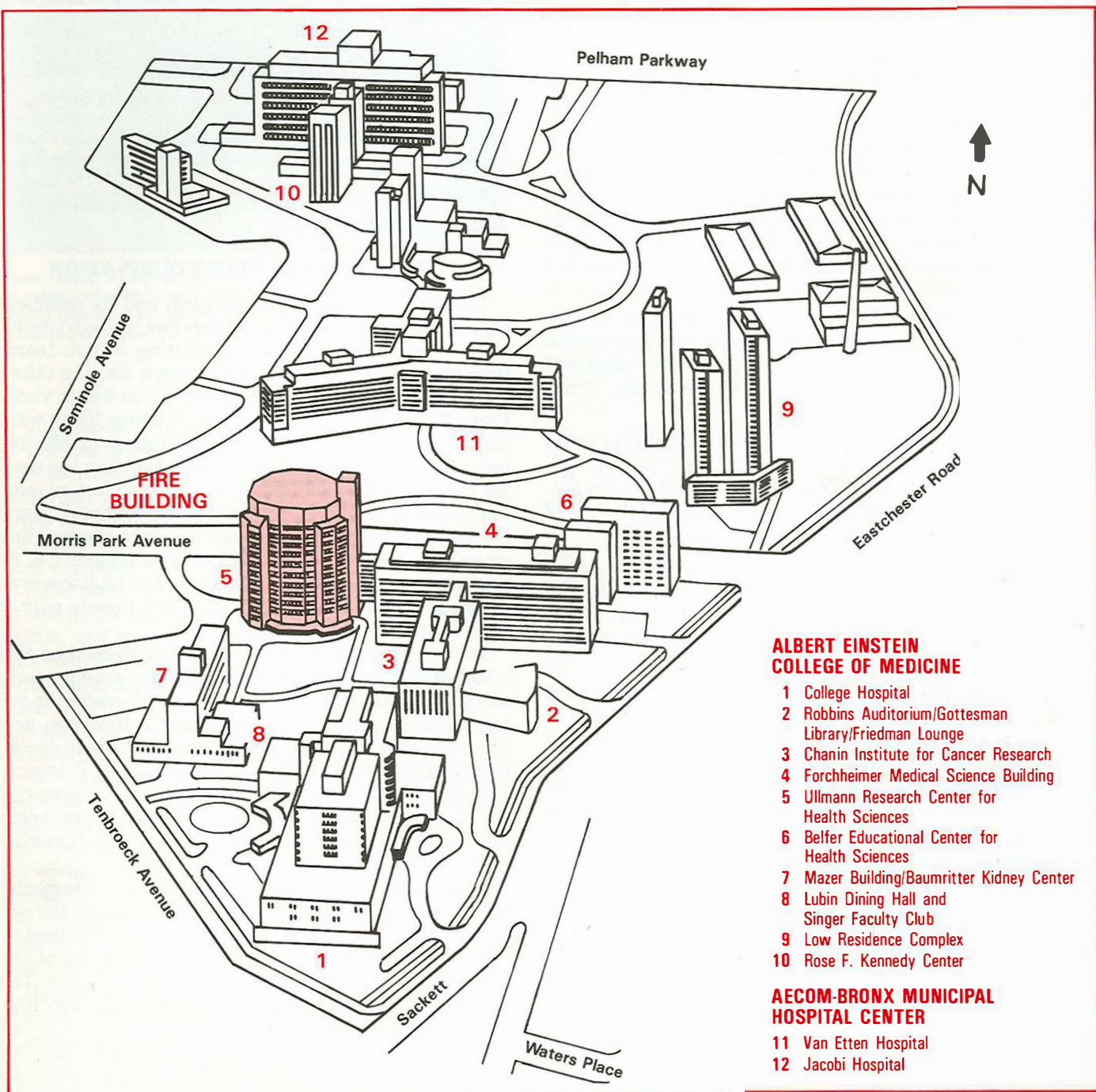
UNITS RESPOND

As the saying goes, "The best laid plans of mice and men gang aft a'glee." And so it was this morning. The first due engine company, Engine Co. 61, was operating

as a relief unit at a greater alarm that had been transmitted earlier. The assigned second due engine company, Engine Co. 97, had a continuing fault in its teleprinter circuit and did not receive the initial teleprinter notification. Engine Co. 90, the assigned third due engine company, received the alarm by teleprinter, and was the first arriving engine company. The chief of the 20th Battalion was already on the scene and had reported a "working fire" in the 13th floor machinery room, involving panels and cables that had knocked out elevator service. This notification rolled Engine Co. 97. Engine Co. 64 was already enroute as the third due engine company, which would complete the assignment. Ladder Cos. 41 and 47 arrived in response order. Rescue Co. 3 had been dispatched at the time of the Class 3 alarm due to the type of occupancy, and the fact that there was an alarm verification from a second source.

Knowledge of the New York Telephone Company fire, and other electrical fires, where polyvinyl chloride (PVC) insulation, and the presence of polychlorinated-biphenyls (associated with transformer cooling oils) were involved, as well as the verification of the alarm notification, resulted in the immediate response of the chief of the 9th Division.

Battalion Chief John P. McCaffrey (2), 20th Batt., the first arriving chief officer, was fully aware of these risk potentials, and they were in the forefront of his operational considerations and orders. Chief McCaffrey ordered the electricity to be shut off at the building's main disconnect, and determined that no PCB's were present. The major concern, at that point, was PVC fume inhalation from burning electrical cable insulation. Because of the PVC risk potential, he directed all members to wear self-contained-breathing-apparatus



ALBERT EINSTEIN COLLEGE OF MEDICINE

- 1 College Hospital
- 2 Robbins Auditorium/Gottesman Library/Friedman Lounge
- 3 Chanin Institute for Cancer Research
- 4 Forchheimer Medical Science Building
- 5 Ullmann Research Center for Health Sciences
- 6 Belfer Educational Center for Health Sciences
- 7 Mazer Building/Baumritter Kidney Center
- 8 Lubin Dining Hall and Singer Faculty Club
- 9 Low Residence Complex
- 10 Rose F. Kennedy Center

AECOM-BRONX MUNICIPAL HOSPITAL CENTER

- 11 Van Etten Hospital
- 12 Jacobi Hospital

(SCBA) equipment during all phases of the operation.

The fire was in a double-faced electrical panel that was eighteen feet long, ten feet high, and one-and-a-half feet thick. The panel contained switching gear and electrical cables of assorted sizes, and was completely involved. The blaze had started when a malfunction occurred while two electricians were working on the panel. They were transferring the elevator machinery power supply lines to a special emergency panel that was being wired in circumventing the building's main disconnect. The malfunction caused an electrical arc that injured the two electricians and ignited insulation and plastic switch components. The fire continued to burn, despite the power being turned off at the main disconnect.

Arriving members were faced with the fact that there was no elevator service as a result of the power loss, and that they had to walk up thirteen flights of stairs, with tools and equipment, in order to reach the fire floor. In this connection, the members of Rescue Co. 3, who had arrived simultaneously with Deputy Chief Richard J. Sloan, 9th Div., were directed to carefully open, or remove, a window at the fifth floor level. The members of Tower Ladder 41 were ordered to position their bucket so that it could be used as an exterior elevator to that opened window. This operation would allow the members of Tower Ladder 41 to raise equipment to the fifth floor level, and would greatly ease the logistics problems associated with manual vertical equipment movement.

The members of Engine Co. 90, acting in a very professional manner, proceeded to the 12th floor stand-pipe located in Fire Tower One. Then, they advanced to the 13th floor and, in an aggressive attack, extinguished the main body of fire.

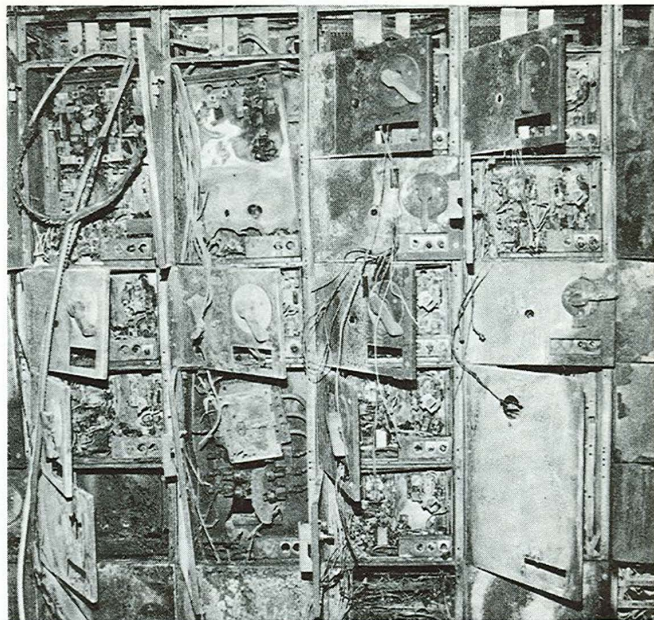
The members of Engine Co. 97 subsequently relieved the members of Engine Co. 90, and used the hoseline, with a fog nozzle attached, for mechanical ventilation. This effort was subsequently augmented by the use of an exhaust fan carried by Ladder Co. 41.

The members of Engine Co. 64 took a position, with their handline, on the roof adjacent to another door to the penthouse, which they reached from Fire Tower Two. The use of their handline, however, was not required.

Engine Cos. 66 and 75 were special-called following the "working fire" report, to provide an immediate reserve if conditions warranted, and to assist in logistic needs.

The members of Ladder Co. 41 used their portable extinguishers briefly, ventilated, and made a primary search of the fire area, which proved negative. The injured electricians had been removed prior to the arrival of the Department. Ladder Co. 41's members also provided portable illumination and the exhaust fan, which was used for smoke and fume removal. Their overhauling role was limited because of SCBA expenditure.

The members of Ladder Co. 47 performed ventilation from the exterior of the penthouse. After ventilation was completed, they made a secondary search of the area. This search proved negative. They were relieved when their SCBA's were expended, and were directed to make a search of stalled elevators on lower floors,



Fire originated in this double-faced panel that was 18 feet long, 10 feet high, and 1½ feet thick. Blaze started when a malfunction occurred while electricians were working on the panel. The malfunction caused an electrical arc that injured the electricians and ignited insulation.

where there were no smoke or fume conditions. This search also proved negative.

PRECAUTIONARY DECONTAMINATION

Ladder Co. 61 was special-called, and its members directed to conduct a search of floors one through twelve; all non-fire involved floors. Operating in two teams (one team assigned floors one through six, the other, floors seven through twelve), their mission was to verify that all occupants were out of the building. They were aided by the security personnel of the college in effecting entry into various laboratories, etc., avoiding the need for forcible entry. While the fire occurred just as most of the staff and students were arriving for the day, and the college's security personnel had kept the building closed, the search by the members of Ladder Co. 61 was appropriate to verify that we had no undiscovered occupant or rescue/aided situation in a remote part of the building.

During this search, the two teams entered non-fire involved areas where radioactive isotopes were properly stored in containers and cabinets, which made the potential for accidental exposure remote. However, as a precautionary measure, a decision was made to decontaminate the unit. Battalion Chief Donald A. Peterson, 15th Batt., was special-called to the scene to supervise the decontamination procedures, which were being carried out by the members of the Hazardous Materials Unit (Haz-Mat).

In connection with the decontamination assessments, we were assisted by the technical expertise of the college's Radiological Officer, who was fully informed as to the locations, types, and radiological levels of the various isotopes being used for medical purposes. The radioactivity levels were very low, and the quantities of materials involved limited.

When Battalion Chief Vincent J. Fowler, Safety Operating Battalion, arrived on the scene, he assumed control of the decontamination procedures.



Tower Ladder 41 was positioned so that their bucket could be used as an exterior elevator to an opened window on the fifth floor. This tactic greatly alleviated the logistics problems associated with the manual movement of heavy and cumbersome equipment to the upper floors.

The Haz-Mat Unit had been called to the scene earlier to take air samples. With the completion of that task, they then handled the decontamination and radioactivity metering. This unit is specially equipped to handle all types of decontamination.

Ladder Cos. 38 and 52 were special-called to perform final examination of the involved panel. The members of these units were given specific entry and exit routes to use in the building, to avoid any possible contamination, and were promptly dismissed when their task was completed.

As always, the Fire Patrol, operated by the New York Board of Fire Underwriters, was of invaluable assistance in their performance of prompt and effective dewatering. Their efficient actions prevented damage to labs and research facilities on lower floors, and assisted in preventing the loss of any long-standing research projects. Members of the Patrol have been equipped with SCBAs and Handi-Talkies by the Underwriters. This equipment proved its value at this operation, since SCBA protection was essential during the dewatering efforts. The Handi-Talkies facilitated communications with the Fire Patrol both at the street staging area, and then later on the operational floor.

Battalion Chief James J. Downey (2), 18th Batt., (second due battalion) was initially assigned the task of investigating and determining the condition of the electricians who had been injured and evacuated prior to the Fire Department's arrival. This task required

that he leave the scene of operations, and go to Jacobi Hospital.

Upon his return to the scene of operations after his investigation, Chief Downey reported that the electricians' injuries were not considered to be in the 10-45 (life threatening) class.

Chief Downey was then directed to assist at the staging area at the street level.

DEPARTURE FROM SOP

Concern about PVC exposure (considered from the onset when the blaze was defined as a serious electrical fire) resulted in two departures from standard operating procedures (SOP) throughout the operation:

- The first was the location of the 9th Division Command Post at the 12th/13th floors levels, in the vicinity of Fire Tower One. This decision was taken because the college's Chief Engineer and the engineering staff, the Fire Safety Director, the Radiological Officer, and the Chief of Security were all located on these levels. Fr. Kenneth Harrington, 9th Div. Aide, was stationed at the division apparatus, and became the contact point and communications coordinator.

This departure from SOP proved to be quite suitable for this essentially "technical fire," that required close operational control. The chief officers of the 20th Battalion, Chief John P. McCaffrey (2), and his relief, Chief Joseph Progler, were free to concentrate on department operations, and were available for personal direction and consultation. Concurrently, the chief in charge of the operation and the college's engineering staff were able to explore areas of mutual cooperation, and discuss problems that the staff would face when control of the premises would be returned to them; particularly the risk to any long term research. It also avoided burdening the Safety Operating Battalion with the considerable radio traffic that would normally be associated with such a "technical fire."

- The second departure was the quick release of units once their SCBAs were expended. Released units were immediately replaced with fresh units, instead of going through the usual re-staging process after the replacement of SCBAs. This determination was influenced by the potential risk that a misguided, though well-intentioned, breach of SCBA discipline would result in a member returning to the operational area with an expended cylinder.

The fire had been quickly extinguished by the members of Engine Co. 90, and visible, black smoke had dissipated rapidly. There was still a faint gray haze in the area, and experience has shown this to be a potentially dangerous situation. In the past, some firefighters have considered this light haze condition to be non-hazardous, and were careless about SCBA use. Then several hours later, these same firefighters became ill due to that "light haze" exposure.

Respiratory rates and other physiological factors associated with the initial twelve floor walk-up into a fire combat situation were also considerations in this departure from SOP. While it is true that the members of the two replacement ladder companies had the same walk-up, the conditions were less pressing. The fire had been extinguished, they had a specific task to perform, and they were released as soon as that task was completed.

RESEARCH PROJECTS UNTAINTED

The Orman Building houses the Ullman Research Center for Health Sciences. This center includes research laboratories and offices for various departments, such as biochemistry, genetics, molecular biology, etc. This special situation was considered throughout the entire operation, from response to extinguishment. In addition to the firefighting risks, there was a potential for the loss of longstanding medical research, due to the environmental conditions associated with power loss and/or water run-off.

Searchlight #23 was special-called on the possibility that their light/generation equipment might be of some assistance in protecting any research that might have been placed at risk. This aspect was not put to the test because of the capability and resourcefulness of the college engineering staff, who were able to isolate the fire-involved "electrical rise," and restore partial power to the facility by about 1300 hours. The engineering staff was equipped with college-owned SCBAs, which we required they use during the immediate post fire assessment of damage. The same concerns about the possible damage to research projects prompted our earlier request for assistance from the Fire Patrol.

So far as we know, no research efforts were compromised as at result of the fire, or our operations.

LESSONS LEARNED

This operation reinforced some "lessons learned" at previous fires. At the same time, other areas of consideration were raised.

- Until the development of firefighter protective clothing reaches the point where the individual is totally encapsulated in a self-contained environment, it is imperative that officers and firefighters recognize the need to wear SCBAs at all operations. Strong measures must be taken to prevent individual exposure to the products of incomplete combustion. Recording exposure is a legitimate concern of all members that must be respected, regardless of the statistical impact.

- One test of officer leadership qualities is the ability to achieve task completion when personnel are becoming fatigued. Such effective leadership does not just happen. It is built up and molded by officers during regular departmental duties, and makes the difference in tough situations. Poor, or non-effective, leadership in physically fatiguing situations encourages the use of non-traumatic injury reporting. It must be realized that task assignment in the early stages of an operation are preordained by the order of arrival, while subsequent unit assignments are influenced by many variables. The fact that one unit may have a more onerous or difficult task than another is essentially the "luck of the draw." Effective platoon leaders recognize that task assignments cannot be equalized in the early stages of the operation.

- Tight personnel control must be exercised by platoon leaders in all aspects of unusual operations, as was the case at this fire. That control ranges from regulating the rate of ascent in the "walk-up," to maintaining effectiveness when the fire combat area is reached, to avoiding the "spill over" of uncontaminated personnel into the pool of personnel being decontaminated. Officers must take direct control roles. Orders to "take up" upon task completion require immediate compliance,

in order to maintain a professional climate and to assist in the overall incident control and resource redeployment.

- Mechanical-hydraulic ventilation, using a fog nozzle, is a most valuable aid in these operations. While it is an old technique, it is one most suitable for use immediately after fire extinguishment. It permits a quick vent of fume-laden atmospheres, pending the placing of fans, portable generators, etc. (see *Mechanical Ventilation and Fog Nozzles*, by Robert J. Fitzgerald (2), W.N.Y.F. Magazine, January, 1958.)

- At this operation, the use of a tower ladder as an exterior elevator, for part of the lift to the upper floors, was quite successful. A portable generator, lighting appliances, fans, and other equipment were raised to the 5th floor with comparative ease.

- Much assistance can be rendered the Fire Department by a well organized institutional staff, such as is employed at the Einstein Medical College. Mr. Fred Spielberg, the Fire Safety Director; Mr. A. Annusiata, the Chief Engineer; Mr. Pat McGuire and Mr. Richard Civitano, the Assistant Engineers; Mr. Jeff Brown, the Radiological Control Officer; Ms. Eileen Beck, the EPA Chief Safety Officer; and Mr. Alvin Lloyd, the Chief of College Security, were of great assistance to the Department. Mutual cooperation was the order of the day, and did much to control the situation, protect the institution from further damage, and return the facility to its normal function in the earliest possible time.

CONCLUSION

This is an outstanding example of some of the associated complexities accompanying a fire in what could be termed a "world class asset," such as the Albert Einstein College of Medicine. This institution is a major research facility, as well as a teaching college.

The fire had to be viewed from two aspects: the extinguishment situation, and the degree to which the fire and our associated extinguishment actions would impair institutional recovery. Institutional recovery had to be accorded a very high priority because of the possible threat to important, long-standing medical research projects. Thus, supportive institutional recovery aspects were factored into the extinguishment operation. This resulted in certain special units being called to the scene while the chief of the 9th Division was, himself, still enroute. Thus, concurrently with the extinguishment action by the first arriving company, Engine Co. 90, the "command structure" was taking action to support the college's recovery.

While the fire itself was not a major one, it was very threatening because it cut off the institution's electrical life line. The potential for damage to long-standing medical research, created a very sensitive and special situation. Early consideration of this risk, coupled with the expertise of the extinguishment action, meshed efficiently with actions to aid institutional recovery.

As stated earlier, no on-going medical research was impaired, or lost, as a result of the fire, and partial institutional recovery was in effect within hours of extinguishment. The educational function of the facility was also not seriously impaired. ▲