St. Anthony Hospital, Effingham, Ill., at approximately 12:10 A.M., April 5, 1949. Flames have enveloped an open wood stairway, trapping Rev. C. C. Sendon in his quarters on the second floor at the right.
The Tragedy of St. Anthony Hospital

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"Greater love hath no man than this, that a man lay down his life for his friends."—St. John 15:13

Fire at St. Anthony Hospital, Effingham, Illinois, on April 4, 1949, took at least 74 lives and caused many painful injuries. Those killed were patients, day old babies, oldsters spending their last days in the shelter of St. Anthony's, and hospital staff members. The fire of unknown cause, believed certain to have originated in a laundry chute extending to the top floor of the building, was first reported by telephone from the third floor at approximately 11:45 P.M., April 4, 1949.

Listed as a 100-bed general hospital, it was the only hospital available to those needing its services within a radius of 25 miles of the stable, God-fearing, county seat town of 8000 in central Illinois. Regardless of race or creed or economic status of the people of the community, all felt the medical and physical security of their hospital and its staff, which had consistently served them well since its dedication in 1876.

Within a few hours after the tragedy was reported, recently appointed Illinois State Fire Marshal Pat Kelly (formerly Deputy Fire Chief of the Chicago Fire Department), his deputies, building department officials from near and far, fire chiefs from large and small departments, representatives of the American Hospital Assn., the Illinois and the U. S. Public Health Service, the American Red Cross, Illinois National Guard, insurance adjusters, and hundreds of bereaved or curious converged on the scene. Two questions were on all lips, "What caused the fire?" (which will never be answered) and "How could it have been prevented?"

There is "nothing new" in the Effingham disaster but a rebuttal in lives to those who have long argued that comparatively low fire insurance costs and the presence of staff personnel in a hospital 24 hours of the day and night was a guarantee of the safety of patients regardless of the fire vulnerability of the construction of a hospital building or the lack of safeguards against the perils of destructive fire.

To sophisticated newspaper reporters, hardened to daily tragedy of lives lost in violent death by homicide, suicide and uncounted dead in fires in homes and apartments every year, the answer was a simple, "Nothing new!" Theirs the job to find the story that would keep the Effingham disaster on the front pages for the few days the public would accept it as news. Even arson in a hospital was not beyond their comprehension!

News reports stated, "The building was thought to be fireproof," and "—had its own extinguishing system." The first statement obviously a symptom of tragic over-confidence, unfortunately reminiscent of the LaSalle Hotel (61 lives), the Canfield Hotel (19 lives), and the Winecoff Hotel (119 lives), and other mass tragedies. The second statement was untrue.

As in every such tragedy, the ruins were searched for bodies and for clues as to the cause and the subsequent effect of the fire.
facts. Though "it did happen here" there was the same humble hope that through the reporting of the loss at Effingham, it would not happen somewhere else. Theirs the task to reconstruct the sequence of the destruction of St. Anthony Hospital, and ours to report it in terms understandable to hospital authorities in other towns and cities which would somehow move them to search out qualified advice from persons appreciative of the average hospital's economic situation, but with sound knowledge of the hazards to life and property from fire causes and their mitigation or elimination. The simple question which must be answered by all hospital authorities, and others deeply concerned with the safety of patients and hospital personnel should be, "How can we prevent an Effingham disaster in our own hospital?"

Evaluation of Hazards
In the light of the fire at Effingham, it is impossible to escape the conclusion that arrangements were not sufficient for pre-fire evaluation and correction of the existing hazards of unprotected vertical openings, the use of combustible interior finish, provisions for the detection and extinguishment of fire in the incipient stage. Thus, to avoid a recurrence of the disaster, hospital authorities, insurance companies and their representatives, architects, building department officials and fire department officials (all of whom have a stake in the proper evaluation of the possible maximum loss of life and property existing in any hospital within their jurisdiction and interest), should jointly consider and satisfactorily answer six basic questions in the determination of prudent corrective measures. All are interrelated, and a careful examination of each should result in a common-sense agreement as to corrective measures required. They are:

Identification and determination of the number of persons in the building was difficult, as all hospital records were destroyed in the fire. Survivors, grief-stricken or injured though they were, had to be questioned.

As in Chicago, Dubuque and Atlanta there was a fervent desire on the part of legal and other authorities to find the
1. How combustible is the structure and interior finish?
2. What are the provisions for the limitation of fire spread (enclosure of stair wells, etc.) from any point of origin within the structure?
3. What provisions have been made for the discovery of fire in the incipient stage?
4. What provisions have been made for the immediate notification of fire-fighting forces and for the prompt notification of hospital personnel that an emergency exists?
5. What provision has been made for the prompt extinguishment of fire in the incipient stage?
6. What provision has been made for the prompt evacuation of patients to safe locations in fire emergencies?

Combustibility

As the investigation proceeded at Effingham, the inherent combustibility of the structure was obvious, but the reason for the rapid spread of fire throughout the building less so. Early reports (in error) attributed the rapid fire spread to recent extensive painting and redecoration of the interior of the building.

The first 2½ story and full basement section was built in 1876. Brick and timber were cheap. Each room was separated by brick bearing walls. Its half-story (third floor) is reported to have had room separations of cellulose fibreboard on wood stud partitions (built at a later date). Accurate information as to the layout of rooms in the half-story is not available. In the original structure, three open stairways of wood construction extended from the basement to the attic, without fire doors or other protection provided for them. One of the stairways was later torn down and floored over. At the time of the fire the second open stairway (surrounding a metal lath and plaster enclosure for an abandoned elevator) also contributed to the spread of fire in the building. When built, the interior finish of the building was wood lath and plaster and the interior doors and trim were wood. The laundry chute (see plan page 16) in which the fire originated is not shown on plans made by a consultant architect in 1922 or as later revised, but is believed to have had a wood interior over a type of exterior plaster over cellulosic material. The exact construction at the top of the chute is unknown.
The gutted ruins of St. Anthony Hospital, Effingham, Ill., looking east. The front entrance is in right foreground. The surgery is the one story and basement section left foreground. The top of one of the two slide escapes can be seen in the center. The north portion of the one story wood frame convent is visible in the upper center of the photograph.
In 1912 or 1913 a three-story, full basement section was added. It had brick walls, wood joist floors, flat deck roof (with concealed space) and wood lath and plaster interior finish. Included in the design was an open wood stairway, without fire doors or other protectives, opening directly to the outside of the building between the first floor and the basement. The corridors of this addition were an extension of the corridors in the original building. A combustible laundry chute (exact construction unknown), shown on the plans made in 1922, extended from the laundry at the basement level to the third floor.

In 1924, a one-story and full basement surgery communicating with the section built in 1876 was added. The walls are brick, first floor construction concrete and terrazzo, and the flat deck roof is wood on steel joist. Interior finish is metal lath and plaster. Its corridor is an extension of the earlier building, separated by an ordinary panel door in an ordinary glass partition. (See cut page 15.)

The laundry and maintenance shop sections adjoining and communicating at the basement level with the three-story and basement brick, wood joist section built in 1912, have brick walls and open wood joist roof construction. The boiler room, next in rear of the laundry (and communicating with the maintenance shop through an unprotected door opening) is cut off from the laundry by a standard self-closing fire door assembly. The roof construction of the boiler room (like the maintenance shop, undamaged in the fire) is concrete on exposed steel beams. The laundry and its equipment suffered only superficial damage in the fire.

In agreement with a general policy established in 1925 by the Sisters of St. Francis, a 4-story fire-resistive elevator and utility room addition off the east corridor was constructed in 1945. A fire-resistant trash chute and laundry chute, only accessible at their lower extremities from the outside at the ground level, was included, and neither chute was involved in the fire.

In 1943 the ceilings of the open corridors, except in the basement (approximately 350 lineal feet per floor), were sound-proofed with a combustible fibre-board acoustical treatment.* The side walls of the corridors, except for distance of 18 inches from the ceiling (acoustically treated), were covered with a type of oil-cloth-like material.

Floor coverings, usually the last to ignite in any fire, are reported to have been linoleum throughout, except in the basement and surgery. They were waxed and polished.

In 1946 a one-story wood frame convent building, communicating through a passageway 16 feet in length with the basement of the main building, was built. The vertical exterior surfaces of this building were asphalt shingles (simulated brick appearance) which were scorched in the fire in the main building, but the efforts of the fire-fighting forces and the fire-retardant shingle roof covering combined to save this building from destruction.

A cursory examination of the ruins indicated that the possible maximum loss under completely adverse conditions was 100 per cent, especially in the event of fire.

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*The material used was a fibrous acoustical tile of the sort made by a number of manufacturers. Noncombustible acoustical tile and wall boards are also made by many of these same companies. Identical or similar trade names are used for both combustible and noncombustible boards so that the material is not identified by a trade name in this report. A number of these manufacturers are engaged in a program of development of fibreboards treated to reduce flame-spread characteristics.
originating in the maintenance shop, and had been so since its opening in 1876. The area of the building taken from the 1922 plans and measurements of the remaining walls, now rubble, follows:

- **Basement** ........ 19,000 sq. ft.
- **First Floor** ...... 15,000 sq. ft.
  (Not including 2400 sq. ft. in the convent building.)
- **Second Floor** .. 13,400 sq. ft.
- **Third Floor** .... 13,400 sq. ft.

**Total Area** ........ 60,800 sq. ft.

**Limitation of Fire Spread**

Except for a standard fire door installation in the opening between the noncombustible boiler room and the laundry there were no planned barriers to the spread of fire in the building.

The usual special hazards found in hospitals—kitchen, laundry, storage room for general supplies, oxygen and ether storage, pharmacy and X-Ray laboratories,—were all located in the basement, not cut off in any manner from the balance of the building, but, like the LaSalle, Canfield and Winecoff hotel fires, none of the "special hazards" likely to be found in them were initially involved in the fire at St. Anthony Hospital.
The combustibility of one of the three laundry chutes which spread fire rapidly into the combustible attic (half-story) area, the open combustible stairways, and the use of combustible fibreboard in the attic and open corridor ceilings, all were major contributing factors in the large loss of life and the rapid and nearly total destruction of the property.

**Discovery of the Fire**

In the absence of automatic means or watchmen to detect the fire (which can be placed with reasonable accuracy in the laundry chute, see plan) dependence for discovery of the fire was placed on any one of 10 members of the hospital staff on night duty in the building. The exact time when Sister Eustasia first smelled smoke on the third floor of the east wing may never be known, but she is known to have telephoned Sister Anastasia, night superintendent, at the switchboard on the first floor. Sister Eustasia died in the fire and no one is alive who can trace her actions prior to or following her discovery of smoke at her duty station. Twenty-three patients in the third floor area (prior to 1946, the Sisters’ quarters) also perished in the holocaust.

**Emergency Notification**

Organized fire drills had not been administrative practice at St. Anthony Hospital, which is not uncommon where a general feeling of security against fire exists. Sister Anastasia, at the switchboard (near collapse following the fire) remembers having rapidly telephoned Chief Engineer Frank Reis, who lived at the nurses’ home 100 yards west of the building, Sister Superior Ceceliana at the adjoining convent building and the Effingham Fire Department. The approximate time Assistant Chief Charley Chamberlain, on night duty at the station, states that he received the call through the telephone office to the city hall was at 11:48 P.M. There were no time recording devices in fire headquarters.

**Extinguishment**

Reconstruction of the sequence of events in the attempt to extinguish the fire until it was finally brought under control (approximately three hours later) is exceedingly difficult. Twenty-eight 2½-gallon soda and acid extinguishers and standpipe and hose were available to hospital personnel. Chief Frank Wilkins’ department consisted of 22 men, six of whom are employed by local public utility firms.

The hospital chief engineer, Frank Reis, who died in the fire, raced from his home following Sister Anastasia’s call, entered the basement entrance and to the opening into the laundry chute. He was last seen
fighting the fire in the chute with a fire extinguisher, though he may have died in an attempt to reach his wife, who had entered the hospital a day or so earlier as a patient. Mrs. Reis later escaped by jumping from a third floor window and at the last report was near death.

Four discharged 2½-gallon soda and acid extinguishers were found in the rubble in the basement corridor near the opening into the laundry chute. (See plan page 16, extinguishers designated.) At least one was used in an effort to extinguish the fire at the chute in the first floor corridor. Several nuns, hurriedly dressing in the convent, entered the main hospital building through the passageway into the basement and assisted Engineer Reis until all were driven out of the building by smoke and heat rapidly filling the corridors, and the need to rescue patients became terribly obvious.

Assistant Chief Charley Chamberlain, driving the 500 gpm pumper, and one
member of the fire department arrived at the front of the building in approximately two minutes following the receipt of the alarm. As he braked to a stop, flames were seen in the second and third floor windows in the vicinity of the laundry chute originally involved, and patients were already at the second floor front windows screaming for help. Neighbors, nuns, nurses and the rapidly gathering crowd spread mattresses and helped with the movement of the ladder equipment placed at the front windows. Some patients were jumping to injury or death, when even a few seconds' wait might have enabled rescue.

Chief Wilkins arrived two minutes later, following a telephone call, in the same car with three members of the fire department. He immediately checked the fire escape at the rear of the east wing, and was shocked to find that no one was using it. Smoke was pouring through the entrance to the fire escape from the window at the end of the third floor corridor.

Eye-witnesses confirm the statements of members of the fire department that within a minute or two following the arrival of the first pumper flames burst through the roof in the vicinity of the open stair well at the intersection of the south and west corridors, and almost directly above the open stairway at the southwest corner near the nursery on the second floor. Later results confirm Chief Wilkins' statement, "We didn't have a chance!"

It is impossible to expect time factors to be accurately provided by any or all of those involved in mass destruction taking place before their eyes. It is believed that Assistant Chief Harry Stalling arrived within 5 minutes of the alarm with the department's 750 gpm pumper, adequate hose, 28-foot ladders and one 50-foot aluminum ladder. Two additional pieces of apparatus, and 500 gpm O.C.D. pump and a recently purchased and completely equipped rescue truck (panel body), were also prompt in arrival on the scene. Chief Wilkins estimates that all 22 men in the department and the available equipment were present within 10 minutes of the receipt of the alarm.

Firemen must expect critical comment from bystanders in the event of large loss of life fires, and the Effingham disaster is no exception. With the third floor of the building completely involved on arrival, Effingham firemen faced the same horrible choice many firemen have faced, whether to begin rescue operations (of paramount importance) or to lay their hose and get water on the fire. Many are alive who would certainly have died in the fire if rescue operations had not been the first choice of Assistant Chief Chamberlain and confirmed by Chief Wilkins on his arrival a minute or two later.

Reporters were quick to pick up comments and rumors about low water pressure at the hydrants and delay in getting water on the fire. It is considered that the water supply, pressure (45 lbs., boosted to 75 lbs.) and fire equipment available were sufficient to cope with almost any fire emergency except the insurmountable task the department faced at St. Anthony Hospital with fire through the roof of the building at the time of, or shortly after, arrival, open stairways, and open corridors finished with combustible fibreboard and without provision for automatic detection or extinguishment of fire. Fusible plugs on oxygen tanks stored in a room in the basement near the laundry chute let go during the fire and ether cans exploded, but the loss of life had already mercifully occurred in the opinion of competent observers.
In response to a State Police radio alarm, volunteer fire departments from Matoon (28 miles), Neoga (15 miles), Sigel (8 miles), Alpamont (12 miles), Teutopolis (4 miles), and Salem (45 miles) each arrived with one engine company. Centralia (62 miles) sent firemen to the scene without apparatus. More than 50 firemen from these and other communities were continuously on duty for several days, digging out the ruins in an effort to recover bodies and searching for evidence which would indicate the cause of the fire.

Exit Facilities

The emergency evacuation of all patients under conditions which existed in the midnight fire at St. Anthony Hospital was impossible. Forty-two persons on the third floor, 29 on the second floor, and 3 on the first floor died in the fire. The combustibility of the structure and the rapid spread of fire on the surface of the interior finish in the open corridors combined with the open stairways to defeat the possible use of two exterior fire escapes (one at the end of the south corridor reached at the second floor through the nursery, and the other at the end of the east corridor) as well as two slide escapes (one accessible only from the east corridor, and the other through a room off the west corridor as indicated on the plans) installed on the order of the State Fire Marshal in 1940.

Consider the situation which faced the 10 members of the hospital staff on duty and at least two bed-side watchers (members of families) when they learned there
was a fire in the building (probably with the top floor half-story section at the front of the building totally involved), with more than 100 patients in their care, many in fracture casts, in traction splints, some recovering from major surgical operations, others aged and infirm, one blind patient, a prospective mother waiting in the delivery room, 11 babies (later to be identified only by the identification beads placed around their tiny necks), even some patients whose treatment had been completed and who were waiting the night to return to their homes!

At the very best, nuns and nurses asleep in the convent and nurses home who were familiar with the building, the location of the fire escapes and slide escapes, were from 3 to 5 minutes distant from their helpless charges, and the untenable stairways and corridors barred the way to them!

The heroism of survivors is oftentimes overlooked in the heroism of the dead, but Fern Riley, young nurse in charge of the second floor nursery, in the early stages of the fire had only to step outside the window of the nursery to the fire escape and safety, but died with her small charges facing certain death. Hundreds of proud fathers must have peered through the plate glass window at the end of the south corridor at their wrinkly new-born. The same window must have held terror to Fern Riley as she must have seen smoke and flames racing toward her through the 120-foot long open corridor and spreading down the open stairway from the third floor just outside.

Sister Eustasia, alone with her patients on the third floor died, as did Sister Bertina. Frank Reis, who knew every inch of the building, every pipe and fitting, every foot of electrical wiring, died in the fire, What a simple matter for Frank to have retreated to safety through the basement corridor, its paint bright and shiny even after the rubble cooled very much later.

Two special nurses died in the fire. They found the body of the hospital Chaplain, Rev. C. C. Sandon, trapped without warning in his second floor bedroom. At least one of the bed-side watchers is known to have perished. "Greater love hath no man than this—."

Neighbors, Sisters, nurses, firemen and other rescuers saved lives with heroism beyond compare. Fathers raced into the smoke and heat to save children and pregnant mothers until the quick burning structure drove them back. Several who jumped from windows, the only way out when the corridors became untenable, died of their injuries.

Without provision for the limitation of fire spread within the building, the fire escapes and slide escapes ordered to be installed by the State Fire Marshal could not be used to save a single life.

When the series of hotel fires in 1946 demonstrated the extremely high life hazard of unprotected vertical openings, the Illinois State Fire Marshal's office included the protection of such openings in the cor-
rective orders issued to hotels and hospitals they were able to inspect under their jurisdiction, though this and other corrective measures are not specifically mentioned in the law.

At the last inspection by the State Fire Marshal at St. Anthony Hospital in 1944, the hotel fires had not yet occurred, housekeeping of the building was excellent, exit facilities were found to be in good order, and a recharge of the first aid fire extinguishers was ordered.

The death of 74 persons (49 women, 16 children and 9 men) of 128 now known to have been in the building at the time of the fire seems proof for all time that without adequate hospital personnel on duty trained to quickly move bed-ridden patients in their beds to areas of safe refuge or to adequate means of escape, loss of life is inevitable if areas subject to fire destruction are unlimited, there is delayed detection of fire and inadequate provision for the limitation and immediate extinguishment of it.

How Could It Have Been Prevented?

Recommendations for fire and accident prevention and protection to be acceptable must also be practical, and demonstrated from the fire record to be necessary to life and property safety. Recommendations beyond those indicated below could be made, such as, "Replace the combustible structure with fire-resistive construction."

No doubt such a recommendation would be desirable, but not immediately feasible from an economic point of view. The Sisters of St. Francis decided in 1925 to employ modern fire-resistant construction in the building of additions or replacements of their hospital facilities, and demonstrated their acceptance of this type of construction at this and other hospitals operated by the Order. The basic assumption in the following recommendations is that replacement of the structure was not feasible prior to the fire, and that the building could be used safely for many years if the recommendations and suggestions were complied with.
Quite the most distasteful and frustrating task in the preparation of reports of large loss of life disasters for the membership of the NFPA and the public at large is the necessity for inclusion of items of omission and commission which in the aftermath can be seen to have contributed to the over-all result of the disaster. Distasteful, because such reports appear to "second guess" and frustrating for the reason that in each large loss of life fire in the past four years (273 lives in 4 fires) it has been obvious following each fire that there was over-confidence in the safety of the structure and occupancy which affected the attitudes of management, legal authorities, fire and casualty insurance interests, architects, building materials interests and others, prior to the fire. In all humility therefore, and in sequence insofar as the St. Anthony fire is believed to have progressed, the following recommendations for the limitation of fire spread in the building (and the estimated cost) might have been presented:

1. Provide a sprinkler head to be supplied with water from the nearest domestic service piping at the top of each laundry chute, trash chute and dumb-waiter shaft. Estimated cost $500.00.

The exact cause of the fire is certain to remain unknown, but it is believed certain that it originated in one of three laundry chutes. Consider the effect on the loss of life had these chutes been protected by single automatic sprinkler heads.

2. Provide smoke barriers (as recommended by the American Hospital Association and the NFPA) in the east corridors at the locations indicated (1) on the plans. Doors to be arranged to be maintained in the open position unless closed by the operation of a heat-actuated device. Estimated cost $800.00.

It is believed that the operation of doors in smoke barriers at the indicated locations would have cut off the passage of smoke and heat temporarily at the third floor level, and progressively lower, even though automatic sprinkler heads had not been provided for the top of the affected laundry chute.

3. Provide smoke barriers in first, second and third floors in the east cor-
ridors at the locations indicated (2) on the plans, and a standard self-closing fire door at the entrance to the east stairway in the basement. Estimated cost $750.00.

The design of this open combustible stairwell was such (completely destroyed in the fire) that it would have been physically impossible to enclose it at the entrances to it, except on the corridor wall in the basement. The recommendation for smoke barriers on the upper floors is the only feasible method of providing an enclosure without complete rebuilding of the stairway. It has the disadvantage of leaving one room on each floor opening into the open stairwell area, but this could be partially offset by providing a door opening into an adjoining room, or by the installation of a suitable door on the corridor opening into the room and depending on the fire department for rescue of individuals in these rooms. Providing adequate hospital personnel were available, patients could have been moved down such a protected stairway or to safety via the exterior fire escape at the rear of this wing.

4. Remove and rebuild the old elevator shaft and stairway at the location indicated (3) on the plan, the stairs to be constructed of noncombustible materials, the stairway enclosed with a minimum 1 hour partition, and the entrance doors to stairways at each floor to be Class B as listed by the Underwriters’ Laboratories, Inc. Estimated cost $5,000.00.

In view of the rapid spread of fire in the half-story (attic of the south wing of the building) had the stairway been properly cut off and adequate staff personnel present, it could have been used for the evacuation of patients from the second and first floors. This stairway burned out and the metal lath and plaster enclosure collapsed into the basement in the fire.

5. Provide sliding fire door assemblies at each entrance to the stairway at the location indicated (4) on the plan. Estimated cost $600.00.

This stairway, enclosed except for the lack of fire doors, was totally burned out in the fire. A standard sliding fire door installation of the interior of the openings was feasible, and had they been installed might have saved the lives of patients and the Chaplain in the area. In addition, this stairway provided the nearest access to the upper floors for nuns resident in the convent.

6. Coat the fibreboard ceiling in all locations with fire-retardant paint equivalent to Albi-R (listed by the Underwriters’ Laboratories, Inc.), or Fi-Re-Sist (tested for effectiveness by the National Bureau of Standards for the Corps of Engineers, U. S. Army) in accordance with manufacturers directions. Estimated cost $1,200.00. It is further recommend ed that future requirements for acoustical treatment be met through the use of noncombustible acoustical materials.

The fibreboard acoustical treatment provided for approximately 9000 sq. ft. of open corridors on the first, second and third floors was installed, using two methods: 1) fastened to 1 x 3 wood nailing strips beneath the original wood lath and plaster ceiling, and 2) by gluing it directly to the metal lath and plaster ceiling in the surgery. This material, once ignited, spreads fire much more rapidly over its surface than ordinary wood such as red oak. The cut on page 20 shows all that remained of the fibreboard in the corridors except that in the surgery. The charred wood nailing strips can also be seen in the cut on page 15, which shows the fibreboard in the corridor of the surgery, where the ordinary wood panel door and ordinary glass partition delayed the ignition of the board until fire-fighting forces could reach the area and prevent the glue from melting, which, had it done so, would have released the board from the ceiling.

Recommendations 2, 5 above would limit the areas of the corridor subject to rapid spread of smoke and fire from the point of view of providing additional time for the removal of patients and would also enhance the effectiveness of the fire-retardant coating when applied to the acoustical material.

Fire Limitation — Summary of Cost Estimates:

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Total . . . . . . . $8,850.00
Automatic Protection

The primary consideration in the use of automatic protection devices is their contribution to the enhancement of the life-safety of the occupants. As has been indicated above, the first notice that there was fire in the building came from Sister Eustasia, who smelled smoke on the third floor. This discovery was in the line of duty, no watchman patrol charged with this specific duty having been provided. As both persons who might be able to answer the question as to the cause and time of origin of the fire died in the fire, it will never be known. Three days after the fire, firemen digging in the shadow of unstable brick walls, finally reached the floor level of the basement at the base of the laundry chute. Bits and pieces of charred linen from the chute burst into flame as the rubble about them was removed. Nothing was left in the rubble to indicate the cause of the fire.

It has been noted earlier that the areas of special hazard were not originally involved in the fire, but this is not to suggest that fire in such locations is an impossibility. On the contrary, the location of general storage areas, oxygen and ether storage, laundry, X-Ray rooms, the kitchen, and the pharmacy in the basement (especially without structural protection against the spread of fire vertically and horizontally from such areas) could have as easily been major factors in a holocaust in the absence of detection and extinguishment of fire in the incipient stage. On two earlier occasions, the Effingham Fire Department had handled fires (discovered by personnel and promptly reported while in the incipient stage) in laundry and maintenance shop areas without difficulty or unduly alarming the patients.

Thus, concurrently, action is necessary in limitation of fire spread in the building and consideration of the necessary automatic protection facilities. Whatever type of automatic protection is provided, means to automatically transmit an alarm to the public fire department (and the hospital fire brigade if available) without hospital staff interference is necessary, as is provision for assured maintenance of the automatic systems in operating condition.

Automatic Sprinklers

Automatic sprinkler protection is designed to detect and extinguish fire in the incipient stage, and thus serves two highly important purposes. Too little emphasis has long been placed on the life-safety value of automatic sprinklers, too much
on the considerable saving in building and contents fire insurance costs through their use.

Early newspaper reports stated that the "building had its own extinguishing system." This report was totally in error. Automatic sprinkler protection is reported to have been recommended.

Consider the difference in the result of the fire at the St. Anthony Hospital had structural limitation of the spread of fire and smoke been provided, the fire in the laundry chute detected and extinguished by automatic sprinklers, the fire department automatically notified, and the hospital personnel notified and trained to evacuate patients to safe locations.

A reliable cost estimate, based on presently available water supplies, for the installation of automatic sprinklers throughout St. Anthony Hospital with a water flow alarm connection direct to the Effingham Fire Department headquarters, is less than $25,000.

**Automatic Fire Detection**

There are many types of approved automatic fire detection systems listed by the Underwriters’ Laboratories, Inc., and the Associated Factory Mutual Laboratories, Inc., any one of which, if properly installed and maintained throughout St. Anthony Hospital could have detected fire automatically in any location in the incipient stage, provided direct notification of the Effingham Fire Department, and warning to the hospital staff that there was a fire emergency requiring immediate action. Consider the difference in the result of the fire at St. Anthony Hospital had structural limitation of smoke and fire spread been provided, the fire in the laundry chute been automatically detected, the fire department automatically notified, and the hospital personnel notified and trained to evacuate patients to safe locations.

A reliable cost estimate made from the plans of the destroyed building for automatic fire detection protection of the entire building and a direct connection to the Effingham Fire Department headquarters is approximately $6,000.00.

**Conclusion**

The loss of 74 lives at St. Anthony Hospital* is not the result of willful acts on the part of any person or persons, rather it is the failure of all those familiar with the consequences to reach the Order of St. Francis with the advice which could have saved their grief and heartache and the lives of their patients and associates: the combination of combustibility of structure, its combustible interior finish, open corridors, stairways, and other unprotected vertical openings, and the lack of provision for the immediate detection and extinguishment of fire in the incipient stage.

To other hospital administrators the St. Anthony disaster is a tragic invitation to consider their own situation, and to follow qualified advice and assistance in the evaluation of the fire hazards, if any, present in their hospitals. A group evaluation should be made on the supposition that destructive fire may originate in any room or location within a building, whether in visible or concealed space, and in the light of available facilities for the detection and extinguishment of fire originating from any possible cause.

In the introduction of this report, the suggestion is made that advice and assistance in the evaluation process be obtained from those legally and professionally qualified to provide it. The list is repeated

*Property loss, direct and indirect, is expected to be in excess of $1,000,000.
with the type of experience likely to be available from each:

1. *The chief engineer of the hospital.* The chief engineer, responsible for the maintenance and operation of the hospital building and equipment, is best qualified to contribute his knowledge of the building and the location and condition of mechanical and electrical equipment. If a hospital fire brigade is to be set up, the logical person to head it, subject to the basic responsibility of the hospital ownership, is the chief engineer.

2. *The fire chief.* Regardless of the steps taken to improve the physical conditions in a hospital (or any other occupancy) the fire chief and his department will be called upon in a fire emergency, and he and his department must deal with conditions as he finds them when a fire occurs. The success or failure of the fire department efforts in the saving of lives and property in large measure is dependent on the *immediate* discovery of fire, the *immediate* transmission of an alarm to the department, the provisions made for the limitation of fire spread within the structure pending the arrival of the department, and the over-all vulnerability of the structure to fire destruction. Much of the fire department’s effectiveness is dependent also on a complete knowledge of the building and the location of hazards and protective devices in it, as well as the availability and dependability of water supplies, etc. The fire chief, may, in addition, have legal responsibility for the enforcement of ordinances affecting the storage and handling of flammable liquids and gases, and other common requirements of fire prevention ordinances.

Thus, in the evaluation of the hazards of a hospital, the fire chief is in a position to make his contribution to the protection of the patients and personnel on the basis of his department’s capabilities and advice as to fire drills, alarm transmission, etc. Building owners have often been helpful to fire department officials in securing manpower and equipment shown to be essential in the reasonable protection of their specific properties.

3. *The building department official.* In most communities which are subject to building code requirements, the building official is legally responsible for the enforcement of building regulations affecting the hospital. Such regulations often overlap with fire prevention regulations, but the basic legal justification for both lies

Looking west in the south corridor. The unburned flooring hangs from the remains of the floor of the nursery. The office was directly beneath; all records were destroyed.
in their protection of the safety of the public. In several states (as in Illinois) the State Fire Marshal and local fire department officials have permissive responsibility for the provision of safe means of egress, fire escapes, etc.

Thus, the building department representative in the deliberations of the group may be expected to contribute sound knowledge of the fire resistance of the structural elements of the building, legal requirements for exits, and should also be familiar with costs of various types of building materials found to be necessary. In addition, the legal implications of structural problems are usually the responsibility of the building official.

4. The architect. Few hospitals make physical changes in their buildings without the services of an architect. Fortunate is the hospital board whose architect has a basic knowledge and appreciation of the relative hazards of combustibility of building materials, the availability and comparative costs of various materials used for sound-proofing, requirements for exits, protection of openings, and other alterations commonly necessary. The architect will ordinarily be found to have the most up-to-date information of the evaluation group in the consideration of possible costs of making improvements.

5. The fire protection engineer. Fire insurance agents, brokers, and fire insurance companies they represent, like the owners of buildings, have a basic interest in the reduction of life and property losses from fire causes. Fire insurance companies do not indemnify the hospital owner or his employees for loss of life. The ser-
vices of fire insurance engineers obtained through the cooperation of company sales representatives, may be expected to make their principal contribution to the group evaluation of fire hazards in sound knowledge of the mitigation or elimination of the hazards, NFPA standards for their protection, and the hazards to life and structure from failure to protect vertical openings or to consider the inherent combustibility of the structure, interior finish, etc. Fire insurance engineers may also be expected to provide knowledge as to the effect of proposals for corrective measures on fire insurance rates.

6. The casualty engineer. Casualty insurance companies indemnify owners and employees against loss of life, accident, etc. The services of casualty insurance engineers obtained by contact with the appropriate agent or broker, may be expected to contribute a wider knowledge of the adequacy of exit facilities (see NFPA Building Exits Code) and an accident prevention program than fire protection engineers, but in most cases, their understanding of fire hazards (their elimination or protection) is less acute than that of the fire protection engineer. Unfortunately, fire protection engineers and casualty engineers seldom have an opportunity to consider jointly and to provide prevention advice to owners at the site. In organizing an evaluation group, the hospital administrator will do both fire protection and casualty engineers a great service by providing them with an opportunity to meet and work together in the solution of an obviously overlapping problem.

General Program

In the aftermath of the disaster at St. Anthony Hospital, Effingham, the outcry for more law to protect the lives of helpless patients is no less distinct than that following every national tragedy, and the clamor in some cases is warranted. However, in Illinois (even given perfect law) there are only 13 men in the State Fire Marshal's office available to inspect 218 hospitals located outside the city of Chicago. It thus appears obvious that in Illinois, at least, legal requirements are not sufficient to allay the fears of hospital authorities or the patients they serve. What then is the answer?

It seems clear that hospital administrators who wait for inspections by public officials will be doing themselves and their communities a disservice. Consider the probable national effect of an evaluation program as outlined above, in which all affected organizations, insurance agents and brokers and the organizations they represent, architects, public officials and others combine their manpower and special knowledge to alleviate delay in a hospital inspection program which, in many cases, will result in improved life and property safety. What more important program is there, than the protection of the lives of helpless patients and hospital personnel?

Acknowledgment