CITY RECORD

OFFICIAL PUBLICATION OF THE CITY OF BOSTON.

VOL. 14. SATURDAY, NOVEMBER 4, 1922. NO. 44

PROGRESS IN FIRE PROTECTION, 1872-1922.

BY THEODORE A. GLYNN, FIRE COMMISSIONER OF BOSTON.

On Saturday, November 9, 1872, at 7.24 p. m., an alarm of fire was sounded from Box 52, at the corner of Lincoln and Bedford streets. This was followed by four additional alarms received in rapid succession. These five alarms called the entire working force of the department to the scene of a fire which had started in the basement of a granite building at the corner of Summer and Kingston streets, occupied by Tebbitts, Baldwin & Davis as a dry goods store, and A. E. Young, hoopskirt manufacturer. The fire originated in the basement and burned through the elevator shaft to the upper stories and through the roof. The illumination from the fire was seen as far away as Charlestown fourteen minutes before the first alarm was sounded in Boston.

The fearful fire which resulted was the greatest catastrophe which ever visited Boston, and in the opinion of the officials in charge of the Fire Department in 1872 was due to the unaccountable delay in giving the alarm. The report of the commission appointed to investigate the cause of the fire and the efforts made for its suppression states that the fire "raged without control till the afternoon of the following day (Sunday), spreading through the best business portions of Boston, covering sixty-five acres with ruins, destroying 776 buildings, assessed at the value of $13,500,000, and consuming merchandise and other personal property estimated at more than sixty millions of dollars."

The date of this terrible conflagration marked an epoch in the history of Boston, and, approaching as we are the fiftieth anniversary of the disaster, it is truly characteristic of human nature that we should review the past half-century, not with any intention of boasting of our good fortune in escaping a similar fate, but to find out if we have made any real progress in preventing the possibility of such a catastrophe befalling us again. In such a review there is considerable opportunity for comparison in fire conditions of 1872 and 1922.

In 1872 the population of Boston was only 290,000, compared with approximately 832,000 today. The Fire Department at that time was under the control of the Board of Aldermen and the Common Council.

NOTIFICATION.

As the size of the fire was attributed in a great measure to the delay in giving notice, it is well to consider at the beginning the facilities of half a century ago and the fire alarm system of today.

The total number of fire alarm boxes in 1872 was 164. Today there are 1,270 boxes installed throughout the city. The modern boxes are known as the "keyless door" type, which up to a few years ago the boxes were all locked and the keys intrusted to the care of certain citizens living or engaged in business in the vicinity of the box. The delay resulting from the obligation of finding the key before sounding an alarm is very apparent. If the custodian of a key was careless, or his home or place of business closed, much valuable time was lost in searching for some other caretaker. All public boxes today are of the keyless door type, and delays of this character are avoided.

In addition, two or three private fire alarm companies are in business in Boston today. These companies install private fire alarm systems in buildings, and over these systems alarms are transmitted to their central offices, and thence to the Fire Department. The systems are either automatic or may be operated manually without delay, thus assuring the Fire Department of prompt notice of the existence of a fire. Many potential conflagrations have been checked in the first five minutes, and in order to accomplish this the City of Boston has extended its fire alarm system commensurate with its growth.

PERSONNEL.

In 1872 the membership of the department comprised a force of approximately 475 men, 385 of whom were call members, and the other 90 permanent men engaged in driving and operating the apparatus. It was necessary at the time of the great fire to enlist the services of approximately 500 additional men. The pay roll of the department in 1872 amounted to a little over $221,000, while in 1922 approximately $2,400,000 will be expended for salaries. Today the department gives employment to 1,400 men, 1,200 of whom comprise the actual fire-fighting force. The entire department is now on a permanent basis and there are no call men.

In making a comparison of the personnel of today with that of years ago consideration should be given to the type of men in our department at the present time. All appointments are made from eligible lists established after competitive civil service examinations. In order to pass these examinations a man must do considerable studying and also be in first-class physical condition to pass the rigid physicial tests imposed on all applicants for appointment. All promotions in the department are made in an almost similar manner, which induces the men to apply themselves industriously and become fully acquainted with the duties of firemen in order to fit themselves for the examinations.

In addition the department conducts schools of different kinds, frequent drills and inspections, thereby maintaining the efficiency of the personnel at a high standard. These features were unknown fifty years ago, and cannot be effectively adapted to a call fire department.

EQUIPMENT.

In 1872 the Fire Department consisted practically of twenty-one engine companies, each having a hose reel, or "jumper," the steamers being of small capacities; ten hose companies; seven hook and ladder carriages, and three extinguisher or chemical companies. Of the twenty-one steamers in service, six were located in the city proper, three in East Boston, three in South Boston, three in Roxbury and six in Dorchester. Of the seven hook and ladder carriages only two were in the city proper.

Today our fire-fighting equipment consists of fifty pumping engines, three fireboats, thirty ladder trucks, three water towers, one chemical company and one rescue company. In addition the department maintains a good percentage of reserve apparatus in first-class condition ready for any emergency. Practically eighty-five per cent of this equipment is motorized. A motor pumping engine of today has approximately the relative value of two of the steam fire engines of fifty years ago.

In 1872 the Fire Department was severely handicapped by an epidemic of a horse disease known as "epizootic," making it necessary to draw several of the pieces of apparatus to the scene of the fire by hand. It required about two hours to concentrate the total force of the department at any given point in the city in 1872. Today, with motor apparatus, and operating under a modern assignment system, we are able, if necessary, to mobilize all our apparatus in any part of the city in less than one half an hour. The cities and towns around Boston are well equipped with motor apparatus, and upon call could assemble their men and equipment in almost any part of our city in a very short time.

The Fire Department carries on sixty per cent of its apparatus what is known as "deck guns" for the purpose of concentrating heavy streams. The high pressure wagons are equipped to operate streams of such extreme caliber as to penetrate a blaze of the greatest magnitude and do effective work, where in the earlier days, less powerful streams would practically feed the flame.

WATER.

Water and fire in a controlled state are two of the greatest servants of mankind today. Either, uncontrolled, presents a problem and wreaks havoc wherever it chooses to strike. Water, applied in proper force and volume, performs a great service to man in checking the ravages of the fire demon. When we look back and view the situation of fifty years ago we are amazed that even greater loss did not result from the terrible fire that visited the city.

In 1872 the water service in the downtown section consisted of a single set of mains, there being a 24-inch main in Washington street, from which a 12-inch pipe led through Bedford street, and down to what was then known as Broad street, now Atlantic avenue. This pipe continued on to State street and came up State street, connecting again to the 24-inch main. The district lying inside this territory was lined with 6-inch and 8-inch pipes, most of which had been underground for many years. The hydrants for fire purposes were of an old type, with offsets from the pipes on 4-inch pipe, and having but one outlet so that but one steamer could be connected to a hydrant. In many instances the hydrants were many hundred feet apart.

There were also scattered throughout the district quite a number of underground fire reservoirs supplied from the mains by a 4-inch pipe. The main in upper Summer street was of the 6-inch type, and without doubt was considerably reduced in efficiency through rust and inside accretions.

Today the district is gridironed with mains ranging from 36-inch feeders down to 8-inch pipes. Throughout the greater part of the district there are three independent systems of mains, namely, the so-called low service, which furnishes

the general supply of water for domestic, business and fire purposes; the high service, which ordinarily furnishes water for automatic sprinklers, hydraulic elevators and similar arrangements, but nevertheless easily and quickly available for fire purposes; and the high pressure service of recent installation, intended for and devoted entirely to fire purposes. This latter service delivers water at the hydrant at the necessary pressure for fire purposes, and when desired makes the use of portable pumping engines more or less unnecessary. Thus Summer street today has all three services, a 12-inch low service main, a 12-inch high service main and a 16-inch high pressure fire service main. This applies in a general way to almost the entire district which was burned over in 1872.

The hydrants are now of the modern type, with three and four outlets, and to a large extent connected directly to the main, and where offsets are necessary they are of much larger size than were provided in 1872. Today the hydrants in our downtown section are spaced approximately 125 feet apart. Of course, in some instances they are much nearer where physical conditions govern the location. In the City of Boston today we have approximately 11,000 hydrants.

In so far as our present high pressure system is concerned, viewing it as an uncompleted system, we can easily obtain, at various pressures delivered on a fire, from 12,000 to 18,000 gallons of water per minute. In 1872, under the very best conditions, with the short line service under engine pressure, the department could deliver about forty-two streams, while today, under ordinary conditions with 300-foot lines, from our pumpers alone we are able to supply 130 1¼-inch streams.

Miscellaneous.

In addition to the protection provided by the city by a better Fire Department and increased water service, there have been many other achievements in the past fifty years which aid in eliminating the possibility of a conflagration in our city.

The building laws of today define the character of construction permitted in the congested area of Boston. In what was the burned district the greater percentage of the buildings are known as first-class construction. Fire walls are required, as well as many other fire stops, which result in confining and retarding the progress of a fire once started.

Many property owners are beginning to realize the duty they owe themselves and the community, and adopt all known measures to protect their property against destruction by fire. The automatic sprinkler has come into favor to a great extent during the past score of years, and today we have hundreds of buildings in Boston, both of first-class construction and of the older type, equipped with automatic sprinkler systems. No other private agency has been so effective in the extinguishment of fire as automatic sprinklers, and the successful career of this invention has won for it the hearty indorsement of fire and insurance officials the world over. Today the law requires the installation of sprinklers in certain classes of buildings, which fact is a distinctive testimonial of their recognition as an agency for conservation and safety.

Fire prevention is taking a position today alongside of fire protection. Fires can be prevented as well as extinguished. Just as the medical profession today is expending every effort to prevent disease, so do fire departments devote considerable time and labor in the prevention of fire. In the Boston Fire Department today we have a division known as the Fire Prevention Bureau. Affiliated with this bureau are thirty or more inspectors who are visiting buildings of all kinds in all sections of the city daily, noting defects and causing the correction of evils. Many of the hazards encountered are corrected immediately on the verbal request of the inspectors. There are found occasionally flagrant cases and conditions which require money and considerable persuasion to correct. These cases require a tremendous volume of attention and correspondence, and on account of this a force of clerks is kept busy at fire headquarters following up and disposing of the recommendations of the inspectors. The citizens of Boston have evidenced a willingness to co-operate with the Fire Department in its efforts along fire prevention lines, and since its inception the work of this bureau has been very successful.

Conclusion.

In spite of all that has been done and is being done Boston has problems to contend with which are not present in other cities. Our streets are narrow and traffic is congested. It is almost impossible to overcome the handicap of our narrow streets, but the traffic situation is a matter for regulation. Drastic steps should be taken to relieve the congestion of traffic in our high value district. Here a few moments' delay may result in a serious loss at any time. One flagrant feature of this congestion is the parking of vehicles, particularly of the motor-driven type, on or adjacent to hydrants in such a manner as to put the hydrant out of service for immediate use. When apparatus responds to an alarm of fire and such conditions are found, the engines must turn about and locate at some other hydrant, with the result that the most important moments in the life of a fire, so far as the defensive attack is concerned, are being wasted. The co-operation of the citizens is needed in correcting this evil.

Congestion of traffic did not interfere with the Fire Department in 1872. It has not resulted in serious consequences as yet. The evil is growing, however, and unless checked at once may get beyond control and present on some vital occasion a difficulty that no fire department is in a postion to overcome.

Time and again the question has been asked, "Could the fire of 1872 be repeated in Boston"? The answer is that American cities are not fireproof in the strict sense of the word. It might be well to quote here a statement made by the present chief of department to the effect that "anything is possible." All that is necessary is an unforeseen combination of circumstances, and the entrance of an unknown factor in our daily routine. It can be said that with the fire protection provided by the city, and the type of buildings erected and being erected in the high value section of Boston, the possibility of a conflagration covering the area of the fire of 1872 is being reduced to a minimum.

To point out clearly that great fires are still a possibility in our large cities, attention is called to the fire in Chicago on March 15 of this year, which resulted in an approximate loss of $10,000,000. To extinguish such a fire a force of fifty-one engine companies, six ladder companies, seven squad companies, two fireboats and four insurance patrols was called upon. In pumping units alone this force exceeds the entire complement of this type of apparatus in Boston. This example is not cited to emphasize the fact that there is any great possibility of a large fire in our business district, but merely to impress upon the minds of the readers of this article that it is unwise to rest with absolute security in a feeling of safety from fire.

LAND-TAKING IN BRIGHTON.

The Acting Mayor has approved the order of the Board of Street Commissioners for a taking of land for sewerage works in Beacon street, Brighton.

The property is bounded as follows:

A parcel of land, supposed to belong to the West End Street Railway Company, bounded:

Southeast by other land of said company, three hundred thirty-five and 77–100 feet; southwest by the same, ten feet; northwest by land hereinafter described as taken from owners unknown (private way) and from Proulx *et al.*, three hundred thirty-five and 83–100 feet, and northeast by other land of said company, ten feet; containing thirty-three hundred and fifty-eight square feet, more or less.

A parcel of land, owners unknown, being part of a private way, bounded:

Southeast by land hereinbefore described as taken from the West End Street Railway Company, one hundred fourteen and 87–100 feet; southwest by land supposed to belong to the West End Street Railway Company, fifteen feet; northwest by another part of said private way and by land supposed to belong to Daniel J. Navin, one hundred fourteen and 87–100 feet, and northeast by land hereinafter described as taken from Proulx *et al.*, fifteen feet; containing seventeen hundred and twenty-three square feet, more or less.

A parcel of land, supposed to belong to Ernest Proulx and Mary T. Proulx, bounded:

Southwest by land hereinbefore described as taken from owners unknown (private way), fifteen feet; northwest by other land of said Proulx *et al.*, two hundred twenty-one and 1–100 feet; northeast by the boundary line between the City of Boston and the town of Brookline, fifteen feet, and southeast by land hereinbefore described as taken from the West End Street Railway Company, two hundred twenty and 96–100 feet; containing thirty-three hundred and fifteen square feet, more or less.

The sewerage works to be constructed are as follows: About 332 linear feet of 7-foot by 6-foot 4⅝-inch concrete surface water conduit and about 335 linear feet of 26-inch by 39-inch concrete sanitary sewer, in the above-described premises, being private land between Chestnut Hill avenue and the boundary line between the City of Boston and the town of Brookline.

The Board determines that no person sustains damages in his estate by the taking of the aforesaid easement and construction of said sewerage works and awards no damages therefor.