ANNUAL REPORT

OF THE

FIRE DEPARTMENT

OF THE

CITY OF BOSTON

FOR THE

YEAR ENDING 31 JANUARY, 1913

CITY OF BOSTON
PRINTING DEPARTMENT
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FOR THE YEAR 1912–13.

BOSTON, 1 February, 1913.

HON. JOHN F. FITZGERALD,
Mayor of the City of Boston:

DEAR SIR,— In accordance with section 24, Revised Ordinances, 1898, City of Boston, I have the honor to submit herewith report of this department for the year, 1 February, 1912, to 1 February, 1913.

Appended are reports of the Chief of Department and the heads of the different branches; tables giving in detail the organization, work and cost of these branches; fire statistics for the year; location and valuation of department buildings; valuation of property in charge of the department; description of apparatus; roll of merit; changes in personnel, and treasurer's report of the Relief Fund.

FINANCES.

The cost of maintenance, including all branches, was $1,726,116.53, an increase over 1911–12 of $113,721.22.

This increase was accounted for as follows, none of which could be avoided:

Annexation of Hyde Park	$24,000 00
Increased pay	61,000 00
Pay of additional men	13,800 00
Increased price of hay, grain and straw	13,800 00
Increased price of coal	7,600 00
New boilers, Engine 44, left over from 1911	15,000 00
	$135,200 00

Aside from unavoidable increases the maintenance cost was $21,500 less than last year.

The expenditure for permanent improvements under special appropriations was $91,485.83. This included

New fire station and wharf at Northern Avenue Bridge for Engine 44	$29,038 62
New fire station at Oak square, Brighton	35,658 49
Improvements in fire alarm construction	*17,514 96
Purchase of motor apparatus	†8,005 45
Additional construction in Repair Shop	1,268 58

FIRE FIGHTING FORCE.

There are 961 permanent men assigned to duty in the fire fighting force as compared with 914 in 1911, an increase of 47.

There are 116 employees in all other branches.

During the year there have been fifteen retirements for age and disability. This covers the criticism of the department made two years ago by the National Board of Fire Underwriters.

In line with the country-wide movement the salaries of members of all grades were increased during the year, as follows:

Privates, from $1,200 to $1,300.
Engineers, from $1,300 to $1,400.
Lieutenants, from $1,400 to $1,600.
Captains, from $1,600 to $1,800.
District chiefs, from $2,000 to $2,300.
One deputy chief, from $2,500 to $2,800.

* $24,000 additional has been contracted for, but not yet paid.
† $35,000 additional has been contracted for, but not yet paid.

DETAILED MEN.

Members of the department heretofore permanently detailed to the fire alarm and the repair shop have been transferred to those respective branches, so that hereafter each branch of the department will show the actual number of men employed therein. Previously the cost of these men was borne by the fire fighting force while their services were rendered elsewhere.

DISTRICT LINES.

The boundary lines of the fire districts have been rearranged to remove any uncertainty as to the responsibility and authority of district chiefs.

CHAUFFEURS' SCHOOL.

At the school of instruction for chauffeurs an elaborate equipment has been installed. It consists of an automobile chassis with the working parts exposed to view of the students (loaned to the department through the courtesy of the Studebaker Company), and a demonstrating automobile which is set up on a testing plant; by this means the student becomes thoroughly acquainted with the handling of the speed or transmission levers without liability of accident. The instruction consists of lectures by a professor of gas engineering from Worcester Polytechnic Institute, practical demonstration of automobile construction, practice on testing plant, and is completed with road work on a piece of motor fire apparatus.

INSPECTIONS.

There have been 19,408 inspections of schoolhouses, theatres, motion picture houses, buildings, etc.

There have been issued 3,248 permits for fires in the open air, blasting, storage and transportation of dynamite, storage, sale and discharge of fireworks, under authority given by statute, ordinance or delegated by the district police.

There have been 126 applications for gasolene licenses passed upon by this department.

NEW REGULATIONS.

A board has been appointed to revise and bring up to date the regulations which govern the department. That board is now ready to report.

CIVIL SERVICE.

The extension to this department by the Civil Service Commission of promotion only by competitive examination is, in my opinion, the fairest and most efficient method that can be devised. There have been quite a number of complaints of injustice to individuals which have some warrant in fact, but they are matters that can be adjusted at the next examination, and I have no doubt will then be remedied by the Civil Service Commission.

CONSTRUCTION, SUPPLIES AND REPAIRS.

There are now in service, or in course of construction, five motor-driven combination chemical and hose wagons, four motor-driven city service hook and ladder trucks, and twelve chiefs' runabouts. These will be placed in the suburbs where the runs are long, namely, Orient Heights (East Boston), Dorchester, West Roxbury, Hyde Park, Brighton, and the Parker Hill section of Roxbury. They will add materially to the efficiency of the department.

COMPARATIVE COST — MOTOR APPARATUS.

A careful study has been made of the comparative cost of motor and horse-drawn apparatus. The figures are very interesting and do not agree with those given by the builders of motor apparatus. These figures show that in large cities, where the apparatus is called upon to respond to alarms frequently, the cost of upkeep, including interest on the original investment, is greater than the cost of a similar piece of horse-drawn apparatus.

EXAMPLE 1.

Cost of motor-driven combination chemical and hose wagon, $5,500.

Interest, 5 per cent, for one year	$275 00
Repairs	38 00
Supplies and tires	390 00
Total	$703 00

EXAMPLE 2.

Cost of motor-driven combination chemical and hose wagon, $5,500.

Interest, 5 per cent, for one year	$275 00
Repairs	315 00
Supplies and tires	574 00
Total	$1,164 00

EXAMPLE 3.

Cost of hose wagon, harness and two horses, $1,500.

Interest, 5 per cent, for one year	$75 00
Repairs, harness and wagon, rubber tires	100 00
Hay, grain, shoeing, two horses	400 00
Total	$575 00

The balance in one case is in favor of horse-drawn apparatus by $133, and in the other case by $589.

This, of course, does not take into consideration efficiency, nor the fact that the department gains the services of the driver as an addition to the fire fighting force.

FIREPROOF VAULT FOR RECORDS.

A fireproof vault has been built in the repair shop in which to store all valuable books, papers and records.

FIRE ALARM.

By reference to the report of the superintendent of this branch it will be seen that many improvements have been made toward bringing it up to date. There still remain a number of changes to be made in the office, which will be completed before another year. The question of underground cable construction is a serious one, and the city must prepare now to meet it. This is taken up in detail in the recommendations made later in this report.

LOSS PER ALARM AND PER CAPITA.

During the fiscal year there were 811 more alarms than in the previous year. The loss per alarm was $459 in 1912 as against $507 in 1911, and an average of $650 during the last fifteen years.

The per capita fire loss for the fiscal year was $2.81 as against an average for the past ten years of $3.58.

ADMINISTRATION.

Filing and Correspondence.

The headquarters have been rearranged and modern methods of correspondence and bookkeeping have been introduced, the card system has been extended and the flat filing system installed, all of which should prove to be a great saver of time. The same system will be introduced into the different branches during the coming year. It is the intention to have one standard throughout the department.

Compilation of Statutes and Ordinances.

The statutes and ordinances bearing on this department have been compiled by Capt. Martin A. Kenealy of Engine 43, and are now in the hands of the printer. They will be distributed to the department. This is a most important work, as heretofore there was nothing to show the power, authority and responsibility of the Fire Commissioner or the Fire Department under the law.

General Orders.

A system of issuing general orders has been instituted, which gives prompt notice to the department of all matters of administration on which it should be informed. This method does away with a great deal of unnecessary work.

Specifications for Motor Apparatus.

An important work has been accomplished in drawing up specifications for automobile fire apparatus, and the testing of the same. They have been used as a model by other cities of the country.

Permits.

The forms of permits have been revised to conform to the city ordinances and the method of recording and issuing them has been improved.

Fire Prevention.

The attention of fire departments throughout the country for the past two or three years has been drawn to the matter of fire prevention as well as fire extinguishment. This is in line with all modern science in looking to the prevention as well as the cure. The figures of the annual fire loss in this country are appalling. The

more so when it is realized that at least 70 per cent of the loss is from preventable fires. Why the subject has remained so long quiescent is beyond comprehension. The only explanation is the entire unfamiliarity of the average citizen with the subject.

There were 4,522 fires in Boston last year; three-quarters of these were caused by carelessness and lack of proper regulations. A comprehensive plan of regulation would save the city over a million dollars a year. Such a plan should be immediately adopted.

At present the power and authority to regulate matters looking toward the prevention of fire is scattered among seven different departments; none of them responsible for fire matters as a whole; most of them without sufficient men to enforce such authority as they have, and the Fire Department, which has the greatest knowledge and experience in such matters, has the least authority of all.

The Fire Commissioner of Boston has recently served as a member of the Metropolitan Fire Hazard Commission, appointed by the Governor of the Commonwealth. This commission has been sitting twice a week since last August, and has had before it fire chiefs, fire prevention engineers, hydraulic engineers, real estate experts, architects, state police, chemists, builders, insurance men, and other men conversant with fire hazards. The commission has listened to their opinions, advice and suggestions, and has reported a bill to the Legislature. This bill asks for legislation on the fire hazard for the whole metropolitan district. Had the legislation pertained to the City of Boston alone, I believe it could have gone much further; therefore, as an official of the city, I deem it my duty to give to the city the benefit of the information I have received as a member of that commission. I submit the following recommendations:

1. Within the building limits a section should be set off where, in the future, only first-class construction should be allowed. This section should be bounded as follows:

Starting at the intersection of Berkeley and Boylston streets, easterly through Boylston street on both sides, to Tremont street, to Park street, to Beacon street, to Bowdoin street, to Ashburton place, to Somerset street, to Pemberton square all sides, to Cornhill, to Adams square, to Exchange street both sides, to State street

both sides, to the waterfront, thence southeasterly along the waterfront to the easterly extension of Kneeland street, to Eliot street, to Columbus avenue both sides, to Berkeley street both sides, to Boylston street, the point of beginning.

Scattered through this section are already standing many first-class buildings, and it would seem that the city as a whole would derive much benefit without working any great hardship on the individual.

2. The building or fire limits should be extended to include all of Charlestown, all of South Boston, all that part of East Boston south and west of Trumbull street, and all that part of Boston north and east of a line beginning at the intersection of the extension of Columbia road and the Old Harbor, then southwesterly through Columbia road to Blue Hill avenue, to Seaver street, to Columbus avenue, to Atherton street, to Mozart street, to Chestnut street, to Sheridan street, to Centre street, to Perkins street, to South Huntington avenue, to Castleton street, to the Brookline boundary line.

3. That no more wooden roofs be allowed to be built anywhere in the city.

4. That in all dwellings housing more than one family all construction below the first floor be fire resistive.

5. That in all tenement houses there be no connection between the first floor and basement.

6. That all buildings of five stories or more in height be of fire resistive construction.

7. That fire escapes run to roofs when so ordered by the Fire Commissioner.

8. That all window openings to fire escapes be either cut down to the level of the fire escape platform, or permanent steps be built so as to facilitate getting out of windows onto fire escapes.

9. That all signs hereafter erected on buildings be subject to approval by the Fire Department.

10. That in all repairs and additions to third-class construction the size of the building be not increased over 10 per cent.

11. That the Fire Commissioner be a member of the Board of Appeal.

12. That the School Committee be required to provide a course for the study of fire prevention in the schools, for fifteen minutes each week. This is done in several cities.

13. That in buildings of second and third class construction no horses be allowed to be kept above the first floor unless there are two means of egress.

14. That the sale of stove polish containing benzine, gasolene, naphtha or inflammable fluids be prohibited.

15. That where chimney fires occur, owing to defective chimneys, the owners of buildings be fined a reasonable amount, and that amount be turned into the Firemen's Relief Fund.

16. That the causing of fire through carelessness be made a misdemeanor and punished as such.

17. That every theatre be required to have a fire alarm box on the stage.

18. All buildings, other than single dwelling houses, should be equipped with gas shut-offs, either automatic, or manual that can be operated from the outside.

19. No buildings of any kind should be allowed nearer than 10 feet of each other, unless all openings in walls within 10 feet of another wall are protected with wired glass, metal frames and sashes.

20. That the use of any but safety matches be prohibited.

If the Metropolitan Fire Hazard Bill is not passed I recommend that a fire prevention bureau be established by the City of Boston, and the necessary legislation petitioned for which will give to the Fire Commissioner power to enforce all laws, ordinances and regulations relating to fire hazards, fire menaces, fire escapes, fire extinguishing apparatus, transportation, sale, use and storage of explosives and inflammable materials, hazardous business, or anything relating to fire prevention now held by any other city or state department. The Fire Commissioner to grant all licenses and permits relating to fire hazards and combustibles, and to have authority as follows:

(*a.*) To inspect all building plans.

(*b.*) To cause obstacles which may interfere with means of exit to be removed from floors, hallways, stairs, fire escapes, etc.

(*c.*) To require and regulate fire drills in theatres, public places of amusement, and public and private schools.

(*d.*) To require proper safeguards to be placed on roof skylights.

(*e.*) To order the installation of fire extinguishing appliances in railroad yards, lumber yards, factories, basements and cellars.

(*f.*) To regulate the accumulation and require the removal of all combustible rubbish, etc.
(*g.*) To regulate the use of salamander stoves.
(*h.*) To regulate the storage of combustible chemicals.

High Pressure.

The Public Works Department has completed plans for the building of the high pressure plant for the congested business district. It is to be located underground, in Charles street, between Beacon and Boylston streets. Advantage has been taken of the experience of New York, Philadelphia and Baltimore in the plans, and the Boston plant will be a great improvement over these three. When this is completed the city will have in the congested district an additional fire fighting equipment the equivalent of thirty steam fire engines.

RECOMMENDATIONS.

Motor Apparatus.

I would especially call your attention to the recommendations of the Chief of Department as to the installation of motor apparatus. Plans, as laid down by him, will call for $300,000 to be spent during the next two years for this purpose. If carried out it would practically motorize all of Dorchester, Hyde Park, Brighton, West Roxbury, Jamaica Plain, and part of Charlestown, East Boston and South Boston, and the wagons of the repair shop and fire alarm branch. This would increase the efficiency of the department at least 25 per cent. It would also motorize apparatus in the downtown district that is seldom called out and make for a marked saving of expense.

I would also recommend that the $15,000 already appropriated for a fire station for Parker Hill be transferred to motor apparatus to be used for the purchase of a motor ladder truck and a motor pumping engine to cover the Parker Hill section. This will give this section the needed protection.

New Stations.

Three new stations should be built this year; one in Charlestown, if built on land now used by the Fire Department, to cost, with equipment, $40,000; one in Dorchester, in the vicinity of King square, to cost, with equipment, $50,000; and one in Readville, to cost, with equipment, $25,000; the New York, New Haven & Hartford Railroad Company will furnish the land at a nominal rent. I would, therefore, recommend a special appropriation of $115,000 to build three new stations as outlined above.

Salem Street Fire Station.

I renew my recommendations made to you last year that the coal station and fire station of Engine 8 on Salem street be disposed off and a new site purchased on Hanover street, in the vicinity of Blackstone and Richmond streets. This would call for about $50,000 in addition to the money raised from the sale of the Salem street site.

FIRE ALARM UNDERGROUND CONSTRUCTION.

I would call your attention to the recommendations of the superintendent of fire alarm in regard to underground construction. There should be additional cable laid to establish an independent and interchangeable system, so that in case of an accident or breakdown another section of cable could be used without interrupting the service. For this purpose we should need this year $31,000 in addition to our regular appropriation, and I, therefore, recommend a special appropriation to cover this amount. During the next four years we should spend at least $50,000 a year on this important branch of the service.

ISOLATED FIRE ALARM OFFICE.

I would again call your attention to the hazardous location of the fire alarm office, and recommend that new quarters be erected of fireproof construction, and in an isolated location. In this connection, in the interests of efficiency and economy, I would recommend that careful consideration be given to the subject of placing the fire alarm office in the new building designed for the high pressure pumping plant. Combining these two stations into one would mean a saving to the city of $75,000 over what they would cost if built separately. The original estimate of this department for this proposition was $225,000, which I find no reason to change at this time.

WINDING, LIGHTING AND REPAIRING CLOCKS.

I would again recommend that the expense and labor of winding, lighting and repairing clocks of the city be transferred to some other department. It not only takes firemen away from their duty, but adds to the expense of fire fighting. This is unfair, and when the figures go out to the country it makes the cost higher in comparison with the other cities. It is not any part of a fireman's business to wind, light and repair clocks.

ONE-WAY STREETS.

I would again recommend that Mason street and Howard street be made one-way streets for the better efficiency of the fire companies stationed in or near those streets.

DUPLICATION IN NAMES OF STREETS.

I would recommend that the names of streets be changed so that there would be no two streets with the same name in the city. The increased number of notifications of fire to this department by means of the telephone, and the confusion that arises in locating the fire due to duplication in the names of streets calls for these changes.

In conclusion, I would state that the work of the members of this department has been efficiently performed during the year. I desire to express my appreciation for the hearty cooperation of the Board of Fire Underwriters and the other departments of the city with this department, and especially thank the Public Works Department, the Police Department, the Building Department and the Wire Department.

Yours very respectfully,

CHAS. H. COLE,
Fire Commissioner.

REPORT OF CHIEF OF THE DEPARTMENT.

FROM: THE CHIEF OF THE DEPARTMENT, BOSTON. 1 February, 1913.
TO: THE FIRE COMMISSIONER:
SUBJECT: ANNUAL REPORT.

The following is the report of the Fire Department for the year ending 31 January, 1913.

During the calendar year the department has responded to 5,244 alarms. The fire loss was $2,531,017.

ADDITIONS AND CHANGES.

A gasolene combination chemical engine and hose wagon was put in service with Engine 37, replacing the horse-drawn hose wagon. This was for the better protection of the Parker Hill section.

A gasolene combination chemical engine and ladder truck was installed in the station at the corner of Callender and Lyons streets, Dorchester, and a new company known as Ladder Company 29 was organized to man this apparatus. This was for the better protection of the Talbot avenue section of Dorchester.

A gasolene chemical engine and ladder truck has been received, to be installed in the quarters of Engine Company 41, and a new company should be organized, to be known as Ladder Company 31, to man this apparatus. This company will replace Chemical Company 6, which should be disbanded.

A horse-drawn steam fire engine was installed in the station of Hose Company 48, Hyde Park, and a company to be known as Engine Company 48 was organized to man this apparatus, and Hose Company 48 was disbanded.

A water tower equipped with a quick-raising device was installed in the quarters of Tower Company 1 and the apparatus formerly used by that company placed in reserve in the East Boston district.

A gasolene chemical engine and ladder truck has been received, to be installed in the quarters of Engine Company 42, and a new company should be organized, to be known as Ladder Company 30, to man this apparatus. This company will replace Chemical Company 5, which should be temporarily disbanded.

It should later be reorganized to man the gasolene combination chemical which is expected soon to be installed in the quarters of Ladder Company 23. This is for the better protection of the Grove Hall section.

A gasolene combination chemical has been purchased and is expected to be installed in the quarters of Chemical Company 11 in a short time, replacing the horse-drawn apparatus in service with that company. This will afford additional protection in the Talbot avenue section of Dorchester.

A gasolene chemical engine and ladder truck has been purchased to replace the horse-drawn truck now in service with Ladder Company 21; this is for the better protection of the Orient Heights section of East Boston.

A new berth for Fireboat Engine 44 and station for crew, at Northern Avenue Bridge, was completed and occupied.

A new fire station in Oak square was completed and is now ready for the installation of the apparatus and men.

Plans and specifications were prepared and bids requested to remodel the quarters of Ladder Company 24. The house should be enlarged to accommodate extra men necessary to increase the strength to twelve men.

The services of twenty-seven call men have been dispensed with in District 15, Hyde Park.

The single jacket hose in service in Hyde Park at the time of annexation was condemned and replaced with double jacket hose.

A motor launch was placed in service for use in the marine district.

Eight turret nozzles were placed on hose wagons, making a total of twenty-eight now in service.

BUILDINGS.

As in my previous report, I must call your attention again to the fact that a great many of the stations in this department are not modern. At the time these stations were built the department was mainly on a call basis, and consequently a small amount of space was planned for the housing of the few permanent men assigned. The addition of men and horses to meet the increasing demands of the service has used up the reserve space to the limit.

With the incoming of motor apparatus these conditions will, no doubt, be somewhat improved, as space now given to supplies and equipment for horses may be utilized for other needs.

To keep this property in anything like good order requires the constant attention of the men in the different repair squads.

The interiors, as regards cleanliness, are in satisfactory condition.

The exterior wood and metal work of several houses have been painted since the last report and a plan evolved that will in time care for all stations in a similar manner.

Shower baths have been installed in several houses. A more sanitary drainage system is installed in the house of Ladder 24. A few houses have been remodeled, affording separate rooms for lieutenants.

APPARATUS AND EQUIPMENT.

The annual inspection and test of apparatus and equipment, including hose, found everything in good condition.

BUILDING INSPECTION.

Theatres, motion picture houses and all places of public assembly in this city were inspected by this department for either a new or renewal of license. The law compels a yearly renewal.

A weekly inspection and report was made of theatres and motion picture houses.

Inspections were made and reports submitted weekly of buildings which were visited, and hazardous conditions, when found, were brought to the attention of those officials under whose supervision they came.

A monthly inspection of all fire appliances in schools, libraries and other public buildings was made and conditions reported.

On request, signs erected on roofs of buildings were inspected and reported on.

This department made inspections and reports on all applications for licenses for the storage of gasolene.

Many inspections of reported hazardous conditions were made by request.

A member of this department was specially detailed to safeguard the transportation of explosives.

It can be readily seen by the foregoing that this

department, primarily organized to extinguish fires, has demands upon it for other purposes, without the necessary men, without authority to enforce penalties for violations of laws, or to remedy hazardous conditions when found.

It is the duty of officers of this department to visit all buildings in their company subdistrict, so as to become familiar with inside and exterior conditions.

This knowledge they must possess to use in fighting fire in same, to keep fire from getting in, or to save life. If, however, this department is expected to go further, then legislation is necessary to give authority, and an organization perfected to enforce such authority. A special force would be required for this work.

DRILLS.

During the year all companies have held weekly drills and all men coming into the department have passed through the regular drill school.

During the year twelve men have successfully passed the school of instruction for engineers.

MUTUAL AID.

The same willingness to cooperate exists in the fire departments of the cities and towns adjacent to Boston. During the past year we have sent apparatus to Cambridge, Watertown and Everett.

FIRE HAZARD AND PREVENTION.

With the exception that the incoming motor apparatus will add celerity and mobility, and a high pressure system will provide larger and more effective streams, the science and appliances for extinguishing fire have about reached their limit of effectiveness. Thus, fire prevention, by removing and curtailing the known hazards, is the proper direction in which to move.

A state commission is at present at work on obtaining facts to be used to procure remedial legislation to prevent this enormous pecuniary loss.

CIVIL SERVICE.

Promotions have been made from the list in order.

Motor apparatus replacing horse-drawn has changed certain requirements to properly man the apparatus of this department.

At present an automobile school is maintained to teach the operation and care of same. This method of obtaining chauffeurs weakens the fire fighting strength of the companies in that men are periodically detached from them to attend the school.

As it appears that motor-driven apparatus is to be added to this department in considerable numbers in the near future, the problem of obtaining the required number of men with sufficient knowledge to safely operate them will be more complex.

If feasible, a plan to have the appointees of this department equipped with this knowledge would release the City of Boston from the expense of maintaining such an expensive school and, what is more important, would keep more men in quarters.

HYDRANTS.

The following is the number and type of hydrants in use for fire service 31 January, 1913:

Ordinary post	2,961
Boston post	2,548
Lowry	1,937
Boston Lowry	754
Boston	217
Chapman post	181
Ludlow post	13
Coffin post	1
Total	8,612

RECOMMENDATIONS.

Many of the recommendations made in the last annual report have been carried out, and I reiterate my request for remaining items, with additional recommendations, the carrying out of which will, in my opinion, bring this department up to the standard of efficiency that our citizens expect.

FIRE STATIONS.

A site should be secured and a house built in the Readville section of Hyde Park to replace the present quarters of Hose Company 49, which are not adapted for the service.

A new station should be built on the site of Chemical Company 3, Winthrop street, Charlestown, for an engine company.

A new station on the same site for Engine Company 26–35. These quarters are inadequate for the number of men housed there. Any new plan should include offices for the Chief of Department.

Arrangements should be made, if possible, to obtain more room in the present building in which are the quarters of Engine Company 4, Chemical Company 1 and Water Tower Company 1. The present smoking and recreation room for the men of these companies is not fit for the purpose.

The present site of Engine 17 and Ladder 7 should be disposed of, and a new site secured and a station built for these companies, or a new house built on the same site.

A new station is needed to replace present quarters of Engine Company 8.

The City of Boston at the present time owns a lot of land in that part of West Roxbury known as Germantown, which should be held as a site for a future fire station.

If another station is contemplated in the Dorchester section, it should be erected in the vicinity of King square.

Now that a municipal building is being erected in South Boston that will include the municipal court, the building vacated should be remodeled for Ladder Company 5.

Chemical Company 8 is very much in need of a heating plant. These quarters are at present heated by stoves.

The recommendations made in the last report for the substitution of shower rooms for bathtubs in the houses have been generally carried out, and I hope as far each year as the financial conditions will permit that this necessary adjunct for the comfort of the men will be installed in the houses.

I would recommend that, where possible, the work of providing separate rooms for all officers be continued.

APPARATUS.

Engines.

A gasolene combination pumping engine and hose wagon, to have a pump capacity of at least 700 gallons per minute, to be purchased for the Readville station to be erected.

A tractor-drawn steam fire engine, with a pump capacity of at least 1,000 gallons per minute, for new station recommended on Winthrop street, Charlestown.

A gasolene combination pumping engine and hose wagon, to have a pump capacity of at least 700 gallons per minute, for service in the new station at Oak square, Brighton.

Also gasolene combination pumping engines and hose wagons, of a pump capacity of at least 700 gallons per minute, to replace the present horse-drawn steam fire engines in the quarters of Engine Companies 2, 11, 19, 30, 32, 34 and 42.

Tractors should be applied to the present horse-drawn steam fire engines in the quarters of Engine Companies 10, 20 and 41.

Chemical and Hose Combination Wagons.

Gasolene combination chemical and hose wagons to replace the present horse-drawn hose wagons in the quarters of Engine Companies 5, 16, 17, 20, 28, 29, 41, 45, 46 and 48.

A motor-driven high pressure hose wagon for the engine company recommended in Charlestown.

Chemical Engines.

The horse-drawn chemical engines at present located in the houses of Chemical Companies 1, 2, 4, 7, 8, 9, 10, 12 and 14, to be replaced by motor-driven chemical engines with two tanks each capable of holding at least 80 gallons.

Ladder Trucks.

Seventy-five or 85-foot aerial trucks, motor-driven, should be procured for service in the quarters of Ladder Companies 4 and 12 to replace the present horse-drawn box trucks.

Motor-driven combination ladder trucks, to replace the present horse-drawn trucks should be installed in the quarters of the following companies, viz.: Ladder Companies 6, 7, 10, 16, 19, 20, 23, 24, 25, 26 and 27.

Tractors should be applied to the present horse-drawn apparatus in the houses of Ladder Companies 14 and 15.

Water Towers.

The present horse-drawn Water Towers 1, 2 and 3, to have tractors installed. This in the interest of economy.

Miscellaneous.

The district chiefs should be furnished with motor-driven runabouts as soon as possible. The handicap of a horse-drawn wagon in the outlying districts is strongly felt by the officers in command of these sections.

Again I reiterate that it would be of great advantage to this department, and a measure of economy, to have a motor-driven wagon procured to replace the present horse-drawn wagon attached to the fire alarm branch, and a motor-driven wrecking wagon attached to the repair shop.

Men.

The following men would be needed to operate the recommended apparatus:

Readville Station.— This company should consist of a lieutenant and six men; as two men are at present on Hose Company 49, which would be disbanded and the men transferred to the new company, this would require the appointment of but five men. The services of the call men attached to this company could be dispensed with.

Oak Square Station.— A lieutenant and seven men would be required for this company.

Grove Hall Station.— A lieutenant and five men will be required to man the combination chemical purchased for these quarters.

The engine company recommended for the Winthrop street station in Charlestown to replace Chemical 3 would require but six men, as with Chemical 3 disbanded the men on that company could be transferred to the engine company.

Four men would be required to bring Ladder Company 24 up to the strength recommended.

The motor-driven ladder truck recommended for the quarters of Engine 41 will require four men. Chemical Company 6 should be disbanded and the men transferred to the truck.

The motor-driven ladder truck recommended for the quarters of Engine 42 will require three men. Chemical Company 5 should be disbanded temporarily and the men transferred to the truck.

In the event of a gasolene combination pumping engine replacing the horse-drawn engine now in service with Engine Company 11, I recommend that this apparatus be installed in Chemical House 7, East

Boston, and an engine company be organized to man the same. This would require twelve men.

An additional man should be assigned to each of the following companies to bring them up to the proper strength, viz.: Engine Companies 2, 5, 16, 19, 24, 29 and 30.

The morale of the fire fighting force is excellent, and, as always, the willingness to assist displayed by those who co-operated with us is worthy of commendation.

JOHN A. MULLEN.

FIRE ALARM BRANCH.

FROM: THE SUPERINTENDENT OF FIRE ALARM BRANCH,
BOSTON, 14 February, 1913.

TO: THE CHIEF OF DEPARTMENT:

SUBJECT: REPORT OF FIRE ALARM BRANCH FOR YEAR 1912-13.

I herewith submit report of the Fire Alarm Branch for the fiscal year, 1 February, 1912, to 1 February, 1913:

OPERATING DIVISION.*

Alarms received and transmitted:	
Bell alarms, first	2,837
Bell alarms, second	62
Bell alarms, third	19
Bell alarms, fourth	7
Alarms received but not transmitted:	
Alarms received from same box two or more times for the same fire	182
Alarms received from adjacent boxes for same fire	217
Alarms received for grass fires, treated as still alarms,	6

Box Records.

Boxes from which no alarm was received	325
Boxes from which twenty or more alarms were received,	26
Box tests and inspections (an average of about eleven for each box)	9,467

Still Alarms.

Alarms received from citizens by telephone	842
Alarms received from Police Department by telephone,	151
Alarms reported by companies to which they responded,	1,248
Box alarms received for same fires	160

Automatic Alarms.

Boston Automatic Fire Alarm Company, alarms received,	154
Department box alarms received for same	14
A. D. T. alarms received	24
Department box alarms received for same	6

Total Alarms.

Bell alarms	2,925
Still, automatic and A. D. T. alarms (eliminating those from which department box alarms were received)	2,419
Grand total of alarms	5,344

* Record of alarms from 1 January, 1912, to 31 December, 1912, inclusive.

CONSTRUCTION DIVISION.

Owing to a special appropriation a large amount of work has been accomplished this year. Seventy-six fire alarm boxes have been established, of which fifty-nine are department boxes located on streets, three private boxes and four boxes with auxiliary attachments located in buildings, and ten schoolhouse boxes, seven of which were placed to be of benefit to the general public. Twelve boxes were moved to better locations and forty-nine changes were made in the numbers of boxes in order to have the numbers grouped in a more systematic way. Because of the large increase in the number of boxes, four new circuits were made, two of them in Brighton, one in the city proper and one in East Boston. All boxes and posts were painted by contract.

Several improvements have been made in the fire alarm office. A new 110-circuit testing board was installed; a ten-pen ink register was replaced by three four-pen registers, and an old fault detector was removed; wooden mountings for instruments have been removed and slate substituted; registers that record the alarms from the Boston Automatic Fire Alarm Company and from the city of Cambridge were installed; new storage batteries for local circuits, a new charging board and new battery racks were set up and many changes were made in the office wiring. A new telephone terminal and protector boards were installed, and a new cable laid to the main terminal room.

A new filing cabinet was bought for the superintendent's office; a Western Union Company clock was bought for the office; maps of the underground system and of circuits have been made and brought up to date.

Many changes and additions to the lighting and signaling system in department houses have been made; an entirely new equipment was installed in the new quarters of Engine Company 44 at Northern Avenue Bridge; new punching registers have been put in service in the houses of Chemical Company 8 and Engine Company 44, and new registers have been bought for other houses.

Fifty-three new lamp-posts were set up and thirteen old ones replaced with new ones. Five new test posts were installed and four old ones replaced by new. Iron test posts are now being used instead of wooden posts. Thirty cable test boxes were established.

Six thousand nine hundred and seventy feet of 3-inch ducts were laid underground to be used mostly for post and pole connections.

In September last a contract was made with the American Electrical Works of Phillipsdale, R. I., to furnish 60,684 feet of cable of various sizes, and to install approximately 53,855 feet. This work has been seriously delayed and is yet unfinished.

The department force has installed about 7,682 feet of cable of different sizes in several sections of the city; 23,280 feet of aerial cable has been strung on poles, and approximately twenty-one and one-half miles of new wire have been used in the extension of the service and in replacing old wire. About forty miles of dead wire have been removed from poles.

Arrangements have been made to install a red light over every fire alarm box and to substitute electricity for gas in the lamp-posts now in service. Two boxes, 714 and 71, are already being lighted by electricity.

The following cable has been laid during the past year, but only a comparatively small amount has as yet been connected into service:

DORCHESTER.

	Feet.
Savin Hill avenue, Dorchester avenue to Rockdale street, 10-conductor cable	1,786
Park street, Dorchester avenue to Washington street, 6-conductor cable	3,563
Melville avenue, Dorchester avenue to Penhallow street, 10-conductor cable *	523
Centre avenue and Centre street, Dorchester avenue to Allston street, 6-conductor cable	1,740
Welles avenue, extension of cable to Washington street, 10-conductor cable	482
Mill street, at Preston street (under railroad tracks), 4-conductor cable†	395
Washington street, Park street to Roslin street, 10-conductor cable	3,742
Harvard street, Washington street to Blue Hill avenue, 15-conductor cable	4,602
Bernard street, Harvard street to Kerwin street, 6-conductor cable	1,235
Eldon street, pole connection, 4-conductor cable	388
Bowdoin and Westville streets, Washington street to Draper street, 6-conductor cable	3,251
Upham's Corner, to lamp-post, Box 199, 4-conductor cable *	240

* In service. † Work done by this department.

	Feet.
Magnolia street, Dudley street to Oleander street, 6-conductor cable *	1,253
Pole connections at various places, 10-conductor cable†,	415
Pole connections at various places, 4-conductor cable,	120
Lamp-post connections, 10-conductor cable†	60

ROXBURY.

Dudley street, Winslow street to Adams street, 10-conductor cable *	1,342
Harrison avenue, Northampton street to Dudley street, 35-conductor cable *	3,141
Elm Hill avenue, Howland street to Cheney street, 6-conductor cable *	1,010
Lamp-post connections, 10-conductor cable†	183

JAMAICA PLAIN.

Chestnut avenue, Green street to Paul Gore street, 10-conductor cable†	1,635
Biltmore street, Chestnut avenue to Lamartine street, 10-conductor cable†	385
Centre street, Engine House 28 to Eliot street, 15-conductor cable	1,413
South street, Eliot street to St. Mark street, 15-conductor cable	2,953
Pole connections, 10-conductor cable†	174
Pole connections, 4-conductor cable†	86

BACK BAY.

Brookline avenue, 6-conductor cable	1,401
Jersey street, Brookline avenue to Boylston street, 6-conductor cable	1,039
Hemenway and Norway streets, lamp-post connections, 6-conductor cable	112

CITY PROPER.

Bristol street, Headquarters Building to Albany street, 35-conductor cable	478
Albany street, Bristol street to Northampton street, 35-conductor cable	5,020
Cumberland street, Huntington avenue to St. Botolph street, 10-conductor cable *	291
Charles street, Mt. Vernon street to Revere street, 6-conductor cable *	751
Minot street, Lowell street to Wall street, 10-conductor cable	250
Lamp-post connections, 10-conductor cable†	172
Northern avenue to quarters of Engine Company 44, 10-conductor (lead) cable	315

* In service. † Work done by this department.

	Feet.
Northern avenue to quarters of Engine Company 44, 10-conductor (submarine) cable	425
Eastern avenue to North Ferry, 4-conductor cable	426

HYDE PARK.

Hyde Park avenue, River street to Green street, 10-conductor cable	895
West River street, Hyde Park avenue to Gordon avenue, 6-conductor cable	650

NEW FIRE ALARM POSTS.

Dorchester.

Park and Waldeck streets, 1-duct	21
Melville avenue and Penhallow street, 1-duct	25
Centre and Samoset streets, 1-duct	80
Dorchester avenue and Beale street, 1-duct	35
Dorchester avenue and Bellows place, 1-duct	8
Washington street, opposite Roslin street, 1-duct	8
Codman square, 1-duct	50
Harvard and School streets, 1-duct	28
Harvard and Glenway streets, 1-duct	28
Harvard and Wales streets, 1-duct	29
Harvard street and Blue Hill avenue, 1-duct	82
Bernard and Kerwin streets, 1-duct	15
Westville street and Dakota road, 1-duct	16
Westville street and Geneva avenue, 1-duct	16
Westville street and Draper street, 1-duct	17.5
Columbia road and Seaver street, 1-duct	94
Columbia road and Dudley street, 1-duct	36
Columbia road and Massachusetts avenue, 1-duct	38
Magnolia and Oleander streets, 1-duct	19

Roxbury.

Dudley and Langdon streets, 1-duct	12.5
Dudley street, opposite Adams street, 1-duct	15
Warren street and Kearsarge avenue, 1-duct	20
Warren and Maywood streets, 1-duct	17
Warren and Carlisle streets, 1-duct	12
Elm Hill avenue and Cheney street, 1-duct	16
Wayne and Maple streets, 1-duct	88
Washington street, opposite Valentine street, 1-duct	5
Harrison avenue and Lenox street, 1-duct	19
Blue Hill avenue and Woodcliff street, 1-duct	13

Jamaica Plain.

Chestnut avenue and Chestnut place, 1-duct	15.5
Lamartine and Biltmore streets, 1-duct	8
Centre and Burroughs streets, 1-duct	20

	Feet.
Centre and Eliot streets, 1-duct	14
South street, opposite Jamaica street, 1-duct	42
Washington street, opposite Forest Hills street, 1-duct,	5

West Roxbury.

Centre and Park streets (by Schoolhouse Department), 1-duct	16

Brighton.

Brighton and Harvard avenues, 1-duct	44
Cambridge and Saunders streets, 1-duct	25
Washington and Oakland streets, 1-duct	27.6
Washington and Fairbanks streets, 1-duct	20.6
Washington and Matchett streets, 1-duct	23
Washington street at Oak square, 1-duct	15.8

Back Bay.

Boylston and Jersey streets, 1-duct	33
Hemenway and Norway streets, 1-duct	41

City Proper.

Cumberland and St. Botolph streets, 1-duct	118.3
Washington street and Cottage place, 1-duct	14
Harrison avenue and Kneeland street, 1-duct	28.5
Franklin and Broad streets, 1-duct	40
North square, 1-duct	20
Minot street, opposite Wall street, 1-duct	23.6
Charles and Revere streets, 1-duct	22.9

Charlestown.

Rutherford avenue and Devens street, 1-duct	50.9
Bartlett and Sullivan streets, 1-duct	14

NEW TEST POSTS.

Park street and Dorchester avenue, 4-duct	23
Harrison avenue and Northampton street, 4-duct	28
Harrison avenue and Dudley street, 4-duct	26
Washington and Market streets, Brighton, 4-duct	50
Atlantic and Northern avenues, 3-duct	45

OLD TEST POSTS REPLACED BY NEW.

Tremont and Linden Park streets.
Tremont street, opposite Northfield street (two old ducts replaced by new).
Forest Hills square.
Maverick square.

NEW POLE CONNECTIONS.

Dorchester.

	Feet.
Savin Hill avenue and Sydney street, 1-duct	63
Savin Hill avenue, opposite Rockdale street, 1-duct	66
Park street and Geneva avenue, 1-duct	146
Park and Greenbrier streets, 1-duct	111
Dorchester avenue and Ashmont street, 1-duct	135
Harvard and Waterlow streets, 1-duct	33
Harvard and Greenwood streets, 1-duct	187.5
Harvard street and Blue Hill avenue, 1-duct	52
Washington and Eldon streets, 1-duct	210
Centre and Allston streets (by New England Telephone and Telegraph Company), 1-duct	262.5
Mill and Preston streets (2), 1-duct	274

Roxbury.

Washington and Guild streets, 1-duct	35

Jamaica Plain.

Chestnut avenue and Paul Gore street, 1-duct	18
Chestnut avenue and Boylston street, 1-duct	50
Lamartine and Biltmore streets, 1-duct	43
Centre street and Harris avenue, 1-duct	92
South and Boynton streets, 1-duct	52.5

Hyde Park.

Business street, 1-duct	260
Dana and Hyde Park avenues, 1-duct	33
Gordon avenue, 1-duct	20.5

Brighton.

Washington and Foster streets, 1-duct	105
Washington and Lake streets, 1-duct	77.5
Washington and Bigelow streets, 1-duct	87.6
Washington and Tremont streets, 1-duct	54
Washington and Parsons streets, 1-duct	38.3

Charlestown.

Rutherford avenue and Chapman street, 1-duct	23

ENGINE HOUSE DUCT CONNECTIONS.

Northern avenue, Atlantic avenue to drawbridge, 1-duct	288
Harvard street to Engine House 18, 2-duct	65
Oak square to new department house, 3-duct	159
Eastern avenue to North Ferry Headhouse, 1-duct	56
Bristol street, Albany street to headquarters, 4-duct	295

MANHOLE BUILT.

Washington street, opposite Forest Hills street.

LAMP-POSTS REPLACED BY NEW.

Brattle street (Box 18), top knocked off by team.
Massachusetts avenue and Beacon street (Box 801), knocked down by automobile.
Cambridge and North Russell streets (Box 24), knocked down by team.
Washington and Milk streets (Box 41), knocked down by automobile.
Washington street, opposite Boylston street (Box 53), knocked down by team.
Albany and Way streets (Box 65), knocked down by team.
Shawmut avenue and Waltham street (Box 73), knocked down by team.
Washington and Green streets (Box 519), knocked down by hose wagon.
Washington and Park streets (Box 364), gas leak.

LAMP-POSTS RELOCATED.

Boylston and Fairfield streets (Box 90), on account new subway.
Tremont and Winter streets (Box 42), on account new subway.
Tremont and Berkeley streets (Box 71), on account large trolley cars.
Park square (Box 62), on account change in square, one new duct, 12 feet.

AERIAL CABLE INSTALLED.

	Feet.
Chelsea street, East Boston, Maverick square to Day street, 10-conductor cable	4,309
Paul Gore street, Jamaica Plain, 10-conductor cable,	550
Codman street, Dorchester avenue to Washington street, 4-conductor cable	1,250
River street, Mattapan, 6-conductor cable	1,000
Various sizes in short lengths in different sections	16,171

PUBLIC BOXES INSTALLED.

City Proper.

Box.	Location.
30,	Charles and Revere streets.
701,	Minot street, opposite Wall street.
710,	Franklin and Broad streets.
714,	North square and Garden-court street.
751,	Harrison avenue and Kneeland street.
771,	Washington street and Cottage place.
804,	Hemenway and Norway streets.

East Boston.

Box. Location.
624, Frankfort and Gove streets.
656, Bennington street and Neptune road.

Charlestown.

437, Medford street, opposite Walnut street.

South Boston.

164, Summer street, opposite D street.

Dorchester.

181, Pleasant and Mayfield streets.
183, Sydney street, opposite No. 71.
306, Magnolia and Oleander streets.
310, East Cottage and Humphreys streets.
345, Park and Spencer streets.
350, Canterbury and Austin streets.
372, Columbia road and Seaver street.
381, Norfolk and Chipman streets.
384, Evans and Capen streets.
396, Almont and Colorado streets.
912, Pleasant street, opposite Downer avenue.
916, Fox and Percival streets.
934, Melville avenue and Penhallow street.
952, Dorchester avenue, opposite Bellows place.
954, Dorchester avenue and Beale street.
960, Adams and Hillsdale streets.
976, Cedar and Sanford streets.
983, Tenean street.
988, Minot and Sheridan streets.

Roxbury.

223, Harrison avenue and Lenox street.
233, Dudley street, oppposite Adams street.
236, Warren street and Kearsarge avenue.
244, Lambert street, opposite Lambert avenue.
257, Centre and Cedar streets.
263, Washington street, opposite Valentine street.
274, Elm Hill avenue and Cheney street.
275, Warren and Carlisle streets.
282, Wait and Hillside streets.
303, Blue Hill avenue and Woodcliff street.

Jamaica Plain and West Roxbury.

Box. Location.
502, Cranston and Sheridan streets.
505, Chestnut avenue and Boylston street.
508, Lamartine and Biltmore streets.
510, Washington street, opposite Forest Hills street.
548, Washington street and Highview terrace.
576, Metropolitan and Augustus avenues.
585, Florence and Catherine streets.
590, Maple and Garden streets.
599, Mt. Vernon street, near Montview street.

Brighton.

810, Farrington avenue and Linden street.
813, Harvard and Brighton avenues.
836, Cambridge and Saunders streets.
840, Market street and Western avenue.
866, Chestnut Hill avenue and South street.
867, Commonwealth avenue and Wallingford road.
869, Sutherland road and Beacon street.
874, Mt. Vernon and Foster streets.
878, Litchfield and Cygnet streets.
881, Market and Mapleton streets.

NEW PRIVATE BOXES.

120, New York, New Haven & Hartford Railroad Yard, south of Dover street.
732, Gordon's Olympia Theatre, Washington street.
785, St. James Theatre, Huntington avenue.

NEW AUXILIARY PRIVATE BOXES.

298, Trimont Manufacturing Company, Amory street.
530, Emerson Hospital, Morton street.
748, John Hancock Building, Devonshire street.
796, American House, Hanover street.

NEW SCHOOLHOUSE BOXES.

2141, Brimmer School, Common street.
2211, Cumberland and St. Botolph streets, Charles C. Perkins School.
2238, Massachusetts avenue and Washington street, Girls' Trade School.
2239, George T. Angell School, Harrison avenue and Hunneman street.

Box. Location.

2241, Lewis School, Walnut avenue and Paulding street.
2336, Beaumont street, opposite No. 59, Ellen H. Richards School.
2524, Florence and Hawthorne streets, Florence School.
2528, Robert G. Shaw School, Hastings street.
2616, U. S. Grant School, Paris street.
2628, John Cheverus School, Pope and Moore streets.

CHANGES IN LOCATION OF BOXES.

141, Mt. Washington avenue and Granite street to Seventh and O streets.
146, Seventh and N streets to Sixth and N streets.
250, Highland street and Fort avenue to Highland and Beech Glen streets.
276, Warren and Quincy streets to Warren and Maywood streets.
506, Boylston street, opposite Adelaide street, to Boylston street and Belmore terrace.
839, Western avenue, Engine House 34, to Western avenue and Telford street.
915, Eaton square and Percival street to Bowdoin and Quincy streets.
2227, Hugh O'Brien School to lamp-post at Dudley and Langdon streets.
2516, Ellis Mendell School to pole at School and Copley streets.

BOXES REMOVED FROM SERVICE.

Auxiliary Company Boxes.

166, Perkins Institute for the Blind, Broadway.
467, Boston & Maine Railroad hay sheds, Rutherford avenue.
726, East side of Long Wharf.
2236, Perkins Institute for the Blind, Perkins and Day streets.

Schoolhouse Boxes.

2128, Cook School, Groton street.
2327, Elbridge Smith School, Dorchester avenue and Centre street.
2616, Old High School, Meridian and Paris streets.
2814, Brighton High School, Cambridge street.

Department Boxes.

698, Chelsea Police Station, Chelsea square (temporarily).

SUMMARY OF WORK DONE.

	Feet.
New line wire used	113,010
Old wire taken down	211,410
Aerial cable installed	23,180
Conductors in aerial cable	101,624
Aerial cable removed	2,319
Conductors in aerial cable removed	14,536
Underground cable installed in New England Telephone and Telegraph Company's ducts	43,463
Conductors in same	522,311
Underground cable installed in fire alarm ducts	6,559
Conductors in same	75,902
Total underground cable installed (new work)	50,022
Conductors in same	598,213
Cable used for repairs	1,329
Conductors in same	14,816
Conduits built by this department	4,838
Ducts in same	6,970
Manholes built	1
Cross-arms used	595
Fire alarm boxes installed (total)	76
Fire alarm boxes installed by Fire Department	59
Fire alarm boxes installed by Schoolhouse Department	10
Fire alarm boxes installed by Auxiliary Company	4
Fire alarm boxes installed by private ownership	3
Fire alarm boxes removed from service	8
Fire alarm posts installed (new)	53
Fire alarm posts reset	13
Fire alarm test posts installed (new locations)	5
Fire alarm test posts replaced by new	4
Fire alarm pole test boxes installed	30

FIRE ALARM BOXES IN SERVICE.

Total number	888
Owned by Fire Department	639
Owned by Schoolhouse Department	130
Owned by Auxiliary Fire Alarm Company	57
Owned privately	62
Department boxes are established and equipped:	
On lamp-posts	226
On poles	382
On buildings with lights over them	24
On buildings without lights over them	5
In buildings	2
With keyless doors	582
With key doors	57
With auxiliary attachments	15

Schoolhouse boxes are established and equipped:	
Inside buildings	61
Outside buildings accessible to public	29
Outside buildings inaccessible at times	22
On poles	15
On lamp-posts	3
On building with light	1
With keyless doors	69
With key doors	61
Auxiliary Company boxes are established and equipped:	
Inside buildings	34
Outside buildings	23
On building with light	1
With keyless doors	8
With key doors	49
Private boxes are established and equipped:	
Inside buildings	36
Outside buildings	26
With keyless doors	9
With key doors	53

POSTS.

Lamp-posts in service	229
Lamp-posts not yet in service and set	22
Test posts	42
Pole test boxes	105

CIRCUITS.

Number of box circuits (main office)	48
Number of box circuits, Hyde Park	4
Number of tapper circuits (main office)	10
Number of tapper circuits, Hyde Park	1
Number of gong circuits	13
Bell circuit, Hyde Park	1
Special repeater circuit, Hyde Park to main office	1
High pressure signaling circuit	1
Number of telephone circuits to department stations,	36
Number of telephone circuits to Tremont Exchange	7
Number of telephone circuits to Oxford Exchange	1
Special circuit to police headquarters (telephone)	1
Special circuit to American District Telephone Company's office	1

WIRE, CABLE AND CONDUITS.

	Feet.
Line wire in service	1,759,450
Aerial cable in service	95,509
Conductors in aerial cable	628,661
Underground cable in service	453,612
Conductors in underground cable	9,041,510

	Feet.
Conduit owned by the department	39,792
Ducts in conduit	50,543
Ducts in New England Telephone and Telegraph Company's system used by this department	338,845

APPARATUS.

Number of tappers in service	121
Number of gongs in service	122
Number of telephones in department system	127
Number of public exchange telephones	8
Number of registers in service	5
Number of relays in service	5

TOWER BELLS.

	Pounds.
Bells in service:	
Faneuil Hall (steel)	5,816
Methodist Episcopal Church, Central avenue, Hyde Park.	
Old Hose House, Hyde Park avenue, Hyde Park.	
Whistle in service:	
Hyde Park Electric Light Station.	

BELLS OWNED BY FIRE DEPARTMENT, BUT NOT IN SERVICE.

	Pounds.	
Old City Hall Building, Charlestown, composition	3,600	out
Engine 1, Dorchester street, South Boston, composition	2,911	out
Engine 16, Temple street, Dorchester, composition	4,149	out
Engine 19, Norfolk street, Dorchester, composition	2,927	out
Engine 20, Walnut street, Dorchester, composition	3,061	out
Engine 21, Columbia road, Dorchester, composition	3,026	out
Engine 29, Chestnut Hill avenue, Brighton, steel	1,535	
Engine 30, Old House, Mt. Vernon street, West Roxbury, steel	1,000	
Engine 34, Western avenue, Brighton, composition	1,501	out
Engine 41, Harvard avenue, Brighton, composition	800	out
Engine 45, Washington and Poplar streets, West Roxbury, composition	1,059	out
Ladder 4, Dudley street, Roxbury, composition	3,509	out
Saratoga Street Church, East Boston, steel	1,968	
Trinity Church, Trenton street, East Boston, composition	1,760	

CLOCKS.

The care of the department clocks has been transferred to the department repair shop.

Sixty-two reports of tower clocks have been attended to.

Extensive repairs were made on the following clocks: Old State House, Unitarian Church, Jamaica Plain, Neponset church and the Gaston School.

The tower of Lyceum Hall was repaired, the expense being charged to this department. Because of the refusal of the lessee of the building to furnish keys to the department, the clock in Lyceum Hall has been out of service since 25 November, 1912.

FOLLOWING IS A LIST OF PUBLIC CLOCKS CARED FOR BY THIS DEPARTMENT.

City Proper.

Charles Street Church.
Christ Church, Salem street, owned by city.
Commercial Wharf.
Odd Fellows Hall, Tremont street, owned by city.
Old South Church, Washington street, owned by city.
Old State House, Washington street, owned by city.
Suffolk County Jail, Charles street, owned by city.
St. Stephen's Church, Hanover street, owned by city.
Public Library Branch, Shawmut avenue (Old Shawmut Avenue Church).
Tremont M. E. Church, Tremont and Worcester streets, owned by city.
Young Men's Christian Union, Boylston street, owned by city.

South Boston.

Gaston Schoolhouse, owned by city.
Lincoln Schoolhouse, owned by city.
Phillips Church, Broadway, owned by city.
St. Augustine's Church, Dorchester street, owned by city.

East Boston.

London Street Church, owned by city.
Lyceum Hall, owned by city.
Trinity Church, Trenton street, owned by city.
Orient Heights Church, Breed and Ashley streets, owned by city.

Roxbury.

Winthrop Street Church, owned by city.
Boston Elevated Railway car house, Columbus avenue, owned by city.

Dorchester.

Baker Memorial Church, Columbia road, owned by city.
Neponset Church, Walnut street.
Tileston School, Norfolk street, owned by city.

Charlestown.

St. Francis de Sales Church, Bunker Hill street.
Old City Hall, City square, owned by city.

West Roxbury.

South Evangelical Church (Doctor Strong), Mt. Vernon street, owned by city.
Unitarian Church, Centre and Eliot streets, owned by city.
Congregational Church, Ashland street, owned by city.

Brighton.

Bennett Schoolhouse, Chestnut Hill avenue, owned by city.

RECOMMENDATIONS.

Many improvements should be made in this branch to bring the system up to a proper standard. To do everything that is necessary would mean a very large expenditure, but a special appropriation should be made each year in order to accomplish the result. The most important thing to consider is to improve present conditions rather than to extend the system. The following are the more important features of the system that demand immediate attention.

Automobiles.

The necessity of keeping the fire alarm system always in serviceable condition demands means by which faults may be located and corrected quickly. At present a large amount of valuable time is lost when trouble occurs in reaching the seat of the trouble. At times many boxes or tappers are out of service when a circuit is open, and in case of fire serious results might happen because of lack of facilities for the public to notify the department. In general work, also, much more could be accomplished if so much time were not lost in going from place to place. Two runabouts and a small auto-truck should be bought to remedy this condition.

Outside Construction.

Many of the cables in Boston proper are old and may need to be replaced at any time. In order to avoid serious trouble, because of defective cable, new cables should be laid in various sections to relieve the old cables of parts of their loads, and frequent test points should be established to make an easily interchangeable system. This work is most important.

The amount of underground cables would be approximately 258 miles of wire. The amount of wire removed from poles due to the underground work would be approximately 62 miles. When installed this cable wire should allow for the future and enough extra conductors are figured on to provide for additional circuits. In some of the locations there are no wires at present, but cables must be laid in order to divide present circuits.

There are about 330 miles of wire strung on poles in the system. A large part of this wire is bare and in many places on poles with high voltage wires. Much of this wire should be renewed and where possible wires should be put underground. Thousands of feet of ducts are being held in reserve for the use of the city's cables.

Interchangeable System of Underground Cables.

I would recommend that enough cable be purchased to establish an interchangeable system. This would cost, approximately, $31,000, and would give the desired protection to the congested districts of the city.

Boxes.

There are on file requests for over one hundred signal boxes and in most cases these requests should be granted. There are many places where the distance between boxes is far too great.

Circuits.

Some of the box circuits are overloaded and new circuits should be made to relieve these conditions. In some sections of the city additional tapper circuits should be installed so that the striking apparatus in too many of the department houses in one section will not be on the same circuit.

Office Apparatus.

New registers to record alarms from boxes should be bought and a new manual transmitter, to be used as a spare machine, should be installed. A new generator should be set up in the repair shop to be used for fire alarm purposes and at least one more motor generator should be purchased.

Telephone System.

The telephone system is old and out of date. A new common battery system should be installed, but if the present system is to be continued public exchange lines should be installed in each division and district headquarters.

Wiring in Department Houses.

The wiring in the lighting and fire alarm systems in several of the department houses is not in accord with present day requirements and must be changed. Test switches should be installed in all houses so as to facilitate the location of circuit troubles, and in some houses additional tappers would improve the service.

Hyde Park.

When the service of call men in Hyde Park is discontinued, the tower bells and whistle should be removed from the service and the signal boxes timed to correspond with the Boston system. Circuits should be run to the Bristol street office, but the present automatic equipment, located in the house of Engine 48, should be kept to be used in case of emergency. The boxes in this district are old and of an inferior make and should be replaced with new and up-to-date types.

GEORGE L. FICKETT.