

ADDRESSES

AS

PRESIDENT

OF THE

National Board of Fire Underwriters

OF THE

UNITED STATES,

ON SEVERAL OCCASIONS,

BY

HENRY A. OAKLEY.

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APPENDIX.

SPECIAL REPORTS UPON FIRE DEPARTMENTS, WATER SUPPLY, &C., OF CITIES.

ST. LOUIS, MO.

HENRY A. OAKLEY, Esq.,

President National Board of Fire Underwriters,

Sir,—In compliance with your request, I beg leave to report that I took the earliest opportunity of visiting the city of St. Louis, Mo., and made myself acquainted with the workings of the Fire Department of that city, and am enabled to give you the following, as the results of my observations :

REPORT.

The city proper extends over an area of nearly forty square miles. The business portion is compactly built. Nearly all the buildings are constructed of brick. One feature was particularly noticeable, namely, the absence of iron shutters to the side and rear windows in a great number of buildings.

The Fire Department comprises seventeen (17) steam fire engine companies, and three (3) hook and ladder companies. Each company is composed of eight (8) men, one of whom is watchman, doing no fire duty whatever as a fireman, but acting as a house patrol, reporting at six o'clock in the evening, and remaining in quarters until six o'clock in the morning.

The engines are of the "Latta" and the "Ahrens" manufacture (Cincinnati); the former are drawn by four horses, and the latter by two horses. *The horses are never harnessed*, except when required for actual service on the occasion of an alarm of fire; several exhibitions were made in my presence, and the average time consumed in the operation was $1\frac{1}{4}$ minutes. *There are no heating apparatus*' connected with the boilers of the engines, steam having to be raised from cold water, which consumes from $3\frac{1}{2}$ to 4 minutes on the small engines, and 5 to 6 minutes on the large engines. Taking this into consideration, and the fact that the horses are not harnessed, the liability for the spreading of a fire may be readily conceived.

A peculiar system prevails in the method of allowing *days off duty*. Every day *one entire engine company is out of service* between the hours of six o'clock A. M. and six o'clock P. M., performing no duty whatever.

During this period any repairs required to the apparatus are attended to. In the hook and ladder companies one man is allowed off each day (these companies being considered always on duty).

Recently a fire occurred in an unoccupied frame building on Park Avenue, within 500 feet of the quarters of Engine Co. No. 7, on a day when this company was *off duty*, and the labor of extinguishing the fire had to be performed by a company located nearly one mile distant, resulting in the destruction of the upper story and roof of the premises.

No patrol duty is done by the Department, and "lookouts" are unknown.

The houses used by the Department are kept in good condition.

There is a salvage corps, consisting of four (4) *permanent* men and four (4) *call men*, stationed in the business centre, with new wagon, drawn by two (2) horses, carrying *thirty* (30) *covers*, *twenty-five* (25) of which are in good order, and five (5) in ordinary, and two portable fire extinguishers. The company is sustained by the fire underwriters, and is uniformed.

The water supply is derived from the reservoir system, water being obtained from Lynde Brook, located about five (5) miles from the business centre. The reservoir has a water shed of eighteen hundred and seventy (1870) acres, and gives a head of one hundred and seventy-five (175) feet to the lower reservoir, and about one hundred and sixty-five (165) feet from the lower reservoir to the City Hall. The upper reservoir has a capacity of six hundred and sixty-three millions (663,000,000) gallons. The high service connects with the upper reservoir, and supplies water to the section principally occupied as residences by means of a twenty (20) inch cast iron pipe from the gate house, and gradually reduced in size until it is joined by the cement lined pipes comprising the greater portion running through the side streets. The average pressure on the hills is eighty-five (85) pounds to the square inch. The lower reservoir is situated about three (3) miles from the City Hall, and connects with the high service by pressure or regulating valves; it has a capacity of three million (3,000,000) gallons. The water is distributed by means of a twenty (20) inch cement lined pipe from reservoir one thousand (1,000) feet; then connecting with eighteen (18) inch cement lined pipe two thousand (2,000) feet, and then connecting with sixteen (16) inch cast iron pipe running the entire length of Main Street, and laid last year, taking the place of the former smaller pipe, and connects with twelve (12), ten (10), eight (8), six (6), and four (4) inch pipes on side streets. The pressure in the business portion is seventy-five (75) pounds to the square inch.

There are five hundred and three (503) hydrants in service, and are of two kinds, the post and surface. The pressure of water from hydrants in the business portion of the city is sufficient to force water to the upper floor of a five (5) story building, although one or more engines respond to every alarm of fire, according to location.

There are quite a large number of high buildings on the principal streets, having Mansard roofs, and an almost total absence of iron shutters to sides and rears of buildings, attracted my particular attention.

SYRACUSE, N. Y.

The Fire Department of this city is controlled by the Common Council, and is virtually a volunteer organization. It is commanded by a Chief Engineer, who gives his whole time, and three (3) *call* assistants.

The Department consists of four (4) steam fire engine companies, and one (1) hook and ladder company; *no reserve apparatus*. A hand engine is located in the outskirts, and performs duty in that vicinity. The steamers are all of the "Amoskeag" pattern and build, two of them, Nos. 1 and 4, are in good condition, while Nos. 2 and 3 need considerable repairs—

all are drawn by horses. The horse hose carriages attached are also of the "Amoskeag" build, carrying seven hundred and fifty (750) feet of hose on each reel.

Automatic relief valves and controlling nozzles are not used. Circulating steam heaters are attached to the boilers of all the engines.

The hook and ladder truck is of the "New York" build, in good condition, carrying eight (8) ladders, including an extension ladder of sixty-five (65) feet, also hooks, axes, portable fire extinguishers etc., and is drawn by two (2) horses.

Three (3) *permanent* men are attached to each engine company, (engineer, fireman and driver), with an average of twenty-five (25) *call* men. The hook and ladder company has two (2) *permanent* men (driver and steersman), with thirty (30) *call* men.

Each company receives from the city three hundred (300) dollars per annum, which goes into the company fund. The *call* men appear to be unreliable for after-midnight fires, which is often apt to make the companies short-handed, as also the fact that the fine for absence is only ten (10) cents. The *permanent* men are not uniformed.

The *Chief Engineer* is elected annually by the votes of the firemen, and confirmed by the Common Council.

There is nine thousand eight hundred and fifty (9850) feet of hose in use in the Department. Seven thousand (7,000) feet of double riveted leather hose, in good order; one thousand (1,000) feet of cotton, rubber lined, in good order, and eighteen hundred and fifty (1,850) feet of leather hose, in poor and ordinary condition. The couplings on three thousand (3,000) feet of hose recently purchased, are made of too light material, rendering them liable to be easily indented and thus unfit for use. A hose depot is located on Wyoming street, where hose is repaired and kept on storage the companies being required to change hose at this depot after every working fire.

An extra hose carriage is housed at the hose depot, carrying seven hundred (700) feet of hose, and is sent for when required.

Owing to the want of exact information of the size of the pipes running through the different streets, several engines will connect with hydrants on same pipe, of small capacity, and thereby fail to get anything like a full supply of water. A system might be adopted to great advantage by designating the size of supply pipe to each hydrant by a distinct color, thus a hydrant connected with a four (4) inch pipe, might be painted a bright red, a hydrant with a six (6) inch pipe drab, and so on, care being taken to adopt such colors only as could be easily distinguished at night. This system could be well applied to other cities.

The fire alarm telegraph is of the "Gamewell" automatic system, and in good order. Wires are laid over housetops and on poles. There are thirty-four (34) street alarm boxes—keys to which are furnished to the *permanent* men, and the policemen, thirty-four (34) in number, and are also placed in the vicinity of the boxes. Fire alarms are sounded by bell on the City Hall, weighing 4,700 pounds, struck by electrical apparatus, and on same circuit as the gongs in the engine houses. There are also small bells on the engine houses, which are rung by hand.

There is no salvage corps or chemical engine.

The water supply is derived from reservoirs and the "Holly" system, under the control of a private company. The pumping house is located on Onondaga Creek, about one and a half ($1\frac{1}{2}$) miles from the City Hall, and has two (2) "Holly" rotary pumps, with a capacity of about three million (3,000,000) gallons of water per twenty-four hours. A twelve (12) inch iron pipe runs from the pump house to Onondaga Street, to and through Salina Street, with branches of eight (8), six (6), and four (4) inch pipe, the most part of the latter size. There are three (3) reservoirs; the main one is on Onondaga Hill, about four (4) miles from the City Hall, and covers eighteen (18) acres, with a water shed of about three thousand (3,000) acres. The average depth of water in this reservoir is thirty-five (35) feet, and it is used for supplying the distributing reservoirs. It has a head of about four hundred (400) feet (from the Syracuse House), with a ten (10) inch pipe from the gate house. The first distributing reservoir is situated about a quarter ($\frac{1}{4}$) mile from the pump house and has a head of one hundred and seven (107) feet above the Erie Canal, at the Syracuse House, with a capacity of one and a half million (1,500,000) gallons. The pipe from this reservoir connects by means of a Y branch pipe from the pump house, a short distance from the latter. The second distributing reservoir is located about two (2) miles from the City Hall, having a head of one hundred and sixty-five (165) feet above the Erie Canal, and has a capacity of five million (5,000,000) gallons, with two (2) pipes, twelve (12) and ten (10) inch. cement lined, from gate house. The average pressure in the business portion of the city is twenty-five (25) pounds to the square inch. There is about an equal quantity of iron and cement lined pipe used throughout the city, and is, generally speaking, too small in diameter, as difficulty is sometimes experienced in obtaining a sufficient supply of water for the engines in case of fire.

There are two hundred and sixty (260) hydrants in use, all of the upright or post pattern, and in the business portion of the city are placed about three hundred and fifty (350) feet apart. The Erie Canal runs through the heart of the city, connecting with the Oswego Canal, near the City Hall. The engine companies avail themselves of the supply of water thus afforded, when opportunity occurs, in preference to the hydrants.

The boilers in the pumping house have proved inadequate for the requirements, and are to be replaced by others of larger dimensions. The reservoirs are, however, the main dependence, the pump house being used as an auxiliary, or in case of a long continued drouth.

There are a large number of "Omnibus" blocks here, surmounted with frame mansard roofs, making it highly necessary that the Fire Department should be in the highest state of efficiency. I think it essential in all cases where there is no salvage corps, and controlling nozzles or relief valves, are not used that a chemical engine should be located in the centre of the business portion of the city, where more damage is oftentimes at present occasioned by water than by fire.