

New England
Association
— of —
Fire Chiefs

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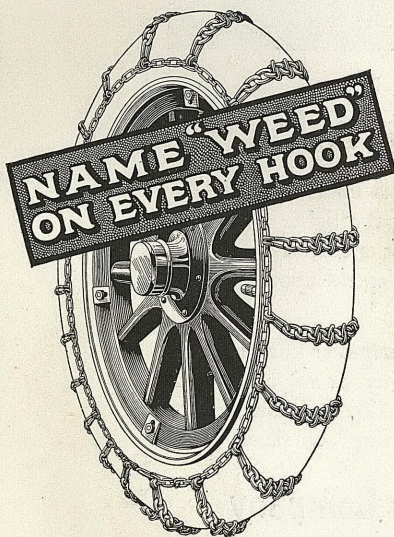
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First Annual Convention

OF THE

New England Association

— of —

Fire Chiefs



June 20, 21 and 22, 1923

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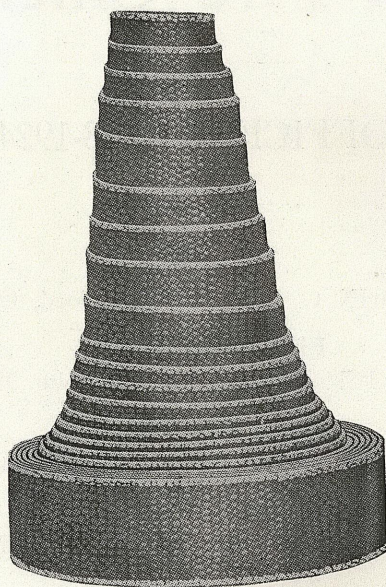
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PROCEEDINGS OF THE FIRST ANNUAL CONVENTION
OF THE
NEW ENGLAND ASSOCIATION OF FIRE CHIEFS
HELD AT
BRIDGEPORT, CONN., JUNE 20, 21, 22, 1923

The first annual convention of the New England Association of Fire Chiefs was called to order in ballroom of the Stratfield Hotel at Bridgeport, Connecticut, June 20, 1923, by Chief John P. Doyle, of Wellesley, Mass., President.

The Convention was opened with an address of welcome by His Honor, Mayor Atwater, of the City of Bridgeport, as follows:

Mr. President, Members and Guests of New England Association of Fire Chiefs: While this is a rather warm day and the ability to deliver an address has formed no part of my political education, I can add and dress, but I cannot put them together; nevertheless, I want to extend to you a welcome—a hearty welcome in behalf of the city and hope your stay here will be pleasant, as I know it will. I hope the spirit of this convention will be as serious as the nature of the business warrants. I hope the discussions here will be earnest and productive from an educational standpoint, and that the knowledge gained will be spread in your home towns or villages so that others may profit by the experience of those who have remarks to make in connection with this convention. We can all learn. Those who come in contact with various situations are able to explain those situations to us and to others who have not had the same experience. We are proud of our City of Bridgeport—we are proud of the City as a whole. We are proud of, and want you to have an opportunity to see, our many developments. Our parks, our charitable institutions, our various manufacturing plants, our municipal buildings and, particularly, our Fire Department.

Our Fire Department we are very proud of. We are justly proud of OUR Fire Department because we can back it up by the fact that we have not had a serious fire in a good many years, due to the vigilance of our able Chief and his co-workers, who are on the job every single minute—100%; and if all others maintain the same efficiency as that of our Fire Department, the Insurance Companies would make a lot more money than at present.

We are proud of our Chief here and why shouldn't we be? He is the best that Bridgeport has ever had and one of the very best in the New England States. I said—ONE of the best because I consider that every other chief in the New England States is 99½% equal to Our Chief.

We want to have you take as much interest in this Convention as it is possible for you to, and we want you to feel when you leave us that the latch string is out for you when you come again and that we are all friends, absolute and bona fide, arm gathering friends. I thank you all for this privilege."

Address of welcome by Chief D. E. Johnson:

"Mr. Mayor, President, Members of the New England Association of Fire Chiefs:

There were only 1277 electric light and power companies when the General Electric Company was founded in 1892. To-day there are over 7000 companies, with a total investment of more than five billion dollars.

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BRIDGEPORT, CONN.

It is a great pleasure to be here this afternoon and listen to the words of His Honor, the Mayor, welcoming the first Convention of the New England Association of Fire Chiefs held in Bridgeport. I am very glad that it held here. I hope that every minute of your stay with us will be pleasant. I think you will enjoy the entertainment planned by the people of Bridgeport. You will find the Bridgeport Police Department working in harmony with the Fire Department to make your stay in Bridgeport a pleasant one. You will find the best of friendship between the two departments. To any question you may wish to ask of either department, you will be given a civil and courteous answer. We work together and we play together. We hope you will enjoy your visit to Bridgeport. Thank you."

Mr. George E. Wood (representing President Crawford of Bridgeport Chamber of Commerce.)

"Mr. Mayor, President, Members and Guests of the New England Association of Fire Chiefs:

In every city, town and hamlet you will find a community spirit and mutual regard for the interests, welfare and happiness of fellow citizens.

This spirit arises naturally in the free and unhampered relations socially, commercially, politically and religiously. It is in reality the measure by which one community or city is judged or estimated by its sister communities. In our fair city, I say unblushingly, the best city in the United States—this spirit is crystallized and finds its expression in the Chamber of Commerce. Today this spirit is turned towards this Convention and greets you with heartiest felicitations.

As a worthy contributor to this worthy and enriching spirit is the Rotary Club with its love and service and broader community life as reflected in the Chamber of Commerce.

Mr. President, in the dual capacity as a representative of the Chairman of the Chamber of Commerce and the Rotary Club, who are both, unfortunately and unavoidably, absent from the city, I extend to the Convention a hearty welcome and hope that your stay in our city will be both profitable and pleasurable.

I thank you."

Mr. James F. Coleman, President, Board of Fire Commissioners:

"Mr. President, Members and Guests of the New England Association of Fire Chiefs:—

I wish to congratulate your President and his associates, for this gathering shows the spirit which gives confidence to the men who are responsible.

I have just a brief message to give you and that is one of confidence. Bridgeport is one of the great industrial centers of New England. While we are proud of our commercial enterprises and industrial plants, we are exceedingly proud of our Bridgeport Fire Department. We have confidence in our institutions and City Government.

I am going to ask the Chiefs this afternoon to accept as a slogan for their convention 'Confidence'.

I hope that you will approach the matter in a spirit of confidence and on behalf of the Fire Board of Bridgeport I wish to congratulate you upon your splendid success. I hope your days in Bridgeport will be pleasant and profitable and trust you will select us soon again when considering another Convention. Thank you."



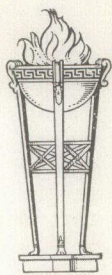
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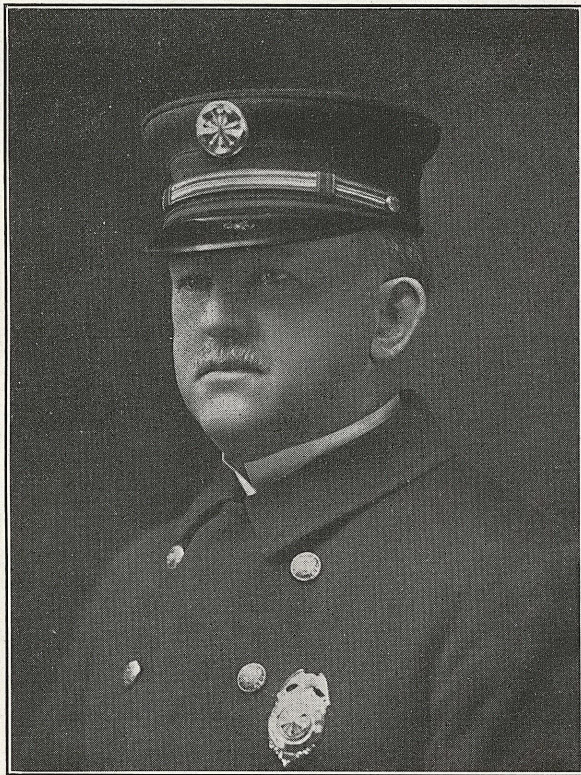
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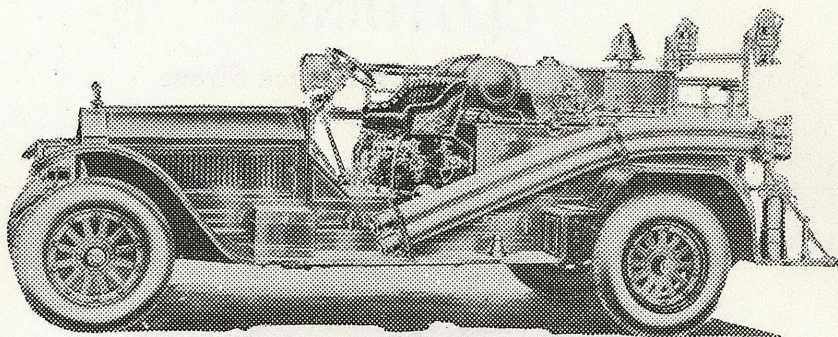
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RESPONSE TO ADDRESSES OF WELCOME

By Theodore A. Glynn, Fire Commissioner, Boston, Mass.

Mr. President, Mr. Mayor and Gentlemen:

I am keenly impressed with the high honor of being asked to respond to the greetings extended to the officials of the New England Association of Fire Chiefs who are assembled here this afternoon on the occasion of their first annual convention.

I was rather pleased to learn from your good Chief Johnson that the first public department to be notified of our coming was the Police Department. I feel that with the Police and Fire Departments of your city government, your brilliant Mayor, the Chamber of Commerce and the Rotary Club with us there is no question as to the solution of the problems that will be brought before the various committees.

On behalf of the New England Association of Fire Chiefs I desire to express sincere thanks to the members of the City Government and to the representatives of the Rotary Club and the Chamber of Commerce for the declarations of good will and for the sentiments embodied in the various addresses to this convention.

It is very apparent from the remarks of the gentlemen that they are in full accord with that sentiment which should be predominant in every city and town in the United States—that this and every other fire department in their respective cities and towns should receive the undivided support of the entire citizenship. I judge, from the expressions of your honorable mayor, that here in Bridgeport everything, within reason, that this most important branch of the city government desires has the unqualified support and backing not only of himself but of the various civic bodies as well. The city of Bridgeport may well boast of its peerless Fire Department and it is very gratifying to know that such a progressive and up-to-date organization as the Chamber of Commerce stands squarely behind it.

Not all the cities of New England are blessed with such support from their Chamber of Commerce and other civic bodies. Some do not desire that this particular department which is so important should make that advancement which will keep it in the vanguard of progress and abreast of the times; they do not feel that it should grow as the other departments of their cities grow. This despite the fact that the safety of property and of the citizens themselves should be a paramount consideration.

There are in every town men who desire to stay the improvement of this indispensable arm of its particular community so you may well imagine with what intense satisfaction I learn that Bridgeport, this great big hive of industry—Bridgeport, that well may brag and boast of the multifarious industrious contained within its borders—Bridgeport, that employs regularly thousands of men and women of every race, creed or color—Bridgeport, I say, exemplifies that quality so needed in America today, yet lacking in many communities—the quality of intelligent preparedness to adequately meet its fire hazards.

There is a convincing note of interest and real encouragement in the words of welcome that have been addressed to us here and I feel that we have with us, as we gather here to discuss those problems that every community must face, the men who constitute those in control and who represent genuinely the spirit of the citizenship of Bridgeport.

My friends, ours are problems that, to my mind, will never be solved to the satisfaction of all unless we approach them with vision, breadth of mind and invincible determination. A long pull, a strong pull, a pull all together and, presto! the thing is done. It just needs good teamwork. And speaking

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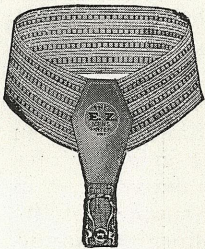
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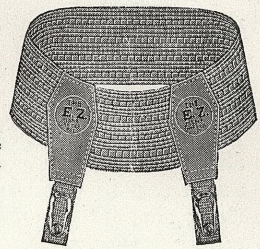
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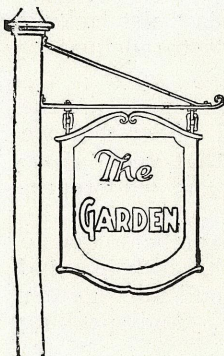
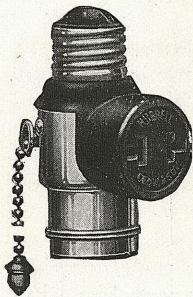
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of teamwork reminds me of McCarthy and the first time he played baseball. This is a warm day and I shall be as brief as possible but as the case of McCarthy will point a moral and adorn my tale I'll relate it in a few words.

We have a baseball team in our fire department up home in the little city of Melrose. A short time ago in the early part of June there was a game between ours and a rival team. If I mistake not some of you chiefs were present on that occasion. Just a few days before the game a new man had been added to the Melrose fire department. He filled an emergency position in the repair shop. Apparently a particularly brilliant man, events proved him totally devoid of experience along athletic lines. His name was McCarthy and regardless of the name he was born in Ireland.

Well, the game started. Because of a peculiar combination of circumstances we had just nine men on the team that day. There was not a single substitute on the bench. Of course, the inevitable happened. In the very first inning our short stop was struck on the knee by a very fast drive and was so badly incapacitated that he was compelled to withdraw from the game. The captain of the team tore his hair in a fine frenzy. He didn't know what to do. Perplexity was writ large on his troubled countenance.

"Ain't my name Jonah? I'll say it is," he wailed, asking and answering the question all in one sentence. "What the devil are we going to do?" he beseeched the rest of us, helplessly.

Just then, lo and behold out there in the first row of the bleachers what should the eager eye of our Chief spot but a red head—and the red head was the head of McCarthy.

"McCarthy," hailed the Chief, "come here; and come quick."

McCarthy strolled over and we anxiously invited him to take our short stop's place.

"Sure, boys, I'd like to oblige ye," said he, embarrassed like, "but I never played a game of baseball in my life."

"Then it's time you learned," snapped the Chief. "McCarthy, this is the time and the place—and you're the man. Go in. We need you."

Pleading and coaxing, we all gathered around McCarthy.

"Get into a suit and get busy," we urged.

And McCarthy did.

When our team went to bat the first man up sent a long liner driving way up over center field. He scooted around first base, catapulted by second and made third safely. Things didn't look so worse.

Then McCarthy went to bat. He stood there swinging that bat much as a farmer swings a flail. He gripped it—you know the desperate grip of a beginner on the steering wheel of an automobile? McCarthy's was like that. Every muscle of his body was as tense as a bowstring. It was evident that he had a realizing sense of what was expected of him and that he was going to do or die—that if his bat ever connected with the ball something was due to happen. By this time the crowd had caught on and everybody was hanging on to their sides.

The first ball went right over the plate. McCarthy stood absolutely starkly rigid. His bat was motionless now though his fingers were glued to it with a bull dog grip. He didn't even attempt a swing as the ball flashed by, directly over the center of the plate. His attitude was that of a stone image whose posture would endure through the ages. Then, slowly, he became animate. He looked around at the umpire. He seemed dazed. Then he shook himself, planted his feet firmly, jabbed his bat rapidly up and down in the air and fixed his eyes on the pitcher. He made a vicious swing at the next ball—and missed. One strike—two balls. The pitcher wound up again, let fly and, oh, what a wallop. McCarthy caught the ball right on the knob

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of the bat and off over left field and over the fence it went like a cannon ball. Then bedlam broke loose. The crowd yelled and cheered like mad.

But McCarthy didn't move. He stood there, mouth open, the bat sagging in his now nerveless fingers, staring at the ball in its comet-like flight. "Run, McCarthy;" Run, McCarthy," went up a deafening chorus of shouts.

Still McCarthy remained motionless.

The Chief rushed up to him excitedly.

"What in the name of Kingdom Come is the matter with you, McCarthy?" he yelled. "Why don't you run? Don't you know you knocked the ball over the fence?"

McCarthy bristled.

"To hell with the ball," he says; "I'll pay for it."

I do not intend, my brother firemen, to take up any more of your valuable time. However, pertaining to the undivided support the Fire Department of Bridgeport received from the officials and citizens here I want to say that the same conditions obtains in Boston.

In closing, I will state that if this organization, composed of the real fire fighting forces of New England, desires to be accorded a warm, hospitable reception—if you wish next year to participate in a real, old time muster—if it would afford you pleasure to visit various historic shrines that mean so much to the American public—if you will accept my guarantee that a city with no less than 800,000 population will enthusiastically welcome you and your friends, then I invite you to come to Boston for your next convention. I can assure you the same cordial good-fellowship, the same spirit of brotherly love that we have found so much in evidence here in Bridgeport. We have a mayor, as you have in Bridgeport, who is heart and soul with the fire department. We are going to show you, next year, the record of a one hundred per cent motorization. We will also show you a real fire department and real boys who make the Boston Fire Department the huge success that it is—the best in the world. Considering the nature of our work it might be pertinent to say that we will show you the latest and best ingredients for quenching—quenching—but that is another story, as Kipling says. I thank you.

REPORT OF THE ORGANIZATION MEETING

By Secretary J. W. O'Hearn

Boston, Mass., July 12, 1922.

Thirty-eight men interested in fire departments, consisting of Chiefs, ex-Chiefs, and manufacturers of fire department equipment, met this afternoon at the office of The Gamewell Fire Alarm Telegraph Company, 200 Devonshire Street, Boston, to discuss the advisability of forming an organization to include all persons interested in fire departments with the purpose in view of discussing, planning and adopting fire fighting methods and standards.

The meeting was called to order at 1.45 P. M. by Chief John P. Doyle of Wellesley who briefly outlined what was expected and the purpose of the meeting.

Ex-Chief Reuben Weekes of Providence, Rhode Island, was nominated for temporary chairman but declined to serve as such. Chief John P. Doyle was then nominated and elected Temporary Chairman.

Chief John W. O'Hearn of Watertown, Massachusetts, was nominated and elected Temporary Secretary.

Chief John F. Leonard of Belmont moved that the association be now organized as a permanent association to be known as the New England As-

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sociation of Fire Chiefs. After some slight discussion as to name best suited Chief Leonard's motion was unanimously adopted.

Chief John P. Doyle then read Constitution and By-Laws which he had prepared. Some discussion arose as to reading each section at a time or reading them as a whole. It was decided to read them as a whole first and then discuss articles should anyone so desire. Chief Barard of Arctic, Rhode Island, moved to adopt constitution and By-Laws as read with the following amendment made on motion of Chief Stanton: Article 3, Section 4, of the constitution struck out. Section 1 of the By-Laws add at the end of the last line "in advance." Motion to adopt was carried unanimously.

Chief Tracey of Woburn moved that we proceed to the election of officers. Carried.

Chief Leonard of Belmont moved that the present acting officers be made permanent. Carried.

Chief Pierce of Arlington, Massachusetts, nominated Chief Howard Stanton of Norwich, Connecticut, for First Vice-President. Chief Stanton declined same.

Mr. F. M. Tiffany nominated Chief John Moran of Hartford, Connecticut, and he was elected First Vice-President.

Chief Patrick Hurley of Holyoke, Massachusetts, was elected Second Vice-President.

The following were elected State Vice-Presidents:
Chief Charles French, Manchester, New Hampshire.
Chief Daniel E. Johnson, Bridgeport, Connecticut.
Chief Carl D. Stockwell, Burlington, Vermont.
Chief Almus D. Butler, Portland, Maine.
Chief A. G. Cote, Woonsocket, Rhode Island.
Chief John A. Taber, Boston, Massachusetts.

In addition to the President and Secretary by virtue of office the following were elected to the Board of Directors:

Ex-Chief Reuben D. Weekes, Providence, Rhode Island, three years.

Ex-Chief Peter E. Walsh, Boston, Massachusetts, two years.

Chief James E. Smith, Nashua, New Hampshire, one year.

On July 17 Director Reuben D. Weekes wrote President Doyle that it was impossible for him to serve as a Director and tendered his resignation which was accepted. Chief George L. Johnson of Waltham was elected to the vacancy.

Chief David A. Decourcey of Winchester, Massachusetts, was elected Sergeant-at-Arms.

Moved by Chief Johnson that the office of Secretary and Treasurer be combined for the time being and it was so voted.

Meeting adjourned at 3.10 P. M. after which all retired to the roof of the building where a group photograph was taken.

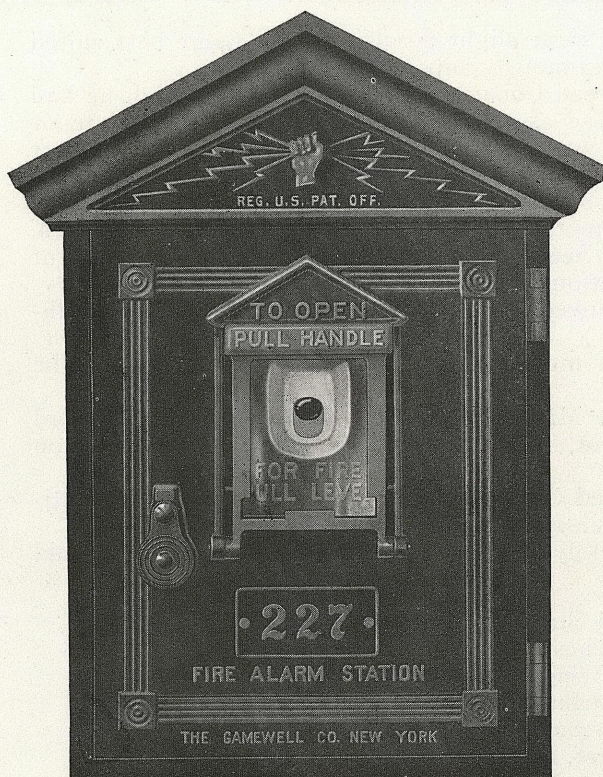
Secretary O'Hearn continuing:

On June 1, 1923, Director Peter E. Walsh of Boston, Massachusetts, because of private business found it impossible to continue as a Director of the Association.

President Doyle advanced Director James E. Smith of Nashua, New Hampshire, who was serving the one year term, to the vacancy in the two year term caused by the resignation of Director Walsh.

Chief Daniel E. Johnson of Bridgeport, Connecticut, was appointed to the vacancy in the one year term caused by the advancement of Chief Smith.

Mr. President and Members: It may be of interest to the members of the Association to know how many paid members we have to June 15, the date on which I closed my books. We have by States the following number:



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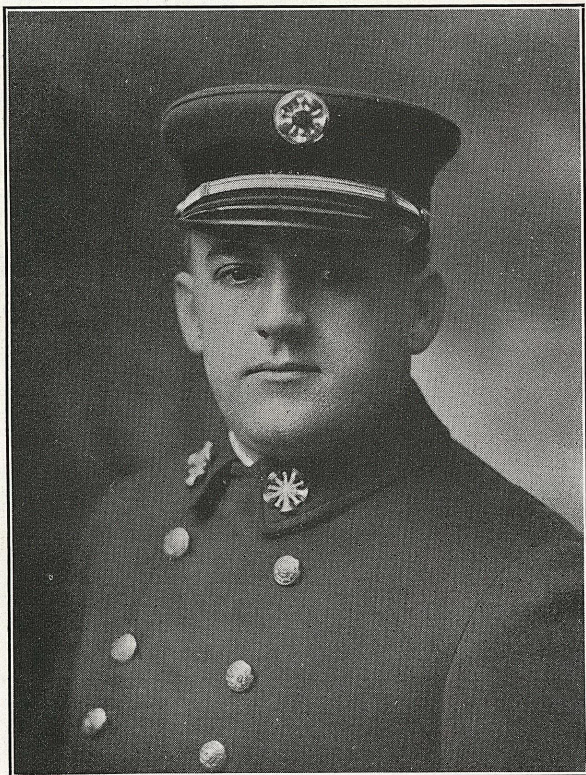
**Brattle Street
Boston**

**MCCARTHY & CO., INC.
BOSTON 8, MASS.**

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Bridgeport, Conn.

F. A. CANTWELL, Manager



WILFRED J. SAMSON
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and Toy Co.**

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Wooden Collar Buttons

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NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Maine	5	Massachusetts	68
New Hampshire	3	Rhode Island	16
Vermont	1	Connecticut	22
New York.....		4	

This makes a total of 119 members.

It appears to me that the Association should have some fixed date for closing the books. For this reason I took it upon myself to close the books June 15 in order to make a report before this convention.

In connection with the membership fee I desire at this time to make the following motion: That all persons eligible for membership in the Association who have paid at least one assessment of \$3.00 between July 12, 1922, the date of organization, to and including June 1, 1923, be and are hereby considered as having paid dues in advance to June 1, 1924. The motion was accepted.

AIMS AND OBJECTS OF THE ASSOCIATION

By President John P. Doyle

"I propose to give you, gentlemen, a short talk on the aims and objects of this Association; in other words, the reason for its organization. A great many of the small cities and towns have failed in the past to pay the expenses of their Chiefs to the International Association of Fire Engineers Convention held yearly in the different parts of the United States and Canada. For that reason we thought it might be well for the Chiefs of the New England States who are so closely affiliated in their line of duty, conditions through New England being pretty much the same, to arrange to hold a yearly convention of three or four days duration and to have an exhibition each year. With this object in view, I interviewed a number of the Chiefs more than a year ago, and after talking with perhaps twenty-five or thirty from different parts of New England, notices were sent out last July. The Secretary has already read to you a list of those who were present at that meeting. They made a fairly good representation of the Chiefs of New England States. We organized this Association with the object in view of helping one another and increasing the efficiency of our Departments in the various cities and towns throughout New England. There is a wonderful opportunity for increasing efficiency in these departments, and one of the opportunities that will be offered to us at this Convention will be "Standardization" of couplings. I understand that through this section of the country in case of a conflagration where outside assistance is called for, particularly from Boston, they would be unable to connect the hose threads without the use of an adapter. That, of course, involves great loss of time, particularly during the height of a conflagration when help is most necessary. That is one thing we hope to eliminate through the standardization of couplings. It has been done throughout the State of New Jersey, through the efforts of the New Jersey Fire Chiefs' Association, and New Jersey is about standard, which, of course, makes it very nice for companies coming in from outside.

There are many objections such as the one I have just mentioned that might well be taken up by the New England Association of Fire Chiefs to the benefit of the municipalities and to the benefit of the Fire Chiefs in those municipalities. There is now no excuse for the New England Fire Chiefs not attending a convention each year regardless of whether their city will pay the expenses or not. It will be no particular to any man who holds the office of Chief to attend the convention in the New England States. One thing that we ought to bear in mind is this: There should not be too much entertainment. Some time should be devoted to the serious business on



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Eastern Department
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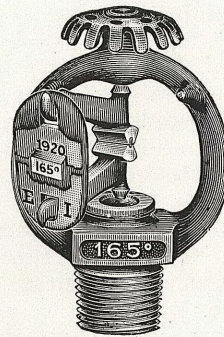
FIRE MARINE AUTOMOBILE

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LACONIA, N. H.

Boston Office, 54 Batterymarch Street

APPROVED
UNDERWRITERS LABORATORIES, CHICAGO
AND
ASSOCIATED FACTORY MUTUAL FIRE INSURANCE CO'S.



NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

hand. That is why we organized—to look after the interest of our various members, and if we devote all of our time to entertainment, we will have very little time to devote to business. I want to say, gentlemen, that I am pretty proud to see this large gathering at our first meeting.

Many of our members are now out seeing the sights instead of being present here but there is no doubt that our Convention is going to be a success and right now I am going to say that our Secretary has done much to make it so, as also has our State Vice-President, Reuben D. Weekes, Providence, Rhode Island. He has sent in sixteen or eighteen applications for membership in this Association. There are a number of others who have done equally as good work, but our Secretary has worked untiringly. In the last two months he has sent out more than 7,000 communication so you see he has been working. Very true, he did not write all, but had to address them and he is right on to his job every minute.

Each member has been furnished with a copy of the program and if there is no objection, we will accept that as a report of the Committee on Topics and program and so place it on the records of the Association. (This was put to a vote and carried in the affirmative.)

REPORT OF SECRETARY AND TREASURER, JOHN W. O'HEARN

Dated June 15, 1923.

	Received	Expended
	Cash	Cash
119 Members from July 12, 1922, to June 15, 1923		
Membership fee, \$3.00	\$357.00	
August 11, 1922—Check No. 1		4.35
John P. Doyle		
125 Postal Cards	\$1.25	
Printing Cards	2.00	
Stationery, etc.35	
Copy Book and Receipt Book.....	.75	
August 12, 1922—Check No. 2		31.00
Pequosette Press, Watertown, Mass.		
500 Letter Heads	\$3.75	
1000 Circulars	7.00	
500 Large Envelopes	3.75	
1000 Applications	5.50	
1000 Small Envelopes	4.75	
1000 Membership Receipts	6.25	
May 11, 1923—Check No. 3		32.00
Pequosette Press, Watertown, Mass.		
2000 Postal Cards Printed		
May 21, 1923—Check No. 4		25.00
John W. O'Hearn, Watertown, Mass.		
Business trip, relative to Convention, of President Doyle and Secretary O'Hearn to Bridgeport., Conn., May 22, 1923.		
May 26, 1923—Check No. 5		5.75
Pequosette Press, Watertown, Mass.		
300 Postal Cards printed		

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Wetmore-Savage Co.



BOSTON, MASS.



Pettingell-Andrews Co.

Electrical Merchandise

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Bridgeport, Connecticut



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State Vice-President, Burlington, Vt.

COMPLIMENTS OF

Bridgeport Motor Truck Corporation

Bridgeport, Connecticut

HENRY H. MEUNIER, General Manager

Waltham Watch and Clock Co.

THE SCIENTIFICALLY BUILT WATCH

GEORGE H. BROWNE, President
HARRY G. BROWNE, Vice-President
JOHN J. MEEHAN, Treasurer and Manager
ALBERT C. FAIRBANKS, Secretary

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MASS.

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Gutta Percha Products

Watertown, Mass.

NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

June 4, 1923—Check No. 6	32.00
John W. O'Hearn, Watertown, Mass.	
1600 Postal Cards	\$16.00
1200 1-cent stamped envelopes.....	14.00
100 2-cent stamps	2.00
	<hr/>
June 5, 1923—Check No. 7	42.00
Pequossette Press, Watertown, Mass.	
1600 Postal Cards printed	
Cards furnished	\$11.00
2500 4-page Programs	31.00
	<hr/>
June 5, 1923—Check No. 8	11.00
John W. O'Hearn, Watertown, Mass.	
300 1-cent Stamped Envelopes.....	\$3.54
Miscellaneous Stamps to date.....	7.46
	<hr/>
	<hr/>
	\$357.00 \$183.10
Bank Balance, Union Market National Bank	
Watertown, Mass., June 15, 1923	173.90
	<hr/>
	\$357.00 \$357.00

President Doyle:

Before the report of the Secretary and Treasurer is accepted as read, I would like to have a report of the Auditing Committee.

Chief James E. Smith:

The Auditing Committee has audited the Treasurer's books and found them correct.

President Doyle: Gentlemen, you have heard the report of the Secretary and Treasurer read. What is your pleasure?

A motion was made by Chief Howard Stanton of Norwich, seconded by Chief Avery, Worcester, Massachusetts, that the report be accepted as read. It was so voted.

President Doyle:

We will now listen to the report of Chief John C. Moran, Hartford, Connecticut, Chairman of Exhibit Committee.

REPORT OF THE EXHIBITION COMMITTEE

By Chief John C. Moran

To the Officers and Members of the New England Association of Fire Chiefs. Gentlemen:

The report of the Exhibition Committee in connection with the First Annual Convention of the New England Association of Fire Chiefs held in Bridgeport, Connecticut, June 20-21-22, is herewith submitted.

Twenty-seven exhibitors of fire apparatus and equipment occupied 5,880 square feet of floor space for which 10 cents per square foot was charged, amounting to \$588.00.

The expenses of the exhibition committee amounted to \$86.48, leaving a balance of \$501.51, which has been paid to Secretary-Treasurer John W. O'Hearn.

Following is a detailed account of receipts and expenditures with a list of and location in the exhibition hall of all exhibitors.

COMPLIMENTS OF THE

Ballard Oil Burning Equipment Co.

Oil Burning Engineers and Contractors

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KENNEBEC STREET, PORTLAND, MAINE
252 ASYLUM STREET, HARTFORD, CONN.
806 MAIN STREET, WORCESTER, MASS.
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100 BELLEVUE AVENUE, NEWPORT, R. I.

NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Receipts

From sale of 5,880 square feet of floor space at 10 cents per square foot \$588.00

Total receipts\$588.00

Expenditures

April 20—M. J. Doyle, printing contract forms and floor plans..... \$65.00
March 23—Expenses, Hartford to Bridgeport and return, J. C. Moran 3.96
June 5—Expenses, Hartford to Bridgeport and return, J. C. Moran 3.96
June 6—Postage, J. C. Moran 3.00
June 16—Stenographer and incidentals, J. C. Moran..... 10.60
June 20—Checks and cash by J. C. Moran to John W. O'Hearn
Secretary-Treasurer 501.48

Total Expenditures\$588.00

Exhibition Committee,

JOHN C. MORAN, Chairman.
REUBEN D. WEEKES.
HENRY H. HEITMAN.

President Doyle:

No doubt the majority of Chiefs and others present have visited the Exhibition Hall. If not, they must because the Exhibit Committee has certainly done a very creditable job on the exhibit of our first convention in this city. And now, gentlemen, having heard the report of Chief Moran, what is your pleasure?

A motion was made by Chief Stanton of Norwich, Connecticut, that the report be accepted as read and placed on the records of the Association. This motion was seconded by Chief Walter Pierce, Arlington, Massachusetts. It was so voted.

A motion was made by Chief Morris, Lawrence, Massachusetts, seconded by Chief Stockwell of Burlington, Vermont, that the Association extend Chief Moran and his colleagues, Ex-Chief Weekes and Chief Heitman, a rising vote of thanks which was voted in the affirmative.

President Doyle:

Gentlemen: I have here a paper prepared by Leonard B. Buchanan, Woburn, Massachusetts, on the new fire hazard that is confronting New England, in fact the whole country, and that is pertaining to Radio and Wireless. It is a very lengthy paper and somewhat technical, and owing to the fact that the afternoon is hot, and he is not here to read it, I would suggest that if there is no objection, it be spread upon the records and printed in our report so that the Chiefs may take their time and study the problem over. I assure you it is well worth studying as it comes from the hands of a man who is well versed in and able to handle the subject intelligently.

A motion was made by Chief Frank Tracey and seconded by W. J. Noble that a vote of thanks be extended to Mr. Buchanan and the paper be incorporated in the records of the New England Association of Fire Chiefs and it was so voted.

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coupled therewith, a renewed and increasing interest in amateur radio, has multiplied materially the mere number of potential fire hazards in our residential districts.

It is not the present purpose to proclaim that thus a very serious and material hazard has been added to our already sufficiently numerous evils; but rather to attempt to set forth wherein the hazard lies, and to show that with reasonable vigilance, it need not be great. This latter statement is indeed substantiated by the small number of electric fires ascribed to radio in the past year, in spite of the amazing increase in the number of radio stations installed.

Inasmuch as the far the greater number of such stations are receiving stations in residences for the reception of popular broadcasting, the essentials of such station, the general classification of apparatus affording such essentials and the hazards thereof will first be taken up.

The essentials of a radio receiving station are first—something to extract from the electric field surrounding the earth a portion of the energy thereof; second—something to pick out from such extracted energy a particular portion, the variations in which constitute the signals it is desired to receive; third—something to convert this energy to audible sound and so detect it.

The first essential may be called in a most general way the "antenna." An antenna may consist of a wire or group of wires or a plate of metal, suspended in the air out of doors, with a lead-in running to the radio set inside the house; or it may consist of a similar wire or wires entirely within the house, which may be stretched in the attic or around the room, or may be wound on a pair of crossed sticks, or similar supporting device (the so-called loop antenna), or again, existing wiring in the house, such as the electric light, bell or telephone circuits may be utilized. Again, the antenna may be a piece of insulated wire buried in the ground or merely a wire leading from the receiving set to the water pipe or other grounded metal. The ground itself has not been mentioned as an essential, for the reason that direct connection to it is not necessary for good reception of radio signals, nevertheless even when not connected, it is effective to a greater or less extent by inductive action, through the air.

The principal hazards of outdoor antennas may be enumerated as follows:

Installation in proximity to other wires which are charged or may become charged by contact with charged wires elsewhere, so that breakage of the antenna, due to its own weakness, or due to falling limbs or structures may cause it to cross such charged wires and so bring dangerous electrical conditions into the house.

Inadequate insulation which may invite trouble during thunder storms.

The lightning hazard, the elevated conductor is itself a species of lightning rod, and with proper insulation and adequate, well maintained lightning arrester or ground switch and ground connection is a protective device rather than a hazard; but with poor insulation or no or an inoperative arrester or ground-switch or with too small a ground-wire or with an inefficient ground, it is quite possible that lightning could cause considerable trouble. However, let it be said that there are in long common use metal clothes lines, installed on flat roofs and run between buildings, with no pretense of grounding, which afford an equal lightning hazard.

The hazard of the inside wire antenna is very slight, residing chiefly in careless installation, so that it may come in contact with lighting or power wires in the building.

The use of existing service wires inside the house for antennas, particularly the electric light or power wires carries the hazard of accidental



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leading of the service current into the radio circuit, either by inadvertent wrong connection or by the breakdown of the insulation of the condenser device used for purpose of connection.

Practically no hazard resides in the use of either the loop, the buried wire or the ground lead antenna.

It will be at once seen that the remedy for antenna hazards is anticarelessness. A secure, well insulated antenna in a safe location, with proper arrester and ground connection, need cause no worry.

The second essential is the energy selecting apparatus or tuner. This is practically a small coil or wire, with a variable number of turns, with or without an electrical condenser, which latter is usually a bunch of metal plates in close proximity but insulated from each other in two groups, the insulator is either air, oil or some solid material. There is no direct fire hazard in this apparatus by itself.

The third essential is the device for converting the received electrical signal into sound. The simplest type is a crystal, held lightly in contact with a piece of metal and the whole connected in series with a telephone. There is no fire hazard in this type of detector.

The other, and most desirable type of detector, is the thermionic tube, which is a species of electric bulb containing one or two internal electrodes insulated from each other and from the filament. These usually require two separate batteries for their operation, and either storage or primary cells may be used. Storage batteries of from two to six volts are perhaps most commonly used for lighting the filaments, while dry batteries of from twenty to one hundred volts are used for operating the telephone circuit. The telephone is used just as with the crystal detector, or more than one tube may be used and a loud-speaker or giant telephone used in place of the small head set. Each tube used usually has an adjustable rheostat to regulate the filament current, and often a similar higher resistance device is used to regulate the telephone battery potential.

The hazards of these devices are the usual hazards of low potential electric circuits. With dry batteries, there is little or no hazard; but a fresh, small, one hundred volt telephone battery can draw an arc that will set fire to various insulating compounds. Storage batteries of the sixty to one hundred ampere hour size can deliver a very husky current on short circuit and careless or accidental wrong connections have been known to burn out rheostats and coils and even to start a blaze on the insulation of No. 14 rubber covered wire when the wire fused off on short circuit. Care in installation, and the use of fuses at the battery terminals, will reduce these hazards to a minimum.

Storage batteries usually contain sulphuric acid; this is not strong enough to have any elements of fire hazard; but it will destroy clothing and wood work, and is unpleasant at least in contact with the skin.

The hazard of the ground wire is ordinarily slight but such wire should be large enough to carry any accidental current it might receive, and to resist being broken or detached easily. It should be securely attached to the ground (preferably the water service) by a proper clamp. The gas service should not be used for a ground. Any made ground should be the same as would be installed for an effective lightning rod.

All of the above hazards, and possibly others, have been taken in account by the underwriters in the rules they published last year for the provisional regulation of radio receiving installations. Inspectors, whether from underwriters or from fire departments, should insist on a full compliance with those rules, which if effected, will make the radio receiving station fire hazard a trivial one.

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I am the only man in the United States that has found the idea that has done away with a heavy 40 foot ladder. I will build them for you three or four in a set so that you can get 40 feet or more. You can use these ladders anywhere you wish instead of the 40 feet laying in your yard half the time.



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P. D. F.
Ladder King

The side rails are bored only 2-3 through, making them stronger. They are all equipped with solid brass locks. The rungs are split and shaved with the grain of the wood and are turned with a square shoulder preventing the water getting in and rotting the ends of the rungs.

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Secretary-Treasurer, Watertown, Mass.

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Boston, Mass.

It is now in order to say a little about amateur sending stations, such as may be found in private houses or outbuildings mostly operated by an enthusiastic junior contingent of high school or college age. Right here the writer wishes to pay a compliment to the young people engaged in amateur radio during the past fifteen years; the advance made in the art, and the achievements in extending world communication, can be largely traced back to radio amateurs who began their research as boys. The average high school boy of today knows more and better about the theory and practice of electrokinetics than did the graduate electrical engineer of thirty years ago, and this is largely by reason of his work with radio.

Without going into details of various radio sending apparatus, let us consider that a radio sending station must have an antenna, a source of power, a device for generating and regulating electromagnetic waves and a means of impressing voluntary signals thereon.

Many of the hazards of such a station are exactly like those of the receiving station, and will not be renumerated; suffice to say that for sending materially higher voltages are used, and greater precautions regarding insulation must be observed. The smaller stations frequently use batteries for the source of power, which again puts them within the general hazard class with the receiving station.

Probably the great majority of such stations however use the public electric service as a source of power, so that with certain exceptions, the hazards are no different than with any household electrical installation; the underwriters' rules which make for safety in the latter case are equally effective in the former. It is therefore for us to consider only the exceptions as peculiar to radio. The house current which the amateur uses for his energy supply usually comes to him as sixty cycle alternating current at either 110 or 220 volts potential. Now in order to send out radio signals on 200 meters wave length, which is the maximum allowed the junior amateur by Uncle Sam, he must have a $1\frac{1}{2}$ million cycle alternating current, and if he wants to cover any considerable distance, he must have more than 220 volts. There are various ways of stepping up the frequency and voltage, utilizing transformers, induction coils, spark gaps, motor generators, thermionic tubes, electrolytic rectifiers, batteries, condensers and various combination of them; but all of them are in effects one sort of a step-up transformer, coupled with a condenser to form an oscillating circuit, with some sort of an automatic controllable power impulse device which will feed the energy into the oscillatory circuit, in exact rhythm for the wave length wanted. Here again, except for somewhat unusually high voltages to be found in a dwelling house, there is nothing materially different about the hazards of the apparatus itself, from those of similar electrical devices found in garages, battery stations, hospitals and doctors' offices.

The principal hazard is perhaps, that much of this apparatus is home made, and the best of materials and best of skill have not been used. Let me say though that I have seen apparatus constructed by young amateurs that could not have been bettered either in material or workmanship by the most skilled electrical artisan; even the design would have been creditable to an electrical professor.

The really exceptional hazard is a function of the remarkably high frequency used. If the antenna runs near and parallel to lightning or telephone circuits, the induction is likely to build up a voltage in such utility circuits as to break down insulation and possibly cause a fire. Sometimes the high frequency current works back through the transformer, in such a way as to induce high voltage and surges on the house circuit, which may cause a breakdown in insulation, at a point relatively remote from the radio set.

This danger can all be avoided by keeping the high frequency circuits

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Liabilities	7,718,456.27
Surplus	4,158,369.25
Capital	1,000,000.00
Net Surplus to Policyholders...	5,158,369.25

FIRE — MARINE — AUTOMOBILE —
SPRINKLER LEAKAGE — EXPLOSION —
RIOT and CIVIL COMMOTION—TORNADO
— RENTS — USE and OCCUPANCY —
TOURISTS' BAGGAGE

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BOSTON, MASSACHUSETTS

STATEMENT, JANUARY 1, 1923

Assets	\$4,401,085.03
Liabilities	1,353,494.08
Surplus	1,547,590.95
Capital	1,000,000.00
Net Surplus to Policyholders.....	2,547,590.95

FIRE — MARINE — AUTOMOBILE —
RIOT and CIVIL COMMOTION — EXPLO-
SION — SPRINKLER LEAKAGE — TOR-
NADO — RENTS — USE and OCCUPANCY
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remote from or at right angles to all other house circuits, and by a proper use of condensers, choke coils and leaks or vacuum gaps, to prevent the high frequency from getting back into the electric service supply.

Another exception is more a matter of personal safety than fire hazard. The high voltage, high frequency current is not particularly dangerous to life but it is painful and can burn. However, there is often around such stations wires carrying 1,000 volts or more of sixty cycle alternating or even of direct current, the touch of which might mean death. In case of a fire in a radio sending station, the power supply should be promptly cut off, to insure that no fireman comes in contact with any very innocent looking but really very deadly little wire festooned over a radio sending set.

The advances in radio broadcasting in the last year have been wonderful; but hardly a patch on its possibilities as a means of entertainment, publicity, and education has been touched. We may look for accelerative advances from now on, with corresponding increase in its popular use. Its growing use in fire stations, as a means of recreation, should be pleasing to all of humanitarian instincts and duly encouraged. Its possibilities in these same fire stations, as an educational measure, cannot be estimated. I do not refer to education along fire lines alone; but to that broad education in citizenship and manhood which it is perfectly possible to have broadcasted in person to all who care to listen to the world's foremost men.

My good and progressive friend, Chief Taber, tells me that already the Boston Fire Department has a radio course in their school, and that very shortly the fireboats will be in constant communication with headquarters by radio. It is but a short step to where every fire station in the city has a receiving set with a loud speaker, which, with a radiophone on the transmitter at headquarters, puts every man on duty in hearing of his chief's voice at short notice. Under such circumstances, I will add one other radio hazard from the fireman's standpoint, namely, the hazard of failing to do something he heard the boss personally tell him to do, in the hearing of the whole department.

There being no further matters of importance, the meeting was adjourned until June 21, at 9 o'clock, a motion to that effect being made by S. B. Dyer of Whitman, Massachusetts, and seconded by Chief Sheppard of Pittsfield, Massachusetts.

Meeting called to order at 9.15 A. M., June 21, 1923, by President Doyle.

Chief Stanton, Norwich, Connecticut, brought up the subject of attendance at exhibits and suggested that at least one day be devoted to that feature of the convention. He also brought up the matter of entertainment, saying that it was his idea to make of the Association an Engineering Society and endeavor to impress upon the minds of those inviting the body to the different points in New England that the organization was not looking for entertainment solely. He also suggested that meetings be held in the exhibition halls of the various cities where conventions were held. He was emphatically of the opinion that round table talks would go further along the line of exchange of ideas than in any other manner.

Chief Moran, Hartford, Connecticut: I would like to call the attention of the members of this Association to the fact that we have here one of the best exhibitions I have seen. Though we have been put to a great deal of expense in covering and arranging these exhibits the result is most gratifying for we have a varied and interesting assortment of equipment used in fire service for your inspection. This display will prove of benefit to us as it is educational and it is the only time of the year when we can see such a

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lot of apparatus and equipment in one place. I think that we may possibly arrange to adjourn from this meeting to the exhibition hall and from there go to the sheep roast this afternoon. We will certainly have to do something if we expect to have good exhibitions in the future. Let us start right. To start right is of the first importance. It is evident this present exhibition is a big success. Let us take heed that our zeal and enthusiasm continues on high voltage.

Chief Taber, Boston, Massachusetts: Referring to Chief Stanton's remarks about taking up in the convention hall at round table discussions the various problems that face fire fighters from time to time, I want to say that I fully endorse the stand he has taken. A Chief's convention, to me, means that it is a school for all of the chiefs; a place where they may exchange ideas freely; a place to give their thoughts full expression and not withhold anything that is going to benefit their brother fire-fighters. There is much to be learned from the chiefs in the small towns by the man who is in the large city. Free exchange of thought is bound to be beneficial to all. Entertainment is all right—I like it—I appreciate it—but I think we should give more attention to real discussion and co-ordination in fire service. I recall a remark Chief Stanton made yesterday on standardization of couplings, that the departments throughout the New England States are not fully equipped to meet this standardization. There is a standardization of fire service that is really worth while and if the ideas of all are given and expressed freely right here in the convention hall every member will be greatly benefited. This convention has got to develop more pep, and it must have more subjects. The spirit of service must be made evident from within and without. Chief Moran in the exhibit hall has gone to a lot of trouble; the exhibiting committee have also exerted themselves to bring all the best in present day apparatus. I was up there twice yesterday and I think this organization made a darn poor showing. I do not believe there were more than twenty-five men in the hall and I don't believe that number was exceeded, at one time, all day long. The entertainment is wonderful and I appreciate the finely arranged program, but we must give more time for real business and for round table discussion. And the exhibition hall is the real place to have it—not here.

Chief Smith, Nashua, N. H.: I was talking to quite a number throughout the hall and I am sure they will all be there. This convention has practically just opened this morning and all those attending hope to be in the exhibition hall before it is over. Yesterday was a very warm day and of course we all had to get acquainted, but before this thing is over every one will be sure to inspect the fire apparatus and appliances on exhibition.

President Doyle: The first speaker on today's program will be Justin A. McCarthy, of Boston, who will address you on "Automatic Gas Shut-offs."

AUTOMATIC GAS SHUT-OFFS

Justin A. McCarthy, Boston, Massachusetts.

Mr. President, Officers, Members and Friends of the New England Association of Fire Chiefs:

The subject "Automatic Gas Shut-Offs" which has been assigned to me today, is a subject which should be of great interest to everybody, but especially to those engaged in the prevention and extinguishment of fires and also the saving of lives and property from destruction by a menace which exists wherever an unprotected gas meter is installed.

Gas meters originally came from England and were first invented about the year 1815. The first gas meters manufactured in the United States were made at Baltimore, Md., about the year 1860.

If ever a destructive and dangerous device in time of fire exists within

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the confines of a building, that device is none other than a gas meter. If it were possible to accurately estimate the toll in human lives and the millions of dollars as represented in property destroyed by gas feeding the flames when the meters have been melted, even during the past ten years, the loss would be astounding.

The great majority of gas meters are constructed of tin and put together with solder, then they are attached to the gas pipes with lead connections, and when the heat near a meter reaches a point between 180 to 230 degrees Fahrenheit, the solder and lead connections melt away, the tin separates, then the deadly gas escapes, lives are sacrificed or placed in great danger, explosions many times occur, property is destroyed, the fire menace is greatly increased and sometimes a conflagration ensues.

Occasionally iron meters are used but the heat also reaches these, the gaskets in the same burn out and they are as dangerous in every way, as those of tin construction. Occasionally rigid connections between the meter and gas pipes are installed, instead of the ordinary lead connection, but the danger from gas and explosion still exists in the meter regardless of its construction.

To realize the force of a gas explosion, I respectfully refer you to the terrible calamity which occurred in Springfield, Massachusetts, at the works of the Springfield Gas Light Co., on February 1 of this year. This explosion resulted in the death of three men and the injuring of over half a hundred persons. It also destroyed property valued at more than \$800,000.

As a further illustration of some of the destruction wrought by gas fires, the following extracts taken at random from various newspapers appearing during the past few months may be of interest.

Boston Evening Globe, January 19, 1923

GREAT ALLSTON GAS FIRE

"Blazing illuminating gas which gushed from an open main and exploded intermittently, imperilled the lives of firemen this morning at a two-alarm fire which gutted the one story 5 and 10 cent store of F. W. Woolworth Co., located at 142-146 Harvard Avenue, Allston, Mass.

"Firemen battled for four hours beginning at 5.30 A. M. The streams of water from the hose were useless against the flaming gas, and the men were steadily driven back, at 7.30 after firemen and gas company employees equipped with gas masks and life lines had failed in desperate attempts to reach the shut-off in the blazing building, it was felt that it would be necessary to shut off the gas in the entire district. A dozen streams were put in the building from front and rear.

"When the gas meters were burned off the walls, the gas escaped freely and spread throughout the back of the store. Firemen took turns manning the lines in the gas filled store but were steadily driven backward.

"At times there were numbers of firemen stretched out on the snow-banks regaining their breath, while others were taking their places inside. The blaze was fought from doorways, while gas employees were hunting up mains and picking the ice away from the covers. While the gas men were doing this, firemen finally got the blaze under control and it then proved unnecessary to shut off the gas in the district.

"Earlier in the morning Ladderman T. J. Muldoon of Ladder 14, donned a gas mask and made several attempts to shut off the gas at the store meter. He was accompanied on one of these trips by an employee of the gas company. It became evident that further attempts would be practically suicidal so he was ordered to give up trying. Approximate loss \$100,000."

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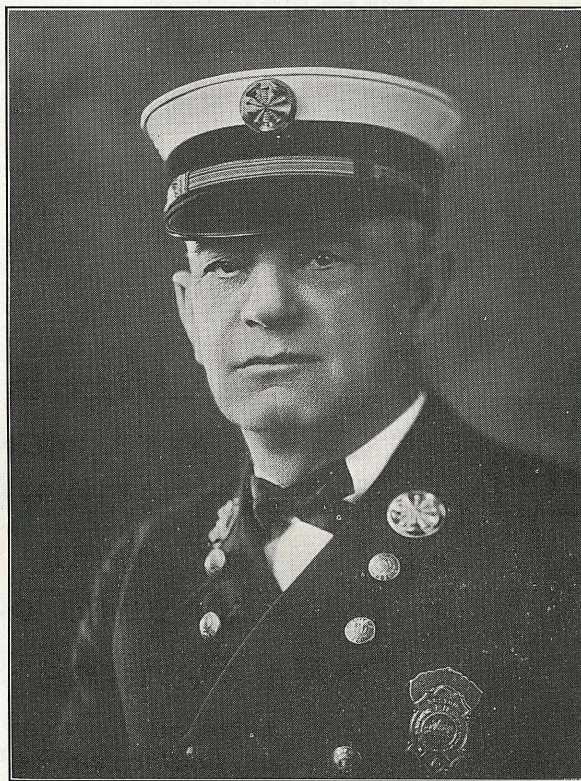


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In connection with the use of gas masks at fires I feel that it is well for us all to bear in mind that they are absolutely of no avail, regardless of what type they may be, if in the room or building there is an insufficient supply of oxygen, in other words, while certain gas masks can eliminate smoke, ammonia and certain gases, under no circumstances should they be used in a space where the oxygen is below 18 degrees. Many firemen have been overcome while using so called gas masks for this very reason.

The only devices of course which can be used where gas or other conditions have consumed a large portion of the oxygen, are oxygen breathing apparatus. These are quite costly, that is they cost about \$200.00 each and are also somewhat cumbersome.

On January 23, 1923, the Cambridge, Massachusetts, fire department was called to a fire in a two story apartment building located at 11 Dana Street, where they found a fire in the basement twenty feet away from a battery of eight meters. The fire was quickly extinguished, but the heat had melted off the meters, with the result that the gas worked upstairs and caused such a violent explosion that it stripped the plaster from the walls and blew out through the side of the building. The escape of the firemen working in the basement was nothing short of miraculous.

Boston Globe, March 31, 1923.

TWO FIREMEN KILLED AND SIXTEEN OTHERS INJURED

"Three factories and tenements destroyed and hospital threatened at East 12th Street, New York City. Most of the dead and injured were buried beneath a brick wall which toppled into the street by a gas explosion."

Schenectady Union Star, November 28, 1922.

SEVEN FIREMEN OVERCOME IN WEAVER STREET BLAZE.

"Firemen knee deep in water stuck to their posts in the cellar until the gas meters melted from their places and streams of gas were thrown in the smoke filled air. Seven of the firemen were dragged through the water up an outside stairway and resuscitated though none were able to return to the fire fighting task."

Boston Globe, December 9, 1922.

FOUR HARVARD MEN WERE BURNED IN CAMBRIDGE.

"The fire was believed to have started in the cellar among some barrels of rubbish. The gas meter was burned and the cellar was filled with gas which ignited and caused the flames to spread rapidly."

Boston Telegram, September 9, 1922.

SIX FIREMEN OVERCOME WITH GAS AT FIRE

"Brimmer Street home ruined. The gas was caused by the meter breaking from the pipes because of the heat."

Boston Globe, July 11, 1922.

"Fire at 46 River Street, Arlington. The fire started near the gas meter and melted the meter off, causing the cellar to be filled with gas."

Boston American, December 7, 1922.

TWELVE FIREMEN OVERCOME BY GAS AT SPRINGFIELD

"Firemen were obliged to chop holes in the main flooring to get to the blaze."

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Boston Post, April 8, 1923.

BRAVES GAS FUMES AT FIRE.

"Plunging through a dense wall of smoke and gas, George Reagan, chauffeur for Chief Casey of the Cambridge Fire Department shut off the gas cock in a fierce cellar fire at 3 Phillips Place which threatened destruction to the whole apartment house. The flames had melted the gas meters into a mass of shapeless metal when the firemen arrived."

Little Falls, N. Y., Evening Times, October 28, 1922.

OVERCOME BY GAS IN RESTAURANT BLAZE

"Firemen J. Albert Baker in serious condition for several hours after experience. Was shutting off gas pipe which caused West Main Street fire."

Boston Globe, December 11, 1922.

GAS DRIVES TENANTS FROM DOVER STREET FIRE.

"The gas meter was burned off and there was so much gas in the basement where the fire started that it was not considered wise by District Chief Downey that the men should at once go in there."

Extracts from the Boston Globe.

FOUR FIREMEN OVERCOME IN DORCHESTER SCHOOL.

"Gas explosion follows fire in basement of William E. Endicott School."

FIRE FIGHTERS HAD TO ABANDON WORK.

"Escaping gas in Milk Street building drove them back to street until it was shut off."

At this point I feel that it would be well to say a word regarding carbon monoxide poisoning. Carbon monoxide is the gas which causes most of the trouble at fires, it renders unconscious and often takes the lives of firemen and others.

This gas causes more deaths every year of peace, than all other gases combined. Unlike the gases used in war, it does not by itself irritate the lungs. It has no smell or odor, although it is often found mixed with other vapors which are irritating to the eyes or throat.

Carbon monoxide is generally present in greater or lesser amounts in the fumes from a furnace and the smoke from a coal stove. In the winter whole families are sometimes overcome by carbon monoxide, when every door and window has been shut so tight, that the stove has insufficient air. Carbon monoxide is also found in the exhaust gas of automobile engines as well as other places.

But what is extremely important to us is the fact that it is present in very large quantities in manufactured illuminating gas.

Professor Yandell Henderson of Yale University while speaking on this subject stated as follows:

"The effects of carbon monoxide on men are all due to the fact, that this gas combines for a time, with the hemoglobin or red coloring matter of the blood. In a healthy man it is hemoglobin in the red particles in the blood which carries the oxygen from the lungs to all parts of the body. Carbon monoxide combines with the hemoglobin much more strongly than does oxygen. The blood is thus prevented from carrying oxygen to the brain, muscles, and other organs and a man becomes weak in the legs or



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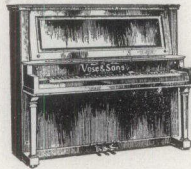
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even collapses. His judgment and temper are likely to be upset and he may even act as if intoxicated. If he absorbs enough of the gas he becomes unconscious, with locked jaws, rolling eyes, and his blood has a characteristic cherry color."

"He may die at the time or a day or two later. Even if he is only partially overcome, his heart may be damaged if he makes any great exertion, such as that of climbing or carrying another man. It often happens that even a moderate dose of carbon monoxide produces nausea and a sick headache, and this may also result in a weak heart unless the carbon monoxide is quickly removed from the blood."

I have been told by many firemen, that many of their comrades who have been overcome by carbon monoxide gas have become permanently incapacitated, and have had to retire from the service.

It might also be of interest to state that carbon monoxide may exist in deadly quantities without a lamp detecting it. It is very hard to detect less than 2% with a lamp. It has a very wide range of explosibility ranging from 16.5% the lower limit to 74.95% the higher limit and for this reason it is used extensively in the operation of gas engines.

Illuminating gas contains 28% of carbon monoxide. In an atmosphere containing a very small percentage of carbon monoxide gas, that is, less than 0.1%, the blood does not absorb enough to cause distress unless breathed for a long time, but when the gas is in greater proportions, the blood sooner or later reaches the stage of partial saturation which produces helplessness. 0.5% and even 0.2% renders the atmosphere actively dangerous, and may cause severe symptoms if inhaled for a long time. It is said that 0.2% inhaled for four or five hours, 4% for one hour or only a few inhalations of 2% to 5% may cause death.

I feel that we are all aware of the fact, that the tendency of late years, especially in cities, is toward the erection of large apartment blocks. Many of these contain small suites of one, two or three rooms. In these blocks are sometimes housed hundreds of families. In connection with this, I think that it will be admitted that gas is a very desirable and efficient fuel when used for cooking purposes. This of course means that a gas stove is invariably placed in each apartment for the use of each family.

Now, of course, the installation of a gas stove also calls for the installation of a gas meter and you can readily appreciate what this means in blocks containing so many families. You can see that in case of fire the gas meters can easily become a grave menace, constructed as they are without any safety device attached to them. Insurance rates are necessarily very high in apartment houses and the unprotected gas meters certainly do not assist in rate reduction.

According to John B. Morton, President of the National Board of Fire Underwriters, the total fire loss in the United States, during 1922, was \$522,000,000. This total is greater than the record breaking year 1906, when the San Francisco conflagration swelled the national loss. According to Mr. Morton's figures, fire cost each person in the United States last year \$4.75. This, of course, is a terrible indictment regarding the laxity of our building laws and our carelessness in allowing such latent fire hazards as gas meters installed without essential gas cut-offs attached to them.

Now you may very properly ask, why have not the gas companies taken the initiative and used a small portion of their great earnings all these years to perfect and install some automatic device in connection with their meters and thereby tend to reduce the fire menace they place within the confines of our buildings to the smallest possible minimum. The answer must be perfectly obvious, that such a device would cost money and from the atti-

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Roberts, Mass.

tude of many of the gas companies, it would seem that the saving of human lives and property was of secondary importance. This statement may be denied by certain gas officials, but recent occurrences in metropolitan Boston provide me with plenty of witnesses to prove the truth of this assertion.

It might be of interest to you to learn, that the net earnings of the subsidiary companies of the Massachusetts Gas Companies for four months ending April 30, 1923, amounted to \$1,672,580, compared to \$910,441 for the same period in 1922 or an increase in net earnings of 83.7%. It might also interest you to learn that in one of the returns of legislative expenses made recently to Secretary of State of Massachusetts, Frederic W. Cook, under the provision of the "Lobby Act" included the following: "Albert E. Pillsbury, from Association of Massachusetts Gas Companies, \$1500.00." It is of course clear that lobbying costs money each year, but the gas companies evidently find that it pays, for of course if a paid lobbyist can inform the gas companies in regard to some proposed change in the laws pertaining to necessary improvements in gas meters, even though this change would save human lives and property, I venture to say that they would bring all the power they could muster to stop it, if they found that such a change would cost them money.

In the scores of years gas meters have been in existence and as already stated they have been used since 1815, I do not know of a really serious attempt on the part of the gas companies to try and reduce the fire hazard by their meters.

When a criticism is made it becomes the duty of the person making the same to suggest a remedy. The remedy I suggest is this: We are all aware of the fact that many cities require outside cut-offs on the gas pipes in the business district. This is all right as far as it goes, but outside cut-offs amount to very little during certain months of the year, namely in the winter time, when the snow and ice cover these shut-offs and render them practically useless as was well illustrated by the Allston, Mass., fire of January, 19, 1923, to which I have already referred.

We are all aware that many cities and towns have passed laws or amendments to their building codes requiring the placing of fire resisting coverings on the roofs of buildings within their confines, and that from time to time other laws or amendments to building codes are enacted to try and further reduce fire hazards.

Now this very same action should be taken in regard to gas meters and safeguarding laws or amendments to building codes should be passed in every city and town where a gas meter is installed, which would compel the installation of an automatic device which will stop or retard the flow of gas in case of fire, at or near the meter. This device should meet with the approval of the fire chief or building commissioner or both. It should be placed on the intake pipe near every meter, for of course the meter is where the trouble exists. This law should apply to not only every new meter, but should also apply to all replacements and existing meters could all be equipped within a reasonable length of time.

By taking this action the fire hazard from gas meters would be radically reduced. Belmont, Massachusetts, has just passed a law requiring either an outside cut-off or an automatic device placed inside near the meter.

The expense of such a device should be placed squarely upon the shoulders of the gas companies where it rightfully belongs, although in many cases no doubt, they would pass this expense on to the ultimate consumer.

The question now naturally arises, are there any suitable devices, not costly, which will automatically stop or retard the flow of gas in case of fire at or near the meter and the answer is emphatically yes. There are such devices on the market today which have been proven after the most

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rigid tests, (some of these tests have been made in fact by certain gas companies themselves, at the request of the manufacturers) that these devices would automatically shut off from 95% to 100% of the flow of gas when the temperature reached 130 degrees Fahrenheit.

Please understand that the meters themselves do not melt until the heat reaches a temperature ranging from 180 to 230 degrees Fahrenheit, so you can see that the automatic devices work before the danger could occur. In other words, the meters could be melted away but practically no gas escapes with such a device attached to the intake pipe of the meter.

We all know that the life of a fireman is a hard one at best and many times, I am sorry to say, their efforts are unappreciated. Many of them are incapacitated for life through injury received in the line of duty. Others are sent to an early grave through no fault of theirs. When they respond to a fire they never know whether or not they are going to return.

Realizing the hardships which firemen are obliged to undergo, regardless of weather conditions, appreciating the dangers which beset them on all sides, is it not our duty to do everything in our power to try and minimize those dangers as far as possible.

What better service could we render in our respective communities, than the bringing to the attention of the proper authorities the terrible fire menace existing in unprotected gas meters, and if through our efforts, the necessary laws or amendments to building codes are passed, how much better we would feel with the knowledge that by our efforts we had helped to diminish the dangers as well as the losses by fire from such meters, and that at the same time we also helped to instill in the minds and hearts of the firemen a feeling of greater security, when they are compelled to enter buildings on fire containing these meters.

These things can be accomplished by persistent efforts on the part of all. Let us not wait until more lives are lost and more property is destroyed by gas fires, but let us act as soon as possible after our arrival home.

In conclusion fellow members, a few lines dedicated to the firemen might not be amiss.

THE FIREMAN

The hardy seaman pants the storm to have,
For beck'ning Fortune woos him in the wave;
The soldier battles 'neath his smoky shroud,
For Glory's bow is painted on the cloud,
The Fireman also dares each shape of death,
But not for Fortune's gold or Glory's wreath.
No selfish throbs within their breasts are known;
No hope of praise or profit cheers them on,
They ask no meed, no fame, and only seek
To shield the suffering and protect the weak!
For this the howling midnight storm they woo,
For this the raging flames rush fearless through;
Mount the frail rafter—thrid the smoky hall—
Or toil, unshrinking, 'neath the tottering wall.
Nobler than they who with fraternal blood
Dye the dread field or tinge the shuddering flood,
O'er their firm ranks no crimson banners wave
They dare—they suffer—not to slay—BUT SAVE!

Chief Moran: Did I understand Mr. McCarthy to say that the ordinary gas mask is not effective in illuminating gas fires?

Mr. McCarthy: My information is that the ordinary gas mask is not effective. I am not positive about this statement—I heard it verbally. Chief Taber, of Boston, knows quite a little about it. However, my understanding is that if there is not a sufficient supply of oxygen within the mask it is absolutely impossible to get enough oxygen into a man's lungs, regardless of the type of construction of that gas mask, to sustain life properly. It is understood that the BEROLE GAS MASK eliminates certain gases and monoxide smoke, but it is also understood that sufficient amount of oxygen must come through that gas mask and must be purified. I would say not less than 18%—and at that, firemen have had trouble and are going to have trouble.

Chief Taber: We carry 15 4" masks in our department. We have 14 in one house with a rescue company and they are working all right. We find that no matter what the mask is, or how safe, when you use up your energy with the mask on, you are bound to have ill effects. When you have done the work required of you, regardless of the mask, or its maker, you usually come out pretty good. When you say 18%, you are coming down to something which is deadly. Monoxide gas is ordinarily found in cellars where there are gas mains. From any vegetable matter you will develop monoxide gas also. Its effect on men we find to be different as produced from different materials.

George C. Ambrose, Superintendent Consolidated Gas Co., Boston: I just want to add one correction to Mr. McCarthy's statement that the Gas Company has done nothing to remove this menace. The company with which I am connected spent a good many thousands of dollars to maintain five very well equipped trucks that answer all alarms of fire, and we have yet to have a record of missing a single alarm. The men are the pick of our organization and shut off the gas, doing everything to work in co-operation with the Fire Chief. The trucks are equipped with all of the latest and most expensive gas masks, the very best that can be bought. Any dealer that has a new mask calls us to try it out and we will be glad to work it out. The Gas Company, as Mr. McCarthy says, has done nothing to remove this hazard so-called. I, myself, am working very faithfully to perfect an automatic gas shut-off.

I have three very good ideas worked out in model. I have seen two other types that are very good. The thing is that we must all try and get together and try and remove the feeling that the Gas Company is not with the Fire Chief. Now I do not know what the treatment is in other cities, but I think the treatment we give the Fire Department of Boston is beyond criticism. We have the Chief of the Fire Department and the Fire Commissioner here and I am going to ask them to endorse my statement. A gas meter will stand about 60 pounds of compressed air before it will blow the side off—that is my own test—and not a laboratory test. I have tried that out myself. We have a great number of meters come and I am privileged to make all kinds of tests. The thing I want to bring out is to have co-operation among the Chiefs. I do not rate myself as a Chief of the Fire Department. I am chief of the plant and we have a Fire Department there. You have my hearty co-operation in any idea or anything you wish me to test. I will guarantee you a faithful test on it. Some of the newspaper stories that Mr. McCarthy read in all good faith are not altogether true. I will not go into detail with them but we have a system whereby we receive the alarm, the time we report at the fire and a record is made of just what action is taken, and those things are put into a file where we keep all of our matters that are apt to come up for legal questions.

They have to be absolutely accurate as you know there are lots of things that come up besides fire and all reports must be absolutely right.

The question of gas masks and being able to withstand carbon monoxide gas is a very high percentage. I agree with Chief Taber in saying that a

man must not be put to use up all of his energy. Now we put gas masks to a very severe test.

I have cut a hole as large as twelve inches in diameter in a high service gas line and a man has worn one gas mask two hours and fifteen minutes before he is compelled to use small tools and wrenches. I tried this out in another extreme in very hard laborious work, swinging a hammer. It cannot be done successfully. A man cannot do rescue work because he knows that his is one job to go and get the man affected and bring him to a place of safety. He has his own life in his mind and he has his life saving apparatus on him and that must be made to work, and he is the only man that can make it work with his own lungs—go and get his subject and return to the place of safety. The masks are so tight that they will withstand a chamber that is absolutely filled with carbon monoxide; no oxygen in the room, and the Berol is a very good type of mask in use in the Fire Department. Conditions are not quite as extreme in the gas house or on the large mains in the street.

Chief Casey, listening to Mr. Ambrose about gas masks, he states that a gas mask was used two hours and some odd minutes. If I understand Mr. Ambrose, when he was making that opening in the pipe, he was making it in the open air. Now that is one of the difficulties of the Fire Department. We are supposed to go with gas masks into a room or confined chamber, probably not so much in the smaller cities as in the larger ones like Boston where they have sub cellars, and it is almost impossible to receive any oxygen. I would like to ask Mr. Ambrose, through you, if he thinks there is any gas mask on the market today that will stand two hours and fifteen minutes in a confined room.

Mr. Ambrose: In answer to that question, I will say there is a gas mask that will stand two hours and and fifteen minutes—one with an oxygen breathing attachment and in the most extreme cases a man can get enough oxygen from the oxygen tank outside. He knows his nose is sealed and all the oxygen he can get is the oxygen contained in the iron bottle that is hung on the side of the gas mask. There is a gauge on there which will show him the amount of oxygen he can use and when the dial goes beyond the danger mark, he must make his escape and there is also time allowed on that as a factor for him to get out of the gas chamber. Now if a man's mouth is sealed and his nose as well, he cannot get carbon monoxide gas, smoke of any kind, ammonia or sewer gas. To my mind, the most severe test is on a gasoline tank. It is a very hard test—the vapor is very light and very penetrating. This, I have tried out for my own satisfaction. I won't risk my own men for the sake of interesting the manufacturers of gas masks, but there are masks on the market that will keep out any kind of gas. They cost lots of money and cost lots of money to maintain, and require considerable attention. They must be continually inspected by a man familiar with them, and that often costs money, because you have to keep replacing the oxygen. Now, as you know, one of the things that makes gas masks rather unpopular is the constant expense that is incurred by keeping them in working order and the men would have to be continually using them to become familiar with them. I have an extra set of stuff for our men to practice with. They are not allowed to practice with the equipment on the truck.

Chief Casey: Mr. Ambrose answered in regard to the gas mask which had an oxygen breathing attachment. My reply is that a gas mask with an oxygen breathing attachment is not what I would call an ordinary gas mask. I say that he cannot stay in two hours and fifteen minutes with an ordinary gas mask.

Mr. Ambrose stated that they have five wagons and also appliances with which to fight the fires. We should go before the trouble arises and not after the trouble occurs. I say that is exactly like "locking the barn after the horse is stolen."

Mr. Seagraves: I would like to say one or two words as a representative of a manufacturer of gas masks with oxygen breathing attachments. Mr. McCarthy stated that oxygen breathing apparatus cost from \$200 up, but there are others thoroughly useful which are considerably cheaper than that. Mr. McCarthy mentioned percentages of carbon monoxide. I have been in this business a good many years and have made many tests and carbon monoxide is usually not found with any such percentages. Where Mr. McCarthy has said that 5% of carbon monoxide is dangerous, that is not 5%, that is .05 of 1%. Where Mr. McCarthy has said that one hour is dangerous, either .05 or .04 of 1%, these are the kind of percentages that are giving trouble. 4% would probably knock a man out so thoroughly in two minutes that he would die. These percentages are very low, but a man who tries to get in with a gas mask certainly does something that should not be done with an ordinary gas mask. The ordinary gas mask gives them absolutely no protection but gives them a false sense of security and gives absolutely no guarantee to the fire chief or firemen. If a man reads the labels, he will see by these labels that they say "Do not use this mask in illuminating gas or carbon monoxide." When a man goes into a cellar with a gas mask on he has a false sense of security and as a result is liable to find himself in a position of extreme danger. There are ordinary gas masks that do not give carbon monoxide protection, and that is probably the experience of a great many of you men. There has been a mask developed that will protect against carbon monoxide and illuminating gas—probably a great many of you have read about it in the newspapers. As Mr. McCarthy has said, the gas mask depends upon the removal of dangerous gases from the outside air, allowing purified air to go through the mask.

If the outside air is so depleted in oxygen that without a mask it will not support life, with a mask, it will not support life. I believe that Mr. McCarthy's percentages were somewhat off, because a man will live in as low as 12% of oxygen. In the case of mines, the tremendous amount of 16½% and 17%, a man can live twelve or thirteen minutes—his capacity for work is nothing, but he will stay living.

Chief Casey: He says it states right on there "Not to be used in illuminating gas" and "Do not use this mask where a lighted candle will not burn." That is just the point I wanted brought out and I claim that the safety for any firemen who go into a building have lanterns and those lanterns will not burn, it is time for the men to back out. Therefore the gas masks are absolutely useless. They tell you right on their printed instructions "Do not use this in illuminating gas." Therefore I say that present gas masks are absolutely useless in the Fire Department. Now the question arises as to the safety of gas meters and I think this Association should go on record and pass a motion to the effect that every Fire Chief should get in touch with the proper authorities in his city or town and have an ordinance passed compelling the Gas Companies to put on some automatic gas shut-off. I do not believe in the manual shut-off because there are times when, as you have read in the papers, on the first, second and third floors of an apartment houses that it would be useless to shut off the gas all over the building. And we all know pretty well, as experienced firemen, that most gas meters are set on the floor of the apartment occupied, especially in the back hallway. There is a meter set just outside the door of each apartment. If the meter on the first floor goes and has no automatic shut-off, what is the result? The gas travels from the cellar to the attic and as it goes along, each meter in turn

melts. That has been the trouble in all large cities, and I suppose in small cities and towns where they are building apartment houses. Most fires start in the basement or back hallways, and you know back hallways, from carelessness of not the people who live in the house, but on the part of the people like the milkman, grocer and everybody else, for the reason that each person puts out every morning their waste paper baskets and some careless person strikes a match, lights a cigarette and then throws that into the waste basket—what is the result? Fire is started in short order and the first thing you know you have a fire from the first floor to the roof, and I think this Convention should go on record as trying to have an ordinance passed in every city and town compelling an automatic shut-off on every meter.

Mr. McCarthy: In regard to Mr. Seagraves, I look upon him as an expert in regard to gas masks.

Mr. Seagraves: The expert is an ordinary man away from home. However, I would like to correct Mr. Casey and notify any of you men to read our instructions on the Berole. This mask will protect against illuminating gas. I have worked it for from 10 to 15 minutes. Five per cent of carbon monoxide corresponds to about 20% of illuminating gas. It is an expensive mixture and dangerous to use it, but this mask will protect against illuminating gas. The cities of Hartford, Boston and Providence have adopted them and would not have done so had they not felt they would give ample protection.

Chief Taber: Mr. McCarthy made his adjustment on what I was going to suggest that he do on his figures to bring them to a decimal. If I understand correctly, Chief Casey is not in favor of a manual shut-off.

Chief Casey: I am not in favor of one that will shut off the whole building. I have to disagree with you, Chief Taber, on this matter. I think it is unnecessary.

Chief Taber: I have to disagree that a manual shut-off on any supply going into a building or into any location is absolutely necessary so that you will not impair the efficiency of the whole system. It is essential on all fluids, gas main and even essential on your own gas tank which is in your automobile. I hope Chief Casey will reconsider his motion.

Chief Casey: I do not mean a shut off in the street. There is one that is placed just inside the hallway and by throwing the lever it shuts the gas off all over the building. There are times, as Chief Taber knows, that it is not necessary to shut off the gas in the whole building—that is the manual shut off system I have in mind.

That is the one I am referring to—one that is placed in the entrance to the building and it is operated by simply throwing the lever which shuts the gas off all over the building.

Chief Taber: Regarding the gas shut-off, I will say that a safety device, whether it be automatic or manual, is a good thing, but in the main, a manual shut off should control the source of supply in any building. I can fully appreciate that where there is a battery of meters, supplying gas to forty, fifty or a hundred apartments, that may need one hundred different meters. Individual shut-offs on those would impose a hardship. A manual shut-off would control all. It acts as a real factor of safety so that any time the building is under fire, and it is necessary to throw the whole building off, it can be done at one throw of the valve.

That could be well thought out and I think it is a good thought all the way through.

We all know the danger, and I think this Association had better go on record and make a recommendation, as I said before.

Commissioner McCarthy, Lewiston, Maine: I understand the President is to take action on Mr. McCarthy's address. I desire to say this much—it

has been proposed here by Chief Casey, of Cambridge, that this Convention take some action in regard to amending existing ordinances or passing new ordinances compelling the installation of automatic gas shut-offs. I question very seriously whether that is the proper method to pursue. I am inclined to believe that the suggestion made by Chief Taber is one that we should adopt; that is, the adoption of some resolution placing this convention on record in favor of requesting the installation of gas shut-offs. I desire to say now that this convention should extend its thanks to the gentleman who has so ably covered the matter in the paper he has read and in the following discussion.

Chief Doyle seconded the motion made by Commissioner McCarthy for a vote of thanks to Mr. J. A. McCarthy, of Boston.

It was so voted.

Chief Casey: I may have been a little strong in my remarks on proposed ordinances. I thought probably some of the members were in accordance with my views. The reason I say that is this—I think it is the duty of the chief of the fire department of any city or town, where he knows that a hazard or some other condition that is liable to cause a conflagration exists and sees a way to abolish that hazard, I think it is his duty as head of the department to recommend to his superiors and go on record as being in favor of some constructive action that will tend to prevent fires. The reason I make this statement is, that wherever the chief is on record as favoring some definite type of device that will prevent fires and conflagrations, appropriate ordinances should be passed requiring the installation of such device. If anything untoward happens at any fire at any time in any building who is the man who gets the crack on the head? The chief—always. And the first thing they say is, "Why didn't you recommend a change here?" If he replies, "Well, I didn't think it necessary," he gets the grand razz. Let him go on record—let him sign his name as chief of the department as recommending these things; then, if anything unpleasant happens they cannot, in justice, blame him."

Chief Doyle: Does Commissioner McCarthy wish to present his ideas, in the form of a resolution, before the convention?

Commissioner McCarthy: I do not—I just make the suggestion.

The following committee was appointed to act on recommendations concerning automatic gas shut-offs:

Chief Taber, of Boston, Chairman.

Commissioner McCarthy, of Lewiston.

Chief Casey, of Cambridge.

Chief Taber: I have been appointed to act on a committee and in the wording, as set forth before this convention, the word "compulsion" was used. I decline to serve on any committee where that word is to be used in its findings. Entering such word in any resolution renders it impossible to rightly represent the American public.

Chief Casey: In my opinion Chief Taber is right; though I think we should approach the subject without timidity.

Commissioner McCarthy: If you are asking for laws to provide for the installation of automatic gas shut-offs you are not making it compulsory that it be done. If you finally amend the old ordinance, or pass a new one, you are compelling this installation. It seems to me if such an ordinance as we are considering is passed you are compelling them to act. Does it not all result in the same thing?

The word "compulsion" was withdrawn and Chief Taber reconsidered his decision, agreeing to serve on the committee.

Commissioner Glynn, of Boston: I must leave for Boston on the 2.30 train. I am glad to have been here with you and hope that next June or

July you will come to Boston. Boston is not only the Capitol of Massachusetts for it might well be called the Capitol, as it is the Metropolis, of New England. Look to Boston for all things progressive! Not only in this line of endeavor, but in any line—look to Boston. We have progressive ideas. We always have been—always will be—right in the van-guard of the firing line of Progress. Boston, the lode-star of civilization beckons you and if tomorrow you consider the advisability of having your next convention in that historic centre you will make no mistake. I will not say “good bye”; I will say “au revoir” for I shall expect to see you later—in Boston.”

President Doyle: The next paper is by Mr. John S. Caldwell, Engineer, New England Insurance Exchange, Boston, Massachusetts. The subject will be “What Methods Should Cities and Towns Pursue to Get Better Insurance Classification.”

WHAT METHODS SHOULD CITIES AND TOWNS PURSUE TO GET A BETTER INSURANCE CLASSIFICATION

By John S. Caldwell, Engineer

It was with considerable pleasure that I accepted the invitation of your Association to give you a brief outline of “What Methods Should Cities and Towns Pursue to Get a Better Insurance Classification” for the reason that it would give me the opportunity to lay squarely before you the extent to which the New England Insurance Exchange is endeavoring to equitably measure the relative value of the fire protection facilities and conflagration hazards of the different cities and towns throughout New England.

It is generally recognized that this work is of first importance to the Underwriters so that a fair and just basis to all concerned may be arrived at in the determining of insurance rates, but it is my personal opinion that the work is of vital importance to every one of you fire chiefs present at this Convention, for the reason that it enables you to determine just where certain deficiencies exist, what can be done to correct them and the saving which will accrue to the public by the correction of these defects. In other words, the price of the goods is plainly marked and you can determine before the purchase is made as to whether the transaction is economical or not, where in the past the opposite has been the practice and many times a municipality has been unable to find out what saving would be effected by certain improvements; this was not due to the Insurance Companies' unwillingness to recognize such improvements, but was a natural result of the system which was previously used.

I feel that it would be well at this point to outline briefly the method which is used to determine the value of the fire protection facilities and conflagration hazards. While I realize that there are some of you who are familiar with this system, there undoubtedly are many Chiefs present from the smaller communities who do not entirely understand when we speak of a First, Fifth or Tenth class city or town, and further it is of considerable importance to you Chiefs of the State of Connecticut, for we have just started to grade and classify every city and town in this State for the introduction of the Analytic System of Schedule Rating.

The measuring stick or grading schedule is based upon the plan of assigning to the various features of fire defense found in cities and town of the United States of deficiency depending upon the extent of variance from standards formulated from a study of conditions in more than 500 localities throughout the country; the natural and structural conditions which increase the general hazard and the lack of laws or of their enforcement for the control of unsatisfactory conditions are graded in the same way.

The sum of the maximum points of deficiency totals 5000 and is divided in accordance with the relative values of the features considered as given below.

RELATIVE VALUES

	Points
Water Supply	1700
Fire Department	1500
Fire Alarm System	550
Police	50
Building Laws	200
Hazards	300
Structural Conditions	700
Total	5000

It is generally recognized that climatic conditions affect fire losses, by reason of the frequency of fires due to the heating hazard, by retarding the response of fire apparatus, by hampering effective fire fighting during cold weather and storms, by the increase in combustibility due to hot dry weather, and by the greater probability of fires spreading at time of high winds. Also that earthquakes, tornadoes, hurricanes, cyclones, blizzards, floods, and other unusual conditions have an influence on the conflagration hazard. These elements are to a greater or less degree common to the whole country, and therefore no deficiency is considered in the schedule for normal climatic conditions. Some sections of the country are subject to abnormal climatic conditions, and to these localities a superdeficiency is added to the deficiency determined by the application of the schedule proper.

The application of the points of deficiency is on a percentage basis, according to the standards incorporated in the schedule, and in determining the points of deficiency to be applied to many of the items it appears reasonable to use a graduated scale of points, with a lesser increment for the first 30 per cent, than for the remainder, that is, a deficiency of 10 per cent. in good or moderately good conditions has less actual effect than where conditions are poor, and either the full per cent. of deficiency, a multiple or fractional part thereof is used depending upon the relative weight of importance of the item under consideration.

After the total number of points of deficiency is determined for a city or town, the classification is arrived at by the following division of points:

- A First Class City or Town
is one receiving 0 to 500 points of deficiency.
- A Second Class City or Town
is one receiving 501 to 1000 points of deficiency.
- A Third Class City or Town
is one receiving 1001 to 1500 points of deficiency.
- A Fourth Class City or Town
is one receiving 1501 to 2000 points of deficiency.
- A Fifth Class City or Town
is one receiving 2001 to 2500 points of deficiency.
- A Sixth Class City or Town
is one receiving 2501 to 3000 points of deficiency.
- A Seventh Class City or Town
is one receiving 3001 to 3500 points of deficiency.
- An Eighth Class City or Town
is one receiving 3501 to 4000 points of deficiency.
- A Ninth Class City or Town
is one receiving 4001 to 4500 points of deficiency.

A Tenth Class City or Town

is one receiving more than 4500 points, or without a Water Supply and having a Fire Department grading Tenth Class or with no fire protection.

In the collection of the data necessary to apply the schedule, trained investigators are employed who are men equipped especially in water supply, fire departments, electricity and structural work, each and every department being studied, apparatus and appliances listed, water supplies and engines tested, and in fact an exhaustive study made of every city or town, in order that the application of the schedule can be made in an equitable manner to both the municipality and the insurance companies.

Now to get back to the subject matter of this address, namely, "What Methods Should Cities and Towns Pursue to Get a Better Insurance Classification." After a locality has once been graded and classified, and it is desired by the Municipality that consideration be given to improvements which are believed to have been made since the last inspection, or it is desired that suggestions be made which if carried out would affect the classification, an application should be made to the New England Insurance Exchange signed by an authorized city or town official. An inspection will then be made to check up the existing conditions, and the grading schedule again applied to determine whether the improvements made would warrant a change in class, or a detailed report will be issued to the city or town giving the results of the inspection together with general suggestions for improving the conditions, including specific ones necessary for a change in class. This gives the municipality a comprehensive engineering report together with recommendations which can be used as a guide in planning appropriations for improvements from year to year so that a constructive program can be arranged for, which will prevent the misdirected efforts and wasted appropriations so often found in our American municipalities.

A good example which comes to my mind and which will illustrate the various steps which should be taken by a municipality in bringing about improvements and recognition of same occurred in a well known Massachusetts town some years ago where, following the adoption of the Town Manager form of government, I received a call one day from the Town Manager to explain why this town was rated in a certain class; following the explanation I gave him an application blank, which he immediately filled out requesting an inspection, together with recommendations for an improved classification. Following the inspection we issued the necessary recommendations and in less than a year we again received notification that the requirements had been complied with, and on inspection and application of the grading schedule we found that the recommendations had been complied with and a change in the classification was granted. He immediately came right back at us for the requirements for the next class, and was engaged on these when he was called to assume charge in a larger city and he had not any more than got settled in his new office than he took up the same method as regards the classification in that city.

There are many such instances of a similar nature which I might cite you, some possibly not quite so persistent, but all representative of what can be accomplished by a live and up to the minute municipal official, who has vision and farsightedness to see the value to his city or town by such a policy.

As a contrast I could also cite many instances where officials have gone ahead blindly with improvements, without any consideration for the future, with the result when we were called in it was too late. "The horse had been stolen" and we were obliged to tell them that what they had done was not

sufficient to warrant a change in class, which was bound to leave an uncomfortable feeling to all parties concerned.

In summing up a few of the many advantages to be gained by the municipalities in this analytical measurement I would include the following:

First. That each city and town is being analyzed on its own merits and by a universal and systematic method.

Second. That improvements will be recognized and consideration given to the effect of same on the classification.

Third. That municipal officials can have the benefit of engineering reports on the fire protection facilities and conflagration hazards of their respective city or town at no cost to themselves outside of the co-operation and assistance in the collection of the necessary data.

Fourth. That department heads, particularly Fire Chiefs, have found that this system has been of considerable assistance to them in their endeavoring to obtain new apparatus and equipment, which in many cases would otherwise have been difficult to obtain.

Fifth. That the city's interest is protected by our willingness to conduct acceptance tests on purchases of new apparatus to determine if the contract requirements are complied with.

And finally, our interests are mutual in that we both are working toward one common end, namely, to reduce the fire waste in the United States, which is annually becoming more and more of a drain on our natural resources, and which can never be replaced or compensated for by insurance.

Resolution submitted by Chief John O. Taber of Boston:

Be it resolved that the New England Association of Fire Chiefs, express their approval of the offer by the Insurance Library Association to conduct a course of lectures for members of fire departments, and that a committee of three be appointed by the chair to confer with the Library Association regarding subjects to be considered for improvement in the fire service.

It was unanimously voted to adopt the resolution of Chief Taber.

President Doyle: The next number on the program is an address by Mr. George L. Fickett, Superintendent of Fire Alarm, Boston, Massachusetts.

Mr. Fickett: Mr. President and Members of the New England Association of Fire Chiefs:

I was invited to address the members of this Association, on the subject of "Fire Alarm Systems" generally; but the Secretary offered a suggestion that a paper on the question of the desirability of locating fire-alarm headquarters in isolated and fire-proof buildings, would be pertinent and interesting.

This suggestion was a welcome one to me, for I have positive opinions on the subject; and my City of Boston has recently appropriated half a million dollars for a new fire-alarm headquarters and equipment, and designated an ideal part site two hundred and fifty feet distant from the nearest building, with no possibility of there ever being another building nearer to it.

This topic is of extreme importance to every city and town, and the safeguarding of central office fire-alarm equipment is receiving more earnest consideration, particularly in the larger cities, as time goes on.

The matter of locating central fire-alarm apparatus in isolated fire-proof buildings, is not at all new in principle. Indeed, the whole history of the art of fire-alarm telegraphy from its inception, has been founded on this same principle, which is that the protection of human life and property is such a vitally important matter, that the manufacturers, installers and operators of fire-alarm telegraph systems must use their best engineering and administrative efforts to guarding against what may possibly occur, as against what probably will happen.

The non-interfering fire-alarm box, the successive box, the humble key-

guard and the keyless door, are but visible expressions of this principle. Each year that passes, sees more and more fire-alarm system wires placed underground where the possibilities of mechanical injury are infinitely less, and where deterioration is far slower. The hand pumping engine gave way to the horse-drawn apparatus; and this in turn yielded to the high-powered automotive apparatus of today. Development in fire-alarm signaling and development in fire extinguishing, are attempting to keep pace with each other, and to follow more closely the fundamental tenets of the principle I have mentioned, by increasing efficiency in every direction; and one very certain way to increase efficiency in anything, is to so construct it that it will not be readily susceptible to interruption.

The first point that I desire to emphasize, therefore, is that there is nothing at all new in principle, in removing a fire-alarm central office from an unsafe building and location, to one that is as safe as can be found and practicably utilized.

Proper engineering considers only that which may occur, and guards against it; but it is unfortunate that it is only too true that frequently those whose duty it is to put engineering recommendations into actual practice, are prone to pass over possibilities that seem to them to be remote; but the possibility of the destruction of any given central fire-alarm office, located within a congested district, is by no means in the dim and shadowy distance.

The central fire-alarm offices in the following cities—none of them in isolated locations—have been destroyed by fire:

Paterson, N. J., in 1902.
Waterbury, Conn., in 1902.
San Francisco, Cal., in 1906.
San Jose, Cal., in 1906.
Portland, Me., in 1908.
Chelsea, Mass., in 1908.
Chisholm, Minn., in 1908.
Jacksonville, Fla., in 1901.
Baltimore, Md., in 1904.
Hot Springs, Ark., in 1913.
Paris, Tex., in 1916.
Norfolk, Va., in 1919.
Astoria, Ore., in 1923.
Biddeford, Me.
Marlboro, Mass.
Waltham, Mass.

Here, then, is the concrete proof that we must place our central fire-equipment in a fire-proof building and in an isolated location, or we may pay the penalty at some time of having our communities without signaling protection over a period of days, and without adequate protection over a much greater length of time.

In the City of Boston, we have just passed through the process of selecting a park site for our central-office building, a building which is to be built solely for the purpose of housing the fire alarm operating apparatus, and it may be of interest to the Convention to know how it was accomplished.

In the first place, the National Board of Underwriters strongly recommended that the fire-alarm office be located in a less hazardous district. It took some time, I must admit, to find a Mayor and a Fire Commissioner who sufficiently realized the importance of a change, and with sufficient courage to really bring it about. To Mayor Curley and Fire Commissioner Glynn, with the co-operation of Chief Taber, the credit is due. After the consent of the Mayor had been received to proceed with the project, the matter of location was taken up with the Park Commissioners. At first, it seemed to

them to be somewhat of a preposterous proposition but when they became acquainted with all of the facts, they not only did not oppose the plan but were extremely helpful in putting it through.

As matters progressed, it was deemed to be advisable to inform the public as to what the City proposed to do, and the facts were given to the press. The response was immediate, and took the form of an editorial in one of the papers vigorously opposing the use of park sites for such a purpose. Fully realizing the power of the press in its effect upon public opinion, it was decided to thoroughly inform the editors of the various papers as to the facts, and as to the necessity for such action if the lives and property of the citizens of Boston were to be thoroughly safeguarded. No requests were made for editorials or write-ups in favor of the proposition; on the contrary, all that was asked was that the facts should be made known; and we felt positive that if they were known and understood, there could be no honest objections.

The Chamber of Commerce took the matter up, and referred it to their Committee on Metropolitan Affairs, who unanimously reported that in their opinion the Chamber should give its full endorsement to the project.

Massachusetts law requires that if a building for other than park purposes is to be constructed in a public park, the consent of the State Legislature is essential. A bill was drawn and presented to the Legislature; and at the hearing before the proper committee, no opposition was developed.

I can readily understand how the citizens of any community regard with jealous and hostile eyes any proposition to occupy their public parks with buildings for other than strictly park purposes, and how they can regard their parks as sacred spots to be zealously guarded against encroachment. I am just as ready to believe, however, that they will regard the proper and adequate protection of their homes, and schools, and theatres—their hospitals and places of business, as a far more sacred duty, and fully uphold the hands of their officials in any move in this direction, provided always they have the facts presented to them.

New York City has in service, or has planned to construct fire-alarm headquarters in five parks, one to each of the five Boroughs of the City. Detroit's building is one of a civic group occupying a square, and separated from the nearest building in this civic group, by at least one hundred and fifty feet. Baltimore's arrangement is similar to that of Detroit, while those of Albany and San Francisco are located in Parks. Oakland, California, has completed its building; Kansas City, Missouri, has contracted for its headquarters; Chicago has drawn its plans, and Richmond is now erecting one in its new location.

What city will be the next to follow? I hope that it will be one of our New England cities, and that before many more years have passed, New England will be in the forefront in this direction, as it always has been in so many others.

I cannot refrain from quoting here from the recommendations of the National Fire Protection Association. These, to my mind, are ideal recommendations, and there is no question but that city and town authorities everywhere, should make every effort to meet each and all of them. They say:—

“Especial importance should be placed upon the necessity of designing, installing and maintaining municipal fire-alarm systems, so that alarms may at all times, and under the most adverse conditions, be transmitted to the Department.

“To this end, attention is called to the supreme desirability of providing headquarters which, as far as possible, will be free from liability of damage by fire either from internal or external causes; of installing

apparatus suited for promptly and correctly transmitting alarms, but which will be simple of operation and easy of maintenance; of placing all wires outside of buildings as far as practicable underground; of having frequent and systematic tests of all apparatus, and of having in charge of such systems only men of known judgment and ability."

No one knows better than the members of this Association—that, in the words of Mr. J. Grove Smith, Fire Prevention Commissioner of Canada, "the extent of any fire in a community depends in a large measure upon the promptness with which the fire extinguishing appliances are brought into operation. The fire-alarm system of a city or town, ought, therefore, to be as nearly perfect as money and skill can make it. A deficient fire-alarm system, constitutes a general hazard. It is often tolerated when reconstruction would involve a heavy outlay, but a community is dealing with the whole question of fire protection from the wrong end, when extinguishing apparatus is purchased at the expense of the alarm system. An obsolete fire alarm system is the crudest form of economy."

The heart of your fire-fighting organization and equipment lies with your fire-alarm system. If your fire-alarm system is not reliable, your fire-fighting organization cannot be relied upon. Implicitly believing this, as I do, I want to say that although you Chiefs may not be directly responsible for the proper equipment and maintenance of the fire-alarm systems in your cities and towns, any more than the Superintendents of Fire Alarms are responsible for the equipment and maintenance of your organization, neither one of you can get along without the other. The full weight of the authority of the Chief as an expert in fire fighting, should be absolutely behind the Superintendent of Fire Alarm as an expert in signaling, to the end that all of his proper recommendations should have your unqualified endorsement and support; and that your common communities shall not get less protection than you are capable of affording, because the fire-alarm system is less reliable than it ought to be.

The National Board of Fire Underwriters, in its rules for municipal fire alarm systems, says with reference to Class A and Class B systems, which include all but single circuit systems:

"It is desirable to locate the building (the central fire-alarm building) in a park or public square where the conditions as regards exposure can be fully met. The building should be preferably located so as to be unexposed for a distance of at least one hundred and fifty feet.

"As the building, even for a large city, need only be of moderate size, for a slight increase in cost it can be made ornamental in appearance, objections to such locations should not be insurmountable."

The money cost of properly housing the central apparatus of a fire-alarm system in a small city or town, need not be great; while the cost of not properly doing it, may at any time be excessive. Open spaces, in the smaller communities, are usually easily found, and may be acquired at comparatively small cost.

It is desirable if not essential that a site be selected that is near the center of distribution. The expense of making new connections might be considerable if a location remote from the centre were selected and from an engineering standpoint it is important that circuits run in different directions from headquarters. Where wires enter the building underground, more than one entrance should be made. For instance, it should not be possible for an explosion in one manhole to entirely disrupt the system. To go farther all positive wires, especially in the main cables, should preferably be run in one conduit and negative wires in another.

In conclusion, permit me to say that in my opinion, every city and town in these United States needs to safely house its central fire-alarm equipment,

as much as does Boston or New York, or any of the other cities that have blazed the way. It is not a matter to be determined by any rules of proportion as between a city of one size and a city of somewhat lesser extent, and so on down the line. There is no proportion about it at all, for a human life is worth as much in one community as it is in another, and a million dollar loss in one city might not hit its life as hard as a much smaller loss in another community would hit its life. And so I ask of you, Chiefs of New England to go back to your duties with a new determination to range yourself solidly along side your Superintendent of Fire Alarm, satisfy yourself that his recommendations for safeguards and improvements are right, and fight for their adoption, for back of you both are the men, and the women, and the children who are looking to you both for their full protection.

Gentlemen, I thank you for your attention.

President Doyle: At this time I will call upon Mr. H. H. Berry, Superintendent of Fire Alarm, Springfield, Massachusetts, for a few remarks. Mr. Berry is President of the Eastern Association, Superintendents Fire and Police Telegraph.

Mr. Berry:

The Eastern Association Superintendents Fire and Police Telegraph was formed in June, 1921. Its members are the Superintendents of Fire Alarm and Police Signal Systems of the cities and towns in the New England States, including New York and New Jersey.

The object of this Association is the acquisition of scientific and practical knowledge relating to the operation of Fire Alarm and Police Telegraph, diffusion of this information among its members with a view of improving the service, maintaining the confidence of the public and to cultivate good fellowship among its members.

The Association meets in different cities every two months and the membership is steadily increasing. Much valuable information is acquired at all these meetings and many points and questions are taken up for discussion.

The Fire Alarm game is not easily acquired. It is not like any other business. There is but one factory today that manufactures exclusively only Fire Alarm and Police Signaling apparatus and the opportunity of specializing in this class of work is very slight. The Fire Alarm end of the business, we feel is the most important at the start of a fire for if there is no proper warning of its location the fire fighting force would be of but little use and mistakes must not be made in sending the department.

If a lawyer makes a mistake they try the case over again; if a doctor makes a mistake they bury it; if a minister makes a mistake no one knows it; but if a Fire Alarm man makes a mistake—Good Night.

There is one draw back, however, that seems to hinder many of our members from attending the meetings. Some cities do not pay the traveling expenses of its officers and appear to deem it unimportant that their Superintendent should attend and in many instances the man does not feel that he should stand the expense of travel. We want to point out to these Municipalities that at present do not include in their yearly budget necessary appropriation for such purposes that when their officers remain at home they are missing a whole lot—exchange of ideas—new apparatus and methods on the market—meeting new problems that arise from day to day and how to cope with them.

What we would like is that you Chiefs would use your influence to get your Superintendents out to our meetings more.

Meeting adjourned until 7.30 P. M.

Meeting called to order at 7.30 P. M. by President Doyle.

President Doyle: Gentlemen will now come to order as we have some preliminary business before taking up the regular program.

A watch fob has been found bearing the initials E. S. B. Owner may have same by identifying same at Purser's Desk.

I also wish to call your attention to the Exhibition at the Bridgeport Armory. I wish to urge all members who have not visited this exhibition to do so this evening after leaving here or tomorrow morning. It is only fair to those who have exhibited that we give them the proper co-operation by showing an interest in this affair.

Secretary O'Hearn: Mr. President, since the Association was organized in July, 1922, we have lost by death one member, Assistant Chief Arthur Bodge, of Peabody, Mass. I would like to suggest that a Committee of three be appointed to draw up suitable resolutions to be presented to the family of the deceased.

Motion made by Secretary O'Hearn, seconded by Chief Hurley of Holyoke, Mass., and unanimously passed that a Committee of three be appointed to draw up suitable resolutions, to be submitted to the Secretary for transmission to the bereaved family at a suitable date.

President Doyle appointed the following Committee to act on above motion:

Ex-Chief John T. Adams, of Marblehead, Massachusetts.

Chief W. H. H. Atkins, of Marblehead, Massachusetts.

Ex-Chief Jesse F. Barrett, of Peabody, Massachusetts.

President Doyle read letter from the Lions Club of Bridgeport, Connecticut, welcoming the New England Association of Fire Chiefs to Bridgeport, Connecticut.

BRIDGEPORT LIONS CLUB

To the New England Fire Chiefs,
In Convention Assembled.

Greetings:

At the regular luncheon of the Bridgeport Lions Club today, I was directed to convey to your organization the cordial greetings of our Club and to wish you a very pleasant and profitable stay in our City.

We wish it were possible for every Lion to extend to you all a personal handshake of welcome, but as that is practically impossible we trust that you will receive this message as conveying all that.

Very cordially yours,

E. M. BUTLER,
Secretary Lions Club.

President Doyle appointed Chief Daniel Johnson of Bridgeport, a committee of one to extend thanks to Mr. E. M. Butler, Secretary of the Lions Club for their welcome.

President Doyle introduced Mr. Irvin F. Richardson, Automotive Engineer, Vacuum Oil Company, Boston, Mass., who proceeded with his address.

Mr. Richardson: Mr. President, Fire Chiefs and Guests:

I don't know what it is, but there's something about fire apparatus, either the color of the piece, the gold trimming, or the sound of the sirens, that gets under my skin. I do not think there is anything more gratifying than the good fellowship of Fire Chiefs and it is worth a good deal to me to be among you and to have the privilege of addressing this meeting. In exchange I want to give you the benefit of some of our experiences which we believe will assist you in solving some of the difficulties which you have encountered since you motorized your apparatus. The majority of Chiefs in New England and some that I have known in the West have been strong for horses. Yet almost over night they have found the need of changing their equipment to motor apparatus, which presented an entirely new problem, in fact many of them and one, my subject, Lubrication.

THE IMPORTANCE OF LUBRICATION

You would naturally expect me, a lubrication engineer, to emphasize the importance of lubrication. A few years ago you would not have seriously considered the subject, but now perhaps, through bitter experience you have learned that it is the first consideration with motor apparatus. Manufacturers' instruction books almost without exception, state that it is the most important factor in the successful operation of their units.

You have under your supervision, apparatus, the cost of which runs into the tens of thousands of dollars, yet the very life of that apparatus depends upon how you spend a comparatively few dollars for lubricating oil and how you use that oil. A few dollars more or less, a lack of appreciation of the care which should be given to lubrication, and your equipment may be rendered useless until repairs can be made, repairs that will cost many times what your oil bill could even amount to.

The protection of property of untold value is in your hands. When an alarm rings you must get under way immediately and without fail. Lubrication must be perfect from the start. A few cents more or less per gallon—a seemingly trifling matter neglected—and a delay results. I have little need to remind you of what that may mean, little need to tell you of the importance of dependable service.

Out in the middle west I recently had the opportunity of seeing a big fire. At the very worst of the fire one of the pumps went down with a burned out bearing—cause—lack of lubrication. Later I had the pleasure of interviewing the Fire Chief of that place and during our conversation, it developed that the lubricating oil he was using was an experiment. Although a high grade product, it was not suited to that particular engine. Just stop and think what would have happened if that trouble had occurred with all the pumpers working on that fire.

Let a motor truck get stalled at a busy corner and the only attention it causes is to the driver and the traffic officer who push it out of the way. BUT, let a piece of fire apparatus motor have anything at all happen to delay it, and you know the storm of criticism that follows.

The Public today takes the liberty and feels that it has the right to criticise every little delay, whether of Police or Fire Departments. We know how unjust these criticisms may be, but they exist and have to be considered. Therefore, when you get an alarm you want to know that you are going out, going to get there and stay on the fire to the finish. You cannot be sure of this and go bargain hunting for lubricating oil.

Naturally after all this emphasis on the importance of lubrication, you no doubt want to know what you must do to be sure that your apparatus is correctly lubricated. That is the object of my talk.

FUNCTIONS OF THE OIL

To get down to fundamentals, let us see what the oil must do. First it must separate the working surfaces and we should be sure that it is of such body and character that this will be accomplished at all times and under all conditions. Next, the oil must seal the pistons and rings to prevent the escape of any gas into the crankcase which of course, means loss of power and also removal of the oil film on the cylinder wall with resultant wear and contamination of the crankcase oil. Finally, the lubricating oil must transmit heat, acting as a cooling medium for the pistons and bearings through which their heat is radiated to the water jackets or the crankcase wall.

To perform these duties three fundamental requirements must be met. The oil must be quality product; it must be of the proper body and char-

acter to suit the various features of design, construction and operation of the piece of apparatus for which it is intended, and last but by no means least, the oil should be used in the right way.

Quality alone will not suffice, the oil must be right for the engine and still you will not get satisfaction unless you use the oil in the right way as a number of Fire Chiefs I am acquainted with, have found from sad experience.

DEFINING OIL QUALITY

What is a quality oil? I suppose many of you are expecting me to say that an oil must be made from one crude or another to be any good, or that it must have a certain flash, fire or viscosity test in order to lubricate properly. Far from it. Although the character of crude oil is important, this applies with equal force to all types of crudes, for splendid lubricating oils are made from both paraffin and naphthene (asphalt) base crudes and mixtures of both. As for oil specifications, do you think the Government, the Society of Automotive Engineers and automotive manufacturers generally, to say nothing of lubricant manufacturers themselves, would conduct extensive practical tests of lubricating oils if simple readings of specific gravity, flash, fire, viscosity, etc., would completely define oil character and quality?

There is a wide variation in the character of crude oils regardless of their general type and source; hence the first step in getting a quality oil is to select the crude or crudes which when refined, will best meet the particular requirements in view. Next, the refining of the crude oil must be carried on in such a way that it will fully conserve the value of the crude itself for it is perfectly possible to ruin the finest crude by improper methods of refining.

It is a fact that the production of the maximum yield of gasoline and the production of the highest quality of lubricating oil call for radically different refining methods. From one, lubricating oils are a by-product; in the other, the yield of gasoline will be small and the character and value of the crude will be preserved in the lubricating oil. It is needless to say that we wish the utmost lubricating value in the oils we use for fire department work, or in fact, for any service whatsoever, so it is well to keep in mind the advisability of purchasing your requirements from those concerns that make lubricating oils as a specialty—not as a by-product.

The final requirement in the manufacture of a quality lubricating oil is care in handling the oil and preparing and filling the containers to avoid contamination of the finished product. Does this seem like a minor part? Well, I can assure you that a very small amount of dirt or lint carried along with the lubricating oil can do just as much damage as an inferior product, as perhaps some of you gentlemen have learned.

WHY DIFFERENT GRADES OF OIL ARE NEEDED

I mentioned that in addition to being a quality product, the lubricating oil should be of the proper body and character to suit the particular engine in which it is to be used. There is a real need for this as your own experience with many different types of fire apparatus and motor cars may have shown. They are not all alike in design, and they differ widely in their lubricating requirements.

Just as there are differences in engines, so are there very wide differences in oils of quality, but they possess one characteristic in common. They all thin out under heat to a degree which depends upon their original body and character, and upon the temperature to which they are subjected. So it logically follows that the very first factor to consider in selecting an oil for a given engine is its operating temperature.

Before discussing the various features which affect the engine operating temperature, I want to mention and explain one very common misconception regarding lubricating oils. I said that all oils thin out under heat; it is important to remember however, that if the source of heat is removed, all oils will return to their original body; they are not permanently thinned out by heating. The only thing that permanently thins out a lubricating oil is the mixing with it of liquid fuel. The exact way in which this takes place and the causes for thinning out of the crankcase oil I will discuss later in my talk.

ENGINE OPERATING TEMPERATURES

To go back to the question of engine operating temperatures, the first thing which affects them is the duty which the engine performs. The more fuel is burned, the wider open the throttle on the average, and the more steadily the engine runs the hotter it gets. Contrast the chemical which leaves the house, makes a short run to a fire—I think you will agree with me that most fire runs are short—and then stands idle until the return trip—contrast that with the pumper which makes the same run and then goes to work pumping well up to the limit of its capacity, perhaps for hours at a stretch. The chemical hardly gets warmed up going to the fire, but the fire engine working to capacity soon reaches a high operating temperature. In the latter case we are influenced toward the selection of a rich heavy bodied lubricating oil with the chemical such an oil is not required and in fact its use might lead to very unsatisfactory results.

Another factor affecting the engine operating temperature is the method of cooling. Let us contrast air cooling and water cooling. Some of you gentlemen present may remember some of the old air cooled apparatus, others may have air cooled cars. With water cooling the temperature of the jackets is definitely limited to 212 degrees, the boiling point of water, and the piston temperature is definitely restricted by this, varying in exact amount with individual designs. With air cooling we have no such fixed control of the maximum cylinder wall temperature. Under abnormal conditions it may increase to a high degree and we are therefore influenced toward the use of heavy bodied rich lubricating oils to meet this condition. With water cooling they may not be required.

Another point is the valve arrangement. I know some of the Chiefs who have cars with Knight type engines have wondered why we have recommended a heavy bodied lubricant for them. In the Knight type of engine we have two sleeves between the piston and cylinder which cause a resistance to the heat flow from the piston to the water jacket, giving us a higher piston temperature. In other words, the heat in a Knight engine must travel through three oil films and three separate cast iron walls before reaching the water, while with poppet valve construction the heat travels through but one oil gap and one cast iron cylinder wall to the water jacket. Therefore, where the head is damned up inside of the cylinder at the piston, as in the Knight type of engines, we are again going to be influenced toward a rich heavy bodied lubricant.

The engine size and the engine speed are also points affecting the operating temperature. The larger the bore the greater the volume of fuel burned, but the cylinder wall area does not increase as rapidly in proportion as the volume. Hence the radiating surface is restricted and the engine tends to run hotter. Again, the faster the engine runs, the greater the heat generated and the less the time to get rid of it. Hence higher operating temperatures result. In automobiles, these factors are of less importance but in heavy duty, high power engines, they must be given consideration.

To summarize then, if we find from a study of all the factors which effect the engine temperature, that it will be hot running, we will be influ-

enced toward the use of a heavy bodied, rich lubricating oil. On the other hand, if the engine is cool running, the lighter bodied clean burning oils will provide adequate lubrication.

LUBRICATING SYSTEM DESIGN

The next point to be considered is oil distribution. We must get the oil to every working part in sufficient quantities to provide a perfect film. Hence we must determine the characteristics of the various lubricating systems and their component parts to see what type of lubricating is best suited to each individual case.

Without going into the details of all the different types of systems, we may classify them as follows. Splash All Loss Systems—Splash Circulating Systems and Force Feed Systems. Each of these three types has definite characteristics affecting the distribution of the lubricating oil.

In the Splash All Loss system fresh oil is fed into the engine crankcase, a few drops at a time, building up and maintaining an oil level under the connecting rods, the exact height of the oil depending upon the rate of feed which is adjustable. Dippers on the ends of the connecting rods dip into the oil creating an oil mist or spray which reaches all the working parts. Since it is necessary to create a mist or spray by the action of the small dippers, it is essential with splash systems to use light bodied easily atomized lubricating oils, since the dipper would merely cut through and throw but very little oil if a heavy viscous oil were used.

With systems of the so-called All Loss Type, the lubricating oil is not subjected to long continued progressive contamination by unvaporized fuel working past the pistons into the crankcase. Fresh oil is being fed in continuously to replace that which is burned, and to build up the character of that which is left. Consequently light bodied oils which lack the staying powers of the heavy bodied rich lubricating oils may be employed to advantage and to assure perfect distribution.

In splash systems where the entire volume of oil is circulated continuously, there is progressive contamination as fresh oil is fed in at infrequent intervals and only when the entire crankcase supply is drained and replenished, is the oil restored to its original value. For this reason oils of somewhat heavier body and richer in lubricating character are to be preferred, although the factor of distribution by connecting rod splash must not be lost sight of.

Where the oil is distributed by pressure through a drilled crankshaft to the connecting rod bearings, and the other parts of the engine are lubricated by the oil thrown from the connecting rod and crankshaft bearings, any oil regardless of its body and character, will be perfectly atomized. Being forced through the close clearances at the sides of the bearings, it comes out in a fine mist which is perfectly atomized by the crankshaft motion. In fact, with this type of system it is sometimes desirable to use the heavier bodied oils to cut down the rate of flow through the bearings, providing however, there is not some other feature in the design which makes it inadvisable to do so.

The features—there are several—which I have in mind, are the type and location of the oil pump, the size and mesh of the oil screen and the layout of the oil piping. Let us contrast for example, the submerged gear pump with one which is elevated well above the oil level and connected with the reservoir by a pipe of considerable length. It is easy to see that in winter time the elevated pump might fail to lift the oil and prime properly if a free flowing oil were not used, an apparently minor detail, but one which can cause serious trouble in cold weather.

Again, spring returned plunger pumps may fail to function in winter weather if a heavy viscous oil is used. In the same way, such an oil may fail to feed properly through a fine mesh screen which the free flowing oil would pass through with ease.

Let me summarize the situation. When the All Loss Splash System is used, the influence is toward the lightest grades; with circulating systems even those embodying splash, there is a tendency toward heavier grades in order to counteract contamination. With Force Feed Systems, we can assure distribution with any grade, regardless of body, providing the pump and screen design does not interfere.

THE IMPORTANCE OF PISTON RING SEAL

In any engine it is important to seal the rings against blowby for reasons which I have already stated, but let me amplify them somewhat. Engine power depends upon compression. If we lose some of the gas during the compression stroke we lose doubly, first by reducing the amount of mixture left to burn, second by cutting down our compression pressure. For every pound drop in this we lose about four pounds on the explosion pressure and then this too is decreased by the rapid leakage which takes place with the jump in pressure after ignition. A real price to pay for lack of proper seal, don't you think?

And this is not all—when blowby takes place some of the oil film is carried along with the gas. The metal parts make contact and wear results; actual scoring may take place under some conditions, particularly if the oil in the crankcase has become badly diluted by the unvaporized fuel, which has also escaped into the crankcase. Truly, sealing of the pistons is important.

The factors which govern piston ring seal are the engine speed, the size, the operating temperature, the number and fit of the rings and the piston design. The higher the engine speed the easier it is to effect sealing for it takes time to displace the oil film. Naturally, the hotter the piston, the more easily blowby will take place, so the size and other factors which affect the temperature of the piston will have a bearing on the sealing problems.

You can well appreciate that the more rings we have and the better they fit, the easier the sealing problems, but what is not generally considered or even thought of by the great majority, is that the oil film acts as a real drag against the piston movement. When some heavy oil fanatic puts in the heaviest oil he can get, hoping thereby to get perfect sealing with pistons and rings that never did or never could it,—you know the case I have in mind—he introduces a fractional resistance which amounts to several horsepower and which increases as the speed goes up. The result is of course fuel and power loss, even though the person may kid himself into thinking that he is getting more compression and power, simply because his engine cranks harder. He is feeling and measuring frictional resistance, that's all.

In selecting the proper grade of oil to meet the sealing requirements, we have to strike a balance between the maximum of sealing and the maximum of resistance, choosing the grade which gives the best overall results, a problem that often requires very careful analysis.

THE EFFECT OF CARBON DEPOSITS

I have no doubt that every one of you gentlemen will agree with me regarding the desirability of eliminating carbon deposits. You have found that they tend to foul the spark plugs and valves necessitating grinding at

frequent intervals and you have also found that when carbon does accumulate the engine begins to knock. You have called this a carbon knock, a gas knock or a spark knock and you object to it because when it occurs you have to retard the spark or close the throttle to get rid of it, and this cuts down the power. Just what caused the knock itself I venture to say you never fully understood.

There is one very significant thing regarding the knock. You can take a badly carbonized engine, run it with full spark advanced and wide open throttle without a sign of a knock if you put in the gas tank any one of several special fuels, for example, a mixture of thirty or forty per cent. benzol with gasoline. What's the answer? It is the fuel which knocks, for all that we change is the fuel. We still have every other factor which causes knocking.

WHY ENGINES KNOCK

What happens is this—when the fuel burns normally and without knocking, the flame travels through the mixture at a relatively low speed—from 15 to 30 miles per hour. It doesn't all burn at once; the pressure rises to a maximum smoothly and at a comparatively low rate as the charge is consumed. But when knocking occurs, we have an entirely different condition. After ignition takes place the fuel charge at first burns slowly, just as it did before, but after a short interval a change takes place, the flame speeds up to an enormous velocity, the pressure rises with extreme velocity, drops as suddenly and then repeats the process several times with decreasing violence as the piston moves downward.

You all appreciate that a gust of wind travelling at 30 miles per hour would have considerable energy, but raise its velocity to 1100 feet per second, perhaps double that, and try to visualize its striking power. It is such a pressure wave striking the cylinder walls like a hammer that causes them to ring with the peculiar knock we all know so well. The pressure wave bounces back and forth in the cylinder several times before it dies out.

Note:—Mr. Richardson illustrated this condition by slides showing the pressure changes taking place inside the cylinder when an engine was knocking and when it was running smoothly.

This peculiar burning of the fuel charge is called detonation and the tendency of various fuels to detonate varies widely. Perhaps some of you have found that starting an engine with ether in cold weather causes a terrific knocking, it is in fact the worst knocking fuel there is—alcohol and benzol on the other hand cannot be made to detonate. Gasolines vary in their tendency to knock, the less volatile products tending to knock more, kerosene and fuel oil detonating badly under some conditions.

I know some of you gentlemen are beginning to wonder what all this has to do with carbon deposits or lubrication, but I think I can make that clear. Just two factors in an engine tend to cause the knock. The first is high compression, the second high temperatures. You never heard a lightly loaded engine knock—that begins when you get the throttle open and have full compression. Again you know that when an engine becomes overheated it gives warning by knocking.

The effect of carbon is to prevent the flow of heat from the compressed and burning charge to the cylinder head and piston just as soot on a boiler tube cuts down the steaming capacity of a boiler. When the critical condition of temperature and pressure is reached the fuel begins to detonate and we get the so-called carbon knock. If the carbon becomes highly heated it may ignite the charge before the spark occurs. We are then compressing a burning charge, producing a very abnormal temperature and

pressure condition which causes severe knocking with many fuels, yet none at all with alcohol or benzol. The same condition occurs with an over advanced spark.

OIL CONTROL

Naturally since carbon tends to create this condition we want to avoid it if possible and it is common experience to hear mechanics ask for "no carbon" oils. There is no such product as all petroleum oils and fuels are chemical combinations of carbon and hydrogen in various proportions. It is a fact also that the heavier and richer the oil, the more carbon it contains, although it does not necessarily follow that the heaviest oil induces the most carbon. Then too, some of the carbon in the cylinders comes from the fuel for it is impossible to avoid getting a sooty flame with an over rich mixture.

To make an oil carbonize three things are essential—oil must get by the pistons—it must be held at the proper temperature long enough to distill it down to carbon—there must not be so much fire in the cylinder that all the oil will be burned up before it gets a chance to carbonize.

You can therefore appreciate that in selecting the right oil for an engine the lubrication engineer must consider each of these points. He wants to know if the engine design is such that it will knock readily if any carbon accumulates. If so he must guard against it by using a clean burning oil if any excess is going to pass the pistons. He has to consider the possibility for over oiling, the piston design, the ring equipment, and any features of the lubricating system which acts to hold down the oil, such as baffle plates, throttling devices, etc. Finally he wants to know the type of service the engine is used in, for if it works under heavy loads, the fire in the cylinder will burn up the oil cleanly even if it is a rich heavy product. On the other hand, if it is lightly loaded it will handle only the cleaner burning lubricants, except under special conditions.

Note:—Mr. Richardson showed a number of slides illustrating features which tended to cause knocking, also to control the oil supply.

We have now covered in a general way the factors which affect the choice of the correct oil for any engine. However, there must be a question in your minds regarding just what the correct oil is. The answer is simple.

The correct oil is the heaviest richest lubricating oil which can be employed without trouble from lack of distribution, from excessive friction drag or from carbon deposits.

You may wonder why the heaviest richest oil. Simply because we all want to give the best possible protection to the working parts and offset dilution to the greatest possible degree. Isn't that logical?

I think you will agree with me on one point—that there are more factors to be considered in choosing the correct oil for an engine than the average garage mechanic might think. If such is the case, isn't it wiser to take the advice of lubrication specialists on what grade to use? They have only one idea in view—to give you the best results, for in that way only can satisfied customers be obtained.

CORRECT USE OF LUBRICATING OIL

As I mentioned earlier in my talk, it is just as important to use the oil in the right way as it is to have the correct oil in the engine and I am sorry to say that in fire department work we have some flagrant cases of incorrect use, although they have resulted from well-intentioned practices.

It is scarcely necessary to emphasize the need for careful storage and the use of clean containers in handling the oil, yet time and again even in fire departments, we find the oil contaminated with materials which could not by any possibility have gotten into the oil at the refinery.

The next point is the need for draining the crankcase oil at regular intervals and refilling with fresh oil. The reason for this is that the oil becomes contaminated with carbon formed on the inside of the piston heads, with dust and dirt, with water vapor which condenses in the crankcase and with unvaporized fuel which dilutes the oil seriously reducing its lubricating value.

The oil should be drained off at regular intervals, the oil screen cleaned and fresh oil put in. I can almost hear some Chief inquire—"How often shall we drain our engines?", but I will answer that shortly with a question you will have to answer before I can advise you definitely.

There is one precaution which I must emphasize. Don't use kerosene for flushing out the crankcase no matter who urges it. The reason is this—some of it always remains to contaminate and dilute the fresh oil you put in. Even with Force Feed systems where there are no splash troughs to trap it, there is usually a pocket under the timing gears which does the same thing. Then again, mechanics sometimes run the engines with kerosene—this often breaks the pump prime and in some engines leads to bearing trouble from dirt dislodged in the crankshaft drillings. Using kerosene this way is very dangerous practice.

The right way to drain is when the engine and the oil are hot, right after a run. Any dirt that will ever be circulated with the oil will then be carried out with it. The rest will do no harm and kerosene will not materially aid in removing it. A quart of fresh oil through the engine will renew any oil that might be trapped in the crankcase. If more extensive cleaning is essential removal of the oil reservoir is the only method.

LUBRICATION DIFFICULTIES

There never was a product so well made that trouble may not at times be experienced in its use. Even with the finest lubricating oils we may encounter certain difficulties, but these may be avoided if the proper precautions are taken.

In fire department work dilution of the crankcase oil is a common complaint and I am going to say to you very frankly that certain fire department practices are responsible for this condition. As I have mentioned before, thinning out of the crankcase oil is due entirely to unvaporized fuel mixing with it. The fuel reaches the cylinder in the form of a fine mist, some of which may not evaporate. It mixes with the oil film on the cylinder wall, diluting it, weakening the piston seal with the result that slight blowby takes place. This, of course, carries along with it into the crankcase, some of the liquid fuel which then thins out the oil in the reservoir.

It must be quite obvious to you that the way to eliminate dilution is to make sure that the fuel is vaporized perfectly. With cold running engines and with rich mixtures, however, this is impossible as considerable heat is necessary in order to vaporize our present day gasoline and in the absence of this, a fair percentage of the fuel is going into the cylinders in a liquid state.

Do you realize that your practice of house-running the engines several times a day is just the finest way to promote dilution that could be conceived? Your men start the engine from cold using the choker to draw in a rich mixture and get going. Then they let it run idle for a few minutes and shut it off. A lot of raw fuel was pulled into the cylinders, some went into the crankcase and the rest partly burned, passed out the exhaust.

I recently ran a test on a fire engine which was drained and filled with fresh oil on a Monday morning. Three times a day for a week the engine was started and run idle three minutes, the choker being used three seconds

at the start and the mixture regulated to make the engine run smoothly without the choker when cold. Of course it was too rich for hot running, but that is fire department practice. At the end of a week of this, during which there was no fire call, analysis of the crankcase oil showed eleven per cent. of fuel present. At that rate in another week's time the crankcase oil would not have been in condition to give good protection against the stress of long continued fire pumping service.

As far as I can see there is nothing gained by such house-running. What guarantee have you that because the engine started once or twice or three times that it will the fourth time? How can you be sure that something didn't happen the last time you shut down that won't prevent your starting again?

If in the face of this you feel that house-running is necessary, cut it down to one start per day and then let the engine run long enough to get thoroughly heated. Cover up the radiator to help it warm up quickly. The fuel will then be vaporized properly and can burn up some of the oil which is passed into the cylinders during the warming up period.

I think you can well appreciate now how difficult it is for me to specify exactly how often you should drain your apparatus. It depends very largely upon the way you handle it. However, if you keep the oil level to the required level at all times; if you limit your house-running as I have suggested, changing the oil once every three months should be sufficient.

With your touring cars conditions are somewhat different—if you run them considerably and do not practice house starting them, draining every 500 miles in winter and every 1000 miles in summer is usually adequate. However, as the following analysis shows, the crankcase oil can become badly diluted in a very short period if it is run in cold weather with no radiator cover and subjected to frequent starts and stops.

DILUTED CRANKCASE OIL

	New Oil	Used 200 Miles
Specific Gravity	.925	.895
Flash	360° Fah.	145°
Fire	400°	—
Pour Test	5°	Below zero
Viscosity at 104° F	260 seconds	66 seconds
140° F	106	—
210° F	48	—
% Fuel	—	21.9
% Dirt	—	.05
% Water	—	Trace

The remedy of course is to the same as before—keep the engine running at its proper temperature, use the choker as little as possible and set the carburetor for a lean mixture.

WATER AND OIL EMULSIONS

A number of Fire Chiefs have experienced trouble from formations of sludge or much accumulating in the engine crankcases and blocking the oil screens, and have been puzzled to know the cause. Such deposits are always the result of water getting into the crankcase and mixing with the oil there. When water and oil are mixed together in the presence of finely divided carbon and other dirt, such as are invariably found in engine crankcases, an emulsion is formed. This, being heavier than the oil, settles to the bottom of the crankcase and usually collects around the pump intake.

The actual thickening of the oil by such emulsions is well illustrated by the following analysis of a sample of used oil from a well known make of car. The increase in viscosity in comparison with the fresh oil in spite of the presence of fuel is very apparent.

WHEN WATER AND OIL MIX

	New Oil	After 150 Miles
Specific Gravity	.925	.931
Flash	360° F.	185° F.
Fire	400°	—
Pour	5°	Zero
Viscosity at 104° F.	260 seconds	386 seconds
140° F.	106 "	199 "
210° F.	48 "	—
%Fuel	—	9.6
%Carbon and Dirt	—	.67
%Water	—	34.

You may be wondering how water gets into the engine crankcase—aside from leakage which is rare, it comes from the burned gases which blow by the pistons. One of the products of combustion is always water vapor and if the engine is run cold, this will condense in the crankcase if blowby occurs. When the engine is running hot the vapor does not condense, but escapes through the breather.

The same conditions which promote dilution also induce water accumulation for some blowby will occur, particularly if the oil seal is diluted. The formation of an emulsion is then only a question of churning the water and oil together with the dirt—an operation that the lubricating system carried on perfectly unless the water settles clear of the pump intake. The action is similar to that of making salad dressing—the mixture of oil, vinegar, etc., thickening as it is beaten.

To avoid emulsion troubles, eliminate house-running or else let the engines get thoroughly heated each time you start them. Arrange to drain a small amount of the oil at frequent intervals so that any water collecting in the bottom of the crankcase will be drawn off. Watch the oil screen for signs of sludge and if any appears, drain the entire oil supply, rinse out thoroughly with fresh oil, letting the engine run with the flushing oil and draining several times. Once sludge starts to form it promotes the trouble, consequently, every bit must be removed. The best remedy is an ounce of prevention—keep the engines running hot and you will have no such troubles.

OIL PUMPING AND CARBON TROUBLES

I think that perhaps one of the best definitions for oil pumping is the passing of more oil into the combustion chambers than the fuel charge can burn cleanly. The result of such incomplete combustion is of course carbon. Two things are essential then in reducing oil pumping. First, we must have a clean burning mixture, and second, we must reduce to a minimum, the oil passing the pistons.

You cannot have clean combustion if you have leaky valves, defective ignition or an over-rich mixture, and I have found from my own personal experience, that more than half of the over-oiling reports I investigate can be attributed to these causes, particularly with new engines. Again I may say that your practice of frequent house-running with cold engines and rich mixtures contributes directly to fouling of the cylinders with soot and carbon. Just notice some time the difference between the appearance of a spark plug

out of an engine running under heavy load and that of one from an engine which has done nothing but run idle. The contrast will be quite convincing I am sure.

In regard to excess oil passing the pistons, this may be due to an over-supply with All Loss systems, having adjustable oilers, or to excessive dip of the connecting rods in Splash Circulating systems. With Force Feed systems, loose or incorrectly fitted bearings or too high an oil pressure are the common causes. It is hardly necessary to add that poorly fitting pistons and rings are also common sources of over-oiling, but I would suggest that in any case of oil pumping you first look into the matter of securing perfect combustion.

In conclusion, gentlemen, I would like to summarize briefly the factors of importance in connection with correct lubrication. First, be sure that you get a high grade product—be sure that it is correct for your equipment—and then take care to use it in the proper way. By doing this you will avoid most of the lubricating difficulties I have mentioned.

At this point Mr. Richardson closed his lecture and President Doyle took over the meeting for a brief discussion.

In answer to a question regarding the rate of dilution from house-running, Mr. Richardson said:

We became interested in the problem as a result of some dilution and sludge complaints we received and we carried on a number of tests to develop the question. The figures given in my talk—11% dilution after twenty-one cold starts in one week—were obtained during that test work.

In our opinion the fire house-running practice is of no value whatsoever and leads to trouble in many cases. Just because the engine starts once does not mean that it is going to do so again five minutes later. That was proven to my satisfaction in one instance where we started an engine and then after a short run, stopped it, but we could not restart it because the breaker spring in the magneto had cracked.

As far as the oil itself is concerned, it is injured far less by a long hard fire run than by a week of house starting.

Engineer Caldwell: I would like to ask the effect on the oil of the cooling devices which are sometimes employed.

Mr. Richardson: They are a decided advantage in heavy pumping service but if in operation during the house-running process they are not helpful in holding down dilution and tend to promote the sludge trouble. If possible, disconnect them during house-running.

Motion was made by Chief Taber of Boston and seconded by Engineer Caldwell of Boston and unanimously carried that the address of Mr. Richardson be placed upon the Minutes of this Convention and that this meeting give Mr. Richardson a rising vote of thanks.

President Doyle announced a slight change in the program for the evening, introducing Mr. Ira G. Hoagland as the next speaker of the evening.

Address, "Automatic Control of Fire," illustrated, showing the motion picture "The Menace," by Ira G. Hoagland, New York City.
Mr. President, Members and Guests of the New England Association of Fire Chiefs:

I wish to assure you of the deep appreciation I feel in having not only the opportunity but the privilege of appearing before you during the first annual convention of your organization. It is always a privilege not only for me myself, but for any one, to discuss with practical men a practical subject. The opportunity I am enjoying this evening came from having met your esteemed president at a meeting of the Massachusetts Fire Chiefs' Club in Boston last year where I gave a talk.

The subject I will discuss with you this evening is "Automatic Control

of Fire," which has been revealed by the experience of more than forty years to be the greatest factor of conservation of the times.

The rate at which our country creates wealth and then proceeds to convert it into a colossal heap of ashes is more than appalling!

Conservation of the created wealth of the nation is one of the most vital needs of today. It has always been vital but never before as much as it is now. The great war and its aftermath have brought us face to face with an economic fact which we have been dodging for years but may not any more.

Never before have we valued what we have as we do now. Never before have we realized as we do now the need of preserving what we have created. Never before have we appreciated fully the need of economizing our wealth and more rapidly adding to it by increasing efficiency in production. Never before have these understandings been as general among the people of this country as they are now. They are known now as facts by everyone with minds capable of such understanding.

But while the need of general conservation is well understood, there is one phase of it which is not. I refer to the conservation of created wealth from waste by fire.

During the past two years the actual property loss in fires has been one billion dollars! This amount would finance the employment of 400,000 men at one dollar an hour for one year! The human casualties totalled 64,000 and nearly half of that number, 30,000, were mortal!

During the past 40 years the total property loss was seven billion dollars!

If the rate of burning during the past two years continues the total for the next 40 years will be twenty billion dollars!

And over a million casualties to human life! Aside from spiritual considerations think of the great economic loss this fearful toll of human lives will mean to society!

But the consumption losses are only one element of the economic burden the fire waste imposes. For every dollar of property loss there is another dollar lost because of the interruption to enterprise caused by fire. The third element is in the cost of maintaining a system of collecting and distributing indemnity for fire losses—fire insurance; also fire departments and extra investments in water supply systems for fire control. All together the third element amounts to as much as the property loss!

These three elements: property losses, interruption losses, and the cost of indemnity and defense, constitute the fire tax. During the past two years the total fire tax has amounted to three billion dollars!

There is a loud clamor against the income tax, because of its absurdities, but there is an equally loud silence about the most absurd tax imaginable, the fire tax. Why the indifference about a tax which drains our pocketbooks just as surely as the taxes we fuss about? If we fuss about other taxes, why not about the fire tax? Especially when this tax is more certain of control than others.

On this very point W. E. Mallalieu, president of the National Fire Protection Association, in his address at the recent annual meeting of that association, spoke as follows:

"At present the public is heavily taxed, both as to real estate and income, and is continually bewailing the fact. Yet few stop to consider the part which the fire waste plays in increasing these taxes; that when buildings are destroyed by fire, and not rebuilt, the taxes those properties would have yielded, are added, pro rata, to the remaining structures. Neither do they realize that localities where many fires occur must maintain large fire departments, with increased budgets for men and equipment, water supply, alarm systems and other necessary items of defense.

"There are seemingly few who grasp the fact of loss which a community

suffers when a plant or factory burns; employes are thrown out of work, trade is lost to competitors, and frequently operatives are compelled to migrate to other cities to secure employment."

That capital is indispensable to production is indisputable, as also is the fact that we are grossly abusing our capital resources in the extent to which we are financing indemnity for fire losses.

"The major part of our waste by burning," President Mallalieu said further, "is really an outgrowth of the mistaken viewpoint of the general public in regard to fire. Too many persons think that only the fire insurance companies should worry when a fire occurs. They do not stop to consider that the institution of insurance is simply a form of protection for which the many contribute to pay the losses of the comparative few."

Little thought is given—beforehand—to the economic havoc wrought by fire in business and industry; to the thousand and one things in the aftermath of a fire which try the souls of men.

It is fondly imagined, for the most part, that the insurance against loss by fire on the buildings of commerce and industry and their contents of merchandise and materials, "raw, wrought and in process of manufacture," will be full and complete recompense for loss by fire.

"I am insured to the limit. A fire won't cost me a cent. The insurance companies will suffer, not me!" is the familiar chatter of honest but unthinking men—we are not considering the unmentionable kind that make money out of fires and flourish like the proverbial green bay tree because of rotten politics.

Of course the insurance companies will pay for the losses to buildings, equipments, merchandise, and what not in the way of material things, and, sometimes, to income and profits.

And the insurance companies while paying do not pay; the public pays the price. The insurance companies only collect and distribute money for indemnity. They do not suffer and are not expected to.

But who pays for the losses which are the inevitable consequence of the destruction of buildings, their contents and other things material; the impairment of prestige, the interruption of business, enterprise, contractual relations, dismemberment of organization and what not else?

A burned building is far more easily replaced than a burned business; and a wrecked works than an incinerated industrial enterprise.

That which makes business and industry are not buildings, merchandise, machinery and what else, but the organization of human intelligence.

A fire burns a business building, or a factory. These and their contents may be replaced. But far too often the business and the industry, as such, are burned beyond repair. And if not that bad the scars are deep and unforgettable.

I will endeavor to illustrate the further discussion of this subject with lantern slides.

The extent of the fire waste has been remarked. Now let us see something of the nature of it.

The industrial works wrecked by fire, shown in the picture, was of the highest class as regards character of ownership, but the provisions for fire control were not high-class.

In the average manufacturing plant it has been conservatively reckoned that the investment per operative is often as much as \$2,500. For each one absent there is an economic loss and lessened efficiency. That part of the plant investment itself, which the employe represents, has lost its earning power, to say nothing of what the employe loses.

An instance of a mercantile fire is illustrated by the picture of a Pittsburgh department store catastrophe. This loss was enormous as also are the

values in merchandise in retail stores throughout the country which are potential of destruction by fire.

And it should be borne in mind that while two-thirds of the number of fires annually occur in the dwelling houses of the country only about one-quarter of the total loss is in this class, which means that the major portion of property is destroyed by the fewer fires in the commercial and industrial enterprises of the country.

Another instance of this is shown by the picture of the Freese department store fire, Bangor, Me., which occurred just before Christmas last year. It is fires of this kind that are a bugbear to fire departments and pile up the bulk of the fire waste.

According to a compilation made a few years ago by a safety magazine the rate of burning of hotels for a period of thirty days was one every 13 hours and 30 minutes; and every 20 hours a human being was killed or injured, more often killed, in a hotel fire. Guest panics were recorded in many instances. Thousands had to flee to safety—outside the hotels—as most of the fires occurred during periods of deepest sleep!

Safety in sleep! That is something everyone should have in hotels and public lodgings. Hotel patrons can have it if they demand it. And they must demand it, as firetrap hotels will be used for many years, a constant menace to the safety of the traveling public, unless they are altered and equipped to resist fire. Unless a building, much less a hotel, is designed and constructed to confine fire to the locality of origin, or equipped with apparatus for the automatic control of fire, it is a firetrap in the most comprehensive meaning of the term.

Safety from fire for the undeveloped or infirm in body, mind and spirit may be the intent of the emulators of the Good Samaritan who create institutions for these human beings; but, from the way institutional buildings burn and lives are lost in the fires, it would seem that some of the Samaritans were more like the Spartans of old who summarily eliminated their defectives. Is it not so when asylums, hospitals and other kinds of institutional buildings burn at the rate they do? For a six-year period the rate was one a week! A picture will be shown of an institution where the lives of 100 babies were lost in a fire, and of a room where 40 of the little bodies were found after the fire was brought under control.

Safety from fire is the undeniable right of the children and youth of this land, whom the law and a desire for learning require to attend school. The right safety is undeniable, yet it is denied. That it is denied cannot be gainsaid when school fires occur at the rate of five a day! Property loss \$5,000,000 a year! The kind of safety from fire generally offered the children is outside the building. They are drilled in orderly exit, and the school authorities wax enthusiastic over the celerity of the march out—during peace times, of course. The little children in the Collinwood school had practiced fire drills, but when smoke began to thicken through the second story each little instinct of self-preservation threw restraint to the winds, and a sad blot on a page of history is the result of the mad rush to escape.

The picture shown was reproduced from a photograph taken of the Collinwood school immediately after the fire which took a terrible toll in the lives of 170 little children and two teachers. About this fire a prominent architect said: "The Collinwood fire, with all its horrors, may be repeated any day, so little the lessons taught by that fire have been heeded."

A sad example of this heedlessness was the schoolhouse fire in Cleveland, S. C., May 17, 1923, in which 71 or more lives were lost. The picture shows how completely the building was burned.

The Committee on Safety to Life of the National Fire Protection Asso-

ciation has declared that fully 90% of all school buildings are veritable fire-traps!

During the five-year period, 1915-1920, 9,187 claims for fire losses in school properties were recorded by the National Board of Fire Underwriters, totalling \$26,302,479.

And the chief reason why the rate of burning of schoolhouses does not multiply the number of holocausts is possibly because of the All-Wise Guardianship of a Divine Providence—most of fires have occurred when classes were not in session. But some of them have not. And some will not. When will the next one be?

Church fires occur with same frequency as schoolhouse fires—five a day! Property loss about \$3,000,000 a year! Would it not be more practical to distribute this among the underpaid clergy than to pay it to the fire demon?

That public buildings also contribute their quota to the national ash heap is illustrated by a picture of a fire-ruined city hall in a New England city.

The maxim that "a building built to burn is due to burn—eventually" is well illustrated by the burning, on June 11, of the Pennsylvania Railroad Station in Philadelphia.

Basement fires. This is a kind of fire which often tries the souls of firemen, and adds materially to the fire loss. The picture is of a typical instance of the sort, a building in a New England city. The fire started in the basement and jumped to the upper stories, where there were lodgings. Before the fire was controlled several lives were lost.

A fallacious notion is indulged in to a considerable degree that the character of occupancy of a building is a certain assurance of safety from the peril of fire. No higher class of occupancy is conceivable than that of the mansion of the late Mr. Woolworth at Glen Cove, L. I., but that did not prevent its burning.

A list of such fires is a long one. Another of particular note was the mansion of ex-Governor Draper, Boston, Mass., which was one of the first in the country to be constructed of fire-resistive materials. Neither the character of occupancy or of the construction prevented this magnificent home from being burned out as the picture shows.

Another fancied security of safety from fire is that buildings built of incombustible materials of construction, so-called "fireproof," invest in some mysterious way the combustible contents with a relative incapacity for burning. In other words, when in a "fireproof" building, combustible contents may not burn. The picture shows how thoroughly burned out was the Chronicle Building in Augusta, Ga., in the conflagration which happened there several years ago.

The Horne Store in Pittsburgh had several experiences with fire. The first one burned up completely a building of combustible construction. After this, the building was constructed "fireproof" but that did not help much. And when the building was reconstructed it was equipped with automatic sprinklers. When the third fire came along, the sprinklers made short work of it.

Even Thomas A. Edison fondly indulged in the fallacious reasoning about the fire security of incombustible materials of construction. The picture illustrates how completely fire devastated the Edison Works, West Orange, in December, 1914, and reveals the fallacy of expecting safety from fire from mere incombustible materials of construction.

Fire departments perform wonderful service for their employers, the communities of the country, but there is a limit to what they can do in controlling fire. Time is an essential in performance in nothing more than it is in fire department operation. In some cities the interval of time between the receipt of a fire alarm and the arrival of the first apparatus at the fire

has been reduced to two minutes! But the fire department has not any control whatever over the fateful interval of time between the beginning of the fire and the sending of the alarm. That interval may be so long that the quick response after the alarm will count for naught.

One of the most complete examples of the calamitous effect of a delayed alarm was the Equitable Building fire in New York in 1912. Instead of immediately notifying the fire department, employes of a restaurant in the basement endeavored to put out a fire in a storeroom which was caused by throwing a lighted match into a waste basket. By the time the fire department got the alarm and responded the fire was beyond control and burned throughout the building, which covered one whole city block. Among the human beings sacrificed was a battalion chief of the fire department.

Another fearful instance of the disastrous consequence of a delayed alarm was that of the clothing factory fire in Binghamton, N. Y., some years ago. There was a ladder truck company of the fire department right across the street, but, nevertheless, 31 lives were lost in that fire. The picture shows how the fire had spread through the building before the fire department got into action.

And even when alarms are promptly transmitted and responses speedy fire departments are unable sometimes to get to the fire soon enough to prevent disaster. Several instances of this sort I will illustrate with pictures.

Well remembered is the Peabody, Mass., school fire horror not long ago in which more than a score of little girls perished within an arm's reach of safety—outside the building, of course—cut off from escape by the flames and smoke coming up a stairway from the basement.

One hundred babies perished in the fire in the Grey Nunnery asylum for infants in Quebec, Canada, some years ago, though the building was not extensively damaged.

Another limitation of fire departments is that of method. Where a fire is under considerable headway all that a fire department may do is to shoot streams of water into a building from the street to flood out the fire, not being able to put the water just where it is needed most, right in the heart of a fire. The pictures show instances of this limitation of method at fires in Boston and New York.

Another condition which hampers firemen is freezing weather. Jack Frost sometimes co-operates with the Fire Demon in a way to defeat the efforts of the firemen. You may think the frapped apparatus shown in the picture was somewhere way north of Mason and Dixon's line, but it was not. Norfolk, Virginia, was the place. The other picture shows similar circumstances much further north in Winnipeg, Manitoba.

Although it is the scattering individual and group fires throughout the country that pile up the bulk of the fire waste, the kind of fire that attracts the most widespread attention is the conflagration. Aside from the one in San Francisco, which was due to an earthquake, conflagrations generally begin with fires that could have been easily enough controlled if the need for the control had been realized. The recent minor conflagration in Chicago is typical of this. It started in a building which should have been arranged and equipped for the control of fire. The picture shows the desolate aftermath of another conflagration that was the result of a beginning which could easily have been controlled, which was in Salem, Mass. Other pictures show similar instances in Augusta, Ga., and Worcester, Mass.

AUTOMATIC CONTROL OF FIRE

To conjecture how much worse the fire waste would be if it were not for the wonderful work of our fire departments would stupify the imagina-

tion. Much more agreeable it is to consider how much good has been done, not only by the human firemen but as well by the automatic firemen, automatic water sprinklers, in arresting much of the fire waste.

As bad as the fire waste has been, it might have been very much worse had it not been for the development of the art of automatic control of fire by water sprinklers, commonly termed automatic sprinklers, in the country's industrial and commercial properties, which has been in process for more than forty years.

What brightens the gloom of the picture portrayed of the clamitous fire waste is the fact that during the same 40-year period that has been remarked there have been more than 40,000 fires controlled by automatic sprinklers. This, conservatively estimated, represents an economic saving of fully \$5,000,000,000. To this we may add another \$1,000,000,000 as a reasonable estimate of the potential economic value of human lives saved to society.

The most signal exception to our national profligacy, and one which supplies a complete example in economic conservation of enterprise from the destruction and havoc of fire, is the textile industry.

The torch of fire fiend, which has been laying waste to the resources of our fair country to the extent of a quarter of a billion dollars annually for a number of years, touches the modern textile industry very lightly.

Why?

Because the textile industry has been tried by fire, apprehends the economic havoc of it, appreciates the limitations of insurance and the vital need of fire control.

And how has it been done?

By automatic control of fire by automatic water sprinklers which are opened by fire itself.

It would be impossible to operate the textile industry at all without automatic sprinklers. They are just as essential as the machinery of production and the sheltering buildings.

Why?

Because the frequency of process fires in cotton mills, for example, is more than in any other kind of human activity.

But despite this frequency the cost of fire insurance in the modern cotton mill is less than in any other class of endeavor.

And this has been brought about by automatic control of fire.

What it has done for the economic welfare of not only the textile industry, but also the paper and pulp, boot and shoe, woodworking and other principal industries of the country, automatic fire control by automatic sprinklers will do for any other class of enterprise.

Fire controlled cannot wreak economic havoc, and the automatic control of it, and paradoxically, protects the vital spark of human endeavor from burning to ashes, and without quenching it.

To him who runs and reads it will suffice to tell that the greatest single factor of wholesale economic distress is fire uncontrolled and the greatest single factor for its control and consequent economic conservation is the automatic water sprinkler.

No longer does fire lay waste to some of the principal industries of the country as it did a quarter of a century ago, because the need of automatic control of fire has long since been realized, and the principle applied.

Automatic sprinklers are one of the principal remedies for the control of the fire waste. They are because they discharge water where it is needed most; right in the heart of a fire; and when it does the most good; in the beginning of the fire.

In the prompt and precise use of water automatic sprinklers assure immediate control of fire.

The operation of an automatic sprinkler in controlling fire is graphically illustrated by the pictures which show the fire beginning, the water discharging, and the fire out. Another illustration reproduces a photograph taken of a sprinkler in operation which shows how extensively water is discharged over the area covered by one sprinkler, the maximum of which is 100 square feet.

Now let us consider a comparison between the methods of the human firemen and that of the automatic firemen—the automatic sprinkler, in controlling fire.

In the fight to control fire there are four stages of effort in the manual method: First, the fire is discovered; next comes the summons for assistance, the fire alarm; following this is the response to the alarm, the rolling of the apparatus; and, finally, action at the fire. And after this there is, more often than not, protracted inaction in the burned property, the interruption caused by fire.

But the automatic fireman comprehends all of these stages: discovery, summons, response and action, in one fell swoop, in less time than it takes to even discover the fire in the other method. And, after the sprinkler system is restored to normal operating condition everything is ready for another fire. Moreover, there is, more often than not, no inaction whatever caused by the fire and work goes on as usual. This comparison is graphically portrayed by the illustration on the screen.

A brief explanation of the character of an automatic sprinkler system is timely at this point. The automatic sprinkler is a valve held in a closed position by a series of links or struts cemented together with a solder of low degree, which fuses when heated by the fire, allowing the links or struts to fall away and the valve to open. A number of these devices arranged in a series of pipes designed to convey water constitute a sprinkler system. The sprinkler heads and pipes are arranged according to designs drafted by engineers.

In heated buildings the sprinkler pipes contain water, and are termed wet systems. In buildings not heated, the pipes contain air, slightly compressed, which holds shut an automatic valve controlling the water supply. When a sprinkler opens, the air escaping through the opening lowers the air pressure, and the automatic valve opens and admits water into the pipes.

The pipes carrying the sprinkler heads in each story of a building radiate in all directions from a vertical supply pipe, the "riser," decreasing in size as they progress toward the outermost sprinklers. The "riser" is connected at a low point, often in a basement, with the pipes from the water supplies. In standard equipments there must be two supplies.

In the "riser," just above the point where the supply mains meet, an alarm valve is generally installed. This device operates whenever water moves in the piping, so when a sprinkler is opened by a fire the alarm valve indicates the fact by admitting water to a hydraulic motor turning a gong clapper or operating a plunger to close an electric circuit and ring an electric gong.

Automatic sprinklers are soon opened by heat, located, as they are, close to the ceiling, and so speedy is the opening that the heat from a fire does not "bank" down low enough to make a room uninhabitable before a sprinkler opens and kills the fire.

The automatic sprinkler is rightfully acclaimed the world's greatest fire fighter. Here are the reasons: It is always on duty. Fire Chief Kenlon of New York says the automatic sprinkler is "the silent guardian of life and property, which 'slumbers not nor sleeps.'" It opens on the heart of the fire as soon as the heat makes itself felt, and does not have to be called from its quarters, like the fire department. It pours its water on the danger spot

and that spot alone, instead of deluging the building. It can work just as effectively in thick smoke, dense darkness and extreme heat as anywhere else, and can keep up its attack on a stubborn fire under conditions which would drive out the human fireman.

Now let us review some of the effects of this major remedy for the fire waste.

The first effect we will consider is the actual control of fire. The illustrations show actual instances of fires extinguished by sprinklers in widely dissimilar classes of property: an institutional building, a country clubhouse, a hotel, a factory, and in a covered pier in New York harbor, where huge quantities of cotton were stored. So effective was the operation of the sprinklers in this fire that the actual loss of cotton was only about 5 per cent, and there were several thousand bales exposed to the fire.

Illustrative of the efficiency of automatic sprinklers are the statistics of fires in properties having automatic sprinkler protection compiled by the National Fire Protection Association. For the 26-year period, 1897-1923, automatic sprinklers have successfully controlled 95.7 per cent of 28,814 fires. The chief reason for the lack of the success in 4.3 per cent of the number was because water was shut off in the sprinkler systems.

A recent instance of why automatic sprinklers do not control fire because water is shut off was the Shepard Store fire in Providence, R. I. As far as was observed the sprinklers controlled the first fire and the water was shut off. But the fire broke out afresh and there was some delay in opening the valves and in the confusion one was left shut. As a result the fire gained considerable headway in the part of the building where the sprinklers were not in commission.

This fire is another indication of the need of establishing a uniform fire department practice in handling fires in sprinklered properties throughout the country to which question fire department engineers should give most careful consideration.

More than one-third of the fires were controlled by only one sprinkler; and over 60 per cent by not more than three sprinklers.

In a number of diversified classes of property, such as bolt, nut and screw works, brush and straw hat factories, motion picture theaters, oil refineries and insulated wire factories, automatic sprinklers have had a 100 per cent record of successful control of fire!

In about the most hazardous of all classes, cotton mills, sprinklers were 99 per cent efficient. And in this one class were 22 per cent of all the fires!

In the classes of property recorded there are 42 in which there is a pronounced hazard to life. These are only 30 per cent of the total number of classes, yet in them were 52 per cent of the fires. And the proportion of fires successfully controlled in the "life-hazard" classes is 98.12 per cent, nearly 3 per cent better than the general average of successful control!

About the most horrible holocaust of fire in all history was that in the Triangle Waist Company's factory in Washington Place, New York, March 25, 1911, in which 147 lives were lost. This fire effectively exploded the delusion that there is safety from fire in a "fireproof" building. A "fireproof" building is a stove in which the contents are fuel and human beings potential cinders! Except when automatic sprinklers are installed. After this fire Commissioner Adamson of the New York fire department said: "Loss of life would not have occurred had the Triangle building been equipped with automatic sprinklers." And that, too, was the opinion of Fire Chief Kenlon and Battalion Chief Worth, who were in charge of the Triangle fire, and who have attended thousands of fires. The picture shows the havoc wrought by that fateful fire and factory as restored and equipped with automatic sprinklers.

The use of automatic sprinklers has become so extensive that there are now fully 20,000,000 persons daily under their protection from the peril of fire.

During the 40-year period of development of automatic sprinkler protection there have been perhaps 50 lives lost by fire in properties protected by sprinklers. These lives were lost chiefly because of immediate proximity to the fires. I will remark several typical instances:

A mechanic was at work under an automobile. The gasoline, which had been drained from the machine, became ignited. There was a quick flash fire and the mechanic so badly burned that he died. The fire was extinguished by sprinklers, and not even the automobile was badly damaged.

In a smokeless powder factory fire occurred in the mixing building. Two persons were killed. The sprinklers saved the building.

Ignition of naphtha in a rubber cloth works fatally burned two men. But the fire was controlled by the sprinklers.

Automatic sprinklers have scored practical perfection in safeguarding human life. During the 40-year period of development with millions upon millions of persons congregated daily in sprinklered buildings of all sorts of construction, and mainly of the quick-burning variety, there has not been a single instance of loss of lives under the usual circumstances of fires. But all the while the loss of life by fire in properties not sprinklered has been constant.

Automatic sprinklers have accomplished precisely what they were designed to accomplish: To give maximum safety from fire. Buildings have burned which were sprinklered. Therefore it may be argued that loss of life may occur in a sprinklered building. And so it may. Sprinkler systems may be out of commission. They have been. The human element may not be what it ought to be in the proper maintenance of automatic sprinkler systems. Because it has not been is why sprinkler systems have not controlled fires. But such cases are few. The sum of human error in this respect is small. And so is the chance of a serious fire in a sprinklered building, for in all these years there has not been one which resulted in loss of life.

More than ten fires a day are controlled by automatic sprinklers in this country alone. And many of these fires occur under conditions which endanger life. Yet the slate continues clean.

An instance of loss of life prevented by automatic sprinklers will be of interest:

Fire started in the third story of a five-story brick building of quick-burning construction occupied for the manufacture of celluloid buttons, 35 persons employed. The sprinkler system checked the fire. The fire department did not arrive until 15 minutes after the fire began—delayed alarm. It was due to the operation of the sprinkler system that no lives were lost. Several persons were overcome but were revived by the water discharged by the sprinklers. Not a single person was injured.

During his administration of the New York fire department Robert Adamson, fire commissioner, said:

"The automatic sprinkler is the best mechanical device yet perfected for the extinguishment of fires. The records of this Department show that there has never been a loss of life where sprinklers were installed, and with the exception of flash fires or explosions the sprinklers always either put out the fires in their incipency, or hold them to check, until the firemen arrive so that the firemen make quick work of them. The sprinkler is not only a property saver but a life saver."

Marshall Field & Co., Chicago, are among the most experienced users of automatic sprinklers. They say:

"We have all of our buildings equipped with automatic sprinklers and consider them the greatest factor of safety against fire; not alone as a protection to property but to human life as well, for the reason that if a fire starts, one head in all probability will control it, thereby eliminating all danger of panic and other serious trouble."

Reductions of rates because of automatic sprinkler protection range from 40 to more than 90 per cent of the rates on properties not sprinklered. And being relieved of the bulk of the onerous fire tax, manufacturers and merchants are able to increase their profits from 5 to over 20 per cent.

The savings in insurance cost resulting from the reduced premiums pay for sprinkler systems in far less time than it is possible to amortize a building investment. Moreover, after the sprinkler system has been paid for the investment keeps right on returning an annual dividend, which in some instances is over 25 per cent.

Though the investment feature of automatic sprinkler protection is of much practical consequence, it is by no means the chiefest. This is in the protection value of the sprinkler system.

We have considered the economic effect of automatic sprinklers upon insurance cost. But this is only one phase of the general effect.

At best fire insurance supplies only a money indemnity for the property damaged by fire, also in some instances for losses to income and profits during the stagnation period which follows fire.

Insurance is generally remarked as being protection from fire. It is not, in any sense, protection, but only a means of recovering a part, and only a part, of losses caused by fire.

For other, even more serious losses than the property, income and profits losses, which are the inevitable aftermath of fire, and may, and often do become irreparable, such as from the interruption of relations with the market, and with the personnel and structure of factory or commercial organizations, there is neither insurance nor indemnity, in the ordinary sense of these words.

But automatic sprinklers give protection against these contingencies; give an assurance against the probabilities of such losses, which money cannot buy, except in this way. They give protection from fire in the strict sense of the word, as absolute and as positive as human ingenuity can make it.

Automatic control of fire has revolutionized fire insurance both in respect of the cost of it and the methods of doing it, and, in addition, does what fire insurance cannot do in assuring enterprise against the interruption of fire.

As much as has been the economic effect, insurance-wise, it has been even more so industrially and commercially. Quantity and capacity are the fundamental factors in economical manufacturing and merchandising today. They would not be possible without automatic control of fire.

Quantity production in industry depends upon fast machinery and great buildings, and the concentration of enormous values in merchandising operations, which would not be possible without the definite control of the hazard of fire assured by automatic sprinklers.

A noted mill engineer said:

"The efficiency of automatic sprinkler protection is the chief cause in permitting the construction of very long and wide buildings, which bring about great concentration of values, which could not be risked at all if only the older methods of protection were available. The large areas, which are permissible because of this means of protection, greatly aid manufacturing on a large scale at low cost. Thus fire protection brings a direct and substantial return to the manufacturer."

The principle of automatic control of fire is wholly accepted in the textile industry. It is indispensable to the operation of a cotton mill as much as is the machinery of production.

This acceptance is well illustrated by the underwriting experience of an insurance company which confines its business to industrial properties, chiefly textile mill. Since the introduction of automatic sprinklers this company's business has increased more than 8000 per cent while the cost of insurance has decreased 84 per cent.

Another practical effect of automatic sprinklers is in the protection they afford against exposure fires; their operation inside a building keeps an outside fire from entering. The pictures show instances of this in several cities. The last one of the series is of the J. B. White Store, Augusta, Ga., which automatic sprinklers not only saved from destruction by exposure fire but averted a general conflagration as well. That the fire, which burned half a block of buildings on November 27, 1921, did not cause greater damage was due to the sprinkler system in the J. B. White Store, was the opinion of Chief Reynolds. If the fire had gained headway in the White Store he said that it would have been necessary to call for assistance from six of the nearest principal cities.

Another form of protection against exposure fires is the open sprinkler system with open non-automatic sprinklers over all openings in exposed walls. The pictures illustrate the operation of systems of this sort constructed on several prominent industrial plants. The water is turned on by hand.

The concluding series of pictures illustrates the wide range of application of apparatus for the automatic control of fire—automatic sprinkler systems—to the following classes of property:

Industrial, mercantile, office building, theaters, institutions, schools, hotels, etc. many of the buildings of so-called "fireproof" construction.

"Fireproof" popular fancy synonymizes with safety from fire; invests incombustible materials of construction with mysterious power to impart their characteristics of fire resistance to completed and occupied "fireproof" buildings.

"It's absolutely fireproof; it cannot burn," is the familiar contention of the owner of a "fireproof" building containing enough fuel in combustible contents to steam a mammoth ocean liner several days.

The Triangle waist factory fire, which took a fearful toll of human life in a "fireproof" building, and the Edison works fire which blazed unrestrained through nine "fireproof" buildings in seven hours, completely gutting them, are sufficient examples of the fact that it is not the function of a "fireproof" building to safeguard contents. The merits of "fireproof" construction are beyond question, but whatever these merits they cannot comprehend incombustible building materials as a sufficient assurance of safety from fire in an occupied "fireproof" building.

"Maximum fire protection," a manufacturer of an incombustible building material announced, would be assured by the use of it. How so, when maximum protection against fire comprehends not only the incombustion of construction materials but also active control of fire, and all that can be expected of incombustible construction materials is passive resistance? They cannot, by any stretch of fancy, be considered as having any effect whatever on the burning of combustible contents.

Complete fire resistance is made possible by automatic sprinklers. The fire-activated automatic discharge of water right where it is needed most, in the heart of a fire, not only actively resists the flames in combustible contents but also fortifies the passive resistance of the materials of construction.

In 1916, in a New York suburb, a seven-story "fireproof" storage warehouse experienced a fire which is comprehensively epitomized in this conclusion in a report prepared by Ira H. Woolson, consulting engineer to the committee on construction of buildings, National Board of Fire Underwriters:

"The one fact which stands out above all others in connection with this fire is that a suitable sprinkler system would have saved the concrete building with its contents. It is one more demonstration of the folly of depending upon fire-resistive construction alone to protect inflammable contents of a building from fire. The owners had evidently made sincere efforts to have a very safe structure. With all the precautions the building is today badly wrecked. The business of the owners will be more or less paralyzed for many months. All this would have been saved by a comparatively small investment in sprinkler protection."

A "fireproof" building is—completely—when sprinklered.

It has been asserted that business men, the creative element therein can specify what shall prevail in a community, and, because of this, are responsible for the character of conditions condoned, and, in consequence, are accountable for a decrease in the fire waste.

Business men can account for their responsibility to the community by seeing to it that proper conditions of safety prevail and that the constituted authorities are doing all that is possible to decrease the fire waste—that they are doing what is being done in the best of other communities.

If in every city there were a few business men who would, after every fire, ask themselves these questions: "Has everything been done that can be done to prevent and control fire in this city?" and "Have we ourselves done everything we can do to bring about proper conditions?" it would not be long before there would be a marked falling-off in fire losses. In other words if business men would hold themselves personally accountable for what communities suffer from fires, they would go far in accounting for their responsibilities for a decrease in the fire waste.

The cotton manufacturers accounted for their responsibilities. They went to the mat with the fire-fiend, and won! And on the basis of a simple philosophy: "Fire must be controlled immediately."

Are the other business men of this great country going to admit that they are losing in the same sort of fight the cotton millers won?

I am afraid they are. The extent of the fire waste was worse last year than it ever has been, even when San Francisco burned.

The way to win the fight and conserve what we create has been pointed out. The only thing left to do is to follow it. And bear in mind always that fire must be controlled immediately.

In conclusion I wish to sum up the proposition I have been discussing with you.

We need to conserve, to be more thrifty than we have been.

A great and most immediate need in conservation is the reduction of the fire waste.

The greatest extent of the fire waste is in commerce and industry, the business life of the country.

The greatest measure of control of fire by automatic sprinklers has been in commerce and industry.

Therefore the greatest need and the greatest remedy constitute automatic control of fire—the Greatest Factor of Conservation of the Times.

THE MOTION PICTURE

In addition to the lantern slide discussion, I would like to present for your information and, I believe, also your entertainment, a motion picture entitled "The Menace."

The greatest hope of accomplishing anything material in arresting the great extent of the nation's fire waste lies in the awakening of a sense of personal responsibility for fires.

Among the nations of the Latin races for the most part, a fire is a crime and a person who experiences one is immediately adjudged guilty and has to prove his innocence of wrong-doing, whether indirectly or otherwise. In this great country of ours, the burden of proof is not upon the person who experiences a fire, even though he may be actually guilty of either deliberately starting it or of encouraging conditions favoring its inception and spread, but the powers that be, representing the people, have to prove the guilt.

The maximum of personal responsibility is that where human life is involved. The principal accounting of personal responsibility in this respect has been and is in the provision for exits from buildings. It would seem that legislation specifying conditions of safety from fire has been based on the assumption that the only place of safety is outside the building; that when fire occurs it may not be controlled, and the only thing left to do is to get away from it—get outside.

It is a sad commentary upon the progress of civilization that it seems to be thought so generally that the buildings we build are potential firetraps.

In the motion picture, "The Menace," an attempt has been made to tell the story on the theme of personal responsibility.

In telling this story, a parallel is drawn between a man who did not realize his responsibility and one who did.

The man who did not realize his responsibility indulged the notion that incombustible materials of construction, popularly referred to as "fireproof" construction, assured a sufficient measure of safety to life, together with certain elementary means of manual fire control, and that fire insurance was sufficient to protect his business solvency.

As for insurance, the popular notion seems to be that it offers protection from the havoc of fire; whereas all that it actually does is to offer indemnification, and even this only in part, for property consumed by fire, and possibly, for some profits too for some of the period of interruption occasioned by fire—but there the indemnification ceases and nothing whatever may be received for the losses which are inevitable to interrupted operations and stoppage of business and lack of employment of workers occasioned by fire—all of which may be many times more in amount than the actual property loss.

In picturing the parallel of the man who realized his personal responsibility, it will be seen that he was influenced in this realization by a woman, a welfare-worker. The realization brought with it appreciation of the need of maximum security from the peril of fire, and that this is to be found chiefly in automatic control of fire.

The attempt was made in the picture to illustrate the operation of a sprinkler system in automatically controlling fire, also the character of the apparatus and economic effect of its use.

The picture, as is expected of motion pictures, tells its story, in its own way, most effectively.

I thank you sincerely for your patient attention, also Mr. Richardson for his courteous co-operation in projecting the pictures with his stereopticon lantern and Chief Johnson for arranging with Mr. Tarleton of the Bridge-

port Brass Company for the motion picture machine which has been used to good advantage tonight and many other times in this city by Mr. Tarleton in advancing the cause of fire prevention and control.

President Doyle: Gentlemen, please do not leave the hall, as we have one other speaker whom I am sure you will be interested to hear.

After listening to Mr. Hoagland's address, what is the pleasure of this meeting?

Chief Taber of Boston: I would like to ask Mr. Hoagland a question relative to the care and maintenance of a sprinkler system immediately after it has been in service at a fire?

Mr. Hoagland: I think the best example we may find anywhere of efficient handling of the situation after a fire is in Lynn, Mass. Some years ago I worked as an inspector there and I was much impressed by the methods pursued by the Department. After the fire the water was not shut off until it was absolutely determined that the fire was out. Then the water was shut off and the sprinkler heads were replaced, the fused heads taken out and new heads put in. It ought to be absolutely determined that the fire is out before the water is shut off. Sometimes the water is shut off before it is determined that the fire is entirely out. Of course you all know what happens in a case like that.

Chief Taber of Boston, Mass.: The question was asked me here tonight what the replacement would be on a city fire. We have many sprinkler risks and the operation as you see it is good for general use but the underwriters would put up a kick if the water was left on in the sprinkler system until the fire was out.

Our system is different from Lynn, Mass.; ours is cared for by the underwriters. They go to all fires in the City of Boston and the replacement has been made without failure immediately after the drainage was complete. New heads are put in by the underwriters' salvage corps. Isn't the drainage better where it is taken care of by the salvage corps? Or is it under the underwriters' control? Assuming that there is a fire in a department store, who is it up to?

Mr. Hoagland: In many cases it would be up to the plant management.

Chief Taber: I do not think that Lynn has anything on us in their system.

Mr. Hoagland: Please understand, Chief, I referred to Lynn merely because I was there and became familiar with conditions there.

Chief Taber: Of course, I understand. Tell me, will a Rockwood Head fit a Rhode Island Head?

Mr. Hoagland: Yes, any standard head is interchangeable. Engineer Caldwell stated that Chemical No. 1 in Lynn, Mass., carried anywhere from one to two thousand sprinkler heads and keys. The Fire Department have plans of every sprinkler system so they know where all shutoffs, controls and drains, etc., are located. They also have a Salvage Corps.

Chief Taber: That is all very fine and what we need is better education for all departments along that line. We have a school where for the sum of from \$5.00 to \$10.00 one may have fifteen lessons pertaining to the above. This we have established for the Fire Department in connection with the Underwriters and while it is new the attendance has been fair generally but not enough Chiefs have taken advantage of it. It is open for anybody and one man who would go could help in the education of others in the shutoff and care of sprinkler systems.

Engineer Caldwell: There is one point, Chief, which I think could be very well done by the Insurance Company and that is by the insurance inspectors who are laying out the sprinkler systems. As I would equip a risk

with a sprinkler system I would go to the Fire Department Chief to see if he wanted to go with me to go over that risk, or if he wanted to take an assistant with him, I would take him over that building, explaining everything. Then they knew where the controls letting in and shutting the water off were.

Chief Taber: We have a chart of all buildings in certain districts, their locations and cost; the type of heads, whether inverted or otherwise, and where controls are located in the building. I do not see where there is any advantage in allowing the water to run after the fire is under control.

Mr. Hoagland: Instead of saying that the water should not be turned off until the fire is out, I should have said, when it is definitely determined that the fire is under control, then doing the other things which are necessary, shutting off the water, etc.

Chief Taber: All Chiefs are working for the Sprinkler Company unpaid. We have a condition in Boston that does not exist in any other city. We have a new Police Force. We had a fire which was a \$103,000 loss, chiefly bales of Turkish rugs. The building was third class in the heart of a congested areaway. Nearby was a dining room, the Waldorf. The people all heard the gong from the system but apparently thought it was the dinner gong for they went ahead eating undisturbed. It developed later that three or four policemen heard the gong but did not know what it meant. Thompson then thought they had better educate the Police Force as to what these gongs were for. We might be peeved to find the water off but it is better than to go there and find a flood.

President Doyle: The hour is getting late, gentlemen, you have all heard Mr. Hoagland's address. What is the sense of this meeting in regard to Mr. Hoagland's discussion?

Motion made by Chief Moran of Hartford, seconded by Chief Johnson of Waltham, and unanimously carried that a vote of thanks be given to Mr. Hoagland and that his address and remarks be incorporated in the Minutes of this Convention.

Chief Johnson of Waltham proposed that Major Howland's address be postponed until Friday morning.

President Doyle inquired of Major Howland as to what his wishes in the matter were.

Major Howland stated that it would be perfectly satisfactory to him to wait until Friday morning.

It was decided to hold Major Howland's address over until Friday morning.

President Doyle impressed upon the members present the importance of arriving at the Friday morning session early, as there were many important matters to be taken up.

President Doyle: Tomorrow morning at 9 o'clock sharp a 500-gallon tank of gasoline will be set on fire in front of the Central Fire Station, and at 9:15 A. M. we will be in meeting here.

Tonight when you leave here there will be a demonstration by the Portolite Company to the side of the hotel.

At this time I want to thank every member who has remained here tonight, regardless of the weather, and the interest that has been shown by such a great number remaining to hear the speakers. I want you to understand that I appreciate it deeply.

Chief Taber: There should be some little time given after an address for discussion, as it goes to make for better service and a better knowledge of the topics at hand.

President Doyle: I thoroughly agree with Chief Taber that when an

address is discussed thoroughly it is more satisfactory; that is what we are assembled here for. But I was requested by one of the speakers tonight not to impose upon him tonight, that he would be here tomorrow and would be glad to answer any and all questions then. I did not care to put it up to the meeting but these men will be here tomorrow and if there are any further questions it would be well to take them up at that time. If there is no further business to come before this meeting the motion to adjourn is now in order.

Motion made by Chief Kennedy of Bryant Electric Company, Bridgeport, Conn., seconded by Chief Taber of Boston, Mass., and unanimously carried to adjourn, to convene tomorrow morning at 9 o'clock.

Meeting adjourned at 11:15 P. M.

June 22, 1923. Morning session.

9 A. M.: Meeting assembled at Central Fire Station to witness the demonstration by J. Cohn, representing Non-Explosive Corporation of America.

9:45 A. M.: Meeting called to order in Stratfield Hotel by President Doyle.

President Doyle: Gentlemen, you have seen the demonstration by Mr. Cohn, what is the sense of this meeting in regard to same?

Motion made by Chief Casey of Cambridge, Mass., seconded by Chief Johnson of Waltham, Mass., and unanimously carried that Mr. Cohn be given a vote of thanks.

President Doyle then introduced Major J. H. Howland, Engineer, National Board of Fire Underwriters, New York City, whose address was postponed from last evening.

Address of Major J. H. Howland, Engineer, National Board of Fire Underwriters, New York City.

"STANDARDIZATION OF FIRE HOSE THREADS"

Mr. President, Fire Chiefs, Members and Guests: It is always a pleasure to be accorded the privilege of mingling with and enjoying the hospitality of you Generals in the Fire Fighting Game, and from the experiences of yesterday I am sure that this first convention of the New England Association of Fire Chiefs is no exception.

I am glad indeed to be afforded the opportunity of speaking to you at this first annual convention and I am sure that the National Board of Fire Underwriters brings to you its greetings and wishes you the fullest measure of prosperity and growth.

I am invited to speak to you on a topic that is a half century old, that perhaps for some years went into a period of dry rot, but is now going over the top strong—namely, the Standardization of Fire Hose Threads. Many of you have from the time of Mr. Griswold, kept posted on this subject, yet I want to review briefly the recent accomplishments in obtaining uniform fire hose threads.

Starting, as I said before, over fifty years ago, immediately after the big Boston fire of '72, the first real effort on standardized threads was taken up in Massachusetts. As you all know, the so-called Roxbury thread was pretty generally adopted throughout Eastern Massachusetts, but unfortunately there and in other sections of the country they did not realize that they were taking up a matter of country-wide importance. The start in and around Boston spread through Massachusetts to only a limited extent. New York adopted a much smaller and finer thread and Baltimore adopted a larger thread than either.

You will find that not only in different sections of the country and in different States, but sometimes in the same city there are many widely different sized threads used, many of which are not interchangeable.

The call of our nation and of the world today is "Prevention." Secretary Hoover said in Des Moines: "We cannot look with confidence to the continuity of our civilization itself, unless we build up preventative measures."

The standardization of fire hose threads is a 100% preventative measure. It should have the full co-operation of our Fire Chiefs, firemen, superintendents of water supplies, the business men and the general public. Massachusetts with few exceptions is unusually well off on the question of hose thread standardization but most of the other states are in an extremely bad way, particularly the state of Connecticut. If you will look into the records of the existing threads, you will find that Connecticut has pretty nearly all of the different threads made and then some; for the most part they are not interchangeable. Some have adapters, it is true, and some have not.

Enough has been said about the existing chaotic conditions which we all have been trying to remedy for a great many years.

Many of you knew Mr. Griswold, who was for so many years Chairman of the N. F. P. A. Thread Standardization Committee. The first organization as most of you know, that undertook the standardization of fire hose threads on a large scale, was the International Association of Fire Engineers' aim, but after many difficulties, they agreed to disagree and did not get far. The organization that first put this standardization movement on its feet was this N. F. P. A. Committee under Mr. Griswold. It spread the doctrine throughout the length and breadth of the land, but aside from spreading the gospel little was done to remedy the existing conditions in the field.

During the war our force was working for Uncle Sam, and of course other work was laid aside.

We first recognized that the particular factor in bringing about a correction of this situation was the preparing of tools to convert existing threads to the National Standard. Through Mr. F. O. Well, then President of the Greenfield Tap & Die Company, and through a great deal of personal interest on his part, a complete set of tools were made up and first tried out in two small municipalities in New Jersey and a month or two later in two of the Indiana towns. The results of these tests were very gratifying. We were encouraged to go ahead and interest the different states in this movement and you know something of the pamphlets which were widely distributed, entitled "The Standardization of Threads for Fire Hose Couplings and Fittings," and the year following that of a "Suggested Method of Procedure for Accomplishing State-Wide Standardization."

Michigan and New Jersey in 1920 led in adopting this state-wide movement; they started right in, organizing with the co-operation of the Fire Chiefs' Associations and the Underwriters' Rating and Inspection Bureaus, and from the very start made very encouraging progress in converting their municipalities to standard. Today we have thirteen states in which this standardization of fire hose threads is under effective headway as a state-wide movement. There has been no similar movement heretofore started that has met with stronger endorsement or more generous public support.

The business men have become very much interested in this movement and those of you that heard the address of Charles Greenfield at the February meeting of the Massachusetts Fire Chiefs' Club will realize what it means to an association like yours to have embodied in its program so constructive a work as this—"Standardization of Fire Hose Threads."

It was this movement alone which within two years after it was taken

up by the New Jersey State Fire Chiefs' Association, increased their membership 150%. This association has also gone into the question of protecting the public schools. They expect to report the correction of all such fire hazards in the state of New Jersey. These fire chiefs are becoming a real power in fire prevention matters. I do not think there is anything will help to make this association grow faster than including such items on your programs as the standardization of fire hose threads. What strikes me as most important in this country is the opportunity you fire chiefs have to make the business men and the public at large recognize your influence by correcting unsatisfactory and unsafe conditions.

Year by year we are coming to a more truthful understanding and appraisal of the great benefits to be derived from effectively curtailing our fire waste. Why is it that in spite of the best fire fighting facilities in the world we continue to sacrifice annually this 15,000 lives and upwards of a half a billion dollars in property values? The trouble is behind the smoke screen and due to indifference and carelessness on the part of our American people. Comparatively little has been done to clean up the conditions back of the screen.

One of the important things to do which is altogether feasible and practicable and which we have been rather indifferent to until recent years, is to standardize fire hose threads. Is there any one piece of equipment upon which human lives and property values are more dependent than that threaded connection between the indispensable hydrant and hose outlets? Take the threaded hose connection away from you and you are practically helpless. Yet you let these widely different and non-interchangeable threads continue to be used all these years and take a wild gamble on being able to help each other out in the event of a bad fire.

What happened in the Baltimore conflagration? New York, Philadelphia and Washington with powerful companies all responded to the call for aid and when they reached there were of little or no assistance due to the fact that they could not connect up with the Baltimore hydrants.

In Augusta only one out of seven visiting departments that responded to her call could connect up with the local hydrants. This failure to connect up to hydrants in an afflicted city or town has been a large factor in losing control of many of our most disastrous fires. It is an easy matter to remedy. All we need is 100% support from you fire chiefs.

In the February meeting of the Massachusetts Fire Chiefs Club, they passed a very constructive resolution, endorsing and advocating the standardization of fire hose threads, and providing for the appointment of a committee with power to act and co-operate with other kindred organizations to put this movement across.

The New England Insurance Exchange recently authorized the purchase of a complete set of tools and have offered to co-operate with the Massachusetts Fire Chiefs' Club in this great work. I am sure that the Exchange stand ready to render similar service to this Association.

I sincerely hope that the New England Association of Fire Chiefs will at this, its first convention pass a resolution, to the effect that it endorses and advocates the standardization of fire hose threads throughout the protected cities and towns in the New England States and appoint a Committee on the Standardization of Fire Hose Threads, a working committee, and provide also for the purchase of at least one complete set of tools. It is a very inexpensive, altogether feasible and great public welfare movement.

You are making a mistake in purchasing in the future anything but the National Standard Thread, because there are bound to be variations in every other thread that is specified.

You will be interested to know that only three weeks ago I attended a meeting of the Brass Hose Fittings Manufacturers' Association in Cleveland. At that meeting they passed a resolution appointing a committee of one to negotiate with the listed manufacturers for the purchase of a complete set of National Standard Thread limit gauges for each and every member present. With a set of these gauges to check the product you can be sure that no variations from ideal uniformity can be introduced.

With regard to the standardization tools, will say that they have been tried out and found practically fool-proof and have a very useful place in the equipment of any sizeable fire department. You should procure a set of these tools if for no other reason than to renovate threads that have become worn or badly mutilated, thereby keeping the form of thread up to standard pitch and diameter.

The business men of New Jersey have seen the value of standardization work and helped to establish for the State Fire Chiefs' Association an endowment fund, the proceeds of which are to be used solely for fire prevention work. Why not go after similar support here in New England? Everyone get into the harness, on the band-wagon as it were, and appoint your committee, buy a set of tools and start the work of conversion.

The fire commissioners of North Manchester and Rockville, Conn., sent in authorizations some three months ago to have their threads standardized. Other nearby municipalities have been somewhat slower in following suit. Chief Milne of Rockville told me yesterday that he would like to have their threads made standard at this time so that a shipment of new hose which is to be fitted with standard threads will fit when it arrives. A set of tools is going to be forwarded at once, and on Wednesday afternoon at 1 o'clock Mr. Caldwell and I are to be there to start the standardization of the Rockville threads. Those of you within striking distance of Rockville are cordially invited by Chief Milne to see how readily non-standard threads can be converted to standard.

This is the first city that I know of in New England to undertake the complete standardization of its existing threads. Gentlemen, come over and see the work done. We will satisfy each and every one of you that you should do likewise in your town. Get behind this great movement and show your approval by first authorizing the purchase and use of at least one complete set of hose thread standardization tools.

President Doyle: You have all heard this interesting address of Major Howland, what is the pleasure of this meeting regarding same?

Motion made by Chief Johnson of Waltham, Mass., seconded by Chief Taber of Boston, Mass., and carried unanimously, that a vote of thanks be given Major Rowland; that his address be incorporated in the Minutes of the Convention; that we adopt Major Howland's suggestion, and if the finances of the Association would warrant the expenditure, that this Association purchase at least one set of standardization tools.

President Doyle: The next business at hand is the report of the Credentials Committee.

Committee had no reports to make at this time.

Chief Taber of Boston, Mass.: There were three gentlemen appointed by the Chair to draw up resolutions re the Automatic Gas Shut-Off Fuse on Gas Meters. I have them here to read to the assembly:

Recognizing the automatic gas shut-off on gas meters as a distinct factor in the elimination of a fire hazard and believing the installation of the same to be an advance in the proposition of abolishing fire menaces, it is, therefore, hereby resolved, that it is the sense of this Convention that all delegates

recommend to their various municipalities the passage of such legislation as will require the installation of the same.

Signed by: CHIEF JOHN O. TABER, Boston, Mass.
CHIEF JAMES E. CASEY, Cambridge, Mass.
COMMISSIONER GEORGE T. McCARTHY, Lewiston, Me.

President Doyle: You have heard the resolutions as read by Chief Taber. What is your pleasure?

Motion made by Chief Johnson of Waltham, Mass., seconded by Chief John C. Moran of Hartford and unanimously carried that the resolutions as submitted by Chief Taber be adopted.

President Doyle: Through Mr. George F. Cobb's efforts, arrangements were made with the New England Passenger Association, whereby a reduction in fare would apply for members and dependent members of their families under the Certificate Plan. The only requirements were that all should ask for those certificates and that there be 250 certificates presented, showing that that many fares of not less than 67 cents each had been paid one way. These certificates would then be validated by Special Railroad Agent, and upon presenting same at ticket office, you would receive your return ticket over same route at one-half fare. Of course we could not get the benefit of this reduced rate unless we had 250 certificates turned in. I want to call this to your attention at this time so that next year, each and every member will remember to ask for this certificate, whether you yourself are going back by rail or not, so that the other members who are going back by rail will receive their one-half fare rate. So get your certificate, even if you yourself are planning on returning by some other route.

Now, gentlemen, Mr. Cobb, although unofficially appointed, we might say, by the Directors of the Association, has worked very hard and successfully for you all, and before I relinquish my office as President I would like to have this organization make Mr. Cobb Permanent Traffic Officer for this Association. I merely make this suggestion and would like to hear from some of the members present on this subject.

Motion made by Chief Johnson of Waltham, Mass., seconded by Chief Morris of Lawrence, Mass., and carried unanimously that Mr. Cobb, if he is willing to give this Association the valuable time which is known to be his, be elected Permanent Traffic Officer of The New England Association of Fire Chiefs.

President Doyle: I suggest that we give a rising vote of thanks to Mr. Cobb in appreciation of all that he has done for this Association.

Motion made by Chief Casey of Cambridge, seconded by Chief Mahoney of Westfield and unanimously carried that Mr. George Cobb be given a rising vote of thanks.

Chief Morris suggested that Mr. Cobb stand up so that all members could see him and in the future those who did not already know him would do so.

Mr. Cobb: I am always very glad to help in any way at all. I will always try to do my part and want to ask the co-operation of all members so that next year when we send out over 1900 postcards, as we did this year, you will all answer them. These cards were all printed with the questions so that it was only necessary to answer "yes" or "no," and still you did not return them as requested. I'll do my part, so please come across with your responses.

President Doyle: This brings us back to the thought or fact that with the exception of Fire Chiefs in the large cities who are fortunate enough to have a secretary, a great majority of the Fire Chiefs are inclined to lay

their mail aside and fail to answer it. This is a mistake, a mistake that I have made. All correspondence should be answered promptly. I think it will be very much better for the Chiefs themselves and the municipalities which they represent to attend to this and similar matters promptly.

In our organization one of the State Vice President's duties is to increase the membership in that particular State. Some of our State Vice Presidents have fallen down by the wayside on this score, in fact I know of one or two who have done nothing. They even forget to send in their dues to the organization and we hope that the State Vice Presidents will fulfill their duties. The main duty is to increase the membership in their various States. Otherwise do not expect a maximum growth. We want this to be the greatest and grandest organization in New England.

Chief Taber of Boston: Perhaps there are other State Vice Presidents like myself who have never heard what the duties of the State Vice Presidents or any other officer of the organization were. For this information has never been made known since its inception. I would like to suggest that rules and regulations be drawn up and to fit the organization. It is everyone's intention to have it grow. It can be made the best organization of its kind in the country. First let us get rules governing the officers. Assess the members if necessary to defray the expenses of getting this pamphlet out.

President Doyle: In reply to Chief Taber of Boston I would say that the organization has got a Constitution and By-Laws. At the first meeting of the Convention I offered to have the Secretary read them if it was the sense of the members present. They did not care to have them read. Because of the fact that it was a new organization and because it was not financially strong enough it was considered good business to have the Constitution and By-Laws incorporated in the Records of the Convention yearly as we were not in a position financially to have them printed and circulated through New England.

Chief Taber: You have to have a guide. I consider that a small pamphlet is much more suitable to contain the Regulations and By-Laws than a large Year Book which is laid aside as soon as looked through.

President Doyle: In regard to the State Vice Presidents, I was of the opinion that the Secretary wrote to all State Vice Presidents as to what their duties were. I will now call on the Secretary.

Secretary O'Hearn: Every Officer, elected or appointed at the Boston meeting, regardless of whether he was present at the meeting or not, was again notified. Every State Vice President was notified as briefly as possible what his duties were in their particular State and one of the things that was drilled upon was the importance of increasing our membership. With each letter was mailed applications and a circular letter to be used in securing new members.

Chief Taber: Referring to the Secretary's statement, that all may be quite true, still I never received any notice of any kind. It may have been that my secretary treated it as a circular letter and destroyed it. I never saw any such letter. To start the thing right there should have been a pamphlet. There is something distinguished about a pamphlet, it is more dignified. A circular letter don't mean anything except for advertising matter. Personally, for my part, I do not care whether I am State Vice President or not, I intend to work for the organization anyway.

Secretary O'Hearn: The letters to the State Vice Presidents were personal letters enclosing therewith circular letters for men who might make good members. In this connection I distinctly remember receiving Chief Taber's acknowledgment of this letter and if my memory serves me correctly I have this acknowledgment of Chief Taber's in my suitcase in my room here in the hotel.

Chief Taber: Are you sure it was an acknowledgment of that particular letter? It seems to me it is of some other matter.

Secretary O'Hearn: I said if my memory serves me correctly I have your acknowledgment to the letter referred to in my room here in the hotel.

President Doyle: As an organization we were short on finances and we could not do very much, but as for the Secretary, I know that he has done excellent work and I want you to know that we were not in a position to put an assessment on members because the members accepted Resolutions and By-Laws that did not permit of such an assessment.

Gentlemen, if there are no further remarks, the next business on the program is the election of officers. The By-Laws provide that the nominations will come from the floor.

Motion made by Chief Taber of Boston, seconded by ex-Chief Weeks and carried unanimously that we proceed to the election of officers.

Motion made by Chief Hurley of Holyoke, seconded by Chief Casey, one ballot cast by the Secretary upon instructions of the President and carried unanimously that Chief John C. Moran of Hartford be elected President.

President Doyle: It gives me great pleasure to turn my gavel over to a man whom I know will lead this Association to prosperity.

President Moran: I appreciate this honor which you have given me this morning, very much indeed. I am not going to make any promises. But I will always do my very best for the good of the organization. I would like to ask now that every member here consider himself a member of the Membership Committee.

"We have had a motion to purchase a set of tools; these will be for any one who wishes to use them. It will be a great benefit to small towns who cannot afford to purchase a set of these tools. This Association is getting along very encouragingly and in my opinion it is going to be a big success. The discussions that we enjoy here are a real help. We had an example yesterday morning and we entered into it in an interested way.

Gentlemen, what is your further pleasure?

Ex-President Doyle: I move you, sir, that we continue with the election of officers.

Motion made by Ex-President Doyle, seconded by Chief James E. Smith of Nashua, N. H., that Chief Patrick J. Hurley of Holyoke, Mass., be unanimous choice of the Convention for First Vice President, and that the Secretary be instructed to cast one ballot bearing his name. It was unanimously voted.

Motion made by Chief Casey of Cambridge, seconded by Chief Johnson of Waltham, Mass., that one ballot be cast by the Secretary and carried unanimously that Chief Daniel E. Johnson of Bridgeport, Conn., be elected Second Vice President.

Calls for speech from Chief Johnson.

Chief Johnson: I certainly want to thank you for this honor. I appreciate it immensely. I am not given to speechmaking, but you may be sure I will fulfill the duties of my office to the very best of my ability.

Motion made by Chief Johnson of Waltham, Mass., seconded by Chief Taber and carried unanimously that Chief John W. O'Hearn of Watertown, Mass., be re-elected Secretary-Treasurer.

Motion made by Chief Tracy, seconded by Retiring President Doyle, that one ballot be cast by President for Secretary O'Hearn.

Ballot cast for John W. O'Hearn as Secretary-Treasurer.

Motion made by Commissioner McCarthy of Lewiston, Me., seconded by Chief Tracy of Woburn, Mass., one ballot cast by the Secretary and unanimously carried that Chief W. J. Samson of Lewiston, Me., be elected Vice President of Maine.

Motion made by Chief Daniel E. Johnson of Bridgeport, Conn., seconded by Chief Kennedy of the Bryant Electric Company, one ballot cast by the Secretary and carried unanimously that Chief Taber of Boston, Mass., be elected State Vice President for the State of Massachusetts.

Motion made by Chief Hurley of Holyoke, Mass., seconded by Retiring President Doyle, one ballot cast by the Secretary and carried unanimously that Chief Carl D. Stockwell of Burlington, Vt., be elected the State Vice President for the State of Vermont.

Motion made by Chief Daniel Johnson of Bridgeport, Conn., seconded by Chief James E. Smith of Nashua, N. H., one ballot cast by the Secretary and carried unanimously that Chief Charles French of Manchester, N. H., be elected State Vice President for the State of New Hampshire.

Motion made by Chief Weeks, seconded by Chief Tarlton of the Bridgeport Brass Company, one ballot cast by the Secretary and carried unanimously that Chief Robert Browning of Central Falls, R. I., be elected State Vice President for the State of Rhode Island.

Motion made by Chief Harford of Norwalk, Conn., seconded from the floor, one ballot cast by the Secretary and carried unanimously that Chief H. H. Heitman of Waterbury, Conn., be elected State Vice President for the State of Connecticut.

Motion made by Chief Tracy, seconded by Retiring President Doyle, one ballot cast by the Secretary and carried unanimously that Chief David A. DeCoursey, Winchester, Mass., be elected Sergeant-at-Arms.

Retiring President Doyle informs questioner from the floor that the President appoints all Trustees, and that all other officers are elected.

Motion made by Retiring President Doyle and carried unanimously that the Convention give a rising vote of thanks to the Connecticut Firemen's Association and to Chief Daniel E. Johnson for the wonderfully enjoyable time they had given the visiting Chiefs.

A rising vote of thanks given, accompanied by three cheers.

Motion made from the floor that a Committee be appointed to attend to the proper testimonials of appreciation to be sent to all who helped to make this Convention so successful.

Motion made by Retiring President Doyle, seconded by Chief Kennedy of the Bryant Electric Company and carried unanimously that a committee be appointed to draw up resolutions to be presented to the City of Bridgeport for the royal good fellowship extended to this Association at its first Convention. This Committee to be appointed by the President.

Motion made by Chief Hurley that Chief Johnson and the Bridgeport Fire Department be included in the above list to receive testimonials for all that they have done toward the successful Convention enjoyed by all.

Retiring President Doyle: I believe that the Committee appointed by the President will cover all that Chief Hurley requires and desires, including the Mayor of the City of Bridgeport, the City Council, the Fire and Police Departments and all others involved.

Chief Farmer of the General Electric Company suggests that the Press should be included in the list.

President Moran then appointed a Committee of three to draw up suitable resolutions thanking Chief Johnson, the City of Bridgeport, the Mayor of Bridgeport, the City Council, the Press, Chamber of Commerce, the Police Department, the Fire Department and all who helped in entertaining the visiting Chiefs.

Committee appointed: Retiring President Doyle of Wellesley, Mass.; Secretary O'Hearn of Watertown, Mass.; Chief Johnson of Waltham, Mass.

Chief Johnson of Waltham, Mass.: Do we want to thank the Police Department for keeping us out of jail or for not putting us in? Laughter.

Chief Taber of Boston: At yesterday's session our Fire Commissioner very kindly suggested the City of Boston as the convention place for the 1924 Convention for this Association. He also instructed me, when he left yesterday, to make a second offer at this session of what he had already offered relative to that invitation. Now his reasons, and he looked at it from a practical, liberal viewpoint, were that, first, the organization is young, it needs building up to strike a happy medium. In Boston subjects can be taken from the center, in fact the starting point of interest. Underwriting Bureaus which affect our physical conditions, etc., and lecturers can be procured from the outside as well as from within. He said that it would be well for many of the lecturers to come from our ranks. I think very well of the idea, always did. Last, Boston has accommodations for all that you can assemble. The Exhibit Hall is also a desirable facility.

The entertainment which is essential and always welcome after an arduous session is practically unlimited. Good dining places, theatres, some one hundred in number.

Every condition that would affect fire fighting can be seen in Boston. There are 94 fire companies in Boston, with 266 double unit outfits, together with a modern fireboat fleet. There are also colleges for fire fighters, for chauffeurs, pumping and drill schools. A large sum has already been set aside by the city to go toward the entertainment of the Association members. It would be well for all Chiefs to visit Boston.

In speaking thusly we do not wish to take from any other section. This had been made an offer to this organization more because of its youth and to help it financially. In a word, the Massachusetts Fire Chiefs' Club assembles there monthly and they wouldn't assemble there if it wasn't an easy point of concentration.

I think, gentlemen, that you would do well to think seriously of this offer. We have no motive other than the good of the organization. To survive and grow an organization must have a good sound foundation.

Chief Stockwell of Burlington, Vt., read letters: one from Mayor J. Holmes Jackson of Burlington, Vt., and one from Mr. F. E. Perkins and Frank C. Wheelock of the Board of Fire Commissioners of Burlington, Vt., and one from the Burlington Chamber of Commerce, C. D. Ordley, President.

The letters were invitations to the members of this Convention to hold their 1924 Convention in Burlington, Vt.

Some of the members did not hear the letters and requested the Secretary to re-read them.

OFFICE OF THE MAYOR

J. Holmes Jackson, Mayor

Burlington, Vt.

To the Officers and Members of the New England Association of Fire Chiefs:

Gentlemen: Learning from Chief Engineer Carl D. Stockwell of our Fire Department that you are to hold your first annual Convention at Bridgeport, Conn., I, as Mayor of the City of Burlington, extend to you, through Chief Stockwell, an urgent invitation to choose this city for holding your second annual Convention. I feel sure that our citizens and especially the members of our Fire Department would be gratified if you should make such a choice.

Respectfully,

June 18, 1923.

J. HOLMES JACKSON, Mayor.

FIRE DEPARTMENT HEADQUARTERS

Fire Station No. 1.

Burlington, Vt., June 18, 1923.

New England Fire Chiefs' Association,
John P. Doyle, President.

Dear Sir: It is the pleasure of the Fire Commissioners of the City of Burlington, Vt., to extend to your Association a most cordial invitation to hold your next annual Convention in our city.

Sincerely,
F. E. PERKINS,
FRANK E. MORGAN,
H. C. WHEELOCK,

Board of Fire Commissioners.

BURLINGTON CHAMBER OF COMMERCE

June 18, 1923.

Mr. C. D. Stockwell,
Chief of the Fire Department,
Burlington, Vermont.

My dear Mr. Stockwell: The Burlington Chamber of Commerce desires to extend through you to the New England Association of Fire Chiefs a very hearty invitation to hold their annual Convention for the year 1924 in the City of Burlington.

We feel that it would be an honor and a privilege for Burlington to be the scene of the annual meeting of an organization which is so important for New England and which means so much to New England citizens and to New England property.

Burlington would extend to the delegates the heartiest sort of a welcome to the city and to this wonderfully beautiful region. Burlington-on-Lake-Champlain is a port on the greatest of New England lakes, in fact an inland sea. The city lies under shadow of the Green Mountain Range and to the east of the Adirondacks, so that mountains are ever present in Burlington views and offer delightful trips before and after your Convention.

We feel that if you visit us you will agree with those who first called, and with us who now call, Burlington the "Queen City."

Please extend, then, in the name of the Burlington Chamber of Commerce a most cordial invitation to the Fire Chiefs to hold their Convention for 1924 in the Queen City.

Yours very truly,

BURLINGTON CHAMBER OF COMMERCE,

C. D. Ordway, President.

President Moran: You have heard these two invitations, one from Chief Taber and one from Chief Stockwell, what is your pleasure?

Chief Shepherd of Pittsfield, Mass., thought that either Chief Taber or Chief Stockwell would have to go some to come up to the hospitality and so forth of Chief Johnson and the City of Bridgeport and invites the Convention to Pittsfield Hills in 1925.

Chief Taber: In addition to the 94 companies, accounting for 1434 men, the colleges and drill schools, chauffeur and pump schools, fireboats and everything that any city on the water front or inland have for fighting fire, we have the best facilities for making tests on gas masks in the United States. We do not bar anyone and every new known means for staging tests are housed in this station. We have two emergency crews, in fact everything that you people would be most interested in. I am for the interest of the public, in a word I am for your interest.

Chief Stockwell: I did not come all the way down here to get in a scrap, I withdraw my invitation in favor of Chief Taber.

Chief Taber: It isn't in my category to hurt any one, I believe it to be for the good of this organization to come to Boston and I presented my argument accordingly. I simply stated facts concerning the advantages of this organization in its youth coming to Boston in 1924 for its Convention.

President Moran: Won't you reconsider your withdrawal of your invitation, Chief Stockwell, and allow it to stand?

Chief Stockwell replied by making a motion that the New England Association of Fire Chiefs hold their 1924 Convention in Boston, Mass.

Chief Johnson of Waltham, Mass., seconded by Chief Harford of Norwalk, calls for a counting vote of the floor.

Result: Twenty-six active members voted to go to Boston; four active members voted against going to Boston. The resolution was therefore affirmed by 22 votes.

Motion made by Chief Stockwell, seconded from the floor and carried unanimously that the Association hold its 1924 Convention in Boston.

President Moran: Gentlemen, please keep your seats, the meeting has not yet adjourned.

President Moran introduced Mr. Costello of Bridgeport, Conn.

Mr. Costello: President, Gentlemen and Guests: You all know Chief Johnson and I want you all to know that he is just a regular fellow. Firemen have a responsibility and a great function which takes every minute of their time. Bridgeport is very fortunate in having you here for your first Convention and we hope that you may again come here. I also hope that we may all meet again in Boston. I do not think that Boston with all its one-half million people can put anything over on Bridgeport. I want to extend to you for the City of Bridgeport a welcome any time you wish to come here and that our worthy Chief will welcome you, and so will our fine Mayor, Mr. Atwater, and we will all be only too glad if you will again choose the City of Bridgeport. We don't want you to go away from Bridgeport, so this afternoon we will play the New Haven Fire Department for your entertainment. The Bridgeport Fire Team is one of the best in the State. Try to stay until the evening or the night—stay the limit. We are only too grateful to have you boys, I mean Chief Greene of Concord, N. H., too. when I say boys. Now, boys, I want you to give three cheers for the finest Chief in the United States, Daniel E. Johnson.

Three cheers for Chief Daniel E. Johnson, heartily given, also three cheers for the City of Bridgeport, Conn.

Retiring President Doyle: Mr. President, there is one other very important duty to be performed by the Association this morning and which might come under the heading—New Business, and that is to state the salary of the Secretary. The salary should be set yearly.

As Past President of the Association, as the man most closely associated with the Secretary, I am in a position to suggest what the Association might well do in the way of compensation for the work of the past year and also for the coming year.

What I am going to make first is a suggestion as to what I think should be paid him, but it is only a suggestion. I think that \$100 for his services from last July to the present time, and his salary up to the next Convention should be \$300, making a total of \$400 due him for the duties of two years, carrying him up to the next Convention.

Having in mind that our finances are not very great, I have placed the amount very low.

Motion made by Chief Fuller of Pawtucket, seconded by Chief Hurley

of Holyoke and unanimously carried that the amount of salary suggested by Retiring President Doyle be paid to Secretary O'Hearn.

Secretary O'Hearn: I want to thank you gentlemen. I will accept the \$100 for the past year. We do not know just how much is in the treasury. I will not draw on the \$300 until next year. I do know that there is \$100 and enough for the one set of tools.

Chief Taber: Gentlemen, you have all heard the Secretary and he has proven his worth. I fully agree with him when he states that he will not draw on this year's salary until next year. Going along conservatively is the right method of procedure and he has in view the well-being of this organization from the few remarks that he has made. I know that he is keenly interested in the organization and we should all deeply commend him for it.

As a motion I move that the Association's Secretary-Treasurer be directed to arrange the code affecting this Association in a simple pamphlet form to be printed and sent to all members regarding all duties of the officers, dues, etc., affecting all members.

President Moran: I understand that these will all be printed in the Year Book annually.

Chief Taber: My idea, Mr. President, was simply this—that in an organization a small book of rules which could be carried in your pocket would be more of an incentive than a Year Book which when looked over is either filed away or thrown out.

Retiring President Doyle: Before that motion is put to a vote I want to state for the benefit of Chief Taber and members that we had considered doing such a thing and that our eight typewritten sheets would amount to some 25 or 26 sheets printed in such a pamphlet and approximately cost \$300 or \$350. It is really like taking that much money and throwing it to the four winds. It seems to me that the Year Book is more satisfactory and ready of access, answering as it does all questions regarding the organization.

Chief Johnson of Waltham, Mass.: As long as I can remember we have never had any printed rules or regulations other than appeared in the Year Book of this Convention. In the International Association we have never had any printed form other than what is printed in the Year Book. The recent Fire Alarm Book is expensive. I would rather spend the money that the printed pamphlet would cost on the purchase of two sets of tools. I am not a piker, but in all the organizations that I belong to I have never yet received a printed book of By-Laws except in the Massachusetts Fire Chiefs' Club. Let our By-Laws go along every year and come out in our Year Book and let's save them. If we have any extra money let's get another set of tools.

Chief Taber: I withdraw my motion, as I believe that Chief Johnson is absolutely right in his contention that an extra set of tools would be more beneficial to the greatest number in this organization. It will also please the Underwriters.

Chief Johnson: My object is not to please the Underwriters. My object is to help the poor fellow who cannot afford a set of tools. I will say, however, that the Underwriters have done more in the last 25 years for firemanic organization than they will ever get credit for. When you get down and out they will stand back of you 100% also. If we have got any money to spend let us get another set of tools. I am not trying to help the Underwriters, they do not need it.

Chief Hurley of Holyoke requests information as to whether the Directors are appointed or elected.

Retiring President Doyle: The Directors are appointed by the President of the Association.

President Moran: If there is no other business to come before this meeting the motion to adjourn is now in order.

Motion made by Chief Johnson of Waltham, Mass., seconded by several members from the floor and carried unanimously that a vote of thanks be extended from this organization to Retiring President Doyle for the work that he has done in establishing this organization; to the Officers and the Secretary who assisted him and to all others who in any way made possible the birth of this organization.

Chief Johnson of Waltham, Mass.: Retiring President Doyle should be given credit for all that he has done in establishing this organization. To my mind it is going to be one of the grandest that has ever been known. It has always been my dream to see just such an organization started. I can see just what this means to the six New England States.

We are a little colony here, the original pioneers that this continent had ever seen. When the man who fired the shot at the battleground at Lexington, which was heard around the world, he established then this great and wonderful United States of America. We now have established a little cluster of men from this old New England stock and I hope that we shall always cherish that same high tradition towards duty that those of our forefathers established long years ago for us.

For we as members of the New England Association of Fire Chiefs shall always be ready to do to our utmost that which will promote the greatest interest, greatest value and credit on our Fire Departments. To always feel that we have done our full duty, keeping always in view the high standard set by our forefathers of old New England.

With the birth of this Club we have won something we should be proud of. We should carry it on as the years go by so that other organizations can look to us and say that we had established an organization that is not only felt and heard but with all that that implies were banded together as Fire Chiefs not for any personal advancement but for the betterment of our service for the entire New England States.

I hope that this organization will grow and be a power for good. Let us go on with the spirit of our forefathers with never a thought for personal advancement but always in mind the advancement of the entire New England States.

Retiring President Doyle: Gentlemen, I thank you for your support for I feel that I have had the support of every member. The members have stuck; take list night for example; it was a very hot night and still they all showed their interest and spirit of co-operation by remaining for the entire meeting. My only request now is that you will give the same fine support to my successor, President Moran.

Chief Johnson of the Bryant Electric Company inquired if there was a pianist in the room and someone suggested Chief Johnson of Waltham, Mass., who could play The Star Spangled Banner for the members to accompany in song.

The Star Spangled Banner was sung.

President Moran requests the men who have not signed the Register to do so before leaving.

Motion made by Retiring President Doyle, seconded by Chief Johnson of Waltham, Mass., and carried unanimously that we adjourn this Convention to convene in Boston in 1924, at a date to be set later by the Board of Directors.

Adjourned at 12:15 noon.

In Memoriam

ARTHUR P. BODGE

Peabody, Massachusetts

Died May 5, 1923

It has pleased the Supreme Chief of the Universe to remove from our midst our late associate and member, Arthur P. Bodge, and

Whereas, The intimate relations held by our deceased member of the New England Association of Fire Chiefs it is proper that we would record our appreciation of his services and his merits as a man, therefore be it

Resolved, By the New England Association of Fire Chiefs, that while we humbly bow with submission to the will of the Most High, we do not the less mourn the loss of our associate who has been called to his rest.

Resolved, That in the death of Arthur P. Bodge this Association has lost a member who was always active, having the interest of the Association foremost in his thoughts, meeting all with a hearty welcome, a glad hand and pleasant smile, entering all activities with that vigor and wholeheartedness which added much to the success and enjoyment of its meetings and visitations which he endeavored to attend. Truly we shall miss him.

Resolved, That this Association tender its heartfelt sympathy to the family and relatives of our honorary member in their sad affliction.

For the Association,

JOHN T. ADAMS,
JESSE F. BARRETT,
W. H. H. ATKINS,

Committee.

LIST OF MEMBERS TO SEPTEMBER 15

Adams, John T., ex-Chief, Marblehead, Mass.
 Adkins, W. T., Chief, Marblehead, Mass.
 Allen, L. W., Sales Engineer, Hazard Mfg. Co. Wilkes-Barre, Pa.
 Ambrose, George C., Supt. Boston Consolidated Gas Co., Boston, Mass.
 Avery, Wesley N., ex-Chief, Worcester, Mass.
 Barrett, Jesse, ex-Chief, Peabody, Mass.
 Bartlett, Ernest N., Chief, Billerica, Mass.
 Beardslee, George F., Assistant Chief, Bridgeport, Conn.
 Bensen, Fred E., New York, N. Y.
 Berard, Walter J., Chief, Arctic, R. I.
 Bills, Louis W., Lexington, Mass.
 Blakeslee, Harry E., Pierce Arrow Fire Apparatus Co., Worcester, Mass.
 Blanchard, Arthur H., N. E. Agent Boston Woven Hose & Rubber Co., 15
 State St., Boston, Mass.
 Boardman, George W., Chief, Lee, Mass.
 Browning, Robert, Chief, Central Falls, R. I.
 Bryant, Wallace F., Chief, Harvard, Mass.
 Burns, Thomas F., Assistant Chief, Bridgeport, Conn.
 Byrnes, Peter S., Chief, North Kingston Fire Dept., Wickford, R. I.
 Caldwell, John S., Engineer, N. E. Insurance Exchange, 141 Milk St., Boston.
 Carrigan, C. J., Chief, Terryville, Conn.
 Casey, James M., Chief, Cambridge, Mass.
 Chesson, Frederick W., Fire Commissioner, Waterbury, Conn.
 Clark, Fred A., Chief, Attleboro, Mass.
 Clark, W. F., ex-Chief, Naugatuck, Conn.
 Cobb, George F., Curtis & Pope Lumber Co., 783 Mass. Ave., Boston, Mass.
 Comber, Edward, Chief, Narragansett Pier, R. I.
 Cote, A. J., Chief, Woonsocket, R. I.
 Cuneo, M. J., Captain, Woburn Fire Department, Woburn, Mass.
 Curtiss, C. Philip, Chief, Sharon, Mass.
 DeCourcy, D. A., Chief, Winchester, Mass.
 Devine, Wm. J., R. & G. Corset Co., Inc., South Norwalk, Conn.
 Donovan, J. F., Chief, Meriden, Conn.
 Doyle, John P., ex-Chief, Wellesley, Mass.
 Drew, M. R., Chief, Valley Falls, R. I.
 Dunnigan, F. P., Chief, Westport, Conn.
 Dyer, S. B., Chief, Whitman, Mass.
 Egger, George, Chief, Westerly, R. I.
 English, W. S., Grether Fire Equipment Co., Dayton, Ohio.
 Estabrook, Willard W., Fire Commissioner, Brookline, Mass.
 Everley, James, ex-Chief, Westport, Conn.
 Falt, Leonard G., Fire Protection Engineer, Springfield, Mass.
 Farmer, John J., Chief of General Electric Co., Bridgeport, Conn.
 Farmer, William P., c/o General Electric Co., Stratford, Conn.
 Ferguson, F. Howard, Supt. Fire Alarm, Bennington, Vt.
 Flynn, Daniel W., Chief, Great Barrington, Mass.
 Fogg, Harry E., Chief, Auburn, Me.
 French, Charles H., Chief, Manchester, N. H.
 Fortier, Seraphin, Chief, Manville, R. I.
 Fuller, Charles H., Chief, Pawtucket, R. I.
 Furgang, Leonard, Roxbury, Mass.

NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Gardiner, Warren B., Chief, Saylesville, R. I.
Germond, George C., Gamewell Fire Alarm Co., Boston, Mass.
Gilson, John, Chief, Lake Placid Club, Essex Co., N. Y.
Gisborne, F. R., Chief, Sound Beach, Conn.
Glynn Theodore A., Fire Commissioner, Boston, Mass.
Gorham, Joseph T., New England Fire Appliance Co., Boston, Mass.
Grace, P. J., Chief, Locomobile Co. of America, Inc., Bridgeport, Conn.
Green, William C., Chief, Concord, N. H.
Gunther, Frank H., Chief, Dracut, Mass.
Hamor, Roy, Chief, Bar Harbor, Me.
Hardy, J. M., Eureka Fire Hose Co., Boston, Mass.
Harford, D. W., ex-Chief, South Norwalk, Conn.
Hayden, Martin J., Assistant Chief, Bridgeport, Conn.
Hayes, John H., Chief, Bristol, Conn.
Heitman, Henry H., Chief, Waterbury, Conn.
Helm, Charles M., Hartford, Conn.
Heney, John C., Chief, Barre, Vt.
Hiller, Albert E., Chief, Plymouth, Mass.
Hiser, Charles, Chief, Adams, Mass.
Hoadley, G. W., Chief, Naugatuck, Conn.
Hudson, David M., Chief, Chelsea, Mass.
Hurley, Patrick J., Chief, Holyoke, Mass.
Jamieson, Frank J., Dorchester, Mass.
Janes, Edward L., ex-Chief, Worcester, Mass.
Johnson, Daniel E., Chief, Bridgeport, Conn.
Johnson, George L., Chief, Waltham, Mass.
Judson, Allen D., Chief, Stratford, Conn.
Keller, Charles G., Stepney Val. Fire Co., No. 1, Stepney, Conn.
Kellogg, Childs, Chief, Long Wale, Conn.
Kennedy, John J., Chief, Bryant Electric Co., Bridgeport, Conn.
Kenney, John J., Lieut. Ladder Co. No. 23, B F. D., Dorchester, Mass.
Knoblock, James W., American LaFrance Fire Engine Co., New York, N. Y.
Knowles, C. H., Chief, Hamilton, Mass.
Kohen, A. H., American LaFrance Fire Engine Co., Boston, Mass.
Lehman, John L., Mine Safety Appliance Co., New York, N. Y.
Leonard, Fred A., Chief, Taunton, Mass.
Leonard, J. F., ex-Chief, Belmont, Mass.
Lewis, William, Frabric Hose Company, Worcester, Mass.
Logan, Hugh, American LaFrance Fire Engine Co., New York, N. Y.
Lonergan, James N., Chief, Warren, Q. I.
Lovell, Harry Joseph, American LaFrance Fire Engine Co., Boston, Mass.
Mahoney, Thomas H., Chief, Westfield, Mass.
Many, Robert, Boston, Mass.
Marlow, J. H., Chief, Northampton, Mass.
Martin, H. M., Chief, Enosburg, Vt.
Maxim, C. W., Chief, Middleboro, Mass.
McCarty, George T., Fire Commissioner, Lewiston, Me.
McCarthy, Justin A., Henry L. Barnes Company, Boston, Mass.
McCormick, W. S., Chief of Singer Mfg. Co. F. D., Bridgeport, Conn.
McLean, Walter M., Deputy Chief, Boston Fire Dept., Boston, Mass.
Mellor, Alexander S., Assistant Chief, Bridgeport, Conn.
Meunire, Frank, Chief, East Hartford, Conn.
Milliken, Elbridge H., Sewell Cushion Wheel Co., Boston, Mass.

NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Milne, George B., Chief, Rockville, Conn.
Monaghan, Thomas F., Supt. Fire Alarms, Holyoke, Mass.
Montgomery, H. J., Chief, North Adams, Mass.
Montmeny, Arthur, Chief, Chicopee, Mass.
Mooney, Timothy P., Winthrop, Mass.
Moore, Edwin D., Bennington, Vt.
Moran, John C., Chief, Hartford, Conn.
Morris, F. J., Chief, Lawrence, Mass.
Morton, F. Karl, Maynard Rubber Corp., Springfield, Mass.
Murray, F. H., Chief of Morris Cove Fire Dept., New Haven, Conn.
Myers, Eton L., Boston, Mass.

Nichols, Daniel A., Chief, Barrington, R. I.
Noble, William F., Chief, New Britain, Conn.

O'Brien, John J., Chief Engineer, River Point, R. I.
O'Day, John P., Sewell Cushion Wheel Co., Boston, Mass.
O'Hearn, John W., Chief, Watertown, Mass.
Olson, Albert T., McNeal & Olson Company, Walpole, Mass.

Pachl, John S., New Haven, Conn.
Paine, Frank A., Chief, Pascoag, R. I.
Palmer, John A., Chief, Torrington, Conn.
Patt, Irving F., ex-Chief, Central Falls, R. I.
Perry, C. W., Gamewell Fire Alarm Co., Boston, Mass.
Pickett, E. W. S., Chief, Fairfield, Conn.
Pierce, Walter, Chief, Arlington, Mass.
Pigeon, A. Q., Chief, Ware, Mass.
Pitt, George S., Chief, Middleton, Conn.
Portalite Company, Cambridge, Mass.
Potter, Stuart M., Assistant Chief, Sound Beach, Conn.

Qualey, Thomas, Chief, Medford, Mass.
Quinlan, Henry M., Dorchester, Mass.
Quinlan, Philip J., Winthrop, Mass.

Randlett, Walter B., Chief, Newton, Mass.
Rees, John H., Fire Service, New York, N. Y.
Rich, S. M., Chief, Somerville, Mass.
Richardson, Irvin Fogg, Engineer, Vacuum Oil Co., Boston, Mass.
Riley, E. B., Chief, Keene, N. H.
Robinson, C. E., Samuel Eastman Co., Concord, N. H.

Samson, Wilfrid J., Chief, Lewiston, Me.
Saunders, E. F., Chief, Lowell, Mass.
Saxon, Harry, ex-Chief, Saugus, Mass.
Scully, John J., Boston, Mass.
Shepard, W. C., Chief, Pittsfield, Mass.
Sloane, Alfred H., Chief, Berlin, N. H.
Smith, James E., Chief, Nashua, N. H.
Smith, Ralph L., American LaFrance Fire Engine Co., New York, N. Y.
Smith, William F., Chief, Providence, R. I.
Stanton, Howard L., Chief, Norwich, Conn.
Steward, C. D., American LaFrance Fire Engine Co., New York, N. Y.
Stockwell, Carl, Chief, Burlington, Vt.
Stone, E. V., Chief, Ludlow, Mass.
Stowe, Lewis F., Chief, Milford, Conn.

NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Sullivan, James F., Chief, Glenbrook, Conn.
Sullivan, John E., ex-Chief, Plymouth, Mass.
Sullivan, John J., Dorchester, Mass.
Taber, John O., Chief, Boston, Mass.
Taft, Frank, Seagrave Company, Boston, Mass.
Tarlton, Everett L., Chief of Bridgeport Brass Co., Bridgeport, Conn.
Thompson, Henry, Supt. Protective Department, Boston, Mass.
Tierney, Daniel B., Chief, Arlington, Mass.
Tiffany, F. M., ex-Chief, Boston, Mass.
Tighe, James J., Chief, Willimantic, Conn.
Tighe, William A., Boston Globe, Boston, Mass.
Tinkham, F. S., Chief, Lakeview, Me.
Toomey, Timothy G., Chief of N. E. Oil Refining Co., Fall River, Mass.
Tracey, Frank E., Chief, Woburn, Mass.
Turner, W. W., Bi-Lateral Fire Hose Co., New York, N. Y.
Upham, H. Howard, Chief, Needham, Mass.
Van Amringe, W. M., Maxim Motor Co., Middleboro, Mass.
Van Valen, Alfred, Supt. American District Telegraph Co., Boston, Mass.
Veit, Victor H., Chief, Stamford, Conn.
Walsh, Peter E., ex-Chief, Roxbury, Mass.
Webber, Joseph A., American LaFrance Fire Engine Co., Boston, Mass.
Weekes, Reuben, ex-Chief, Providence, R. I.
Westcott, Charles B., Chief, Warwick, R. I.
Wheeler, A. D., Gamewell Fire Alarm Co., Boston, Mass.
White, Eawart B., N. E. Sales Mgr. American Dist. Tel. Co., Boston, Mass.
Wilbur, C. A., Chief, Danielson, Conn.
Woodward, A. P., Chief, Danielson, Conn.
Young, Daniel F., Chief, Cranston, R. I.

Among those present at New England Association of Fire Chiefs' Convention:

Harold Seagrave, Mine Safety Appliance Co., Pittsburgh.
L. F. Bowker, Mine Safety Appliance Co., Pittsburgh.
J. L. Lehman, Mine Safety Appliance Co., Pittsburgh.
*Carl D. Stockwell, Chief, Burlington, Vt.
Charles F. Guinness, Stamford, Conn.
W. F. Joyce, Stamford, Conn.
*I. F. Patt, ex-Chief, Central Falls, R. I.
*Theo. A. Glynn, Fire Commissioner, Boston, Mass.
Justin A. McCarthy, Henry K. Barnes Co., Boston, Mass.
Ralph L. Smith, American LaFrance Fire Engine Co., Elmira, N. Y.
Otto C. Walter, Captain, Logan Hill, Conn.
Timothy G. Toomey, Fall River, Mass.
*George L. Johnson, Chief, Waltham, Mass.
*William Ziegler, Chief, Hackensack, N. J.
Roland L. Smith, Belmont, Mass.
*C. W. Maxim, President Maxim Motor Co. and Chief, Middleboro, Mass.
Mr. Meyer, Stutz Fire Engine Co., Boston, Mass.
*D. H. DeCoursey, Chief, Winchester, Mass.
*F. E. Tracy, Woburn, Mass.
Albert T. Olson, McNeil & Olson Co., Walpole, Mass.
*George E. Egger, Chief, Westerly, R. I.
E. H. Milliken, Sewell Cushion Wheel Co., Boston, Mass.

J. P. O'Day, Sewell Cushion Wheel Co., Boston, Mass.
 *Fred O. Leonard, Chief, Taunton, Mass.
 William H. Lewis, Worcester, Mass.
 Edward D. Moore, Burlington, Vt.
 *Charles H. Fuller, Chief, Pawtucket, R. I.
 *H. H. Heitman, Chief, Waterbury, Conn.
 D. W. Harford, Secretary Conn. State Firemen's Ass'n, So. Norwalk, Conn.
 *Charles G. Keller, Chief, Stepney, Conn.
 *John P. Doyle, Chief, Wellesley, Mass.
 *John W. O'Hearn, Chief, Watertown, Mass.
 *John O. Taber, Chief, Boston, Mass.
 *Robert Browning, Chief, Central Falls, R. I.
 Hugh Logan, American LaFrance Co., New York.
 George F. Cobb, Boston, Mass.
 M. J. Cuneo, Captain Fire Department, Woburn, Mass.
 *John Gilson, Chief, Lake Placid, N. Y.
 *Thomas J. Costello, Chairman, Fire Commission, Bridgeport, Conn.
 William P. Farmer, Bridgeport, Conn.
 William A. Tighe, Boston Globe.
 *Daniel E. Johnson, Chief, Bridgeport, Conn.
 *L. G. Fifield, Ashland, N. H.
 *E. J. Pickett, Chief, Fairfield, Conn.
 F. E. Taft, Seagrave Co., Boston, Mass.
 J. M. Hardy, Eureka Fire Hose Co., Boston, Mass.
 Frederic Bensen, Eureka Fire Hose Co., New York.
 M. C. Murphy, Eureka Fire Hose Co., New York.
 James J. Tighe, Boston, Mass.
 *Thomas A. Qualey, Chief, Medford, Mass.
 W. S. English, Grother Fire Equipment Co., Dayton, Ohio.
 *S. B. Dyer, Chief, Whitman, Mass.
 F. A. Murray, Morris Cove, New Haven, Conn.
 John S. Pacht, Annex F. D., Morris Cove, New Haven, Conn.
 *John J. Farmer, Chief, General Electric Co., Bridgeport, Conn.
 *Dan F. Young, Chief, Cranston, R. I.
 *Patrick J. Hurley, Chief, Holyoke, Mass.
 *Daniel W. Flynn, Chief, Great Barrington, Mass.
 *A. J. Cote, Chief, Woonsocket, R. I.
 *Arthur Montmeny, Chief, Chicopee, Mass.
 Edward A. Sullivan, Hartford, Conn.
 B. Cummings, Pittsfield, Mass.
 A. E. Cook, Supt. Signal Service, Meriden, Conn.
 *Francis J. Morris, Chief, Lawrence, Mass.
 *James Everley, ex-Chief, Westport, Conn.
 *T. W. Chesson, Commissioner, Waterbury, Conn.
 Alfred Van Valem, Supt. A. D. T., Boston, Mass.
 C. K. Shean, Supt. Fire Alarm, Waterbury, Conn.
 H. H. Berry, Supt. Fire Alarm, Springfield, Mass.
 *L. F. Stowe, Chief, Milford, Conn.
 George Kuss, New York.
 J. F. Richardson, Vacuum Oil Co., Boston, Mass.
 L. A. Kempf, Newark Brass Co., Newark, N. J.
 *Charles A. Kellogg, Chief, Long Hill, Conn.
 *J. F. Donovan, Chief, Meriden, Conn.
 *C. J. Carrigan, Chief, Terryville, Conn.
 *J. A. Palmer, Torrington, Conn.
 *V. H. Veit, Stamford, Conn.

NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

- *George S. Pett, Middletown, Conn.
- *F. P. Dunnigan, Westport, Conn.
- H. E. Thompson, Supt. B. P. D., Boston, Mass.
- *Walter H. Pierce, ex-Chief, Arlington, Mass.
- G. W. Wheeler, Gamewell Co., Newton, Mass.
- *G. W. Hoadley, Chief, Naugatuck, Conn.
- *N. S. Clark, ex-Chief, Naugatuck, Conn.
- *F. M. Tiffany, Naugatuck, Conn.
- George L. Fickett, Fire Alarm Supt., Boston, Mass.
- *Frank Meunier, Chief, East Hartford, Conn.
- *Howard L. Stanton, Norwich, Conn.
- *Allen Judson, Chief, Stratford, Conn.
- *Charles F. French, Chief, Manchester, N. H.
- *John C. Moran, Chief, Hartford, Conn.
- *John J. Kennedy, Chief, B. E. Co., Bridgeport, Conn.
- *Chief Grace, Locomobile Co., Bridgeport, Conn.
- John E. R. Keevers, Chairman, Fire Commissioners, New Britain, Conn.
- *W. F. Noble, Chief, New Britain, Conn.
- John J. Keogh, Secretary, Fire Commission, New Britain, Conn.
- H. Hayes, Bristol, Conn.
- Charles N. Coe, Hamden, Conn.
- *R. S. Weeks, ex-Chief, Providence, R. I.
- J. H. Howland, Engineer, National Board of Fire Underwriters, New York.
- George H. Bowen, B. A. F. E. Co., Boston, Mass.
- W. E. Chatterton, New Haven, Conn.
- E. P. Cochrane, New Haven, Conn.
- *E. L. Tarlton, Chief, Bridgeport Brass Co., Bridgeport, Conn.
- *E. N. Bartlett, Chief, Billerica, Mass.
- L. W. Bills, Supt. Fire Alarm, Lexington, Mass.
- E. B. White, A. D. T. Co., Boston, Mass.
- Thomas F. Monaghan, Supt. Fire Alarm, Holyoke, Mass.
- *James M. Casey, Chief, Cambridge, Mass.
- *Daniel B. Tierney, Chief, Arlington, Mass.
- *W. C. Shepard, Chief, Pittsfield, Mass.
- George C. Ambrose, Boston, Mass.
- *Edward F. Saunders, Chief, Lowell, Mass.
- A. H. Kohnen, American LaFrance Co.
- John S. Caldwell, Engineer N. E. Insurance Exchange, Boston, Mass.
- *Edward V. Stone, Chief, Ludlow, Mass.
- *E. F. R. Gisborne, Chief, Sound Beach, Conn.
- *James F. Sullivan, Chief, Glenbrook, Conn.
- *George S. McCarthy, Fire Commissioner, Lewiston, Me.
- *William J. Samson, Chief, Lewiston, Me.
- Charles W. Helm, Helm Fire Service Corporation, Hartford, Conn.
- *George B. Milne, Chief, Rockville, Conn.
- Thomas Hewitt, Rockville, Conn.
- J. Hannawald, Rockville, Conn.
- Arthur Keller, Rockville, Conn.
- John Doyle, Rockville, Conn.
- Leonard Falt, Springfield, Mass.
- I. H. Case, Fire & Water Engineering, New York.
- Fred Shepperd, Fire Engineer, New York.
- S. M. Potter, Assistant Chief, Sound Beach, Conn.
- Ira G. Hoagland, New York.
- John H. Rees, Fire Service, New York.
- *Chiefs or ex-Chiefs.

HOW WE FEEL ABOUT IT

"Smoke-eaters," you're welcome in Bridgeport!

You're always welcome here!

(And if we can't get some "Fire-water,"

At least, we can offer real beer!)

But it's not for the "licker," Old-Timer;—

The inducement to come is not beer,

We want you to come 'cause we like you!

Come again! Any time! Any year!

E. B. B.

EXHIBITORS AT THE FIRST ANNUAL CONVENTION

OF THE

NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Bridgeport, Connecticut

June 20, 21, 22, 1923

Fire and Water Engineering, New York City.
Eureka Fire Hose Company, New York City.
Morand Cushion Wheel Company, Chicago, Ill.
Samuel Eastman Co., Concord, N. H.
Bi-Lateral Fire Hose Company, Chicago, Ill.
Henry K. Barnes Company, Boston, Mass.
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CONSTITUTION

ARTICLE I.

Officers

Section 1. The Officers of this Association shall consist of a President, First Vice-President and Second Vice-President, a Secretary and Treasurer, and a Vice-President for each state, who shall hold their offices for one year or until their successors are elected. All of said officers shall be elected by ballot at the annual meeting. None but active members "Chiefs or Ex-Chiefs" shall be elected to office.

Sect. 2. There shall be a Board of Directors consisting of the President, and Secretary and three members to be appointed by the President, one of whom shall serve for one year, one for two years and one for three years, and each annual meeting thereafter, the President elect for the ensuing term, shall appoint one director who shall serve for three years. This board shall meet at the time and place designated by the President. Only the actual expenses of the Board shall be paid by this Association.

Sect. 3. The three Directors appointed by the President shall be known as the Auditing Committee, who shall select from their number one member to act as chairman. It shall be their duty to audit all accounts of the Association, and receive bids for printing and all other supplies needed.

ARTICLE II.

Duties of Officers.

Section 1. It shall be the duty of the President to preside at all meetings of the Association, and perform such other duties as may be incident to his office.

Sect. 2. It shall be the duty of the Senior Vice-President to perform the duties of the President during his absence.

Sect. 3. It shall be the duty of the Secretary to keep a complete record of the proceedings of the Association, the Board of Directors and the Standing Committees; of which he shall be an ex-officio member; to receive and answer all communications pertaining to the Association; cause to be prepared a full report of the proceedings of each annual convention, which report shall be printed in pamphlet form, and one or more copies mailed by him to each member of the Association within ninety days of such annual convention. He shall receive all communications, contributed papers on topics, etc., designed to be presented to the convention. He shall collect all monies due the Association and pay the same over to the Treasurer previous to the final adjournment of the annual convention and at all other times when the funds in his possession amount to one hundred dollars (\$100.00) taking his receipt therefor and shall keep a correct account of same. He shall also employ such assistance as he may need for the collection of dues at the annual conventions and reporting the proceedings of the same and such other expenditures for clerical assistance at other times as may be approved by the

Auditing Committee, and he shall execute a bond to the Association in the sum of Five Hundred Dollars to be approved by the Board of Directors, the expense of procuring same to be borne by the Association. The salary of the Secretary to be fixed annually at the meeting of the Association. He shall also perform such other duties as shall be assigned to him by the President and Board of Directors. He shall at all times retain a sufficient sum in his possession to defray the necessary incidental expenses of his office, but he or any other officer shall not assume an indebtedness exceeding twenty dollars without the approval of the auditing committee.

Sect. 4. The Treasurer shall have the custody of the funds of the Association; he shall receive all moneys from the Secretary except what is necessary for the expenses of the latter's office, giving his receipt therefor; keep a true account of all moneys received and disbursed; pay all bills after the same have been approved by the Auditing Committee, signed by the President; and countersigned by the Secretary, and at the annual convention of the Association make a full and correct report of the same, and he shall execute a bond to the Association in the sum of One Thousand Dollars, to be approved by the Board of Directors, the expense if any, of procuring same to be borne by the Association. The salary of the Treasurer shall be fixed annually by the Association at its annual convention.

Sect. 5. It shall be the duty of the Board of Directors to transact all the business of the Association during the time intervening between the annual meetings and to assign a list of topics to members of the Association. They shall have full power to expunge from the minutes, before printing, anything that is objectionable to the Association or its members. They shall make arrangements with railroads and steamship companies for carrying members to and from the place of holding the annual meetings of the Association, following their appointment, and communicate such arrangements to the members by letters, circulars and otherwise.

ARTICLE III.

Meetings.

Section 1. The annual meeting of the Association shall be held at such place as the convention shall designate at its annual meeting, and upon such date as the Board of Directors and Chief of Fire Department of the city in which the convention is to be held shall determine, and twenty members shall constitute a quorum to transact business.

Sect. 2. Chiefs inviting the Association to hold its annual meetings in their cities shall understand that the Association expects and requires that their cities shall furnish, without cost, a hall suitable for holding the sessions of the Association, an exhibition hall of ample size to accommodate the apparatus, equipment, etc., that may be reasonably expected to be offered for exhibition, and suitable grounds for the testing of pumpers, trucks and other apparatus and appliance. The necessary fire engines, hose, nozzles and a sufficient number of men to carry out the test as may be required by the Exhibit Committee. The exhibit hall and the testing grounds shall at all times be under the sole control of the Exhibit Committee and under such rules as they may adopt. Badges for members, visitors and ladies shall be furnished free to the Association in such number as the directors may deem sufficient to accommodate the expected attendance. The material, design and workmanship of badges to be entirely in hands of local Chief. Entertainments, such as the local Chief may wish to arrange for, must not interfere with the business programme of the Association.

Sect. 3. Nothing in Section 1 shall be construed as prohibiting the Board of Directors in case of extraordinary emergencies from changing place of meeting.

ARTICLE IV.

Membership

The membership shall consist of: A—Active; B—Associate; C—Honorary Life; D—Life; E—Contributing.

A. Active Members—Chiefs and Ex-Chiefs of Fire Departments, Chiefs or Superintendents of Insurance Patrols and Chiefs of Private Fire Departments. Dues, \$3.00 annually. B. Associate Members—Fire Commissioners, City or Town Officials, Assistant or Deputy Chiefs or members of fire departments, Individuals representing firms and corporations interested in the protection of life and property against fire. Dues, \$3.00 annually. C. Honorary Life Members—Honorary Life Membership may be conferred upon active members upon their retirement from office, provided they have been members of the Association for a period of five years immediately preceeding the date of their retirement, and provided further that they are not identified with fire protection from a commercial standpoint. Honorary Life Membership carries all the privileges of active membership without dues. D. Life Membership—First. Individuals, firms and corporations interested in the protection of life and property against fire shall be eligible to life membership upon the payment of \$100.00. Second. The Association may, by a majority vote elect any associate member to life membership without the payment of any fee; and any member so elected shall thereafter be exempt from dues for life. E. Contributing Members—Individuals and firms manufacturing and dealing in fire apparatus, supplies and fire prevention appliances and materials, exhibiting at the annual meetings shall pay an annual membership, of such sum as the Directors may determine from year to year, based upon the number of square feet required and used by them for their exhibit, provided that the membership for any one year shall not be less than ten cents per square feet of space used.

ARTICLE V.

Amendments.

Section 1. This Association shall have full power, at any time or meeting, to alter, amend or revise this Constitution and By-Laws, but the same shall not be altered, amended or revised, except by a vote of two-thirds of the members present and entitled to vote, but no amendment shall be considered that has not been presented and read at a previous session.

BY-LAWS

Sect. 1. All members of this Association shall be required to pay a membership fee of Three Dollars (\$3.00) in advance.

Sect. 2. The Association shall have (through its Board of Directors) full power to levy an assessment and collect from the members an amount sufficient to cover the entire expense of said meeting.

Sect. 3. Any question coming before the convention for which no provisions are made in the Constitution and By-Laws, the presiding officer shall be governed in his decision by the rules laid down in Cushing's Manual.

Sect. 4. The President shall appoint all committees, and all standing committees shall be appointed at the first session of each annual meeting.

Sect. 5. The second day of each convention shall be reserved for exhibitors to display their various articles and improvements in fire apparatus.

Sect. 6. The exhibition hall shall be closed during the business sessions of the convention.

Sect. 7. The Secretary and Treasurer of this Association shall receive for his services or their services such sum annually as may be fixed by the Association.

Sect. 8. All papers to be presented at any meeting of the Association shall be forwarded to the Secretary thirty days prior to date of such meeting; and he may cause them to be published without expense to the Association in the Fire journals of the country.

Sect. 9. No member who is in arrears for dues and assessments for one year shall be entitled to vote and any member who is in arrears for two consecutive years, his name shall be dropped from the roll.

Sect. 10. Associate and Life Members shall be entitled to all the privileges of the Association except the right to vote.

Sect. 11. Applications for all classes of membership shall be approved by the Credentials Committee, and a majority vote of the Association shall elect.

Sect. 12. The Secretary shall not register or give a badge, or extend any courtesies of the convention to any one, other than ladies accompanying members, representatives of the press, Honorary Life Members and Life Members, except upon the payment of the regular membership fee.

RULES OF ORDER

Sect. 1. The presiding officer shall preserve order and decorum. All questions of order shall be decided by him, subject to an appeal by any member.

Sect. 2. Every member, when he speaks or offers a motion, shall rise in his place and respectfully address the presiding officer and when finished

shall resume his seat. He shall confine himself to the question under debate, avoid all personalities and indecorious language.

Sect. 3. When two or more members shall arise to speak at the same time, the presiding officer shall decide who shall have the floor.

Sect. 4. A member called to order by the presiding officer shall immediately cease speaking on the question before the house, and shall not resume his remarks until the question is settled.

Sect. 5. No member shall leave the convention meeting when in session without permission from the chair.

Sect. 6. The evening of the first day of the annual meeting shall be set apart for the holding of services in memory of deceased brothers.

Sect. 7. The election of officers and selection of place for holding next annual meeting shall take place on the last day of the convention each year.

ORDER OF BUSINESS,

1. Call to order.
2. Roll call.
3. Appointment of committees.
4. Reading of record of last meeting.
5. Reading of communication.
6. Topics and essays.
7. Report of Secretary.
8. Report of Treasurer.
9. Report of committees.
10. Unfinished business.
11. Designation of place for holding next convention.
12. Election and installation of officers.
13. Adjournment.

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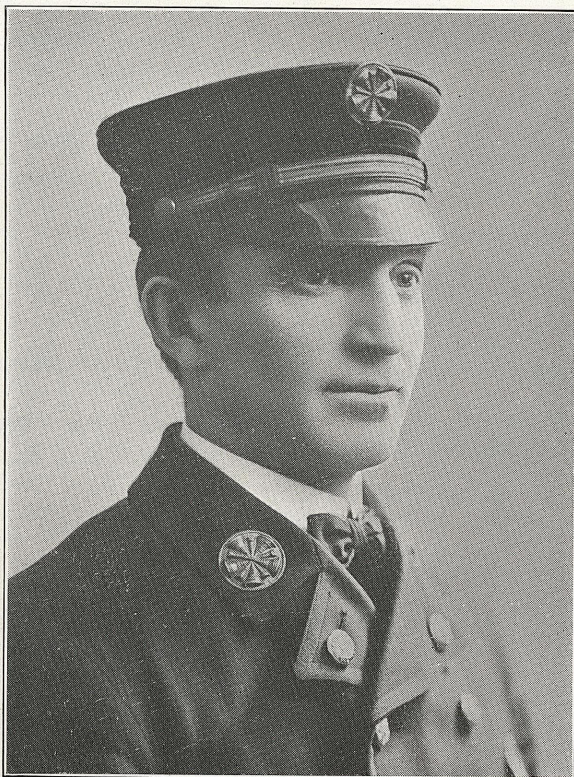
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CONTENTS

OFFICERS OF THE ASSOCIATION, PAGE 3

Portraits	Page	Page
John C. Moran, President	5	Patrick J. Hurley, First Vice-President. 11
Daniel E. Johnson, Second Vice-President	17	Wilfred J. Samson, State Vice-President 23
Carl D. Stockwell, State Vice-President 29		Robert. Browning, State Vice-President 35
John W. O'Hearn, Secretary-Treasurer 41		James E. Smith, Director 47
John O. Taber, State Vice-President... 53		John P. Doyle, First President 59
In Memoriam Arthur P. Dodge..... 119		George L. Johnson, Director 138
Hon. James M. Curley, Mayor of Boston, 127		
Proceedings of Convention 7 to 118		List of Members 120 to 125
Constitution and By-Laws 129 to 133		List of Exhibitors at Convention..... 126

INDEX TO ADVERTISERS

	Page		Page
Adams Cone Co.	18	Canton Restaurant	136
American-La France Fire Engine Co..	12	Carleton-Mace Engineering Co.	59
American Fabrics Co.	50	Chain Electric, Inc.	46
American Fireworks Distributing Co. .	64	Chase Company, L. C.	47
Asia Co. Restaurant	128	Cigars Manufacturing, donation	142
American Chain Co.	Front	Clarendon Oil Works	18
American Tube and Stamping Co.	16	Columbia Counter Co.	143
Aetna Automatic Oil Burners	32	Columbia Graphophone Mfg. Co.	10
Artistic Bronze Co.	136	Compliments of a friend	137
Badger Fire Extinguisher Co.	34	Conn. Electric Manufacturing Co.	142
Badger & Sons Co., E. B.	36	Conn. Land and Tittle Co.	136
Ballard Oil Burning Equipment Co.	32	Conner, George W.	47
Banks, O. H.	136	Connecticut Co., The	8
Barker's Lumber	128	Crane & Co., L. M.	64
Beach, E. D.	136	Dalton Lighting Fixture Co.	34
Beaudett & Graham Co.	135	Davis & Farnum Manufacturing Co. .	128
Belgian Spinning Co.	128	De Nomme, John B.	24
Berkshire Fertilizer Co.	11	Dictaphone Corporation	14
Bettels Confectionery	20	Domestic Oil Heating Co.	52
Bemis Manufacturing Co.	30	Doolittle Tile Co., F. A.	20
Bird, Richard H.	135	Essex Hotel, Boston	22
Blackman & Son, H. L.	134	Elm City Co.	136
Blue Ribbon Garage	16	Elmwood Button Co.	24
Boston Fire Appliance Co.	46	Facey, J. Frank	144
Boston Insurance Co.	44	Field & Cowles	53
Boston Manufacturing Co., The	58	Firemen's Fund Insurance Co.	26
Bridgeport Auto Co.	134	First National Bank, Bridgeport	17
Bridgeport Cornice Works	24	Fitts-Morse, Inc.	64
Bridgeport Housing Co., The	14	Foamite-Childs Corp.	34
Bridgeport Motor Truck Co.	29	Foster-McDonald Co.	56
Bridgeport Public Market	18	Fuller & Son	136
Bryant Electric Co., The	2	Gamewell Fire Alarm Tel. Co.	22
Bridgeport Trust Co.	23	Gas Appliance Exchange	20
Buckingham & Co., N.	24	General Electric	8
Buckminster Co., George H.	42	Goodsell Stoddard	134
Braitling, F. K.	136	Greene's Nervura, Dr.	42
Brennan Oil Burning Co.	48	Grinnell Sprinkler Systems	62
Barnes Co., H. K.	40	Gurney Heater Manufacturing Co.	35
Baver, George H.	143	Harvey Co., Arthur C.	53

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COMPLIMENTS OF

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NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

	Page		Page
Hadley & Co., F. V.	64	Raybestos Co., The	4
Harris Engineering Co.	134	Reichert Ice Cream Co., The.....	144
Harrison, Schnee & Cooney	16	Republic Restaurant	18
H. B. C. Oil Burners	64	Rider Hayes Co.	134
Hewlett Co.	134	Rockwood Sprinkler Co.	137
Hildreth Co., A. J.	136	Rogers, Norton Co.	127
Heppenstall Forge Co.	5	Salt's Textile Co.	Cover
Hood Rubber Co.	40	Schnee & Schnee	18
Howell, Charles M.	143	Service Electric Mfg. and Supply Co. ..	46
Hubbell, Inc., Harvey	14	Shaw's Jewelry Shop	40
Ives Manufacturing Co.	134	Skinner, Walter John	24
Jasper, William G.	20	Smith & Son, W. A.	134
Jenney Gasoline	35	Springfield Fire and Marine Ins. Co. ..	17
Jenkins Bros.	10	Sprinkler Co., C. S. B.	26
Knox & Morse Co.	59	Standard Oil Co. of New York	50
Kress & Son, O. F.	41	Standard Extinguisher Co.	42
Lake Oil Burning C.	48	Strand Amusement Co.	144
Lewandos	60	Stratfield, Bridgeport	23
Lewis, Connie	16	Smart's Oil Co.	128
Lindstrom Tool & Toy Co.	24	Socony Gasoline	50
Lock Steel Chain Co.	142	South Avenue Bottling	134
Lockwood & Brackett	142	Sprague Meter Co.	29
Lorrain, The	136	Taylor Co., Thomas	14
Maxim Motor Co.	Back Cover	Tait & Sons Paper Co.	20
Maxwell, Earle O.	138	Thomson Mfg Co., Judson L.	62
Meade Co., John Paulling	48	Toulson & Renesch Co.	144
Meister Co., D. A.	137	Traffic Sign and Signal Co.	54
Metropolitan Filling Co.	135	Terry Co., W. M.	134
Morgan Co., Inc., J. C.	138	Thompson, Norris	137
Morse & Son, H. J.	135	Union Electric Supply Co.	136
McLauthlin Co., George T.	127	United States Rubber Co.	Front
Mechanics' and Farmers' Savings Bank	5	Vose & Sons Piano Co.	60
Nascon, Electric, Inc., Frank	46	Vulcan Oil Burner Co.	52
New England Fire Appliance Co.	36	Wahn Co., George H.	56
New England Electric Specialty Co. ..	126	Walker & Pratt Manufacturing Co.	41
New England Mica Co.	137	Waltham Bleachery and Dye Works....	58
New Haven Dairy Co.	6	Waltham Trust Co.	137
Nonpareil Roofing Co.	134	Waltham Watch and Clock Co.	30
Old Colony Insurance Co.	44	Waltham Foundry Co.	30
Paradise Ice Cream	18	Walworth Manufacturing Co.	44
Parisian Dye Co.	137	Walworth, English Co.	134
Petroleum Heat and Power Co.	38	Waterproof Paint and Varnish Co.	30
Potter Press, The	128	Waltham Machine Works	128
Perkins-Carpenter Elec. and Supply Co.	54	Wetmore-Savage Co.	28
Percey, W. H.	40	Weeks, H. C.	136
Pettingell-Andrews Co.	28	Whiting, John L., Adams Co., J. J.	48
Pequotette Press	137	Whitcomb, F. L. and C. E.	42
Poli's Theatres	6	Whitney, Nelson	34
Post Publishing Co.	20	Welch Co., W. C.	128
Protex Fire Extinguisher Co.	Cover	Wireless Specialty Apparatus Co.	38
Quincy Hotel, Boston	22	Wolf & Abraham	11

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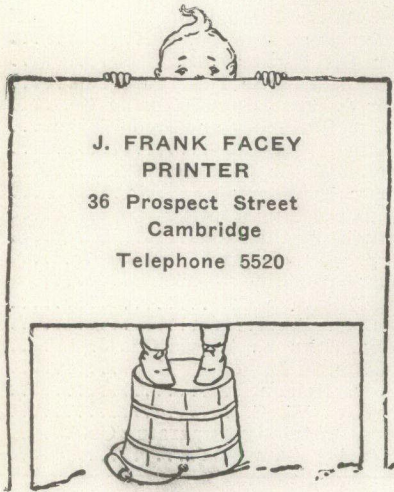
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PUMPING ENGINES

CITY SERVICE LADDER TRUCKS

CHEMICAL COMBINATIONS

HOSE CARS

FOUR WHEEL TRACTORS

LADDERS BUILT TO ORDER

CHEMICAL TANKS

**MAXIM APPARATUS HAS QUALITY BUILT IN
ALL THAT THE NAME IMPLIES**

Maxim Motor Company

MIDDLEBORO, MASS.