# New England Association or FIRE CHIEFS 1924

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# Salt's Textile Co.

Bridgeport Conn.

### Second Annual Convention

OF THE

# Aem England Association of Hire Chiefs



June 24, 25 and 26, 1924 MECHANICS BUILDING BOSTON, MASSACHUSETTS

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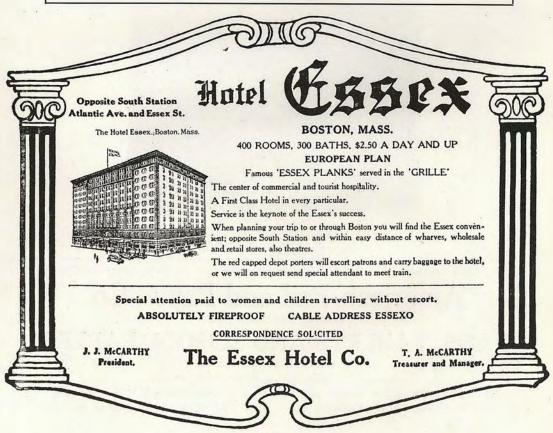
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### PROCEEDINGS OF THE SECOND ANNUAL CONVENTION OF THE

### NEW ENGLAND ASSOCIATION OF FIRE CHIEFS HELD AT

BOSTON, MASSACHUSETTS, JUNE 24, 25, 26, 1924

The second annual convention of the New England Association of Fire Chiefs was called to order in Paul Revere Hall, Boston, Massachusetts, June

24, 1924 by Chief John C. Moran, of Hartford, Conn.
CHIEF MORAN: Ladies and gentlemen:—I now declare the Second Annual Convention of the New England Association of Fire Chiefs open. It pleases me very much to see so many here—especially such a large attendance this morning—and I know it must be very gratifying to every member here, not only at the large attendance but the very fine showing made in the Exhibition Hall, and I think you will be still more surprised as the Secretary reads his report to learn of the great improvement not only in membership, but in the material resources of this Association. The Honorable James M. Curley, Mayor of Boston, was scheduled to address the convention this morning but as he is in New York attending the Democratic National Convention he will be unable to do so. I now take pleasure in introducing a man who is one of the foremost fire department officials in this country, and has always taken a great interest in this branch of the service, Fire Commissioner Theodore A. Glynn, of the Boston Fire Department. Address of welcome by Commissioner Glynn:

Mr. President, Ladies and Gentlemen and fellow delegates of the New England Fire Chiefs' Convention: I have the proud distinction this morning, coming here not only as a delegate to your Convention, but in a dual capacity besides. Coming here representing the great City of Boston and His Honor the Mayor and representing besides the Fire Department, and it is with extreme pleasure and honor on behalf of Boston and on behalf of Boston's great Mayor, the Hon. James M. Curley, that I extend the official greetings of this city and trust that your stay here will be most beneficial not only to you but to Boston, as I know it will. We realize you bring to Boston worth while advice. We realize Boston might have something helpful to you in the great

work you are doing.

The New England Association of Fire Chiefs although in its infancy has made a wonderful stride. I desire as official representative of Boston to congratulate this Association on the wonderful exhibits that are located in this building and on the attendance that your Secretary informs me will be here during the progress of this Convention. It speaks wonders for the future of your Association. It predicts a great future for your organization. The interest displayed in such a short period of time since the institution of your organization up till now bespeaks progress and beneficial results to the membership of this great organization. There is no reason in the world why every man affiliated in one capacity or another that is eligible for membership in this organization should not be within the confines of it, because the problems that affect one city or town or community are practically the same insofar as affecting the others are concerned. When we sit as a great body of men to solve the problems that come before us, we have absolutely no selfish interests, we care not what this man stands for or that man stands for. We

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Corner Pearl Street and Atlantic Avenue Boston, Mass. are all banded together for the interests of our own communities and the interests of the public at large, with absolutely no restraint at all regarding our proceedings or our organization. We glory in the fact that we are progressive, that our principles call for action not on something that is past and gone but that we are planning for the future. We are planning and looking ahead as every worth while organization should be doing. Every worth while city, town and community should plan in advance ten, fifteen, twenty-five years, plan for the future, plan for those that are coming after us,—plan out things that will benefit them and benefit us in the present generation.

The whole trouble with many great organizations,—yes, and many city and town governments is that they have not looked ahead. They do not look ahead five, ten or even one year, and we find in some cities and some towns where we have installed the most modern apparatus that money could buy, and look around the station that houses that piece of apparatus, look at the sleeping quarters that are provided for the men,—we have made advancement and progress insofar as modern apparatus and equipment is concerned, but what do we do for the individual? Do we agree insofar as housing is con-Not always. We overlook that most important function of the life of your department because it brings about a feeling of contentment that creates a greater amount of efficiency than we have had before. So if we grow in every line of endeavor pertaining to our department I think we are doing something not only for the department but for the public that we represent. Now, I realize that the New England Association of Fire Chiefs when they conferred with the weather man, have ordered the very hottest that he can provide. That was made possible at the inception of the organization at Bridgeport. I think we were 101 in the shade down there. Somebody suggested I introduce here today, McCarthy the ball player. Since he came here from Bridgeport, he has become a Chief. They advance rapidly in the Boston Fire Department. (Laughter.)

I am going to tell this little story that I think is apropos to a day like this and a lengthy talk. We appeared in one of the towns that is represented here by a most efficient fire chief a short while ago. I was representing His Honor, the Mayor. When I reached the place of meeting, after traveling one hour and thirty-five minutes, I was told that each gentleman would be allowed to talk ten minutes and no longer. And you know what a terribly short address that is especially to a Boston official. I was going to say politician, but that is wrong. (Laughter.) We meet here today as officials. If I was a politician I would be in New York sweltering in the heat. So in introducing each speaker, the same warning was given,—ten minutes and no longer. So this gentleman, not from Boston, evidently had a prepared address and if it took all evening he had made up his mind he was going to deliver that speech. The presiding officer was a very gentle creature and did not like to offend, but nevertheless had his rules and regulations made and had made them plain to all. The first ten minutes the gentleman in question took up, he had hardly got started,—never even got a sweat on as you say. The presiding officer by way of reminder, pulled his coat-tails, and he looked around as if he would like to see anyone stop him in ten minutes. He went on again for ten minutes longer in the glories of the subject and then the presiding officer gently tapped the gavel, as another sign of warning, but, absolutely nothing doing! He was going to talk and conclude his address regardless of warning and regardless of regulations that pertained to that particular meeting. So one-half hour elapsed and he was going stronger and stronger when the presiding officer grasped the gavel firmly and made a vicious lunge at the pedestal and hit the man on the head that sat directly in the front row. The man was very much dazed and looked around for a moment. The speaker was still giving vent to his eloquence and the presiding

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officer holding the gavel was just about to apologize to the man he had struck when the man spoke up and in a pleading way said, "Hit me again, I can still hear him." Brother Moran has no gavel. I am perfectly safe, for at least a few minutes longer. (Laughter.) I simply want to leave this with you. While you are here in Boston, we want to make your visit worth while. I know you came here not so much for entertainment as to bring home some worth while ideas from this convention and I know Boston is a city that will be helped by your attendance here. I want all of you to see Boston before you leave. We want you to visit any station or building in this city, whether it pertains to fire department affairs or whether it is a historic shrine that represents blood and sacrifice in order that we may go on in this land of the free and enjoy the blessings our government guarantees. Visit Faneuil Hall, go to Bunker Hill, Boston Common and various other historic shrines that represent patriotic sacrifices on behalf of our nation. We want you to go to any public building or any institution. The city is yours for three days. We want you to realize that you are the guests not only of our department but of the City of Boston and Boston is known the country over as hospitable, as patriotic, as a city that permits good fellowship, that stands with you regardless of race, creed or color, with all things pertaining to the welfare of mankind, and there is no organization that is nearer or dearer to those things pertaining to the welfare of mankind than the Fire Chiefs' organization of New England. (Applause.) And so I say ask anybody if you are in doubt. You will find them ready and quick to respond.

The great Mayor of Boston regrets his inability to be with you, but the nation called and the Mayor proceeded at once to New York to participate in deliberations there. He had so arranged his program to be with us this morning, but the call came yesterday and he had to answer that, because who can tell what may happen there. The next President of the United States may be named within a day or two, and he felt if the country calls a man's first duty is to respond. But we are interested of course in our own community, in the first line of defense for our cities, towns and communities and I say to you in behalf of our Mayor and the citizens of Boston, we greet you and we tell you that Boston belongs to the New England Fire Chiefs for at least three days. I thank you. (Loud and prolonged applause.)

PRESIDENT MORAN: Ladies and gentlemen, the next speaker needs no introduction. He has always been an active member of this association and always interested in their doings. He has been a fireman for a great many years, an active fireman for I don't know how long, in fact he was doing fire duty when I was a boy. So I take great pleasure in introducing John Taber, Chief of the Boston Fire Department. Now before he takes the floor I wish to say that for a great many years he has led some of us young fellows. He forgets all about birthday anniversaries and to remind him that this is the anniversary of his sixty-first birthday I have been requested to present this bunch of 61 roses presented him by a number of his personal friends. (Loud and prolonged applause.)

CHIEF TABER: Mr. President and assembled delegates,—First, I didn't know it was my birthday. I never even thought of it. But it is. They want to take out one rose. Don't ever spring anything like that! (Applause.) However, I will first express my thanks to those who thought of me when I didn't even think of myself. I welcome everybody here to the City of Boston on behalf of the members of our whole department. The Fire Commissioner has directed me in the efforts to make this Convention as far as it concerns these delegates, a success. I have repeatedly told him that this was to be a business convention, but notwithstanding that fact, they have made I think adequate arrangements to give a little entertainment in between, particularly to the women folks. The success of your association, I think, depends



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upon the great amount of energy that is put into it at its infancy. Every child will have to grow and in order to grow and meet all of the conditions that you will be called upon to meet or face through life, you have got to have good food. Therefore you men at the last Convention saw to it that your association should meet where it could grow substantially, and when you leave this city you will be placed upon a firm basis so that you can go ahead with that poise that is natural to any association and with confidence of winning in every atmosphere in which you may penetrate. The point is this: I, like many others, like a long ride, but I first want to see before I go far that the vehicle that is going to carry me is safely and adequately prepared to meet many of the rebuffs which come to all of us through life. This association is no exception to the rule. But it has the foundation and material to meet any and all conditions that may be placed in its way. Mentally, physically and in general equipment of mind you men are capable of taking first rank with any association of a similar nature throughout this country. I am not going to "throw any bouquets" at you, but I think more of the last meeting we had in Bridgeport than I have of any convention I ever attended. (Applause.)

The fellowship and shrewdness that was put over the plate there was well worth while. The discussions were of a broad nature and every man that is here now, to my mind, should participate in the discussions which are for the welfare of the communities that you represent. I had handed to me on the lower floor coming in, as I had nothing prepared in the nature of a welcome to you men and your women folks, these four or five thoughts. The first was as a deeply interested member of this young organization was that you made light of the hazards of public service. I want you to understand that all of you today who ever enjoyed being in the service have given yourselves without stint, and that includes all the attending delegates and friends.

Second, all of the firms interviewed or solicited to aid our show or display have acted as real friends to the cause and taken a firm hold to put over a good show.

Third: The several classes of citizens who have spoken to me about this organization have lauded it to the skies,—not only the people of the underwriting world, but all of the merchants in general who believe our ideas, our principles and the general hazards physical or otherwise are similar in New England and that we men accomplish better results among ourselves with an interchange of ideas than we can by seeking them elsewhere. I don't fully agree with that argument, because I believe you can go anywhere and learn. But I also believe you gentlemen can give and take a lot from the City of Boston.

Last but not least, I mention the real deep and sincere interest of our City government headed by His Honor, the Mayor. His honor has without stint given all in his power to make this a live and instructive convention and has been as enthusiastic in its details as one might expect a real spark to be.

I welcome you to Boston, all of you, most sincerely, and if on this floor I may have a fight with some of you, it will be in the most sincere manner and for the benefit of everyone of you members of this organization. (Applause.)

### RESPONSE TO THE ADDRESSES OF WELCOME BY CHIEF WILLIAM C. MAHONEY OF PEABODY, MASS.

Mr. President, Mr. Commissioner, Chief of the Boston Fire Department and fellow delegates, ladies and guests:—About a week ago, or a little more, I received word from our genial Secretary here asking me if I would respond to the addresses of welcome at this Convention. The thought that flashed across my mind almost as quickly as the bell hits in the engine-house,—I

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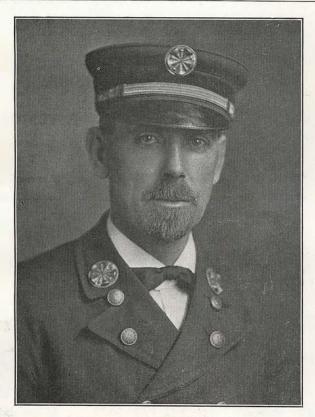
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felt then that it was my duty to tackle the proposition of answering these addresses of welcome inasmuch as it was my duty to respond to an alarm of fire, to be ready and willing at all times to tackle any proposition regardless of how small or how large it might be, but today after listening to two past masters of oratory, I feel that at this time I have tackled a "three-bagger", as the boys say. However, I will endeavor to convey to them the feelings of the Fire Chiefs for their kind words of welcome and their words of encouragement, urging us on to the work that we are assigned to do in our different communities. I want them to feel that, year after year, as we go from one city to another and find that the men at the heads of the departments like Boston and other cities have watched our work through our different communities and are willing to stand up and congratulate us and praise us for what we have done. I want them to know that each and every one of us here go back to our respective communities with those words in our minds used by the Chairman of this Convention, that we will endeavor at all times to live up to that high plane upon which they have placed us and take advantage of and profit by the exchange of ideas, better prepared and equipped to serve our communities in that work of protection to life and property. I thank you. (Applause.)

PŘESIDENT MORAN: The next order of business will be the roll-

call.

A MEMBER: I move we dispense with the roll-call. (Motion seconded

and it was so voted.)

PRESIDENT MORAN: The exhibition of course has been arranged and they have been doing very good work downstairs. Chief Hurley, Chairman, Chief Taber, Chief Stockwell and Chief Mahoney are the committee on that. Chiefs Morris of Lawrence, Mahoney of Peabody and Chief Millne of Rockville, Conn., the Committee on Credentials. Chief Johnson of Waltham, Chief Noble of New Britain, Conn., and Chief French of Manchester, N. H., Committee on Courtesies Extended. The next order of business will be the reading of records of the last meeting. What is your pleasure?

SECRETARY O'HEARN: In regard to the minutes of the last convention, there is on your rostrum a copy of the proceedings of that meeting. I move that that printed report be accepted as the proceedings of that con-

vention at Bridgeport. (Motion seconded and it was so voted.)

SECRETARY O'HEARN: In connection with the balance of the report Mr. Chairman, I have a detailed, itemized report of the list of membership and of all expenses and receipts. It is quite lengthy and if the Association wishes it read I will read it, but it will all appear in detail in printed form. In conjunction with that I have a summary of the work done during the year as to membership and the financial condition. If they want the detailed report I shall read it, otherwise I will read the summary report.

PRESIDENT MORAN: Gentlemen, what is your pleasure in regard

to this report?

It was moved and seconded that the Secretary read the summary report, and it was so voted.

## BRIEF SUMMARY OF MEMBERSHIP AND FINANCIAL CONDITION OF THE NEW ENGLAND ASSOCIATION OF FIRE CHIEFS June 23, 1924.

On June 15, 1923 the total paid	1 mem	bership was 119 classified as follows	:
Maine	5	Rhode Island	16
New Hampshire	3	Connecticut	22
Vermont	1	New York	4
Massachusett	68		

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On Jun	ie 2	23, 1924 the total paid membership is 281	classified	l as follows	:
		setts 9 Pennsy Setts 167 Ohio	yivania		1
		setts167 Ohio land26	***************************************		1
			alra bafar		
OI	1 J	une 15, 1923, the date of closing the bo	oks befor	e the Bridg	eport Con-
Velition	ι, ιι - Τ	ne balance of cash on hand was \$173.90. une 15, 1924, the date of closing this yea	+ho ho	10 to 20 xxx0 a . Ф.	1540.27
Ci.	ı J	June 15, 1924 the following receipts have	ir, the ba	iance was \$.	1349.37.
זוכ	uce	Exhibit Committee	ve been re	ΦQ21 6Ω	
		Memberships	***************************************	. \$601.00	
		MembershipsAdvertising, additional		500.00	
thus oir	vin	g a total balance on hand June 23, 1924	of \$2970	. 300.00 97	
Th	าเร	amount will be materially increased when	final rec	eints are rec	eizzed from
the Ex	hib	it Committee.			
DETAI	LE	ED REPORT OF THE SECRETA	RY-TRE	ASURER	OF THE
		NEW ENGLAND ASSOCIATION			
		From June 15, 1923 to June			
1923		1 10111 June 13, 1925 to June			D 110 :
June 1		Cook Polones brought formers	CK No.	Received 1	Paid Out
•	23	Cash Balance brought forwardFifty-five memberships		\$173.90	
	25 25			165.00	,
	23 27	Advertising Receip's Receipts from Exhibit Committee		250.00	
2		Salary of Secretary-Treasurer, J. W.		405.48	
. 4	_0	O'Hearn, from July 12, 1922 to			
		June 1, 1923	9		100.00
July 1	4	Receipts from Exhibit Committee	J	96.00	100.00
	3	Mulling Typewriter Exch. Type, Paper		20.00	
_	•	Paid Cash to Mrs. Doyle			1.50
		13 Memberships		39.00	1.50
. 2	26	Interest—Union Market Nat'l Bank,		05.00	
		Watertown, Mass.		1.32	
2	<b>2</b> 9	Interest—Union Market Nat'l Bank,			
		Watertown, Mass.		1.69	
Sept. 1	8.	4 Memberships		12.00	
	19	Doyle Letter Service	10		35.00
		Services at Convention.			00.00
2	21	G. M. Penny			
		Services at Convention	11	-	20.00
2	27	Interest—Union Market Nat'l. Bank,			
		Watertown, Mass.		1.67	
	3	Advertising Receipts		250.00	
	7	1 Membership		3.00	
2	27	Interest—Union Market Nat'l. Bank,			
	_	Watertown, Mass.		1.81	
	1	Cash—Stamps for Mailing Reports	12		10.00
	6	J. Frank Facey,			
	0	Printing Envelopes for Reports	13		10.00
	9	Cash—Stamps for Mailing Reports	14		10.00
	17	Hopewell Bros.—Cash Book	15		1.50
	19	Cash—Stamps for Mailing Reports	16		10.00
2	27	Interest—Union Market Nat'l. Bank,			
: 3	20	Watertown, Mass.		2.04	
3	30	7 Memberships		21.00	

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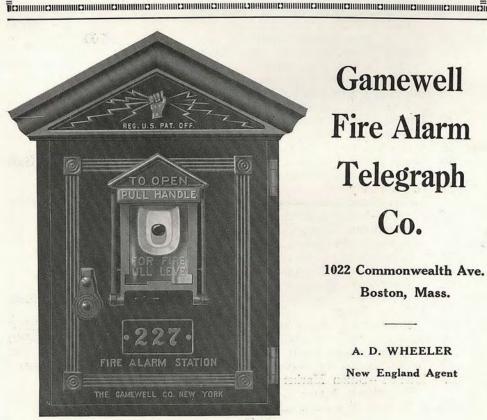
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	:				
Dec.	7	Cash—Stamps for Mailing Reports	17		10.00
	19	Expenses to Directors Meeting:			20.00
		A. H. Fiske—Dinner Tickets	19		20.00
		W. C. Sheppard—Expenses to meet-	20		11.86
		ing J. C. Moran—Expenses to meeting	20 21		10.50
		J. E. Smith—Expenses to meeting	22		3.75
	20	2 Memberships		6.00	
		Rebate from A. H. Fiske		2 50	
	21	Overpaid for Dinners Dec. 19th		<b>2.</b> 50	
	21	Cash—Stenographer to rearrange copy of Stenographer's for report	23		10.00
		Pequosette Press—500 Envelopes	24	•	12.50
	29	Interest—Union Market Nat'l. Bank,			
		Watertown, Mass		1.94	
192		T . TT . N.T. 1 . N.T. (21 T) 1 -	•		
Jan.	28	Interest—Union Market Nat'l Bank, Watertown, Mass.		1.86	
Feb.	20	Expenses to Directors Meeting:		1.00	
I CD.	20	A. H. Fiske—Dinner Tickets	25		17.50
		J. E. Smith—Expenses to meeting	26		4.25
		P. J. Hurley—Expenses to meeting	27		8.00
	: 26	J. C. Moran—Expenses to meeting	28	12.00	10.00
	26	4 Memberships		12.00	
		Watertown, Mass.		1.86	
Mar.	1	Cash—Stamps for mailing	29		25.00
	3	Rebate—Check No. 29 overdrawn		15.00	
	21	3 Memberships		9.00 15.00	¥
	31 7	5 Memberships Ernest Saunders,		13.00	
	•	Flowers for Chief Samson	30		15.00
	26	Expenses of Directors Meeting:			
		J. E. Smith—Expenses to meeting	31		4.50
		W. C. Sheppard—Expenses to	32		11.00
		meeting	32 33		10.00
		Hotel Lenox—Dinners	34		17.00
	28	Interest—Union Market Nat'l. Bank,			
		Watertown, Mass.		1.74	
Apr.	8	Timothy Kelly, Flowers for Chief Randlett	35		25.00
	26	Greenfield Tap & Die Corp.	33		23.00
		Standardization Tools	36		<b>2</b> 51.25
		6 Memberships		18.00	
		Interest—Union Market Nat'l. Bank,		1 50	
73. df		Watertown, Mass.		1.72	
May	. <i>Z</i>	American Express, Express on Standardization Tools	37		2.10
	13	Olive A. Mayer, Pequosette Press In-	0,		2.10
		voice for Envelopes	38		<b>2</b> 2.64
	21	Pequosette Press:	39		46.25
		IM Circular Letters			
		IM 2c Stamped Envelopes & Printing			
		Printing			
		21			1.00

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June 4	Interest—Union Market Nat'l. Bank, Watertown, Mass. Pequosette Press: Inv. 5-24-24—IM Receipts Bound 13.25	40	1.33	25.89
10 6 12 13 14	Inv. 6- 4-24—1200 Stp. Env. Printed 12.64 Advertising Receipts 12 Memberships Pequosette Press 1200 Envelopes Printed 23 Memberships 4 Memberships	41	500.00 36.00 69.00 12.00	5.50
15	Union Market Nat'l Bank Balance		2326.86	777.49 1049.37 500.00
	Union Market Nat'l Bank, Savings Department, Bank Balance		\$2326.86	\$2326.86

GEORGE L. JOHNSON, W. E. SHEPPARD, J. E. SMITH,

Auditing Committee.

### REPORT OF DIRECTORS MEETINGS

On December 19, 1923 the first meeting of the Directors of the New England Association of Fire Chiefs for the year 1923-24 was held at the office of Chief John O. Taber, Mason Street, Boston, Mass.

President John C. Moran presided and all directors were present.

Chief Taber reported on halls for the Second Annual Convention. On motion of Chief Johnson of Waltham it was voted that we hold the Convention in Mechanics Building with sessions in Paul Revere Hall and exhibitions in Machinery Hall on June 24, 25, and 26.

On motion of Chief Smith of Nashua, N. H., Mr. George F. Cobb was

instructed to get data on hotels.

The matter of reporting the proceedings of the Convention was considered and it was voted to adopt the same method used at our First Annual Convention held in Bridgeport, Connecticut.

Second, all of the firms interviewed or solicited to aid our show or display have acted as real friends to the cause and taken a firm hold to put over a good

show.

On motion of Chief Johnson of Waltham it was voted to have Henry M. Quinlan again handle the advertising feature of our Annual Report under the same conditions as at Bridgeport but not to start on the advertising campaign until after March 15, 1924.

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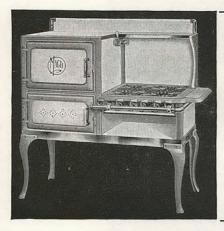
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Meeting adjourned to meet with the Massachusetts Fire Chiefs' Club at the Parker House.

JOHN W. O'HEARN,

Secretary.

On February 20, 1924 the second meeting of the Directors of the New Englang Association of Fire Chiefs for the year 1923-24 was held at the Parker House, Boston, Mass. The meeting was held in conjunction with the meeting of the Massachusetts Fire Chiefs' Club, on invitation of President James M. Casey.

President John C. Moran presided and all directors were present. Chief Patrick J. Hurley of Holyoke, Chairman of the Exhibit Committee, was also

present at this meeting.

The Secretary reported the death of State Vice-President Wilfred J. Samson, Chief of Fire Department, Lewiston, Maine, on February 17, 1924. He also reported that he had ordered a floral piece sent to the late home, sent a telegram of sympathy to Mrs. Samson, and requested Chief Harry E. Fogg of Auburn, Maine to attend the funeral as a representative of the Association.

Directors voted to confirm the action taken by the Secretary.

The following were appointed a committee on resolutions on the death of Chief Samson:

George S. McCarty, Fire Commissioner, Lewiston, Maine.

Chief Harry E. Fogg, Auburn, Maine. Chief Roy Hamor, Bar Harbor, Maine.

Subjects, papers, and speakers were outlined and discussed and tentative program drawn up for the Second Annual Convention. The Secretary was given directions to confer with the various speakers and subjects assigned them.

### JOHN W. O'HEARN,

Secretary.

On March 24th, 1924 the third meeting of the Directors of the New England Association of Fire Chiefs for the year 1923-24 was held at the office of Fire Commissioner Theodore A. Glynn, Bristol Street, Boston, Mass.

President Moran presided and all directors were present. Chiefs Hurley and Taber of the Exhibit Committee, Fire Commissioner Glynn of Boston, and

Mr. George F. Cobb, Traffic Manager, were also present.

The Secretary reported the death of Chief Walter B. Randlett of Newton, Mass., on March 3, 1924. He reported that a floral piece had been sent, and on request of Chief Moran of Hartford extended sympathy to the family. Several members of the Association were present at the funeral services.

The following committee was appointed to draw up resolutions on the death

of Chief Randlett:

Chief George L. Johnson of Waltham, Mass. Chief J. Harry Holmes of Milton, Mass. Chief James M. Casey of Cambridge, Mass.

The tentative program for the convention was taken up and accepted by Chief Moran.

Chief Hurley of Holyoke, Chairman of the Exhibit Committee, reported that practically all space in the exhibition hall had been taken.

Mr. George F. Cobb, Traffic Manager, reported on hotels and accommodations.

It was voted to have headquarters of the Association at the Hotel Lenox.

The Directors then visited Mechanics Building and the Hotel Lenox. At the Hotel rooms were selected for a ladies' rest room, men's room, and final arrangements made for the meeting days of the Convention.

JOHN W. O'HEARN.

Secretary.

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PRESIDENT MORAN: Gentlemen, this is a very gratifying report and I think you all feel just as I do about it: It places the Association on a very solid foundation financially. Gentlemen, what is your pleasure regarding this report? (Moved and seconded that the report be accepted.) It was so voted. The next order of business is the report of the Auditing Committee.

CHIEF JOHNSON: The Auditing Committee have gone over the books of the Secretary-Treasurer and find them correct and the accounts are all true.

CHIEF CASEY OF CAMBRIDGE: As this is our Second Annual Convention I suppose everybody would like to have the New England Association of Fire Chiefs well represented in the newspapers. I notice one representative of the press is taking notes under difficulties and I would suggest a table be provided for these reporters that the local papers may get the record. (Applause.)

PRESIDENT MORAN: Gentlemen, these Conventions are of very great value, not only to ourselves but to the various municipalities which we represent and every facility will be given for considering and discussing various topics which our experience and observation suggest. This work is all very commendable and at this time I think it very appropriate that we devote a few moments to the memory of those of our associates who have finished their work here and passed along. During the year two members of this association have gone to their long rest leaving but a memory. So I will now ask the Secretary to call the roll of deceased members.

SECRETARY O'HEARN: Walter B. Randlett, Chief of Fire Dept.,

Wilfred Sampson, Chief of Fire Department, Lewiston, Newton, Mass.

Maine. (Reads resolution.)

### In Memoriam

Resolutions Adopted By The New England Association of Fire Chiefs On Death Of WILFRED J. SAMSON

Late Chief Lewiston, Me., Fire Department.

February 17, 1924, occurred the death of Wilfred J. Samson, Chief of the Lewiston, Maine, Fire Department, and member of the New England Association of Fire Chiefs.

As Chief of the Lewiston Fire Department, Chief Samson enjoyed the confidence of his men; was an able executive; was devoted to his

duties and fearless in their performance.

He was held in the highest esteem by the community he so faith-

fully served.

At the Bridgeport Convention of the New England Association of Fire Chiefs in June 1923, he was elected a Vice-President of the Association. He was a faithful attendant at all meetings of the Convention, entered heartily into its business and proved to be a valuable member of the Association.

Be It Resolved: That this Association regrets the untimely death of Chief Samson; feels that this Association has lost a valuable mem-

ber; sympathizes with his family in their great loss, and

Be It Further Resolved: That these resolutions be spread upon the records of the Association and that a copy of the same be sent the family of the deceased.

GEORGE S. McCARTY, HARRY E. FOGG, ROY HAMOR,

Committee on Resolutions.

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### In Memoriam

Resolutions Adopted By The New England Association of Fire Chiefs On Death Of

### WALTER B RANDLETT

Late Chief of Newton, Mass., Fire Department.

The members of the New England Association of Fire Chiefs have learned with feelings of deep regret of the death of our fellow member Walter B. Randlett Chief Engineer of the Newton Fire De-

Be It Resolved: That this Association while humbly bowing to the will of the Supreme Master none the less deeply mourns the loss of our brother member, one who was a wise counselor, a faithful and efficient public official whose long and faithful service to the City of Newton can never be forgotten by those with whom he was associated.

Be It Further Resolved: That we extend to the family of our deceased brother our sincere sympathy in their bereavement and that these resolutions be spread upon our records and a copy forwarded to the family of the deceased.

> GEORGE L. IOHNSON. J. HARRY HOLMES. JAMES M. CASEY,

> > Committee on Resolutions.

PRESIDENT MORAN: Gentlemen, you have heard the report of the Committee on Resolutions. What is your pleasure? (Moved and seconded that it be accepted and placed on file; and it was so voted.) Ladies and gentlemen, we will now stand for a few moments in silent meditation out of respect for our deceased members.

We will now have a selection by Prof. John Shaughnessey.

MR. JOHN SHAUGHNESSEY: Ladies and gentlemen; I am pleased to be with you this morning. His Honor, the Mayor, notified me to be sure and come up here and entertain you. On account of the weather being so warm and I having a head cold, there may be a few little flaws in my song. However, please excuse me. I will do the best I can.

Song rendered by Prof. Shaughnessev.

The next song I am going to sing is a song composed by Mr. O'Connor at the piano which I have had the good fortune to make a record of for the Gennett Record people of New York.

(Encore.)

A MEMBER: Mr. President, may I make a motion? I know that the New England Chiefs' Club has put us on record insofar as invitations are concerned to the public of Boston,-invitations through the City Hall. We have invited all of the city bodies, Chamber of Commerce, and various mercantile establishments, and I thought if we go on record as extending an invitation to the public to visit our Exhibition Hall, it would be a good thing. Our good friend of the press that Jimmie Casey takes such an interest in will send forth our message to the people that they are welcome here to see our equipment with which we give protection to life and property. I make the motion that the public be invited to visit our Exhibition Hall and we will request the press to make that public. (Motion seconded; it was so voted.)
(Meeting adjourned at 12:10 noon.)

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### AFTERNOON SESSION PAUL REVERE HALL, MEETING CONVENED AT 2 P. M.

PRESIDENT MORAN: Gentlemen, the first subject this afternoon is a paper given by Mr. Charles F. Moran, Manager of Safety and Hygiene

Hood Rubber Company, Watertown, Mass.

MR. MORAN: When Chief Moran told you what I was going to talk about, he told you something I did not know myself. I notice that I have been put down on the program for a paper on "Fire Protection in Factories." After giving Chief O'Hearn that topic, I changed my mind and assumed that you might be interested in some of the work and some of the unusual causes of fire that some of us as safety men meet in industry, and you perhaps might be interested in some of the things that we are interested in, not from the standpoint of fire prevention, not from the standpoint of preventing economic loss by fire, but the things that we are interested in from the standpoint of preventing loss of life in industry. I haven't prepared any paper. I am something like a little old man at the Brockton Fair They had a prize buil on exhibition and they charged 10c admission to get on the inside of the tent and see the prize bull. A friend of mine ran the exhibition and he noticed every time he came out and made his regular ten-minute speech telling about the bull's pedigree and what a wonderful bull he was, there was an old man who was walking up and down in front of his stand and it appeared as if the little man was about to spend the ten cents to go in and see the bull and then he would hesitate and turn around and go away and the next time the fellow came to tell about the bull the little man was there again. He kept that up for several days, until my friend puts his arm on his shoulder and says, "Don't you want to come in and see this marvelous bull?" The little man said, "Yes, I would like to see the bull but I cannot afford to spend the ten cents." My friend says, "Ten cents isn't very much." He said, "It is a lot for me. I want to tell you I am eighty-two years of age and all through my life I have had to save my ten cents. I have been married three times and raised twenty-eight children. I need every ten cent piece I can get." My friend said, "Do I understand you have been married three times and raised twenty-eight children?" He said, "Yes, and that is not all there is to it. I am saving my money so I can get married again." My friend said, "If that is true, you are eighty-two years of age, and you have been married three times and raised twenty-eight children and are going to get married again, I tell you what you do. You stay here and I will bring the bull out to see you. (Laughter.)

I tried to get for your meetings some of the publications which have been compiled by the National Safety Council of Chicago which is an organization of some three thousand of the larger industries in this country. These pamphlets have been printed for distribution in industry and they have published four on the causes and prevention of fires. I have made arrangements to get several hundred copies of each of these publications and we are either going to send them direct to you after borrowing Chief O'Hearn's mailing list, or, we will make arrangements to send them to Chief

O'Hearn and he will send them to you.

Along the lines of safety in industry, of course we are interested in the construction of buildings with regard to the prevention of fires and with regard to getting people out of the buildings in case of fire, and thirdly, but not least, with regard to putting the fire out after it is started. My viewpoint is some different from yours, because in my work, the effort I personally make is toward the prevention of fatalities in the event of fire. My friend, Mr. Gately who is a member of your organization is interested in the prevention and extinguishment of fires after they have begun.

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	SURPLUS	
	CAPITAL	
5,195,623.26	NET SURPLUS TO POLICYHOLDERS	2,663,882.08

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It is interesting to know that in only a few states can the employer fee assured that complying with the legal requirements in regard to exits that he can be absolutely certain that he has given his employees a proper chance of getting out of the building in the event of fire. One of the requirements in our plant is that no room shall be used for manufacturing purposes that does not have two separate and independent means of exit. Once we built a long building and in the center of it was a passage-way and several doors leading to that passage-way with signs "EXIT". Another department came along and put a hot room on at the end of that passage-way and forgot to take the word "EXIT" out. It would have been but an exit from this world into the next one if anybody had attempted to use it as in event of fire.

I am reading from this first National Safety publication:—"The best exits are those that protect property as well as life and which increase rather than decreasing the convenience of the people that use them" and then this booklet goes on to deal with the various types of exits. The exit from one building to another building without going up or down stairs is, from the stand-

point of protection to life, the best type of exit.

The so-called "smoke-proof" tower we believe to be next in value to prevent the loss of life in the event of fire. It is said the ordinary outside fire escape met with in industrial plants is of very little aid in the prevention of panics and catastrophies. It is believed the ordinary individual in case of a fire likes to go out of the room in the event of an emergency by the same exit through which he enters and leaves daily. The time has come when industry will not place much reliance upon the open outside fire escape. The ordinary individual in case of fire becomes somewhat confused and does not remember that the fire exit is there and even though he sees the sign "This is a fire exit," the tendency he has is to insist upon leaving the building through the same channels in which he entered it.

Of course we believe the ordinary fire ladder outside the building is next to worthless. I saw in the middle west an ordinary fire-ladder that went up sixteen stories and they expected to use that for a fire exit in the event of fire. I would not use it as a fire escape. It was alarming to get on that ladder and look down sixteen stories. You individuals in the Fire Department might use it, but we individuals in industry haven't had the experience in climbing ladders that you have had and I feel satisfied that insofar as protection to the individual in factories is concerned the outside

ladder is of absolutely no value whatsoever.

Determining how many people can get out an exit in three minutes, is somewhat of an arbitrary thing. We know of no exit where we can get

more than fifty people out of an 18 inch exit in three minutes.

You know more about fire alarms than I do. We have a fire alarm system, but it is not connected with the outside town circuit alarm. The feeling has been that in the small fires which we get, and, they have all been small fires, there is not any particular sense in disturbing the outside fire department to bring them in. We have several public boxes which have been rung at times, and there are feelings that it would be a good thing to connect our private alarm system up in some way with the public system

The second pamphlet is on fire extinguishment. You know more about it than I do. We use in the rubber industry mainly the foam types of fire extinguishers. I assume the soda and acid extinguisher in other industries would be as good if not better than the foam extinguisher, but we prefer the foam. In place of sand we sometimes use some soap-stone. We find it works just as well as sand does and does not mix in quite as disastrously as sand does in some of our motors and bearings. In no place do we believe that the ordinary "powder" extinguisher can be used to advantage. They are of absolutely no value in the fires that we have experienced.



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With your permission, I want to tell of some of our experiences, perhaps some of the unusual experiences we have had with fires in the rubber industry.

Most of the fires in our particular plant happen in the winter. They occur on those days when the amount of moisture and the relative humidity in the air is extremely low. We never had any fires due to static electricity in any of our spreader or manufacturing buildings at any time when the outside air contained more than three grains of water per cubic foot. Fires frequently occur when the relative humidity is below 45 or 50 per cent.

We try in our cement rooms and in our spreader rooms to artificially humidify the air so as to bring the amount of moisture in the particular room up to at least three grains of water per cubic foot. We have installed recording thermometers both wet and dry and have reduced our static electric fires

by properly humidifying the air to zero.

In those places where it has been impossible for us to properly humidify the air, we have tried all sorts of grounding. The greatest difficulty we had was with the grounding of the belts,—moving belts. We tried a steel pulley on one end and a pulley on the other and we got an accumulation of static electricity in the belt itself. I know a fire inspector who never believed static fires were possible in the rubber industry. He stood one day under the belt and accumulated a charge of static in himself and then went over and touched a churn innocently and set the churn on fire.

It has been found that treating the belts with a graphite belt dressing at least greatly reduces the tendency for the belt itself to accumulate static

electricity.

We have some cotton machinery at our plant and we find the same static situation is true, that the days that we have the fires inside the cotton rooms were the days when the relative humidity was lowest. Accordingly we let some steam into the room and bring the humidity up above three grains of water per cubic foot. We have eliminated all fires from static electricity. This also produces a better product.

On the fire pails, in some industries, floats are used, so that the fire inspector can go through and make an inspection and instead of going to every fire pail, placing his hand in the water to see whether the pail is full, they simply take a small piece of wood or cork and put it on top of the fire pail. Now an inspector can examine many pails where only one was ex-

amined before.

Another difficulty that we have had is the blocking of fire exits by trucks. In one of our departments we found that the employees were very apt to pull a truck through the landing to the fire escape. We tried all sorts of ways to make them stop this practice and then somebody had the idea that they would take one small piece of pipe and run it from the floor of the ceiling in the center of the landing so that the pipe divided the platform in two parts and thus there was not enough room on either side of the pipe to get the truck by. We have eliminated all trucks in the fire escapes, by having that small piece of pipe put in making it impossible to truck through it.

If you will pardon me for saying it, I believe the tendency of the individual coming into industry from the public Fire Department is to err on the side of equipment at the expense of fire prevention. My experience has been that a lot of the men coming from the public departments into industry need somewhat to be re-educated as to what constitutes safety from fire.

PRESIDENT MORAN: You have all heard this very interesting discourse. What is your pleasure? (It was moved and seconded that it be spread on the records and the gentleman accorded a vote of thanks. I think all of these papers should be discussed somewhat.

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MR. FRANK WENTWORTH: Mr. President, I would like to ask if it is his suggestion they should not pull a box when they have a fire.

MR. HORAN: My personal feeling with regard to the pulling of a fire alarm is,—there is just as much reason why we should call the city or town Fire Department for a fire in our plant as there is that we should call the city or town Fire Department for a fire in my home. I think there are a lot of industries that feel they are big enough to put out their own fires. Some day they will probably find out that they are not. If I had it to do. our fire alarm system would be connected to the fire alarm system of the town. I think we ought to be to assist Chief O'Hearn by giving him the opportunity to get there before we let the place burn up. I think the time is coming when we will be connected. I think we ought to be. I know recently the Watertown men went to our place when a machine broke a riser that controls the water supply for our main factory building, a building 4 1-2 stories high and about 900 feet long by possibly 100 feet wide; and many of the sprinklers in that building were shut off until repairs could be made. We called the Watertown department and told the Chief what the condition was and he sent three or four men down to that building until we could make the repairs.

PRESIDENT MORAN: Any further questions? Isn't it rather unusual to have but one riser in a building of that size?

MR. HORAN: I don't know. The Chief tells me there was more than one riser there.

MR. WENTWORTH: Mr. Dana is our sprinkler expert and he might reply to that question.

MR. DANA: I have nothing to add, Mr. President, to what the speaker said. Ordinarily in a building that size there is a riser every two hundred feet and it has about a 6 inch pipe.

SECRETARY O'HEARN: In this particular building there are five risers. There were places in that 900 foot building that were without sprinklers. For that reason they sent for us to patrol the building. They have a fire department of one hundred men in the Hood Rubber Company plant, very well equipped, and they don't call on the local department very often. But once in a while they get stuck, and that once in a while happened only recently. In fact something like forty minutes had elapsed from the time they started to fight the fire until they decided to get help. They sustained around a \$14,000 to \$16,000 loss. There is no criticism to make of the Hood Rubber Company's Fire Department. There is one man who is in charge of their fire department directly controlling the help, drilling the firemen, and he is a product of the Boston Fire Department, a reasonably young man retired from the Boston Department and he has been in charge of the Hood plant for a number of years. When they want good service they come to Boston, and I think they are getting it through Mr. Gately. They have had alarms, however, that we should be notified on. The losses might have been smaller.

CHAIRMAN MORAN: If there is no further discussion on this paper now, we will pass to the next topic, "The Fire Chiefs' Cabinet," by Chief Johnson.

CHIEF JOHNSON: Gentlemen of the Convention;—It is always a right thing for a man to do when he is going to talk on a subject that he has no practical experience in, to tell the God's truth. Now I am going to tell you honestly that I have had no practical experience whatever with the Fire Chiefs' Cabinet. It is a subject that is new to the ordinary head of a Fire Department of the United States. I want to tell you right now, when I first was assigned this subject, my first inclination was to decline because I had no practical knowledge whatsoever of the results that might accrue for the benefit or the demerits of the thing. But I have made in the past three or four months a little study of the question. I

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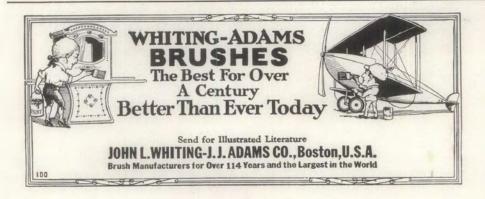
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was asked to prepare a paper and thought I would rather stand here and talk on the subject as it came to my mind than to put my name to something I really didn't know about. Now the Fire Chiefs' Cabinet, as I understand it and as I have conceived the idea of what would be termed a Fire Chiefs' Cabinet, is not the terrible monstrosity that some people of this country would make people I can conceive of no better organization for the furtherance of fire prevention, fire extinguishment and fire ideas and advancement than this same Fire Chiefs' Cabinet. Now let me illustrate. In every city and every little hamlet in our broad land there are problems that are always confronting the head of a fire department which he alone cannot accomplish on account of politics on one side and personal greed on the other. Now this proposition that is my subject will do more to further the benefits of the fire department than anything that I can conceive of. Let me illustrate. In my city I never realized I had a Fire Chiefs' Cabinet, but I have had one for years and never knew it. In 1902 an old member of the Board wanted to have something done that would bring people into the center of the city on a merchants' week and they came to me and asked me what I could do. I told them I would give them an exhibition of the Fire Department and I did and we kept the people right there on the Common and gave an exhibition. I didn't think it would amount to anything, but the chairman of the Board of Trade, the chairman of the executive committee and two or three more said "That is the finest thing that has ever been done in this city. If there is anything you want in the future, let us know and we will see that you get it from an honest, straight, square standpoint, and I never thought anything about it until about 1911 when we wanted a raise for the fire department. I spoke to the Mayor and Board of Aldermen and then took it into my head,—why not go and see these business men? I said to them "I want some motor fire apparatus, told them just what I needed and those fellows went out and went to the Board of Aldermen, and the result was they got me what I wanted for motor apparatus. That was a Fire Chiefs' Cabinet and I didn't know it. It is not a political organization. It is not an organization of any kind at all which will interfere with the authority of the head of the fire department. He is the man that selects the people with whom he shall advise. If a man does not suit him. he can go to work and get in a man and appoint him in his place and consult with him. It is not a political organization. He is not tieing himself down to the National Board of Fire underwriters or the National Fire Protection Association. I wish the firemen of the United States could get over that foolish idea that the National Board of Fire Underwriters and the National Fire Protection Association want to run the fire service or the United States. It is a shame, because I am telling you they have done more in the last twenty-five years for the fire service of the United States than any known organization in the world. It is a fact. It has been proven year after year. And we as Fire Chiefs should co-operate with them and help them, they need our help, they are big, have big monied interests, can make wonderful surveys of the different fire apparatus, that we as fire chiefs cannot possibly make because we haven't got the money in the first place. We haven't got the technique in the second place and in the third place we haven't got the time to make those surveys that those men make. Their whole interest is in the preservation of life and property of these great United States of ours. It isn't in any spirit of self-aggrandizement as some people Of course no man in this present generation is doing something for nothing, but all big interests are protecting themselves, and they are protecting themselves. They don't need our help as much as we need theirs. So I wish that question could be eliminated entirely from this subject.

In relation to this great subject of a Fire Chiefs' Cabinet, I want to read to you just what the formation of a cabinet of this kind would mean to the ordinary city. This idea was conceived by Mr. Franklin Wentworth, Secretary of the National Fire Protection Association and he goes on to say,—"For twenty-five

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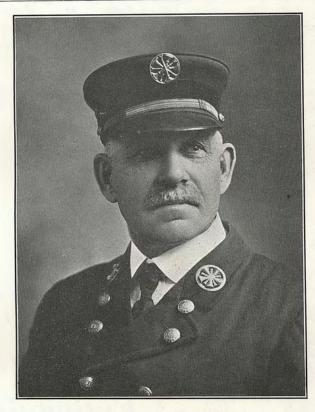
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years, efforts have been expended in evolving methods of fighting the fire waste. We have all the technical knowledge anybody needs,—costly surveys of cities, rules governing hazards, regulations for effective use by fire retarders or devices for fire extinguishment but we have not as yet put into operation any general method of applying this knowledge and making it pay its proper dividends in fire safety. In every city of the United States and Canada there are men and women who understand the impoverishing effect of the fire waste and would willingly do something toward its abatement. At present these citizens are collectively inactive principally because they have never been asked to act collectively. Besides these individuals in various walks of life, there are local bodies like Chambers of Commerce, Rotary Clubs, Credit Mens' Associations, Engineers, Architects, Building Managers' Organizations, Women's Clubs. They are with their affairs but are willing to assist in this someone will take the initiative and tell them how they can help. The Fire Chief is the man to do this because he is the only man whose interest in this subject is continuous and the plan is to assemble these local citizens with him as a sort of permanent committee or cabinet which he can call together monthly and outline his plans to make his city fire safe." Now that is all,—to have this Fire Chiefs' Cabinet organized in every community, a body of citizens who will co-operate with the head of the department for what purpose? To make this city safe. It is not politics. There is not one thing that will tie a man's hands in anything that he might do. I can conceive, gentlemen, of an organization made up of the President of the Chamber of Commerce, of the President of the Women's Club, of a good, active wide-awake Protestant minister, of a good, sound Catholic priest, or a good, straight out and out citizen who has no monetary interests to serve. Ask those five people to meet you in your office. Tell them all the situations you are facing from day to day, lay before them a plan of your city and say, "Ladies and Gentlemen, this is what I want to accomplish. I want fire alarm boxes here, hydrants here, a safety zone right off here,-I want such and such things done here. I want your assistance,—I want your help. And those people, not from any political interest, not from any interest only safety and welfare, will go to work in a quiet, unassuming way and speak to their different

The ministers of the churches will spread the propaganda of fire prevention, and every church in your city will have a sermon on fire prevention on some particular Sunday. The Chamber of Commerce man will consult with every merchant of the city, tell him of the fire hazard and ask them as patriotic citizens, citizens serving the best interests of the town if they will co-operate with the Fire Chief in stopping the fire waste. The President of the Woman's Club goes to her meeting and tells the different house-wives what can be done in the home. That woman is going to do work no one can understand, think how far it will go. Those people are working solely for the interests of the whole town, not for any other interests, only for the home. There are always times when there will be a question arise as to political influence. I am talking in favor of the subject. I am going to look on the other side, on some of the things that have been said to me since I had this subject taken up. I heard one prominent Chief say that it would tie the Chiefs down to politics. I can't conceive of it. I may be wrong. I can't conceive of that, because he is the one that chooses. He is the man that makes his own cabinet. He is the man that will take the responsibility. The citizens cannot take it. All he asks those people to do is to help him further his own ideas. If he wants to make a political job of it, he can. If there is a man that wants to tie himself down with politicians, he can, but if he does that he is through just as soon as his term of office is up. The man that stands four-square for all of the people of his town regardless of politics, regardless of religion, tells the truth and asks the people to help him, always gets along. It has been proved in every state of the United States that the man that stands

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four-square and tells the truth about what ought to be done, is always successful. Chief O'Brien of Indianapolis, a very, very progressive Chief, one of our new Chiefs, at Buffalo, at the meeting of the International Association,—I asked him what result he had had with his Fire Chiefs' Cabinet. I was very much impressed by what he said. He said, "It is the best thing I ever adopted because I have accomplished things that would have taken years to do before, which I have done in months." He is advancing rapidly in the fire prevention work. He says it is helping the women and children in fire prevention. Gentlemen, we have come now to the stage of the fire-fighting game where fire prevention is the one thing we have got to look out for. We have the most costly apparatus in the United States or in the world. We expend more money in this country than any two countries in the world for fire apparatus, equipment and men, but we have got to pay more attention to fire prevention. The Fire Chief of the future will be the man that sees into the future and sees beyond his own immediate vision, in his own town, the possibilities of a conflagration, and goes to work and takes steps to prevent that conflagration before it comes. In every conflagration that we ever have had, in any of our cities, in Chelsea, Salem,—they started from the simplest of simple things. If the ordinary rule of fire prevention had been adop'ed, they would not have assumed those terrible proportions, but there was some slip-up. If a Chief was not backed up in his recommendations, if he was not supported in things he wan ed to accomplish, then an organization of this kind would have great effect in benefiting him. As I said before, the Fire Chief of the future will be the man that can see beyond and see the possibilities in his own city, and work to prevent those possibilities. Fire prevention has got to be our watchword for all these fires. We have expended all kinds of money to extinguish fires, but we do not pay enough attention to fire prevention. This would be a great asset in the fire prevention game. At the meeting of the Massachusetts Chiefs' Club in May I was talking with Chief Daggett of Springfield. He is one of the most progressive Chiefs we have in this country. He is a man always looking for the best. I got to talking with him on this subject and he says, "I guess I have a Fire Chiefs' Cabinet." I said, "When you get home, write me on it." He sent me this letter:

In confirmation of our recent conversation, I will outline in a brief way information concerning the organization and work being done in an admirable way by the fire prevention committee of the Springfield Safety Council. He does not call it a Fire Chiefs' Cabinet. About two years after the organization, realizing the need of the furtherance of Fire Prevention work incorporated all such work in its general safety program. This was organized as a part of the program of the Springfield Safety Council in the early part of September 1923. The Fire Prevention Committee is composed of the President of the Springfield Glazed Paper Company, who serves in the City government as an alderman as Chairman of the Board, and in the City Council, ex-officio member of the Board of Fire Commissioners, Richard W. Marshall of the Rick Department of the Springfield Fire and Marine Insurance Company. Fred M. Kimball, insurance agent, Kenneth B. Babcock, safety engineer, Mr. Moran, Building Commissioner, and myself as Chief of the Fire Department. It is hoped that this Committee will be enlarged this year so as to include a representative of each of the luncheon clubs, the Rotary, the Kiwanis, and Exchange and a representative of the Women's Club. It is felt that having the women represented in this way will result in greatly increased benefits, for the women are truly industrious workers for any proposition in which they truly believe. The accomplishments of this Committee in the short time during which it has been functioning are briefly listed below.

1. The birth of a Fire Prevention bill after analyzing the constitution of similar laws and ordinances in operation in other parts of the country. This

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bill has had a stormy journey through the Legislature. It is due for its third reading in the House on Monday. It has passed the Senate.

2. Planning the general observance of Fire Prevention Week in 1925.

3. The teaching of fire prevention in the public schools.

4. Furnishing firemen with conditions in schools.

5. To co-operate with the publicity of the Safety Council program by having a very pronounced propaganda through the newspapers of those at present engaged in the study of oil burner hazards. It is well also to note that Springfield's Safety Council is now a member of the Springfield Chamber of Commerce. It has been given an amount of \$100.00 and while this is not a large sum, it is sufficient to assure the success of the efforts of this Committee. While not, strictly speaking, a Fire Chiefs' Cabinet, yet it is about the same and can readily accomplish the same end. They can adopt any program suggested and in this way strengthen the work of other similar committees and the Fire Chiefs' Cabinets. Such a Committee is of material assistance to the Fire Department and should be a decided advantage in the community.

Yours truly,

W. H. Daggett.

When I read that letter I made up my mind if he put his name to that paper he wa shonest and felt it was a benefit to him, or he would never have signed it. It satisfied me of the virtues of this proposed cabinet. He is not only one of our progressive men, but one of the most careful men I ever knew about doing anything before he studies the proposition thoroughly. Now gentlemen that is all I have to say on the subject. I have presented it to you the best that I know how. As I said, I have had no practical experience whatever. I don't want to tell an untruth and tell what it can accomplish, because I don't know, but I will say this. I have such faith in it that I am going into my town and going to embody the Fire Chiefs' Cabinet that I have had for a number of years, and I know that I can accomplish more than I have in the past, and I may say in all modesty that I have accomplished a good many things that I think are almost impossible to do. I believe that every Chief can organize something of this description safely without any risk of political interference or sectarian interference if he works honestly and conscientiously for the betterment of his city under this plan, he will be more successful than if he tries to work and plan alone,—he can do it so much quicker by this method than he can by trying to work through different committees and boards of aldermen and selectmen. (Loud and prolonged applause).

PRESIDENT MORAN: What is your pleasure in regard to this very

interesting talk on a very interesting subject?

A MEMBER: I move the report be accepted and spread on the records and a vote of thanks given to Chief Johnson.

(Motion seconded and it was so voted.)

PRESIDENT MORAN: Any discussion on that subject?

Mr. T. ALFRED FLEMING of the National Board of Fire Underwriters: In one of the cities of the Middle West, one of the best known fire chiefs of the International Association, who had served his city well and was considered to be one of the most expert fire chiefs of the State, was slated for dismissal because of politics. I personally had a hand in what might have been called at that time a Fire Chiefs' Cabinet. We chose one of the chief citizens of the city, the President of the Chamber of Commerce, and at the Fire Chiefs' suggestion, I requested the Rotary Club, Kiwanis and others to choose from their membership certain ones representing the entire body. We also had a lady representing the Woman's Club, and two representatives of the ministry of the city. These ladies and gentlemen had a meeting. It was only ten days and the new Chief had been picked.

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Evidently it was practically unannounced, but the weight of the influence of all those citizens representing the chief organizations had its effect, and the next morning the Mayor made a statement he was going to be one of the first, if not the first in that city to blaze the way to make the Fire Chief's office free from politics. Every head of a Fire Department is a man qualified to choose the assistants who wish to serve him. That Chief is still Chief in the city and is doing great work. I have found in every city where they had a Fire Chiefs' Cabinet the finest of results have been obtained, because the Fire Chief has a corps of real, good, live business men to fight for him, and fight for every problem he has to place before the people. It means everything. It relieves the fire chief of very much of the worry that he ought not to be required to face.

CHIEF TABER OF BOSTON: I have listened with interest to what Chief Johnson said and to what he has read. I know the originator of the so-called Cabinet very well. For fifteen years, in this city, before I was Chief, with other chiefs with district and deputy chiefs, Mr. Wentworth and others working along a similar line have been consulted by various Chiefs to embody that which has been recited by Chief Johnson. When in difficulties every man working at a fire cannot say that he knows it all. When he does he is a damn fool. A man that is big enough to go to the other fellow who has more knowledge along certain lines and get his idea of it (I mean if he is a more or less enlightened man with a fancy for that particular line). I feel that a Chiefs' cabinet, while not known exactly by that name, has been working right here in Boston for over fifteen years to my knowledge. They have been of great service, and they are channels through which we have gotten many valuable ideas. Mr. Wentworth and Mr. Dana I have consulted hundreds of times. You can get an idea and a good one from the newest and most recent member of the fire service. I have been in action at fires when a suggestion from a recruit was very acceptable. I think that all of us men here representing our various municipalities would do well to ask and confer with the various industries which are located within their environs as having their views. While the fire chief is a real authority through years of experience he must be conversant with all things relating to his business. He is just human. But usually I have found them big enough when they were stuck to go to the other fellow whom they thought knew and invariably that man has helped them out. I have been helped out thousands of times right here. I have had some few problems in thirty-seven years experience, and I have never yet found one of these men wanting. They have been an asset to me. I can mention Cabot, Osgood. They ahve helped us in everything. The recent Fire Alarm Station, which we have in Boston, according to all newspaper men here, is going to be the best thing in the world. As Chief Johnson says we have looked into the future. We are going to take in Waltham and all those other towns in our fire alarm system. That is looking into the future. They can't back out,—it is metropolitan Boston and going to remain so. I thank you. (Applause.)

Mr. FRANKLIN WENTWORTH: I thought this was a pretty good scheme, but after hearing Chief Johnson speak on it, it seems to me to become a much bigger and better plan than I ever conceived it to be. It is practical. He has been operating it. Chief Taber of Boston has been operating it. We want very good men to go up on Beacon Hill and attend the Legislature and fight bills that were put in there in private interest. Vote for the things that we all believe in.

Chief Johnson and an entire half dozen of fire chiefs in this State any time in the last ten years have had a cabinet. You can call it by any name, so long as the fire chief has the power, authority and support. So long as he is the man that dominates it. In all these years our association has been making standards, been making technical standards by which fire waste might be fought, hazards of all kinds. We study, we produce literature, but a man wants to make his life count for something. I don't want to go on until I can no longer hold the pen



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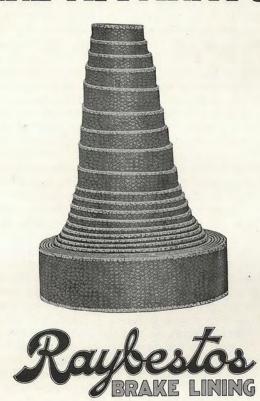
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simply getting out standards. I want to see those standards applied. I have been thinking for a year wondering how they might be applied in some systematic way. Out in the West one time when I was laid up two or three days by a washout, I began to think of some definite plan by which that might be applied. I have seen these Chambers of Commerce Secretaries and Fire Prevention committees, flashing a little while and then dying out through lack of sustained enthusiasm. It became real to me that the man to head any organization of this kind must be the Fire Chief because he is on the job all the time and he must have a group to help him, to sit down and study his plans and work out his ideas, because he is the man to whom the people look for their safety. I thought, what kind of an organization would it be? What can we call it? I could think only of the President and the men in his cabinet. There, I said, is the idea. The name may not be a good name, but there is the idea. Look at these fellows that are going to run for President this next year. They are politicians, but when one of them gets in, whoever is elected President, we know he will be President of all the people. So he selects a group of men around him, men of ability, men that he knows, men that he trusts and men on whose judgment he relies and makes a cabinet, not to rule him, not to tell him what to do. He is the big noise himself. He lays these problems before this group of his friends and says, "Gentlemen, what can we do in this instance for the good of the United States? What can we do for all the people in this matter of foreign relations? The same in any other matter that the cabinet discusses. There is the big thing. You want to reduce it to the city and you have the man like George Johnson and a little group of citizens around him, his cabinet. Call it what you like. George Johnson's effort to make his city very safe. What does your experience show that you ought to have to make your city safe? These men sit in and he tells them what he wants and gets it. He organized a cabinet out there ten or fifteen years ago before anybody ever thought of it. Chief Daggett of Springfield turns to the Chamber of Commerce. There are groups in Chambers all over the country, but they are not all co-operating as that chamber does. I know last year when I went to Springfield and saw Chief Daggett, he was not getting the co-operation there that he is getting now. I went to the Secretary of the Chamber and said to him, "What are you doing to help Chief Daggett make the city very safe?" He said, "We have a Safety Council that has a fire prevention committee." I said, "What is it doing for Chief Daggett?" Well, he didn't know what it was doing. I said, "Find out. Try and see whether your Chief is getting the support that he ought to have." We want to put behind the Fire Chief a power that will make political interference impossible. It is true of any city; the citizens of a city are naturally disposed to help the Fire Chiefs. They know he is their official, but they don't know what to do. They have to be told. When you have had a fire loss and tell them what to do, they will co-operate. It will be a mighty mean citizen that would not sit in with any group to help the Fire Chief to do something for the good of the city. The force of the whole people is behind such movements. Now what can we do? What can the National Fire Protection Association do? We have an organization, supported by the payment of dues, about four thousand members. Quite a little income. I want to see this idea pushed. want to help my fire chief friends. I know seventy five per cent of the fire chiefs of this country,—I have been around the country for so many years. Done all I could to help with what influence I could rally for them. I want to see the fire waste cut down before I die. I welcome such organizations as this because you know you get closer to your problems in a small organization. I was down a couple of weeks ago to the New Jersey Fire Chiefs' organization. They are going out strong and organizing these cabinets in very city in New Jersey. The Fire Chiefs' Club of Ohio had their Convention last week in Columbus. A Chief delivered a wonderful address on this subject. I don't know as it was any better than George Johnson's. His speech sounded like a sermon. He had the power,

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punch, enthusiasm and truth that you all like to hear. Chief Batch is going to be at Buffalo and tell what he thinks about this Cabinet. The man who looks into the future and sees fire prevention as the best way we can serve our people, he is going to be the big man of the future. I made the plea to our Board members to chip in. I passed the hat. I said "We need the full amount to go out and confer with the fire chiefs of the country and see what they are up against, and see if we can't help them, sit down and organize a local group for them if they want us to establish it, or if we find the local fire prevention organization has gone to sleep and is no good. Our members have responded. I will get all the money we need yet. It is coming in in checks of \$1500. It is on the amount that we have already for this end that we are undertaking to employ a Field Secretary, a man that can do what I have tried to do, carrying my executive duties also. But he will be free to do this specific thing, to concentrate on it, he can be conferring with the fire chiefs and offering such help as our national body can give out and that our local members can give in all the cities of the country. Our four thousand members are scattered all over the country. The men must be told what to do. The fire chief himself must want them to do it. We won't force anything on any fire chief. We are not going to organize any committee to tell the fire chief what to do. We are going to find every Chief that wants it. He is the fellow we are going to rally around. They won't rally around us. When the Chiefs want this thing and want our help, then I will have our Field Secretary go and sit down with them and help them in any way that we can and advise them and help them in any way that we can. The man selected is here today. I want you to see a good-faced chap. His name is Percy Bugbee. He came out of the Institute of Technology here two or three years ago. He has been my right hand man in holding down the office while I have been out on the road. Now I am going to hold down the office and keep him out on the road. I want you to look into his face and see what a good-looking chap he is. (Applause.)

Mr. PERCY BUGBEE: Gentlemen:—This job of Field Secretary is only about three days old. We don't know yet just how it is going to shape up, but I have talked with Mr. Wentworth, in fact today since entering the hall, we have decided to begin right here in Boston. We would like to make the start in New England, and he has given me permission to spend the summer right here in our own territory. We can't do a thing unless we have the help of the New England Association of Fire Chiefs. We have prepared a list of cities in New England, the largest cities, showing the per capita fire loss over a period of five years. I would like to have your permission to give that to the Secretary and have it stated in your proceedings. It will give you a pretty good idea of the high spots in New England. We are going to spend the summer at certain of these cities. We hope to get a chance to get acquainted with the Chiefs of those cities and be able at the end of the summer to have the New England Association of Fire Chiefs before the country as the first organization to actually sponsor this work of putting it across. I hope you will be with us.

PER CAPITA LOSS OF NEW ENGLAND CITIES HAVING POPULATION OF 20,000 OR OVER.

Connecticut—								
	Place	1919	1920	1921	1922	1923		
1	Bridgeport	\$ .59	\$ 1.30	\$ 1.09	\$ 1.02	\$ .55		
2	Danbury	2.96	3.08	4.39	6.42	1.69		
3	Hartford	1.54	2.04	2.41	1.67	1.45		
4	Meriden	1.15	1.61	1.21	1.05	3.37		
5	New Britain	.65	1.02	2.92	1.66	1.50		
6	New Haven	1.52	4.24	7.91	3.53	2.90		
7	New London	4.43	3.46	5.86	1.40	5.60		
8	Norwalk		2.72	3.01	4.45	6.20		

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#### NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

9	Norwich	1.10	1.87	3.66	2.10	3.04
10	Stamford	13.09	.49	6.99	5.20	2.82
11	Torrington	10.05	3.48	1.42	.38	1.14
12	Waterbury	1.34	1.69	2.19	1.55	1.85
	ine—					
1	Bangor	.09	1.38	1.66	3.39	3.08
2	Lewiston	2.56	2.30	2.22	6.31	2.91
3	Portland	4.40	3.47	6.29	9.24	2.84
Ma	ssachusetts—			0.0	4.00	4.00
1	Attleboro	<b>**</b> 0	1.77	.93	1.00	1.29
2	Beverly	.79	5.11	7.19	1.54	2.73
3	Boston	3.19	4.19	5.01	4.34 3.66	8.18 2.49
4	Brockton	2.29 .35	1.18 .61	2.13 .46	.94	.85
5	Brookline	3.73	4.17	3.18	5.74	3.85
6 7	Chalge	9.59	6.58	5.24	5.20	10.61
8	Chelsea Chicopee	1.09	1.57	1.04	1.54	1.50
9	Everett	.51	1.48	2.09	1.95	7.14
10	Fall River	1.62	1.45	3.00	1.62	1.57
11	Fitchburg	1.32	2.80	2.41	1.61	1.29
12	Gloucester	2.58	1.48	7.32	3.01	2.51
13	Haverhill	4.35	7.03	5.82	6.46	8.56
14	Holyoke	4.38	.68		2.04	4.29
15	Lawrence	.74	1.22	4.23	1.41	3.64
16	Leominster	=	2.50	3.97	3.50	9.45
1 <i>7</i>	Lowell	1.96	2.57	2.28	4.10	5.44
18	Lynn	.91	2.52	3.60	3.59	4.13
19	Malden	2.19	38.39 -	1.14	1.00	1.22
20	Medford	1.16	10.46	1.68	2.70	1.35
21	New Bedford	2.08	3.23	1.58	2.52	2.21
22	Newton	1.45	2.47	1.19	1.97	2.45
23 24	North Adams	.50	.58	.90	4.57	3.07
2 <del>4</del> 25	Northampton	2.51	1.89 3.36	2.13 4.31	2.14 14.25	2.80 1.57
26 26	Peabody	3.17	3.30	4.31 1.91	2.21	2.62
27	Quincy	2.23	1.80	6.97	1.37	2.54
28	Revere	1.23	1.12	1.61	2.62	5.67
29	Salem	1.26	5.25	4.32	2.58	2.27
30	Somerville	8.58	1.45	2.51	4 <b>.</b> 71	2.33
31	Springfield	2.75	2.36	7.81	4.02	6.14
32	Taunton	1.25	1.01	3.73	1.66	1.17
<b>3</b> 3	Waltham	.95	.73	1.24	1.08	1.66
34	Watertown		.91	3.91	.74	.83
35	Worcester	1.30	2.48	7.23	1.98	3.52
	v Hampshire—					
1	Concord	2.49	7.18	12.45	13.37	11.14
2	Manchester	1.70	3.14	2.69	3.83	3.74
3	Nashuaode Island—	3.03	17.80	4.69	8.73	3.05
	ode Island—	70	) - F4	116		
1 · 2	Central Falls	<b>.7</b> 9	.51	1.16		1.50
3	CranstonE. Providence		2.27	2.52	1.4	1.56
4	Newport	.49	5.17	2.52	.14	4.05
5.	Pawtucket	1.21	2.74	2.54 2.30	3.50	1.37
6	Providence	$\frac{1.21}{2.41}$	4.20	2.30 4.06	3.66 2.21	1.13 7.21
7	Woonsocket	1.89	1.74	4.00 .90	5.65	3.53
	moni—	1.07	1./ 丁	.50	5.05	. 3.33
1	Burlington	4.97	1.07	1.34	1.06	1.37
	G		1.07	1.01	1.00	1.07



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CHIEF STANTON: I want to personally vouch for Mr. Bugbee. I have known him since he entered the office of Mr. Wentworth. I trust every Fire Chief will welcome him, as certainly I shall in my city.

PRESIDENT MORAN: We will pass to the next subject, a very interesting one, or rather it will be in six months from now. "Snow Removal and the Problem of getting to fires under blizzard conditions," by Chief Selden R. Allen of Brookline, Mass.

CHIEF ALLEN: It is the duty of every well-governed and properly organized fire department to furnish to the community which it serves, adequate year around fire protection under abnormal, as well as normal, conditions insofar

as it is humanly possible.

The winter season brings to the fire chiefs of New England no mysterious problems to be solved, nothing but what can be anticipated. We know from experience just about what the seasonal handicaps are to be. We know that snow-falls of varying dep hs are bound to occur and that streets are liable to become impassable to motor apparatus. We also know that freezing temperatures are almost inevitable and that frozen hydrants may result, thereby seriously decreasing the efficiency of a department, as records all too often show.

Motor apparatus in general has defects and limitations for use in the winter

season.

A motor-propelled apparatus has a pre-determined amount of horse power—no more can be added. There is a limit to the strain to which driving chains or shafts can be subjected;—a limit to the amount of traction that can be secured by the addition of skid chains. Every Chief present has seen numberless snowfalls through which no piece of motor apparatus could travel, notwithstanding the claims of manufacturers to the contrary.

The retirement of our steam fire-engines took away a most effective method of thawing out frozen hydrants and the builders of motor pumps have failed to devise a satisfactory, workable, self contained method to supplant that loss. Pump gauges are not properly protected from freezing in extremely cold weather and winter pumping in such weather must be by guess work on account of frozen guages.

The average city or town finds itself in about the same relative position as

regards equipment, either triple combinations or separate units.

For financial reasons, or for lack of storage space, it has been forced to trade in, or otherwise dispose of the horse-drawn apparatus.

All activities of a fire department today should be figures on a motorized

We will concede that it is possible, in the event of a heavy snow-storm, to utilize privately owned horses and pungs, to replace hose-carrying apparatus, but to dispense with the services of pumps at such a time would be out of the question. The stream that might get us by in the summer time would be worthless under blizzard conditions. We need pumps in the winter time, or not at all.

The question now arises—what has been done and what can we do in the future to meet the seasonal handicaps of the winter without wholly or partially changing our present equipment or impairing the efficency of the department?

In 1921, the Town of Brookline, Massachuset's, decided on a comprehensive plan of street snow-plowing to keep open its streets throughout the winter so that no change in the equipment of the fire department would be necessary and motor travel, as a whole, would be unhampered and it is a pleasure to place before you the details of our experience.

The Town is residential and has a population of 42,000. It has an area of 6.81 square miles and 72.45 miles of streets. Street widths are mainly 50 feet; a few are 45 feet, one is 80 feet and another varies from 160 to 180 feet. It is a hilly town with elevations varying from 7 feet to 340 feet above mean high



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water. The steepest street grade is 13%, with several others varying from 8 to 10%.

The Fire Department has 96 members quartered in seven fire stations; has seven triple combinations, six of these 750 gallon pumps, one with a 350 gallon

pump. It also has one 75 foot aerial truck and one city service truck.

The plowing of the streets is entirely under the supervision of the Superintendant of Highways. He is notified by the Police Department of night storms. The winter of 1921 and 1922 was a mild one and the total snow-fall was 37.6 inches, the storm of February 20th., being the only serious one of that season.

That year, five Mack trucks were hired from private contractors, the contractor furnishing the chauffeurs and the Town an assistant. The Town also furnished and attached the plows, paying the contractors \$4.50 per hour which included gas and oil. The town was divided into five districts and a plow was assigned to each district. As the winter season approached, the plows were fitted and the necessary connections made by the Town so that when they were called into service the average time consumed in connecting up the plows, was forty-five minutes. The plowing started when the snow reached a depth of two inches and was continuous, night and day, no stop being made except to change operators or to replenish gasolene or oil. Main arteries plowed first. Secondary streets next. The snow was pushed to the sides of the road, leaving an open path almost the entire width of the street allowing for future storms. At no time did the snow get beyond the height where the plows could go through it easily and the only trouble experienced was on a grade over 10%. At no time did the Fire Department experience any difficulty in reaching a fire, even in the outskirts, and no change was necessary beyond putting on large skid chains.

The snow was carted away by autos from seven business centers and the

total cost of the entire snow removal for that season was \$3,360.80.

The plowing equipment for the season of 1922-1923 was changed somewhat to provide for the steep grades. A ten-ton Holt caterpillar tractor was purchased at a cost of \$7,512.50. This tractor was equipped with a Sargent plow capable of plowing a path 26 feet wide or 13 feet on each side, and can easily cut through three or four feet of snow, but it can only be used at its full width during the early morning or when travel is practically at a standstill.

In addition to this tractor, the equipment was one five-ton Mack truck and one three-ton Kelley truck, both owned by the Town and used for street work during the balance of the year, and two Mack trucks hired from contractors under the same conditions as the preceding winter, but at the rate of \$3.50 per hour, instead of \$4.50. The snow-fall for this winter was heavy, having a total of 68.5 inches and the total cost for the snow removal was \$11,676.11.

The result was the same as the preceding year. The remote districts received exactly the same degree of fire protection as they did during the rest of the year

and we made no change in our equipment.

For the season of 1923-1924, a Fordson tractor was purchased for use on the hills at a cost of \$1100.00, and was equipped with a Stark plow with a fifteen-foot sweep. The Town also used its own Mack and Kelley trucks as before and hired two five-ton Mack trucks under the same conditions and price as the winter preceding. The total snow-fall was 32.3 inches and the cost for the snow removal was \$5956.61, with the same gratifying results.

The cost of the plows that have been used on the front of the trucks has been \$164.50 each, which includes the equipment for raising and lowering and attaching. A plain mole board plow of steel, 10' long is used and set at an angle. Based upon our experience, we believe we have reached the stage where we can guarantee to our citizens the same speed in reaching a fire in winter as we can at any other season, not only in the business sections, but in the most remote sections as well and that a comprehensive plan of snow-plowing is the only method that makes it possible.

67

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We believe that it is absolutely necessary that tractors of sufficient weight and power be used on steep grades and that the balance of the equipment should be trucks of sufficient power and weight to enable them to take care of even the heaviest falls of snow that can be anticipated. We recommend that the street mileage allotted to each plow be kept as low as possible. We also recommend that not over 2 inches of snow be left on the ground, so as to avoid ruts.

There is one element of danger that this scheme contains and that is the danger of a truck breaking down and no provisions being made for replacing it, allowing the snow to gain headway, so provisions should be made for keeping a truck, properly equipped with a plow, in reserve to meet such an emergency.

I believe that the Boston Fire Department has dealt with the frozen hydrant problem in the only satisfactory and safe manner by purchasing several outfits of portable thawing device of proven value and having them available at all winter fires as the emergency arises.

PRESIDENT MORAN: Gentlemen, what is your pleasure regarding this

paper?

A MEMBER: I make the motion the paper be placed on the records.

(Motion seconded and it was so voted.)

PRESIDENT MORAN: Any discussion on that paper?

CHIEF TABER: From the problems presented by Chief Allen, I assume that he is taking the Town of Brookline or a similar condition in some other town. The width of the streets must interest you. The responsibilities in a comprehensive plan as set forth by him, and having that 50' width is wonderful. But in a city of 7500 alarms, a large city, everybody must see that the expense of simultaneously moving in all parts of the city would mean a tremendous outlay. In 1920—I wish he had spoken of that year—we had a snow-fall in this city and surrounding cities and towns of 86". Now you know that was abnormal,—it was the greatest snow-fall we had had in twenty one years. I assume that the board of governors of Chief Allen's town saw the need of heavy, powerful tractors. It is nice to come in through the terminals who start their plows with the s'orms and keep relaying along the line of travel so that we have really a wonderful pathway from Providence to Boston. But it isn't the outlying sections that we are bothered so much about, and it isn't so very hard to go through provided the snow is not of a wet nature. But in the down-town sections of our city we have most trouble,—eighty-six streets that have an average width of less than 25 feet. Right through the heart of our city an alleyway in which to enter the buildings,—at one time there would be conges ion to that extent it would almost border on a panic. We have a street 19 ft. at one end and 20 ft. at the other on which they put in the papers recently that there had been passed through that street in one year approximately five million persons. Those are the problems that we are up against. While we have the measures of cleaning them off with grades that in many respects offer 100 per cent resistance to either end of these alleyways, we haven't been always able to get into them as we would be if we had a 50 ft. street. Because when they clean off the sidewalks they don't evenly spread that clearness to the whole width of the street, but on the side which gives a very good field to a plow running through the wider streets. and acts as a passage for apparatus to other streets. The Keystone plow has many good qualities and they have them on the main lines in our city. The Elevated Road has really done wonders and if it hadn't been for the Elevated Road our problems would be much harder. We have in many of the hill sections sleighs with horses, but in the responses we have had there the damnedest month in the year we have in each case responded notwithstanding the depth of snow. Up to date though the arrival of the horses only provide for one emergency, so that we have been after all very fortunate, but if we had many 86 inch falls of snow for a season, our motors would need a tremendous amount of overhauling, and the general drift

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Opposite the Stratfield Bridgeport, Conn. to motors, while it has been best for fire apparatus and most easily repaired, most efficient for all purposes; still we break them just as they do in Brookline, or down in South Norwalk, Conn. The same thing is here as it is there. He has brought out something which this organization was framed for. Having the same climatic conditions practically throughout New England, our problems are much the same. The discussion is good, wonderful. It would be better to induce some of their city governments into buying heavy, powerful tractors, and their fire problems would be much easier. He spoke of the hydrants. We have had wonderful results, much better than the steam pump engine could have produced. We carry on all of our fire apparatus a large pump, and advise all of you men who have not got it, you will be able to see one at our repair shop if you desire to see it in action. All you have got to do is to say something and we will produce everything that you want to give you an idea of penetrating 4 inches or 5 inches deep and in 4 sections. (Applause.)

Mr. CALDWELL OF THE N. E. INSURANCE EXCHANGE: I wish

to compliment him on the very able manner in which he has handled the snow removal problem. I think there is one small problem he did not consider. As many of you know, in our Northern States such as Maine, New Hampshire and Vermont outside of the larger cities it would be almost impracticable on account of the small amount of travel over these roads to attempt to keep them broken out with a tractor in the dead of winter. As many of you know who have travelled out in those regions, the familiar manner of keeping those roads open for sleighs is by the sleds. I refer of course to the old fashioned roller by which they cleared My experience has been with motor apparatus that it is pretty treacherous going. As long as you can roll in the center of the road with a road which is pretty well packed down, you are all right, but if you deviate much from the center you are apt to get in so that you will have to be hauled out. brings up the problem as to whether in a lot of our Northern communities it is not going to be necessary to still provide for lighter sleds for certain winter conditions. Undoubtedly there are Chiefs here from some of these Northern sections, and I thought they possibly might impart some information along that line.

PRESIDENT MORAN: I think that subject is very interesting to every Chief here. I know in our city before they started this plowing there have been occasions there when we have had as many as forty-five horses on the old spare apparatus. Now we have disposed of the spare apparatus. Is there any further discussion on that subject?

CHIEF TABER: I think Mr. Caldwell's objection to the Northern roads is very well taken. But I have in mind coming down from Dalton, Mass., last winter over the road and I was very much surprised to find the cleaner road from Dalton, Mass., along the State highways, much cleaner than I have found in many of our streets right here. The traffic in autos tills the road and makes it hard to cut up, and as with the heft of the traffic you may always find until such time as it can be cleared it is a pretty, dangerous, hazardous response to all apparatus. But in the more northern and isolated sections where they really cannot pick out an isolated road, I believe he is right. We have to rely I presume in many instances on the extension of the service from the main road by the motors over the lesser safeties from the main highway. Of course I hope that they will never see a winter as heavy as we did in 1920, because if we do they will be making powerful motors for fire apparatus that will easily be heavy enough to sink in and hold the road in order to get through there before the conditions have existed. After all is said and done, the horse is done away with but every Chief here knows whether in Northern or Southern New England it is pretty good if he has an emergency service with his motor apparatus of a horse and truck. I think every one of the Chiefs have taken that precaution. We have in our city covered the outlying sections, and

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PRESIDENT MORAN: If there is no further discussion, we will pass to the next paper on "Methods and Possibilities of Snow Removal as an aid to Fire Departments" by George White.

MR. GEORGE WHITE: It is important to point out before commencing this talk that there is a decided distinction between "snow removal" and "snow fighting". Snow removal as generally practiced, is but little more than digging yourself out after the storm. "Snow fighting" is keeping ahead of the storm and not getting snowed in at all. As thus defined, snow removal is of very little aid to fire departments; "snow fighting" would prove more interesting.

Probably the best way of describing methods and possibilities in this field is to tell briefly what has been done and is now being done with this question by the Department of Street Cleaning of the City of New York. New York was the first city in the Eastern snow belt at least, to make a serious study of this problem and the methods in use there are conceded

to be the most successful vet devised.

There, the work is divided into two distinct parts, viz.:

1st. Snow fighting, or keeping the streets open and traffic unimpeded during the storm.

2nd. Snow removal, or disposing of the piled snow either after the storm

is over or during the storm itself if necessary.

The second part is as important as the first. There is no room in the street for snow to remain until it melts and provision must also be made for possible storms to follow. The primary object in all this work is to get the snow off the pavement itself before it freezes or traffic has beaten it down. Fire apparatus must be able to move through any part of the city proper, at any hour of the day, summer or winter. Further, as there is never more than forty-eight hours supply of food in the city at any one time, you can realize how important it is for traffic to be unimpeded.

In describing how the present system developed it is necessary to go back some ten years. Up to and including the winter of 1913-14 there was no snow fighting and all the snow removal was done by contract. The Department of Street Cleaning had no organized snow removal force of any consequence and the only equipment consisted of a few horse-drawn snow plows. Practically all snow removed was shovelled by hand and all of this was carted away and dumped either into the rivers or on vacant lots, etc. In the light of present knowledge it is evident that this method is an exceedingly slow and costly one and it would be entirely inadequate for the needs of today.

Beginning with the winter of 1914-15 a new system was tried. Its

salient features were as follows:

1st: The organization of a snow-fighting force made up of emergency laborers officered by Department employees. This force was to work while the storm was in progress and bend every effort to keep the streets openfor traffic.

2nd: The use of sewers wherever possible for the disposal of the snow. 3rd: The organization of a snow removal force consisting of contractors' organizations, using trucks for carting snow and supplemented by emergency labor by department employees for sewering the snow not disposed of by the snow fighting force.

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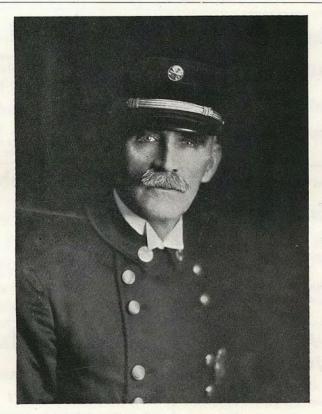
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To make up this snow fighting force emergency laborers were registered as early in the fall as possible. About 40,000 were registered that year. Notification cards for all emergency laborers as well as for department employees and other city employees drafted for snow work, were made out and sent to the police stations for the precincts in which men lived. they were sorted according to the patrolmen's posts, ready for distribution when the call was sent out for snow work to start. This system was generally successful and in each storm that winter an average of approximately 12,000 emergency laborers were provided with equipment and at work in the streets within four hours after the call was sent to the Police Department. This snow fighting force was made up into groups each under the direction of a department sweeper. They were equipped with pan scrapers for pushing the snow down sewer manholes where possible. Where no sewers were available the snow was pushed into gutters and piled for later removal by the snow removal force. The latter loaded the snow into trucks for dumping. The department also tried out that winter for the first time push plows in front of motor trucks as an aid to the pan scrapers of the snow fighting force.

It is worth while to say a little more here regarding the motor truck rush plow as this has since developed into the most efficient piece of snow moving equipment in use to date. The horse drawn plows previously used had worked out well but they were too slow. During the previous winter some members of the Department of Street Cleaning had conceived the idea of taking the mould-board or blade, from the horse-drawn plow and placing it into the front of a motor truck, fastening it to the truck front axle. The blade would then clear a track for the truck and the truck could develop more power and even double the speed of horses. This idea our company took over to develop. Considerable experimenting was done that year with the result that the department purchased twenty-six of these machines for use during the following winter. Although they were crude and a little light they were highly successful and demonstrated conclusively that such a device was not only practicable but a big improvement over hand labor or horse-drawn plows.

This new system inaugurated in 1914-15 proved highly successful during that winter the total snow-fall was 28.8 inches at a mean temperature of 39.3 deg. Fahr. as against an average for the previous 46 years of 31.7 inches at a temperature of 37.7 deg. Fahr. So that conditions were about as usual. The total mileage of streets scheduled was 927 with an area of 32,607,000 q. yds. The total amount of snow removed was approximately 4,300,000 cubic yds. and the total cost approximately \$600,000. At no time was traffic beriously impeded. Figures showed that the work of snow fighting went on at nearly nine times the speed and at about 1-8 the unit cost of snow removal; or, in other words, the snow fighting force removed eight times as much snow as the snow removal or trucking force for practically the same cost.

This showed progress.

During the next year, the winter of 1915-16, the system had a serious test. 50.7 inches of snow fell at a mean temperature of 36.8 deg. F., or 55 per cent more snow than the average at a lower temperature than the average. Once more the new method proved its worth. The department had purchased seventy more motor truck plows, making a total of 96, all of which were mounted on contractors' trucks. An average of 9060 emergency laborers were available during that winter, or 61 per cent of the required number, but the additional plows more than offset this shortage. A total of approximately 11,900,000 cubic yards of snow was removed at a total cost of approximately \$2,500,000.

This system was in use with few modifications and satisfactory results until the winter of 1919-20. Conditions during that winter were the worst

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in many years. During December, 1919, fourteen inches of snow fell which was handled fairly well in spite of an increasing scarcity of emergency labor. In the latter part of January, 1920, a hard snow storm began, later changing to sleet with a freezing temperature. The snow already fallen started quickly to freeze. Then came more snow with high winds. Due to the severity of the storm the hired trucks were hours fighting their way to the department garages to have plows attached. An acute shortage of labor aggravated matters. Less than one-third of the required snow fighting force was available. By the time additional labor was drafted and the plows were out the first snow had frozen solid and the damage was done. It was too late for snow fighting and from then on it was a matter of old fashioned snow re-Hardly a wheel turned for nearly three weeks. The merchants in the city estimated their loss as over \$100,000,000. Due to ice on the tracks, trolley cars were all stalled and some remained where they stopped for over a month. It was early March before the streets were completely cleaned. Fortunately there were no severe fires. Fire apparatus was able to reach the

few slight blazes that occurred, by driving on the sidewalks.

The Department of Street Cleaning was subjected to severe criticism, which it must be admitted was entirely unwarranted. They had done everything possible under the circumstances and were beaten before they started. Every known device for melting and moving snow was tried cleaning up that winter from oil-burners and flame throwers to steam shovels. most effective was hand labor with picks and shovels at rates up to 75 cents The total cost ran into millions of dollars. That storm proved conclusively that so far as New York City is concerned snow removal is a dead issue. The failure of the snow fighting force was due to two causes; first, shortage of labor and second, lack of department-owned equipment. For the previous two or three years it had become evident that the shortage of emergency labor was increasing. This breakdown demonstrated that equipment must be added to take its place. Further the department should own sufficient trucks and plows always prepared and be independent of outside help as much as possible. The secret of success in the snow fighting system is to always keep ahead of the storm; get the snow off the pavement before it is too deep to handle and before it has a chance to freeze or traffic can beat it down. The next spring approximately \$2,000,000 was appropriated for the equipment and the following was purchased: 212 five-ton trucks, 75 of which were equipped with flushers for use in cleaning the streets during the summer and 137 with dump bodies for use throughout the year for garbage and ash removal.

100 two-ton trucks with dump bodies for use in garbage and ash re-

moval and for carting snow to be dumped.

50 five-ton tractors of the track-layer type for use with push plows.

100 one-ton tractors of the track layer type for use with push plows in sewering and for hauling the four wheel type plows previously drawn by horses.

300 push plows for motor trucks and tractors.

150 four-wheel plows of the horse drawn type but equipped with tractor

hitch as well as horse poles.

Provisions were also made for increasing the department forces to operate this equipment. A school of instructions held during the summer and fall to train drivers for the trucks and tractors. Until such time as sufficient men could be recruited, department forces were augmented by police and firemen. All possible steps were taken to avoid a recurrence of the previous winter's breakdown.

Temporarily snow removal under direction of Fire Chief.

The winter of 1920-21 was a mild one and not until February 20, 1921 was there an opportunity to try out the new equipment. That day 13 inches



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of snow fell. The storm was handled in a successful manner. The streets were always passable and traffic never impeded. Conditions were normal within 24 hours of the storm's start and all snow was off the streets within

three days. There never has been another tie-up since 1920.

During the winter of 1921-22, a total of 29.2 inches of snow fell. A total of approximately 4 1-2 million cubic yds. was removed at a total cost of \$2,800,000 or a unit cost of about 62 cents per cu. yd. This total cost includes several false alarms; that is, times when the forces and equipment were called out and the snow stopped or melted off without being moved. The actual unit cost of snow removal probably did not exceed 50 cents per cubic yd. It would not be possible to remove the snow by any other method for less than double the figure at least. The streets were always passable. Some idea of the magnitude of these operations can be gained from considering that the scheduled area is now 1017 miles of 6000 streets or approximately 36,000,000 sq. yds. of pavement. All of the snow including that shoveled from the sidewalk has to be disposed of. The mileage given above does not include unpaved or macadam streets nor streets in the outlying dis-The average is five storms of 6 inches each and the average cost is \$3,000,000. The department now has available 7,000 department employees and an average of 10,000 emergency laborers. The following equipment is

119 five-ton trucks with flushers to which plows are attached and which are ready for immediate call from about November 15 to April 1st.

50 five-ton tractors with push plows always available.

100 one-ton tractors with four-wheeled plows.

350 five-ton dump trucks in reserve with axle clamps and lifting devices attached. These can be used for either snow fighting with plows or for snow removal in carting the snow as required.

100 2-ton trucks with dump bodies for carting snow.

10 motor driven brooms.

100 spare plows for replacements. A large stock of replacement pails. There is also a reserve snow removal force comprising contractors' trucks which can be called out for carting snow in an emergency.

The city will in all probability purchase 150 five-ton trucks and 150 more push plows this year. The method of operation is as follows.

The Department of Street Cleaning handles the boroughs of Manhattan, Brooklyn, and the Bronx, Queens and Richmond are under the direction of their respective borough presidents. Each of the three former are divided into numerous districts. Each district has a department garage or yard where trucks, plows and other equipment are kept. The tractors are all kept in the downtown districts for use in narrow streets. The motor brooms are used exclusively on the bridges over the East River. Each district has its snow fighting force subdivided into groups each with a definite area assigned to it. Notification cards for the various laborers are at the various police stations. Contractors' trucks for snow removal are assigned to the various districts.

Commissioner of Street Cleaning gives the alarm after consulting with the weather bureau, usually after the first half inch to one inch has fallen.

At this alarm

Department employees report to their respective districts.

Police start rounding up emergency employees.

119 flusher trucks with plows go out. 50 5-ton tractors with plows go out.

100 one-ton tractors with four wheel plows go out.

10 motor driven brooms go on the bridges.

350 five-ton dump trucks have plows attached ready to go out if necessary.



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Contractors are notified to have snow removal trucks ready. As soon as possible the snow fighting force goes out with pan scrapers. They are in squads each under the direction of a department sweeper and with a definite area. Their job is to clear the cross-walks, street intersections, open around sewer manholes and fire hydrants and help pile the snow the trucks have plowed into the gutters. The trucks and tractors with push plows plow snow from center of the street to the curb, starting with the main arteries, each truck given a distance of from one to four miles depending upon traffic conditions. As soon as possible the trucks start piling the snow in the gutters, especially around fire hydrants. Every piece of equipment must be ready to go out within thirty minutes of the alarm. Hosing gang go out whenever weather permits without being notified.

At two inch fall the second alarm is given. Then 350 one ton dump

trucks with plows go out.

Contractors are notified to bring snow removal trucks to districts where they are routed and sent out.

All available laborers are sent out.

Although the actual details will vary with the severity of the storm,

temperature, condition of the snow, etc., the general plan is the same.

The main objective is to move the snow from the pavement to the curb and to open cross walks and around fire hydrants and sewer manholes before the snow has frozen or traffic has beaten it down. The work of snow removal can be done afterwards. Even if the piled snow has frozen it can be picked loose by hand if necessary, although this has never been necessary yet.

After the snow has been plowed and piling has begun the work of removal starts. Wherever possible the snow is pushed down the sewer manholes by the motor truck plows. Where sewers are not available the snow is piled into heaps at the curb as high as possible. It is then shovelled by hand into department and contractors' snow removal trucks and dumped into the rivers.

In order to keep the sewers from clogging the fire department is notified, who starts their pumps throwing water from the rivers into the sewers to speed up circulation.

The four-wheeled type plows are used for plowing in unimportant streets and to some extent in sewering. The forces all work in 12 hour

MR. MORRIS: I am reminded somewhat of an experience of a friend of

shifts until removal is completed.

This describes the main points of the system and the details of operation. The department is convinced they have the problem solved and results during the past four winters have justified them. The department has experimented with practically every known device for snow moving. The equipment owned represents the results of years of experimenting. Some of it has worked excellently under certain conditions and poorly under others. Some of it is used for a definite kind of work only. For all around use the department is convinced that heavy motor trucks equipped with flushers or with a heavy load in the bodies and with push plows are the most effective tools devised to date. It is safe to say that equipment purchased in the near future at least will be confined to this type of equipment.

The department owns one snow loading machine for loading trucks. While the results with the machine were generally good, they do not believe the expenditure would be warranted to equip throughout with these machines. They have experimented with a lighter type of machine mounted on a motor truck but results were not so good as hoped. They would like to find a medium priced machine which could be mounted on the one-ton tractors using the tractor for motive power and the tractor engine to drive the loader, If such a machine could be developed it would prove interesting to them.

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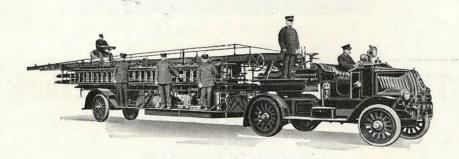
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The secret of their success has been preparedness. What they have done is possible almost anywhere in the eastern snow belt. It might not be necessary to go to such lengths and modification could be made to suit conditions. However, the general idea is the same anywhere. If you are going to move snow the time to do it is while it is falling.

CHIEF TABER: Mr. President, for the benefit of the Chiefs, what is the approximate value of the equipment of the city of New York, corresponding to the sale value?

Answer:—The equipment would represent probably around three million dollars. If you have no more questions, I would like to have you listen to Mr. J. W. Morris of the White Company who is ex-Deputy Commissioner of streets of Cleveland, Ohio, and he may be able to add something to what I have already said. mine when I am called upon to deliver an address after Chief Allen of Brook-Realizing that the speakers that preceded him had very exhaustively treated his subject as well as their own, he turned to his audience and said, "My address is so and so, Englewood Ave., Chicago, Ill.," and left. I feel much that way myself after listening to the remarks of the gentlemen that have preceded me. I have nothing new to offer, but if I can by reiteration or emphasis bring the thought of the importance of snow removal to your mind, I think the time spent will be worth while. The subject as usually discussed and treated is divided into two sections, as it, affects our public highways and our city streets. You fire chiefs are more concerned about the subject as it affects our streets than you are as it affects the highways. Our interstate commerce as it is being transported by automobile trucks, our highway engineers are beginning to realize its importance, that these main thoroughfares be open so that this commerce can be carried without interruption between these various centers, and you gentlemen are interested in getting your fire equipment over the city streets with all the speed possible when a conflagration breaks out, and it is the latter part of the subject that we will confine our remarks to. The subject did not have this importance prior to the advent of the automobile. There was little tractive resistance offered to the horse. I remember when I was a boy my father used to say how deep the snow was in New York City and how the horses and wagons would ride over the fences, how easy it would be. Then 4 inches of snow on our city streets did not offer as much difficulty in negotiating the snow as it would with our automobile trucks or your fire apparatus. I might say somewhat about the lack of interest in the past on the subject of snow removal. Your driver spoke of it as snow fighting, not as snow removal. The snow used to fall and after it had finished falling, an organized effort was then put forth to shovel it up. Sometimes it was; more often it wasn't. I prefer to treat the subject in the way that you gentlemen speak of fire fighting. Fighting the snow, only not waiting until it has fallen with all its disastrous consequences and other troubles that result therefrom. We desire to speak of the matter in the light as you gentlemen understand it. Fighting! When the snow begins to fall, start your operations and not wait until the damage has been done and then start in. I am reminded of an incident in my own experience when a prominent individual, a first class executive, said to me,—when we were preparing to do something a little out of the ordinary, he said, "Why go to all this expense and trouble in inaugurating a snow fighting campaign?" He said, "God sent it and let Him remove it." We might say the same about a great conflagration! When we have transcontinental lines built, and continents united, we travel the continents and employ the best engineering skill we can get. When we were building the Panama Canal, commerce prior to that time went "Around the Horn" and made thousands of miles of a detour, but the best engineering skill was brought to bear and now we have shortened that distance consider-

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ably. I believe the same thought should be in the minds of all those who have charge of this important work, to bring to bear the best thought and the best methods for the elimination if possible of all the troubles that arise from an excessive fall of snow. When the subject was first brought to my attention I could not quite understand why fire chiefs and department heads would be particularly interested in a snow removal campaign, but after looking at the seasonal snow-fall in New England I can see it is a real problem that you gentlemen have to solve. It does not devolve upon fire departments; it is the function of the street commissioner. But I do believe, the same organization, not necessarily the same officers, but the same organized effort should be used on the part of the street officials in the clearing off of snow from the city streets as is used by the fire department in fighting fires. The speaker before me has touched on some of the disastrous results of fighting snow in New York City, some as high as \$100,000,000. In the city of Chicago, it takes about \$20,000,000 on one snow-fall. It only takes a few such to bring to the attention of City fathers the importance of doing it in a well organized manner. I might also speak to you about the excessive cost of leaving the snow on the streets. Traffic, like everything else, follows the lines of least resistance. The first team out in the morning makes a path and all the traffic after that follows in the direct track. The break of that track is centered upon a certain area in that pavement. It is more noticeable upon a public highway than it is upon our city streets. These various automobiles, trucks and vehicles follow that track continuously all through the day and great ruts are made in the pavement, and when the spring thaw takes place you can readily see what damage has been done. When I tell you that in one city I know of it cost in the neighborhood of \$700,000 just tor street repair, you may know just how serious this problem is. As I said before, the successful snow fighting campaign must be well organized. In a city it directly comes under the jurisdiction of a Street Commissioner or his deputies. Oftentimes the Street Commissioner is charged with other responsibilities and other matters equally important, and in that event this responsibility should be placed upon his deputy. You gentlemen are interested in the area where the fire hazard is the greatest which is the congested area in the downtown section. When a fire breaks out, there is no way of telling what the result will be. In New York they experienced a great fire in 1919 when some of the streets were impassable. With the high buildings in New York in the congested area, it is absolutely necessary that the snow not only be plowed out, but it also must be removed, shoveled up and taken away. I think one of the best arrangements for successful operation is in dividing the congested area among regional firemen or district firemen, the deputy commissioner having the responsibility, and when he gives the "Advance" order, the district fireman interested being assigned a certain district, with the necessary equipment with which to handle the snow-fall, and the individual that has that responsibility, let him have it and not be in any manner hampered by any individual, sometimes higher up, feeling that it is incumbent upon them to take the responsibility. I have found in my own experience that the individual who is charged with that responsibility should be a man that should carry that snow-fighting campaign out. I cannot lay too great stress upon our reports. I might give you an illustration. You would think this amount of snow-fall was rather light when you consider some of the snow-falls here in New England. In the winter of 1922 on the 14th of December, just ten days before Christmas when the holiday trade was at its height, we had 9 inches in snow-fall, and I had tried to bring into operation the plan I suggested to you gentlemen. We used snow-plows throughout as the most practical means of opening the streets to traffic, and during that year, the winter of 1922 and spring of 1923, 660 miles of streets were cleared at an expense of \$17,000, that is about \$25 per mile,

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before the snow of the congested area was removed. However, where the plows proceeded from the central portion of the city through the main traffic lines of the city limits. I might also tell you some of the results of the failure to have a well organized snow fighting campaign, not only to our city, where it was found last winter it cost the city administration \$70,000 to clear half of the amount that I have spoken of, because they did not have the proper kind of organization to fight this problem. I am not here to tell you gentlemen just the kind of methods or equipment that is the best for this purpose. That I leave to your own judgment. As far as my experience has extended, the snow-plow is the most economical and I believe the most efficient. You can attach it to your trucks and take it off. It is serviceable in other ways, whereas other equipment more or less faulty in design was only useful during that particular season. I might say a word in respect to the disposition of snow-fall. Some cities dispose of it through their regular You have probably witnessed the congestion of traffic around these manholes. It is not very satisfactory to a fire chief to see one of his main arteries congested by a lot of snow-plows dumping snow into manholes. I believe it can be best disposed of in vacant lots or in the regular city dumps and the arteries of traffic left open at all times. That in brief is my particular experience on the subject of snow removal, and I hope the remarks have benefited somebody.

PRESIDENT MORAN: Gentlemen, you have listened with great in-

terest to these remarks. What is your pleasure?

CHIEF DALEY: I move it be accepted and placed on record and a vote of thanks extended to the speaker. (Motion seconded and it was so

voted.)

PRESIDENT MORAN: I would just like to say a few words before we adjourn, in regard to the first subject tonight. I don't know whether you have heard the gentleman before or not. This subject is generally handled in a dry sort of way. You will hear a talk on fire prevention in a very interesting and instructive way. Eight o'clock tonight daylight time, not moonlight time. I now entertain a motion to adjourn. (Adjourned at 5:10 P. M.)

#### EVENING SESSION, TUESDAY, JUNE 24TH, 1924

PRESIDENT MORAN: Please come to order. The first speaker tonight probably has spoken on the subject before. The speaker this evening will do it in a very entertaining and instructive manner. Mr. T. ALFRED FLEMING, Conservation Commissioner, National Board of Fire Underwriters: It is a great privilege to be here tonight and one which I esteem very highly. I had the honor to be with the Honorable President, and listened to one of the most entertaining and finest addresses on the use of fire apparatus I ever heard in the United States. I am looking forward with great pleasure to his address tonight.

I appreciate very much the kind invitation of your Executive Committee to attend and address the Second Convention of the New England Association of Fire Chiefs on the subject of Fire Prevention. I take pleasure in congratulating you upon the magnificent spirit shown in this meeting and upon the splendid exhibit of fire equipment which has been prepared in the exhibit hall. I have been very much delighted with the most excellent

program presented thus far.

Your Committee on Arrangements has caught the ideal of the present day constructive improvements and has presented subject matter particularly worth while and such as will render a wonderful service to the communities which you serve. The past ten years have evidenced a change of ideal among the fire fighting force of the nation. A few years ago, our topics of discussion were chiefly those relating to fire extinguishment today, the major

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part of every program prepared, is given over to the subject of fire prevention. Standards of the highest character are most necessary in the elimination of fire waste and education of the public, of paramount importance. These I notice are the subjects slated for discussion throughout your entire program.

On behalf of the National Board of Fire Underwriters, we wish to express sincere appreciation for the very loyal and faithful work done by all your members in the interest of fire safety. The National Board is a service organization—pure and simple—and is giving itself and the service of its large staff to the promulgation of important principles both in fire prevention and protection. Its officers and employees are always glad to be of assistance to any fire chief in connection with the improvement of the service in any city.

The vast toll of waste, both of life and property, increasing in large amounts almost every year, has aroused the public mind to a very large extent, and has created a sentiment in support of constructive policies advocated by the different fire chiefs. It is a startling realization to contemplate the figures which depict the losses of last year, an analysis of which ought to determine our policies for future years. Approximately 15,000 persons were killed by fire last year, while more than that number were seriously injured, and thereby made a public charge on the regular citizens. Over 80 per cent of these were found to be of the dependent class—such losses taking place in homes, schools, hospitals, and state institutions. These tabulations suggest the fact that public sentiment has not been aroused to the necessity of proper protection in these classes of occupancy. The losses of property in 1923, as shown by recent statistics of the National Board of Fire Underwriters show a total of \$508,000,000. This exceeds the total amount spent in education for all the schools of the nation. If we add to this figure the necessary expenses for the upkeep of the fire departments, water supply and signalling service necessary for the protection of our property for the same period, we will have a total sum of over one billion, two hundred To illustrate the possibility of such an investment in constructive improvement, this amount will build a great avenue at a cost of \$25,000 a mile for a distance of 400 miles in length. Dividing this street into lots fifty feet wide on both sides, it will build on each a house costing \$5,000. supply furniture to a value of \$2,500, a garage at \$500, a new car of \$1,000, and besides this, give each family \$2,500 for annual running expenses and \$500 for vacations, and still leave a total of \$18,000,000 for extras. modern city of 31,680 homes would be an improvement worth while. losses as shown last year are nearly ninety per cent preventable. Therefore, 90 per cent of this total investment is the result of the condition of careless citizenship which now exists.

Aside from the gigantic loss of money values as outlined, there is also a very serious deterioration in the property valuations for taxation purposes. As we all know, our city and state governments are supported by a tax levy on real property. Every building removed by fire reduces the productive valuation on the property for taxation. The amounts which would have been secured therefrom are therefore placed as additional taxes on those who have been fortunate enough to escape property losses. It is estimated that over \$20,000,000 will be paid this year in taxation—by others—which naturally would have been procured from properties destroyed. It is quite impossible to compute the economic loss to industry and to the laboring classes. Every large fire in the manufacturing district not only disturbs the labor conditions and to a large extent annihilates the manufacture of our necessary products but also throws out of work every person employed in such industry. In the consideration and analysis of all these losses, it is found that a

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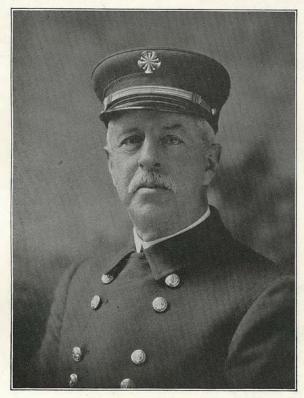
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large percentage has been occasioned by improper protection of buildings. Prof. Woolson, who is chairman of the committee appointed for the development of better standards in building construction, and which is under the direction of Secretary Hoover of the Department of Commerce of the United States Government, is authority for the statement that over 80 per cent of our losses, both of life and property, is occasioned by the existence of unprotected vertical and horizontal openings. Open stairways and elevator shafts allow fire to pass from one section of a structure to another by draught conditions, which the lack of satisfactory cut-offs in single floor construction, renders all parts of such a manufacturing plant subject to one fire. The enclosure of stairways and elevator shafts and the proper division of buildings by fire walls are therefore strongly advocated by all fire prevention engineers.

It is hardly possible to calculate the great value which the sprinkler service renders the manufacturing industries of the country. The sprinkler is the individual fireman on duty at the time of the incipiency of the blaze, when it can be easily controlled. The installation of this service in all downtown districts, schools, hospitals, and state institutions should be recommended and thus the danger from conflagration hazards would be greatly

minimized.

It is also difficult to estimate the importance of the watchman service. The total investment in industry is more hazardous during the night period than at any other time. The large investment entailed and the possibility of the laborer's pay-check are made subject to the efficiency of the man on duty as a watchman. Frequently we find in this position a man impaired in health by reason of age or accident and one entirely incapable of rendering the degree of efficiency necessary for proper protection. We believe that one of the best paid and most carefully chosen men in the employment should be the night watchman. A careful check should be kept of his rounds of inspection and he should be required to make a definite report every morning on each division. This will not only improve the efficiency of the watchman service but will necessitate more careful action among the foremen and other employees of the concern.

The losses of life and property show nearly 65 per cent of the number of fires take place in homes. It is plainly apparent that we have given much more of our time to the protection of industry where money values are invested than in the protection of the habitations where our people live. About 800 fires take place in homes for every working day of the year. Inspection of homes is, therefore, strongly urged. The use of the self-inspection blank, passed out through the schools, has brought about considerable improvement in this respect. If this action could be followed up by a definite and careful inspection, very many of the hazards which are now unapparent to the

property owner, would be eliminated.

It is hard to estimate the great value which comes through the cooperation of the schools in the education of children in the regular class work. This has continuous effect throughout the entire year. Addresses by the chief or his firemen are always considered special features of the school program. These should be accentuated not only at special periods but at all times. The children now in the schools are to be the citizens of our next generation, and to a large extent the solution of the fire prevention problem will be assigned to their keeping.

The United States Chamber of Commerce has inaugurated a most comprehensive program in the interests of better fire safety. This program contemplates the appointment of permanent Fire Prevention Committee to act with the fire chief in improving the general conditions of the city. The fire chief's cabinet, advocated by the National Fire Protection Association, will take the same place. In many instances, this cabinet is endorsed by the

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chamber officials as its representative body. These organizations in no way limit the control or authority of the chief but give him the means of securing the support of all the business associations in his scheme for larger and better fire service. I am sure that the fire chief would welcome this degree of co-operation in the solution of the many problems which face him almost

daily.

The Committee on Fire Prevention Week of the National Fire Protection Association is at the present time making elaborate plans for a bigger and better Fire Prevention Week this year than ever before. They are endeavoring in every possible way to make the impetus engendered during that week count throughout the year for the establishment of improvements advocated. We are recommending that each fire chief take advantage of that period as a proper time for launching any large scheme for better improvement in the service or for securing the complete co-operation of the people in general fire safety. At the time when the attention of the public is generally focused on the consideration of this subject, we are able to secure more complete support for any program necessary for promulgation. Our Committee and the Campaign Committee of the National Fire Waste Council are particularly anxious to have the co-operation of every chief in making this year the greatest fire prevention year in history. In this way, we will be able not only to eliminate a large percentage of the losses of life and property, but we will render our constituencies still better and more complete service.

PRESIDENT MORAN: You have all heard this very interesting

address. What is your pleasure?

A MEMBER: I move a rising vote of thanks be extended the speaker.

(Motion seconded and it was so voted.)

A MEMBER: Gentlemen, the next paper is on Equipment Necessary for a Fire Department Machine Shop by our honored President. He objects to giving this paper himself. He would rather somebody else would have done it, but the Board of Directors and myself thought he was the only man

who was capable of doing it.

PRESIDENT MORAN: Gentlemen of the Convention:—A great many fire departments have always had some facilities for doing some although limited amount of repair work. Such departments having well equipped shops have been as a rule only departments of very large cities. In the days of horse drawn apparatus requirements for repair work were not as varied and multitudinous as we find them to be now, with the much more compli-

cated motor apparatus.

Before the advent of motor apparatus, shop equipment consisting of a small lathe, drill press, sharper or planer and blacksmith forge with a few small tools was considered ample for doing all repair work that was done by the departments of even quite large cities. Most frequently the average size departments had no machine tools as repair work on horse drawn apparatus was not so extensive or exactly, consisting principally of overhauling pumps on steamers every three years by facing off or renewing the valves, replacing pump springs or packing and minor repairs to hose wagons and trucks.

Any extensive repair or new work as well as painting apparatus was generally done by outside concerns and frequently when work of that kind was done by outside labor the job itself was never slighted by any undue haste in getting the apparatus back in commission; consequently departments having no adequate spare apparatus would not be prepared for an emergency should one arise for a much greater period of time than if they maintained a well equipped machine shop of their own prepared to handle such work. Hose repair work was accomplished by the use of rather uncertain tools and hose testing never received the attention it regularly receives today, so when



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motor apparatus replaced horse drawn equipment the necessity for more apparatus repair facilities became urgent and much more attention is now devoted and much more will be required as motor equipment deteriorates through many years of service to this very important and necessary adjunct of an efficient fire department.

#### SHOP PERSONNEL

One of the most important details in connection with the effective operations of a department shop, relating to the overhead cost of maintaining the shop as well as the class of work done in the shop is selecting the personnel. This is a very important detail to consider while organizing the small shop.

It is not necessary to select a man for each particular trade or line of work handled in the shop. There are many men who are not only tool makers but machinists and auto mechanics as well, some woodworkers are also pattern makers and wheelwrights, an auto mechanic may also be a first class electrician. Selecting men for this qualification of being skilled at several trades it is evident is very important for the small shop while for the large shop it is not so important as there is generally enough of routine work to keep one or more men of each particular trade busy.

Mechanics having had experience as firemen should make good shopmen, The tool maker or machinist who was formerly an engineer with experience doing department repair work and who gradually worked into the requirements of automobile repair work generally makes an excellent department

shop mechanic.

Arrangements so that the shop force can be easily reached when not employed in the shop and made available for emergency work or for supervising apparatus while engaged at large fires should be made.

#### BUILDING

The location of a shop building should receive more consideration than it usually receives. It should not be too far away from the center or business section of the city and preferably on a street through which a trolley car line runs or that is kept reasonably clear of snow in winter and wide enough so that an aerial truck can be towed and brought into the shop. Any one having had the experience of towing an eighty-five foot aerial truck in several feet of snow can recollect the difficulty experienced while turning and backing such apparatus in a narrow street.

Many departments especially those not having a large amount of apparatus may find it expedient to locate their shop in a part or addition to one of their company stations, many of these stations having space which can be utilized for this purpose since motor apparatus was introduced, while those having much work to do will require a separate building for the purpose, consequently it is difficult to give any estimate to govern the dimensions or cost of such building, this being regulated by the amount of ap-

paratus and work to be done.

However a machine shop building with facilities for caring for from 30 to 50 pieces of apparatus should be 50 feet wide, from 100 to 150 feet long and 2 stories high. Provision should be made for plenty of light from all sides of the building. A six ton elevator with a cage 24 feet long, 10 feet, 6 inches wide and 10 feet high which is large enough to carry a pumping engine to the second floor should be installed. On the second floor all machinery should be located and there should also be ample room on this floor for floor work on apparatus. A very necessary piece of equipment on this floor is a 6 ton travelling crane for hoisting heavy apparatus, etc. By having plenty of working space on this floor the first floor can be used for painting, blacksmithing, hose testing and repairing and battery work. There will also be ample space for working on such apparatus as H. & L. trucks which cannot be placed on the elevator and for spare equipment.

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the pump then being tested before leaving the shop.

The first floor is a suitable place for a hose testing bench 60 feet long and 8 feet 6 inches wide, 60 feet long and 8 feet 6 inches wide, which will allow five or six lengths of hose being connected to a header which is in turn connected to a power pump, with the male ends of the hose capped pressure can be applied on all lengths at once. If this table is inclined downward toward the pump end of the table the water can be drained from the hose after testing without wetting the jackets. Besides testing new hose in this manner the annual testing of the department hose can also be done here doing it much quicker and better than it usually is done at the various company stations.

A basement under the first floor will accommodate the heating plant and give additional storage room.

Equipment.

In equipping the shop with machine tools the first question in the minds of

department officials is the necessary amount and cost of such equipment.

The amount of apparatus used in a department regulates this more or less. Machine tools for necessary work in a small department may be procured for about \$2,500.00 while departments having from 30 to 60 pieces should have a complete shop equipment enabling them to do considerable new work as well as the ordinary line of repair work on apparatus, excluding woodworking machinery this equipment will cost about \$15,000.00 while the necessary woodworking machinery will cost about \$3,500.00, so that a complete shop of this size can be fully equipped with modern machine tools enabling them to do all classes of work for about \$18,500.00.

The small shop equipment should consist of one 16" lathe, one 20" drill press, one 16" shaper or planer, one tool grinder, forge and anvil. With the necessary small tools, these machines will enable them to do most of their ordinary repair

work and as work increases their equipment can be added to.

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One Triplex 2" x 3" hose testing pump.

One 6 ton travelling crane.

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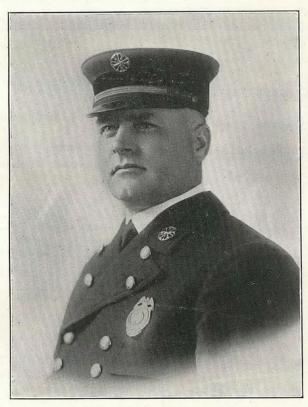
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These machines take considerable power to operate them and should have independent motors to run them so as not to overload the shop motor and at the same time save considerable in power as the motors are used only as each particular machine is being operated.

SERVICE PARTS AND MATERIAL.

To complete the service that a modern machine shop will give the fire department a supply of spare parts of apparatus and equipment used by the department should be kept in stock such as are most frequently replaced, radiators, axles, wheels, valves those parts of a machine that are most liable to need replacing through accidents, etc. This does not mean any great expense to those departments that have their apparatus standardized or nearly so. By having such essential parts in stock apparatus is frequently out of commission only a short time while removing the damaged part and replacing the spare part on the machine.

The shop doing its own woodwork should have a good supply of Oregon pine, white ash, spruce, oak and walnut on hand so as it will be properly aired and dried before it is used. It is well known that ladders require much more attention than they formerly did years ago as they are now used much more, due to the modern practice of drilling and training men, than they are used at fires and they should be constructed of good reliable material.

#### PAINT SHOP.

Last but not least is the paint shop. Very frequently while apparatus is in the shop much of the painting can be done on it while repairs are being made thus saving considerable time in getting it back into service.

#### SHOP SERVICE.

To illustrate the value and importance of a department machine shop equipped to handle such work as may be required in an effective and economical manner, I will cite one instance showing how one job was disposed of in a very short space of time and at very small expense.

This job is selected for illustration because it will undoubtedly interest many chiefs at this particular time when so many are interested in standardizing their hose couplings and connections which are not now National Standard and also because the difference in diameter between the old Hartford thread and the National Standard, about 3/32" is about the limit at which this change can be

made and using the old couplings.

When it was decided to standardize the couplings in the department a program for doing this work was laid out, this was then turned over to the Master Mechanic who immediately prepared for the work by equipping a radial drill press and an ordinary drill press with chucks for holding couplings and equipment to be standardized. For tapping out the female couplings only one tap was used instead of two but this tap was preceded by a 2 15/16" reamer removing considerable stock but leaving enough of the old thread for the tap to catch and cut a full thread to the standard size. A 3 roll boiler flue expander was used for expanding the male ends, a sizing die was then run over these ends to smooth the thread. These tools were all designed different from those used manually. A length of hose was disposed of by one man tapping out the female coupling while at the same time another man was expanding the male end on another drill press, hose can be thus changed over at the rate of about 1000 feet every 25 of 40 minutes.

To standardize department connections required changing couplings on 36,000 feet of hose and connections on all apparatus and equipment a total of 2,518 pieces. 50 male connections split while being expanded these and 86 worn out male connections were replaced by used coupling which had been expanded and ready for such an emergency thereby avoiding the necessity of making new



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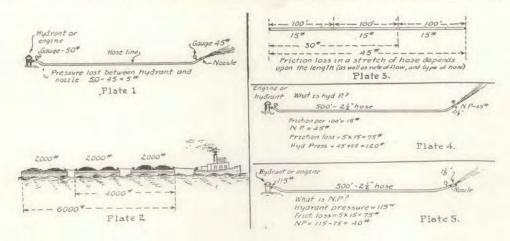
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couplings. This work was all accomplished by an average of five men working 60 hours or 300 hours labor for the whole job. The total cost for all of this work aside from the labor was about \$225.00 for the tools used and a few castings. Anyone having had the experience of altering couplings 3/32" will readily appreciate the difference both in time as well as labor between the machine work and the hard manual work on the other hand.

In conclusion there is no question as to the service a fire department receives from a well equipped machine shop, whether it be a small or large department. The service received is of much more value than even the cost of the equipment and this should be more evident in department having apparatus made by concerns formerly manufacturing fire apparatus that have gone out of existence and consequently are unable to get the necessary parts to replace damaged ones.

There will always be found enough work in such shops to keep the men busy when not engaged on emergency work or inspecting apparatus by working on equipment and appliances which are necessary to keep department equipment to a high standard and which would probably be otherwise difficult to obtain.

(Slides were shown by Chief Moran on the Machine Shop, layout, etc.)

(Applause.)

ACTING CHAIRMAN: I move gentlemen that we extend to President

Moran a hearty vote of thanks. (Motion seconded and it was so voted.)

PRESIDENT MORAN: The next paper will only take about twenty minutes. It is very interesting, something new,—I don't believe anything of the sort has ever been brought up at a convention before. It gives me pleasure to present Mr. Fred Shepperd, Editor of *Fire Engineer*, who will address you on "Quick Pressure Calculations at Fires."

Mr. FRED SHEPPERD: Throughout the following it should be borne in

mind that all calculations are only approximate.

In a complex subject such as hydraulics, and particularly hydraulics as applied to fire fighting, so many factors enter that calculations which are anywhere near accurate entail a great amount of work and quite a thorough knowledge of advanced mathematics.

It is appreciated that at a fire it would be impossible to attempt any accurate hya-aulic calculations and it is the object of this paper to set forth some simple rules which will give satisfactory values for practical application, but which of

course will not stand careful mathematical analysis.

In order to clarify the different points set forth, a number of sketches and photographs are presented. These will aid in following the line of reasoning to fire fighting hydraulics.

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#### (Plate 1.) Friction.

Let us first consider the simplest layout of hose found in fire service: a straight line of hose stretched along a level from a hydrant to a nozzle.

Let us further make assumptions. Assume that the hydrant pressure is fifty

pounds and that the nozzle pressure shown by the gauge is 45 pounds.

In other words, we have 50 pounds pressure at the hydrant, but at the nozzle we have only 45 pounds.

The question immediately arises as to what has become of the 5 pounds

pressure which has been lost between the hydrant and the nozzle.

This difference in pressure has been lost due to the friction of water rubbing on the inside of the fire hose lining while it is passing from the hydrant to the nozzle.

The friction in this case amounts to 50 minus 45, or 5 pounds.

Now reverse the problem and note of what the hydrant pressure is composed. It is composed of the nozzle pressure plus what was lost in friction or 45 plus 5 pounds.

It is most essential to remember this latter point.

At the same time, it must be remembered that this applies only to hose lines laid horizontally and does not include hose lines laid up ladders or up fire escapes, as will be fully described a little later in this paper.

#### (Plate 2.)

This sketch illustrates a point in connection with friction in fire hose which

enters into all fire pressure calculations.

Let us assume that it requires 2,000 lbs., pull to keep one of the scows in motion at a certain velocity. This pull is necessary because of the friction of the snow passing through the water. One scow requires 2,000 pounds pull and it is quite evident that three of them will require just  $3 \times 2,000$  lbs. or 6,000 lbs. Likewise two of them would require 4,000 lbs. pull.

#### (Plate 3.)

Exactly the same thing holds true in the case of fire hose as shown in plate 3. We have 3 one hundred foot stretches of hose coupled up. The friction loss in the first hundred feet we will assume to be 15 lbs., for the flow of water passing through the hose at this time. The friction loss in the second hundred feet is likewise 15 lbs., and also 15 lbs. in the third hundred feet.

The friction loss in the three stretches connected up would be  $3 \times 15$  or 45' lbs., exactly as it was in the case of the scows where the three scows required 6,000 lbs., or three times what it required for one scow to be kept in motion at a

certain rate of speed.

Now this applies to all layouts of fire hose. If the friction loss in 100 feet is, as noted above, 15 pounds, the friction loss in a 200 foot stretch would be twice as much or 30 pounds, in a 300 foot stretch three times as much or 45 lbs., and in a 400 foot stretch four times 15 or 60 lbs.

Of course the friction loss in hose varies with the rate of flow just as the pull required on the scows varies with the speed of the scows but we are assuming an average value of flow in the fire hose and on this assumption an average value of 15 lbs., friction loss per hundred feet.

At this point it might be well to give the following average figures.

The friction loss per hundred feet of 2 1/2 inch hose may be taken at 15 pounds per 100 feet.

The friction loss in 100 feet of 3 inch hose where hand lines are being used

may be taken at 10 lbs., per 100 feet.

The friction loss in 3 inch hose where deck pipes or other large pipes are in operation may be taken at 20 lbs., per 100 feet.

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Hose and Nozzle Rules.

In order to avoid the use of improper size nozzles the New York Fire Department developed a set of rules which have proven quite satisfactory.

They are as follows. For a short stretch of hose the nozzle diameter should

be one-half of the hose diameter.

For a medium stretch of hose the nozzle diameter should be the first size smaller than half the hose diameter.

For a long stretch of hose the nozzle diameter should be two sizes smaller

than one half of the hose diameter.

The New York Department sets forth two lengths as a short stretch; 12 lengths as a medium stretch; and 19 lengths as a long stretch.

However many lines do not fall of either of these three lengths so it is

necessary to average.

Thus, if a stretch were nearer six lengths than twelve it would still be considered a short length. If the stretch were nearer 12 than either 6 or 18 lengths it would be considered a medium stretch. If the stretch were nearer 18 than 12 or were greater than 18 lengths it would be considered a long stretch.

(Plate 4.)

As the first example assume we have a 500 foot stretch of 2 1/2 inch hose equipped with a 1 1/8 inch nozzle and desire 145 pounds nozzle pressure. What pressure will be required at the engine?

Refer to plate 4.

Note that this line of hose falls in the classification of a medium stretch and 1 1/8 inch nozzle (one size smaller than one half of hose diameter) is employed.

As noted previously we shall consider that the friction loss is 15 lbs., per 100 feet, and with 500 feet in the stretch the friction loss will be  $5 \times 15$  or 75 pounds.

As previously noted 45 pounds is desired at the nozzle.

The hydrant or engine pressure is made up of two things, the nozzle pressure and the friction loss. The nozzle pressure is 45 lbs., and the friction loss is 75 lbs. The hydrant or engine pressure will therefore be 45 plus 75 or 120 lbs.

(Plate 5.)

Assume the engine pressure is 115 lbs. Also that the stretch is 500 feet of 2 1/2 inch hose and equipped with 1 1/8 inch nozzle. Notice here that 500 feet (in length) falls nearest to a medium stretch and the nozzle diameter will therefore be one size smaller than one half the hose diameter or 1 1/8 inch nozzle.

The friction loss in the 500 feet of 2 1/2 inch hose will be 5 x 15 or 75

pounds.

The engine pressure is 115 pounds, the friction loss is 75 lbs., and the nozzle pressure will therefore be 115—75 or 40 lbs., approximately.

(Plate 6.)

This slide shows hose layout at a recent fire at the Iron Steamboat pier at Battery Park, New York. Owing to the absence of a sufficient number of hydrants in the immediate neighborhood of the fire it was necessary to stretch a number of comparatively long lines as shown in the illustration.

Assume that one of the lines to be considered is 400 feet in length and is 3 inches in diameter. Assume further that 70 lbs. is wanted at the nozzle. 400 feet is eight lengths which would fall under the short stretch. The nozzle diameter employed would likely be 1 1/2 inch where a wagon pipe is used, as shown in the illustration.

The friction loss will be taken at 20 lbs. per 100 feet.

The total friction is then  $4 \times 20$  or 80 lbs. The nozzle pressure being 70 lbs., the desired engine pressure or hydrant pressure would then be  $80 \times 70$  or 150 lbs.

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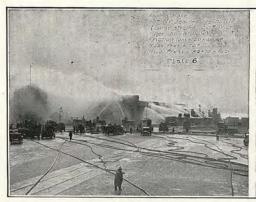
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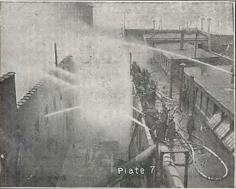
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METHOD OF DETERMINING NECESSARY NOZZLE PRESSURE.

A simple rule for calculating the necessary pressures to produce effective streams, and where the distances the streams are to travel is known or can be estimated, is to allow one foot range to each pound nozzle pressure. This applies to all streams.

The range of horizontal streams or vertical streams may be estimated directly, but where streams are thrown at an angle it is necessary to make a short calculation to secure the range.

(Plate 7.)

Plate 7 shows a number of streams all of which will be considered as falling into the class of horizontal streams. Here the horizontal range is the factor. In this case, as in all other cases, one foot range is figured per pound nozzle pressure or vice versa.

It is very seldom that streams are shot vertically but where such should be the case as in the use of fire streams in shafts, elevators, stairwells, etc., the same allowance is made, namely, one foot verticle reach for each pound nozzle pressure.

For a range of streams where they are directed at a comparatively high angle such as 45 deg., it is necessary to make a rough calculation to determine their travel.

(Plate 8.)

Such streams are shown in plate 8. These streams are directed at approximately a 45 deg, angle.

The method of calculating the range, as well as nozzle pressure necessary, for such streams is to multiply the height of the point at which the stream enters the building by 1 1/2 to find the necessary range or nozzle pressure.

For instance, in plate 8 where the streams are directed to the 4th floor and each floor is assumed to be 12 feet in height then the necessary nozzle pressure will be  $1 \frac{1}{2} \times 48$  or 72 pounds.

If the streams are directed at an angle higher than 45 deg., the same rule

might be applied.

If they are directed at less than 45 deg., it is a safer method of calculation to take 1 1/2 times the distance of the nozzle from the building as the nozzle pressure. In other words if the wagon pipe shown in plate 8 were placed at a point 50 feet from the building then the nozzle pressure necessary would be 1  $1/2 \times 50$  or 75 lbs.

(Plate 9.)

This sketch shows an example of application of the previous rule. It is desired in this problem to secure from the nozzle a stream which will be satisfactory in range. The stream is to be operated from a point 40 feet from the building and in through the window on the third floor of the building. The

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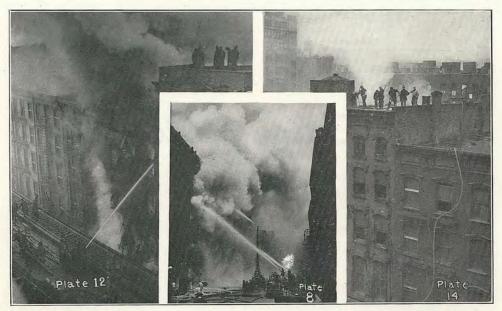
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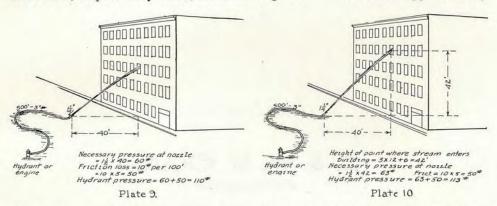
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nozzle is 1 1/4 inches in diameter and 500 feet of 3 inch hose are to be stretched from the hydrant or engine to the nozzle. In this case the angle of the stream will be less than 45 deg., so that it will be safer practice to take as the nozzle pressure 1 1/2 times the distance (in feet) of the nozzle from the building. The nozzle is 40 feet from the building and 1 1/2 times 40 is 60 which is the necessary pressure at the nozzle. The flow from the 1 1/4 inch nozzle on a 3 inch line is, as previously noted, sufficient to give a friction loss of approximately



10 pounds per 100 feet of 3 inch hose. The friction loss from the hydrant to the nozzle will then be 5 x 10 or 50 lbs.

The hydrant pressure is made up of the friction loss and nozzle pressure or 50 plus 60 or 110 lbs.

(Plate 10.)
Plate 10 shows a problem which is nearly the same as that shown in plate 9 with the exception that the stream is to be directed to the fourth floor window. In this case the angle of the stream is a little more than 45 deg., which is shown by the fact that the point where it strikes the building is farther from the street than the nozzle is from the building. The necessary nozzle pressure is 1 1/2 times the height in this case, which is 42 feet, or 63 lbs.

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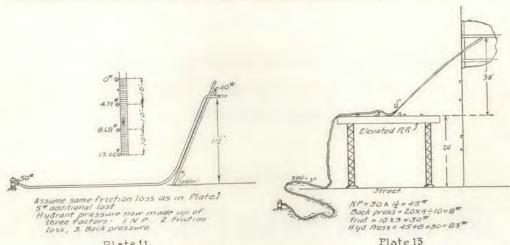


Plate 11.

The friction loss in the hose may be taken the same as that in the previous problem, namely ten pounds per one hundred feet, or 50 pounds per 500 feet. The engine pressure or hydrant pressure must then be equal to 63 plus 50 or 113 pounds.

(Note. While no reference has been made to parallel lines of either 2, 2 1/2 or 3 inch hose in the above, it may be mentioned that two parallel lines of 2 1/2 inch hose have about one third the friction loss that a single line would have when carrying the same quantity of water; similarly, two or three inch lines would have but one-third the friction loss of a single line of three inch hose when carrying the same quantity of water that the single line carries. Likewise with 3 1/2 inch.)

BACK PRESSURE. (Plate 11.)

Note that the layout is precisely the same as in plate 1 with the exception that the line is laid up a ladder rather than laid horizontally.

In the particular layout the hydrant pressure is 50 lbs., and the nozzle pressure shows by gauge to be 40 pounds. The nozzle is 11 1/2 feet above the ground.

(Plate 1.)

It will be noted that the 40 pounds nozzle pressure is 5 lbs, less than in the case of plate 1, although the same layout of hose is employed and the same size nozzle, as well as the same hydrant pressure.

This difference in nozzle pressure introduces a new factor which enters into all calculations involving lines, the nozzles of which are elevated.

(Plate 11.)

Refer to the insert in plate 11 showing standpipe filled with water and where-

in are tapped several gauges.

The gauge at the upper level of the water shows no pressure whatsoever. The gauge which is 10 feet below the surface of the water shows 4.34 lbs. That which is 20 feet below the level of the water shows 8.68 lbs., while the lower gauge shows 13.02 lbs. and is 30 feet below the surface of the water.

It is this pressure caused by the depth of water, that creates what is known as "Back Pressure" in hose lines and other containers of water and fluids.

How Back Pressure is Calculated.

Back pressure is very definite and there are precise methods of calculating

For every foot (vertically) that the nozzle is above the point at which the pressure is being read there is a back pressure of .434 pounds. This means that a depth of one foot of water gives a pressure of .434 lbs. per square inch. Two feet would give exactly twice as much, three feet three times as much and so on.

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But the depth is measured vertically and not along the incline of the hose. In other words if the nozzle is 10 feet above the ground and the pressure is being taken at the ground then the figure 10 is the one which is taken into account and not the length of hose from the point where the gauge is placed up to the nozzle, unless such stretch of hose is placed absolutely vertical.

There are several practical methods of determining what the back pressure is in the case of hose lines laid up ladders, fire escapes or where lines of hose are attached to standpipes. Probably the simplest method where lines or standpipes are being used in a building is to allow 5 lbs. back pressure per story. This gives good results. Where water is being forced up into a structure in which there are no floors at definite levels or where the distances between floors vary, it is safer to calculate the back pressure of the water as follows:

Multiply the height at the opint at which the nozzle is being used above the engine by four and divide by ten. For instance, if the nozzle were 100 feet above the engine then the back pressure at the engine would be  $4 \times 100$  divided by

10 or 40 pounds.

Nozzle Pressure Made Up of Three Factors.

The nozzle pressure in problems of this sort, whether the water is forced through hose laid up inclines or fire escapes or stairways or connected to standpipes which in turn feed hose lines on upper floors, the engine or hydrant pressure is made up of three factors, namely:

1. Nozzle pressure.

2. Back pressure.

Friction loss.

To sum this up, the hydrant or engine pressure must be equal to the nozzle pressure plus the back pressure plus the friction loss in problems where the nozzle is placed above the level of the engine or hydrant.

It is essential that this type of problem be thoroughly understood. In this group of problems fall those involving standpipes, hose lines laid up fire escapes,

ladders or stairways, hose lines laid up slopes or down slopes of land, etc.

(Plate 12.)

This photograph shows a typical fire in which the factors noted above enter. The nozzle is 20 feet above the street, approximately; there is a nozzle pressure throwing the stream as shown, and there is the hose line in which friction is created.

(Plate 13.)

This same problem is shown in diagram in plate 13.

The stream is striking the ceiling at a point about 30 feet above the elevated structure, and using the rule previously given for determining back pressure,  $4 \times 20$  divided by 10, gives 8 lbs. back pressure.

The friction loss in 300 feet or 3 inch hose, using a 1 1/4 inch nozzle (which

means a moderate sized stream), is 3 x 10 lbs. or 30 pounds.

The hydrant pressure which is the sum of these three factors, must then be 45 plus 8 plus 30 or 83 pounds, approximately.

(Plate 15.)

This photograph shows the fire after it had been brought under control and therefore does not show lines in operation. This line, up the fire escape, however, was used for two purposes, for finishing up the fire in the building in the foreground and also for checking fire which had entered the building at rear across 20 foot alley.

We will have to make some assumptions here in order to develop a problem. It will be assumed that the line shown was to supply a stream which would pene-

trate the building across the 20 foot alley a depth of 25 feet.

(Plate 14.)

The problem is shown in detail in plate 14.

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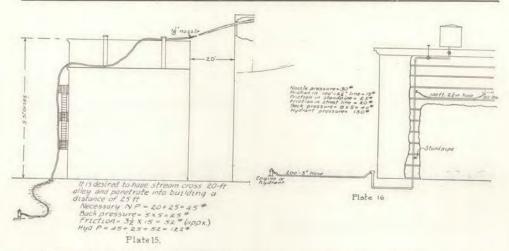
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Assume further that a 1 1/8 inch nozzle was used and that 350 feet of 2 1/2 inch hose constituted the line.

The pressure required at the nozzle was 20 plus 25 or 45 feet because the stream had to travel 45 feet at an angle which may be considered horizontal.

Thus 45 pounds was required at the nozzle.

The back pressure is readily determined because the building is 5 stories in height and allowing 5 pounds per story gives a back pressure of 25 pounds. The friction loss in 350 feet of 2 1/2 inch will be 3 1/2 times 15 or 52

These are the three factors which make up the hydrant or engine pressure, namely, the nozzle pressure, back pressure and friction loss.

The hydrant pressure is therefore 45 plus 25 plus 52 or 122 lbs., approxi-

mately.

#### (Plate 16.)

This plate shows a development of the previous problem but instead of running the hose up along the building, water is sent up by standpipe. This is the type of problem commonly encountered by large city departments.

But the methods of calculation are very much the same as in the last problem, with the exception that instead of figuring out the friction loss in standpipes this is usually taken at 25 pounds irrespective of the floor to which the water is being delivered and the diameter of the pipe.

Nevertheless, three factors en'er into the hydrant or engine pressure as before given, namely, friction loss (in hose and standpipes); back pressure and

nozzle pressure.

As shown in plate 16 the layout consists of 200 feet of 3 inch hose connected to a siamese connection of standpipe at street, a rise in the standpipe to the eighth floor, a lead line of 200 feet of 2 1/2 inch hose.

1 1/8 inch nozzle is usually used in a layout of this sort and a nozzle pressure of 30 pounds is satisfactory for inside work unless the fire has gained headway where greater pressures are desirable.

Assume therefore a nozzle pressure of 30 pounds.

The friction in the line leading from the standpipe to the nozzle, 100 feet of 2 1/2 inch hose, will be 15 pounds.

The friction loss in the riser is, as given previously, 25 lbs.

The friction in the street line, 200 feet of 3 inch hose, will be, for the small flow through 1 1/8 inch nozzle on the 8th floor, 10 lbs. per 100 feet, or 20 lbs. Back pressure may be taken as 8 x 5 or 40 pounds.

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While the nozzle is not eight stories above the street, still it is more than seven and the additional allowance for back pressure by assuming the nozzle to be eight stories above will be a little margin on the safe side, thence 8 x 5 (rather than  $7 \times 5$ ) is used in determining the back pressure in this case.

The hydrant or engine pressure will then be the total of nozzle pressure, friction in lead line, friction in standpipe, friction in street line, and back pressure or 30 plus 15 plus 25 plus 20 plus 40 or 130 pounds necessary at the engine.

Conclusions.

There are an indefinite number of problems which might suggest themselves involving layouts both simple and complex but it has been the object of the author only to include simple examples of each class. When complex layouts are brought into play then it is beyond the field of problems which may be solved without the use of pencil and paper.

PRESIDENT MORAN: Gentlemen, what is your pleasure, after listening

to the paper by Mr. Sheppard.

A MEMBER: Mr. President I move it be accepted and put on the records. All in favor say "Aye." (It was so voted.)

PRESIDENT MORAN: Is there any discussion on that paper?

CHIEF TABER: Mr. Sheppard has given it very clearly and I think everybody understands it.

A MEMBER: I move we adjourn. (Motion seconded) Adjourned at **10.**15 p.m.

**IUNE 25, 1924** 

Meeting called to order at 9:50 A. M. by President Moran.

The first topic will be a paper on "Forest PRESIDENT MORAN: Fires" by Mr. W. L. Bazeley, Commissioner of Conservation, Commonwealth

of Massachusetts.

COMMISSIONER BAZELEY: Fellow members:—It was only a few years ago that Massachusetts used to raise all the wood that we used in Massachusetts, in all our industry and for all our building operations. the present time with the disappearance of the lumber supply in Massachusetts, we are importing eighty per cent of all the wood and timber that is used in this State. Of that eighty per cent a very large part comes from the West Coast, from Oregon and Washington. That gives you one of the principal reasons for the high cost of building in Massachusetts today, and when you take your fire statistics and see how many wooden buildings are burnt up in this State and in New England every year, you get a beautiful view of what it means to have to be importing all this lumber and timber from the Western States.

Now it is also adding to the cost of living by the tremendous increase of costs to the railroads. All the railroad ties and birch timbers used to be raised in our New England States,—in a great many cases railroad ties being cut right alongside the track where they were delivered. Now, with the disappearance of chestnut through the chestnut blight, the railroads are beginning to bring in Douglas fir ties from the Pacific Coast, which cost more than double what the old chestnut ties used to cost in this State. As you know, they used to use only the best of oak and chestnut, but the New Haven and Boston and Maine are now getting down to the point where they are making experiments by cresoting all the soft woods, maple, hemlock, and even making experiments with poplar ties on the small branch lines. Now, that is the reason why the State of Massachusetts and the other New England States, New York and Pennsylvania have gone in so extensively to the forestry business to bring back the timber supplies into our States by the planting of trees, and to keep what remaining timber supply there is in the States. In Massachusetts we have a million acres of land that is doing nothing, and that is just about one-fifth of the acreage of the State. It is Compliments of-

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absolutely wild waste, and it should not be allowed to remain so. The State is taking on itself the initiative with the purchase of 100,000 acres for State forests. At the present time, we have purchased 75,000 acres and we have divided those up into thirty-five State forests in Massachusetts, our idea being to secure those forests around in the forest parts of the State, so that in the future we shall have a timber supply in the forest parts of the State, and also have the further reason that the disappearance of our forest area has meant the disappearance of our small farmer. He has nothing to do any longer unless there is timber near him, and I believe that by the establishing of these State Forests we shall get around us a nucleus of the farmers who can be assured of steady work on those forests during the winter months. Now the second item of this program is the town forest land. This has only been going two years in this State, but thirty-five towns have added these town forests, and I believe that every town ought to have a town forest if not more than ten, fifteen or twenty-five acres, and they are all practical for farms where they can have several hundred acres, and we shall begin to get some result on the one thing which of course is the great item against forestry, and that is forest fires. We have established State nurseries and today we have twenty million trees in the nurseries of Massachusetts. We have planted this year three million trees to take care of forest fires, and to show you the interest that is becoming general in this State we sold one and one quarter million of the trees at one cent apiece to provide units to set out. A few years ago we used to sell trees at ten dollars a thousand, but we have come down to business principles now, and we are using a little psychology, and can sell them at one cent apiece, which is cheap enough. The one thing that we are afraid of in this whole thing is the forest fire. Last year we had twenty-seven hundred forest fires in Massachusetts. They burnt over forty-nine thousand acres costing \$51,000 to extinguish, and a damage of \$160,000, burnt up 121 buildings and cost five lives. Now unless you get down to facts and know what is going on, you would not realize that in this old State of Massachusetts such a thing could happen. But those are the figures. The year before we had four thousand fires. It was a very trying year, as you remember. This year I am afraid we shall have more fires than we had last year, and we have already lost two lives. Now what are the causes of forest fires? Carelessness is ninety per cent of it even as the yare in your building fires. Thirtyseven per cent of the fires were caused by railroads. And I want to say here that though the railroad fires amounted to a tremendous number, the railroads are doing their damndest to stop it. The organizations are working hard and one thing we have got control of now in the railroad situation is the human equation because the companies are trying to find perfect equipment to get rights of way, but at times the human element of it will cause these fires. Of the other 63 per cent of the fires by far the greatest number, I believe, were caused by the careless smoker. I can say that with perfect freedom because my wife says I only smoke once a day and that is when I start in the morning and keep it up all day. But there is no question but that the careless smoker in the automobile today is the cause of at least 50 per cent of the fires in our New England States. We made a very careful survey a few years ago and we found that these fires are starting right along the well travelled highways and there is no question in our minds but that the careless flicking of the cigarette butt is the cause of a great many of these fires. How we are going to get at that careless population I don't know except by education, by drumming the matter into them well, by putting up our signs along the road sides, and by other precautions. campers which were supposed to cause a great many, do not cause a great many fires. The camping season does not begin until the fire season is practically over. It does not begin until the country has got green and

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we do not get many fires from it. Now another set of people that used to be responsible for a great many fires, and they are coming around to our side of the camp in splendid shape, and that is the sportsmen. We have been trying to educate them for the last several years, and have finally got it across that if they lose their forest cover they lose their game and the streams for their fish. So that in this State at the present time we have several organizations that before the fishing season starts in April send out post-cards warning all their members about forest fires and again in the fall before the hunting season, send out post-cards. Now the organizations we have in Massachusetts to combat the forest fire evil are known to the men of this State, but for the benefit of the visiting men I want to just say a few words on it. Under me as State Forester we have a State Fire Warden and eight district wardens on the State land. Then the next stage I think is the item of our forty steel fire towers which are put on the highest point of land where there is a man stationed or a woman, watching in that town all through the day with telephone communications to the town warden. In this State we have a forest warden in every city and town and he has from five to seven deputies and of course they hire the men that they need to fight the fires. In every instance we have tried to get the Chief of the organized fire department as the forest warden and I am glad to say that we are receiving the greatest co-operation from the Chiefs of the organized fire departments. A few years ago I think it was the largely accepted idea that forest fires were not worth putting out, that they did not care for the trouble of it and they shied at it; but I think that is only held now in a very, very small number of cases, because we have found in every city and town practically in this State that we have wonderful co-operation from the Chiefs of the regular departments. They have begun to realize it is just as important now to get after the forest fire with forest fire equipment so that it won't get to the buildings, as they did a few years ago just on account of our forest fires. And when you realize that we lost 121 buildings last year from our forest fires, it is just as important to get to the forest fire quickly and work hard at that fire as it is at the building fire, and that is what we try to impress on all the small organizations to have some equipment. Of course they don't need the heavy equipment that the cities have. But if the cities haven't got some old equipment that they can send up to their forest fires, I think they are missing a chance, because the forest area around cities and towns today is what draws people to those cities and towns. It is our scenery in Massachusetts that brings people from outside into New England, and if we turn people away we are not going to get them. As I said down on the Cape the other night, we have started an organization down there of the forest wardens of the various towns and Chief Wells of Plymouth is their President. We have got a live man. We had a corking good meeting down there the other day. I had a chance to bring before those men what forest fire fighting means, getting to it quickly and fighting when you get there. Barnstable County only had five per cent of the fires of Massachusetts, but they burnt up eighty per cent of the area. Now it is because the average Cape Codder does not think the damn stuff is worth saving, and as I told the men down there I shall try to put across the idea that the forests were worth saving if the scenery was, and we have got to go at this campaign of education by getting anything that we can grab hold of like the drowning man, and I believe the way to land Cape Cod is by touching their pocketbooks, for in three months of the year they make enough to carry them the other nine. That same thing applies all over the State, and the men who are in the fire game should protect, though it may seem a far cry, the scenery of their cities and towns, because it is one of the great assets of the New England towns. Of course up in the back of our minds is the protection of timber, but I think that you can get hold of a great many more people per-

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haps by taking them on the good scenery and all the out-door sport, than you can on the protection of timber. Mr. Chairman, I am very much obliged to you for the chance to say these few words. I have the honor of being an associate member of the Fire Chiefs' Club of Massachusetts and on behalf of the State of Massachusetts it is a great pleasure to meet you visiting members from other New England States. (Applause.)

PRESIDENT MORAN: Before we take any action on Mr. Bazeley's

speech, we will listen to Chief Crowe on the same subject.

CHIEF CROWE OF WESTBORO, MASS.: Mr. Chairman, gentlemen: It seems that the Commissioner has covered this forest fire situation pretty thoroughly. He has told you why we are trying to save the forests, he has told you the means the State has taken, and the State organization in trying to save the forests. I have only a few words to say in addition to that, and that is the co-operation of the Fire Chiefs of the Commonwealth with the State Forestry Department in extinguishing forest fires. I want to say in the beginning that I think the solution of this whole forest fire business is in prevention. But until we can get the prevention going and make it effective, we have got to take the extinguishing part of the work in hand. You members of the Fire Chiefs' Club can help this department in our work more than any other body of men. Some of you are not the forest wardens in your town and now I am going to become blunt to you and say that the Chief Engineer of a Fire Department who refuses to accept the responsibility of the forest warden of the town in which he does the fire work, in my opinion, is not a real fireman, because a real out and out fireman, a Simon pure, dyed in the wool, won't allow anybody else but himself to do any fire work in his town. He will have charge of the fire work regardless of whether it is woodland worth \$15.00 or the biggest mansion in the town. That is my opinion of the real Fire Chief. We find but a few, though we have had veteran firemen refuse to accept the responsibility of fire warden, and we think they ought to resign the first time they get a chance, as Chief Engineer of the Fire Department. Few men, most of you who are members of the Fire Chief's Club, and most of you who are here at this meeting are the Chief Engineers of cities and the larger towns that have organized fire departments. Now, you can help this department and help in this forest fire work more by your example to the men in the towns surrounding you than anybody else I know of. You can do much more work than the State Fire Marshal or the Commissioner by the way in which you handle the fires in your own town yourself. Every man here that is the Chief Engineer in a town of any size having an organized fire department is running the fire work in his town and a lot of smaller towns. Some of them don't have any fire department at all. They all have a forest warden. He looks to the Chief Engineer of the good fire department in the nearest town to him and follows his example. He does just exactly what he sees those men do, and takes more stock in him than he takes in the biggest city of Massachusetts. He looks right to his neighbor, the man whom he If the Chief Engineer of that town does not take any notice of his forest fires, the lad in the next town is going to do about the same thing. He is going to get the same idea in his head and do the work just about the same as this other fellow does it that he looks up to. You can help out a whole lot by the way in which you handle forest fires in your town. the Commissioner has told you, it is just as important and to my mind more important, for the forest warden to get onto the forest fire quickly than it is to get onto your building fire quickly. When you get a call to a building fire you don't lose any time. You take the best apparatus you have got and get there and get to work on it. You have that building in one spot and can get a pretty good idea of what you have got to do. You can do the same thing with a forest fire if you get it when it is small. But if it gets

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away from you and covers miles and miles, there is not a Chief Engineer or fire warden that knows what he has got to do for a minute. We had a fire only a few weeks ago in my territory on the side of a road on a terrible windy Sunday. It got away and before it stopped it ran eight miles. I was on the job myself. I knew what was going on. The Chief Engineer of a city and the Chief Engineers of three more large towns with excellent fire departments and the forest wardens of four other towns were there, and not one man on the job knew where that fire was half the time, and nobody could tell where it was going to stop. I am telling you that because I want to impress upon your minds the importance of getting out quickly to the forest fires. You have got to make provision beforehand to get that forest fire before it gets to that stage. No doubt many of our large towns have excellent fire departments. They have wonderful fire departments, thousands and thousands of dollars worth of good fire fighting equipment. The average hose wagon that you send up to a forest fire may have two, three or four pony extinguishers. The only thing on that wagon you can use in a forest fire is your pony extinguisher, unless it happens to be where you can turn your big chemical tank onto it. You can't drive your wagons into the woods. It is up to every city or town that has any woodland to protect to put in some special forest fire equipment. You want some water guns, you want some small extinguishers, some brushes or brooms if you prefer them, on the wagon that you send out on the first call just the same as you do when a box comes in. Now I can show you gentlemen Chief Engineers of departments here in this State that have tried that sort of thing and they find it is good stuff. You don't have to take my word for it. I can point out Chiefs here today who have adopted that policy, who have got special fire wagons that they have equipped with that stuff, in the spring and fall. In the winter time they load the gun up with hose and have an additional wagon for their use, and a pony extinguisher and water gun. I am going to tell you gentlemen that there is a whole lot of good service in that little five-gallon water gun. I came into a meeting about a year ago this time. Somebody says "I wonder if Crowe has his little squirt pump with him." That man did not have a squirt pump in his whole department, and I am going to tell you, and I know what I am talking about, that you can get a whole lot of good service in the woods from one of those little five-gallon squirt guns. The people who ridicule the equipment that we use in forest fire work do not come across and tell us where we can get something better. If there is anything better, we want to have it. We haven't a thing in the line of equipment that was built especially for forest fire work. We have picked the best that we could find that was already on the market. I am going to tell you, you get a whole lot of good work out of it. Try to put out a forest fire without it. There are some Chiefs we don't have to tell that to. But there are some of the Forest Wardens who are not Chiefs, who are absolutely opposed to carrying anything into the woods with them to fight a forest fire with but a shovel. There does not seem to be much sense in talking to men who insist that the best way to beat out a forest fire is with a shovel. This small equipment does not cost a great deal of money. There is one little word to say about extinguishing forest fires and I think that you Chiefs could help us out in getting them out quickly. There isn't any set rule to be laid down for extinguishing forest There are only a few general rules that might be used,—nothing set, because no two are alike and the rule that will work at one fire will be wrong and get you in bad at the other one. You have got to take different You have ground conditions, wind conditions, water supply conditions. All that must be worked out and has to be worked out by the individual forest warden in his town. The main thing is to know your territory, know where the danger spots are, where you can get water in the

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woods, where the wood roads are, where they lead you, where branches come in and where you are going to get stuck and mired in there. your territory. It is up to every forest warden to immediately acquaint himself with conditions in the woodland in his town. The important thing for a forest warden to do is to get a list of deputies in the woodland if possible. You are in the center of the town but you want somebody in the woodlands. For instance, you get a call from the forest fire station, it may be three miles, it may be four miles out to where this fire is. It is going to take some little time to get out there. You have a telephone in your hand and if you have a man four miles nearer the fire than you are, and can telephone him in a minute, you can do a whole lot in holding that fire in check until the forest warden gets there with re-inforcements. That is something that I consider very, very important. You are making a mistake, gentlemen, when you think you are going to handle a forest fire from the center of the town. You have to depend on the men who are on the outskirts. They make pretty good forest fire fighters, as they are acquainted with the woods, take farmers, used to that type of work, and you get an intelligent deputy out in the woodland. Then you have a very, very big help right on the job the minute the fire starts. I don't know as I care to take up any more of the time, Mr. Chairman. If there are any Chiefs who

want to ask any questions, I would be glad to answer them.

PRESIDENT MORAN: Gentlemen, you have all heard the talk on this very interesting subject by Commissioner Bazeley and Chief Crowe. What is your pleasure? (It was moved and seconded that this talk be accepted, spread on the records of this Convention and a vote of thanks extended to those gentlemen. And it was so voted.) Is there any discussion

on this subject?

CHIEF STANTON: Mr. President, I feel that there is altogether too much of wrong information about this association, as I feel that the Massachusetts Chiefs are continually alluding to the Fire Chiefs' Club. This is the New England Association of Fire Chiefs and of course there are other cities represented and other States beside Massachusetts. Now I represent Connecticut and we have forest fires there and use practically the same material for fighting the fire as Chief Crowe has described, in my city at least, with the water guns. He does not say how they would fill the guns if they run into brush out in the woods. Every piece of apparatus in my city is equipped with ponies. I have one piece equipped with 1 1-2 inch hose; with six water guns, a 25 gallon tank and ponies as I said before. They can fill that out of a well. What I wanted to bring to the attention of the Convention in our discussion is that the Massachusetts Fire Chiefs' Club have held so many meetings in the past, and are such a big organization that they are pretty apt to allude to "The Club." I have heard it mentioned here many times. Now this is a big organization, covering the whole of New England, and I would like to hear other Chiefs from other States that have forest fires talk along these lines and hear their criticisms if they have any. In addition to the equipment I have spoken of, we have a reed broom and several of our little house brooms and chuck them on each piece of apparatus. In addition to this one piece I speak of, every piece responds in their respective districts. If there is any city in New England that has any more park area according to the size than mine, it has a pretty big job on hand. We feel we are out every day during the season in those parks of ours. People will drop their cigarettes, and they will continue to do so. It is up to the Chief of the fire department to assist. We get a great deal of help from the Boy Scouts who are thoroughly organized in my community to assist the fire departments. The laws of Massachusetts differ somewhat from the laws of Connecticut in relation to Fire Wardens and their deputies so that in talking in these discussions we want to bring

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forward that the laws of the different States in New England will have to be considered in relation to Chiefs responding to these fires.

PRESIDENT MORAN: Any further discussion?

CHIEF WELLS: There is one thing that I haven't heard mentioned in this meeting. I don't know how the Chiefs of other cities ring the station, but in the territory which I am familiar with we have a peculiar type of bell, a little unique in effect. I have heard it said on request of certain towns to purchase apparatus, that they wrote to a big city that had the best apparatus known. Then I have wondered what other sections of the New England States have had. In my locality it seems to be the universal idea that the only way to stop the fire was to burn it up all around and set fire in what is known as a "back fire." That is a condition which I am trying to overcome. I have had several experiences in the past five years where the back fire has been started and the wind shifted and when we got there we had an area over four miles long of side fire which developed into a great fire, and when you are fighting a head fire running through open cedar groves about eight or ten feet high it becomes a solid wall of flame twenty feet or more in height, to such an extent that you can't put it out, and all due to the fact that you have used a box of matches to "back fire." My policy in my locality is to stop back firing. The only time I believe the back fire is necessary is when you have a great fire coming down on you and you have to make a small section of back fire to meet that because you can't handle it. When your head fire meets your back fire, you are able to stop both fires if you control your back fire. In the Spring when these fires break out, due to carelessness and other causes, we find that we have a prevailing wind. In the morning the wind changes invariably with the tide, and experience shows in 95% of the fires the wind has shifted just about the time they have got a roaring good back fire going. If we could make the wind stand still, there might be some use in back firing. I haven't heard any criticism regarding this back fire proposition, and what other States are doing to stop it. I would appreciate it if anybody can give me an idea of what they are doing in other States in regard to the back firing proposition and how they control it.

PRESIDENT MORAN: There must be some Chiefs here very much interested in this subject. We would like to hear from them.

CHIEF COTE: We have State laws covering the question of forest fires and we have some in regard to the forest warden. When woodland is cleared they turn around and leave all that "slash" as a general thing piled up. We had a case last year. I am not forest warden where I am situated. We have an organized fire department, have had one for some years now. The Chief Engineer has not tried to take over the duties of the warden. The only thing we can do is to go over the land and ask them if they will kindly remove the "slash." That is a condition that is fundamental because you can clear the edges, but there is danger from the "slash" and the fire will get away if it is not taken care of. We generally do the work anyway. We shall have to deal with this menace that is left in the woods when they do that kind of thing.

CHIEF HURLEY: I would like to ask the Commissioner if there is any law in regard to the slash that is left where they cut down the wood.

COMMISSIONER BAZELEY: The slash that results from operations has to be drawn back forty feet from the outside limits of the highway or 40 feet from adjoining woodland. It does not make any difference whether it is a man's own woodland or some one else's holdings. It must be removed forty feet. I don't believe that 40 feet is enough. It is my belief it ought to be at least 100 feet and that is what they tried to make it at the time the law was passed. We hope we shall get 100 feet in Massachusetts at some future time but 40 feet is better than nothing.

Unless the forest wardens and deputies are onto their jobs, the removal of that forty feet slash will usually be from the travelled highway and not from the

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outside limit of the highway, and if you insist I think it gives you in almost every case a 20 foot strip extra.

PRESIDENT MORAN: If there is no further discussion on that subject,

we will pass to the next:

Handling Fires in Double Decker Wooden Buildings Bv

CHIEF McCARTHY of Worcester, Mass. I am sorry they have introduced me in the program as "Charles H." because Charles L., is my name. Just a mistake in the middle initial. I am very much interested in this talk in regard to forest fires. Our city is composed of a little better than 38 square miles. We have not a few grass fires. We don't have any forest fires. We handle all the grass fires with our own department so that Commissioner Bazeley and Chief Crowe will understand we don't have to call on them for any expense from the State whatever. We handle them ourselves and I don't send in any bills to the State for any work we have done in regard to handling grass fires in the City of Worcester. Another thing I want to state is that from these watch towers, I have had ten or twelve calls this year, from Westboro. I haven't the exact figures. I want to state there never was a call that has come in to me that they didn't have the location exact. It seems almost uncanny to think that they would locate something in my city. We were across the city from Westboro, we would cross to the south end of my city, locate a fire and notify me of the fact that they saw something showing up, and in a majority of the cases we have had them out there, because our city is spread out so, the telephones are so closely allied that we have always got a call before they notified us, but it shows they were right onto their job every minute. We haven't got a wrong call from these fire towers from Westboro once. I think that is commendable in regard to the work that is going on with the forest fire wardens.

My talk was to be on two-deckers. But Worcester in years gone by has had very few two-deckers, in fact the majority of our stuff is three-deckers. In fact, Worcester is considered the home of the wooden three-decker. It is the poor man's home. He figures by building three-deckers he can get his rent practically free, and he can pay for the building in time from the rent on the other two tenants. We have had a lot of three-deckers built in Worcester. I am glad to say it is fading away now, and people are coming to realize the fact that they can build a two-decker and get practically as much rent out of it, for you would rather pay a little more rent in a two-family house and only have one family to fight with, than in a three-tenement and have two families to fight with. When it comes to the third family and their children, there is a row going on most of (Laughter.) When one flat is empty two or three months in the year, it takes off of your income from the building, now, today, in Worcester they are building these two-family houses mostly. We have three-deckers in Worcester so close together that the man could shake hands with the fellow in the next house by reaching out the window. When one of these fires get going there is not much chance for the next house. It is a case of getting in and fighting the fire in between the houses. In a city of two hundred thousand there is no need of them being any less than 25 or 30 feet apart. Let them get a little sunlight and better living conditions.

To prevent a fire is one thing and to fight it is another and since it is necessary for me to deal with frame buildings as my subject, consideration must be given to "fire-fighting" in its active sense. That is, how to deal with outbreaks in this type of building and the best method of using apparatus. Gentlemen, wherever you are working in any of the tenement houses through any of your cities or towns, be careful of the use of water. Chemicals is the only thing to use if it is possible. You have got to stand a lot of punishment, but the well-trained fire department is willing to do that, but remember that in the two and three tenement houses somebody has built them for money revenue and a home of their

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own, and they haven't the money to contend with any losses. A great many of your three-deckers, in Worcester especially, are in the residential section where the poor element, people of small means, a great many of them, do not carry insurance and a water loss means a loss of practically all. You all know that you go into a house, take a water line in and wet everything in the house.

The fire risk becomes more apparent as soon as it is realized that it is a menace to the home. The primal requisite, when a fire occurs in a frame building, is time. A few seconds lost may mean thousands of dollars more damage to property and perhaps the loss of a human life, the value of which cannot be measured in dollars

and cents.

In connection with the matter of time it might be well to add, that the stretching in of hose lines at fires has been the subject of much comment, but when time is the paramount object, hose cannot be measured by the foot. However, when the location of the fire has been ascertained, the commanding officer of a company should have a fairly good idea of the number of lengths required and it shows very poor training to see hose coiled in the streets in every direction at the site of the outbreak.

Shut-off nozzles should be used for inside work, wherever possible in order that the streams may be shut off as soon as possible. This is necessary because in almost all buildings constructed of wood the floors are not filled and care should be exercised in the use of water, as the water would run through the floor boards, destroying the ceilings beneath and the furnishings of the lower floors

NOTE: If it is possible, where your fire is confined, soda chemicals should be

used in place of water.

Let us consider for a moment one of the most hazardous of frame buildings. That in which there has been erected a store over which there are two, three or four tenements. We will suppose that the blaze has started in the store on the ground floor. In this type of building the stairs leading to the cellar and leading to the tenements above are of wood and all partitions are composed of wood lath

and plaster

To prevent the fire from reaching the soil pipes and getting through the partitions and by this means ascending to the top only to mushroom on the highest floor is the first thing to be done. A line of hose should attack the fire from the front through the main door. The second line should go to the back to cover the rear door and transom to stop the fire from spreading up the back stairs and piazzas, while ladders should be raised to the front of the building and all floors above should be examined to be sure the fire has not followed through pipe recesses or vertical openings. If the alarm has been turned in promptly a fire of this sort will be confined to the store where it originated.

But if there has been a delay and the fire has burned through the partitions and ceiling and has communicated with the floors above, a very different problem awaits the commanding officer. If the fire is spreading, or has spread before the apparatus arrives, use the lines to confine the fire to the room or place where it originated. This method will control the fire and finally lead to its extinguishment. By the time lines have been laid, ladders would have been placed to the floors above and especially to the top floor. This line is of the greatest importance and if the position is reached quickly, the fire should be prevented from mushrooming on the top floor. All possible effort should then be made to advance the lines to the seat of the fire, and here is where the men must take their medicine if need be. Life perhaps depends on their grit, determination and endurance, for work of this kind often entails severe trial. There is one more essential point to be guarded, namely the partitions and vent pipes. In dealing with this type of building, it is important to look carefully around these vent pipes and also these partitions as every partition is a vertical flue and there are very few fire stops. You will find that quite often in the old two and three tenement houses under

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the ordinances they have to put in a fire stop, and a wooden fire stop went in. They make a great mistake,—they say it should be "either wood or brick," but don't state the brick shall be cemented. I heard of one case in Worcester where a man was building three-deckers. He built three three-deckers and used bricks for fire stops. He started with one three-decker. He got it in condition where he was ready for the inspector to come around and look at it. He passed it. Then the owner took the brick out as soon as he went away, and closed that in and used it in the next building. That brick went through three buildings, and I guess he is using it yet. (Laughter.) It was carelessness on the part of the framers of this ordinance that they didn't insist that the bricks used for fire stops should be cemented in, and then there would be no getting away from it, and there is where we get into a lot of trouble. The lath should be stripped until it is satisfactorily proved that there are no nests of fire concealed behind the plaster. In fact, it is well to remember the following:

In case of a fire in or around a partition, open it up until lath or studs show clean, especially at the closets. This is the point where a great deal of false work will be found, also a space from the top of the closet at the lath and plaster ceiling within the closet up to the under side of the floor above. When on the top floor it may extend to the attic. Look for a space on the floor boards at sill of partitions, as fire may drop to lower ceiling through space at this point. Much false work about a chimney or flue is found in frame tenements and consists of the placing of studs alongside of a chimney, or flue, and placing furring strips on the face of chimney or flue, and then applying lath and plaster to the strips; this leaves an open space both at side of chimney and on its face, extending from the floor to under side of floor boards above. If on the top floor, the opening may extend to the attic. In many cases this space will extend throughout from the first floor to the attic. False work may also be found around and over closets, alcoves, and folding or sliding doors.

These concealed places permit the fire to spread, but with the space behind false work of chimneys and flues, the large concealed space will act as a flue and draw the fire up rapidly. Whenever a fire occurs near any false work, open up a section of the wall or partition and examine the concealed spaces to be certain that fire has not entered therein. In case of a fire occurring in a room which has floor or wall registers, have a quick examination made of the apartments above the floor on fire, as sparks from the fire are liable to go up the heater pipe and come out into the rooms above and thereby create a series of fires. We will next consider an outbreak which has occurred in the cellar of a frame building.

Now in Worcester we use ancient and modern three-deckers. We have a great many fires on rear piazzas. They reach from the bottom to the top and ninety per cent of them are open piazzas. One end of the floor is bolted and has an air shaft extending from the top floor down through the whole building ending up in the basement which is supposed to be fire proof. Ninety per cent are not. Some man carelessly with an ash pan filled with hot ashes dumps it into the ash-shaker and the consequence is a few drop on the floor and it makes a nice receptacle for that to start a little waste paper. Or, it may be that the children are out there playing, and getting hold of a few matches they start a fire. A little lad comes out with a pan of hot ashes and shakes them in. It may be nine or ten o'clock at night. Fire breaks out and by the time it is discovered the whole rear end of that building is just one solid mass of flames from the bottom to the top. My practice in Worcester is this: You have to lay a water-line after you are assured there is nobody in the building. Don't try to make the stairs. Knock down the half of that fire from the ground with the water-line before you try to make the stairs. The next thing is getting in and going up there with the chemical line. Go up through each floor and eventually open up the windows, get to the rear and stop that fire from getting through.

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The first objective is to confine the blaze. If there are windows to the cellar it is a comparatively easy matter to locate the seat of the fire, but, if there are no windows and it is impossible to make the stairway, a bad

condition exists.

By the intensity of the heat on the floor or surrounding walls one is sometimes enabled to judge where it would be best to place the first stream. All haste should be given to cutting a hole in the floor and dropping a cellar pipe into this hole. The cellar pipe should be of a type that would enable the operator to turn the nozzle in all directions. This would insure his hitting the flame at least once in every revolution. As soon as the cellar has been cooled and sufficiently ventilated to allow entrance by the stairway a line should be taken into the cellar so as to extinguish any blaze that might have jumped or burned through the cellar partitions. The number of holes to be cut into the cellar would be determined by the intensity of the blaze.

In case of a fire in a cellar which has a furnace to heat the premises, examine the heater pipes and wall and floor register on all floors, as they

may be the means of communicating fires.

After a fire is under control or practically extinguished, care must be taken to examine all openings and concealed spaces for fire. It is an excellent practice, after every fire, and before you leave the building, to examine the floors above and below the fire; feel around the walls, and around pipe and shaft openings, and make sure that there is no fire left behind, so that there will be no chance of a rekindle.

We have confined fires to one room and in rare instances it went into two rooms, by using that system. Don't try to make stairways. That is pretty slow work with a water-line, especially in the back of a three decker.

CHIEF MORAN: I think Chief McCarthy has handled this subject in a very intelligent and interesting manner. You can lay out a great deal of this work that is done at these fires. Chief McCarthy I think has shown that we should have more of this subject discussed at these conventions than we have had in the past. It seems rather funny, but we have rather beat away from that. It is in the educational field for the whole of us. You men are always interested in how the other fellow does the same kind of work. What is your pleasure in regard to this paper?

CHIEF JOHNSON OF WALTHAM: I am sorry I did not get here

to hear the whole of it. I heard the last part of it. I move we accept Chief McCarthy's paper and extend to him a vote of thanks. (Motion was seconded

and it was so voted.)

PRESIDENT MORAN: Is there any discussion on this paper?

CHIEF TABER: Referring to the three decker: It has been a bane to every city in the New England States, as we see it in the Fire Department, but, after reading Bulletin 346, 1917 we have got to accept all of the trouble that goes with the three-flatter, due to the fact that the investigation of healthful dwellings and living conditions show in the Bulletin, which states most emphatically that the three deckers with the rear piazzas are the most healthful dwellings that are built in this country. Those dwellings are occupied mostly by the poor or middle class. Unless a man is pretty hard-headed and close-fisted like our friend Mr. Casev there, you can live in a bungalow or a one family house, but the people of medium means or those who are striving to get along, have to accept dwellings that are dif-

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ferent, and the poorer classes as a rule mostly live in these same three-There is less sickness in them and of course you know there are more fires because of every inhabitant of that building,—if it is three, it means of course the hazard is only three per cent, but it is increasing with every child born there, increasing for all of the family as they accumu-The ratio of each flatter in the city of Boston has a risk of fifteen human beings, and after all hazards accrue from human beings. We are trying to stop a whole lot of it for the younger people who are coming along. Chief McCarthy has many hard problems. He has some that I saw coming into Worcester that in the winter time must be real problems. We haven't anything quite so bad here. We have enough three-flatters with the healthgiving platform in the rear, known as a dryer or piazza which is used as a catch-all for everything in the house which is emptied out onto these platforms in indiscriminate fashion. A careless smoker throwing a cigarette butt might put everybody out of business in that block. We have had them in this city time and time again. I have had eight going at one time,—kids hopping around like the kids play hopscotch. Nothing travels faster than that which goes to make a three-flatter. I appreciate all the trouble Chief McCarthy has got but there are a whole lot of others got just the same thing. While we deplore those conditions we have to fight between health and the problem of building those buildings for people to live in. They are not all millionaires. They have to worry like the old Harry to get their debt paid off, as Chief McCarthy says. It is a method pursued by most of the people who have a rent problem, and a Fire Chief should take more precaution in a poor man's house than he would in those that are covered pretty well by insurance. Caution and not destruction is the watch-word or should be of the fire departments.

PRESIDENT MORÂN: Any further discussion on this subject? not, we will pass to the next topic, which is "Oil Burners and oil heating by Mr. John Primrose, representing the manufacturers. Mr. Primrose in the hall? Has anyone seen Mr. Primrose? Is Mr. Hoag-

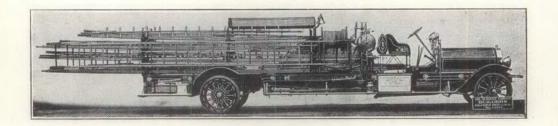
land here?

CHIEF JOHNSON: While we are on the subject of Oil Burning, I think that this would be a good time to mention the fact that there is going to be a conference of New England Chiefs at the Massachusetts Institute of Technology under the auspices of the Massachusetts Fire Chiefs' Club. A Professor is going to give a talk there on the Oil Burning Hazard. I think Chief Daley can tell you about it, and we ought to take some notice of it now, so that the Chiefs will know where this is going to be and what

it is going to be.
CHIEF DALEY OF BROCKTON: (Applause.) I would say that I have received a letter from the Professor inviting the Fire Chiefs' Club of Massachusetts to the Institute, and he has given me the power to set the date of July 9th, two P. M., when he will give an illustrated talk on Oil Burning and equipment, and also plans to have an actual demonstration. I am a little bit disappointed, because the Professor told me he was going to extend an invitation to the N. E. Fire Chiefs Association on that date also, and I think he will before the Convention is over. I think it would be a mighty fine thing for everybody that could attend to make plans on that date to go to the Institute. I trust that every member of the Fire Chiefs' Club of Massachusetts will attend.

PRESIDENT MORAN: I think that subject is interesting to every Fire Chief in New England at this time. Was rather disappointed the speaker was not here this morning. However, that can be taken up this afternoon and we will pass that subject at present. I think, it being after 11 o'clock now, it will be well to adjourn until half past two this afternoon.

(Meeting adjourned at 11:20 A. M.)



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AFTERNOON SESSION, JUNE 25TH, 1924

Meeting called to order at 3:10 P. M., by President Moran:

PRESIDENT MORAN: The next subject on the program entitled, "Potential Hazards Attending Fuel Oil Burning Equipments for Heating and Power" will be dealt with by Deputy Chief Albert J. Caulfield of the Boston Fire Department.

DEPUTY CHIEF CAULFIELD: Gentlemen, this article on the hazards of fuel oil deals with a young subject as far as fire departments are concerned. This subject that we are going to talk on is rather a new one to us all, and when we talk on these subjects the ones that appear to be affected are the oil men and the men that build the device. They seem to feel that we are inflicting hardship or something of that sort. Likewise in fire prevention work the assessors have followed this matter up. But it is not the intent that we will do anything that will harm anybody or restrain the trade. This thing has grown upon us so rapidly that almost the minute the hazard is created we set about to eliminate that hazard and produce conditions that would be effective for safety all the way through. want to bear in mind that the oil burning proposition is a proposition that has come with us and is growing very rapidly; but it is with us to stay. It is going to increase, so this paper is discussed merely on the conditions as we encountered them in our line of duty. The prevailing high cost of fuel brought this oil burning into prominence very quickly. People were seeking relief from those conditions which they encountered during that shortage of coal and the high prices. In consequence of that numerous manufacturers have constructed and placed upon the market various types of fuel oil burners.

In Boston, up to the first quarter of the year 1924, there were 318 licensed heavy fuel oil installations, and 457 domestic fuel oil burning installations operating with permits. The storage tanks installed to serve this equipment comprised a holding capacity of 7,533,974 gallons. So that was a considerable amount of oil that was stored around in all types and kinds of cans some under ground and some above ground. Regardless of the manufacture of these oil burning devices, or how well safeguarded by the supervision of the installations, all of which are installed and maintained under the Rules and Regulations prescribed by the Department of Public Safety of Massachusetts, they present a hazard.

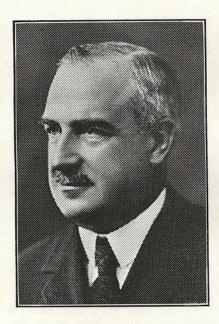
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These fuel oil burning devices may be constructed of the best material and oil storage kept and handled in an approved manner, but here is no restraint or question of the human element that is going to control or operate them.

In many cases where fuel oil installations have displaced coal burning equipments, the experienced fire-room force has been reduced, in the interest of economy, on many new installations a janitor, porter or other inexperienced person has been engaged or assigned to operate the oil burning equipment, and in many instances they are found lacking in the knowledge of the mechanism and proper handling of these heating devices. It has been noted that many installations have been left operating hours and even days, unattended.

The zealous salesman appears and approaches the prospective buyer. He tells of the low cost of operating with oil against that of coal, the number of heat units per gallon of oil obtained, and the difference from so many pounds of coal, the specific gravity of oil and cost per gallon the size and type of equipment he should install, the salesman being so engrossed in endeavoring to effect the sale has never considered or mentioned the hazard possibilities that may be produced by the installation.

# Best Wishes to the Fire Chiefs of New England



FROM

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Candidate for

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OF MASSACHUSETTS In Boston during the past two seasons, (heater operating period) sixty fires have occurred where oil burning equipment were responsible:

Cause of Fire.	Number of Fi	res.
Ignition of soot in chimney		
Defective installation	11	
Overflow of oil	7	
Back-fire	4	
Leaking oil	3	.,
Heat igniting surrounding woodwork	3	

Many of the domestic oil heating equipments installed in buildings of old construction, formerly used for swelling purposes, now re-modelled and converted into stores and light manufacturing purposes, these buildings were originally heated with coal equipment, such as stoves, furnaces, etc., and a number of installations are being made in buildings still used for residential purposes.

It is not unfair to assume that defects exist in many of the chimneys, some structurally poor and of insufficient capacity to serve oil burning equipment, the internal area having been materially reduced by its long continued use and adhesion of combustion elements to the sides, most chimney defects as a rule are not in plain view, being concealed by lath and plaster walls, if such defects exist and not discovered the chimney is continued in use regardless of type of heating equipment it is going to serve.

In Massachusetts there are about seventy accepted and approved types of oil burners handled by the oil burning equipment trade. This approval is received

from the Department of Public Safety of Massachusetts.

In addition to those of the approved type placed upon the market there are ones of the home made variety that are approved only by the maker and user in his home. The use of this type is prohibited. The users do not realize their responsibilities or the danger liable to occur by continuance of its use. They are seemingly satisfied with this hazardous make-shift type. It is impossible to determine the number of this type in use. In the opinion of the writer the percentage would be low in Boston. Several were found operating and their use ordered discontinued.

Conditions Tending To Create Hazards.

Siphoning of oil from tank through broken pipe or burner.

Failure of valve at burners to operate in proper manner (Automatically). Rubber gaskets in flange joints disintegrating, allowing oil leakage.

Operating system with closed draughts.

Smoke pipes of excessive length and too near goods and woodwork.

Unprotected supply pipes from tank to burner.

The re-lighting of pilot light and burner after being extinguished for any cause, while oil vapors are present in the heated chamber of fire-box. Lack of attention of the part of the owners and operators and failure to keep operating parts clean and properly adjusted.

Chimney old and structural condition poor, built to serve coal burning equipment and not of sufficient capacity to care for soot accumulation and excessive heat generated by constant burning of oil at a fixed flow adjustment at burner.

Unintelligent operation of system in such a manner as to produce incomplete combustion and allow unburned fuel to enter chamber of flue in large quantities.

Producing and maintaing a condition causing a lack of oxygen, the absence and sudden admission of oxygen with closed or choked draughts is conductive to back-fire

A peculiar feature attending fires in chimneys which serve oil burning equipments, in many cases the fire occurs when system is shut down and chimney begins to cool off. This is attributed to the admission of free oxygen causing

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the ignition of unburned oil or other residual substance which has adhered to the interior of smoke-pipe or chimney, the result of incomplete combustion. spark emissions from this type of chimney fire are of a carbonaceous substance, are very hot and sometimes break into a flame when coming in contact with the outer air, igniting anything it encounters of a combustible character.

In several instances fire took place in new chimneys of good ample capacity, burned with great intensity, giving off heavy spark emissions, the action of these fires was plainly evident that combustion was incomplete, and system handled in

a faulty manner.

The flooding of burners on air pressure and gravity feed systems of the small domestic type of oil burners, due to direct feed from tank to burner without

As oil burning installations increase, the hazards increase correspondingly and the following suggestions are put forth to reduce the hazard as much as possible. This article is written from a practical fire department view point, from experiences. The subject of oil burning equipment is a question for further study. At present it is immature in many ways, as development progresses the hazards now existing will be lessened if not totally eliminated in the future.

Suggestions to Lessen or Control the Hazards.

Oil burning equipment installed for heating or power purposes should be enclosed in room, walls to be of fire resistant material, floor of cement concrete, with threshold not less than three inches in height, ceiling of wire lath and hard plaster not less than three-quarters of an inch in thickness, equipped with self closing standard fire door and ventilated to the outside air.

Oil tanks or containers to be kept outside of heater room, all feed pipes from

tank to heater to be protected against rupture or injury.

Supply pipes to be equipped with Anti-siphoning device to prevent siphoning. All shut-off valves at tanks and remote control switches to be plainly marked designating their location and to be accessible at all times. Steam jet or coil with valve control to be installed in all chimneys serving oil burning equipment, whenever possible.

Smoke pipes of excessive length to be prohibited.

That automatic control valves be installed on all types of oil burning installa-

All persons operating or responsible for the operation of fuel oil burning equipment, other than those of the small type used for household purposes, should be compelled to submit to an examination and be licensed, after they had assured

the proper authorities that they possess the necessary qualifications.

When installations are to be made in buildings where chimneys were built to serve coal burning equipment, that a survey be made to determine the safety of said chimney from a structural viewpoint as to whether any defects exist, and that it is of sufficient capacity to serve such installation, if found necessary compel such changes to eliminate any hazard, or prohibit the installation being made.

Frequent inspections to be made of all installations noting the general condi-

tions, that the existing regulations are being complied with.

It is essential especially in case of fire that fire department officers and privates should possess the knowledge of the location of shut-off valves and remote switches to oil burning equipments. (Applause.)

PRESIDENT MORAN: You have all heard the reading of this paper.

What is your pleasure? I think it is a very vital subject to every chief here.

CHIEF TABER: It is not within my province to speak for a member of my department, but I want to say this for the benefit of all,—that that paper was drawn from practical observations of conditions covering a period of three years. It is a remarkable paper in many ways. I am not eulogizing the writer of it, but I am speaking for the benefit of the every day firemen. Many of the speakers on that subject would go into technicalities, but I say sometimes we can

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introduce a little horse sense. That was the main objection giving vent to that paper at this Convention in a practical way and in a way which many of the members, in fact all of the members, would treat a subject of this kind. It is true they have come from all over the United States to get at our rules and regulations covering the installation and use of oil for heating and power. It is also true, no matter how many and how apt a person may be in drawing up regulations, how safely he can look at it, there is always some appliance left out. The thought with me is this: that things or matters pertaining to the use of oil in heating and power appliance are not always practically set forth by the technical expert. We hold no briefs for those people, neither do we hold them for the practical man, but we bring out that which is for the best interests of all users by men who have handled it. The technical expert can get over a subject and if he is a good, fluent talker, make you believe it is the finest thing in the world.

I will admit that it is good in every way, but there is nothing that is perfect and what we are considering today is to make things as nearly perfect in regards

to safety as possible. (Applause.)

CHIEF JOHNSON: We have another gentlemen here that is going to have a paper on the same subject. I think it will be well to hear that and then discuss them.

PRESIDENT MORAN: Has anybody seen Mr. Primrose?

CHIEF JOHNSON OF WALTHAM: Since he is not present, I would say that we pass his paper and continue this discussion. In that line, I want to say that in the oil burning proposition we all realize it is something entirely new. Oil burning has come to stay,—there is no doubt about it. It is in the province of the Fire Chiefs at the present time, to us as individuals to make them as safe from a practical standpoint as they can possibly be made. I have been privileged once or twice to attend hearings at the State House on Beacon Hill, and whereas from the standpoint of fire engineer my ideas perhaps would not coincide with the ideas of the man who is installing a heating plant. I recall that at one hearing I suggested the importance of all large installations, of all installations where it would be necessary to hire a trained engineer or man who is qualified to run that plant, that some sort of fire extinguisher should be installed in that plant of some type that would control oil. At that hearing I was very much surprised to hear a man of large interests scoff at the idea, because he certainly could not have looked at that from a practical firemanic standpoint. There is no doubt in my mind that in every installation, every large installation, where it is necessary to provide an engineer for any heating plant, there should be adequate means of extinguishing fire in that particular plant, whether the fuel used is wood, coal We all realize that the great oil industries of this country have spent many, many dollars safeguarding their own plants, their installations, their storage plants and everything that pertains to their industry. They have spent many thousands of dollars safeguarding those installations. I was surprised that here in Massachusetts we should get any such response from the oil heating industries that it was not necessary, because when the great State of New York, which is always a state that is progressive and up-to-date, and when their regulations were sent all over the country, I notice all these installations required just what you ask for from a firemanic standpoint, and I feel that the people of Massachusetts, the oil industry of Massachusetts, perhaps were a little hasty in that one thing, and I thought it would be to their benefit, instead of discrediting that idea, to cooperate with us in that one object to safeguard as far as possible anything that might cause the spread of fire from these oil installations. Now we are up against the proposition everywhere of the gravity oil burner. They are small in the average house. It is one of the things we are up against here in the East, and something that we have got to look out for carefully. They have been improved here in Massachusetts. They are installed in some of the cities and we, as firemen, have need to look out for the oil industry. Our province, gentlemen, is not to look

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out for any industry nor the methods perhaps of our people in our several cities and towns. When we come honestly before any body of men or any legislative body and ask that these things be done, we do it honestly. We have nothing to gain, we do it simply because it is our duty as heads of fire departments and I hope that the oil industries of Massachusetts and of the nation will realize that we are unselfish in our motives, and that they will endeavor in all of these large installations to have some type of extinguisher to take care of the overflow of oil should it occur.

That is the only thing that could give us trouble. And I feel that we as members of this organization should spread that principle. We have nothing to gain from oil installation, as firemen. It is a hazard at the present time to our work as heads of fire departments. We want to co-operate with these oil industries and do everything in our power to help them perfect and install a machine that will be proper for the people of the Commonwealth, and the industries of New England, and to heat homes. We want it to come about if it can be done properly. I was surprised that they ridiculed the idea because I knew in my own mind that when the great State of New York spoke that they would speak in no uncertain terms, and my prophecy was fulfilled. So I hope that the oil industry, the men that are installing these plants, in the future, whenever any member of this organization or any Chief Engineer has occasion to make suggestions that they will realize that they are making that suggestion, not for any personal advancement, not for any personal gain that they may acquire, but solely for this one purpose which every Chief Engineer that is honest in this country knows is the preservation of the lives and property of the people of our respective communities. I hope they all realize it and I think that they do, that is, the men that are higher up. I hope also this oil burner proposition is advanced as the years go by that they will try and eliminate as far as possible everything that would cause a hazard in places of public assembly, theatres, schools and such places. We cannot exercise too much care. In our public schools, as Mr. Fleming said on that platform last night, the children of our schools are in prison so many hours every year. It is our duty as Fire Chiefs to safeguard the lives of those children as long as we have the power to safeguard them, and I never would have any installation of any kind, oil, coal or anything else in a building unless it is absolutely safe from a firemanic standpoint. What we need is more men of the type of Paul Revere that have got the good, solid, strong American blood in their veins, that can stand up on their feet and say that they think they are right and stand up and be criticized for principle. I don't think it is right for any organization of men to say to one man who is standing up for principle, "You are ridiculous, we don't know what you are talking about;" because they do. History has proven that the Fire Chiefs of this country have stood in years gone by for things that were true and it has proven true year after year. The National Board of Fire Underwriters and the National Fire Protection Association do realize that the men in the fire service of this great country are trying to their utmost to carry on this work. It is our duty to work with them. It is their duty to work and cooperate with us. (Applause.)

CHIEF TABER: Mr. President, I would like to trespass about four minutes upon your time, to introduce a resolve in this convention which affects the sane use of films. To introduce a resolve affecting the homes, schools and churches relative to the sane use of films. It was very quickly drawn and very well drawn by those who are interested.

WHEREAS it is recognized that the constantly widening use of motion picture films in churches, schools, hospitals, clubs, colleges, lodges and homes is a fire nuisance which should be fully controlled.

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BE IT RESOLVED, That the New England Fire Chiefs' Association at its Second Annual Convention hereby endorses the Model Film Law, a copy of which is attached hereto, and pledges its support and active cooperation with the fire prevention, protection, underwriting and other interests who have already endorsed it, with the end in view of having it become a part of the laws of the New England States.

I would like to have this endorsed, as it has been by all similar Conventions throughout the country and in most of our cities, as it is really a sane measure and in many homes, schools, lodges for educational purposes they have in some cases violated the principles of safety in using the nitrocellulose. For safeguarding and eliminating the causes of fire and panic no better rule can be undertaken by any board of men in your positions in life than to have this endorsed by this convention. I move you, Mr. President, the resolve be endorsed by the convention.

PRESIDENT MORAN: Gentlemen, you have heard this resolution. It has been moved and seconded. What is your pleasure? (The resolution

was adopted.)

CHIEF DALEY OF BROCKTON: Before we close the discussion on the oil burning question, that in inviting you to attend that demonstration and illustrated lecture at the Institute of Technology on July 9th at 2 P. M. in view of the fact that the Secretary has not yet received the invitation, I feel sure there has been some mistake made, because it was really intended that this Association should be invited. I want to say to you all again I don't know where you will find anything more instructive than by going to that lecture. You will see the actual demonstration of what causes your fires by oil fuel burning. (Applause.)

SECRETARY O'HEARN: In reference to this meeting Chief Daley speaks of in the Mass. Institute of Technology, when I left here I looked up my records and find a letter on file notifying me that those men had made arrangements with the Mass. Fire Chiefs' Club for such a meeting. Previously he and I had some telephone communication, and I told him that in my opinion it was very doubtful if we could get the New England Fire Chiefs' Club together again in a month after meeting here in this convention. For this reason he made arrangements for a meeting with the Fire Chiefs' Club only. I told him that when I received a notice I would notify the membership of the New England Association by post card, and invite them to be present at that meeting.

Q. Will you do it? A. I will do it.

PRESIDENT MORAN: The next subject on the program is a paper on Automatic Sprinkler Equipment by Mr. Ira G. Hoagland of the National

Automatic Sprinkler Association of New York City.

MR. HOAGLAND: Mr. President, officers and members of the New England Fire Chiefs' Association, I am again privileged to appear before this organization, and I feel constrained to say in view of my election by the first annual meeting of the organization, it is certainly great stuff. My subject is "Automatic Sprinklers as Fire Department auxiliaries." Of course to get a larger slant on just what the relationship might be, one would have

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to go to some practical sources of information, which I did, and to assure you just how this relationship is regarded by some Fire Chiefs, I would like to read a few excerpts on some of the responses received. I am not prepared to present this matter as I would like to, but shall only hit the high spots of the subject, in order that some discussion may be brought out. One Chief responded:-"There would be something wrong with the fellow that would say a sprinkler system is no help to the fire department. I consider my sprinkler a fireman on the job 24 hours a day." Another:—"I cannot say too much for the Automatic Sprinkler. It is possible for it to operate immediately upon the start of a fire and operate in the most inaccessible places where a human being could not go or in fact live, and in that way I feel that the automatic sprinkler is without question a most effective extinguish-Another Chief says, "I have confidence in the automatic sprinkler and am frank to say that they are the means of saving thousands and thousands of dollars worth of property from destruction by fire,-the best friend the firemen ever had or will have. And I think that they are the best watchman that there is, always on the job. I wish every school was equipped with them.

Now of course the first thing to consider about the automatic sprinkler system as an auxiliary to fire departments is how they are used by fire departments in discharging water on fire. The first thing to consider in that respect is the fire department connection. I was cautioned today by one member not to refer to "Steamer connection." Of course the steamer connection has become obsolete. The fire department connection is the most comprehensive term. This is the essence of the subject as far as the extra sprinklers are concerned. They should be kept in the premises, and the fire department really should not be required to carry such apparatus for replacement. To co-operate with the underwriters in exercising their authority, the Fire Chiefs thought the property owners would give ear to what they had to say about that. I know in my experience of the owner, they usually take an unfavorable attitude toward keeping an extra supply of sprinklers on hand. In most cases the supply was not found. In answer to the question, what are the reasons for fire departments not doing this, but preferring others to do it? I would like to read these few excerpts. The hour is getting late and the air is heavy. I don't want to try your patience too far, but just wish in conclusion to read a few responses of the men. Q. Have you any suggestions in mind for additions to sprinkler systems that will make them conform better to fire department practice?

This subject may be termed otherwise: "Co-operation Between Human Firemen and Their Most Valuable Ally the Automatic Firemen." Unquestionably there is a definite relationship of this sort and that automatic sprinklers are an important means of controlling conflagration conditions in cities and modifying responsibilities of fire departments, also a valuable auxiliary in fire department

operations.

To get the point of view of the human firemen about the aforesaid relationship a question letter was sent to the members of the New England Association of Fire Chiefs. Otherwise stated, the purpose of the questionnaire was to get from the most practical source, chiefs of fire departments, information about the practices that obtain in making use of automatic sprinklers as fire defense auxiliaries.

The following points were comprehended in the questionnaire:

The extent to which automatic sprinkler systems are equipped with fire department connections.

What use is made of these connections?

Procedure followed at fires in sprinklered buildings. Practice pursued in shutting off sprinkler systems. Restoring sprinkler systems to service after fires.

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6. What salvage work is done by fire departments.

What knowledge do fire departments have of sprinkler systems.

What record is kept of fires in sprinklered buildings.

What consideration is given to sprinkler system automatic alarms.

10. Opinions of sprinkler systems and what improvements in them are considered desirable by fire departments.

Among answers to the question, "What do you think about automatic sprink-

lers as a practical help to firemen?" are the following:

"There would be something wrong with the fellow that would say a sprinkler system is not a help to fire departments. We consider the automatic sprinkler a

fireman on the job, with a supply of water, twenty-four hours a day."

"I can't say too much for the automatic sprinkler. It is possible for it to operate immediately upon the start of a fire, and in the most inaccessible places where a human being could not go, or, in fact, live. The automatic sprinkler is without question the most effective fire extinguishing agent."

"I have absolute confidence in the automatic sprinkler. It is the best friend

the fireman ever had or will have. Its value is not sufficiently realized nor ap-

preciated by business interests."

"If automatic sprinklers were used more commonly America's fire loss would

be cut to a very small amount."

"I consider them to be the most efficient and practical method of discovering, controlling and preventing the spread of fire."

A great help and a valuable auxiliary to any fire department."

"They have stopped many fires which would have been dangerous if not held in check."

"A big help in checking progress or completely extinguishing fire."

"Greatest thing ever invented." "Best help possible to have."

#### EXTENT OF FIRE DEPARTMENT CONNECTIONS

The fundamental purpose of automatic sprinkler systems as fire defense auxiliaries comprehends the use of them by fire departments in getting water into fires. For this purpose standard automatic sprinkler systems in cities and towns are generally equipped with hose connections for fire department use, which are required by the fire underwriters.

To ascertain the extent that automatic sprinkler systems in New England are equipped with fire department connections the following question was asked which was the first one in the question letter sent to the members of the New

England Association of Fire Chiefs:

I. Are the complete sprinkler systems in your jurisdiction provided with so-called fire department connections for attachment of hose by your department

to supply water to such systems?

According to the responses received most of the sprinkler systems in many of the larger and in some of the smaller cities in New England are equipped with these connections, and a fair proportion in some others. In some of the larger cities there are only a few, e. g., only 3 out of 108 sprinkler systems so equipped in Springfield, Mass. In some of the smaller cities there are not any connections at all.

To some extent, possibly, one reason for the lack of fire department connections is given in the following response: "Some of them have. Others are connected direct to the city water mains." In another: "Only one, a factory in the uptown hill district where the pressure is not as great as in the downtown section."

Therefore, it would seem that where there are not any fire department connections or only a few it is because of water supply connections to automatic sprinkler systems direct from public water systems capable of sustained service.

For the most part fire department connections have been put in under the requirements of fire underwriters. But the following response indicates that public

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authorities are developing an additional influence in this respect: "Not all systems have fire department connections, but under the present building code they are required."

In relation to question No. 1, this one was asked:

1. (a) Do you know that all such fire department connections are threaded

to fit your department's hose couplings?

The answers received were unanimously affirmative. In a few cities in other sections of the country this has been found otherwise. In view of the work that has been and is underway is standardizing fire department hose and hydrant couplings care should be taken to see that sprinkler system fire department connections are threaded also according to the National Standard.

To ascertain to what extent fire department connections are limited to so-

called basement sprinkler equipments this question was asked:

(b) Do you have in your jurisdiction such partial sprinkler equipments as may be in basements and sub-basements and equipped with fire department

connections?

Only a few answered, yes. Without doubt most chiefs wish that there were more, for basement fires are among the worst that fire departments have to deal Four lives and a property loss of several hundred thousand dollars was the price one New England city paid several years ago for the lack of automatic sprinklers in the basement of one building. And it took the whole fire department to control the fire. Now there are basement sprinkler equipments in that city. Why do lives and property have to be sacrificed to bring about necessary improvements to safeguard them when there are so many sad lessons of neglect already recorded?

#### UTILIZATION OF FIRE DEPARTMENT CONNECTIONS

The extent and method of use of fire department connections are covered

by following questions, Nos. 2, 3 and 4:
2. Do you make use of fire department connections to sprinkler systems and attach hose to them in responding to alarms of fires in buildings equipped with, sprinkler systems? Please answer Yes or No and see Nos. 3 and 4 for further questions.

Responses revealed that only a few fire departments have established a definite practice in making use of fire department connections. For the most part in New England use is mainly discretionary. In only a few cities are these con-

nections not used at all.

Concerning discretionary use are the following comments: "This question cannot be answered by yes or no. The same conditions do not take place at all fires. If conditions warrant we connect with pump hooked up." "We have always noticed good service from sprinklers. We certainly would connect if needed.'

3. If you do make use of fire department connections and attach hose to them in responding to alarms of fires in sprinklered buildings, will you please explain what method you follow in doing this?

(a) Is hose attached by first or second companies responding?

In one of the few cities having a definite practice the first company does In another, the "first or second, if possible." In another the first company runs the first line to the fire and the second line to the fire department connection.

In one city the third company connects.

In some of the cities where use is discretionary second companies connect when ordered, as explained in one response: "There are two or more engine companies responding to all bell alarms. First company to arrive lays water and chemical lines to building. Second company would be ordered to connect to sprinkler connection, providing, in the opinion of commanding officer, it is

In one city an exception to discretionary use is as follows: "At fires in upper floors of high buildings, the first company due connects to street connections.

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In one city the first company would attach one, the second company two lines. In some others one, in others two or both.

3. (c) Is pressure immediately pumped up in hose attached and what pres-

sure maintained?

This is done in only a few cities. In one a pressure of 85 lbs. is immediately pumped up. In another a pressure of 140 lbs. is pumped up in lines in excess of 200 feet and increased in proportion to the length of longer lines, but only to conserve private water supplies, such as gravity and pressure tanks. Pressure is not pumped up where sprinkler systems have direct water supply connections to the public water system unless it is desired to increase the pressure above that in the public water system.

3. (d) Is pressure maintained until fire is located?

In some of the cities where hose is attached to fire department connections either in accordance with a set practice or with the judgment of the commanding officer pressure is maintained until fire is located.

3. (e) Is hose attached and orders awaited before pumping up and what

are conditions determining orders for pumping? Is fire located first?

Where hose is attached and pressure not immediately pumped up orders are awaited before pumping in some cities. Several responses remarked that the fire would be located first. One of them said: "We locate our fires first, then issue orders accordingly."

3. (f) Is there a standing rule or order concerning any of foregoing pro-

cedures and what is such rule or order?

As far as could be ascertained there is only one fire department that has a standing order for a definite utilization of fire department connections. "Our instructions are explicit and they function as part and parcel of our fire methods." In another department instructions are given in connection with drill school practice.

#### GENERAL ORDERS NO. 70, SERIES OF 1923, BOSTON FIRE DEPARTMENT

#### V. Sprinkler System Connections

- In response to an alarm of fire in a sprinklered building having steamer connections, the second company responding shall connect their first line to steamer connections. However, if, in the opinion of the officer in charge of operations, this cannot be accomplished, then the first line from the third engine company arriving at the fire is to be connected.
- 2. It must be borne in mind that the action taken by the officer in charge first reaching the fire depends entirely upon the conditions existing at the scene of the fire. It is always well to feel that practice makes perfect, and if connecting to sprinkler connections results in nothing more than practice, it would prove invaluable in the event of the freezing of water in the sprinkler street supply, or the possibility of their being shut off for various reasons, this being the case in many of the buildings throughout the city.
- 3. Should the street sprinkler supply be frozen, or shut off, as the case may be, the use of the steamer connections would result in a similar degree of efficiency in much the same manner as though the supply was normally delivered through the take-offs from the street supply. The fact of the matter is that the officer in charge may or may not have use for sprinklers, but it is well to adopt this plan in order that all persons concerned may become familiar with the connections and their locations.
- 4. The attention of the officers of the department is called to the availability of the High Pressure System for use in connecting to sprinklers. Should occasion arise that the High Pressure System should be used for this purpose, the pressure from the hydrant outlets to which the sprinkler supply is attached must not exceed 125 lbs. This can be regulated by the operator of the hydrant in reducing the orifice on the outlets being used, if it be necessary to increase the pressure above that point.
- 3. (g) Are connections made according to judgment and if so, what officer decides?

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Where fire department connections are utilized for the most part it is according to the judgment of commanding officers at fires. One response remarked: "Chief or first officer at fire decides."

(h) Is judgment determined after fire is located and what are fire or any

other conditions determining decision to connect?

Judgment determined after fires are located in many cities, before in a few. Conditions determining decisions are variously remarked as follows:

"If pressure low and top story all afire."

"Extent of fire, number of sprinklers open, and water pressure."

"If fire above second story."

"Appearances indicating fire to be of an extent to open several sprinklers would determine advisability of making connections immediately."

"If pressure low in system would connect right up but we have always found

where there is a fire the sprinklers have taken care of it."

"Condition of fire in regard to size and location of building."

"In cases where water flow alarm is not sounding orders to make direct connections would be issued."

"Should enough heads go off to drop pressure in system we would push the

pressure up with pump."
3. (i) If there are basement sprinkler equipments in your jurisdiction having fire department connections is there any different procedure about making

use of them? And what is difference?

Only a few fire departments report that there is not any difference in procedure in making use of fire department connections to basement sprinkler equipments from that followed in attaching to connections to complete sprinkler systems. In one city where the procedure is different two lines would be immediately attached to fire department connections to basement sprinklers and pressure pumped according to conditions of fires.

In another city fire department connections would be used at once only where basement sprinkler equipments are "dry-line" systems. One response remarked: "In basements where open head sprinklers are installed first line laid is immediately connected to sprinkler system. In other cases where entrances to basements

are difficult connections would be made at once."

In some cities basement sprinklers have fixed water supply connections direct from public water mains which the following comments indicate: "Our pressure can take care of it, if not, it needs more than one water line." And: "Basement sprinklers have no fire department connections, all having good pressure and volume.

If you do not make any use of fire department connections to sprinkler systems, please explain why you do not.

(a) Is it because sprinkler systems have direct connections to public

water supply or any other water supplies? Please name supplies.

Where fire department connections are not utilized at all or only occasionally in exceptional instances, it is generally because sprinkler systems have independent water supplies, chiefly from the public service and, in some cities, from private sources One response remarked: "All our sprinkler systems are connected to the public water supply which has been ample for any fire we have had. Recently we had a fire in which 500 heads opened without any serious effect on the water supply."

One fire department which follows a consistent discretionary practice in utilizing fire department connections said: "The fact that a risk had an auxiliary water supply would not prevent me from making connections if conditions war-

ranted such action."

(b) Is it because you have found that automatic sprinklers usually have

controlled fires?

Because automatic sprinklers have usually controlled fires is one of the principal reasons for not attaching hose to fire department connections. Com-

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ments on this point, from fire departments in cities where there are many sprinklered properties, follows:

"It is because the sprinkler has extinguished the fire before our arrival;

therefore, it has not been necessary to connect to system."

"Have never had occasion to pump or supply water through fire department connections.'

"We have always found sprinklers to have control of fires."

"Sprinklers under town pressure have always taken care of fires, but we have line from pump ready to assist if necessary."

"We have always good service from sprinklers. Never connected to a

sprinkler system yet."

"We have always found where there is a fire the sprinklers in the building have taken care of it."

4. (c) Is it because if automatic sprinklers have not extinguished fire you would proceed anyway with hose or chemical lines rather than pump through sprinkler system?

A considerable number of fire departments remarked that this was the reason for not using fire department connections. One said: "Would do less water

damage."

Some others were not quite so flatly affirmative: "If, in my opinion, pumping through sprinkler system I consider quickest and best, well and good; and again, conditions might need both." And another: "We would proceed with hose or chemical line also pump through sprinkler system, if considered necessary."

4. (d) If you do not usually attach to fire department connections do you do so in exceptional cases where you think sprinkler systems need more water to control fire?

Some fire departments would do this. A few others in smaller cities would

not at all.

#### PROCEDURE FOLLOWED AT FIRES IN SPRINKLERED BUILDINGS

What practice do you follow at fires in sprinklered properties?

(a) Do you lay to fire hose line with shut-off nozzle and under pressure

or use chemical line or carry portable extinguishers for use if necessary?

Responses indicated that fire department methods at fires in sprinklered properties are generally the same as for all fires with respect to the laying of water and chemical lines and using portable extinguishers. One department uses small garden hose lines instead of chemicals.

5. (b) What companies say nose or chemical sine. In a number of departments the first company to arrive lays chemical line, and the second a water line with shut-off nozzle. But with respect to which is laid first and what companies do it, the practice varies.

(c) Would you use hose or chemical lines before determining if fire is

nuder control by sprinkler system?

Two responses remarked this to be a foolish and a needless question. No doubt it may seem to be but it brought out the fact that there are a few departments that would do what the question asked. One response said: "We use water when we see fire or in places where we feel there is fire."

From a department that would not use hose or chemical lines before determining if fire is under control by the sprinkler system is the following comment: "Under no consideration as loss can be sustained by water as well as by

fire."

(d) Would you pump water through sprinkler system before using hose or chemical lines?

Most fire departments would not. From among those who would came these

comments:

"If fire is not under control by sprinklers connections to the system would be ordered as the distribution of sprinkler heads would cover the area involved more efficiently than a single line of hose and with less water."

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"We would endeavor to maintain pressure equal to static."

"If fire up high and showing evidence of spreading would pump through sprinklers."

5. (e) If there is a certain established practice, please explain? In answer one department said: "Much would depend on amount of fire encountered, the nature of contents, area and number of sprinklers involved." PRACTICE PURSUED IN SHUTTING OFF SPRINKLER SYSTEMS

6. Do you require that water shall not be shut-off from sprinkler systems

until fire is out, or under control by sprinklers? Please state which.

A few departments require that water shall not be shut off until fire is out and most of them that this shall not be done unless the fire is under control by sprinklers and the departments in readiness to finish whatever fires that have not been completely extinguished. Comments follow:

"We don't shut off water until fire is out or can be handled with small line." "We shut off the sprinklers just as soon as the Lord will allow us to do so

and cover any fire which may remain by our line if get-at-able.'

"Water is never shut off until fire is under absolute control of sprinklers and department in a position to extinguish such fire as remains, such as under benches,

"We require that water shall be shut off when we are in a position to handle with chemical lines or water lines with shut-off nozzles."

(a) Is water shut off from sprinkler system as soon as fire is located, re-

gardless of whether or not fire is under control by sprinklers?

For the most part this is not done. Several responses were qualified as follows: "In some cases." "Depends on size of fire." "Not always." "Not unless water from sprinklers hampers firemen." "Water is shut off as soon as fire is located when we are backed up with chemical to handle it."

One response indicated that water would be shut off regardless of whether

or not fire is under control by sprinklers.

(b) Is water shut off from sprinkler system upon arrival of fire de-

partment before fire is located and why?

Not done in most instances. Some departments qualified responses by saying: "Sometimes" and "Not always." And the following from a department that would not shut off in this way: "Not done, because we must locate fire and see if we can handle it."

6. (c) What are reasons or conditions which determine decision to shut

off water from sprinkler systems such as to save water damage, etc?

For the most part the condition which determines decision to shut off water is that the fire is under control and in a few instances only when the fire is out.

To a lesser extent the reason for this determination is to save water damage and in a fewer cases when the fire department can handle the fire. One response remarked that the water was shut off "to enable men to work in the affected area to make sure fire is out." Other comments follow:

"Wherever we have been called to fires in buildings with sprinkler systems, the fire has been extinguished. Our first thought then is to stop flow of water."

"To save water damage, if possible, and then only when we are assured that

the fire is under control of men and apparatus present."

"When we are satisfied that department can handle fire without sprinklers we believe that we can work to better advantage without sprinklers and with less water damage.'

"When fire is under control and contents not of a combustible nature that a

spark would cause fire to rekindle."

Just this sort of thing has happened many times throughout the country because of the precipitate and injudicious shutting-off of water from sprinkler sys-

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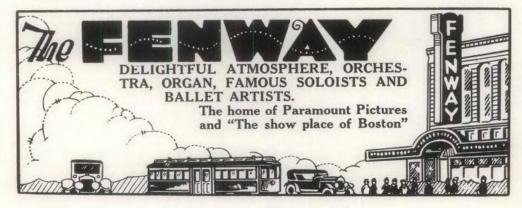
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tems before definitely ascertaining that fires were actually extinguished or absolutely under control and fire departments definitely in a position to take care of the fire.

In their zeal to save water damage many departments have overshot the mark in stopping far too soon the operation of automatic sprinkler systems.

6. (d) Any established rule of practice about shutting off water or ac-

cording to judgment?

There does not seem to be any rule of practice about shutting off water. It

is generally done according to the judgment of officers commanding at fires.

7. Is water shut-off under fire department direction and by what officer is order given, or is shut-off by direction of salvage corps or fire patrol, owner or

Generally under fire department direction and orders given by commanding officers.

7. (a) Who usually shuts valve? Members of fire department, of salvage

corps or fire patrol, employee or owner or tenant?

For the most part this is done by members of fire departments; in one department an officer does it. To some extent it is done by employees of owners or tenants, if available, under fire department direction, but if employees are not available members of fire department would shut valves. Only a few responses indicated that fire departments would leave this entirely to owners or tenants.

At least two fire departments have given instructions to owners and tenants of sprinklered properties that they must not close valves in the event of fire under

any circumstance until after the arrival of the fire department.

In the few cities where there are salvage corps. or protective departments the members of them usually shut valves under fire department direction. Concerning this is the following comment: "We co-operate with the Protective Department which responds to all alarms with the fire department and our co-operation has been perfect. Members of the fire departments are instructed in this matter so to be ready in case the salvage corps, is not present which may occur."

(b) Any established rule of practice about shutting off water or accord-

ing to judgment?

This question should have been worded differently. It is the same as 6 (d) but means something different. Question 6 (d) referred to a rule of practice determining judgment. This question 7 (b) was intended to refer to an established method of shutting off wa'er after judgment had been determined. Several responses indicated that this was the way the question was interpreted. They follow:
"One man is located outside street entrance to building so as to get the signal

called to shut off valve and drain system."

"Member detailed at entrance to carry out order to shut off."

"As soon as we are assured that fire is under control we pass the word to the salvage corps member whose duty it is to look after the valves and who takes immediate action. In this way we limit the water loss as far as possible."

7. (c) Is sprinkler system immediately drained affter shut-off valve is

closed?

This is generally done, but a few departments do not. Concerning the matter of drainage are the following comments: "Drained to a point where heads can be replaced." "Not necessarily if sprinklers are in top story." "Only dry systems in cold weather." "When sprinkler in elevator well operates it is not necessary to drain whole system as riser in well has separate controlling valve."

7. (d) Is man stationed at valve when shut-off in readiness to open same

if necessary?

In most cases, yes; in some, no.

"The man ordered to shut off water is ordered to see that it is turned on." "The salvage corps man remains at valve to open immediately if need be."

"Member of department remains at valve until sprinklers are replaced and system in full operation."

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currence in my own city which demonstrated to me how easily it could be done. We had a fire in a five and one-half or six story building, a basement fire,—no means of entering the basement but by a stairway or a ladder. The proportions of the fire were great at the time of my arrival, though I figured I might prevent the loss of that building. During the progress of the fire, the owner came to me as I came out of one of the stores and said "Chief, if I lose that building I am a ruined man." I was too busy to make any conversation with him at that time. We did our best,—the fire was extinguished before reaching the second floor. Shortly after that, when this same man came to repair that building, although he has promised me he would not lathe and plaster it, and would do away with wooden partitions; I made an examination and found he hadn't done as he promised. He cut off the boiler room by a wooden partition. I immediately ordered him to cut down the partition and put up a steel wall. That same man who told me the night of the fire that he was a ruined man, commenced to holler about how much it would cost him to do that. In the next building was a store, and we insisted upon the party wall being broken through and fire walls being built on each side. The owner said, "No, sir, it never shall be done." Then he wanted to know on what condition I would let him out of it. I said, "If you will sprinkler the whole building." He said, "Under no consideration can I make those party walls." I said, "I want you to go to your local agent and find out what it would cost you for your insurance should you want to install a sprinkler system. The agent said about 11 cents a floor. I tell you that is wrong. I want to say to you now gentlemen that your local agent is not interested in the proposition. I took this fellow and asked him to come to my house and we sat down and I prevailed on him to go to the New England Insurance Exchange and demand that a survey be made of his premises. It was done. He was very anxious to rent his store. The result was while this man was paying \$1.27, by installing an automatic sprinkler system and using at different points about that building a few hand chemicals that rate was brought down to 40 cents. Within three to five years that man can pay for that system by his savings in insurance. I wondered that if we, as Fire Chiefs could go before our Chambers of Commerce and show these hard-headed business men, open their eyes to what a saving can be made, I think we would have the assistance of the greatest agent we ever had, and that is the automatic sprinkler.

PRESIDENT MORAN: Any further discussion?

CHIEF STANTON OF NORWICH, CONN.: With your permission, I will read this resolution:

WHEREAS, The annual waste of property by fire in the United States imposes a serious economic drain on the created wealth of this country; and

WHEREAS, Organized fire departments are responsible for the preservation from fire of a great proportion of this wealth; and this responsibility of fire departments is increased by conditions which breed conflagrations, conditions that can be modified; and

WHEREAS, The automatic sprinkler is an agent for fire control of proved worth and one which, if more generally used, would decrease the dangers of conflagration, lessen the responsibilitiy of fire departments and constitute a most valuable auxiliary in the public fire defense; therefore

BE IT RESOLVED, That the New England Association of Fire Chiefs regards the automatic sprinkler as an important means of controlling conflagration conditions in cities and modifying responsibilities of fire departments, also as a most valuable auxiliary in fire department operations, and

ments, also as a most valuable auxiliary in fire department operations; and RESOLVED FURTHER, By the New England Association of Fire Chiefs that its President be and is hereby authorized to appoint a special committee to investigate ways and means whereby automatic sprinkler systems may be used to best advantage by fire departments as fire defense auxiliaries;

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Boston, Mass. West Somerville Said committee to report recommendations at the next annual meeting of this Association.

Resolution adopted and the following committee appointed:

Chief Daley, of Brockton; Chief Stanton, of Norwich; Chief French, of Manchester, N. H.

CHIEF O'HEARN: Many of the members will recall yesterday we had a very interesting address by Chief Johnson of Waltham and many interesting remarks following the address indicated that there were a number of Chiefs who had already had a Fire Chiefs' Cabinet, but they didn't know it, they didn't call it a Cabinet, they had committees on boards of trade and other associations assisting in the work of their departments. I think it is no more than fitting that this association should in some way take some action concerning the Fire Chiefs' Cabinet. I have thought it over and have got some resolutions to present to the Convention concerning the Fire Chiefs' Cabinet.

WHEREAS the New England Association of Fire Chiefs is organized to reduce the fire waste of New England and to develop and perfect our fire

departments to the highest degree of efficiency to that end, and

WHEREAS the organization in every city and town of a group or committee of citizens, selected by the fire chief, to operate as his advisory cabinet and aid him in presenting the needs and problems of the Fire Department to the people of his city or town would be of great assistance to the chief in his efforts to make his city fire safe, it is therefore.

RESOLVED that the idea of such a local committee or cabinet as presented in the address of Chief George L. Johnson of Waltham be hereby unreservedly commended and endorsed: that the chiefs of this Association be urged to consider as soon as possible the creation of such a cabinet in their home cities: and that where necessary or advisable the field secretary of the National Fire Protection Association be called upon to assist in such effort.

SECRETARY O'HEARN: I didn't move for the adoption. I presented them to the Convention for their consideration. I don't feel as if I want to present the resolutions, and say "Go ahead and adopt them," because they are my resolutions. I would rather have some one else say whether we want to adopt them or not.

PRESIDENT MORAN: What is your pleasure?

CHIEF DALEY: To bring this subject up, talking with several Chiefs, I find this question is not thoroughly understood. I think it is looked at from a different angle. The proper course would be to give the members time for further consideration. There are many different angles on the subject. Conditions are not alike in all cities and towns. I am only speaking for those I have discussed it with, and I find there are many of them that would like to give it further consideration.

would like to give it further consideration.

PRESIDENT MORAN: We will pass that up for the present. Are there any further subjects to come up now? It is getting rather late. Before a motion to adjourn is put, I will say that the session tonight will start with that moving picture and any one who has not seen it should be here

on time. (Meeting adjourned.)

Morning Session, June 26th, 1924

Meeting called to order at 10:15 A. M. by President Moran.

PRESIDENT MORAN: Gentlemen, is there any unfinished business? A MEMBER: Mr. President, the only unfinished business is the paper

supposed to have been read by Mr. John Primrose.

PRESIDENT MORAN: As nobody has seen him around here that I know of, that paper will be passed by. I regret very much that that was omitted. He had one of the principal discussions in the whole Convention here. Now, we will pass on to "Reports of Committees." Credential Com-

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mittee. Chief Morris is chairman. The secretary's report will take care of that. Now, we will hear Chief Johnson, Chairman of the Committee on Courtesies.

CHIEF JOHNSON: Every member of this Association realizes that we have had an exceptional Convention here in the City of Boston. It has been brought about by the co-operation of the people of this great city and it is my duty to extend to them our deep appreciation of the many courtesies they have extended to us, and I move you that we extend to His Honor Mayor Curley, Fire Commissioner Theodore A. Glynn, Mr. Henry Thompson, Superintendent of the Boston Protective Department, Chief John O. Taber and his board of Assistant Chiefs, the Box 52 Association and to all who have given their time to make this Convention a success, our heartfelt thanks. We also want to extend our thanks to the Officers and Directors of the Officers' Club, and the officers and directors of the Russell Club and to all others who in any way made this Convention what it was. I also want to include in this resolution Mr. Milliken, who has ably assisted our Chairman of the Committee on Exhibits for the wonderful work he has done. I don't know as it would be proper for this organization to thank our own Traffic Manager. He is supposed to attend to his job and do it right. But I believe he has exceeded everything he has ever done before. I would like to include him.

CHIEF HURLEY: Mr. President, I would like to ask you to include the young man up in Holyoke, the Secretary of the Fire Department up there. He has done all the correspondence for the Committee on Exhibits. Done more work than the Chairman or any other member of the Committee did. I would like to have him included. Mr. James E. O'Leary.

PRESIDENT MORAN: You have all heard that resolution. (It was

moved and seconded, and the resolution was passed.)

Next is the report of the Chairman of the Committee on Exhibits.

CHIEF HURLEY: Mr. Chairman, I am very sorry to say that we haven't collected all of the money yet. I suppose I could give you a slight idea of what it means. We have collected in the neighborhood of \$1430. Our expenses will be \$80, which will leave \$1350 in money to be turned over to the Secretary some time this forenoon. It will be within \$25 of the \$1350. We will turn it over to the Association.

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I would like to add a few words to what the Chairman of the Committee on Courtesies said about Mr. Milliken. He has certainly been a wonderful help to this Committee. He was drafted originally by Chief Taber who did not have the time to give to the Committee and induced Mr. Milliken to help out for him and it was a very fine thing for us that we got him. He has been here late and early and never been too tired to do anything that we asked of him. We did get wonderful help and we had a wonderful exhibit. It was all owing to the help that we got that we had such a good exhibit.

PRESIDENT MORAN: You have heard the report. It is certainly a wonderful report. I don't believe any of us ever expected any returns of that kind from the exhibition of this Association. I certainly am very much surprised to see them reach that amount. What is your pleasure, gentlemen?

CHIEF JOHNSON: I move you the report be received and a vote of thanks extended to the Chairman and members for their efficient services.

CHIEF DALEY: I would like to mention it again, to include Mr.

Milliken.

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SECRETARY O'HEARN: Mr. Milliken is on the Exhibit Committee. PRESIDENT MORAN: All in favor signify it in the usual manner. (It was so voted.) The next order of business, gentlemen, is the election of officers. Nominations call for the Presidency of this Association.

A MEMBER: Mr. President, I nominate Chief Patrick J. Hurley of

Holvoke as President.

CHIEF JOHNSON: I second that motion.

PRESIDENT MORAN: The name of Chief Hurley of Holyoke has been presented for President. All in favor signify it in the usual manner.

(It was so voted.)

A MEMBER: I move the Secretary cast one ballot for Chief Hurley.

PRESIDENT MORAN: The Secretary has cast one ballot for the position of President, Chief Hurley of Holyoke. I appoint as a Committee Chief Johnson and Chief Smith to escort the new President to the chair. (Applause.) I congratulate you, and also the Association on the election of a man that I really think will have great influence in carrying this Asso-

ciation along to much greater prestige and strength than it has at present.

(Applause.)

CHIEF HURLEY: Gentlemen, I wish I had the eloquence of Bill Daley or George Johnson so I could adequately express to you my sincere thanks for the great honor that you have given me. It surely is a great honor to me. You know this has been a very fast growing little baby, only two years old. I don't suppose there has ever been an association before that has reached the heights this one has in the short space of two years. Now, gentlemen, I realize my limitations, I know that I haven't the ability of our past President, Chief Moran, and I am somewhat doubtful of my ability to carry along the work that has been done in the last two years, but I will do everything in my power to devote as much time as possible to it, and I have got to ask you to give me the most help that you possibly can. I will be always open to suggestions or ideas from any of you. The Convention listened to the talk of one of our members, Chief McCarthy of Worcester. It was an old fashioned talk on fire extinguishing. I begin to think we have gone a little bit away from what is our primary job, that of putting out fires. We all got our jobs as heads of departments to put out fires. Of course I don't wish to discredit any fire prevention measure. There is no one knows any better than I do the good of fire prevention. But I have a feeling that we have been getting a little bit away from the extinguishing of fires. I think in the coming year if we had some more papers the same as Chief McCarthy gave us in the last Convention, it would kind of equalize between extinguishment and fire prevention and make for a better Convention. I am just mentioning this, gentlemen, to show you the way I feel, and any suggestions will be gratefully received by me. I thank you. (Loud and prolonged applause.) Gentlemen, the next business before the meeting is the election of a First Vice-President.

CHIEF CASEY: I nominate Chief Daniel E. Johnson of Bridgeport, Conn., who is now Second Vice-President, to be First Vice-President. I make a motion to have the Secretary cast one ballot for Daniel E. Johnson of Bridgeport, Conn., for First Vice-President. (It was so voted and the

Secretary cast one ballot.) (Applause.)

Speech of Acceptance by First Vice-President Johnson

If I only had the ability with the feeling that I have got for the New England Association of Fire Chiefs, both as a body and individually, I would talk away for a long time in singing the praises of this Association. I hope that it will continue in the way it has started out. Take the fine exhibits they have got here, the exhibits on the floor and everything in general. It has been a howling success and I am mighty glad to see the Association as it is today and hope it will continue. Thank you very much. (Applause.)

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Night and Sunday, P. Callahan, S. B. 2680 150 Tyler Street Boston, Mass. PRESIDENT HURLEY: The next order of business is the election

of a Second Vice-President.

CHIEF JOHNSON: The gentleman I want to propose for the office of Second Vice-President, and I am sorry to say it was not possible for him to be here today. When we organized this body, it was to be a body of New England Fire Chiefs, and it was the object of the prime movers of this organization to select for the offices of this body men whom we could all look up to, who did not seek the office in any way, shape or manner. That is the way it was started and I hope it is the way it will continue in the future. Ever since I landed at this Convention hall a few days ago, it has been a matter of business, and the matter of officers, and who should be President, First or Second Vice-President has never been mentioned. It shows the tone of the organization when all the offices seek the men, and I have conceived the idea that we should go into one of our sister states for our new Second Vice-President. I feel that I can name a man who would be an honor to the organization, a bright and noble Chief who is looked up to by all his associates, and would be a credit to us, and I take pleasure in nominating Chief Charles French of Manchester, N. H. for Second Vice-President. (It was moved and seconded and the Secretary cast one ballot electing him.)

PRESIDENT HURLEY: The next election will be that of Secretary

of the Association.

CHIEF MORAN: Gentlemen, it gives me great pleasure to nominate the present Secretary, Chief John O'Hearn. I wish to say he has been of great assistance not only to the whole association but to myself during the past year and at the same time I also want to thank the members of this association for their co-operation. It has been a real pleasure, as Chief Hurley will find, to work for this association. Gentlemen, as said before, I take great pleasure in nominating Chief O'Hearn as Secretary and Treasurer.

PRESIDENT HURLEY: Gentlemen. Chief John O'Hearn has been nominated as Secretary. It was moved and seconded and the nomination

closed. (It was a unanimous vote.)

CHIEF MORAN: I make the motion that the President cast one ballot for Secretary John W. O'Hearn and declare him elected Secretary-Treasurer for the ensuing year. Gentlemen, we will now proceed to the election of a Sergeant-at-Arms.

CHIEF JOHNSON: I would like to ask if the Sergeant-at-Arms is here. No. I move you, sir, that Chief David DeCourcey be re-elected Sergeant-at-Arms with instructions to be here at every session. Elected on

his past record.

PRESIDENT HURLEY: The Secretary will cast one ballot, as it has been moved and seconded that Chief DeCourcey be elected. The next business before the meeting is the election of State Vice-Presidents who are nominated from the floor. What is your pleasure, gentlemen? Vice-President for the State of Maine,—any nominations?

CHIEF DALEY: I move you, sir, that the name of Chester W. Blethen

of Auburn, Maine be appointed State Vive-President for Maine. Carried.

Chief Arthur W. Spring of Laconia, N. H. for State Vice-President for New Hampshire. Carried. For Vermont, I nominate Carl Stockwell of Burlington, Vt. Carried.

A MEMBER: For Massachusetts, I nominate Henry Thompson.

CHIEF McCARTHY, WORCESTER: Mr. President, I would like to nominate Chief Taber of Boston.

PRESIDENT HURLEY: Any other nominations for the State of

Massachusetts?

PRESIDENT HURLEY: Gentlemen, it looks as if we would have to proceed to ballot for the election of State Vice-President for the State of Massachusetts. What is your pleasure?

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CHIEF JOHNSON: I have just happened to think at this time,—as I sit here listening to the nominations for State Vice-President. I begin to think it would be a good idea in the future for the different States to pick out a man that they would like to have and have it decided in their minds who they would like to have for the State Vice-Presidency, and it would save some complications. It is an honorary office, an office that might be required to fill the chair, but very seldom. I think it would be a very good idea in the future to have him selected so that we would not have to decide on this question. Not necessarily for a State Caucus, because we

want to keep away from that, but simply to decide who they want to have. PRESIDENT HURLEY: I agree with Chief Johnson. I think it is the proper thing to do to have each State delegation elect their own Vice-President. In future I think it would be a good thing to adhere to that practice and save us a lot of trouble right here. Gentlemen, how do you wish to vote on this State Vice-Presidency matter? You can ballot either

by standing or by show of hands.

CHIEF HAYES OF BRISTOL: I suppose the delegates from Massachusetts could get together and bring in one man. I make that as a motion.

CHIEF McCARTHY: The fact that this convention has been so successful and handled in such an efficient manner by the City of Boston makes me feel as though Chief Taber should get some recognition from this Association. He has handled this thing wonderfully and it has been a success from start to finish. The only thing that we can give him is an honorary office. This is my sole object in nominating John O. Taber for State Vice-President at this time. Nothing personal about it at all.

PRESIDENT HURLEY: Is there a motion before the house?

SECRETARY: There is. A motion that this matter be left to the Massachusetts delegates to be fixed up between themselves.

A MEMBER: Is that legal? A. No, it is not.

PRESIDENT HURLEY: Let us proceed to ballot? How do you mean this ballot to be taken,—by show of hands? The Secretary will distribute ballots to the different delegates.

PRESIDENT HURLEY: Chief Thompson has withdrawn his name as a candidate for State Vice-President, which brings us back to the only

nomination, which is Chief Taber.

A MEMBER: I make a motion that the Secretary cast one ballot bear-

ing the name of John O. Taber for State Vice-President.

The motion has been made and seconded. All in favor manifest it in the usual manner. (It was so voted.) The Secretary has cast one ballot for Chief John O. Taber of Boston.

PRESIDENT HURLEY: Now, gentlemen, we have the State of Rhode

Island.

CHIEF COTE: I nominate Robert Browning of Central Falls, R. I.

PRESIDENT HURLEY: Any further nominations?

A MEMBER: I move the Secretary cast one ballot for Chief Browning. PRESIDENT HURLEY: All in favor, manifest it by saying "Aye." The Secretary has cast one ballot for Robert Browning (It was so voted.) of Central Falls, R. I. as State Vice-President.

A MEMBER: For State Vice-President of Conn., I nominate Chief George

S. Pitt of Middletown, Conn.

PRESIDENT HURLEY: All in favor of Chief Pitt manifest it by saying "Aye." (It was so voted.) The Secretary has cast one ballot for Chief George S. Pitt of Middletown, Conn., completing the list of State Vice-Presidents.

CHIEF MORAN: Mr. President, I believe the Constitution calls for the amount of salary to be paid the Secretary-Treasurer, and this has to be voted on every year. I will make a motion that the same salary be continued for another year. (Motion seconded.)

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PRESIDENT HURLEY: The motion has been made and seconded that the salary of the Secretary-Treasurer be continued the same as last year for the ensuing year.

CHIEF JOHNSON: What is the salary?

PRESIDENT HURLEY: Three hundred dollars. All in favor manifest it in the usual manner. The vote is passed and the motion is carried. Now gentlemen, I think the next business is the selection of a Convention

City for next year.

CHIEF SHEPARD OF PITTSFIELD: I have been requested by my people to extend an invitation to the New England Association of Fire Chiefs to hold their Third Annual Convention in the City of Pittsfield, Mass. I will ask the Secretary to read the invitations from the representative organizations of Pittsfield.

A MEMBER: I move that if there is no city proposed, that we waive the reading, and have the next convention of the New England Fire Chiefs

held in Pittsfield.

PRESIDENT HURLEY: I would like to recognize that motion, but as a matter of courtesy I think we should read this correspondence.

SECRETARY O'HEARN reads letters, as follows:

Mayor's Office PITTSFIELD, MASS.

W. C. Shepard, Chief, Pittsfield Fire Department, Pittsfield, Mass.

June 20, 1924.

My dear Chief:

I would be very glad to have you extend to the New England Association of Fire Chiefs an invitation to hold their 1925 Annual Convention in Pittsfield.

There is no doubt but that the entire city would unite to give them a most cordial welcome, and to make their stay both pleasant and profitable. It is equally true that their presence here would greatly stimulate local

interest in better Fire Protection and acquaint our citizens generally with the prime importance of this Municipal Department.

Trusting that your invitation may receive the cordial reception which

I am sure it will, I-remain,

(Signed) Chas. W. Power, Mayor.

#### PITTSFIELD CHAMBER OF COMMERCE PITTSFIELD, MASS.

June 4, 1924.

Chief William C. Shepard, Pittsfield Fire Department, Pittsfield, Mass. Dear Chief Shepard:

The Pittsfield Chamber of Commerce is deeply interested in the suggestion that an invitation be extended the New England Fire Chiefs Association, to hold its annual convention in 1925, in this city. In presenting this invitation at this year's session, will you convey to the members of your Association an assurance of the most cordial endorsement of our organization?

Pittsfield will esteem it an honor, as well as a real pleasure, to have an opportunity of welcoming and entertaining the heads of the fire departments of New England. I am authorized to tender to your Association, the fullest co-operation of the Chamber of Commerce in making the visit of

your members both enjoyable and helpful.

You are fully qualified to inform your associate chiefs as to the character of Pittsfield's hospitality, and you may assure them that it will be on tap in unlimited quantity and of our best quality, if they decide to honor us with their presence in 1925.

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Sincerely yours, (Signed) S. Chester Lyon, Secretary. ROTARY CLUB

PITTSFIELD, MASS.

June 20, 1924.

William C. Shepard, Chief of Fire Department, Pittsfield, Mass. Dear Chief Shepard:

The Rotary Club of Pittsfield through you cordially invites the New England Fire Chiefs Association to hold its 1925 Convention in Pittsfield.

You can assure the Association of every accommodation necessary, and the support of Rotary is assured, as well as of our other civic organizations.

Respectfully, ROTARY CLUB OF PITTSFIELD, (Signed) William C. Root, Secretary. THE KIWANIS CLUB PITTSFIELD, MASS.

June 21, 1924.

Mr. W. C. Shepard, Chief of Fire Department, Pittsfield, Mass.

The Kiwanis Club of Pittsfield invites the New England Fire Chiefs' Association to hold their 1925 Convention in Pittsfield. In the event that Pittsfield is honored by the presence of your Association, the Kiwanis Club wishes to extend to you its hearty co-operation.

Yours truly,

(Signed) E. P. Dittman, Secretary.

PITTSFIELD, MASS.

June 20, 1924.

William C. Shepard, Chief, Pittsfield Fire Department, Pittsfield, Mass. Dear Sir:

As a member of and on behalf of the Pittsfield Lions Club, will you please extend to the New England Fire Chiefs' Association a very cordial invitation to hold its next convention in Pittsfield?

The Pittsfield Lions Club will be glad to co-operate in any way within its power toward making your Convention a success.

Very truly yours, (Signed Wm. T. Nesbitt, Jr., President, Pittsfield Lions Club.

WTN-M

PITTSFIELD LODGE No. 272, B. P. O. ELKS PITTSFIELD, MASS.

June 20, 1924.

N. E. Association of Fire Chiefs, Care Chief William C. Shepard, Pittsfield, Mass. 'Gentlemen:

In accordance with the unanimous vote of Pittsfield Lodge of Elks passed at the meeting of June 19th, we extend to your organization a cordial invitation to hold your 1925 Convention in Pittsfield.

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currence in my own city which demonstrated to me how easily it could be done. We had a fire in a five and one-half or six story building, a basement fire,—no means of entering the basement but by a stairway or a ladder. The proportions of the fire were great at the time of my arrival, though I figured I might prevent the loss of that building. During the progress of the fire, the owner came to me as I came out of one of the stores and said "Chief, if I lose that building I am a ruined man." I was too busy to make any conversation with him at that time. We did our best,—the fire was extinguished before reaching the second floor. Shortly after that, when this same man came to repair that building, although he has promised me he would not lathe and plaster it, and would do away with wooden partitions; I made an examination and found he hadn't done as he promised. He cut off the boiler room by a wooden partition. I immediately ordered him to cut down the partition and put up a steel wall. That same man who told me the night of the fire that he was a ruined man, commenced to holler about how much it would cost him to do that. In the next building was a store, and we insisted upon the party wall being broken through and fire walls being built on each side. The owner said, "No, sir, it never shall be done." Then he wanted to know on what condition I would let him out of it. said, "If you will sprinkler the whole building." He said, "Under no consideration can I make those party walls." I said, "I want you to go to your local agent and find out what it would cost you for your insurance should you want to install a sprinkler system. The agent said about 11 cents a floor. I tell you that is wrong. I want to say to you now gentlemen that your local agent is not interested in the proposition. I took this fellow and asked him to come to my house and we sat down and I prevailed on him to go to the New England Insurance Exchange and demand that a survey be made of his premises. It was done. He was very anxious to rent his store. The result was while this man was paying \$1.27, by installing an automatic sprinkler system and using at different points about that building a few hand chemicals that rate was brought down to 40 cents. Within three to five years that man can pay for that system by his savings in insurance. I wondered that if we, as Fire Chiefs could go before our Chambers of Commerce and show these hard-headed business men, open their eyes to what a saving can be made, I think we would have the assistance of the greatest agent we ever had, and that is the automatic sprinkler.
PRESIDENT MORAN: Any further discussion?

CHIEF STANTON OF NORWICH, CONN.: With your permission, I will read this resolution:

WHEREAS, The annual waste of property by fire in the United States imposes a serious economic drain on the created wealth of this country; and

WHEREAS, Organized fire departments are responsible for the preservation from fire of a great proportion of this wealth; and this responsibility of fire departments is increased by conditions which breed conflagrations, conditions that can be modified; and

WHEREAS, The automatic sprinkler is an agent for fire control of proved worth and one which, if more generally used, would decrease the dangers of conflagration, lessen the responsibility of fire departments and constitute a most valuable auxiliary in the public fire defense; therefore

BE IT RESOLVED, That the New England Association of Fire Chiefs regards the automatic sprinkler as an important means of controlling conflagration conditions in cities and modifying responsibilities of fire depart-

ments, also as a most valuable auxiliary in fire department operations; and RESOLVED FURTHER, By the New England Association of Fire Chiefs that its President be and is hereby authorized to appoint a special committee to investigate ways and means whereby automatic sprinkler systems may be used to best advantage by fire departments as fire defense auxiliaries;

209

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Said committee to report recommendations at the next annual meeting of this Association.

Resolution adopted and the following committee appointed:

Chief Daley, of Brockton; Chief Stanton, of Norwich; Chief French, of Manchester, N. H.

CHIEF O'HEARN: Many of the members will recall yesterday we had a very interesting address by Chief Johnson of Waltham and many interesting remarks following the address indicated that there were a number of Chiefs who had already had a Fire Chiefs' Cabinet, but they didn't know it, they didn't call it a Cabinet, they had committees on boards of trade and other associations assisting in the work of their departments. I think it is no more than fitting that this association should in some way take some action concerning the Fire Chiefs' Cabinet. I have thought it over and have got some resolutions to present to the Convention concerning the Fire Chiefs' Cabinet.

WHEREAS the New England Association of Fire Chiefs is organized to reduce the fire waste of New England and to develop and perfect our fire

departments to the highest degree of efficiency to that end, and

WHEREAS the organization in every city and town of a group or committee of citizens, selected by the fire chief, to operate as his advisory cabinet and aid him in presenting the needs and problems of the Fire Department to the people of his city or town would be of great assistance to the chief in his efforts to make his city fire safe, it is therefore.

RESOLVED that the idea of such a local committee or cabinet as presented in the address of Chief George L. Johnson of Waltham be hereby unreservedly commended and endorsed: that the chiefs of this Association be urged to consider as soon as possible the creation of such a cabinet in their home cities: and that where necessary or advisable the field secretary of the National Fire Protection Association be called upon to assist in such effort.

SECRETARY O'HEARN: I didn't move for the adoption. sented them to the Convention for their consideration. I don't feel as if I want to present the resolutions, and say "Go ahead and adopt them," because they are my resolutions. I would rather have some one else say whether we want to adopt them or not.

PRESIDENT MORAN: What is your pleasure?

CHIEF DALEY: To bring this subject up, talking with several Chiefs, I find this question is not thoroughly understood. I think it is looked at from a different angle. The proper course would be to give the members time for further consideration. There are many different angles on the subject. Conditions are not alike in all cities and towns. I am only speaking for those I have discussed it with, and I find there are many of them that would like to give it further consideration.

PRESIDENT MORAN: We will pass that up for the present. Are there any further subjects to come up now? It is getting rather late. fore a motion to adjourn is put, I will say that the session tonight will start with that moving picture and any one who has not seen it should be here

(Meeting adjourned.) on time.

Morning Session, June 26th, 1924

Meeting called to order at 10:15 A. M. by President Moran.

PRESIDENT MORAN: Gentlemen, is there any unfinished business? A MEMBER: Mr. President, the only unfinished business is the paper

supposed to have been read by Mr. John Primrose.

PRESIDENT MORAN: As nobody has seen him around here that I know of, that paper will be passed by. I regret very much that that was omitted. He had one of the principal discussions in the whole Convention here. Now, we will pass on to "Reports of Committees." Credential ComTelephone Somerset 4586-W

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mittee. Chief Morris is chairman. The secretary's report will take care of that. Now, we will hear Chief Johnson, Chairman of the Committee on

Courtesies.

CHIEF JOHNSON: Every member of this Association realizes that we have had an exceptional Convention here in the City of Boston. It has been brought about by the co-operation of the people of this great city and it is my duty to extend to them our deep appreciation of the many courtesies they have extended to us, and I move you that we extend to His Honor Mayor Curley, Fire Commissioner Theodore A. Glynn, Mr. Henry Thompson, Superintendent of the Boston Protective Department, Chief John O. Taber and his board of Assistant Chiefs, the Box 52 Association and to all who have given their time to make this Convention a success, our heartfelt thanks. We also want to extend our thanks to the Officers and Directors of the Officers' Club, and the officers and directors of the Russell Club and to all others who in any way made this Convention what it was. I also want to include in this resolution Mr. Milliken, who has ably assisted our Chairman of the Committee on Exhibits for the wonderful work he has done. I don't know as it would be proper for this organization to thank our own Traffic Manager. He is supposed to attend to his job and do it right. But I believe he has exceeded everything he has ever done before. I would like to include him.

CHIEF HURLEY: Mr. President, I would like to ask you to include the young man up in Holyoke, the Secretary of the Fire Department up there. He has done all the correspondence for the Committee on Exhibits. Done more work than the Chairman or any other member of the Committee did.

I would like to have him included. Mr. James E. O'Leary.

PRESIDENT MORAN: You have all heard that resolution. (It was moved and seconded, and the resolution was passed.)

Next is the report of the Chairman of the Committee on Exhibits.

CHIEF HURLEY: Mr. Chairman, I am very sorry to say that we haven't collected all of the money yet. I suppose I could give you a slight idea of what it means. We have collected in the neighborhood of \$1430. Our expenses will be \$80, which will leave \$1350 in money to be turned over to the Secretary some time this forenoon. It will be within \$25 of the \$1350. We will turn it over to the Association.

Collected to date       \$1424.60         Expenses       76.00
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I would like to add a few words to what the Chairman of the Committee on Courtesies said about Mr. Milliken. He has certainly been a wonderful help to this Committee. He was drafted originally by Chief Taber who did not have the time to give to the Committee and induced Mr. Milliken to help out for him and it was a very fine thing for us that we got him. He has been here late and early and never been too tired to do anything that we asked of him. We did get wonderful help and we had a wonderful exhibit. It was all owing to the help that we got that we had such a good

exhibit.

PRESIDENT MORAN: You have heard the report. It is certainly a wonderful report. I don't believe any of us ever expected any returns of that kind from the exhibition of this Association. I certainly am very much surprised to see them reach that amount. What is your pleasure, gentlemen?

CHIEF JOHNSON: I move you the report be received and a vote of thanks extended to the Chairman and members for their efficient services.

CHIEF DALEY: I would like to mention it again, to include Mr.

Milliken.

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SECRETARY O'HEARN: Mr. Milliken is on the Exhibit Committee. PRESIDENT MORAN: All in favor signify it in the usual manner. (It was so voted.) The next order of business, gentlemen, is the election of officers. Nominations call for the Presidency of this Association.

A MEMBER: Mr. President, I nominate Chief Patrick J. Hurley of

Holyoke as President.

CHIEF JOHNSON: I second that motion.

PRESIDENT MORAN: The name of Chief Hurley of Holyoke has been presented for President. All in favor signify it in the usual manner.

(It was so voted.)

A MEMBER: I move the Secretary cast one ballot for Chief Hurley. PRESIDENT MORAN: The Secretary has cast one ballot for the position of President, Chief Hurley of Holyoke. I appoint as a Committee Chief Johnson and Chief Smith to escort the new President to the chair. (Applause.) I congratulate you, and also the Association on the election of a man that I really think will have great influence in carrying this Association along to much greater prestige and strength than it has at present.

(Applause.)

Gentlemen, I wish I had the eloquence of Bill CHIEF HURLEY: Daley or George Johnson so I could adequately express to you my sincere thanks for the great honor that you have given me. It surely is a great honor to me. You know this has been a very fast growing little baby, only two years old. I don't suppose there has ever been an association before that has reached the heights this one has in the short space of two years. Now, gentlemen, I realize my limitations, I know that I haven't the ability of our past President, Chief Moran, and I am somewhat doubtful of my ability to carry along the work that has been done in the last two years, but I will do everything in my power to devote as much time as possible to it, and I have got to ask you to give me the most help that you possibly can. I will be always open to suggestions or ideas from any of you. The Convention listened to the talk of one of our members, Chief McCarthy of Worcester. It was an old fashioned talk on fire extinguishing. I begin to think we have gone a little bit away from what is our primary job, that of putting out fires. We all got our jobs as heads of departments to put out fires. Of course I don't wish to discredit any fire prevention measure. There is no one knows any better than I do the good of fire prevention. But I have a feeling that we have been getting a little bit away from the extinguishing of fires. I think in the coming year if we had some more papers the same as Chief McCarthy gave us in the last Convention, it would kind of equalize between extinguishment and fire prevention and make for a better Convention. I am just mentioning this, gentlemen, to show you the way I feel, and any suggestions will be gratefully received by me. I thank you. (Loud and prolonged applause.) Gentlemen, the next business before the meeting is the election of a First Vice-President.

CHIEF CASEY: I nominate Chief Daniel E. Johnson of Bridgeport, Conn., who is now Second Vice-President, to be First Vice-President. I make a motion to have the Secretary cast one ballot for Daniel E. Johnson of Bridgeport, Conn., for First Vice-President. (It was so voted and the

Secretary cast one ballot.) (Applause.)

Speech of Acceptance by First Vice-President Johnson

If I only had the ability with the feeling that I have got for the New England Association of Fire Chiefs, both as a body and individually, I would talk away for a long time in singing the praises of this Association. I hope that it will continue in the way it has started out. Take the fine exhibits they have got here, the exhibits on the floor and everything in general. It has been a howling success and I am mighty glad to see the Association as it is today and hope it will continue. Thank you very much. (Applause.)

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PRESIDENT HURLEY: The next order of business is the election

of a Second Vice-President.

CHIEF JOHNSON: The gentleman I want to propose for the office of Second Vice-President, and I am sorry to say it was not possible for him to be here today. When we organized this body, it was to be a body of New England Fire Chiefs, and it was the object of the prime movers of this organization to select for the offices of this body men whom we could all look up to, who did not seek the office in any way, shape or manner. That is the way it was started and I hope it is the way it will continue in the future. Ever since I landed at this Convention hall a few days ago, it has been a matter of business, and the matter of officers, and who should be President, First or Second Vice-President has never been mentioned. shows the tone of the organization when all the offices seek the men, and I have conceived the idea that we should go into one of our sister states for our new Second Vice-President. I feel that I can name a man who would be an honor to the organization, a bright and noble Chief who is looked up to by all his associates, and would be a credit to us, and I take pleasure in nominating Chief Charles French of Manchester, N. H. for Second Vice-President. (It was moved and seconded and the Secretary cast one ballot electing him.)

PŘESIDENT HURLEY: The next election will be that of Secretary

of the Association.

CHIEF MORAN: Gentlemen, it gives me great pleasure to nominate the present Secretary, Chief John O'Hearn. I wish to say he has been of great assistance not only to the whole association but to myself during the past year and at the same time I also want to thank the members of this association for their co-operation. It has been a real pleasure, as Chief Hurley will find, to work for this association. Gentlemen, as said before, I take great pleasure in nominating Chief O'Hearn as Secretary and Treasurer.

PRESIDENT HURLEY: Gentlemen. Chief John O'Hearn has been nominated as Secretary. It was moved and seconded and the nomination

closed. (It was a unanimous vote.)

CHIEF MORAN: I make the motion that the President cast one ballot for Secretary John W. O'Hearn and declare him elected Secretary-Treasurer for the ensuing year. Gentlemen, we will now proceed to the election of a Sergeant-at-Arms.

CHIEF JOHNSON: I would like to ask if the Sergeant-at-Arms is I move you, sir, that Chief David DeCourcey be re-elected Sergeant-at-Arms with instructions to be here at every session. Elected on

PRESIDENT HURLEY: The Secretary will cast one ballot, as it has been moved and seconded that Chief DeCourcey be elected. business before the meeting is the election of State Vice-Presidents who are nominated from the floor. What is your pleasure, gentlemen? Vice-President for the State of Maine,—any nominations?

CHIEF DALEY: I move you, sir, that the name of Chester W. Blethen

of Auburn, Maine be appointed State Vive-President for Maine. Carried.

Chief Arthur W. Spring of Laconia, N. H. for State Vice-President for

New Hampshire. Carried.

For Vermont, I nominate Carl Stockwell of Burlington, Vt. Carried.

A MEMBER: For Massachusetts, I nominate Henry Thompson.

CHIEF McCARTHY, WORCESTER: Mr. President, I would like to nominate Chief Taber of Boston.

PRESIDENT HURLEY: Any other nominations for the State of

Massachusetts?

PRESIDENT HURLEY: Gentlemen, it looks as if we would have to proceed to ballot for the election of State Vice-President for the State of Massachusetts. What is your pleasure?

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CHIEF JOHNSON: I have just happened to think at this time,—as I sit here listening to the nominations for State Vice-President. I begin to think it would be a good idea in the future for the different States to pick out a man that they would like to have and have it decided in their minds who they would like to have for the State Vice-Presidency, and it would save some complications. It is an honorary office, an office that might be required to fill the chair, but very seldom. I think it would be a very good idea in the future to have him selected so that we would not have to decide on this question. Not necessarily for a State Caucus, because we

want to keep away from that, but simply to decide who they want to have.

PRESIDENT HURLEY: I agree with Chief Johnson. I think it is
the proper thing to do to have each State delegation elect their own Vice-President. In future I think it would be a good thing to adhere to that practice and save us a lot of trouble right here. Gentlemen, how do you wish to vote on this State Vice-Presidency matter? You can ballot either

by standing or by show of hands.

CHIEF HAYES OF BRISTOL: I suppose the delegates from Massachusetts could get together and bring in one man. I make that as a motion.

CHIEF McCARTHY: The fact that this convention has been so successful and handled in such an efficient manner by the City of Boston makes me feel as though Chief Taber should get some recognition from this Association. He has handled this thing wonderfully and it has been a success from start to finish. The only thing that we can give him is an honorary office. This is my sole object in nominating John Ö. Taber for State Vice-President at this time. Nothing personal about it at all.

PRESIDENT HURLEY: Is there a motion before the house? SECRETARY: There is. A motion that this matter be left to the

Massachusetts delegates to be fixed up between themselves.

A MEMBER: Is that legal? A. No, it is not.

PRESIDENT HURLEY: Let us proceed to ballot? How do you mean this ballot to be taken,—by show of hands? The Secretary will distribute ballots to the different delegates.

PRESIDENT HURLEY: Chief Thompson has withdrawn his name

as a candidate for State Vice-President, which brings us back to the only

nomination, which is Chief Taber.

A MEMBER: I make a motion that the Secretary cast one ballot bear-

ing the name of John O. Taber for State Vice-President.

The motion has been made and seconded. All in favor manifest it in the usual manner. (It was so voted.) The Secretary has cast one ballot for Chief John O. Taber of Boston.

PRESIDENT HURLEY: Now, gentlemen, we have the State of Rhode

Island.

CHIEF COTE: I nominate Robert Browning of Central Falls, R. I.

PRESIDENT HURLEY: Any further nominations?

A MEMBER: I move the Secretary cast one ballot for Chief Browning. PRESIDENT HURLEY: All in favor, manifest it by saying "Aye." (It was so voted.) The Secretary has cast one ballot for Robert Browning of Central Falls, R. I. as State Vice-President.

A MEMBER: For State Vice-President of Conn., I nominate Chief George

S. Pitt of Middletown, Conn.

PRESIDENT HURLEY: All in favor of Chief Pitt manifest it by saying (It was so voted.) The Secretary has cast one ballot for Chief George S. Pitt of Middletown, Conn., completing the list of State Vice-Presidents.

CHIEF MORAN: Mr. President, I believe the Constitution calls for the amount of salary to be paid the Secretary-Treasurer, and this has to be voted on every year. I will make a motion that the same salary be continued for another year. (Motion seconded.)

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GENUINE BOSCH



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CHIEF JOHNSON: What is the salary?

PRESIDENT HURLEY: Three hundred dollars. All in favor manifest it in the usual manner. The vote is passed and the motion is carried. Now gentlemen, I think the next business is the selection of a Convention

City for next year.

CHIEF SHEPARD OF PITTSFIELD: I have been requested by my people to extend an invitation to the New England Association of Fire Chiefs to hold their Third Annual Convention in the City of Pittsfield, Mass. I will ask the Secretary to read the invitations from the representative organizations of Pittsfield.

A MEMBER: I move that if there is no city proposed, that we waive the reading, and have the next convention of the New England Fire Chiefs

held in Pittsfield.

PRESIDENT HURLEY: I would like to recognize that motion, but as a matter of courtesy I think we should read this correspondence.

SECRETARY O'HEARN reads letters, as follows:

MAYOR'S OFFICE PITTSFIELD, MASS.

W. C. Shepard, Chief, Pittsfield Fire Department, Pittsfield, Mass.

June 20, 1924.

My dear Chief:

I would be very glad to have you extend to the New England Association of Fire Chiefs an invitation to hold their 1925 Annual Convention in Pittsfield.

There is no doubt but that the entire city would unite to give them a most cordial welcome, and to make their stay both pleasant and profitable. It is equally true that their presence here would greatly stimulate local

It is equally true that their presence here would greatly stimulate local interest in better Fire Protection and acquaint our citizens generally with the prime importance of this Municipal Department.

Trusting that your invitation may receive the cordial reception which

I am sure it will, I remain,

(Signed) Chas. W. Power, Mayor.

# PITTSFIELD CHAMBER OF COMMERCE PITTSFIELD, Mass.

June 4, 1924.

Chief William C. Shepard, Pittsfield Fire Department, Pittsfield, Mass.

Dear Chief Shepard:

The Pittsfield Chamber of Commerce is deeply interested in the suggestion that an invitation be extended the New England Fire Chiefs Association, to hold its annual convention in 1925, in this city. In presenting this invitation at this year's session, will you convey to the members of your Association an assurance of the most cordial endorsement of our organization?

Pittsfield will esteem it an honor, as well as a real pleasure, to have an opportunity of welcoming and entertaining the heads of the fire departments of New England. I am authorized to tender to your Association, the fullest co-operation of the Chamber of Commerce in making the visit of

your members both enjoyable and helpful.

You are fully qualified to inform your associate chiefs as to the character of Pittsfield's hospitality, and you may assure them that it will be on tap in unlimited quantity and of our best quality, if they decide to honor us with their presence in 1925.

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> Sincerely yours, (Signed) S. Chester Lyon, Secretary.

ROTARY CLUB

PITTSFIELD, MASS.

June 20, 1924.

William C. Shepard, Chief of Fire Department, Pittsfield, Mass. Dear Chief Shepard:

The Rotary Club of Pittsfield through you cordially invites the New England Fire Chiefs Association to hold its 1925 Convention in Pittsfield.

You can assure the Association of every accommodation necessary, and the support of Rotary is assured, as well as of our other civic organizations.

Respectfully, ROTARY CLUB OF PITTSFIELD, (Signed) William C. Root, Secretary. THE KIWANIS CLUB

PITTSFIELD, MASS.

Tune 21, 1924.

Mr. W. C. Shepard, Chief of Fire Department, Pittsfield, Mass.

The Kiwanis Club of Pittsfield invites the New England Fire Chiefs' Association to hold their 1925 Convention in Pittsfield. In the event that Pittsfield is honored by the presence of your Association, the Kiwanis Club wishes to extend to you its hearty co-operation.

Yours truly,

(Signed) E. P. Dittman, Secretary.

PITTSFIELD, MASS.

June 20, 1924.

William C. Shepard, Chief, Pittsfield Fire Department, Pittsfield, Mass.

Dear Sir:

As a member of and on behalf of the Pittsfield Lions Club, will you please extend to the New England Fire Chiefs' Association a very cordial invitation to hold its next convention in Pittsfield?

The Pittsfield Lions Club will be glad to co-operate in any way within

its power toward making your Convention a success.

Very truly yours,

(Signed Wm. T. Nesbitt, Jr., President, Pittsfield Lions Club.

WTN-M

PITTSFIELD LODGE No. 272, B. P. O. ELKS PITTSFIELD, MASS.

June 20, 1924.

N. E. Association of Fire Chiefs, Care Chief William C. Shepard, Pittsfield, Mass.

Gentlemen:

In accordance with the unanimous vote of Pittsfield Lodge of Elks passed at the meeting of June 19th, we extend to your organization a cordial invitation to hold your 1925 Convention in Pittsfield.

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Wishing for your organization continued success and with the sincere hope that we will have the pleasure of having the Association here next

summer, I am

Very truly yours,

(Signed) Arthur A. Elliott, Exalted Ruler.

PRESIDENT HURLEY: There is a motion before the house that the next Convention City be Pittsfield. Is that motion seconded? (Motion seconded.) I would like to say one thing before passing the vote, gentlemen, I know Pittsfield. I come from that neighborhood and I think if we adopt that city as our Convention city we will be doing a very wise thing. I know the people there. I know their hospitable nature. I know the country around there,—one of the most beautiful spots on God's earth. I think every one of you would be justified in taking a few days vacation there next year. The motion is that we go to Pittsfield. All in favor manifest it in the usual manner. (The vote was carried.)

SECRETARY O'HEARN: You will remember last year at Bridgeport in the closing hours we appointed a Traffic Manager, and the Traffic Manager has certainly proved efficient. It is a good suggestion now. I hope we will have a Traffic Manager for the coming year. I am simply suggesting this as a case of something I want to bring about that was helpful

to us.

From my experience in the past year, I have had considerable difficulty in getting what I thought proper newspaper publicity for the organization. In Boston we have a column in the Sunday Globe known as the "Firemen's Evidently there has been something wrong there. I think it has been the man that writes the column. During the past year, he argued with me the purpose of the organization, and it was serving certain purposes which I was not permitted to debate with him. We want some new assistant appointed, without any compensation I should hope, in the same manner that the Traffic Manager was appointed, in order that we may reach the newspapers in some way so that anybody who had anything throughout New England might give it to our publicity man for newspaper work, that we may get it in there. I know there are ways of getting to the newspapers, but the thing is to get the proper man to get the stuff in right. I want to see that during the next year we get a lot more publicity. This is the daily papers I am referring to mostly. The fire magazines have been wonderfully generous. They are chasing me all the time for news. They are ahead of me. They are the Fire Engineer and Fire and Water Engineering. They are on the job all the time and are very good boosters for us. In all the large cities throughout New England where we have dailies, once in a while we might get something in during the year. reason I have brought this up before the convention to see if we cannot decide some way to get more publicity from the newspapers even if we appoint a man from among ourselves and I think we have some in the organization that are able to handle that.

PRESIDENT HURLEY: Have you any information or suggestions to

offer in the matter?

CHIEF TIERNEY: I move the President and Secretary be appointed

Committee to select a publicity man.

PRESIDENT HURLEY: The motion has been made and seconded that the President and Secretary become a Committee to appoint a publicity man. All in favor manifest it in the usual manner. (The vote was passed.)

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WORCESTER

MASS.

SECRETARY O'HEARN: In the opening of the meeting this morning, you called for the Credential Committee's report. Among those who have been working throughout this Convention are members of the Box 52 Association who volunteered their services. They have taken absolutely everything off of me, matters pertaining to the collection of dues, etc. How many new members have we got out of this Convention? When we

started we had 281 paid members.

MR. PARKER: We have tried to register everybody that has come into the Hall, either as an active member, associate member or a guest. We have had during the Convention 137 Chiefs who are active members. We have registered 77 associate members. We have received 57 new members in the Association since Monday noon. We have also renewed the dues of 66. We have had a total registration of 426. Your Secretary said that the members of the Box 52 Association have been handling the registration. I want to go a step further and say everyone of those members of the Box 52 Association are also members of this Association. (Applause.)

CHIEF DALEY: I make a motion that a vote of thanks be extended to the Box 52 Association for the great work they have done in helping along

this organization.

PRESIDENT HURLEY: The motion has been made and seconded.

(It was so voted.)

CHIEF DALEY: I move you, sir, that a rising vote of thanks be extended to Chief Moran for the able and impartial manner in which he has conducted the office of President of the Association for the past year. Motion

carried with applause.

CHIEF MORAN: Gentlemen, I want to thank you very much indeed. I assure you it has been a real pleasure and has given me so much more interest than I have previously had. I don't know where it will wind up. I thank you very much. I would like to state that in the future a great deal of attention should be given to the topics which are brought up at these conventions, and I believe that the talk should come right down to the real fire work. No matter how much fire prevention work is done, and that is all good work and will not be let up on at all, but in spite of all that, we still have fires and that was amply demonstrated here yesterday in Chief McCarthy's paper. It was evidently very interesting to everyone present. There was one other topic which was very interesting and that was Mr. Shepard's paper. And they will be still more interesting to you gentlemen during the coming winter when you receive these reports and have ample time to look them over. I am sure that after reading them as they are printed you will feel inclined to have more of that stuff. In other words, let us come back to our real, fire work. (Applause.)

PRESIDENT HURLEY: Gentlemen, I am very sorry to acknowledge that I had forgotten all about our traffic man. We certainly ought to either elect him again or elect somebody else in his place. He has made himself

such a valuable man I think we ought to take some notice of it.

CHIEF JOHNSON: I am surprised you should make that statement. He serves his tenure of office. He was elected at Bridgeport until he was discharged. I think his services have been satisfactory to me. He is a good valet and I want him to continue.

SECRETARY O'HEARN: The President appoints a vacancy in the Board of Directors. There is one director whose term expires but the

President fills the vacancy.

PRESIDENT HURLEY: Gentlemen, as our time comes to close, I would just like to say one or two words more in regard to the coming year. You have listened to the Secretary's good reports here. We have only been going two years, and I think we can truthfully say that we are one of the largest organizations of this kind in the country. We have had a wonderful

growth, I am saying these few words to again impress on you that we want to continue growth. Each and every one of you is supposed to do all that you can to continue this growth. Now, gentlemen, a motion to adjourn is in order.

A MEMBER: I move we close by singing the STAR SPANGLED

BANNER.

PRESIDENT HURLEY: There is a motion that the Convention sing the Star Spangled Banner led by George Johnson. Meeting adjourned and Convention closed at 11:15 A. M.

#### MEMBERS OF THE NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Adams, T. John, ex-Chief, Marblehead, Mass.

Allen, Franklin B., Chief, Marion, Mass.

Allen, L. W., Sales Engineer, Hazard Mfg. Co., Wilkes Barre, Pa.

Allen, Selden R., Chief, Brookline, Mass.

Ambrose, George C., Supt., Boston Consolidated Gas Co., Boston, Mass. Atkins, W. T., Chief, Marblehead, Mass.

Atwood, Aron J., Chief, So. Manchester, Conn. Austin, C. H., Fire Commissioner, Nashua, N. H.

Austin, Geo. W., Box 52 Asso., 170 Summer St., Boston, Mass.

Avery, Wesley N., ex-Chief, 27 Elm St., Worcester, Mass.

Bailey, Clarence E., Chief, Northborough, Mass.

Ball, Charles H., Representative of Greenfield Tap & Die Corp., Greenfield, Mass.

Barker, Clifford H., 45 Westmoreland Ave., Arlington Hts., Mass.

Barker, James W., Paradise Ave., Middle own, R. I.

Barker, John J., Boston Coupling Co., 297 Congress St., Boston.

Bartlett, Earnest N., Chief, Billerica, Mass.

Barrett, Jesse, ex-Chief, 4 Andover St., Peabody, Mass.

Barton, R. W., Chief, Foxboro, Mass.

Batchelder, Earl H., Chief, 2043 Smith St., Centredale, R. I.

Bean, Albert M., Chief, 2043 Smith St., Centredale, R. I.

Beardslee, Geo. F., Asst. Chief, Bridgeport, Conn.

Belcher, Warren, Chief, Winthrop, Mass.

Beattie, William, Asst. Chief, Shelton, Conn.

Benson, Fred E., 27-29 Barclay St., New York, N. Y. Berard, Walter J., Chief, Warwick & Coventry Fire District, Arctic, R. I.

Berry, W. A., ex-Chief, Danvers, Mass.

Bills, Louis W., Supt. Fire Alarm, Lexington, Mass.

Blake, Frederick, Box 52, Asso., National Protection & Identification Co., Room

215, 30 Huntington Ave., Boston, 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.

Blethen, Chester H., Chief, 19 Goff St., Auburn, Maine.

Boardman, Geo. W., Chief, Lee, Mass.

Bond, Everett O., Chief, Hyannis, Mass.

Bowker, Charles W., Chief, South Paris, Maine. Boyden, J. F., Chief, Norwood, Mass.

Brown, Leroy B., 2nd Asst. Chief, 12 Spring St., Milford, Mass.

Browning, Robert, Chief, Central Falls, R. I. Bryant, Wallace F., Chief, Harvard, Mass.

Buchanan, L. B., ex-Chief, 10 Bennett St., Woburn, Mass.

Burns, Thomas F., Asst. Chief, Bridgeport, Conn.

Byrnes, Peter S., Chief, No. Kingston F. D., Wickford, R. I.

Caldwell, John S., Engineer, New England Insurance Exchange, 141 Milk St., Boston, Mass.

Cameron, Lloyd J., Chief Hdg., West Haven, Conn.

Capwell, Elmer A., Chief, Coventry Fire Dept., Anthony, R. I.

Carberry, William F., Chief, 68 Carberry Rd., East Walpole, Mass.

Carrigan, C. J., Chief, Terryville, Conn.

Carlow, Harry, 60 Church Green, Taunton, Mass.

Casey, James M., Chief, Cambridge, Mass.

Caswell, H. Wright, Chief, Middlebury, Vermont.

Chase, F. E., ex-Chief, Northampton, Mass.

Charlesworth, Frank, Chief, Providence, R. I.

Chesson, Frederick W., Fire Commissioner, Waterbury, Conn.

Chevalier, Albric, Chief, Warwick, R. I.

Churchill, Roy, Captain, P. O. Box 24, So. Attleboro, Mass.

Clark, Fred A., Chief, Attleboro, Mass.

Clark, W. F., ex-Chief, Naugatuck, Conn. Closson, Eugene, Chief, Southboro, Mass.

Cobb, George F., Curtis & Pope Lumber Co., 783 Mass. Ave., Boston, Mass.

Comber, Edward, Chief, Narragansett Pier, R. I.

Coneeny, John T., Chief, Dupont Co., Box 928, Wilmington, Del.

Cote, A. J., Chief, Woonsocket, R. I. Comins, Charles E., Chief, Warren, Mass.

Crane, M. I., Eureka Fire Hose Co., Boston, Mass.

Cuneo, M. J., Captain, Woburn Fire Dept., Woburn, Mass.

Curtis, C. Philip, Chief, Sharon, Mass.

Dahill, E. F., Chief, New Bedford, Mass.

Daley, William F., Chief, Brockton, Mass. DeCourcy, D. A., Chief, Winchester, Mass.

Doibel, Andrew F., Boston Woven Hose & Rubber Co., 15 State St., Boston, Mass.

Devine, William J., c/o R. & G. Corset Co., So. Norwalk, Conn.

Dezotell, B. W., Foamite-Childs Corp., 204 Congress St., Boston, Mass.

Dolan, Joseph A., Deputy Chief, D.v. 3, B. F. D., Grove Hall, Boston.

Dolan, William E., Box 52, Association, 171 Tremont St., Boston, Mass.

Donnell, Chester L., Chief, Walpole, Mass.

Donovan, J. A., ex-Chief, Lynnfield, Mass.

Donovan, J. F., Chief, Meriden, Conn.

Dowler, Joseph, Chief, Bryantville, Mass.

Doyle, John P., ex-Chief, 127 Federal St., Boston, Mass.

Drew, C. R., Chief, Kingston, Mass.

Drew, M. R., Chief, Valley Falls, R. I. Driscoll, Timothy E., Chief, Peterborough, N. H.

Duchesneau, Joseph E., Chief, 200 Main St., Southbridge, Mass.

Dunnigan, F. P., Chief, Westport, Conn.

Dyer, S. B., Chief, Whitman, Mass.

Eames, Hugh L., Captain, Central Fire Station, Reading, Mass.

Edwards, Fred A., City Electrician, Melrose, Mass.

Edwards, William B., Chief, Brunswick, Me.

Egger, George, Chief, Westerly, R. I.

Ellis, Benjamin M., Gen. Mgr., Whitney Fire App. Co., 1238 Commonwealth Ave., Boston, Mass.

English, W. S., Grether Fire Equipment Co., Dayton, Ohio. Estabrook, Willard W., Fire Commissioner, 219 Harvard St., Brookline, Mass. Everley, James, ex-Chief, R. F. D. 35, Westport, R. I.

Fallon, M. J., Fire Marshall, L. C. Chase & Co., Watertown, Mass.

Falt, Leonard G., Fire Protection Eng., 33 Berkeley St., Springfield, Mass.

Fancher, Rufus R., Chief, New Haven, Conn.

Farmer, John J., Chief of Gen. Electric Co., Bridgeport, Conn.

Farmer, William P., c/o General Electric Co., 516 Windsor Ave., Stratford, Conn.

Fay, I. H., Chief, Marlboro, Mass.

Fay, Robert E., Box 52, Asso., 1 Court St., Boston, Mass. Fearns, William, Chief, Vigilant Fire Co., Apponaug, R. I. Ferguson, F. Howard, Supt. Fire Alarm, 710 Main St., Bennington, Vt.

Fifield, L. G., Chief, Ashland, New Hampshire.

Floyd, Frank L., Chief Engineer, Manchester, Mass.

Flynn, Daniel W., Chief, 54 Russell St., Great Barrington, Mass.

Fogg, Harry E., ex-Chief, Auburn, Maine. Fortier, Seraphin, Chief, Manville, R. I. Fowler, Albert A., Chief, Gardner, Mass.

French, Charles H., Chief, Manchester, N. H.

Fuller, Charles H., ex-Chief, Pawtucket, R. I.

Furgang, Leonard, Dale St., Roxbury, Mass.

Gallagher, Daniel D., Eureka Fire Hose Co., Boston, Mass.

Gardiner, Warren B., Chief, 1015 Smithfield Ave., Saylesville, R. I.

Gately, John J., Fire Marshall, Hood Rubber Co., Watertown, Mass.

Gatzke, Otto K., Chief, 14 Wakefield St., Webster, Mass.

Gormond, George C., Gamewell Fire Alarm Co., 1022 Mass. Ave., Boston, Mass.

Gilson, John, Chief, Lake Placid Club, Essex Co., N. Y.

Gisborne, F. R., Chief, Sound Beach Fire Dept., Inc., Sound Beach, Ct. Glynn, Theodore A., Fire Commissioner, 60 Bristol St., Boston, Mass.

Grace, P. J., Chief, Locomobile Co. of America, Bridgeport, Ct.

Grant, L. C., ex-Chief, Burlington, Vermont.

Green, Joseph H., Manager, U. S. Rubber Co., 50 Church St., New York.

Graham, Fred D., Chief, Wakefield, Mass.

Green, William C., Chief, Concord, N. H. Goodwin, Fred M., Vice Pres., Boston Consolidated Gas Co., 149 Tremont St., Boston, Mass.

Gorham, Joseph T., New England Fire Appliance Co., 9 Broad St., Boston, Mass.

Guerin, Fred J., Chief, St. Albans, Vermont.

Guertin, Wm. H., Supt. Protective Dept., Worcester, Mass.

Gunter, Frank H., Chief, Fracut, Mass.

Hanna, James F., Captain, Central Fire Station, Milton, Mass.

Hamor, Roy, Chief, Bar Harbor, Maine.

Hardy, J. M., 645 Old South Bldg., Boston, Mass.

Harford, D. W., ex-Chief, 10 Chestnut St., So. Norwalk, Conn.

Harris, Burton K., Chief, Lime Rock Grange Fire Dept., R. F. D., No. 1, Saylesville, R. I.

Hayes, John H., Chief, Bristol, Conn.

Hayden, Martin J., Asst. Chief, Bridgeport, Conn.

Hawkins, William H., Chief, Haverhill, Mass.

Healey, Henry J., Asst. Chief, 16 Fruit St., Milford, Mass.

Helm, Chas. W., 159 Linmore St., Hartford, Conn. Heitman, Henry H., Chief, Waterbury, Conn.

Heney, John C., Chief, Barre, Vermont.

Hill, William H., Chief, Belmont, Mass.

Hiller, Albert E., Chief, Plymouth, Mass.

Hiser, Chas., Chief, Adams, Mass. Hoadley, G. W., Chief, Naugatuck, Conn.

Hoagland, I. G., Sec. Nat. Automatic Sprinkler Assoc., 80 Maiden Lane, N. Y.

Hogan, Walter E., Chief, Orono, Maine.

Hollis, John F., Chief, Hingham, Mass.

Holmes, J. Barry, Chief, Milton, Mass. Horne, Wm. D., Chief, Millbury, Mass. Hubbard, Isaac M., 1st Asst. Chief, Greenwich, Conn.

Hudson, David M., Chief, Chelsea, Mass.

Hurley, Patrick J., Chief, Holyoke, Mass.

Hutchinson, Fred A., Chief, White River Junction, Vermont.

Hyatt, Henry J., Chief, Fitchburg, Mass.

Hutchinson, Thomas G., Asst. Chief, Greenwich, Conn.

Janes, Edward L., ex-Chief, Worcester, Mass.

Jameson, Frank J., 4 Mellen St., Dorchester, Mass.

Jenks, Fred A., Fire Commissioner, Plymouth, Mass.

Johnson, Daniel E., Chief, Bridgeport, Conn.

Johnson, George L., Chief, Waltham, Mass.

Judson, Allen D., Chief, Stratford, Conn.

Kauffman, Frank K., Publisher of Fire Service, 153 Waverley Place, New York.

Keane, Thomas J., 104 Cedar St., Roxbury, Mass.

Keene, John H., Mack Motor Truck Co., 195 Mass. Ave., Boston, Mass.

Keller, Charles G., Chief, Stepney Val. Fire Co., No. 1, Stepney, Conn.

Kellogg, Childs, Chief, Long Hill, Conn.

Kenney, John J., Lieutenant, Ladder Co., 23, B. F. D., Washington St., Dor-

chester, Mass.

Kennedy, John J., Chief, The Bryant Electric Co., Bridgeport, Ct.

Kimball, Howard C., Chief, Salem, Mass.

King, Herbert E., Chief, Mansfield, Mass.

Knickerbocker, Daniel E., Chief, Springdale, Conn.

Kohnen, A. H., American La France Fire Engine Co., 1265 Boylston St., Boston,

Knoblock, James W., American La France Fire Engine Co., 250 West 57th St., New York City.

Knowles, C. H., Chief, Hamilton, Mass.

LaCroix, Charles, Chief Engineer, Millis, Mass.

Lally, John N., Dist. Chief, B. F. D., 659 Centre St., Jamaica Plain.

Lawton, Joseph S., Deputy Chief, Sta. 5, Newport, R. I.

Lehman, John L., Mine Safety Appliance Co., 82 Fulton St., New York City.

Lehnan, William P., Box 52, Assoc., 171 Tremont St., Boston.

Leonard Coupling Co., Represented by Herbert H. Pratt, 39 Union St., Taunton,

Leonard, Fred A., Chief, Box 442, Taunton, Mass.

Leonard, J. F., ex-Chief, Belmont, Mass.

Lewis, George E., Chief, Newport, N. H.

Lewis, H. William, Fabric Hose Co., Box 764, Worcester, Mass.

Lillie, Charles D., Stutz Fire Eng. Co., 137 Pearl St., Boston.

Logan, Hugh, American La France Fire Engine Co., 250 West 57th St., New York.

Lonorgan, James N., Chief, Hotel Warren, Warren, R. I.

Lovell, Harry Joseph, American La France Fire Engine Co., 1265 Boylston St., Boston, Mass.

Mahany, E. M., c/o Chief Qualey, Medford, Mass.

Maher, T. F., Chief, Milford, Mass. Mahoney, William C., Chief, Peabody, Mass. Mahoney, Thomas H., Chief, Westfield, Mass. Mansfield, Lucius R., Chief, Rehoboth, Mass.

Many, Robert, 729 Old South Bldg., Boston, Mass.

Marchant, Homer R., Chief, Gloucester, Mass.

Marlow, J. H., Chief, Northampton, Mass. Martin, H. M., Chief, Enosburg, Vermont. Maxim, C. W., Chief, Middleboro, Mass.

Maxim, E. L., Maxim Motor Co., Middleboro, Mass.

McCarthy, Charles L., Chief, Worcester, Mass.

McCarthy, Edward J., State Fire Inspector, 476 Main St., Worcester, Mass.

McCarthy, Justin A., Henry L. Barnes Co., 254 Devonshire St., Boston, Mass.

McCarty, George S., Fire Commissioner, Lewiston, Maine.

McCormick, W. S., Chief, Singer Mfg. Co., Fire Dept., Bridgeport, Conn.

McLean, Walter M., Deputy Chief, Boston Fire Dept., Boston, Mass.

McKenzie, George A., 51 School St., Westerly, R. I.

Mead, Alfred L., Chief, Quincy, Mass.

Mellor, Alexander S., Asst. Chief, Bridgeport, Conn.

Meunire, Frank, Chief, East Hartford, Conn. Miller, Dean H., Chief, Ashland, Mass.

Miller, W. E., Pres. Combination Ladder Co., Providence, R. I.

Milliken, Elbridge H., Sewell Cushion Wheel Co., 584 Commonwealth Ave., Boston, Mass.

Milne, George B., Chief, Rockville, Conn. Minehan, Edward C., ex-Chief, 134 Howe St., Marlboro, Mass.

Mitchell, Melvin P., Chief, Hudson, Mass.

Monaghan, Thomas F., Supt. Fire Alarm, 54 Gates St., Holyoke, Mass.

Montgomery, H. J., Chief, North Adams, Mass.

Montmeny, Arthur, Chief, Chicopee, Mass.

Monto, George W., Chief, Lewiston, Maine. Mooney, Timothy P., 25 Whittier St., Winthrop, Mass.

Moran, John C., Chief, Hartford, Conn.

Moore, Edwin D., 700 Gage St., Bennington, Vermont.

Morris, F. J., Chief, Lawrence, Mass. Morton, F. Karl, Maynard Rubber Corp., Springfield, Mass.

Murray, F. H., Chief, Morris Cove Fire Dept., New Haven, Conn.

Myers, Eton L., Stutz Fire Apparatus Co., 137 Pearl St., Boston, Mass.

Naylor, William, Chief, Maynard, Mass.

Neary, John H., Chief, Natick, Mass.

Newman, Frank C., Chief, Melrose, Mass. Nichols, Daniel A., Chief, R. F. D., No. 185, Barrington, R. I.

Nichols, George W., Supt. Fire Alarm, Woburn, Mass.

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., 584 Commonwealth Ave., Boston,

O'Hearn, John W., Chief, Watertown, Mass.

O'Keefe, Vincent P., Holtzer-Cabot Co., Boston, Mass.

Olson, Albert T., McNeal & Olson Fire Dept. Supplies, Walpole, Mass.

Ordway, O. O., Chief, Reading, Mass,

Pachl, John S., 107 Fairmount Ave., New Haven, Conn.

Packard, H. R., ex-Chief, Attleboro, Mass.

Paige, Melrose S., Chief, Amherst, Mass.

Paine, Frank A., Chief, Pascoag, R. I.

Palmer, John A., Chief, 117 Water St., Torrington. Conn.

Parker, P. Hildreth, Box 52 Assoc., 81 Benjamin Rd., Belmont, Mass.

Patt, Irving F., ex-Chief, Central Falls, R. I. Pendergast, James E., 20 Sevan St., Dorchester, Mass.

Percy, William H., Fire Ladder Mfg. Co., 1417 Fairfield Ave., Bridgeport, Conn.

Perry, C. W., Gamewell Ind. Agent, 1022 Commonwealth Ave., Boston, Mass.

Philbrook, George A., Deputy Chief, Box 202, Middleboro, Mass.

Pickett, E. W. S., Chief, Fairfield, Conn.

Pierce, Walter, ex-Chief, Arlington, Mass. Pigeon, A. H., Chief, P. O. Box 268, Ware, Mass.

Pitt, George S., Chief, Middleton, Conn.

Poor, J. H., Jr., Lieut., Supt. of Fire Alarm, Winthrop, Mass.

Potter, Stuart M., Asst. Chief, Sound Beach Fire Dept., Sound Beach, Conn.

Pratt, Herbert K., Box 52 Assoc., 24 Spring Hill Ave., Bridgewater, Mass. Preble, A. G., Asst. Fire Marshall, Burlington, Vermont.

Qualey, Thomas, Chief, Medford, Mass.

Quinlan, Henry M., 87 Summer St., Dorchester, Mass.

Quinlan, Philip J., Quincy Ave., Winthrop, Mass.

Rajah Auto Supply Co., Bloomfield, N. J.

Randall, Frank R., Chief, Smithfield, R. I. Randlett, Clarence W., Chief, Newton, Mass.

Reilly, Martin J., 17 Hilton St., Roxbury, Mass.

Rich, Sewell M., Chief, Somerville, Mass.

Richardson, Irving Fogg, Maxim Motor Co., Middleboro, Mass.

Riley, E. B., Chief, Keene, N. H. Robinson, C. E., Gen. Mgr., Samuel Eastman Co., Concord, N. H.

Robinson, George O., Samuel Eastman Co., Concord, N. H.

Robinson, Stanley, Fire Protection Co., Worcester, Mass.

Ruthenburg, H. P., Special Agent, National Board Fire Underwriters, New York.

Saxon, Harry, ex-Chief, 9 Winter St., Saugus, Mass.

Saunders, E. F., Chief, Lowell, Mass.

Schleinitz, Wm., Larkin Mfg. Co., Dayton, Ohio.

Sears, C. E., Chief, 100 Broad St., Claremont, N. H.

Seaverns, Ernest R. C., Chief, Scituate, Mass.

Sennott, Daniel F., Asst. Chief, Boston Fire Dept., Boston, Mass.

Scovill, H. L., c/o Scovill & Ross, 1475 Broadway, New York City.

Scully, John J., N. E. Fire Appliance Co., 9 Broad St., Boston, Mass. Shepard, W. C., Chief, Pittsfield, Mass.

Sloane, Alfred H., Chief, Berlin, N. H.

Small, Roy K., Chief, Augusta, Maine.

Smith, George W., Chief, Box 36, Wakefield, R. I.

Smith, James, Chief, Dover, N. H.

Smith, James E., Chief, Nashua, N. H.

Smith, Lowndes A., Jr., 115 Wayland Ave., Cranston, R. I.

Smith, Ralph L., American La France Fire Engine Co., Broadway and 57th St., New York.

Smith, Roland, Portalite Co., 110 Brookline St., Cambridge, Mass.

Spaulding, H. C., Boston Woven Hose & Rubber Co., Boston, Mass.

Spring, Arthur W., Chief, Laconia, N. H.

Stanton, Howard L., Chief, Norwich, Conn.

Stewart, C. D., American La France Fire Eng. Co., 250 West 57th St., New York.

Stevens, Henry J., Chief, Hull Fire Dept., Nantasket Beach, Mass. Stockwell, Carl D., Chief, Burlington, Vermont. Stone, E. V., Chief, Ludlow, Mass.

Stowe, Lewis F., Chief, Milford, Conn.

Sullivan, James F., Chief, Box 74, Glenbrook, Conn.

Sullivan, Jeremiah F., Chief, Fall River, Mass. Sullivan, John E., ex-Chief, Plymouth, Mass.

Sylvester, Clarence N., c/o The White Company, 930 Commonwealth Ave. Boston, Mass.

Taber, John O., Chief, Boston, Mass.

Taft, Frank, Seagrave Co., 167 Federal St., Boston, Mass.

Tarlton, Everett L., Chief, Bridgeport Brass Co., Fire Dept., Bridgeport, Conn. Thompson, Henry, Supt. Protective Dept., 40 Purchase St., Boston, Mass.

Thurston, Ralph E., Chief, Putnam, Conn.

Tierney, Daniel B., Chief, Arlington, Mass.

Tiffany, F. M., ex-Chief, 1022 Commonwealth Ave., Boston, Mass.

Tighe, James J., Chief, Willimantic, Conn.

Tighe, William A., Boston Globe, Boston, Mass.

Tinkham, F. S., ex-Chief, 126 Norwell St., Dorchester, Mass.

Toomey, Timothy G., Chief, New England Oil Refining Co., Fall River, Mass.

Tourtellotte, Frederick F., Fire Equipment Co., 93 College St., Springfield, Mass.

Tracey, Frank E., Chief, Woburn, Mass.

Tracey, Hurbert W., N. E. Fire Appliance Co., 9 Broad St., Boston, Mass.

Tunstall, J. W., Chief, Brookfield, Mass.

Turner, W., Bi Lateral Fire Hose Co., 150 Massan St., N. Y. C.

Upham, H. Howard, Chief, Needham, Mass.

Van Amringo, W. M., Maxim Motor Co., Middleboro, Mass.

Van Valen, Alfred, Supt. American District Tel. Co., 60 State St., Boston, Mass. Veit, Victor H., Chief, Stamford, Conn.

Walsh, Peter E., ex-Chief, 142 Devon St., Roxbury, Mass.

Ward, Thomas G., Chief, Shelton, Conn. Warnock, James, Chief, Swampscott, Mass.

Webber, Joseph A., Fisk Bldg., New York City. Weekes, Reuben, ex-Chief, 181 Doyle Ave., Providence, R. I.

Wells, Ray D., Chief, Falmouth, Mass.

Westcott, Charles B., Chief, Box 111, Apponaug, R. I.

Wheeler, A. D., Gen. Mgr. Gamewell Co., 1022 Commonwealth Ave., Boston,

White, Ewart B., N. E. Sales Mgr., American Dist., Tel. Co., Boston, Mass.

White, Ralph H., Chief, Auburn, Mass.

Whitehead, George E., Chief, Box 452, Millbury, Mass.

Whitmarsh, F. O., Deputy Chief, 185 Shaw St., E. Braintree, Mass.

Whiting, Homer B., Chief, Hampton Beach, N. H.

Wilbur, C. A., ex-Chief, Central Falls, R. I.

Woodward, A. P., Chief, Danielson, Conn. Wooxey, Henry P., Chief, Stockbridge, Mass.

Young, Daniel F., Chief, Cranston, R. I.

## LIST OF EXHIBITORS AT THE CONVENTION OF THE NEW ENG-LAND ASSOCIATION OF FIRE CHIEFS, MECHANICS HALL, BOSTON, MASS., JUNE 24-26, 1924.

•	
Ahrens-Fox Fire Engine Company American LaFrance Fire Engine Co American District Telegraph Co Automatic Gas Valve Co	Cincinnati, Ohio
American LaFrance Fire Engine Co	Elmira, N. Y.
American District Telegraph Co	Boston, Mass.—60 State Street
Automatic Gas Valve Co	137 Pearl St., Boston, Mass.
The Atmus Company	92 Brookline Ave., Boston, Mass.
The Atmus Company	234 Devonshire St., Boston, Mass.
Arthur H. Blanchard	15 State St Roston Mass
Combination Ladder Co.	Providence R. I.
C. G. Braxmar Co	10 Maiden Lane, New York
Combination Ladder Co. C. G. Braxmar Co. Samuel Eastman Company Fire Protection	Concord N H.
Fire Protection	420 F. Front St. Cincinnati Ohio
Fire and Water Engineer The Fire Engineer Ernest Flentje Fabric Fire Hose Co.	318 W 39th St. New York
The Fire Engineer	1 Broadway New York
Ernect Floatio	643 Cambridge St. Cambridge Mass
Enhais Fire Hose Co	Sandy Hook Conn
Family Childs Com	Tition N. V.
The Course of Course of the Co	2 Commonwealth Assa Doctor Man
Foamite-Childs Corp	Z Commonwearth Ave., boston, mass.
Greenneid Tap and Die Corp	Greenneid, Mass.
Andrew C. Gillis	University Road, Cambridge, Mass.
Earnshaw & Crowell	Hyde Park, Mass.
Holtzer Cabot Electric Co	125 Amory St., Boston, Mass.
Hartford Shock Absorber Co	319 Columbus Ave., Boston, Mass.
Hazard Manufacturing Co	533 Canal St., New York
Hazard Manufacturing Co.  J. M. Hardy	644 Old South Bldg., Boston, Mass.
Howe Auto Co	Anderson Indiana
Larkin Manufacturing Co.  Lord Polish Co.  Massachusetts Tire Sales Co., Inc.	Dayton, Ohio
Lord Polish Co.	Cambridge, Mass.
Massachusetts Tire Sales Co., Inc	805 Mass. Ave., Boston, Mass.
Moulton Ladder Co	Cambridge, Mass.
Maxim Motor Co.	Middleboro, Mass.
Moulton Ladder Co.  Maxim Motor Co.  Mack Motor Co.	195 Mass. Ave., Cambridge, Mass.
D. E. McCann's Sons	Portland, Maine
Mine Safety Appliance Co.	
McNeil & Olson	455 W. 5th St., Dayton, Ohio
Andrew I Morse & Son Co	221 High St Roston Mass
Morrison Ladder Safety Grip Co	336 Hildreth St. Lowell Mass.
New England Fire Appliance Co.	9 Broad St. Boston Mass
Morrison Ladder Safety Grip Co.  New England Fire Appliance Co.  New England Tire & Rubber Co.  Eureka Fire Hose Co.	Holyoke Mass
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New England's Favorite Son





# Fabric Fire Hose Co.

ROBERT MANY, N. E. Manager

# 1018 COMMONWEALTH AVENUE BOSTON, MASS.



THE SEPARABLE INNER TUBE WILL NOT SLIDE OR BUCKLE WITHIN THE FABRIC.

BECAUSE—It adheres or hugs the fabric as firmly as though it were cemented thereto, for the reason that one-half the diameter of the tube is reinforced with special duck and the other half with a non-skidding strip of rubber, allowing for circumferential expansion under initial pressure—the greater the pressure—the firmer the tube grips the fabric. The Kumbak Duck provides for expansion and contraction.



A WAX AND GUM TREATED FABRIC JACKET WITH A SEPARABLE TUBE MEANS ABSOLUTE PERFECTION IN FIRE HOSE CONSTRUCTION.

BECAUSE—The wax and gum treated fabric is absolutely waterproof, so cannot mildew or rot. Each strand of cotton is treated to a bath of melted wax and para gum. The strands are cabled, lubricated and solidified by the treatment, making a hose fabric practically indestructible. The rubber lining of such a fabric must necessarily be its only vulnerable part. It is the nature of rubber to deteriorate—good rubber, slowly—bad rubber, rapidly. Insist on wax and gum treated fabric with separable tube of the best rubber.

D-U-R-A-B-I-L-I-T-Y spells economy "DO YOUR OWN THINKING"

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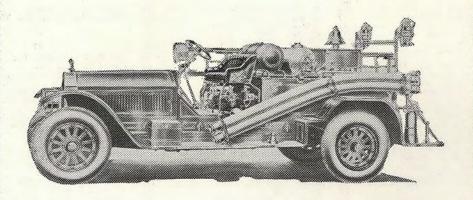
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Hotel Nonotuck Hotel Essex Hotlezer-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Haas & Co., L. B.	12 30 40 45 50 52 54 62 62 70 72 78 78 78 78 78 78 78 79 100 100	Javis Engineering Co.  K  Keith Co., Geo. E.  King Co., E. & F.  Knoek & Co., L. S.  Kalashian Bros.  Kelvinator Sales Co.  Koless Oil Burner Co.  Kilso Co., J. L.  Kirby Jr., Paint Co., George.  Keith, Warren S.  Klauer Brothers  Knott Apparatus Co., L. E.  Kilsyth Garage, The  L  Lewis, Connie  Livingston Motor Co.  Lake Croft Inn  Laundry Co., F. & F.		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co. National Fire Insurance Co. New Method Laundry Corp., The Newton, Robertson & Co. Newton Robertson Grocery Co New England Bakery Co. Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Casket Co National Casket Co	100 0. 25 322 48 74 80 80 100 100 100 100 101 102 134 162 162 120 202 208
Hotel Nonotuck Hotel Essex Hotlezer-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Haas & Co., L. B.	12 30 40 45 50 52 54 62 62 70 72 78 78 78 78 78 78 78 79 100 100	Javis Engineering Co.  K  Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Kelso Co., J. L. Kirby Jr., Paint Co., George. Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L  Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lambe Ritchie Co.		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co. National Fire Insurance Co New Method Laundry Corp., The Newton, Robertson & Co. Newton Robertson & Co. Newton Robertson Grocery Co. New England Bakery Co. Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Casket Co. Notloon's Garage	100 0. 25 32 32 48 48 76 80
Hotel Nonotuck Hotel Essex Hotlezer-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, 'Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Haas & Co., L. B. Hotel, Keney Tower Hotel, Highland Court Hotel Bond Garage	12 30 45 50 52 54 62 70 72 78 78 78 78 78 78 79 100 100 100 102 96 104	Javis Engineering Co.  K  Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Koless Oil Burner Co. Kirby Jr., Paint Co., George Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L  Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lamb & Ritchie Co. Lincoln & Ritchie Co.		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co National Fire Insurance Co. New Method Laundry Corp., The Newton, Robertson & Co Newton Robertson & Co Newton Robertson of Grocery Co New England Bakery Co Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Casket Co. National Casket Co. Nolson's Garage Norcross Teel Co Northampton Street Garage	100 0. 25 0. 32 0. 32 0. 48 0. 80 0. 84 0. 98 0. 100 0. 100 0. 100 0. 104 0. 104 0. 104 0. 202 0. 208 0. 208 0. 201 0. 202
Hotel Nonotuck Hotel Essex Hotlezer-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, 'Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Haas & Co., L. B. Hotel, Keney Tower Hotel, Highland Court Hotel Bond Garage	12 30 45 50 52 54 62 70 72 78 78 78 78 78 78 79 100 100 100 102 96 104	Javis Engineering Co.  K Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Kelso Co., J. L. Kirby Jr., Paint Co., George. Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lamb & Ritchie Co. Lincoln & Ritchie Co. Lincoln-Ford-Fordson		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co National Fire Insurance Co. New Method Laundry Corp., The Newton, Robertson & Co Newton Robertson & Co Newton Robertson of Grocery Co New England Bakery Co Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Casket Co. National Casket Co. Nolson's Garage Norcross Teel Co Northampton Street Garage	100 0. 25 0. 32 0. 32 0. 48 0. 80 0. 84 0. 98 0. 100 0. 100 0. 100 0. 104 0. 104 0. 104 0. 202 0. 208 0. 208 0. 201 0. 202
Hotel Nonotuck Hotel Essex Hotlezer-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, 'Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Haas & Co., L. B. Hotel, Keney Tower Hotel, Highland Court Hotel Bond Garage	12 30 45 50 52 54 62 70 72 78 78 78 78 78 78 79 100 100 100 102 96 104	Javis Engineering Co.  K  Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Kelso Co., J. L. Kirby Jr., Paint Co., George. Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L  Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lamb & Ritchie Co. Lincoln & Ritchie Co. Lincoln & Ritchie Co. Lincoln & Ritchie Co. Lincoln Street Garage		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The. New England Oil Refining Co. National Fire Insurance Co. New Method Laundry Corp., The. Newton, Robertson & Co. Newton Robertson Grocery Co. Newton Robertson Grocery Co. Nobile & Co., M. New England Bakery Co. Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Laundry New England Mica Co. National Casket Co. Nelson's Garage Norcoss Teel Co.	100 0. 25 0. 32 0. 32 0. 48 0. 80 0. 84 0. 98 0. 100 0. 100 0. 100 0. 100 0. 100 0. 100 0. 100 0. 200 0
Hotel Nonotuck Hotel Essex Hotlezer-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, 'Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Haas & Co., L. B. Hotel, Keney Tower Hotel, Highland Court Hotel Bond Garage Harrington-Hudson Co., The Hotel, Highland Court Hotel Bond Garage Harrington-Hudson Co., The Hotel, The New Dom Hotel, The New Dom	12 30 40 45 50 52 54 62 62 70 72 78 78 78 78 78 79 100 102 102 104 105 105	Javis Engineering Co.  K Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Kelso Co., J. L. Kirby Jr., Paint Co., George. Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lamb & Ritchie Co. Lincoln & Ritchie Co. Lincoln-Ford-Fordson		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. Co National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co. National Fire Insurance Co. New Method Laundry Corp., The. Newton, Robertson & Co. Newton Robertson Grocery Co Newton Robertson Grocery Co New England Bakery Co. Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Casket Co. Nelson's Garage Norroos Teel Co. Northampton Street Garage New England Steetric Specialty Co.	100 0. 25 0. 32 0. 32 0. 48 0. 80 0. 84 0. 98 0. 100 0. 100 0. 100 0. 100 0. 100 0. 100 0. 100 0. 200 0
Hotel Nonotuck Hotel Essex Hotleter-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, ' Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Has & Co., L. B. Hotel, Keney Tower Hotel, Highland Court Hotel Bond Garage Harrington-Hudson Co., The Hotel, The New Dom Hotel, The Henblein Hotel, New Savoy Hartford, Ice Cream Co., The	12 30 40 45 50 52 54 62 62 72 72 78 78 78 78 78 78 100 100 102 102 105 105 105 105 105 105 105 105	Javis Engineering Co.  K  Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Kilso Co., J. L. Kirby Jr., Paint Co., George. Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L  Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lamb & Ritchie Co. Lincoln & Ritchie Co. Lincoln & Ritchie Co. Lincoln Street Garage Lancaster Tire & Rubber Co.		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co National Fire Insurance Co New Method Laundry Corp., The Newton, Robertson & Co Newton Robertson Grocery Co Newton Robertson Grocery Co Nobile & Co., M. New England Bakery Co Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co Noble's Milk National Laundry New England Mica Co. National Casket Co. Nelson's Garage Norcross Teel Co. Northampton Street Garage New England Electric Specialty Co. Newell Coal & Lumber Co	100 0. 25 0. 32 0. 32 0. 48 0. 80 0. 84 0. 98 0. 100 0. 100 0. 100 0. 100 0. 100 0. 100 0. 100 0. 200 0
Hotel Nonotuck Hotel Essex Hotleter-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, ' Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Has & Co., L. B. Hotel, Keney Tower Hotel, Highland Court Hotel Bond Garage Harrington-Hudson Co., The Hotel, The New Dom Hotel, The Henblein Hotel, New Savoy Hartford, Ice Cream Co., The	12 30 40 45 50 52 54 62 62 72 72 78 78 78 78 78 78 100 100 102 102 105 105 105 105 105 105 105 105	Javis Engineering Co.  K  Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Kelso Co., J. L. Kirby Jr., Paint Co., George. Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L  Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lamb & Ritchie Co. Lincoln & Ritchie Co. Lincoln & Ritchie Co. Lincoln & Ritchie Co. Lincoln Street Garage		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co National Fire Insurance Co. National Fire Insurance Co New Method Laundry Corp., The Newton, Robertson & Co. Newton Robertson of Cocery Co New England Bakery Co. Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Casket Co. Notham Casket Co. Northampton Street Garage Norcross Teel Co. Northampton Street Garage New England Electric Specialty Co. Newell Coal & Lumber Co	100. 252. 252. 252. 252. 252. 252. 252. 2
Hotel Nonotuck Hotel Essex Hotleter-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, 'Holyoke Bar Co., Inc. Hartford Fire Ins. Co. Hall-Thompson Co., The Haas & Co., L. B. Hotel, Keney Tower Hotel, Highland Court Hotel Bond Garage Harrington-Hudson Co., The Hotel, The New Dom Hotel, The New Dom Hotel, The Henblein Hotel, New Savoy Hartford, Ice Cream Co., The Hotel, The Bismarck Hotel, New Park Square	12 30 40 45 50 52 52 54 62 62 70 72 78 78 78 78 78 100 100 102 96 105 105 105	K Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Kelso Co., J. L. Kirby Jr., Paint Co., George. Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lincoln & Ritchie Co. Lincoln-Ford-Fordson London Street Garage Lancaster Tire & Rubber Co.  M Mass. Bonding and Insurance Co.		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co National Fire Insurance Co. National Fire Insurance Co New Method Laundry Corp., The Newton, Robertson & Co. Newton Robertson of Cocery Co New England Bakery Co. Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Casket Co. Notham Casket Co. Northampton Street Garage Norcross Teel Co. Northampton Street Garage New England Electric Specialty Co. Newell Coal & Lumber Co	100. 252. 252. 252. 252. 252. 252. 252. 2
Hotel Nonotuck Hotel Essex Hotlezer-Cabot Hotel Nantasket Hurley & Co., J. J. Hotel Pemberton Hotel Commodore Hotel Commodore Hollander Co., L. P. Hotels Lenox and Brunswick Hope Webbing Co. Harvey Hubbell, Inc. Heppenstall Forge Co. Hoffman, F. R. Hannan Supply Co., F. H. Hotel Palace Hodson's Lunch and Hotel Hotel Kingsbury Holyoke Bar Co., Inc. Hartford-Aetna National Bank, Hotel Bond Hartford Fire Ins. Co. Hall-Thompson Co., The Haas & Co., L. B. Hotel, Highland Court Hotel, Highland Court Hotel, Hotel, New Dom Hotel, The Menblein Hotel, New Savoy Hartford, Ice Cream Co., The Hotel, New Savoy Hartford, Ice Cream Co., The Hotel, The Bismarck Hotel, New Park Square Hotel, New Park Square Hotel, New Park Square	12 30 40 40 50 52 54 62 62 72 78 78 78 78 78 78 78 100 100 100 102 102 105 106 106 108 110 111	K Keith Co., Geo. E. King Co., E. & F. Knoek & Co., L. S. Kalashian Bros. Kelvinator Sales Co. Koless Oil Burner Co. Kelso Co., J. L. Kirby Jr., Paint Co., George. Keith, Warren S. Klauer Brothers Knott Apparatus Co., L. E. Kilsyth Garage, The  L Lewis, Connie Livingston Motor Co. Lake Croft Inn Laundry Co., F. & F. Lewandos Liston Lumber Co. Lincoln & Ritchie Co. Lincoln-Ford-Fordson London Street Garage Lancaster Tire & Rubber Co.  M Mass. Bonding and Insurance Co.		N New England Tire & Rubber Co New England Tire Appliance Co North British & Mercantile Ins. C National Fireworks Dist. Co Nason, Electric Ins., Frank New Haven Dairy New System Laundry, The New England Oil Refining Co National Fire Insurance Co. National Fire Insurance Co New Method Laundry Corp., The Newton, Robertson & Co. Newton Robertson of Cocery Co New England Bakery Co. Nobile & Co., M. New England Food Products Co., The New Columbian, The The Nesbit Garage Norwood Trust Co. Noble's Milk National Laundry New England Mica Co. National Casket Co. Notham Casket Co. Northampton Street Garage Norcross Teel Co. Northampton Street Garage New England Electric Specialty Co. Newell Coal & Lumber Co	100. 252. 252. 252. 252. 252. 252. 252. 2
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