NEW ENGLAND ASSOCIATION
OF
FIRE CHIEFS
1938

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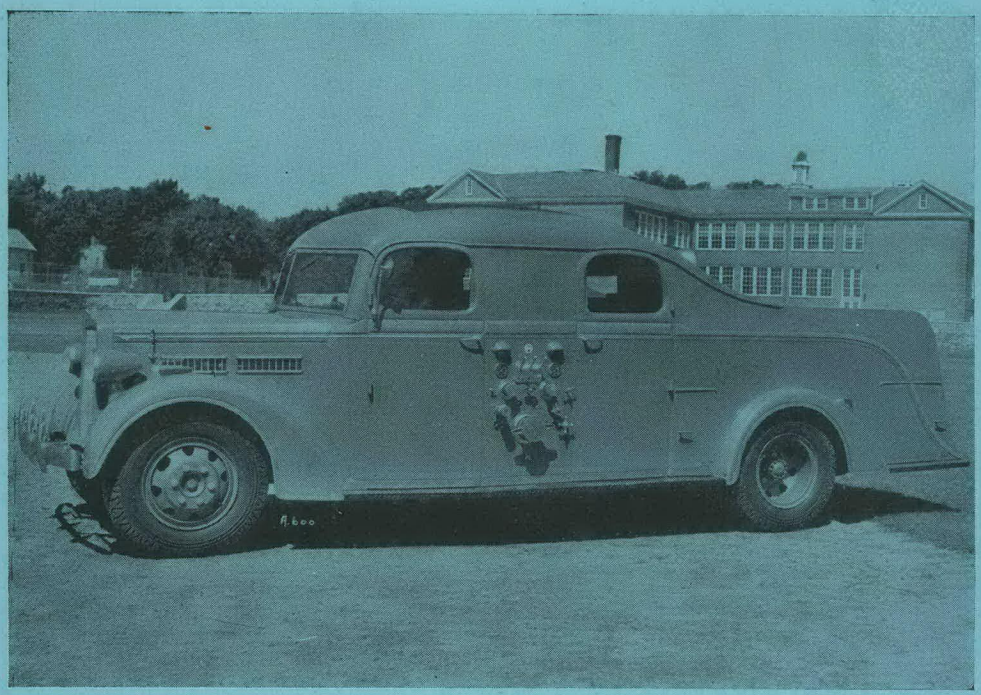

A 750 gallon Pumping Engine, "ALLWEATHER," All Purpose design, everything under cover, including men.

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Sixteenth Annual Convention

OF THE

New England Association

of

Fire Chiefs

JUNE 21, 22, 23, 1938

BURLINGTON, VERMONT

THE NEW ENGLAND ASSOCIATION OF FIRE CHIEFS WISH TO THANK OUR ADVERTISERS AND FRIENDS FOR THEIR SUPPORT BY ADVERTISING IN OUR ANNUAL REPORT.

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Announcing the

17th Annual Convention

PROVIDENCE, RHODE ISLAND

JUNE 20, 21, 22, 1939

KEEP THESE DATES OPEN

New England Association of Fire Chiefs

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PLACES AND DATES OF PAST CONVENTIONS

No. 1 Bridgeport, Conn., June 20–21–22, 1923
PRES. CHIEF JOHN P. DOYLE, Wellesley, Mass.

No. 2 Boston, Mass., June 24–25–26, 1924
PRES. JOHN C. MORAN, Hartford, Conn.

No. 3 Pittsfield, Mass., June 23–24–25, 1925
PRES. PATRICK J. HURLEY, Holyoke, Mass.

No. 4 Manchester, N. H., June 22–23–24, 1926
PRES. DANIEL E. JOHNSON, Bridgeport, Conn.

No. 5 Portland, Maine, June 21–22–23, 1927
PRES. CHARLES H. FRENCH, Manchester, N. H.

No. 6 Burlington, Vermont, June 26–27–28–29, 1928
PRES. WILLIAM C. SHEPARD, Pittsfield, Mass.

No. 7 New Haven, Conn., June 25–26–27, 1929
PRES. OLIVER T. SANBORN, Portland, Maine

No. 8 Rutland, Vermont, June 24–25–26–27, 1930
PRES. LAWRENCE E. REIF, New Haven, Conn.

No. 9 Boston, Mass., June 23–24–25–26, 1931
PRES. SELDEN R. ALLEN, Brookline, Mass.

No. 10 Newport, R. I., June 21–22–23–24, 1932
PRES. JOSEPH LAWTON, Newport, R. I.

No. 11 Lewiston, Maine, June 20–21–22, 1933
PRES. ALFRED H. KOLTONSKI, Rutland, Vt.

No. 12 Burlington, Vermont, June 26–27–28–29, 1934
PRES. DANIEL B. TIERNEY, Arlington, Mass.

No. 13 New Bedford, Mass., June 25–26–27, 1935
PRES. JOHN S. PACHL, New Haven, Conn.

No. 14 Hartford, Conn., June 23–24–25, 1936
PRES. DAVID H. DECOURCY, Winchester, Mass.

No. 15 The Balsams, Dixville Notch, N. H., June 22–23–24, 1937
PRES. CARL D. STOCKWELL, Burlington, Vt.

No. 16 Burlington, Vt., June 21–22–23, 1938
PRES. JOSEPH W. RANDLETTE, Richmond, Me.

16th ANNUAL CONVENTION
NEW ENGLAND ASSOCIATION OF FIRE CHIEFS
BURLINGTON, VERMONT
JUNE 21, 22, 23, 1938

* * * *

TUESDAY, JUNE 21

10:00 A. M.

PRESIDENT RANDLETTE: Members of the New England Association, Ladies and Guests, it is indeed a pleasure and a privilege as President of the Association and also personally to see so many present this morning, and without further remarks I am declaring the Sixteenth Annual Convention of the New England Association of Fire Chiefs open. I so declare it.

As no great undertaking should be advanced without first invoking the divine blessing of Deity, I am going to ask you to rise while the Rt. Rev. Monsignor Patrick C. Brennan invokes the divine blessing.

INVOCATION

By Rt. Rev. Monsignor Patrick C. Brennan

Almighty and eternal God, look down we beseech Thee upon this assembly. These thy servants are the protectors of men and property from the ravages of fire. They are gathered here today from all parts of New England for the purpose of sharing with one another their knowledge and experience for the perfection of their service to mankind. Send the light of Thy Holy Spirit down upon them, enlighten and guide them in their deliberations, strengthen them in their resolutions. This we ask through Christ Our Lord, Amen.

PRESIDENT RANDLETTE: I don't know whether this was a put up job or not by meeting as we do in the State of Vermont this morning and your President coming from the State of Maine, the only two outlaw states in the United States, but it is a pleasure indeed for us to meet again in this beautiful city of Burlington, especially on this beautiful day, and it is a pleasure for me to introduce to this gathering a man who has extended to me personally the greetings of the city and who tells me that the city is ours. It gives me great pleasure to introduce to you Mayor Louis F. Dow of the city of Burlington.

ADDRESS OF WELCOME

By Louis F. Dow

Mayor of the City of Burlington

Mr. President, Monsignor, Rev. Father, Past Presidents, Ladies and Gentlemen: It seems more or less like a bromide when I say you are welcome to the city

of Burlington. I get so sick in one sense of saying that because it is my privilege and pleasure to welcome so many conventions to Burlington or has been in the last three years. While it is sincere in the other instances, I will grant you, it is more sincere in this case because I want you to feel at home for two reasons.

We are glad to have you here but I am particularly glad today that I am Mayor at this time because our Fire Chief here is a friend of mine of many years standing. I have known him since I was about so old (indicating). That means in years; I am not much larger in height. In years I have known him for forty years, and a finer gentleman the Lord never put on this earth and a finer Fire Chief the city would have to seek long to find his equal. I want at this time to pay my respects to Carl Stockwell. He is a Past President of your Association and I know what he thinks of the Association and what he has done for it, and what little I can do to help to entertain you here, make your stay comfortable and pleasant, I will consider a distinct honor and pleasure.

Carl suggested that if I had a key to the city I could present it to you, but I see no need of that. Unless I am mistaken, all the doors of the city are open to you. You don't need any keys. If you find otherwise, just speak to Carl or me and we will rectify it.

I want you to know from the bottom of my heart it is a distinct pleasure to welcome you here. It means much to the city. What you do here I am certain will mean much to the cities throughout New England in fire prevention and kindred subjects. For that reason, if I may repeat myself, let me say you are most heartily welcome and it is a great pleasure that I can stand here and extend the greeting of the City of Burlington to you. Thank you.

PRESIDENT RANDLETTE: Response by William Arthur Reilly, Fire Commissioner of the City of Boston.

RESPONSE TO ADDRESS OF WELCOME

By William Arthur Reilly

Fire Commissioner, Boston, Mass.

Mr. Chairman, Mr. Mayor, Right Reverend Monsignor, Reverend Father and Distinguished Guests: Every other speaker on this program has an advantage over me. They at least have had the advantage of being able to prepare their remarks in advance. However, you can't very well prepare a response until you become aware as to what you are going to make reply. Therefore, I hope you will understand my situation at the present moment.

I confess I was confused at first when I found I had been given this assignment because I had always been given to understand that fire commissioners weren't in very good grade with fire chiefs. I never thought that Chiefs would pay tribute to the rank of commissioner by allowing one of that rank to speak at a chiefs' convention. Therefore as I am about to undertake my assignment now, I wish to express my thanks to you for giving me the place of honor on your program.

The fact that we are meeting here in Vermont is one which I am sure pleases everyone here present. It is a particular pleasure to come here because those of us who have not had the privilege before are really experiencing a new thrill. Most of us realize that the State of Vermont and the character of its inhabitants typify and

represent in American history the old-fashioned qualities which made America great. We are far removed from the days when public questions were settled through discussions by men on either end of a log, or around a cracker barrel in the store. We are far removed from those days, but Vermont as a state and the people who live in Vermont still represent real Yankee Americanism to every one of us who come from other states of the Union. Therefore, it is a special pleasure for us who are strangers here in Vermont to come here and find the welcome we have found here and be received so enthusiastically. We hope that in future years it may be our pleasure and privilege to come again and once more partake of this hospitality.

Our responsibilities are great. This after all is a convention, and no man ever attended a convention and lost anything by his attendance. This meeting here will be a profitable meeting for every person present, I think. It will be pleasant, it will develop friends and good fellowship, and through informal discussions many mutual understandings will be attained which will be beneficial to all concerned. We have here the opportunity of seeing assembled the latest developments in the field of equipment and apparatus. We have the opportunity here to express our opinions and tell our experiences of the last year.

And so we appreciate this opportunity to have a convention in such pleasant surroundings. We are grateful to those of the committee who have arranged this affair here, and we are particularly grateful to the Mayor of this city, to the Chief of the Burlington Department and the people of this city for their cordial welcome, and generous hospitality.

PRESIDENT RANDLETTE: I will take this opportunity to make any announcements and following the announcements we will have the memorial exercises as you find them on the program, with one exception, and I am going to request that during the memorial exercises, which is for those Chiefs who have passed beyond, that there be no applause from the audience. Chief O'Hearn, have you any particular announcements to make?

SECRETARY O'HEARN: The only announcement is the place of the meetings after this meeting which I understand will be in the Auditorium. All sessions will be at the Auditorium.

PRESIDENT RANDLETTE: I find I have made a serious omission. There is one gentleman present with us today that we surely want to honor, and if Chief Dougherty of New York is present I would like to have him come up on the stage.

I want to say at this time that we have quite a program, as you will notice, and every session will start promptly on time and I am going to make an appeal to the members to see that they are at the meeting place at the hour assigned because the meetings will start promptly and the program will go on as you have it published before you.

Now Chief Stockwell has some announcements to make which he will make at this time.

CHIEF STOCKWELL, Burlington, Vt.: This afternoon at two o'clock there will be buses down at the Hotel Vermont to take all the ladies out to the Champlain Club where they will be entertained with lunch, bridge, swimming, boats; and tonight at the Royale Grill there is a floor show on. We want you all there. Tomorrow at two o'clock the buses will leave the Hotel Vermont to take you up to the Country Club where you will have a fine time.

Tomorrow night the boat was going to start at eight o'clock but I set it ahead just one-half hour so you people can see the beauties of New York and the State of Vermont on Lake Champlain. We have a three and one-half hour ride and I want you all there. Your badges will take you on.

Also remember this that your badge is good for any picture show there is in the city, and if you want anything just come and ask us. If you see anything you want, take it. If you can't get it, come to me and I will give it to you.

Furthermore, Thursday afternoon, there probably won't be many left but if there is, I will provide transportation for them to take them around Camel's Hump or some other place and show you the State of Vermont which is the most beautiful state in the Union although we are on the outside.

PRESIDENT RANDLETTE: There is only one wharf, and the wharf the boat will leave from is at the foot of King Street.

MEMORIAL EXERCISES

PRESIDENT RANDLETTE: We will now proceed with the memorial exercises.

Selection by Harry Gallup Quartette.

ROLL CALL OF DECEASED MEMBERS SINCE LAST CONVENTION

By Secretary John W. O'Hearn

Chief Arthur W. Dugan, Vergennes, Vt.; admitted to membership June 21, 1936; died July 5, 1937.

Chief Isaac M. Hubbard, Greenwich, Conn.; admitted to membership May 27, 1933; died August 15, 1937.

Franklin W. Haines, Peabody, Mass.; admitted to membership June 24, 1935; died August 28, 1937.

Ex-chief Thomas Lynch, Waterbury, Conn.; admitted to membership May 31, 1935; died October 1, 1937.

Chief Manuel S. Miguel, Manchester, Mass.; admitted to membership March 7, 1927; died October 3, 1937.

Ex-chief E. W. S. Pickett, Fairfield, Conn.; admitted to membership May 15, 1923; died November 1, 1937.

Ex-chief C. H. Knowles, South Hamilton, Mass.; admitted to membership May 17, 1923; died November 11, 1937.

District Chief James H. Dallagher, Fall River, Mass.; admitted to membership April 30, 1937; died December 11, 1937.

John J. Scully, President, American Fire Equipment Co., Boston Mass.; admitted to membership August 16, 1922; died December 29, 1937.

Chief Lewis A. Ware, Hanover, N. H.; admitted to membership April 21, 1936; died February 2, 1938.

Chief Frank M. White, Guilford, Conn.; admitted to membership June 13, 1929; died June 4, 1938.

TAPS BY FORT ETHAN ALLEN BUGLER

PRESIDENT RANDLETTE: The only change in our memorial exercises is instead of a selection by the quartette we will now have a tenor solo, "There Is No Death," by Mr. Lawrence Lauzon accompanied by Mrs. Lauzon.

TENOR SOLO BY MR. LAWRENCE LAUZON

MEMORIAL ADDRESS

BY REVEREND MICHAEL F. COLLINS

Marblehead, Mass.

Chaplain, New England Association of Fire Chiefs

Mr. President, Right Reverend Monsignor, Distinguished Guests and Ladies and Gentlemen: Once more the passage of time has brought you to another convention. Once again you have gathered this morning to pay your respects to those who have answered the last alarm.

The history of New England is rich in its traditions. There are many men, noble and good, who rose from the ranks to the capacity of chief. They served their city or town and went to their last reward. Whether it was along the rock-bound shores of Maine or whether it was from the hills of the White Mountains of New Hampshire or the Green Mountains of Vermont, whether it was Massachusetts where the Pilgrim Fathers first landed or in the rolling hills of Connecticut and Rhode Island, wherever men and women formed a community, one of the first necessities was the protection from fire, and in the establishment of a fire department one man must necessarily be its leader. This man was designated as Chief, and if we look back on the history of the New England States we find that these men who acted as chief of the fire department were men who served their community and served it well.

In your own organization there are many men who have gone to their last reward. These men, many of them you knew and loved. They did everything in their power to serve their community, to further its interests. Now that they are gone you bow your heads in their memory this morning.

The American public as a whole can perhaps never realize from its point of vantage what is required of the leader of a fire department. From their place of ease and comfort it never seems to come to their consciousness to realize the heat of the flame. They can never realize what it means to go and eat smoke. They can never realize the danger from poisonous gases. Again, they can never realize what it means in the heat of the summer or in the numbing cold of winter for a man and the members of his department to go out and serve their interest; but these men, these chiefs, they knew, and nevertheless, in order to be loyal to their position, they went forth. Many of them paid with their lives, and our tribute to

them as God himself tells us—Greater love than this no man hath than he lay down his life for his friend.

There are other chiefs who were not called upon to make the supreme sacrifice in the line of duty, but nevertheless they, too, served to the best of their ability. Many of them perhaps worn out before their time in order to serve loyally and well. Many of them who had to fight along by every advantage that they could gain. Many of them who had to answer objections of office holders or politicians who could not seem to realize that politics cannot be mixed up with a fire department whose duty is the saving of life and property. These men, too, were heroes, the same as those who gave their lives at fires.

This morning as you heard the names of your departed members read at Roll Call your minds went back in memory, for memory is the bridge which spans the space between the living and the dead, and as you go back in your minds and in your memories you realize that these men were good and true. It is hard for you, too, to realize that they have gone forever. To you who knew them well they seem even now to have that same old smile. In their eyes you can see that same twinkle. You can feel the friendly handclasp and the pat on your back. All that comes back to you in memory this morning, and as you look about you and find that they are gone forever, why not in your own minds this morning make a promise, a promise that you will always hold their memory sacred, that you who knew them well, many of you who have succeeded them, will try to further the interests for which they labored.

If they could come back this morning, if they could speak to each one of you individually, there is no doubt but their one request of you would be to carry on for them; and in praising their memory, in honoring them this morning, in your own minds and hearts make that resolution that you will carry on for them, and perhaps there is no more fitting tribute than we could say in a few words of them this morning that to those who are departed, to those of your comrades who are gone never to return, for their inspiration to you, you bow your heads and say, "Thank you and God bless you."

BENEDICTION

RT. REV. MONSIGNOR PATRICK C. BRENNAN

We beseech Thee, Almighty God, these thy servants, bless them, bless their families, bless their work. Watch over them that while they labor for the safety of others they, too, may be protected from harm. May the blessing of Almighty God descend upon them and remain forever. Amen.

TUESDAY, JUNE 21

2 P. M.

PRESIDENT RANDLETTE: We will begin the afternoon session. I will appoint the Committee on Courtesies and also the Auditing Committee.

For the Committee on Courtesies I will appoint: Chief John C. Heney, Barre, Vt.; Chief Allen F. Payson, Camden, Me.; Chief Frederick H. Pye, Stoughton, Mass.

In Memoriam

Each year the unrelenting hand of Death touches several of our brothers and calls them to sleep from which there is no awakening.

It is, therefore, fitting and proper that we dedicate these resolutions to the memory of those who were near and dear to us.

At their passing heads are bowed with grief, eyes are dimmed with tears and hearts throb with the knowledge of irreparable loss.

May we be inspired by the desire to profit by the noble character of their lives—their fidelity to their God—their loving concern for their dear ones—their devotion to duty.

Memory is the bridge which spans the space between the living and the dead and as the years pass on may we always hold their memory sacred and their deeds inspiring.

Therefore be it resolved:

1. That this Association has suffered a great loss in the deaths of our members whom we cherished and loved.

2. That we solemnly pledge to carry out, to the best of our abilities, the principles for which they labored so well.

3. That we tender our sincere sympathy to the families of our departed members, assuring them that their loss is also ours.

Respectfully submitted,

1. THOMAS D. KEERY,
   St. Albans, Vt.
2. THOMAS H. SLAMAN,
   Wellesley, Mass.
3. MILTON GALVIN,
   Naugatuck, Conn.

For the Auditing Committee from the Board of Directors: Chief Oliver T. Sanborn, Portland, Me.; Chief William C. Mahoney, Peabody, Mass.; Chief A. J. Cote, Woonsocket, R. I.

I will announce at this time that the Auditing Committee will meet Wednesday at 2:30 P. M. in the registration room so their report can be submitted Thursday morning.

We had the good fortune at our last convention to have present with us the President of the International Association of Fire Chiefs, and today we are still more fortunate in having the President of the International Association but he is one of our own members, and it gives me pleasure now to introduce Chief Daniel Tierney of Arlington, Massachusetts, President of the International Association.

ADDRESS

PROGRESS OF THE INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

By Chief Daniel B. Tierney

Arlington, Mass.

President International Association of Fire Chiefs

Mr. President, Officers of the Association, Members and Friends: For centuries men engaged in the same kind of work have found it much to their advantage to band themselves together as a unit for the protection and advancement of their particular business.

It was the feeling of this very need that sixty-five years ago prompted a few fire chiefs of this country to form such an association which as its membership grew and its influence extended became known as the International Association of Fire Chiefs. It was an unselfish undertaking on their part guided entirely by the love of their work and the firm determination to place it upon a higher plane of efficiency. They were pioneers who fully realized the magnitude of the task they set for themselves, its obstacles and difficulties. Yet they resolutely set about it. They called meetings and attended them, often at great inconvenience and always at their own expense. They heard lectures, saw demonstrations, took part in discussions, all of which was of infinite benefit to themselves and their communities. However, the greatest good came from personal contact with other serious-minded men with like purposes, for from them came the unity, solidarity and fraternity so real and so evident in the International Fire Chiefs' Association of today.

The Association is entering a new era in its life. Its activities have so multiplied and its sphere has so broadened that its influence is now reaching into every part of the country.

Under its guidance schools have been organized for training firemen in the best and safest methods of fighting fire, of handling equipment, the use of water, the nature of explosives and inflammables and other new hazards created by industrial advance. The results are gratifying.

The first aim is to extend these schools into every village and hamlet in the United States and for this purpose the Educational Committee of the International Association of Fire Chiefs enlisted the aid of the Federal Board of Education and a large sum of money has been allotted to the several states to be expended by the

Chief THOMAS F. BURNS, President, Bridgeport, Conn.

Department of Vocational Education for the extension of the training schools already mentioned.

Beside that, an office has been established in the Department of Education in Washington with a competent man at its head who will serve as Consultant with the Educational Committee of the Association to furnish all technical information needed by any Chief.

The Association Headquarters has been enlarged and its duties increased. It will collect, compile and distribute all kinds of information on organization and administration of fire departments. It will furnish the texts for use in training schools, give advice on the construction of stations and drill towers, give specifications for apparatus and equipment, in fact, furnish all information needed in any branch of the fire service, and it is its earnest wish that every Chief will avail himself of any help that Headquarters offers. Not only that, it wishes you to send to the office any experience or information you have that will benefit others. This will be especially helpful for our publication.

The second aim is to put the Association on a firm financial foundation. In the past little was accomplished because of lack of funds.

Some progress has now been made by admitting as Sustaining Members firms whose businesses give fire departments their greatest work and worry, firms that benefit financially from the work of departments, and firms that exist solely because there are fire departments.

Here is a splendid opportunity for every Chief knowing or serving such firms to invite them to become members of the International Association of Fire Chiefs at $250 per year, thus giving them the chance to show their appreciation for good service willingly rendered.

The third aim must keep this Association out of politics, while at the same time it must include in its educational system a program of enlightenment which will keep politics or other subversive influences out of the fire department. Measures of importance to the fire service can be satisfactorily and efficiently handled only by men of practical knowledge and experience in that field—in other words, by firemen.

Aim four. The Association must interest itself in legislation affecting fire departments, such as uniform building laws, control of hazards and so on. However, all efforts to improve the service which do not include the welfare of the personnel will fall far short of perfection. Consequently, the Association must work for civil service and higher salaries for firemen, tenure and adequate compensation for Chiefs, and just pensions for all.

The International Association of Fire Chiefs held its first convention in 1873 one-half century before the New England Association had its first convention. I will shortly convene for the sixty-sixth time and this is New England's sixteenth meeting.

New England has seen many changes in these sixteen years, not only in membership but in methods of preventing and extinguishing fires.

Its record of achievement is an enviable one. From its first convention in 1923 at Bridgeport, Connecticut, it took its place in the forefront of all worthwhile measures for the advancement of the fire service in this section, where there are probably more regularly organized fire departments than in any like area in this country.

The small group of organizers is to be commended for the keen judgment displayed in its formation, for during these sixteen years there has been no material change made in any of the details of administration so ably and wisely planned by its founders.

It has kept pace with the varied changes rapidly occurring in the fire fighting field and is recognized as one of the outstanding sectional organizations.

Its officials come and go with the exception of our genial and capable Secretary-Treasurer, Chief John W. O'Hearn, and it is because of his incomparable zeal and exceptional ability in performance of his official duties that makes this organization outstanding.

PRESIDENT RANDLETTE: Are there any questions to ask Chief Tierney? The Chair awaits any motion in regard to Chief Tierney's paper.

SECRETARY O'HEARN: I move you, sir, it be received and made a part of our records.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: Before I introduce the next speaker, I see that all of our speakers are not on the platform, and I will ask Chief Allen and Chief McNally of Somerville to come up and take a place on the platform, also Mr. Percy Charnock.

We will continue with the program, and it gives me great pleasure to introduce to you now Chief Samuel J. Pope of Boston.

ADDRESS

NOTES ON SPECIFICATIONS FOR MUNICIPAL FIRE APPARATUS

By Chief Samuel J. Pope

Boston, Mass.

Mr. President, Members of the Convention Assembled: The larger cities of the country are in a position to take pretty good care of themselves in the matter of defining what they want in the way of fire apparatus. There are, however, only about a dozen cities over a half million population in the United States and less than a hundred cities of over a hundred thousand population. There are in all some 13,500 fire departments in the United States and Canada. Of these, only about a thousand (comprising roughly those in cities over 10,000 population) may be considered full paid departments. The vast majority of fire departments are in the volunteer or part paid class.

Very few of these small cities can afford to have an extensive maintenance shop or to have on its staff one or more men who are thoroughly familiar with all the mechanical details which go into making a good fire department. There is, therefore, a very important place which a set of recommended specifications for motor fire apparatus might have to guide these thousands of fire departments in establishing their requirements for fire equipment.

Last fall the National Fire Protection Association created a committee to bring up to date a specification on municipal fire apparatus which would fill the very real need for such specifications as outlined above. The National Fire Pro-

tection Association acted at the request of the United States Conference of Mayors which had received numerous requests for data on essential fire apparatus requirements.

Almost anyone with some fire experience could write some sort of specification. Each manufacturer of fire apparatus, for example, does this very thing. A manufacturer's specification is naturally written around the type of apparatus which they are in a position to make and sell. A specification might similarly be written by an underwriter's engineer or by a city purchasing agent. One thing appears obvious, that the most useful set of specifications which would enable fire departments to get apparatus best fitted for their service and the best possible prices, is a specification which would represent as nearly as possible the joint point of view of all persons who have to take part in the business of designing, testing or using the apparatus.

Obviously, the fire chiefs of the country are in the best position to know about the type of use to which fire apparatus is to be put and the conditions under which it must operate. Therefore, in choosing a committee to do this important job, the National Fire Protection Association selected a group of fire chiefs to take a leading part in this committee project. Chief Joseph N. Sullivan of Utica, N. Y., is chairman of this committee. He is a member of the New England Association of Fire Chiefs and past president of the International Association of Fire Chiefs. The interests of the fire service of various parts of the country is taken care of by a good geographical spread in the selection of the other committee members. The other fire chief members of the committee are J. J. McElligott, New York City, R. E. Mottesheard, Dearborn, Mich., A. W. Olsen, Omaha, Nebr., J. Ray Roe, Abilene, Texas, and Samuel J. Pope of Boston. Canada is represented on the committee through F. X. Ahern, Deputy Provincial Fire Commissioner of Quebec. There are two representatives of the Motor Fire Apparatus Manufacturers' Association on the committee—S. O. Cook, President, and A. O. Boniface, Assistant Secretary. The National Board of Fire Underwriters is represented by their engineers, George W. Booth of New York City and Clarence Goldsmith of Chicago. Loren S. Bush, Chief Engineer, of the Board of Fire Underwriters of the Pacific, San Francisco, Milton I. Parker, Chief Engineer, of the Missouri Inspection Bureau of St. Louis, and C. R. Wellborn, Secretary, of Underwriters' Laboratories, Inc., of Chicago, are also members of the committee. Paul V. Betters, Executive Director, of the United States Conference of Mayors, and Russell Forbes, Commissioner of Purchasing, New York City, represent the interest of mayors and city purchasing departments in the committee activities.

The fire service has, of course, the largest number of representatives on this committee and therefore has the principal responsibility for turning out a set of suggested specifications which will not only serve the needs of the fire service but will be acceptable from all other viewpoints.

The development of specifications for municipal fire apparatus came about as a result of a study of the business of testing pumpers. This subject was given attention by demonstrations at conventions of the International Association of Fire Engineers as far back as the Milwaukee convention in 1911. By 1913 the standard 12-hour test for pumpers (which has been made in subsequent years by engineers of the National Board of Fire Underwriters) was developed. Following preparation by the National Fire Protection Association of the first specification on municipal fire apparatus in 1914, these were published in 1920 with the endorsement of the Committee on Fire Department Engineering of the International Association of Fire Engineers and the National Board of Fire Underwriters. Ex-

Chief SAMUEL J. POPE, First Vice President, Boston, Mass.

cept for specifications dealing with apparatus for rural and forest fire fighting, which have been developed by the National Fire Protection Association, there had been no complete review of the subject of specifications for municipal fire apparatus since that publication in 1920.

In March of this year, Chairman Sullivan called a meeting of this new committee in Buffalo and a report containing suggested specifications on motor fire apparatus was drawn up. The committee found a number of features whereby specifications could be vastly improved. To mention only a few items, the committee found it desirable to include a clear statement of what the motor's cooling system should do, recommended a definite step-up in storage battery capacity, brought up to date the reference to brakes, wheels, tires and other details by reference to state and national standards on these subjects. A comprehensive series of road tests which would check the performance of the apparatus against modern road and traffic conditions was devised.

There was considerable discussion of what should be required in the way of ignition arrangements, particularly the question of single and dual ignition systems and single and double battery systems. The committee feels that this subject is well worth further study and is soliciting suggestions from all fire departments on this subject. Two other subjects to which the committee is giving attention are the design of closed bodies for fire apparatus and the design and testing of ladder equipment. I am sure I can speak for the rest of the committee when I say that Chairman Sullivan would greatly appreciate receiving suggestions covering any of these points.

By far the most radical change recommended by our committee was one relating to pumper ratings. Our committee received assurance from the manufacturers that it was possible at no additional cost to produce pumping apparatus which would perform considerably in excess of the requirements which were developed in 1913. These "underwriters" requirements require pumpers to deliver their rated capacity against a net pumping pressure of 120 pounds pressure per square inch, 50 percent of the rated capacity at a net pressure of 200 pounds, and one-third of the rated capacity at 250 pounds.

The committee after some study proposed instead that the pumpers be rated to deliver their capacity at 150 pounds, 70 percent at 200 pounds, and 50 percent at 250 pounds. In the light of further developments, this appears to have been a pretty radical suggestion and it is one that occasioned more comment and discussion than any other item in the committee's specifications.

On presentation of the committee report to the annual meeting in May, opposition to the adoption of these new requirements without further study had become very strong. Notwithstanding the fact that the National Board representatives on the committee had joined with the manufacturers in recommending the step-up in rated pressures at the committee meeting in March, representatives of the various underwriting boards and bureaus attending the N.F.P.A. annual meeting voiced such strenuous opposition to the new requirements that the report was referred back to the committee.

There seems to be an honest difference of opinion about this whole subject of stepping up the pumper requirements. One argument has been advanced that no change is necessary from the former specifications because the same results may be obtained by the simple expedient of buying pumpers of larger rated capacity. There is also the point of view that the rated pressures should be increased but

there is some question possibly as to whether the figures which the committee has decided upon are the proper ones.

There is a well defined trend among many cities to express the rated capacity of pumpers at higher pressures. New York and Philadelphia both have recently specified pumpers to deliver 1,000 gallons of water at 160 pounds. Los Angeles specifications call for a thousand gallons at 200 pounds but this is not the whole story. The specifications of those and other cities are calling for much higher capacities at higher pressures. Philadelphia and New York ask for 500 gallons per minute from a 1,000 pumper at 300 pounds. Pasadena, California, recently wrote a specification which required a thousand gallon pumper to deliver 575 gallons at 200 pounds. Columbus, Ohio, specified that a pumper rated at the present 120 pound figure be required to deliver 475 gallons at 250 pounds. What these figures mean is that the requirements recommended by the committee followed this same trend.

I think you all respect the view which I hold personally and which many of the other fire chiefs on the committee hold that if the manufacturers are able to give us pumpers which will deliver better capacities at the higher pressures, it will be a great thing for the fire service. There are three particular situations in fire work where good capacity is needed at high pressures. These are (1) when operating at high buildings, (2) when supplying heavy streams, (3) and when supplying long lines. A typical situation to illustrate this point would be to assume a fire in the fifth floor of an institution 500 or more feet from the street. With such a fire layout, a 750 gallon engine might have difficulty in making two good lines usually expected of such a pumper, but it appears that a 750 pumper could be readily designed which would take care of such a situation.

To a municipal purchasing agent, or purchasing committee of a small town, a thousand gallon engine may seem to them like a pretty big piece of equipment. At 250 pounds, however, this pumper will turn out only enough water to supply a line with 1¼-inch nozzle tip. The committee felt it reasonable to specify that a thousand gallon pumper should turn out at least half its capacity at 250 pounds pressure.

The committee believes it is on the right track in its proposed pumper requirements. Under the proposed requirements a 500 gallon pumper would have about the same capacity at low pressure that a present 600 gallon pumper would have. At 250 pounds it would deliver as much water as the present 750. A 750 gallon pumper under the proposed specifications would be as good or better at most pressures as the present thousand gallon pumpers and at 250 pounds it would probably do very nearly what is now done by the 1250 gallon pumper. In other words, what the committee is proposing is a set of requirements which brings the range through which a pumper performs more nearly in conformance with what is actually called for at a large fire.

In view of the comment which has developed on this subject of proper pumper specifications, it certainly appears that the whole subject would stand a good deal of study. It is quite possible that the committee is not specifying high enough rated pressures. New York City, for example, calls for a thousand gallon pumper which will deliver 600 gallons at 250 pounds pressure. The Boston Fire Department is undertaking a study of its multiple alarm fires with the idea of finding out the actual amounts of water which pumpers have had to deliver at the important fires. Our records system in Boston is such that complete data is kept on pumper requirements at every fire and we are hopeful of developing information that will be of assistance to our committee in its further study of this subject.

It would be fine if every other fire department which keeps similar records would send in a summary of their own experiences. This could be taken from fire reports which give records of the hydrant pressure, pumping pressure, size of nozzle and length of line for each company. It would only be necessary to study the larger fires and the results would probably show just exactly what is needed when pumping equipment is loaded to the utmost by demands of a fire.

It is likely that the small community will benefit from a step-up in rated pressures as well as the large ones. Every small community has large estates, institutions and farms subject to big fires. Hydrants or water supplies are likely to be few and far between. Buildings are often a long way from roads. Under these conditions, long hose lines are inevitable and pumpers must overcome high friction losses to deliver as much water at a fire as the available water supplies will permit.

Now if there are any questions any of the gentlemen would like to ask relative to any of the work of the committee, I would be pleased to answer it. Thank you.

PRESIDENT RANDLETTE: Are there any questions?

CHIEF ALLEN, Brookline, Mass.: I believe this is the most important subject that will come before this convention, either this year or in the years to come. Personally for my own edification I would like to see the theory there freely discussed. We have in this audience some outstanding builders of fire apparatus. I see Charlie Fox with years of experience. I think there is a little opposition from my colleague Percy Charnock; and this engine you see that my taxpayers forced me to build in Brookline is based on the new specifications. I would like to hear from Mr. Charnock.

CHIEF TAFT, Norwich, Conn.: I would like to know what would be the result of a thousand gallon pumper on a six-inch main.

CHIEF POPE: It would be useless to fasten to anything exceeding the capacity of your reservoir or main and not run into any other difficulties. There is only so much water. You can only pump as much water as you can get from the main.

MR. PERCY CHARNOCK: Chief Pope has referred to the meeting of the National Fire Protection Association at Atlantic City and what developed there in regard to this proposal of changing the specifications for the performance of a pumping engine. I was somewhat pushed into objecting to the change in the proposal and I want to explain to you my personal reasons for it, and I find that a great majority of the other engineers who are connected with the making of rates felt somewhat the same way as I did.

Now for quite a number of years I have experienced considerable difficulty in persuading various communities that they should buy pumping engines having a capacity of at least five hundred gallons a minute and on the existing pumping specification. Furthermore, I can't see where there has been any change in the hazard which calls for increasing these pumping requirements.

It was mainly on those points that we raised our objection to the increased performance requirements. The idea was put forth that the chiefs are demanding an increase in pumping requirements. I have yet to find that that is an absolute fact, and if it is so, I hope you folks will register it here today.

Personally I would be very much pleased to see all manufacturers of fire apparatus step up their product. I think it would be a very desirable thing. It is

HERE AND THERE AT BURLINGTON CONVENTION

very true in small communities where it is necessary to lay long lines of hose to deliver water at high pressure. Now if all manufacturers are in a position to do that, well and good. I hope it will come about if they can do so, but I don't believe all are in that position today.

There were other features in the specifications which I don't think any of us are in agreement on today. I don't think we all know what we want in the shape of ignition, whether we want dual ignition or double ignition or what we want. Chief Pope said today we want to find where the trouble is, whether batteries, spark plugs, magnetoes or what not. Until we get that field of experience I doubt if the manufacturers or that those working on the specifications are in a position to give us what we need in the way of ignition. I hope there will be a very general discussion on this point.

PRESIDENT RANDLETTE: Let me impress upon you, Chiefs, that now is your opportunity to make these meetings of value not only to yourself but to your fellow Chiefs. This is the time these questions should be discussed, and I hope any who have questions on your mind in regard to this will express yourself. That is what we are convening for. Are there any other questions?

CHIEF ROOT, Springfield, Mass.: Will it be out of order to make an attempt to get a consensus of opinion at this meeting on this subject to clarify the situation and perhaps bring out a little more discussion? If you will entertain it, I will move you that it is the consensus of opinion of this Association that it would be a step forward to raise the minimum specifications of pumpers to 150 pounds for the capacity requirement and so on according to the recommendations of the committee of the N. F. P. A.

PRESIDENT RANDLETTE: You have heard the motion made by Chief Root. Do I hear that seconded?

(Motion seconded.)

PRESIDENT RANDLETTE: It is moved and seconded that it is the consensus of opinion of this Association that we go on record as approving—

CHIEF POPE: I don't think Chief Root meant to approve it. I think he just wanted to get an expression of the opinion of the members present, is that it?

CHIEF ROOT: I thought that might bring it out.

CHIEF POPE: You just wanted an expression of those present, is that it?

CHIEF ROOT: Those in favor of raising the minimum requirements.

CHIEF ALLEN: Isn't it a fact that it has been returned to the committee for further consideration?

CHIEF POPE: That is right.

CHIEF SLAMAN, Wellesley, Mass.: How do you arrive at 150 pounds pressure? Why not make it 160 or 180?

CHIEF POPE: That is just a standard. It is a question whether 150 is proper or 160. That is just the figure they started at on the increase, that is all. It was on that curve.

PRESIDENT RANDLETTE: Any other discussion? Are you ready for the question? Mr. Fox, have you anything to offer before this question is put?

REMARKS

By Charles H. Fox, *President*
The Ahrens-Fox Fire Engine Company

Mr. President: I did not come here with the idea of addressing this convention. When shown the program and noting the topic to be handled by the Chief of Boston, I did make it a point to be here at this time.

Now! may I talk frankly as a manufacturer, but as one who has no ax to grind. I wish to say what I feel is right and what is not right. We will leave "Ahrens-Fox" out and please regard this talk as an expression of my own views.

As far as this proposition to increase Pumper pressures is concerned, when this idea first came to my attention, and again reminding you that I am talking frankly, my thought was—"Well, they are wakening up"—for to my way of thinking "120 pounds pressure" in connection with the nominal capacity rating of Pumpers might well have been increased a long while ago.

Much depends of course upon how you reckon with this matter. If you have a 1000 Gallon Unit that will just come under the wire at 120 pounds pressure—that is one thing, but I never figured it that way. My notion was and still is that Pumpers should have a reasonable reserve capacity and that seemingly is the point that we are now talking about.

A question I foresee is whether 500, 750, or 1000 Gallon Pumpers are to deliver their rated capacities at 150 pounds pressure as ultimate performance or, does it mean there is to be some "reserve" in addition thereto. I do say for myself, that my aim always has been to keep a little something "up our sleeves." This is a point too frequently ignored, but, in my opinion the move to higher pump pressures is a step in the right direction.

In the case of a 1000 Gallon Pumper, operating under conditions where by reason of a long line of hose or an elevated position of the nozzle, 120 pounds pump pressure is inadequate to force enough water to properly fill the nozzle, then, the pump operator shifts to the so-called "pressure range," but incidental to that change your 1000 Gallon Pumper—according to the existing method of rating—becomes either a 500 gallon unit at 200 pounds pressure—or a 334 gallon pumper at 250 pounds pressure.

Talking to you now as an old fireman, rather than as an apparatus builder; let me add that from practical experience gained during a decade served in the Cincinnati Fire Department, I reached the conclusion that fire pump pressure ratings should be higher and this early opinion has certainly not been changed in view of the conditions confronting the fire service today.

And this issue is not entirely confined to metropolitan areas where tall buildings abound. This greater pressure demand works both ways, for in lesser communities and even where there are no especially tall buildings, we should keep in mind that a fair fire stream from an 1¼" nozzle tip calls for the discharge of 340 gallons of water per minute and that the pressure loss by friction in the fire hose ranges around 30 pounds per 100 ft. in average 2½" hose.

Situations are not uncommon where 1000 feet or even more footage is required between the Pumper and the scene of a fire and it follows, therefore, that your 1000 gallon pumper will fall shy of doing the work, should the lead exceed approximately 750 feet in length—and this is on the assumption that the discharge is quite level with the position of the pumper.

In other words, not less than 300 pounds pump pressure should be essential for fair results using an 1¼" tip at 1000 feet from the Pumper.

The corrective, where such pressures are impossible is to substitute a smaller nozzle, but whether the Ratings are increased or remain as they are, the point of "Reserve" as stressed at the beginning of this talk is something which is highly commendable in any Pumper and is a factor that should merit better consideration.

CHIEF RANDLETTE: Anybody else?

CHIEF KOLTONSKI, Rutland, Vt.: I think there is going to be quite a need of education on that thing. For instance, the fellow in the small town is up against something the chiefs in the larger cities are not. They get men on the committee that is going to buy apparatus who might be a plumber or a petty politician. I think most every chief knows what he wants but he has got to educate the people on his committees how much water he has got to have. I think it is a matter of educating the public more so than the chief.

CHIEF ABEL, Westwood, Mass.: I think this is the first time the association has ever asked the Insurance Exchange to increase the capacity of all pumping engines, is that right?

PRESIDENT RANDLETTE: Is that true, Mr. Charnock?

MR. CHARNOCK: It has essentially resolved itself into that in the end because we as a rating association utilize the standards which have been adopted by the National Fire Protection Association or the National Board, and if these increased performance requirements are adopted, there is where I feel the rating association is going to get into difficulties because some manufacturers will be able to comply with the specifications and some will not. You can see the predicament I will be in when I say your apparatus doesn't come up to the requirements.

MR. CHARNOCK: I don't like to speak too often but let me assure you this, that if any change is made in the specifications they will not be retro-active. Any apparatus purchased on the old specifications will be retaxed on those former performance requirements.

PRESIDENT RANDLETTE: Of what they were bought on?

MR. CHARNOCK: Yes.

PRESIDENT RANDLETTE: Those are all good points, gentlemen. Are you ready for the question before the house?

CHIEF SLAMAN: What assurance will the Insurance Exchange give if we buy one that conforms with the specifications?

MR. CHARNOCK: They will get credit for the water they deliver and at the capacity for which the specifications are drawn.

PRESIDENT RANDLETTE: Are you ready for Chief Root's motion?

MEMBER: Question.

(On the voice vote the President could not determine whether or not it was carried.)

PRESIDENT RANDLETTE: All those in favor please raise their hands until counted.

Chief THOMAS H. COTTER, Second Vice President, Providence, R. I.

SECRETARY O'HEARN: Seventeen.

PRESIDENT RANDLETTE: All those opposed?

SECRETARY O'HEARN: Twenty-four.

PRESIDENT RANDLETTE: The vote is twenty-four opposed to seventeen in favor.

Are there any other motions? Any further discussion on this question?

I want to take this opportunity to remind the members of the important sessions of this convention and I personally appeal to you and urge you to attend them. I also want to call your attention to the fact that we do not have any night sessions. One of the important sessions, Wednesday afternoon, is the Forest Fire Wardens who occupy the entire afternoon. I also want to take this chance to advise of the entertainment this evening which is to take place in the Sherwood and in which you will have a floor show, and as the Chair understands it will be a very entertaining evening.

SECRETARY O'HEARN: I move you, sir, that Chief Pope's paper be accepted and made a part of our records.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: I distinctly remember the first time that it was my privilege to present a paper before this Association. There was a fellow who was president of the Association at that time who said he had to get a running start to introduce me. Well, it is my opportunity today to introduce that same fellow and I don't want a running start, I want a flying machine. It gives me pleasure to introduce to you someone you all know, a Past President of the National Association and a Past President of this Association, Chief Selden Allen of Brookline.

ADDRESS

HOW TO SAVE THE TAXPAYERS' MONEY

By Chief Selden R. Allen

Brookline, Mass.

Mr. President, Distinguished Guests and Colleagues: What I have to say to you today is not in the nature of an address but rather a frank discussion, and if you look at your program, it is ironical. You notice me listed as saving the taxpayers' money and on the line below it says, "Be sure and patronize your exhibitors."

Now I want to get out of your minds, for I know it still lurks in the back of the heads of many of our older chiefs, that the fire department is organized and functions today for the mere extinction of fires. Today it is designed and equipped and trained for the alleviation of human suffering, yes, that suffering wherever we may find it and its ramifications have gone far beyond the belief of "old timers."

I want to stress this here and now that good-will brings you good budgets and good-will can only be secured through good service. I believe firmly in this, one of the things we want to get in our minds is the need of the education of the public. We need to take them back stage frankly and fully, tell them what is going on in

their interests. And so I am going to discuss new phases and I believe the modern fire department may be divided into three spheres.

You have heard me preach this before, some of you, but I know what a dividend it pays. Fire prevention, nothing more or less than the elimination of those things which might accelerate fire or cause it. Have a good set of building laws impartially applied and thereafter a matter of systematic removal of debris and refuse from our buildings, human habitations and industry. Right along on that point, never overlook the value of zoning as an adjunct to the activities of a department.

Now let's travel on to that in which there has been a radical change in the last fifteen or eighteen years, and either in this audience or in this city is one of the outstanding men who brought about this right-about-face. We all confess up to fifteen or eighteen years ago we were fighting fires wrong. We know it now in the light of our knowledge, and so I want to discuss frankly and fully with you some of the phases of the new type of fire fighting which pays such a handsome dividend, —safeguarding of our men as a measure of good business, cutting down of our expenses, cutting down of men on the sick-list and non-productive activities.

So my mind goes back as yours does today to those old days that a man took it until he went down and out and the sum total of that policy was the death of the cream of the fire service, and into being came this form of ventilation of safeguarding of our men with adequate gas masks, the lighting of our men either when they went below or above ground, safeguarding him in every angle in the interest not only of the men but in prudent business. There is no profit in men on the sick-list, and I have long held strong convictions on the safeguarding of these men we send into these death holes, and so the safeguarding of these men is one of the things which should be given careful consideration. Flood lighting of our buildings has cut down accidents materially.

Training of these men; oh, what a dividend this training program has paid to our taxpayers in improved service!

My mind also drifts back to the great, great need of a new point of view on the part of every fire chief within the sound of my voice. This demand for training and for education. When it was first launched, it was deemed a fad by the "old timer" who took it on the chin; he believed it was just a fad and a fancy. But we know today it is entirely different. So I drift back to this meeting of serious minded chiefs in Birmingham, Alabama, where ten of them dedicated themselves to this phase of the fire service, so badly needed, and so it has paid a handsome dividend. You will never get anywhere until you get the mind of the public away from the fact that fire departments are idlers, checker playing men. We have got to gain their confidence and take a big stage and show the other side, the side of these serious minded men, they realize their responsibilities and are doing everything possible to render a higher source of service and elevate our profession, because it is a profession today.

I am particularly interested in this elevation. I know what it means. I know we must get it up in the estimation of the public for you can even get their confidence and goodwill and these good budgets necessary. And so some trend of that educational program and this training in the state of Massachusetts has been the education and training of over two thousand men in these small communities. Chief Pope will bear out what I have to say and the chief of any department of any size has had the same experience, the prince of the fire service never has been and never will be in my opinion in these large cities. Some of the outstanding men

in the profession, men that are striving morning, noon and night to raise the standard of the service come from these small communities; and when you see two thousand men in the Commonwealth of Massachusetts giving of their time and paying their own travel that they may go home and preach the gospel of more efficient service, no man can be pessimistic on the outcome of the fire service.

I want to drift on just a moment, keeping ever before you the need of goodwill so necessary, and I want to take you on to the last activity and one you have heard me preach morning, noon and night, one I wouldn't trade for anything on God's earth during my entire career, the thing every man places higher in his estimation than any activity, and that is the saving and preserving of human life with the aid of inhalators and the prone method of resuscitation. I am going to cite you just a few concrete examples showing you must have vision and preparedness, for sympathy will not carry you through. Lots have good intentions but they will never bring back from the brink of the grave one hovering close by, so to show the ramifications and need for vision and preparedness that you may gain this good-will so essential I want to cite you the value to me over a long period of years, yes, the value to every chief who has gone into it, and I want to cite you just three examples to show you in this audience the ramifications and need for adequate equipment.

My mind drifts back to a call coming in from the home of an official of one of our outstanding signaling systems in the United States, and it is a story that every chief can testify to or a parallel one, the story of a woman stricken with heart trouble out of a clear sky, beyond medical aid, and along goes a ladder truck with an equipment based upon vision, based upon an honest conviction for the need of preparedness. As they pull into that home, dignified, conscious of their responsibility, they brought back to life that woman, a hopeless case, and for seven hours two elderly men alternating sat on the bed by the side of that woman, a family came to say good-by, she made out her will and then passed on because she was beyond medical aid. Those seven hours are beyond price, those seven hours brought to my department more good-will than seven hundred fires you might have licked in one year. You can't beat it. The only way to get good-will which means a good budget is on improved service to every human being from the humblest citizen to the man of affluence.

I may take you to another one. A comparatively short time ago, showing preparedness does enter into this picture of gaining good-will, and it is a story of a woman underneath an electric car. I received the message over the radio. It was a short run for me. A crowd gone mad with the sight of a bloody woman underneath an electric car and nothing available immediately for the raising of that car, but along came a ladder truck, and I thank God I had the guts to go out and fight any group of men whether they call themselves reformed convicts or taxpayers or what you name them, I thank God I had the guts to go out and get what vision showed me we needed. So a ladder truck with a jack estimated to lift seventy-five or one hundred ton was placed underneath that car and in a few moments that prostrate body was removed with all the respect that was due a stricken person and I have a strong conviction on that point, too, on the dignity of service in an emergency, and that woman was tenderly covered up the same as you would want yours or mine cared for, placed on a stretcher and sent to a hospital, and the grumblings and criticism of that crowd changed to admiration and cheers. You can't lick this policy of good service and goodwill.

And just one more to show you, oh, what a difference it is when it comes home and it may come to your home or mine tonight. Any man of experience knows a

Chief JOHN W. O'HEARN, Secretary-Treasurer, Watertown, Mass.

person who augurs otherwise is dwelling in a fool's paradise. So it is a story of one of Boston's outstanding physicians, a man who had seen death in every form, but as I said before, it is so different when it enters your own door, and getting me on the telephone one night he told me his mother had gone down under illuminating gas, was there anything we could do? And I thank God I had the vision as any forward-looking chief in this country to prepare for just such an emergency. A ladder truck rolled out without delay, and in an hour and twenty minutes they brought that poor old soul back to life. A woman eighty years of age gone down under illuminating gas, was beyond medical aid. And so this physician came into my office the following morning, laid down a substantial check, with tears streaming down his cheeks, and said, "Never in God's earth will I ever object to the taxes I pay into this department, a department equipped to render that sort of service." The same sort of service that is being rendered by every thinking chief, and so the thought I want to leave with you today, rambling as I have, for I know you would much rather hear me speak frankly and fully, the thought I want to leave with you today is this: There is no magic in fire service, that the fire chief is no magician, for a success you must depend on this, good intentions plus an adequate equipment and a trained personnel. Never overlook, no matter how insignificant it may appear, an opportunity to hold out a helping hand to anybody and everybody within your jurisdiction. Chickens have a habit of coming home to roost, and the same chap that you may help in an emergency may be the very man that sits in judgment upon your budget.

It has been said that I have never lost a dollar off a budget, that I have never lost a project that I projected, and, gentlemen, there is only one secret. Shooting square over the middle of the plate with every citizen and always keeping in mind this,—we are here to render service. It is a sacred responsibility, and I am going to digress just a moment. Never overlook, too, for I hear it spoken of so lightly, the cat up a tree, the dog in a ditch. Remember there is a lot of sentiment woven around the old family cat. It only takes a few moments, but what it does mean to that family! So keep in mind what I am trying to bring before you, there is no magic, the chief is no magician. It is all a matter of service and vision and an honest desire, not with an ulterior motive but with an honest to God desire to be of real service to humanity. Thank you.

PRESIDENT RANDLETTE: What is your pleasure with Chief Allen's talk?

CHIEF POPE, Boston, Mass.: I move it be accepted and made a matter of record.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: We have been fortunate in our conventions each year, and this year is no exception, to have experts talk to us in their line, and certainly today are we fortunate in having with us Dr. Aldrich of the Boston City Hospital and Harvard Medical School who will address us on "Treatment of Burns with Aniline Dyes."

ADDRESS

TREATMENT OF BURNS WITH ANILINE DYES

By Robert Henry Aldrich, M.D.

Visiting and Asst. Surgeon, Carney Hospital, Boston City Hospital and Harvard Medical School, Boston, Mass.

Members of the New England Fire Chiefs' Association

Gentlemen:

It may seem a bit incongruous to come before this group to state what should be done for the care of the burned patient, as I suppose Fire Chiefs see more of these cases than the average doctor in practice. However, recently there has been quite a bit of work done in the treatment of burns and I think you will be interested in hearing some of the newer theories as to the cause of toxemia in burned patients, and especially in the newer forms of treatment, both for first aid and for the after care.

In 1932 I published a paper on "The Role of Infection in Burns with Special Reference to Gentian Violet." In this paper I tried to show that the toxemia of a burned patient was not due to the absorption of a burned protein and not to a shifting of the water balance, but to an invasion of the body through the burned area by virulent forms of the streptococcus. At that time gentian violet seemed to be the best means that we had of counteracting the pathology exhibited by the burned patient. The burn was protected from all gram-positive organisms and sealed under an eschar; analgesia was obtained and fluid loss prevented. Gentian violet, however, has one weakness; it is not a specific antiseptic against the gram-negatives and sooner or later these germs offered complications. For two years I sought some other antiseptic that would offer all of the advantages of gentian violet plus a more powerful action against the gram-negatives. I investigated the analin and the azo dyes, as well as the chloramides, and wish to present now a report on the use of a combination of acriviolet and brilliant green, acriviolet itself being a loose chemical combination of acriflavine and crystal violet.

Before going into a detailed description of this form of treatment I should like to be permitted to stress again my theory of the role of infection in burns. When Firor and I began working with burns in the Johns Hopkins Hospital, there were two main theories as to the cause of toxemia and death in burns. The first theory contends that there is absorption of some split protein in the burned area. Many investigators have reported many substances, isolated from the burned area, the blood and the urine of burned animals or patients. Some of the substances reported were histamine, pyridine, guanidine, ptomaines and primary and secondary proteoses. There has been no uniformity in the results obtained by different investigators. Among the more recent advocates of this theory are Robertson and Boyd, who claim to have isolated primary and secondary proteoses by alcoholic extraction from burned skin. When this extract was injected into unburned animals, they exhibited signs of toxemia and shock. For a time this seemed to have settled the question. However, Underhill and his co-workers at Yale repeated the experiments of Robertson and Boyd, using the same technique and discovered that it was the ethyl alcohol of their extract which caused the animal's toxemia and shock.

Underhill then definitely proved that there was no absorption from either the burned area or the edema fluid around the burn by injecting five times the lethal dose of strychnine into the burns of experimental animals without obtaining any

evidence of strychnine poisoning. He followed this up with injections of trypan and methylene blue into the burned area and found on tests and on sections that these dyes were not absorbed from the burned area back into the body. If none of these three substances is absorbed, it seems to me very improbable that some split protein should be absorbed in sufficient quantities to cause any toxemia.

Underhill then showed that there is an enormous shifting in the water balance in burned patients with resulting concentration in the blood. In animals a third degree burn of one-sixth of the body area brings about a loss of one-half the blood volume in thirty hours. This seemed to him to be the cause of the toxemia of burns, and he felt that the logical treatment would be one which kept the blood chemistry normal. This consisted chiefly of intravenous injections of normal saline. A review of Underhill's cases indicated that while his form of treatment was very good in combating primary shock, on the third and fourth day signs of toxemia set in and his patients ran much the same course as those of others.

If, then, there is no absorption from a burn back into the body, and if, even when changes in the blood chemistry are prevented, the symptoms persist, what is the cause of the toxemia in burned patients? Dr. Firor and I began our work with this question. A review of the literature revealed that no work had been done on the bacteriology of burns. Repeated bacteriological studies of fresh burns were done and revealed that for the first twelve hours the areas were practically sterile but that, beginning around the eighteenth hour, positive cultures could be obtained on all burns. The early culture reports showed a mixed infection, but after seventy-two hours the pus which existed on all burns was practically a pure culture of the beta hemolytic and the gamma streptococcus. In a recent personal communication from Cruikshank of Glascow I have been informed that he has confirmed our work on the last two hundred burned patients entering the Royal Infirmary.

There was a definite correlation between the clinical picture and the amount of infection. As the streptococcus multiplied the toxemia increased in severity. The patients' charts and the bacteriological reports went hand in hand. With this evidence and with the awareness that burned patients had large open surgical lesions bathed in virulent streptococcic pus, we saw no reason to search for some obscure split protein. Additional pieces of evidence that lent weight to our theory were these: in those patients who became very toxic, blood cultures were positive with the same strain of streptococcus that was found on the burned surface and in patients dying following a severe burn, the same germs as were found on the burn could be cultured from the heart blood and the lungs. From this we concluded that the fundamental principle in the treatment of burns should be asepsis and antisepsis.

We tried various antiseptics in an effort to find a non-toxic agent with a high specific germicidal power. Gentian violet was the outcome of this work. After its adoption we immediately began to get the results which we had anticipated. If a burn can be kept free from infection there will be no evidence of toxemia. In the two years following the introduction of gentian violet into Johns Hopkins the mortality dropped from 42% to 13%. However, gentian violet was not the ideal antiseptic and contamination by gram-negatives was a constant annoyance. No details of the gentian violet treatment need be given now inasmuch as it was used in exactly the same way as the new combination of dyes which I shall now discuss.

This combination of acriviolet and brilliant green is the most powerful antiseptic against the gram-positives that will not injure living cells. It also has a high

Chief WILLIAM C. MAHONEY, Board of Directors, Peabody, Mass.

specificity against the gram-negatives. In broth cultures and in the test tube it will not let gram-positives grow in dilutions of one to one million, nor gram-negatives in one to ten thousand. In concentrations of one to one thousand it has a high phenol coefficient against all of the pyogenic organisms. When applied to a burned area it very rapidly forms a tough, flexible eschar which seals off the burn, sterilizing it at the same time. The eschar thus formed prevents fluid loss and brings about analgesia by protecting the nerve endings.

Our treatment of a severe, superficial, fresh burn is as follows. When the patient is first seen the burn itself must be ignored if the patient is in shock. This is an imperative fundamental. The shock must be adequately and completely combated. This is done by the usual routine of heat, rest and fluids. When the patient is well out of shock he is placed under a cradle and an aqueous solution of the dye sprayed on by means of an atomizer. There is no clean-up done unless gross contamination is present. The burned area is sprayed every hour during the first day, by which time the eschar is formed. When this has taken place the spraying is discontinued. From this time on the eschar must be watched very carefully every day, or in large burns twice a day, to make certain that no contamination has taken place. Burns of the perineum, burns involving any body orifice, and burns in children who defecate and urinate in bed are rather difficult to keep sterile. If any infection occurs under this eschar it is not masked as it is under the tannic acid crust. The area directly over the infection becomes moist and soft. This contaminated portion should be lifted up with a pair of tissue forceps and excised. The underlying area is then dried with a sterile sponge to remove any gross contamination and the dye reapplied. This careful inspection continues until healing under the eschar is complete or until the granulating surface has built up to the proper height to accept skin grafts. If the eschar becomes contaminated in too large an area to permit painless excision of the infected crust, the whole area can be cleaned up by the use of sterile normal saline compresses. If these compresses are kept moist and are changed every hour, large areas can be completely freed from infection and eschar in a few hours. The dye is reapplied at this time. The patient is usually very comfortable and unless there is some contra-indication such as extent or position of the burn he can be up and about once an eschar has formed. The patient is on house diet and can handle his food and fluid intake adequately.

I have just drawn a fairly broad picture pertaining to the theories that have been put forth attempting to explain the physical signs and symptoms exhibited by the burned patient. I should now like to narrow the cases down to those points that are of interest and importance to the work and functions of the Fire Department. The burned patients that you will see will have just received their lesions. Your main aim is to take care of the patient during his first aid period, and to place him in the hands of the doctor who will take care of him later, in the best possible condition. It is instinctive to confuse first aid with activity because the spectators and the patient get a satisfaction out of seeing something done. When elaborate first aid kits are opened and highly-colored antiseptics and bandages are taken out and applied to the patient, everyone tends to feel that medical aid is begun, and that the condition of the patient will be the better for it. This is true in certain cases, such as hemorrhage, but it is not true for the burned patient. As I stressed before, the initial shock is the important thing to combat. When you see a fresh burn your immediate thought should be to make sure that the patient is not still being burned. Investigate his clothing rapidly and put out any smoldering fire in his garments. When this has been done, begin your treatment for shock at once.

The three fundamentals in the treatment of shock are: heat, rest and fluids. You need only be concerned with the first two. Don't be in too much of a hurry to

move your patient to a hospital. As he is badly shocked, he will do better if given a chance to recover before he undergoes the added exertion of being carried to an ambulance and hurried to a hospital. This is especially true if your facilities for transportation are not of the best. Put a blanket on the ground and let your patient lie down. Cover him with several more blankets. If local heat can be applied in the form of hot water bottles or chemical heating pads, so much the better. By putting your patient on the ground you help the circulation to the brain, and by keeping him warm you tend to keep the body from cooling off, as it will in response to the lowered circulation and blood pressure. These symptoms of shock, unless they are combated, can bring about very early death. I have seen patients die within an hour after being burned, simply because they were handled roughly and allowed to become chilled. You remember the explosion of the German Zeppelin at Lakewood. Our papers and periodicals regaled us for weeks with startling pictures of the victims. Several in particular were compelled to pose for the cameramen and many more were herded around for quite awhile in the excitement. From the best reports obtainable I have concluded that at least a few that died did so because the shock was not combated. They were not allowed to live long enough to have been given a fighting chance to overcome their burns.

There is absolutely no urgent rush to begin the treatment of the burned areas themselves. The patient, as a whole, must be considered first. An hour's delay, when the patient is kept warm and prone, will in most cases do a great deal of good and never any harm, whereas too much rush will do no good and will frequently bring about death.

I consider this point to be so important that I should like to emphasize it in other words. Don't attempt to remove the clothing from a patient with a large burn. Don't insist that salves or liquids must be applied to the burned areas immediately. Treat the patient as though he were very sick, exceedingly weak and extremely fatigued. Imagine what you would want under the same circumstances and you will get the answer. Make him warm and comfortable and allow him to get over some of his initial shock.

If you will follow this routine in handling your severe burns you will alleviate discomfort and pain, will prevent unnecessary deaths and will turn your patients over to the doctor in much better condition than had you attempted to express your first aid care by motion and commotion.

It has given me a great deal of pleasure to speak before this gathering and I wish to take this opportunity to thank you for the honor you have bestowed upon me by inviting me to be present as a speaker at this Annual Convention.

There was a question asked about the advisability of giving ammonia to a patient in shock and the answer is as follows:

Aromatic spirits of ammonia is a useful drug when a patient merely faints. Fainting is a transient anemia of the brain. Ammonia counteracts this transient condition. However, when a patient has a real shock no drug is useful in the first aid period. Give your patients the first aid care that I stated in my talk. There is no better method at the present time.

PRESIDENT RANDLETTE: What is your pleasure with Dr. Aldrich's paper?

CHIEF CROWLEY, International Shoe Co., Manchester, N. H.: In treating burns such as you have been talking about, does the same method apply to acid

burns, and if not, what do you advise for burns such as sulphuric acid? And also, do you advise using water to wash off acid?

DR. ALDRICH: The first thing is to flush out the burn with large quantities of water whether it is acid or alkali. Don't try to combat acid with weak alkali or alkali with weak acid. If you do, you will have heat and frequently induce a second degree burn into a third. First, flush off with lots of water and then put on a mild alkali such as baking soda to combat the acid burn and then begin treatment with your dyes.

PRESIDENT RANDLETTE: It has been moved and seconded that we accept Dr. Aldrich's paper with a vote of appreciation for his coming here.

(Motion carried.)

PRESIDENT RANDLETTE: Many of you Chiefs have had from time to time difficulty in getting co-operative methods in the prevention of fire. We understand that Chief McNally of Somerville has had a rather fine result in co-operative methods and now I am glad to introduce to you Chief McNally of the Somerville Fire Department, Somerville, Massachusetts. Chief McNally.

ADDRESS

REMOVAL OF FIRE HAZARDS BY CO-OPERATIVE METHODS

By Chief John C. McNally

Somerville, Mass.

Mr. President, Invited Speakers and Members of the New England Fire Chiefs' Association: The title of my paper is, "Removal of Fire Hazards by Co-operative Methods."

This paper is merely a history of how we tried to solve a problem which confronted us in Somerville. With a definite objective in mind, it became necessary to choose the best possible method of reaching this desired end. The existence of a considerable number of dilapidated buildings, including vacant buildings, idle manufacturing plants, small sheds and barns constituted our problem. All these structures had outlived their usefulness. Unfortunately, however, these buildings had become, by reason of their condition, a distinct liability to the community. Our task was to relieve the community of an unwelcome burden. Two obvious paths lay open to us. First, the aldermen of our City are empowered under Massachusetts law, Chapter 143, Section 3, to condemn unsafe structures; second, under Chapter 143, Section 8, a special board composed of building commissioner, city engineer, fire chief, and a citizen named by these three may act in certain cases. These two methods we discarded, however, in favor of a third. We favored a campaign which would persuade rather than compel. Dealing with the individual, we wished to stress personal gains compatible with community interests. Our aim was to prove to each individual that he could help himself, and at the same time show commendable community spirit.

With a well-defined goal and a means with which to reach it, we set out to rid Somerville of some of its fire hazards. Somerville, Massachusetts, is largely a city of homes, there being comparatively few manufacturing plants for a population of 103,000 people. There are approximately 15,000 dwellings within a total area of 4½ square miles, with frame construction predominating throughout the city.

Chief ALFRED H. KOLTONSKI, Board of Directors, Rutland, Vt.

The number of unused buildings became so great that immediate action was urgent. Considerable time was spent in a preliminary survey of the buildings to be included in our campaign. We enlisted the aid of the New England Insurance Exchange, as soon as we discovered that insurance rates on surrounding property were being increased due to exposure from these fire menaces. The amount of exposure was in each case based on the size of the condemned building and its proximity to the adjoining property. We found that the New England Insurance Exchange was extremely co-operative. One of their engineers was assigned to devote as much time as necessary to this work. We selected one of our best lieutenants, who was in charge of fire prevention, to devote his time to the demolition of buildings. The aid of the Mayor and the Board of Aldermen was enlisted to obtain a Federal grant under what was known then as the Emergency Relief Administration. Later, the Works' Progress Administration provided funds for salary purposes. At the present time, local welfare recipients are carrying on this demolition work.

We found that in almost every instance the owners were in no position to share in the cost of removal of the buildings. Each owner was interviewed with the purpose of selling him the idea of the benefits he would receive in the form of reduced assessments, with a corresponding reduction in his taxes. He was told of the improvement in health conditions resulting from more air and sunshine in congested areas. Reductions in insurance rates for surrounding buildings and their contents were cited as further advantages. The benefits which would come to the community in the elimination of hideouts for neighborhood gangs and vagrants were emphasized. He was shown that the possibility of law suit for injuries suffered around the building was eliminated.

With the owner once convinced that there was a benefit common to him and the community, an agreement was made to buy the building for $1.00 and other considerations. At times, as many as 175 men did the work of demolishing the buildings. Over a long period, the average was 60 men. Fortunately, no injuries were sustained by workmen at any time. Up to the present time, we have removed a total of 216 buildings at a cost to the City of approximately $175.00 per year to cover tools and materials.

While the City does lose to some extent on a decrease in assessed realty valuation, the loss is minimized since in most cases the original valuations are negligible. On the whole, however, we feel that the city is amply compensated for any such depreciation by the advantages it enjoys from the plan. The bricks were cleaned and some were used to build a new drill tower for the Somerville firemen. A boiler room for the Welfare Home was built from salvaged bricks and other materials. The stone from two Boston & Maine railroad stations was utilized to build a much needed field house and locker room at Powder House Park. The completed structure was valued at $15,000. Some of the lumber was used to build fences around razed property. The rest of the lumber was used for concrete forms in retaining walls, street, sewer and water projects. Short ends and broken boards were sent to welfare recipients for use as firewood. The cellars of the demolished buildings were filled in by surplus earth from various street, water and sewer projects.

Approximately seven hundred reductions in insurance rates on buildings and contents were effected. During the year 1934 alone, insurance rates were reduced on 494 buildings and contents whose rates had been affected by the presence of the dilapidated structures. With children and vagrants no longer using the buildings for club-rooms and hide-outs, the number of alarms showed favorable results.

On the whole, we feel considerable satisfaction with the work accomplished in Somerville. In not one case did we feel it necessary to compel an owner to co-operate with us. Each one was ultimately able to see how he would gain, and each took considerable satisfaction in promoting the welfare of the community as a whole, while helping himself individually. He perceived that there was a whole-hearted desire to help him and he, in turn, was glad to help others. It is a source of satisfaction to feel that in spending $175.00 per year, so many advantages were gained: reduced insurance rates, fewer fire alarms, more healthful sanitary conditions, reduced real estate tax bills, and the use of salvaged materials for necessary municipal purposes. Especially are we enthusiastic about the conviction that in most cases necessary improvements and reforms may be brought about by educating the individual, so that he may see that his own interests are in harmony with those of the community. Our experiment seems to indicate that the individual is usually ready to co-operate if he is treated with tact and consideration.

PRESIDENT RANDLETTE: Are there any questions you wish to ask Chief McNally? What is your pleasure?

MEMBER: I move that Chief McNally's paper be received with thanks and that it be spread on the records.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: The last speaker on our program for this afternoon is on a subject which I think this Association was the instigator of. I think Chief Sanborn of Portland was principally interested in this subject due to the experience he had at the time of the Auburn conflagration and I think through his activities and other members of the Association this was brought to the attention of the Underwriters, and Mr. Charnock is here today to tell us something in regard to the standardization of suction hose threads.

ADDRESS

STANDARDIZATION OF SUCTION HOSE CONNECTIONS

By Percy C. Charnock

Engineer, New England Insurance Rating Association

Mr. President, Gentlemen: Back in 1904 at the time of the Baltimore conflagration it may be remembered that fire departments in Washington, New York and other cities were rushed to the aid of Baltimore and on arrival found their hose would not fit the hydrants and their suction connections were also of a different thread than those in Baltimore.

Soon after that some endeavors were made toward standardizing 2½-inch hose thread connections but no concerted movement was made on this until just after the close of the World War although a few cities had, through one way or another, changed their hose thread connections to what is known as the National Standard for 2½-inch hose. In concentrating on the standardization of 2½-inch hose it was felt that by so doing, fire engines would be in a position to make connection to any hydrant through the 2½-inch opening by means of a reducing coupling and thus obtain some quantity of water although perhaps not as much as though the large opening of the hydrant had been used. In the Fall River con-

flagration most of the numerous outside engines connected to hydrants in this manner.

For some time there has been agitation to do something towards standardizing the large connections on hydrants, the inlets on pumping engines and the suction hose carried on these engines. It may be well here to state what the situation is in regard to suction hose connections. In many departments there are two, if not three, different sizes of suction hose with corresponding differences in sizes of threads on this hose. This comes about through the practice of various manufacturers of fire apparatus to furnish suction hose of varying diameters, depending much on the capacity of the pumping engine, these sizes being ordinarily 4-inches for a 500 gallon pump, 4½-inches for a 600, 5-inches for a 750 and 6-inches for a 1000 gallon or larger pump and in a good many cases the manufacturers also make the suction inlet to correspond with the size of the hose. The result of this is that even in any one city suction hose from one engine could not be used on another engine or connect with the suction hose of another engine. While this may not be a very serious matter for the ordinary run of conditions in a fire department, it is not an economic proposition and it is not conducive to co-operative action in case of severe fires.

In addition to this, in many cities the large outlets on hydrants vary in size. Frequently it has been found there are as many as three different thread sizes. The result of this is the fire department must carry adapters to fit each of the different sizes. It may be interesting to note here that on more than one occasion it has been found the fire department did not carry adapters to fit all of the sizes encountered in its own city.

Features such as this and the fact that the suction hose on one piece of apparatus is not interchangeable with that on another piece in the same city is something to conjure over.

If the suction hose is not interchangeable in one department it is hardly to be expected that it will be interchangeable with that of another city. I think you will agree that by the great progress that has been made in standardizing the 2½-inch hose threads that much has been accomplished, in that where this has been done, pumpers, through the use of 2½-inch reducing couplings, can obtain a fair supply by attaching to the small outlets on hydrants.

However, when engines are called to the assistance of a community and the water system is not capable of furnishing an adequate amount of water, it may be necessary to resort to drafting water from a river or a pond.

One such instance occurred only a few years ago at the Auburn, Maine, conflagration where the water level in the river was such as to require several lengths of suction hose—more than the two lengths carried on the engine which had been assigned to draft from this water. In attempting to piece out these two lengths from other companies it was found that none were of the dimensions as the engine which was to do the drafting. As a consequence this engine had to stand idly by.

Another disconcerting factor in this problem is that for the different sizes of suction hose the manufacturers of fire apparatus and hydrants do not furnish couplings which are uniform for each size, that is, the outside diameter of the thread will vary, the shape of the thread is not always the same and in some cases the number of threads will be different. There is one rather general exception to this, for most of the 4½-inch hose is now coming through with fittings which

Alton Hall Blackington

Wreckage Filled Streets at New Silver Beach, Falmouth
Cleared Away by Order of Chief Ray Weils

correspond to National Standard dimensions, 4 threads to the inch and 5¾-inches outside diameter.

The present situation, which we must admit has existed many years, is not a happy or practical one and could be overcome if the fire departments and waterworks throughout the country would take up a concerted plan to bring about uniformity.

One step which would quickly relieve this situation could be taken on the part of fire chiefs throughout the country and that is to adopt a standard size of suction hose, or let me say of suction hose connections.

The Motor Fire Apparatus Manufacturers Association has accepted a recommendation to furnish all pumpers of 500 gallons or greater capacity with suction inlets corresponding to 4½-inch National Standard dimensions. In a revision of the specifications for motor pumping engines, all interests engaged in this revision have agreed to specifying 4½-inch suction hose with National Standard couplings to be furnished on all pumpers of 500 gallons or larger capacity. This means if the chiefs in this organization and all similar organizations get behind this movement and specify 4½-inch hose on all their pumpers that eventually there will be one standard size of suction hose connections. The only other fly in the ointment is that there will still be some cities where the large hydrant connections will not be uniform.

Here is where many cities and towns which are looking for projects to be accomplished by use of Federal funds could well adopt a plan to standardize all of the suction connections on hydrants. The city could provide the new fittings and the labor which would call for removing the old fittings and inserting the new ones would be at no cost to the community.

You will say this does not wholly solve the problem as you still will have some suction hose on your older pumpers which is not National Standard, and some may maintain that on the larger engines hose greater than 4½-inches must be used. The latter is true only when drafting at capacity and can be overcome and still have standardization of coupling connections by using bevelled couplings, such as done on 3-inch hose.

In regard to existing suction hose, it would not be too expensive if standardization is really desired to have new 4½-inch standard couplings put on to suction hose which is fairly new. On the other hand, there are many pumpers in service where it probably would be a good proposition to discard entirely the old suction hose and purchase new with standard couplings.

It is my belief the only reason this lack of uniformity has existed so long is that the chiefs as individuals and as an organization have not taken any concerted action in demanding that a standard be adhered to.

I would like to leave this thought with you, that this Association adopt a resolution, calling for in all future purchases of pumping engines, that the suction inlets and hose be furnished with 4½-inch (American) standard threads and that each department take appropriate steps to make their existing suction hose thread connections conform to this standard.

Thank you, gentlemen.

PRESIDENT RANDLETTE: Any Chiefs any question in regard to this paper of Mr. Charnock's before we take action on it?

CHIEF SANBORN, Portland, Maine: Mr. President, I agree with the view brought out by Mr. Charnock by having a uniform 4½-inch connection it will be possible to provide a double 4½-inch male connection, thereby enabling anybody to connect up with such hose with one pumper of one city with that of another, and with that thought in mind I will move that we adopt the resolution as suggested by Mr. Charnock.

RESOLUTION ON STANDARDIZATION OF SUCTION HOSE THREADS

RESOLVED: That the New England Fire Chiefs Association be recorded in favor of adopting a standard thread for all suction hose connections and to that end recommends for all purchases of pumping engines that suction inlets and hose be furnished with 4½-inch (American) standard threads.

Be it further RESOLVED: That each fire department take appropriate steps to make existing suction hose threads conform to this standard.

(Motion seconded.)

PRESIDENT RANDLETTE: I think perhaps it might be well if we allow Mr. Charnock to word that resolution if that is agreeable to the Association. All in favor say yes, all opposed say no. It is so voted.

That is the last on our program this afternoon, gentlemen, and I want to take this time to personally thank you for your attendance and remind you that our next meeting is at nine o'clock tomorrow morning and have you keep in mind that the speakers who come here to present papers have gone to a great deal of trouble for us.

CHIEF SANBORN, Portland, Maine: I move that we give Mr. Charnock a rising vote of thanks for his paper and that it be placed on the record.

(Motion seconded and carried.)

WEDNESDAY, JUNE 22
9 A. M.

VICE PRESIDENT BURNS: Please come to order. We will open the morning session with a paper from Joe Randlette on Fourth of July experiences.

ADDRESS
JULY 4TH FIREWORKS

By Chief J. W. Randlette
Richmond, Maine
President, New England Association of Fire Chiefs

Mr. President and Members of the Association: For many years I have been very much interested in the customary practices which we employ in the celebration of our Independence Day, July 4th, and when invited by the Massachusetts Safety Council to present a paper at their meeting in Boston last spring, which was left to my own choice, I selected the subject of "Fourth of July Fireworks," and it is because of that paper that I have been requested to repeat it at this convention. But as I did not retain my notes of the paper presented at Boston, I cannot very well repeat it, but perhaps I may be able to give you some interesting facts on the subject with some suggestions for your consideration.

Perhaps some of you may recall the record which 1909 made in the annals of Fourth of July celebrations. In this year there were in the United States 215 deaths and 5092 injuries due to fireworks and more than one million dollars damage in fire losses. Again in 1935, 30 persons were killed and 7738 persons injured. This did not include the deaths that occurred in the two weeks following the holiday,

and the fire losses were comparable to the year 1909. Of the 30 persons killed in the year 1935, 19 of them were children under the age of fifteen years and of the 7738 injured 1760 were children under that age.

During the 30 years from 1900 to 1930 what statistics it has been possible to accumulate shows that there were more people killed, fourteen times as many injured, as were killed and injured in the Revolutionary War which established our Independence, and the fire losses have averaged in the same time about one million dollars.

I think you will agree with me that the number of personal injuries and property damage incurred is some method of celebrating our Independence.

In this discussion, however, this morning we are mostly concerned with our own New England States. The figures I have given previously are for the entire United States. I will not take the time to go back over a number of years but will give you some facts of recent years in relation to fire losses. Complete statistics for New England alone are not available, but these facts we do know, that in 1935 there were 360 fires with a loss of more than $200,000. In 1936 while the loss in the whole country was 2500 fires with a monetary loss of $580,000, in New England there were 240 fires with a property damage of $130,000 directly traceable to fireworks. In 1937 in New England there were 988 injuries as follows: Maine had 67; New Hampshire 40; Vermont 20; Massachusetts 376; Rhode Island 381 and Connecticut 104, with a property loss from fire amounting to $150,000 and six known deaths.

It is my opinion, and I think it must be yours, that such a tremendous loss of life and personal injuries, combined with the high property loss, is a challenge to public safety and fire officials of our New England States. In 1909 following the dreadful carnage of that year as previously given you, the National Fire Protection Association began a campaign for a rational observance of this national holiday, and the Fire Marshalls section of that organization drew up and the association has adopted a state law and municipal ordinance for the elimination of this public enemy, with the result that five or six states have already adopted a state wide law eliminating fireworks. New Jersey was the last state to adopt such a law and their experience is interesting. The interested associations in New Jersey which fought this law through the state legislature had a tough fight on their hands, and even after it passed the legislature they were faced with an injunction to show cause why they should not be restrained from enforcing it, but the court promptly denied the injunction and the court said, "The act is for the advancement of health and welfare of the people, and that the regulation of sale and posession of fireworks is perfectly within the police powers of the state. That was what the court of New Jersey said to that fireworks elimination law. Still they were further faced by another attempted injunction on the charge of confiscatory action of the legislature in which they did not get to first base, for again the court curtly upheld the law. Some idea of the effect of this law in New Jersey may be seen by comparing the figures of 1936 and 1937, the year the law passed. In 1936 there had been 200 casualties with $50,000 property loss. In 1937 fireworks accidents were almost eliminated, there being only 36 casualties, all classed as minor burns, and not a cent of property loss resulted from fireworks.

Now, gentlemen, such facts cannot help but impress upon you the fact that there is no such thing as harmless fireworks. More than two-thirds of the casualties that have occurred in the country were caused by the common firecracker, and the so-called harmless sparkler caused many casualties and a great many fatalities as

Chief CHARLES H. FRENCH, Board of Directors, Manchester, N. H.

well as fire, which brings us to the question, what are we going to do about it, and I hope that this phase of the subject will be fully discussed by you at my conclusion.

After a somewhat close study of the subject I am drawn to the opinion that it is useless for you and me to attempt the passage of municipal ordinances for the control of this menace to our people. You can readily understand that such ordinances must be uniform, and if adjacent communities do not unite, bootlegging of fireworks from the town out of control to the town in control must constantly be fought. There have been, however, successful municipalities in the control of fireworks, to the extent that they have been able to reduce the personal injuries and property loss, but have not been able to eliminate them. Bridgeport, Conn., from which our good friend Chief Burns comes, is an example of the municipal enforcement of a fireworks ordinance. Baltimore, Maryland, is another and there are probably some others.

The only successful method, I believe, is the enactment of state laws that control the whole state. In such a move we would have the support of the Pyrotechnic Industries, Inc., which is an association of fireworks manufacturers which produce about ninety percent of the fireworks made in the United States and about fifty percent of those sold, and it is the opinion of this association (referring to the Pyrotechnic association) that the logical point of regulation is the source of supply, and that they are in accord with the elimination of those fireworks which are the cause of so many accidents and fires. In other words, they do not wish to see small fireworks but are forced to by popular demand.

Now I have possibly a suggestion for your consideration in regard to the elimination of small fireworks. The New England Association of Fire Chiefs is a powerful organization extending over the entire New England States. What better medium have we as a nucleus to promulgate the enactment of state laws for the elimination of the common fireworks? The Fire Marshalls section of the National Fire Protection Association have adopted a uniform state law, which is available as, and which was the law enacted in New Jersey, Iowa and Michigan. This law limits the use and sale of fireworks to displays only and that under the direction of a competent supervisor.

I believe that we should make a New England wide effort in this direction, that the passage of individual state laws without a united effort for the passage of uniform laws in all the New England states would not accomplish our object, because the bootlegging of fireworks by sales organizations and individuals from the uncontrolled state to the controlled state would be detrimental. But with a united effort on the part of the officials of each New England State, with each state giving its support to each other state, we would eventually gain our objective I realize that it would be a long fight. It probably would not become effective throughout the New England States inside of five years. I do however believe that results could be accomplished if this organization should see fit to promulgate the enactment of state laws. But not alone if we should see fit to start a campaign, we should I believe enlist the co-operation of the New England Police Chiefs' Association and the State Fire Marshalls of the New England States, and we know we have the co-operation of the National Fire Protection Association, and by frequent conferences of the above organizations ways and means could be worked out for the passage of uniform state laws for the elimination of those fireworks which cause so much suffering and loss of life and property damage to our people.

We as a Fire Chiefs organization are constantly working for the prevention of fire and property loss. In what direction could we more forcefully bring about the

added safety to our people and the elimination of property loss than by the elimination of the small fireworks. I thank you.

VICE PRESIDENT BURNS: You have heard this splendid address by Chief Randlette. What is your pleasure, gentlemen?

MEMBER: I move that the paper be accepted and placed on file.

(Motion seconded and carried.)

VICE PRESIDENT BURNS: The Secretary would like to read some telegrams.

SECRETARY O'HEARN: Mr. President and Members of the Association, I have a telegram from Roger W. Babson: "Sorry can't be with you but duties here as moderator of great church gathering makes it impossible. Best wishes to you and all the Chiefs."

One from the Chief of the fire department at Redrock, Ontario:

"Regret that I cannot be with you at the convention. Kindly extend to the association my best wishes and good luck to you all.

GEORGE C. MAITLAND,
Chief of the Fire Department."

Chief Maitland is a member of our Association.

One from the Lieutenant Governor of the State of Vermont:

"Greetings to my friends of the New England Fire Chiefs' convention. Best wishes for a fine meeting today.

WILLIAM H. WILLS,
Lieutenant Governor."

One from M. Norcross Stratton of the Department of Education, Massachusetts:

"Regret that pressure of business prevents my attending the convention. Regards to Mr. Cushman.

M. NORCROSS STRATTON."

One from Nell Anthony, Washington, D. C.:

"Please extend my warmest greetings to all. I sincerely regret I cannot be with you. There is nothing I would enjoy more than being in beautiful Vermont with such a grand group of people as the members and guests of the New England Chiefs' Association."

One from George Richardson, Secretary International Association of Fire Fighters:

"I regret that engagements make it impossible for me to attend your convention this year. May I extend best wishes for a successful convention.

GEORGE J. RICHARDSON."

We have one from the Fire Marshal at Waterbury, Conn., one in which he writes me concerning the illness of Captain Russell who has been a very fine worker in our Association:

"I am writing to inform you that Captain William G. Russell of the Staff of the Fire Marshal, Waterbury, Conn., and a member of the New England Association of Fire Chiefs, will miss the coming convention for the first time in its years of existence, the first, I think. Just now he is at the Waterbury Hospital, to which institution he was returned early in the week. His illness is a general breakdown of his system, no doubt brought about by his work, in part, at least.

"But he has been such an enthusiastic booster for the organization of which you are its Secretary, I felt a sort of obligation to write and tell you of his present condition, for no particular purpose other than to make you personally acquainted with the situation, so that you may tell some of his friends, if you so wish.

"He is associated with me in the work of the Fire Marshal's office, a true and conscientious worker, a good and loyal friend, and an outstanding asset as an acquaintance.

"His heart throbs at his inability to attend the coming convention at Burlington, because he yearns for a renewal of the friendship of the delegates of past conventions.

"Captain Russell has sung the praises of your association almost from the House-tops, and his absence will necessarily deprive us of a whole lot of valuable information he imparted following similar gatherings. He is indeed a worthy member of your association, and naturally we of the Marshal's office always gloried in his association.

DAN LAHEY,
The Fire Marshal."

SECRETARY O'HEARN: Each year we give the exhibitors an opportunity to speak here from the platform or present any story they may have in relation to the goods they are exhibiting. I have a paper on one, it is not very lengthy, one of the exhibitors asked me to read it. Naturally it brings in the name of his product. We say he is not commercializing because he is here exhibiting his product with us. We have one other—You will notice the screen is set up, and later I will call on a gentleman here to show us what he believes is the latest thing in non-skid tires. His talk won't take over five or six minutes, and if there is no objection, I will read this paper at this time in relation to life nets. The time seems opportune, there is so much educational work going on and so much drilling.

ESSAY ON ROPE TRAINING NETS

Prepared by WILLIAM MOELLER of the Atlas
Fire Equipment Company

The importance of having a rope Life Saving net with every Drill Tower is obvious and has been discussed through various channels, first by the International Association of Fire Chiefs, then by the National Board of Underwriters and lately by the Federal Agencies through the Universities.

It is further obvious that the International Association, joining in the efforts of the Federal Agencies for regional training and the safety of firemen and the

Chief OLIVER T. SANBORN, Board of Directors, Portland, Me.

public at large, has renewed the interest of the Fire department for proper equipment.

While the necessity of a Life Saving Net for a Training Tower has been established and accepted, there is still a difference of opinion as to the construction of a rope net and the hanging of the so-called Life Saving Net for the Training Tower.

When the layman sees a Circus Net stretched under a Tightrope Walker or a Trapeze Performer, he does not see the difference in the hanging of the nets. He only assumes that if the acrobat should fall the net would receive him and restore him back on his perpendicular. Actually, the layman claims no knowledge of the functioning or construction of nets. The same applies to the firemen. He trusts and depends on the judgment of his superior officers, taking it for granted that the net stretched under him will save his life and limbs in case of an accident. There have been too many instances in which a fireman has fallen into a supposed Life Saving Net but nevertheless has been fatally injured. Hence the question, apparently absurd but a very important question, "When is a rope life saving net a life saving net?"

Let us consider this very important problem from the first element that must be taken in consideration when a rope net is designed; let us see the amount of work or stress to which the net is submitted when a body falls on it.

For safety purposes, it is always convenient to assume the worst of the cases, or in other words, that a man weighing 160 pounds fell accidentally on a net from a height of 60 feet. From that height and with such a weight, when the body reaches the net it has assumed such a velocity as to cause a terrific impact, which would be approximately 18,000 pounds. Have you ever stopped to consider what may be the reaction of a common stretched rope net under such a stroke? And have you, above all, ever thought of the reaction that takes place in the very body that falls?

I can visualize from here, Fire Chiefs and Drill Masters watching confidently their men following their perilous routine up high above the net..... Truly, gentlemen, your rope net, your commonly stretched rope net gives you and your men a sense of security, a sense of easiness..... But how far is this confidence, this easiness justified? Have you ever seen a man fall from 60 feet and land in one of those stretched rope nets? If you did, I am sure there must be something very sad in your remembrance, and if you did not..... well, I wish with all my heart that you never will.

The writer has made it a point to study the manufacture of nets, the safety devices if any and the so-called rig-up. Much to my surprise, I have found that the nets in use by many Fire Departments were actually poor copies of nets used by Circus Trapeze artists..... rope nets, perfectly horizontal, rigid and tight as a set of harp strings. Upon my examination of these nets, I have made the remark, "I would not like to see anyone fall into that net." Invariably, the Chief or Drill Master would reply, "So would I, but this is the best net I know of."

Chiefs and Drill Masters, these nets are *not* safety nets and you know it. You could not expect a man to fall from a height of 60 feet and go home to his family with his own limbs, because you know that the safety element of your net is zero. Therefore, it must be understood that the natural elasticity of the rope is not sufficient to absorb enough amount of the impact's force so as to prevent injury. The problem, consequently, was that to obtain a balanced elasticity, to find some means that would give the net the necessary resiliency capable of absorbing the greatest part of the impact and to minimize the rebound. We have

solved this problem, simply by combining the knowledge of good seamanship with the requirements of safety by the Fire Department.

The new net is interwoven, equalizing its strength and combined with the new *Atlas Shock Absorbers*. The seizing is eliminated entirely. The *Atlas Shock Absorber* acts precisely as its name implies, no matter how great the impact, yet allowing as many men to walk on the net as the exercise requires (usually between 10 to 20 men), the ropes equilibrated in relation to the weight that acts upon them.

This equilibrium of balancing characteristics is due to the wide range of efficiency which permits the *Atlas Shock Absorbers* to be effective in any possible case; that is, from the mere weight of a single man walking on the net to the impact of a body falling from a great height.

Now to the proof of our assertions. Not so long ago a rookie weighing 175 pounds fell with his belt attached to a scaling ladder (the total weight being 225 pounds) into an *Atlas Training Net* from a height of 45 feet. He *walked* away. The other, a fireman weighing 165 pounds intended to slide from a height of 52 feet, slipped and fell, landing in an *Atlas Training Net.* He claimed he actually got a kick out of the fall.

With the sincere hope that this paper has drawn your attention and that you agree with me that the *Atlas Fire Equipment Co.* has again brought something new for your consideration, you are cordially invited to examine our display where I will be ready to answer any question you may have.

SECRETARY O'HEARN: I would move you, sir, that the telegrams as read be received and made a part of the record.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: I don't want to impose upon you gentlemen this morning as we have many valuable papers that are on our program, but I was in hopes there would be come discussion on the paper I just read. I know we have with us this morning a man from Boston who has worked along that line and has some information about fireworks, and I do want to ask Mr. Percy Bugbee of the National Fire Protection Association to say just a few words on fireworks.

CHIEF REIF, New Haven, Conn.: I would like to say that we have a law in Connecticut in relation to fireworks.

NATIONAL FIRE PROTECTION ASSOCIATION

(*International*)

60 Batterymarch Street, Boston, Mass.

ADVANCE PUBLICATION OF PROPOSED

FIREWORKS LAW

Prepared by a Special Committee of the Fire Marshals' Section with the Concurrence of the Committee on Pyrotechnics and the Committee on Laws and Ordinances.

Presented at 16th annual convention of the New England Association of Fire Chiefs, Burlington, Vermont, June 21–22–23, 1938.

MODEL FIREWORKS LAW

This model state fireworks law and appended regulations have been prepared during the past year by a special committee of the Fire Marshals' Section in accordance with action taken at the 1937 annual meeting of the Section. In conformity with N.F.P.A. procedure the report has also been submitted to the Committee on Pyrotechnics and to the Committee on Laws and Ordinances. Legal opinion on the law has been obtained assuring its constitutionality.

Fire Marshals' Section Committee

J. Vincent Pyle, *Chairman*, State Fire Marshal, Iowa.
Clem Smith, State Marshal, Indiana.
Edward J. Burrill, Asst. State Fire Marshal, Michigan.

Committee on Pyrotechnics

George W. Elliott, *Chairman*, Philadelphia Chamber of Commerce.
Charles P. Beistle, Bureau of Explosives.
E. F. Coop, International Association of Fire Chiefs.
O. M. Henn, Michigan Inspection Bureau.
W. C. Hodges, Kansas Inspection Bureau.
R. G. Malone, Asociacion Cubana de Companias de Seguros Contra Incendio.
J. R. Peters, Railway Fire Protection Association.
George J. Richardson, International Association of Fire Fighters.
E. L. Sanders, Mutual Fire Insurance Association.
Paul W. Terry, Missouri Inspection Bureau.
J. K. Woolley, Washington Surveying and Rating Bureau.

[*This report has been submitted to ballot of the committee, which consists of eleven members, all of whom have voted affirmatively.*]

Committee on Laws and Ordinances

Franklin H. Wentworth, *Chairman;* H. T. Cartlidge, Geo. W. Elliott, W. E. Mallalieu, F. T. Moses.

[*This report has been submitted to ballot of the committee, which consists of five members, all of whom have voted affirmatively.*]

MODEL STATE FIREWORKS LAW

AN ACT to prohibit the sale, offering or exposing for sale of fireworks; defining fireworks and to regulate the manner of using fireworks, and to provide penalties for the violation of the provisions of the ACT.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF.....

1. The term fireworks shall mean and include any combustible or explosive composition, or any substance or combination of substances, or article prepared for the purpose of producing a visible or an audible effect by combustion, explosion, deflagration or detonation, and shall include blank cartridges, toy pistols, toy

Alton Hall Blackington

Furniture Warehouse at New London Where Sprinklers Were Opened to Halt Fire

cannons, toy canes, or toy guns in which explosives are used, the type of balloons which require fire underneath to propel the same, firecrackers, torpedoes, sky-rockets, Roman candles, Daygo bombs, sparklers or other fireworks of like construction and any fireworks containing any explosive or flammable compound, or any tablets or other device containing any explosive substance.

2. Except as hereinafter provided it shall be unlawful for any person, firm, co-partnership, or corporation to offer for sale, expose for sale, sell at retail, or use or explode any fireworks; provided that the State Fire Marshal* shall have power to adopt reasonable rules and regulations for the granting of permits for supervised public displays of fireworks by municipalities, fair associations, amusement parks, and other organizations or groups of individuals. Every such display shall be handled by a competent operator to be approved by the Chiefs of the police and Fire Departments of the municipality in which the display is to be held and shall be of such a character, and so located, discharged or fired as in the opinion of the Chief of the Fire Department, after proper inspection, shall not be hazardous to property or endanger any person or persons. Application for permits shall be made in writing at least fifteen (15) days in advance of the date of the display. After such privilege shall have been granted, sales, possession, use and distribution of fireworks for such display shall be lawful for that purpose only. No permit granted hereunder shall be transferable.

3. The governing body of the municipality shall require a bond deemed adequate by the municipality from the licensee in a sum not less than five hundred dollars conditioned for the payment of all damages which may be caused either to a person or to property by reason of the licensed display, and arising from any acts of the licensee, his agents, employees or subcontractors.

4. Nothing in this act shall be construed to prohibit any resident wholesaler, dealer, or jobber to sell at wholesale such fireworks as are not herein prohibited; or the sale of any kind of fireworks provided the same are to be shipped directly out of state; or the use of fireworks by railroads or other transportation agencies for signal purposes of illumination, or the sale or use of blank cartridges for a show or theater, or for signal or ceremonial purposes in athletics or sports, or for use by military organizations.

5. The State Fire Marshal shall seize, take, remove, or cause to be removed at the expense of the owner all stocks of fireworks or combustibles offered or exposed for sale, stored, or held in violation of this act.

6. Any person, firm, co-partnership, or corporation violating the provisions of this act shall be guilty of a misdemeanor and upon conviction thereof shall be pubished by a fine not exceeding one hundred dollars or by imprisonment in the county jail not exceeding ninety days, or by both such fine and imprisonment.

7. Any provision of any act in this State inconsistent with any provision of this act is hereby repealed.

8. This act shall take effect immediately.

*The State Fire Marshal may delegate his authority to the local municipal authorities.

APPENDIX

The following advisory regulations are presented as typical of the type of regulations which may be promulgated by a state fire marshal under the authority of this law. These regulations are intended to place the administrative detail in the hands of the local authorities; where it is desired to have administrative detail handled in the state fire marshal's office the provisions must be modified accordingly.

REGULATIONS OF THE STATE FIRE MARSHAL FOR THE PUBLIC DISPLAY OF FIREWORKS

Application for Permits

1. Application for permit to operate a public display of fireworks in conformance with the terms of.....of the General Laws of.....shall be made in writing to the chief of the fire department of the city, town or municipality in or near which the display is to be held.

2. Such application shall set forth:

   (a) The name of the organization sponsoring the display together with th e names of persons actually in charge of the firing of the display.

   (b) The date and time of day at which the display is to be held.

   (c) The exact location planned for the display.

   (d) A description setting forth the age, experience, and physical characteristics of the persons who are to do the actual discharging of the fireworks.

   (e) The numbers and kinds of fireworks to be discharged.

   (f) The manner and place of storage of such fireworks prior to the display.

   (g) A diagram of the grounds on which the display is to be held showing the point at which the fireworks are to be discharged, the location of all buildings, highways and other lines of communication, the lines behind which the audience will be restrained, and the location of all nearby trees, telegraph or telephone lines or other overhead obstruction.

3. Upon receipt of such application at least 15 days in advance of the date set for the display, the chief of the fire department shall make, or cause to be made an investigation of the site of the proposed display for the purpose of determining whether the provisions of these regulations are complied with in the case of the particular display. He shall confer with the chief of the police department for the purpose of determining the competence of the actual operators of the display as set forth in the application. Being satisfied that the display is properly lawful, the chiefs of the police and fire departments shall together issue a certificate of compliance signed by each, stating that they endorse the display as being in conformance with all parts of the law and with these regulations.

4. The certificate of compliance shall be sent to the clerk of the municipality

who shall then, upon receipt of the public liability bond required by law in such cases, issue a non-transferable permit authorizing the display.

5. The chief of the fire department or the chief of the police department or both shall have the power to deny any application for a permit to discharge fireworks in public display upon showing just cause for such denial.

Conduct of Display

6. Public display of fireworks shall be permitted only when the actual point at which the fireworks are to be fired is at least 200 feet from the nearest permanent building, public highway or railroad or other means of travel, or 50 feet from the nearest above ground telephone or telegraph line, tree, or other overhead obstruction.

7. The audience at a public display of fireworks shall be restrained behind lines at least 150 feet from the point at which the fireworks are discharged, and only persons in active charge of the display shall be allowed inside these lines.

8. All fireworks that fire a projectile shall be so set up that the projectile will go into the air as nearly as possible in a vertical direction, PROVIDED that where such fireworks are to be fired beside a lake or other large body of water they may be directed in such a manner that the falling residue from the deflagration will fall into the said body of water.

9. Any fireworks that remain unfired after the display is concluded shall be immediately disposed of in a way safe for the particular type of fireworks remaining.

10. No fireworks display shall be held during any wind storm in which the wind reaches a velocity of more than 30 miles per hour. In such cases the chief of the fire department may authorize the display at a future date suitable to the association holding the display.

Qualification of Operators

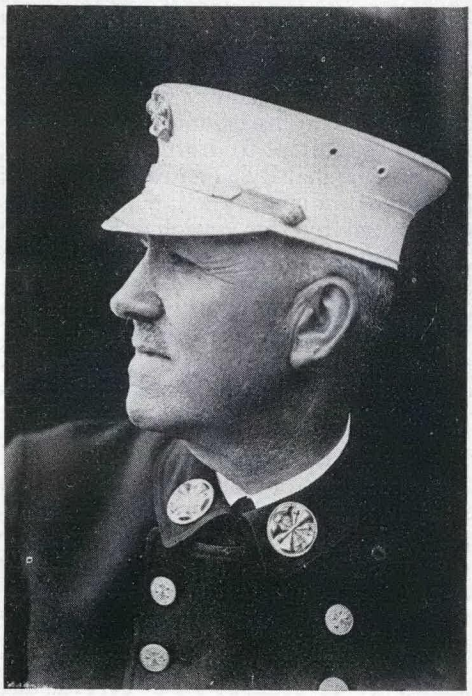
11. The persons in actual charge of the firing of fireworks in a public display shall be able-bodied men of at least 18 years of age, and competent for the task.

12. There shall be at all times at least two operators of the display constantly on duty during the discharge.

General

13. At least two soda-acid type fire extinguishers of at least 2½ gallons capacity each shall be kept at as widely separated points as possible within the actual area in which the discharging is being done.

14. All disputes arising as a result of the administration of these rules and regulations shall be referred to the state fire marshal, who shall be the final authority in all cases.



Chief A. J. COTE, Board of Directors, Woonsocket, R. I.

REMARKS

By Percy Bugbee

Assistant Managing Director, National Fire Protection Association

Chief Randlette asked me to attend this meeting to tell you something about the model state fireworks law recently adopted by the National Fire Protection Association and referred to by him in his excellent address.

Some years ago the Fire Marshals Association of North America which comprised the United States and Canadian Provincial Fire Marshals, became a section of our Association and I have been serving as its secretary since that time. About two years ago Spencer, Iowa, had a disastrous conflagration with a loss of nearly a million dollars caused by an explosion of fireworks in a store in that city. As a result of this, the state fire marshal of Iowa became actively interested in the problem and secured the adoption of an adequate state law controlling fireworks in his state. The fire marshal of Iowa addressed our fire marshals' meeting in Chicago a year ago and described the work he had done in his state and the fire marshals decided to appoint a special committee to draft a model fireworks law. The committee was composed of Fire Marshal Pyle of Iowa, Fire Marshal Burrill of Michigan, and Fire Marshal Smith of Indiana. The law which they drafted and which is the one that has been adopted by the National Fire Protection Association is based on the good fireworks laws now in existence in Iowa, New Jersey and Michigan. The provisions of this law were subjected to competent legal authorities for their consideration and the law has the approval of the National Fire Protection Association's Committee on Pyrotechnics and the National Fire Protection Association's Committee on Laws and Ordinances. It has been widely circulated for comment and criticism and it is believed that it covers the features that should be covered in such a state law.

While hundreds of cities have adopted local ordinances and these ordinances have had good effect, it is perfectly obvious that the fireworks people can set up stands just outside the city limits and sell their wares, thereby defeating in part the effect of a city ordinance. We have come to the conclusion as the the fire marshals that a state law is the only proper answer. The law that we propose is short and to the point and does not put the fireworks manufacturers out of business. I will read the provision to you:

"It shall be unlawful for any person, firm, co-partnership, or corporation to offer for sale, expose for sale, sell at retail, or use or explode any fireworks; provided that the State Fire Marshal shall have power to adopt reasonable rules and regulations for the granting of permits for supervised public displays of fireworks by municipalities, fair associations, amusement parks, and other organizations or groups of individuals. Every such display shall be handled by a competent operator to be approved by the Chiefs of the Police and Fire Departments of the municipality in which the display is to be held and shall be of such a character, and so located, discharged or fired as in the opinion of the Chief of the Fire Department, after proper inspection, shall not be hazardous to property or endanger any person or persons."

The law further provides that whoever secures a license for public display of fireworks shall be required to publish a bond in a sum not less than five hundred dollars for injury of any person or property by reason of the public display. The other provisions are just provisions as to penalties.

You will see from looking it over that it permits the use of properly supervised public displays of fireworks and such public displays of fireworks will be greatly increased if a law of this character is adopted.

It would seem to me a very fine thing if the New England Association of Fire Chiefs would endorse this model fireworks law and would work with the fire marshals in the respective New England states to secure its adoption by the respective state legislature.

PRESIDENT RANDLETTE: Is there any further discussion? I wonder if there is anybody here from Rhode Island can tell any effect of the fire marshal's bill that went into the last legislature. He had a bill that went into the last legislative session. I wonder if anybody can tell me the result of that. Do you know, Chief Cote, whether that bill got to first base or not?

MR. BUGBEE: The bill was defeated in the legislature and will be presented by the fire marshal at the next session.

MEMBER: I would like to state the matter of that law was brought up in the legislature in Connecticut last December but we were unable to get it passed but we have not given up hope and would like to get it put through in Connecticut, legislate it into law and then pass the buck over to the cities, towns and boroughs to enact an ordinance to take care of it.

CHIEF POPE, Boston, Mass.: I think the time has come when this organization should at least express its opinion as to whether or not they stand for the sale and use of fireworks by small children and people who are not competent to use those fireworks. I have with a great deal of interest listened to your paper, and I know from my own experience no later than last seventeenth of June I had occasion to respond to a very serious fire which took place in my city that was caused by fireworks and I for one feel that the time has come, and if in order, I will make a resolution that the opinion of this assembly be expressed, I make it in the form of a motion that this organization get back of the model fireworks law as propounded by the National Fire Protection Association. I think it is high time something was done, and in the end I think it will only be a means of eventually saving the business of the fireworks manufacturers. If you will accept that as a motion, I will be glad to hear an expression of opinion.

CHIEF ALLEN, Brookline, Mass.: The question arises in my mind of the size of the bond required for exhibition purposes. In these days we are having suits filed for twenty-five thousand dollars for damages. I believe that the bond is an insignificant sum and should be raised to something like five or ten thousand dollars. I believe it is a serious difficulty to be corrected before it is passed upon.

MR. BUGBEE: I would like to read this section. It says: "The governing body of the municipality shall require a bond deemed adequate by the municipality from the licensee in a sum not less than five hundred dollars." In other words, any city or town or state itself may make it right.

CHIEF ALLEN, Brookline, Mass.: I still think that minimum is too low.

(Motion seconded.)

PRESIDENT RANDLETTE: Any further discussion before the question is put? Are you ready for the question? (motion put to vote.) It is a unanimous vote.

Is there any other action the Association wishes to take in regard to continuing the work of our Association in relation with the work of the National Fire Protection

Association. It would seem to me if the Association approved it might be well to have a standing committee that the National Fire Protection Association could call on, knowing we are behind them, in case they want assistance from this Association, but that is up to you gentlemen. Perhaps the resolution is sufficient. If there is no further action, we will continue with the program.

For many years in Maine the fire chiefs were somewhat handicapped in their work of incendiarism by failing to have the support of the State Department. Many of you have already heard me say we now have a man in Maine who has the courage of his convictions and who in the short time that he has occupied the official position of Fire Marshal and State Insurance Commissioner has, to use one phrase, gone places and he is still going. And it is indeed a pleasure for me this morning, gentlemen, to introduce to you the Honorable C. W. Lovejoy, Insurance Commissioner of the State of Maine.

ADDRESS

By C. W. Lovejoy

Insurance Commissioner and State Fire Marshal, Augusta, Maine

Mr. President and Members of the Association and Guests: Conventions are very much the same; that is, we have to have speeches and talks of that type. It is something like going fishing; some fool wants to take along a fish rod.

I want to talk to you more or less briefly about something I feel is very important, although it is very simple. It is the question of co-operation. It is a term which is much abused, maligned; something you hear in every type of organization, that we should have co-operation with this group and that portion of the group, but in this particular instance if we don't have co-operation we are at loose ends. I in my department can do little. Any other fire marshal can do little without the hearty co-operation of you men who are in the field, so to speak.

I am very pleased to say that in Maine where this work, as Chief Randlette has said, is comparatively new we are getting what I would term one hundred percent co-operation. It is indeed a pleasure to work with the men there and to endeavor to do what we can to accomplish a reasonable result. What little measure of success we may have had in the last few months—we have only been at it about six—is due to the grand help and friendliness of our chiefs. We in the Department can't get along without it, and by the same token you can't get a good job done unless you and your departments give it.

Municipalities in New England spend vast sums of money for equipment but this thing I am discussing, namely, co-operation, doesn't cost a cent and it is the only way that incendiary fires can be reduced.

So that we may get a clear picture I am going to discuss your job and mine as I see them.

First, your job is to prevent fires if possible and I will offer a suggestion or two on that later.

Second, when a fire occurs you should first prevent loss of life or limb; second, you should bend every effort toward prevention of destruction of property both through extinction and salvage; third, you and your men should take notice of any and all information that might give a clue as to cause. You are all more familiar

Vermont and Maine.—Remember them?
CHIEF A. H. KOLTONSKI—CHIEF T. SANBORN
Rutland, Vt. Portland, Me.

than I with the first two parts of your work but this third part will bear analysis and discussion.

You as chiefs naturally can't see, hear and smell everything that is going on, so that it is most important that you train your men to use their heads and to report all details to you, no matter how trivial. Many a good case hangs by a very slender thread and an observation by a fireman may mean breaking it.

Did there appear to be more than one fire in the building?

Was anything noticed about the fire that was unusual both as to character of flame or burning of materials after extinction?

Did the contents appear to be normal?

How did the owner or occupants act during the fire and after it?

Were any remarks made by anyone during or after the fire that were overheard?

Here is another important thing to remember. You and your men because of your training and experience can qualify in any court as experts and can therefore give an opinion that has force and effect. You should therefore investigate and form a definite opinion, with reason, so that you can give it intelligently if called upon to do so.

There is no fire too small or too honest to bear inspection and reasonable investigation, for all too often an innocent appearing fire may have a whale of a lot back of it, and to do this job well it must be done thoroughly.

If you can help it, don't let anyone get away with anything. You must continually remember that a torch regardless of type is the next thing to a murderer, in many cases they are synonymous, and merits the same consideration. Along that line to illustrate the point we have one case in which an indictment has been returned by our Grand Jury for arson and manslaughter, murder, and another which I anticipate will return the same indictment, all happening within a period of three weeks.

All evidence must be preserved as carefully as possible, and when it can be arranged it should not be disturbed until photographed. Doubtless the best rule to follow is to post a guard and call for an investigator. With a so-called hot case we will have a man on the job in a few hours and other departments doubtless will do the same. In any event when you have a case give immediate notice and it will help tremendously.

I think Chief Randlette can bear me out in that. He called me one morning and said he had a fire that apparently needed investigation and within two hours we were down there on the job.

If you can help it, don't permit an arrest until an investigator is on the job because many a case has been spoiled by a quick pinch. Remember any cop, either Keystone or otherwise, can make an arrest but it takes real evidence to get a conviction. Many avenues of obtaining information and evidence stop when an arrest is made, so don't be hasty.

I have talked a lot about your job. Now what is mine?

I think it is to have a corps of trained investigators available to assist you at any and all times, men who are capable of taking the information you have for them and carrying the investigation to a logical conclusion.

I don't mind telling you that this is no small order, but plainly speaking we are only too willing to do our best to fulfill our part of the bargain. We and other departments will co-operate with you if you will co-operate with us.

We further have done something in our state which is at least interesting, the comments are very interesting and clarifying, and that is the publication of what we call for want of a better term the Torch. It has been received very favorably. It brings out information of what we have done the previous month. It is a means of getting over to the men in our state our story and what has been happening. I think other departments might do the same and I think it would be appreciated in the various states.

Arson investigation is a very interesting work. It has more angles than anyone can imagine and there doesn't appear to be any rhyme or reason to it. There is of course a general pattern to follow, but cases are so unlike in character that a great deal of intelligence and patience is required for a successful handling.

You are all familiar with the types, of course; that is, fraud, burning for financial gain; spite, burning to get even with somebody; and pyromania, burning without rhyme or reason because of mental deficiency, each of course having its own characteristics and requiring its own type of investigation.

It is not necessary to have motive where exclusive opportunity can be shown. There are some very good Supreme Court cases along that line and in point with this particular statement. We have a case now I anticipate being tried where exclusive opportunity will be shown in order to establish ground. There were two fires in this building when the fire department arrived, one in one room and one in another, both in beer cases, and had caused some burning although not very much destruction to the property itself. The man who owned the property had as far as we know and according to his own statement the only key to the place. This particular fire department was smart in my opinion. They immediately investigated to see whether or not all doors and windows, all methods of getting in and out of the building, were locked and they were. It is going to be a very interesting case to see how an individual will explain how there were two fires in this building and how they occurred in his building when he had the only key. The motive is more or less crowded. I think we will more or less hang him, and I hope so.

Science plays a most important part in investigation and briefly I want to outline a case we had which clearly shows this point. I was called on the phone early one Sunday morning and told about a case in a town near my own home town. This farm had burned. In the house were the owner, his wife and two children, a woman and child whom they had taken in just through pure kindness to take care of them because of the fact that the husband had more or less deserted them and left them on their own. He had made statements of what he was going to do to anybody who harbored them. He was a very kind sort of individual, and he was picked up. We found on investigation—of course the building was completely destroyed—no definite evidence of incendiarism. We did find, however, that the car which was the only car available, a truck right near the house, could not be moved; its distributor cap had been taken off.

We also found, this being a farming section, that the only line into this place had been cut at the pole perhaps two or three hundred years from the main dwelling where it joined the main farmers' line. Somebody climbed this pole and cut the wire so there was no outside means of communication. In fact, the people did try to phone to get somebody to assist them, but they almost had to run for their lives

Fortunately one did waken so they did get out without loss of life, although it was doubtless the intent to see these people burned alive.

We took samples of this bark on this cedar pole and the brush, the bushes in and about the bottom of the pole. We also took the two ends of the wire that had been cut. We picked up the car of this individual whom we had under suspicion, searched it, found several pairs of pliers. We took these pliers and the various evidence, took them to the department of identification, which is handled by our state police and I am pleased to say very competently, and asked him to go to work on what we had. We also took the pants from this fellow, his shoes and rubbers and so forth and found small bits of bark, very minute, and other scrapings which we took down.

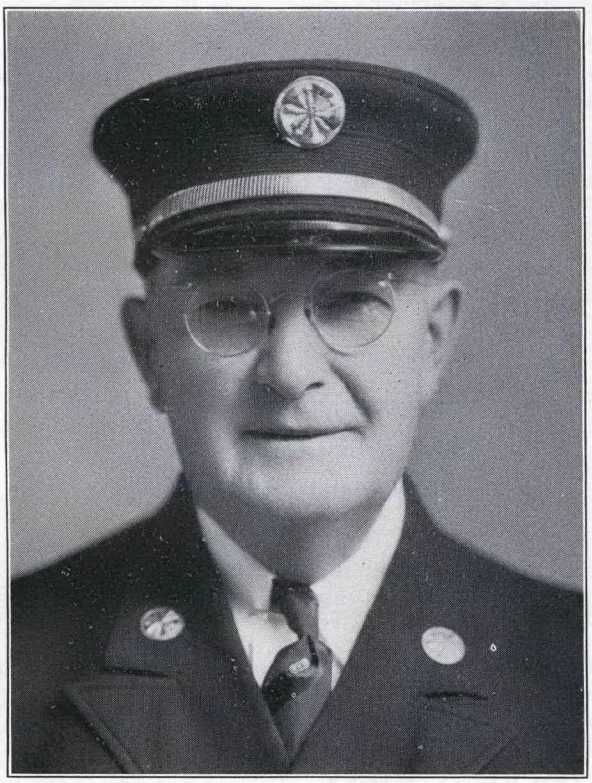
They put the known samples under the microscope and compared them with the unknown. We have here, I am going to pass these around because it is most interesting and because I believe it is one of the two technical cases mentioned in the annual report of the National Board of Fire Underwriters as one outstanding technical case, pictures of the bark. These are enlarged several times and you can see the comparison of the known and the unknown as to fibre and type and so forth, bringing about a definite identification of the sample from the pole and that taken from the man's clothing. It is the only time so far as we can find out that bark was ever used as evidence in the conviction of a criminal. They have used wood on many occasions, but as far as we know they have never used bark.

We then took a sample—I say we— the department of identification took a sample at one end of the wire. These were magnified fifteen hundred times. They took a piece of lead which would show the markings very readily, which is this lower piece here, and cut it with pliers. We took all the pliers obtained from the car and a dozen others picked up in various places, and putting them under the microscope put these together as to the known sample of wire and the cuttings as shown here. You can follow the lines through and see it was the same cutting instrument that cut both samples. I know this evidence was good because this fellow got five to ten years. I would like to have you look these over because I know you will be very interested in it.

I said earlier in my talk that I wanted to outline an assistance that could be given fire departments in the matter of prevention. By the way, on the matter of prevention I am quite sold on it.

I am going to offer to our next legislature a bill which will provide for departmental inspection of public buildings as to fire hazards and safety. A nominal charge to defray expenses may be made in some instances as they do in other states but it is my sincere belief that much benefit can be obtained from them. This is particularly true in rural or small communities where chiefs are up against election and many other problems. Many of you fellows here don't realize that. Some of you may where you go to the owner of a piece of property and want to obtain a certain result and he finds a way to whisper in your ear that election is coming the first Tuesday of such and such a month and "it would be a good idea to lay off me for this year." That is a fact and it is a real problem with our boys in certain sections, particularly in the small communities.

The inspection would be routine and also special if needed, and a follow-up would be made to see that the recommendations were completed within a reasonable time. These inspections would be made in company with the chief where possible so that he would have full knowledge and he would be furnished with a copy of it and the recommendations when made.



Chief JAMES A. DOWNEY, Director, Wallingford, Conn.

I believe this thought could well apply to each of the three northern states and would be of real benefit and help to you men who give so much of your time and energy to this big problem of fire prevention. It is simply another thought along the line of co-operation.

Thank you.

PRESIDENT RANDLETTE: Any discussion of Commissioner Lovejoy's paper?

CHIEF POPE, Boston, Mass.: I move it be accepted and placed in the record.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: We had in Maine this spring a rather unusual fire and explosion. There was not very much fire to it but it was an explosion that would be of interest to every fire chief of New England or anywhere, no matter where he might be, and it is fortunate that we are able this morning to have the chief of the city in which that explosion occurred here to explain to you men just what took place. It gives me pleasure to introduce to you Chief Scott Morse of Bath, Maine.

ADDRESS

GARAGE EXPLOSION AND ITS LESSON

(Explosion at Plant's Garage)

(Bath, Maine—March 1, 1938)

By Chief Scott Morse

Bath, Maine

Mr. President and Members of the New England Chiefs' Association: I wish to give you my personal impression of this explosion which happened in my town late this winter.

On the morning of March first the city of Bath, Maine, experienced the worst explosion in its history, causing instant death to two very estimable young men and injuring seven others, and when the smoke cleared away, nothing was left of a very substantial building but a mass of debris.

This garage was a building 100 feet long and 50 feet wide, with a tapering concrete wall, 18 inches thick at the bottom and 12 inches thick at the top for the foundation, which supported the 12-inch brick walls of the second story. The ground floor, or semi-basement, was used for storage purposes only, and had about 12 feet head room and only three windows in this whole area; this, of course, means poor ventilation. The second story was supported by five special I beams 30 inches deep and 1⅛ inches thick, running transversely from wall to wall. On top of these was a four-inch re-enforced concrete floor. There were abundant windows in this floor, but they were of steel frame type and were a very tight fit.

The roof was of the truss bar type and covered with 1″ matched boards, over which was a covering of tar and gravel. This floor was used for showroom and work shop, also office, storeroom, and toilet. The partitions of these were made of

4″ x 3″ studding, over which was metal lathing covered with hard plaster. Entrance to the workshop was gained by a ramp from the yard at the basement level and a large substantial door admitted cars from this ramp. There was no other method of ventilation other than the windows and doors. The front was practically all glass. This explanation of the building's construction and its tightness is simply to call to your attention the fact that this place was a perfect gas accumulator.

This garage had its own heating apparatus and contained in a fireproof room made of terra-cotta brick and having metal covered door. This compartment was in one corner of the basement.

The hours of this garage at that time of year were 7:00 A. M. to 6:00 P. M., therefore being closed approximately thirteen hours out of each work day.

It was the custom of the employee opening the building for the day to enter from the street at the second story level and pass through the showroom, punch the time clock and proceed to the furnace room and open the drafts, then proceed to entrance at the basement level and open the big door and look into the yard to see if any cars were to come in, then have a smoke.

It has been positively established that this employee was in the building that morning and had opened the door and looked out and closed the door again. The man seeing this, walked about 35 feet when a terrific blast shook the whole city and incidentally blew the garage employee 165 feet, all tangled up with the steel door frame he had just closed about ten or fifteen seconds before.

At this time there were thirty motor vehicles in this garage, two of which belonged to a wholesale gas and oil concern and were of the tank type. One was used for delivering fuel oil and was empty and the other for gasolene and was partly full. It was stated by the owner that this was the case when the truck was driven into the garage the night before, to thaw out the brakes, as it was four below zero at the time of the fire.

It was very fortunate that this explosion happened at an early hour, as six or seven hundred men who work in an industrial plant nearby pass by this place four times a day, and twenty minutes later some two or three hundred persons would have been subjected to death or injury.

At 7:56 A. M., at the time this disaster occurred, as was proven by the severance of electric service, owing to part of the roof being blown through the wires, all electric clocks above this point stopped at above stated time.

Many persons were close to our fire alarm boxes 32 and 45, and within ten seconds after the explosion box 32 was pulled and successively followed by box 45, calling out the entire fire department of six pieces of apparatus and sixty-six men, six of whom are permanent. There was a terrible din and windows and plate glass was broken more than a quarter mile away. Incidentally, the doors of central fire were blown open and consequently two pieces of apparatus were on the way as the alarm started to come in. Nine lines of regulation hose were put in service and two laid in reserve. There was a great deal of fire in the center of the building; there seemed to be a great deal of free oil or gasolene there.

About this time, or approximately two or three minutes after the first alarm, a second explosion of much lesser intensity occurred, which we afterwards discovered was one compartment of the fuel oil truck. The first blast had blown the walls outward and, according to several eye witnesses, raised the roof as high as twenty-five feet and, of course, this came crashing down right in the middle of the

fire and added more fuel to the already fiercely blasing gasolene and oil. People were literally blown out of bed in nearby houses, and thousands of windows were shattered. We were advised at this time of the presence of the two tank wagons, and of course concentrated our energies on these, to prevent further explosions.

After the fire was under control we tried to discover the cause and started an examination of all vehicles in the garage. As no State, County or Municipal authorities seemed interested in an investigation, I proceeded to examine each and every car that came out of the disaster, and although they were very badly damaged, I found every one of them to have gasolene in their tanks but the one in the fuel oil truck, and that was empty and so badly smashed that I could not tell whether tank or gasolene line had been ruptured previous to the explosion or not. The center of the fire seemed to be directly around the front end of this truck. There was a slight indentation in the floor at this point which reached the entire width of the building and about twenty feet wide.

Therefore, it is my honest opinion that this very truck was the cause of this explosion. Due to the intense cold either the gas line froze and burst, or else the glass filter broke and permitted ten or twelve gallons of gasolene free to evaporate and become a highly volatile mixture, and when this employee opened the door, admitting sufficient fresh air, the perfect explosive mixture was present in great volume.

Assuming this young man employed in this garage did his customary duties, as described by other employees, this morning, I came to the conclusion that after closing the door just about enough time elapsed for him to take a cigarette from his pocket and place it in his mouth and strike a match with his thumb nail,—and then the resulting explosion. The fact that the front of this young man's face, below the eyes, was blown all away bears out my assumption, I think.

In conclusion, would state that I think that this convention should go on record to indorse such legislative action, or municipal ordinances, as would tend to promote compulsory ventilation and the installation of gas detectors in all garages, that this calamity could not befall another community as it did Bath.

I thank you, and if there are any who wish to ask any question in regard to this explosion, I will be glad to answer them to the best of my ability.

PRESIDENT RANDLETTE: Are there any questions anybody would like to ask Chief Morse? If not, the Chair awaits any motion.

CHIEF POPE, Boston, Mass.: I move it be accepted and placed in the record.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: In connection with the paper that Chief Scott Morse just gave you we had another case in Maine in which we hoped to have the chief here to talk to you about. I am not familiar myself with the details of this case but I have a set of pictures here which I am going to pass around which I think will be of interest to you. This was an explosion in Augusta in a place where they clean hats. These pictures can tell the story perhaps better than any words I can give you, but one thing particularly interesting in it—I am going to pass the pictures around—is the man that was working there when the explosion occurred and what is left of him. He had a five-gallon can of either gasoline or some high explosive and at the same time lit a cigarette. The other pictures show what occurred as far as fire was concerned, and I am going to pass them around so

Chief WILLIAM T. HAPPNY, Sergeant-at-Arms, Concord, N. H.

you can see it. Chief McCurdy of Augusta wasn't able to be here. We had had him on the program but at the last minute he had to call it off.

At this time we are going to take time for one of our exhibitors who will not occupy more than five minutes, and Mr. J. J. Buckley of the United States Rubber Company is going to show a picture of the Royal Master tire for safe driving.

TALK

By Mr. J. J. Buckley

Mr. President and Members: I appreciate this opportunity to be able to demonstrate to you the value of a safety tire brought out by the United States Rubber Company to cope with today's road conditions and to keep in pace with the many improvements in the automobile. We all know over the last decade we have seen many improvements by way of the four wheel brakes and shatter proof glass and many others, but we know the safety of the occupants depends one hundred percent on road contact, which is four rubber tires, and nothing has been done for many years to keep apace with the many road conditions and other improvements. The United States Rubber Company recognized this condition and have been working tirelessly for four years to bring out a skid controlled tire, a tire that will stop on a wet road better than any tire ever made. This tire is called a Royal Master Skid Control tire. This tire also contains a lifetime feature. It can be perpetuated by means of re-skidding. When the insurance company tells us that 5.6 percent of all accidents that happen on the highway are due to skidding and inability to stop quick enough, I think you will be interested in a tire that has skid control. This same feature is enjoyed in our truck tire which we believe will possible be interesting to you fire chiefs for your heavier apparatus.

The Royal Master tire is a passenger tire. We have many chiefs throughout New England and throughout the country who are riding on Royal Master tires. We have a booth downstairs showing the safety of the tire and I will now show you the picture which will take only five minutes.

(Motion picture shown by Mr. Buckley.)

PRESIDENT RANDLETTE: The next paper on the program; we are to hear from Mr. A. B. White, Chairman, Fire Protection Committee, National Association of Insurance Agents, and I know that you men will be very glad to hear from an insurance agent.

ADDRESS

HOW YOUR ASSOCIATION CAN HELP IN A NATION-WIDE FIRE PROTECTION PROGRAM

By A. B. White

Chairman, Fire Protection Committee, National Association of Insurance Agents

Mr. President, Members of the New England Association of Fire Chiefs, Guests: Perhaps I am a little more courageous than these men who have preceded me because I haven't transposed my thoughts onto paper. Perhaps I should have?

I think the thing to do is to use this mechanical gadget here although I have no need of it because I have plenty of training at home in yelling, if you know what I mean.

I come to you to speak on fire prevention very humbly because I don't have to be told that you men know more about it than I. However, it may be I have a connection with a fire prevention program which qualifies my appearance before you. When I got the invitation of your secretary to appear, I really didn't appreciate the extent and importance of your meetings, and I only had in mind that we had started out in a direction which shaped our program along the same direction as yours. Since that time I have had an opportunity to read from cover to cover the report of your convention at the Balsams and I more keenly appreciate the privilege of appearing before you. It is a privilege, but I will say frankly if I had my choice I would prefer to talk to the fire chiefs who are not here. You men are the progressive fire chiefs of New England and I would like to reach through you if it were possible the men in your sphere of activity who should follow these things as closely as you do.

I think perhaps I will tell you of our National Association. The National Association of Insurance Agents is parallel to your International Chiefs organization; it is national in scope. It is composed of upwards of one hundred thousand producing fire insurance agents and is parallel to the American Bankers Association and the American Bar Association and so forth. Last November Bill Menn, chairman of our executive committee, wrote me and said he would like to have me serve as chairman of the Fire Protection Committee. It was a challenge I could not deny.

I say as a matter of fact and not as criticism that our fire protection heretofore has been done as individuals and not as an organization. We conferred with the National Fire Protection Association, with various fire engineers and chiefs, with our own New Hampshire Rating Board personally, and everywhere we met this point that nowhere can this physical inspection of property be done and not advantageously affect the national fire loss ratio. And so the committee has a one point program which has been released to our membership, and that is co-operation with such men as you in the spread of physical inspection of property. I would like to break that down for just a moment.

There are of course hundreds of communities which have complete fire prevention departments that conduct extensive survey work and it is not those communities we can be of benefit to. You know right here in New England there are hundreds of communities who don't even carry on the first step of a mercantile inspection, and if we and your organization, working together, can interest those communities in furthering inspection, I think we will have done something worth while.

Then, too, there is one other direction in which we can bend our effort and that is in this way, that this fall I am advised by the National Fire Protection Association that Fire Prevention Week will more than ever stress dwelling house inspections, and it seems to me that those men in your organization who do want to extend their inspections to dwelling houses can be helped materially by the members of our organization and I pledge you that help. I say help for this reason. I think that the success of dwelling house inspections depends somewhat on a sympathetic public that is going to welcome your inspector when he comes to their front door, and I believe that we in the insurance fraternity can help you to crystallize that public sentiment.

That is in brief my message. We would like to interest communities who don't do it, in the first steps of property inspection. We would like to help where we can, in helping you if you undertake dwelling house inspections.

If I might ask a favor or make a suggestion, it would be that your executive committee consider the possibility in each of your state associations having a committee that would work with the chiefs who don't work so closely with you, who perhaps are due paying members or not members of your association, to interest them in starting on this problem of property inspections, for I think you will agree, those of you who follow this thing through, that it is one program that shows results, and if all over this country—and I may say that I had response from so many states I know something will be accomplished—if all over this country we can spread that work a little further, I am sure it will be worth while.

PRESIDENT RANDLETTE: Any discussion of Mr. White's paper? The Chair awaits any motion.

SECRETARY O'HEARN: I move you, sir, his address be spread upon the records.

(Motion seconded and carried.)

SECRETARY O'HEARN: And with that our thanks goes out to the speaker.

PRESIDENT RANDLETTE: We have just received a telegram from Massachusetts from the Fire Marshal and his assistant:

> "Circumstances over which we have no control makes it impossible for us to be present. Kindest regards, best wishes for a successful convention to all
>
> STEPHEN C. GARRITY, GEORGE O. MANSFIELD,
> Massachusetts State Fire Marshal and Assistant."

I want at this time while you are all present to call your attention to the convention picture which will be made on the City Hall steps at 1:45 this afternoon, and I would like you all to be present promptly at 1:45 including the ladies, and the reason we have made it this hour is because the ladies leave on buses in front of the hotel at two o'clock.

I also want to call the attention of the Auditing Committee that they audit the books at two o'clock. Also the boat ride at 7:30.

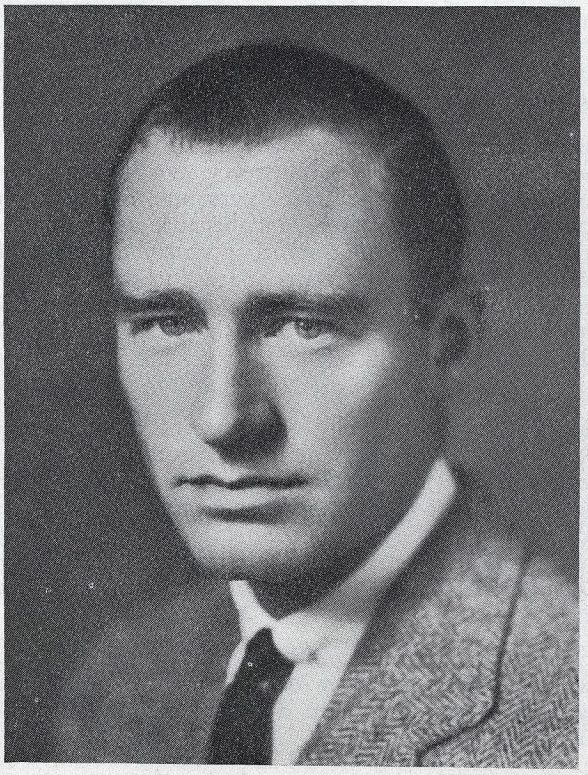
PRESIDENT RANDLETTE: The next topic on our program is to be given by a man who is not any stranger to you and one who has come a long way to be present at this convention, and it gives me pleasure to introduce Frank Cushman, Consultant in Vocational Education, Washington, D. C.

ADDRESS

BY FRANK CUSHMAN

Consultant in Vocational Education, Washington, D. C.

Mr. Chairman, Members of the New England Association of Fire Chiefs: There is supposed to be one advantage in being connected with the service of the federal government. This country is so large that a man doesn't often have to



Chief WILLIAM H. VANDERBILT
Oakland Farms, R. I.

GOVERNOR

State of Rhode Island

return to the same place at which he tried to do something in the past. I think I was in this hall about four years ago with Mr. Stratton and other representatives of vocational training from Massachusetts, and here I am again. It doesn't often happen that way.

You know some people in the states connected with the state departments of education have told me that it is all right for you to come out from Washington and tell us what we might do in connection with setting up training programs for the fire department personnel but we have to stay right here and live with what we do. I suppose there is something in that.

I realize your program is running somewhat behind schedule and I am going to try to avoid being long-winded. I perhaps said most of what I might say at this time about training for the fire department personnel four years ago in this same hall and I am not going to rehash that, first, because at the present time most of you have heard a great deal about the work of organized training in fire departments and, second, I want to try to measure up at least in part to the three standards that have been set for a good public address. I think the first point is that one should stand up so he can be seen; second, he should speak up so he can be heard; and, third, he will shut up so he will be liked, if possible. I am going to try to cut it short.

This particular project in which I am interested, gentlemen, has been in operation now more or less in its present form about eight years. It started with the educational committee of the International Association of Fire Chiefs and has spread pretty well around the country. When it started, we were sort of skating around the edge of what might be done in connection with public vocational training and were trying to see if any service could be rendered to fire departments along the lines which were desired by the educational committee of the International Association of Fire Chiefs.

At this time the picture has changed somewhat because, in a new act, a supplementary act of Congress which provides further for the expansion and development of vocational training, training for fire departments and other fields of public service is definitely authorized.

Now the question comes to the minds of a great many chiefs, why is it that this program does not spread a little more rapidly? So far as I am concerned, I think it is fortunate that it didn't spread too rapidly because I was very anxious to avoid if possible a sort of an unsound or mushroom type of growth which wouldn't have any permanency to it. I think such developments as we have had have on the whole been quite sound.

One reason why attempts that had been made to start firemen's training programs on rather a comprehensive scale have not developed further has been that those programs were not adequately sponsored by fire chiefs. I mean by organizations of fire chiefs such as the Massachusetts State Fire Chiefs' Association. I think the name is not exactly correct but at any rate that is what the organization is, it is an association of fire chiefs. In Massachusetts the State Fire Chiefs got behind this program and they have endorsed it and supported it from the beginning. I don't like to brag about my native state, but I am more or less familiar with what has been done in the field of firemen's training, especially outside of the larger cities, and I know of no state that has a better program at this time than the state of Massachusetts.

As far as our service is concerned, we didn't do any more for Massachusetts

than we have for a great many states, but the program stuck there because it was regarded by the fire chiefs through their organization as their program, not only their program but a program which would depend for its success upon the co-operation of other interested groups and they have secured that co-operation.

At the present time we have a rather favorable set-up for assisting in a nation-wide program of promotion of firemen training, but I think before it can develop in any state the chiefs association must be behind it. After all, anyone from the outside like myself, who will make a study of the training problem in fire departments, will very soon find out that the chiefs generally regard this matter of training of their men and their entire personnel as one of their responsibilities. It isn't somebody else's responsibility, and if the chief doesn't want it, no matter who tries to introduce it, promote it and operate it, it can't get very far.

Now within a state if a program of training is started in just one locality, one city or one county, which has happened, let us say in the state of New Jersey, the development of a comprehensive state-wide program of training reaching the volunteer firemen in the small communities will be gladly rendered. We gave just as much assistance to the state of New Jersey as we did to the state of Massachusetts, and yet we have now on our National Advisory Committee on training for firemen a representative of the state of New Jersey who last week at a meeting of our Advisory Committee expressed surprise that so much more had happened in other states than had happened in New Jersey in this field of firemen training.

Now in the New England states we have, as I stated, an excellent program in Massachusetts. We have a program built along similar lines supported by the fire chiefs which is rapidly growing in the state of Connecticut. So far as I know, the other four New England states have no state-wide program of firemen training especially designed to reach the smaller communities.

Now from articles that have been published in the paper and things that have been said the idea is rather prevalent that somebody in Washington has a whole lot of money to give out for firemen training. I should like to say a word about that because it is important that you should understand the facts.

This new act which became effective July 1st, 1937, so far as appropriations are concerned is now in operation. It is a permanent authorization for increased funds for vocational training including training in public service occupations, such as fire department personnel, police departments, water works employees and other fields of public employment. Actually that money became available to the states only last December, and in many states they haven't yet expanded their program nearly as much as might be expected during the year we are now in, the fiscal year. However, they have the money, which is absolutely under the control of the state departments of education. It is not controlled directly from Washington like some other funds. It is allowed under the provisions of this act of Congress to state departments of education, and those state departments are free to develop training for fire departments if and when there is a demand for it.

I think I may say this, generally speaking, for these men in charge of public vocational training throughout the country, that there are so many demands for training in all sorts of skilled occupations that they are not particularly inclined to go around to sell the idea that training for firemen may be encouraged, supported or promoted, that they are more inclined to wait until the fire chiefs or some other influential group asks for some help, and I think that is about what they are doing in Maine, New Hampshire, Vermont and Rhode Island.

If you gentlemen who represent those states are anxious to get a state program of firemen training going which will serve some of the larger cities and we hope all of the smaller communities that have volunteer departments especially, the thing for you to do is to make your wishes known to those in charge of vocational training in your state. We can't do it for you. Where there is a clearly defined demand for assistance of the kind we can give, all that has to be done is for the state department to ask for that help. I think in order to succeed, as I stated before, any program of firemen training must be supported and looked upon with favor by the chiefs.

We all know many of the larger cities run their own training departments, their own training programs, and perhaps it is all right that they should. If those training activities are already well organized and well operated, why should anyone connected with the state department of education attempt to butt in and assume any share of the responsibility for running it? Within the large departments those training activities are generally organized as part of the work of the department just as much as any other phase of fire department work.

The same is not true when you get into the smaller communities, and we have about three other ways of providing training. First, we have the zone school idea where under the auspices of the state department of education schools will be set up at properly located points which will be open to firemen and officers of fire departments in some cases, provided every man attending one of those schools is authorized to attend and his attendance is approved by the chief of his own department. That zone school idea is working particularly well in Massachusetts, Connecticut and Virginia.

Then we have the idea of traveling instructors where well-qualified men especially trained to handle this phase of work are made available to visit the smaller communities that have no organized training activities of their own, and in many cases the traveling plans of such an instructor are so laid out that he can spend anywhere from one day to a week in any particular area in the state. Through that it means the local department has the services made available, and it may be done without cost to the local department, of well-qualified instructors, drill masters, well versed and thoroughly experienced in fire department work. They have those services available to them under some sort of organized plan.

Then we have the state fire school, as it is called in the Middle West, fire college, where oftentimes the state university or some state college will set up a firemen's school for usually three days. That idea is very popular in the Middle West. There are some things that a school like that can do and some things that it can't do. My opinion, if it is worth anything, in regard to training is that it requires a whole lot more than three days a year for firemen from the small communities to get adequate training for their jobs. I would not care to be understood as in any way criticising unkindly these three day fire schools. They can supplement what may be done under some other type of program. In those schools where apparatus is brought in demonstrations can be given and the firemen from the small communities have a chance to learn a great deal from observations but they will miss the benefit of well organized training programs.

I think the ideal scheme is where you have in your training program something that is going on practically all the time, once or twice a week practically the year around, except perhaps for a little intermission in the summer, where local officers of departments, volunteer or not, not only recognize the responsibility for training their men but also do something about it. That sort of thing is going on in a rather striking sort of way in the states I have mentioned.

CHIEF FRANK E. TRACEY, Retired
Woburn, Mass.

SON HUBERT
American Fire Equipment Co.

Now it isn't enough for the fire chiefs to decide they are going to have a training program. They have got to provide a program which will interest the men. It has got to arrest their attention and hold their interest. It has got to be something worth while. If there is any one outstanding thing that we think we know in connection with education and training nowadays, it is that men will learn in proportion as they are interested. Just to get a group of men together, sit them down and have someone demonstrate to them and carry on some sort of training program won't have much value unless they are really interested, and if they are really interested, it will be worth while.

Just a word about the progress that has been made by the International Association of Fire Chiefs. That Association, I think justly, claims credit for tying up public vocational training with the training of fire departments. A great deal of that credit belongs to Chief Scott of Los Angeles who now is chairman of the educational committee of that Association. Through the efforts of the International the United States Commissioner of Education has appointed a committee of nine men, eight of whom are fire chiefs, one of whom, our good friend George Richardson, represents the fire fighters. Those chiefs are as follows: Chief Dan Tierney of Arlington, Chief Allen of Brookline, Chief Peter Steinkellner of Milwaukee, Chief McGinley of East Orange, New Jersey, Chief Olson of Omaha, Nebraska, Chief Scott of Los Angeles, and Chief Bob Bogan of Baton Rouge, Louisiana; a strong committee representing practically the whole United States. That committee was appointed less than two months ago. It has had one meeting. It happens to be my job to try to carry out some of the recommendations of that committee and that is what we are going to try to do.

One thing that that committee would like to see happen would be to see organized state programs of fire department training, programs for training of fire department personnel, developed in more states. Last year they were operated, as I recall, in only seventeen of the forty-eight states, and it occurred to me this morning that I might perhaps mention the one thing that in my mind is the chief obstacle to further development; that is the lack of definite organized action by the state organization of fire chiefs. They should bring in the state fire marshal's office, and in Massachusetts they brought in the Farm Bureau of Federation, and some insurance groups and others who are interested in better training of the fire department personnel. I am satisfied, gentlemen, that if any group of state fire chiefs after considering this problem really wants to go ahead and develop a statewide program of fire training, the first step is to get the organized fire chiefs behind them.

I would like to say a word of appreciation of the excellent presentation of Mr. Lovejoy of Augusta, Maine. That was particularly interesting to me because of my more or less close connection with the training of police department personnel. That activity heads up naturally and I think correctly in the wonderful organization built up by J. Edgar Hoover known as the Federal Bureau of Investigation, the F. B. I. I felt honored when they made me a member of their faculty to present a course at each police school on training methods. That is a school made up of very carefully selected police officers of various ranks, a great many chiefs. They go down to Washington and receive three months of training. Mr. Hoover's idea is that those men are there for an opportunity not only to learn all about this laboratory work and technical phases of criminal identification, finger-printing, microscope work, ballistic fire arms, law enforcement work generally, but everyone should go back to his home town as an instructor of other men in his department.

I don't believe it would be possible or fair to make any comparison between training of police department personnel and fire department personnel. Certainly firemen were on the job first so far as tying up with public vocational agencies are concerned. They have gone a long way but something prevents further progress in a number of states and I think I have identified it. I am just leaving the thought with you for what it is worth. If you want to get something started in the states of Maine, New Hampshire, Vermont and Rhode Island, where you do not find programs of the type you do in Massachusetts and Connecticut, let the fire chiefs' association in any one of those four states get busy and I am sure you will get the support you would like to have from the state department of education, and I know without any qualification we will give all the help to you that we can give of the kind we give to Massachusetts and Connecticut in order to help them get started and keep the thing going in such a way that it will be worth while.

Thank you.

PRESIDENT RANDLETTE: Are there any questions anybody would like to ask Mr. Cushman?

CHIEF PACHL, New Haven, Conn.: To make this money available isn't it a fact that the state realizes a certain percentage before it becomes workable?

MR. CUSHMAN: It is difficult to answer the question in just a few words. The whole allotment received by a state must be managed on the basis of fifty cents on a dollar but that mapping may be on a state-wide basis so it is possible if a state wishes to do so to support certain new programs entirely from Federal funds. It is a little bit complicated and I wouldn't want you to get the wrong impression, but that is a definite possibility. The old requirement of dollar for dollar of the act which has been in operation for twenty years does not govern this new appropriation.

CHIEF POPE, Boston, Mass.: I move that Mr. Cushman's address be accepted with thanks and that it be spread upon the records.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: The next speaker on the program is one who is no stranger to the Association. He was with us at our last convention at the Balsams and gave a very interesting talk on the Texas explosion, and it gives me pleasure to again introduce to this Association Dr. David J. Price of Washington, D. C.

SECRETARY O'HEARN: Mr. President, while Dr. Price is coming to the platform I have an announcement to make which will no doubt be of interest, as we are running over our time. We have a somewhat lengthy paper from Fred Shepperd, Headquarters Manager of the International Association, entitled "Back of the Hydrant." That deals with pressures and flowage and so forth, and as it is quite lengthy and somewhat technical, I am going to accept the paper and unless there is objection to the acceptance without reading, I will accept the paper and you will get it all in the Red Book. I know most any of you are willing not to listen to this paper at this time, and, as I say, it is very technical.

PRESIDENT RANDLETTE: I hear no objection to the Secretary's suggestion, and Mr. Shepperd's paper will be printed in the records of the convention.

ADDRESS

SOME RECENT DEVELOPMENTS IN DUST EXPLOSION PREVENTION IN INDUSTRIAL PLANTS

By David J. Price

Principal Engineer in Charge Chemical Engineering Research Division
Bureau of Chemistry and Soils, U. S. Department of Agriculture,
Washington, D. C.

Mr. President and Members of the Association: As Fred Shepperd has taken that procedure, I suppose that means I am the last speaker on the program, which you are probably glad to know. I went to a banquet the other night and one of the speakers said, "If you would take all the houses which were burned up in this country last year and put them end by end, they would reach from New York to San Francisco and back. If you would take all the automobiles manufactured by General Motors and put them end by end, they might reach from New York to Hong Kong, China, or some place over there. If you would take some of these programs where they have so many speakers and put those fellows end by end, that would be a darn good thing."

In reading my paper, I am doing something here I don't like to do, but these explosions all occurred during March and April and many are in controversy and I must be accurate in the talk I give in relation to these cases.

Lessons from Recent Dust Explosions

In the study of dust explosions in industrial plants it is always interesting to ascertain what new facts may have been developed in the investigations of importance to the fire service. For this reason it is helpful to analyze the lessons that might be learned from these dust explosions. With this in mind it is desired to refer to a few recent occurrences in March and April of this year.

After more than twenty-five years of research studies in the United States on explosion prevention in industrial plants, it might not be too much to expect that officials and employees engaged in the operation of plants and equipment where combustible dusts are produced would be fully informed on dust explosion hazards and the methods that should be adopted for their control and prevention.

Explosion in Boiler House—Brewing Plant

An explosion in the boiler house at a brewing plant in New York City on March 4, 1938, resulted in the death of five persons, injuries to several others, and extensive damage to the building and equipment. The explosion occurred during the elevating of coal tar pitch, used for fuel, from a delivery truck on the street level to the top of the storage bunker on approximately the fourth floor level of the building. The use of electric welding equipment during repair work on the steel elevator leg casing while the equipment was running was responsible for the ignition of the pitch dust cloud produced in connection with the unloading, elevating, and storing operations. The investigation developed that although the operating official had been in charge of the boiler house for approximately fourteen years, he was not adequately informed on the dust explosion hazard. *This explosion shows definitely that repair operations of any kind in plants where explosive dusts are produced should not be carried on while equipment and apparatus are in operation.*

Ex-Chief JOHN P. DOYLE, First President, Wellesley, Mass.

The recommendations in the safety code for the Installation of Pulverized Fuel Systems, prepared by the Dust Explosion Hazards Committee of the National Fire Protection Association, should be followed in installations of this character.

Explosion in Starch Factory

In contrast with the explosion just cited, it is of special interest to consider an explosion which occurred in a starch factory in Pekin, Illinois, on December 16, 1937. No employees were burned or injured and the property damage was less than five hundred dollars because employees and the management were familiar with the dust explosion hazard and had applied the recommended protective measures included in the safety code for the prevention of dust explosions in starch factories.

The fact that no employees were injured and the property loss was small is particularly significant when it is remembered that a previous explosion in that plant in 1924 caused the loss of forty-two lives, injuries to many others, and property damage of about $750,000. That explosion occurred prior to the preparation of the safety code for starch factories.

The limited effect of the explosion in this starch plant in December, 1937, is an indication of the splendid work which has been done in the prevention of dust explosions. There has not been a life lost from a dust explosion in the starch and corn products industries since September, 1930, a period of more than seven and a half years. This remarkable record is a significant indication of the value of the work of the safety organizations in the starch industry. It shows progress in dust explosion control and prevention, and certainly can be classified as an "encouraging" sign in this undertaking.

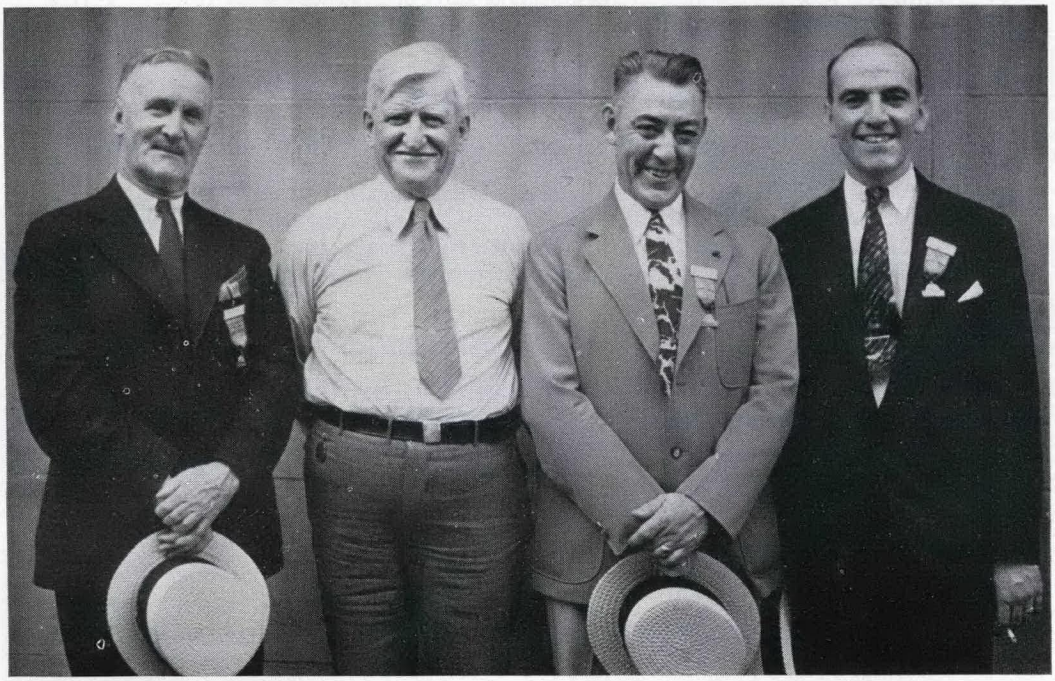
Explosion in Grain Elevator—Malting Company

A dust explosion occurred in a grain elevator in Minneapolis on March 23, 1938, while a car of rye screenings was being loaded for shipment. Two men were killed, six others were injured, and the property damage amounted to about $250,000 The two men killed were the superintendent of the plant and a representative of the Minnesota State Weighmaster's office, who was in the elevator at the time of the explosion. The explosion occurred when a spark produced in the loading operation ignited a grain dust cloud on the first floor.

The investigation of this explosion indicated the necessity of developing methods of controlling dust produced in such operations, and also called attention to the importance of providing means for releasing pressure through properly designed and properly proportioned vents.

Explosion in New Orleans Grain Elevator

An explosion in the Public Grain Elevator at New Orleans, La., on April 4, 1938, caused the loss of six lives and injuries to sixteen others. As the result of the application of precautionary measures for dust explosion control, the property loss was comparatively small, about $20,000, and the plant was not structurally damaged. Full operations were resumed within a week after the explosion.



CHIEF SELDEN R. ALLEN
Brookline, Mass.

FIRE COMM. WILLIAM ARTHUR REILLY
Boston, Mass.

CHIEF DANIEL B. TIERNEY
Arlington, Mass.

CHIEF SAMUEL POPE
Boston, Mass.

The explosion occurred during the handling of yellow corn. One of the men who died as the result of burns received in the explosion was a member of the Federal Grain Supervision force of the U. S. Department of Agriculture. A grain inspector employed by the New Orleans Board of Trade also died as a result of burns.

The investigators concluded that the explosion, which occurred during the normal operation of the elevator, was caused when a flash from a 35 H. P. induction-type motor connected to a dust-collecting fan on the first floor, ignited the corn dust cloud. The open-type construction recommended by the Dust Explosion Hazards Committee for the release of explosion pressures prevented greater property damage. It is a very definite example of the effectiveness of venting measures and is another "encouraging" sign.

Explosion in Feed Mill—Nashville, Tennessee

Eleven men were injured and property was damaged to the extent of approximately $85,000 by an explosion on April 29, 1938, in the mill and elevator section of a feed mill in Nashville, Tennessee. The investigation of the explosion indicated that the original ignition probably occurred in the unloading and elevating of corn and the explosion propagated into the concrete storage bins, where sufficiently high pressure was built up to cause extensive damage to the structure.

Safety in Rural School Buildings

An explosion on April 11 in a rural high school at Farmerville, La., has emphasized again the importance of safety in school buildings. The investigation of this explosion was made by the Bureau of Chemistry and Soils, U. S. Department of Agriculture, at the request of the Louisiana State Department of Education.

The explosion occurred in the Home Economics Department at about 4:15 A.M. Monday. Had the explosion occurred four or five hours later, when approximately three hundred pupils would have been in the building, a heavy life loss might have resulted.

The explosion in the Consolidated School at New London, Texas, on March 18, 1937, in which 293 lives were lost (276 pupils and 17 teachers) is a tragic example of what an explosion in a school building may mean.

In the investigation of this explosion in the rural high school in Louisiana, it was found that the explosion was due to excess pressure in the gas-heated range boiler which was used to supply hot water to the home economics department. This pressure was caused by the generation of steam by a gas flame that had not been completely turned off at the close of class work on the preceding Friday. Pressure slowly increased in the boiler and water pipes because the supply valve had been turned off. This closed valve prevented the excess pressure forcing the water back through the supply pipe into the main line.

This explosion emphasizes the importance of equipping hot water heating boilers with proper safety valves to reduce excessive pressures, and to provide proper supervision by responsible school officials of all hot water heating equipment.

The important question at the present time is what will result from the New London, Texas, school explosion and the more recent explosion in the Farmerville, La., rural high school explosion insofar as the adoption and application of safety

measures in the schools of America are concerned. Tragic as the occurrence was, it must be recognized that the Iroquois Theatre fire in Chicago on December 30, 1903, in which approximately six hundred people lost their lives, resulted in the development of many safety measures for the protection of people in public buildings. Adequate exit facilities, fire-resistive stage materials, fire escapes, fire drills, systematic inspection, and similar measures for the protection of life have been applied with incalculable value.

What are we going to get out of these school house explosions? What have we learned from these tragedies to bring about further protection for our boys and girls in the many other consolidated school buildings in the United States and Canada, particularly in the rural areas?

Provision should be made for regular and systematic fire prevention and safety inspection in all school buildings, particularly in rural communities. This self-inspection can be made at least each month by a committee of three, consisting of the principal, local fire chief, and janitor. The completed inspection reports should be filed with the local Board of Education. Self-inspection blanks can be secured from the various offices of the National Board of Fire Underwriters.

The tragic explosion in the New London, Texas, school in which 293 lives were sacrificed should not be just another "historical event." It should arouse every responsible agency in America in a safety campaign to assure all possible protection to students in our educational institutions. We compel our children by law to attend school, and the responsibility for their safety rests with the agencies having jurisdiction. Local officials must maintain close contact with conditions existing in their schools if hazardous conditions are to be eliminated. The parents directly concerned as well as the public at large should see that the knowledge now available for the safety and protection of our boys and girls is applied in every possible manner.

The safety from explosions and fires of the girls and boys and their teachers must be given first consideration by school officials.

PRESIDENT RANDLETTE: Are there any questions anybody would like to ask Dr. Price? The Chair awaits any motion.

CHIEF POPE, Boston, Mass.: I move that Dr. Price's paper be accepted and placed on the records of this meeting.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: As this is the last paper on the program for this morning, let me again mention the picture at 1:45 and let everyone be there and have a picture of this convention; 1:45 in front of the City Hall.

BACK OF THE HYDRANT

By Fred Shepperd

Headquarters Manager, International Association of Fire Chiefs
and Editor, *Fire Engineering*

There is a limit to the quantity of water any hydrant will deliver. Some hydrants will give more than others, even if of the same make and same size. The

Our Roll

BODGE, ARTHUR, Asst. Chief, Peabody, Mass., May 5, 1923.
SAMSON, WILFRED J., Chief, Lewiston, Me., February 17, 1924.
RANDLETT, WALTER B., Chief, Newton, Mass., March 3, 1924.
McCORMICK, W. S., Chief, Singer Manufacturing Co., Bridgeport, Conn., November 1924.
TABER, JOHN OTIS, Chief, Boston, Mass., December 16, 1924.
SMITH, JAMES, Chief, Dover, N. H., February 8, 1925.
TIGHE, JAMES J., Chief, Willimantic, Conn., April 22, 1925.
FIFIELD, LESTER G., Chief, Ashland, N. H., July 31, 1925.
CHASE, FREDERICK E., Ex-Chief, Northampton, Mass., November 3, 1925
BROWNING, ROBERT, Chief, Central Falls, R. I., November 20, 1926.
ROBINSON, C. E., Concord, N. H., April 16, 1927.
WHITMARSH, FRANK O., Chief, Braintree, Mass., July 30, 1927.
FOWLER, ALBERT A., Ex-Chief, Gardner, Mass., September 11, 1927.
SEAVERNS, ERNEST R., Chief, Scituate, Mass., October 1, 1927.
BAKER, ELLSWORTH, Chief, Seekonk, Mass., January 16, 1928.
PACKARD, HIRAM R., Ex-Chief, Attleboro, Mass., March 27, 1928.
DALEY, WILLIAM F., Chief, Brockton, Mass., May 13, 1928.
BRYNES, PETER S., Chief, North Kingsford, R. I., November 9, 1928.
GRANT, ERNEST F., Deputy Chief, Amesbury, Mass., January 22, 1929.
GRANT, LOWELL C., Ex-Chief, Burlington, Vt., May 13, 1929.
GUNTHER, FRANK H., Ex-Chief, Dracut, Mass., June 24, 1929.
BARRETT, JESSE, Ex-Chief, Peabody, Mass., July 13, 1929.
HUNT, JOHN Q., Chief, Weymouth, Mass., October 8, 1929.
WEBSTER, WADE U., Chief, Willimantic, Conn., October 27, 1929.
TUFTS, HARRY W., Chief, North Attleboro, Mass., October 30, 1929.
NEAL, GEORGE C., State Fire Marshal, Mass., December 14, 1929.
DANAHY, TIMOTHY J., Chief, Hopkinton, Mass., December 21, 1929.
PITT, GEORGE S., Chief, Middletown, Conn., January 2, 1930.
KING, WARREN D., Peabody, Mass., January 5, 1930.
GUERTIN, WM. H., Supt. Protective Dept., Worcester, Mass., March 19, 1930.
THOMPSON, HENRY E., Supt. Protective Dept., Boston, Mass., April 2, 1930.
PRATT, EARL H., Deputy Chief, Auburn, Maine, May 1, 1930.
HARDY, JOHN M., Brookline, Mass., May 2, 1930.
MEAD, ALFRED L., Chief, Quincy, Mass., May 27, 1930.
DONOVAN, JOHN F., Chief, Meriden, Conn., May 28, 1930.
EGGER, GEORGE, Chief, Westerly, R. I., July 29, 1930.
PATTEE, P. W., Chief, Goffstown, N. H., September 1, 1930.
THURSTON, RALPH E., Chief, Putnam, Conn., October 16, 1930.
ERICKSON, JOHN O., Ex-Chief, Newburyport, Mass., December 17, 1930
ROSE, CHARLES H., Ex-Chief, New London, Conn., January 8, 1931.
NICHOLS, GEORGE W., Supt. Fire Alarm, Woburn, Mass., February 10, 1931
CARBERRY, WILLIAM F., Ex-Chief, East Walpole, April 6, 1931
SMITH, JAMES E., Chief, Nashua, N. H., April 9, 1931
MALLORY, HOMER J., Stamford, Conn., April 21, 1931.
MARTIN, H. M., Ex-Chief, Enosburg, Vt., July 2, 1931.
CLARK, W. F., Ex-Chief, Naugatuck, Conn., July 25, 1931.
HOOBEN, JAMES A., Taunton, Mass., September 5, 1931.
JOHNSON, DANIEL E., Ex-Chief, Bridgeport, Conn., September 17, 1931.
TOONE, GILBERT G., Gamewell Co., Needham Heights, Mass., October 12, 1931.
CONEENY, JOHN T., Chief, Dupont Co., Wilmington, Del., October 14, 1931.
FLEMING, JOHN R., Chief, Saylesville, R. I., December 22, 1931.
LABENSKY, IRVING F., Supt. Fire Alarm, New London, Conn., December 25, 1931.
BROWN, HENRY A., Ex-Chief, Marlboro, Mass., January 6, 1932.
GALE, C. DAVID, District Chief, Orange, Mass., January 21, 1932.
DORAN, ANDREW T., Chief, Greenfield, Mass., February 18, 1932.
LEWIS, WM. H., Fabric Hose Co., Worcester, Mass., April 1, 1932
BLETHEN, CHESTER H., Ex-Chief, Auburn, Me., April 11, 1932.
HYATT, HENRY J., Chief, Fitchburg, Mass., May 2, 1932.
FURGANG, LEONARD, West Roxbury, Mass., May 5, 1932.
FULLER, CHARLES H., Chief, Pawtucket, R. I., May 15, 1932.
GARDINER, WARREN B., Chief, Saylesville, R. I., July 11, 1932.
FOX, JOHN C., Fire Commissioner, Rutland, Vt., July 23, 1932.
DOLAN, JOSEPH A., Deputy Chief, Boston, Mass., August 25, 1932.
GREEN, WILLIAM C., Chief, Concord, N. H., October 27, 1932.
O'CONNOR ,THOMAS, Battallion Chief, Washington, D. C., November 20, 1932.
ESTERBROOK, WILLARD W., Fire Commissioner, Brookline, Mass., December 3. 1932,
RICH, SEWELL M., Ex-Chief, Somerville, Mass., December 9, 1932.
SPALDING, HOWARD C., Augusta, Me., January 27, 1933.

# of Honor

CRIBBY, JOSEPH A., Ex-Chief, Somerville, Mass., February 17, 1933.
WARD, THOMAS G., Chief, Shelton, Conn., March 9, 1933.
LaCROIX, CHARLES, Ex-Chief, Millis, Mass., March 17, 1933.
McPHEE, MICHAEL, Ex-Chief, Lawrence, Mass., April 25, 1933.
KING, HERBERT E., Ex-Chief, Mansfield, Mass., May 15, 1933.
HOAGLAND IRA G., Nat. Auto. Sprink. Assoc., New York City, August 5, 1933.
WHEELER, A. D., Gamewell Co., Newton Upper Falls, Mass., August 17, 1933.
KIMBALL, HOWARD C., Ex-Chief, Salem, Mass., August 27, 1933.
SULLIVAN, JOHN E., Ex-Chief, Plymouth, Mass., December 16, 1933.
KOEN, JAMES S., Chief, Salem, Mass., December 21, 1933.
PERSONS, VANEY P., Chief, Montpelier, Vt., February 6, 1934.
COMBER, EDWARD, Ex-Chief, Narragansett Pier, R. I., March 7, 1934.
AHERN, WILLIAM A., Fire Marshal, Branford, Conn., April 28, 1934.
FISKE, HOWARD, Ex-Chief, Framingham, Mass., May 30, 1934.
PARTENHEMER, PHILIP, Ex-Chief, Greenfield, Mass., July 9, 1934.
AMBROSE, GEORGE C., Boston, Mass., July 18, 1934.
BARRY, W. A., Eureka Fire Hose Co., Boston, August 13, 1934.
HEITMAN, HENRY H., Chief, Waterbury, Conn., September 19, 1934.
MONTMENY, ARTHUR, Ex-Chief, Chicopee, Mass., October 1, 1934.
MANY, ROBERT, Fabric Fire Hose Co., Boston, Mass., October 13, 1934.
KEANE, JOHN W., Ex-Deputy Chief, Marlboro, Mass., December 11, 1934.
MOORE, EDWIN D., Bennington, Vt., March 25, 1935.
TORREY, ARCHIE W., Chief, North Scituate, Mass., April 2, 1935.
HAYES, JOHN H., Ex-Chief, Bristol, Conn., June 13, 1935.
McLAUGHLIN, DANIEL F., Ex-Chief, East Providence, R. I., June 22, 1935.
JOY, MELLEN R., Chief, Saugus, Mass., July 31, 1935.
MAXIM, CARLTON W., Ex-Chief, Middleboro, Mass., August 27, 1935.
STANTON, HOWARD L., Ex-Chief, Norwich, Conn., August 30, 1935.
MASON, W. S., Chief, Bangor, Me., November 12, 1935
TITUS, WILLIAM E., Ex-Chief, Pawtucket, R. I., February 26, 1936.
MILLER, DEAN H., Chief, Ashland, Mass., April 25, 1936
WEDGER, WALTER L., Belmont, Mass., June 2, 1936
PATT, IRVING F., Ex-Chief, Central Falls, R. I., June 17, 1936
WOODWARD, A. P., Ex-Chief, Danielson, Conn., June 27, 1936
KELLEY, JOSEPH B., Pawtucket, R. I., July 1, 1936
LUBY, JOHN J., Chief, Wallingford, Conn., July 12, 1936.
FERNBERGER, HERMAN W., Philadelphia, Pa., July 18, 1936.
HARRISON, FRANK R., Chief, Onset, Mass., August 4, 1936.
MAINZER, ROBERT H., Hon. Dept. Chief, New York, August 6, 1936.
PALMER, JOHN A., Chief, Torrington, Conn., December 7. 1936.
HILL, CHAS. E., Chief, Cape Elizabeth, Maine, December 28, 1936.
McGRATH, PATRICK J., Ex-chief, Meridan, Conn., Died January 8, 1937.
SCANNELL, DR. JOSEPH W., Fire Comm., Lewiston, Me., January 16, 1937.
NEARY, JOHN H., Chief, Natick, Mass., January 18, 1937.
CASEY, JAMES M., Ex-Chief, Cambridge, Mass., January 25, 1937.
SEARS, C. E., Chief Engineer, Claremont, N. H., May 5, 1937.
WHITING, HOMER B., Ex-Chief, Hampton Beach, N. H., May 26, 1937.
HOADLEY, G. W., Ex-Chief, Naugatuck, Conn., June 9, 1937.
DUGAN, ARTHUR W., Chief, Vergennes, Vt., July 5, 1937.
HUBBARD, ISAAC M., Chief, Greenwich, Conn., August 15, 1937.
HAINES, FRANKLIN W., 57 Gardner St., Peabody, Mass., August 28, 1937.
LYNCH, THOMAS J., Chief, Waterbury, Conn., October 1, 1937.
MIGUEL, MANUEL S., Chief, Manchester, Mass., October 3, 1937.
PICKETT, E. W. S., Ex-Chief, Fairfield, Conn., November 1, 1937.
KNOWLES, C. H., Ex-Chief, So. Hamilton, Mass., November 11, 1937
DALLAGHER, JAMES M., District Chief, Fall River, Mass., December 11, 1937.
SCULLY, JOHN J., American Fire Equipment Co., Boston, Mass., December 29, 1937.
WARE, LEWIS A., Chief, Hanover, N. H., February 2, 1938
WHITE, FRANK M., Chief, Guilford, Conn., June 4, 1938
RUSSELL, WM. G., Capt., Waterbury, Conn., June 29, 1938
HANMER, H. F., Ex-Chief, Wethersfield, Conn., September 9, 1938.
STEVENS, HENRY J., Chief, Nantasket Beach, Mass., September 13, 1938
PERCEY, M. S., Chief, No. Bennington, Vt., October 15, 1938
ADAMS, JOHN T., Ex.-Chief, Marblehead Mass., December 19, 1938.
ATKINS, W. H. H., Chief, Marblehead, Mass., December 20, 1938
HUDSON, DAVID M., Chief, Chelsea, January 2, 1939.

differences in delivery are the result of differences in the water systems which supply the different hydrants.

The Fire Department's interest in the hydrant lies chiefly in what it can give in the way of water supply and pressure. What is behind the hydrant is frequently given no thought whatsoever by Fire Department officers.

Not only should the hydrant give the water immediately needed for supplying a pumper, but it should also have reserve capacity in the event of a large fire where it may be necessary to place additional demands upon it.

What Limits the Capacity of the Hydrant?

The capacity of the hydrant is limited by several factors. Probably first, and foremost, is the size of the main feeding it. As in fire hose, there is friction loss in water mains. But in the case of water mains, we usually have far less pressure than we are able to develop with fire engines. Therefore, there is far less pressure available for overcoming friction loss. Hence, friction losses must be proportionately less in water mains than in hydrants.

The size of the main determines, in a larger degree, the loss in pressure, due to friction, of the stream flowing through.

For example, with a four-inch main carrying 1,000 gallons a minute, the friction loss amounts to 198 pounds per thousand feet, whereas, with a six-inch main, carrying the same quantity, the friction loss is but 28 pounds, or 1/7 as much. These figures are for new pipes of high quality, and laid straight.

Where the pipe is incrusted or tuberculated, the difference is greater.

From these figures, the tremendous importance of having mains of sufficient size to carry the necessary flow without great losses due to friction is evident.

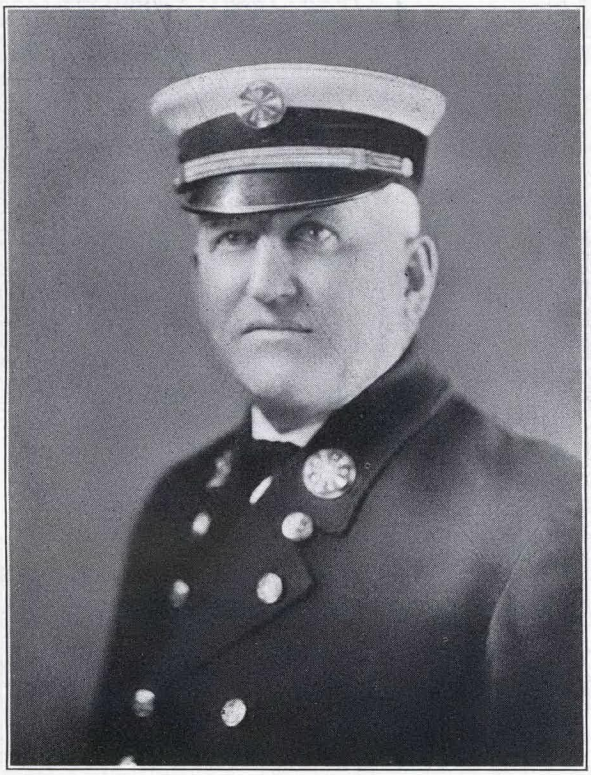
The second factor which has a very important bearing on the capacity of the hydrant is the length of the main feeding it, measured from the point where the main receives its supplies to the hydrant.

If friction loss in 1,000 feet of six-inch pipe carrying 500 gallons per minute is 7.5 pounds, the friction loss in 2,000 feet is just twice as much, or 15 pounds, and so on. Hence, the second important factor in determining the water available at the hydrant is the length of the main feeding it.

The third factor, and it is a very important one, is the interior condition of the main.

When mains are newly laid, they have a very smooth interior. After they have been in service for years, particularly if the water they convey is soft, they develop incrustations, or tuberculations, which interfere seriously with the smooth flow of water. As noted previously, soft waters are more corrosive to mains than hard waters, and in sections where surface supplies (usually soft waters) are used, the effects of corrosion are much more severe.

I have prepared tables of friction loss for pipes of three different ages. These tables show quite clearly the effect of corrosion and tuberculation. (It is hoped that they will be printed along with this paper in the proceedings of the New England Association of Fire Chiefs, for they give some very interesting comparisons.)



Chief DANIEL B. TIERNEY, Past Pres. Int. Asso. of Fire Chiefs
Arlington, Mass.

They show the friction loss for varying flows in new pipe recently laid, pipe after having been in service fourteen years and pipe after having been in service fifty years, carrying ordinarily corrosive water.

Friction Loss in Cast Iron Water Mains in Pounds per 1,000 Feet
New Pipe of High Quality, Laid Straight

Flow in Gallons per Minute	*Friction Loss in Pounds per 1,000 Feet*	
	4 Inch	6 Inch
100	3.0	.8
200	10.5	1.2
300	22.0	2.8
400	35.0	3.9
500	55.0	7.5
600	78.0	10.7
700	105.0	14.0
800	134.0	18.6
900	166.0	22.8
1000	198.0	28.0
1100	232.0	33.0
1200	265.0	38.0

Friction Loss in Cast Iron Water Mains in Pounds per 1,000 Feet
Pipe of Average Condition after being in Service 14 Years

Flow in Gallons per Minute	*Friction Loss in Pounds per 1,000 Feet*	
	4 Inch	6 Inch
100	5	1.8
200	19	2.5
300	40	5.6
400	70	9.3
500	105	14.0
600	146	20.0
700	196	26.0
800	247	34.0
900	308	43.0
1000		47.0

Friction Loss in Cast Iron Water Mains in Pounds per 1,000 Feet

Pipe of Average Condition after being in Service 50 Years

Flow in Gallons per Minute	*Friction Loss in Pounds per 1,000 Feet*	
	4 Inch	6 Inch
100	14	3.0
200	49	5.5
300	105	14.0
400	178	24.0
500	270	37.0
600	378	52.0
700	503	68.0
800	643	89.0
900	800	106.0

As a matter of interest at this point, I would like to review just a few of these figures. Let us consider a line of four-inch pipe carrying 200 gallons per minute. The friction loss per thousand feet in new pipe is 10.5 pounds; in pipe fourteen years in service, 19 pounds; in pipe fifty in service, 49 pounds.

Where the flow is 500 gallons per minute, the friction loss per 1,000 feet of four-inch pipe, newly laid, is 55 pounds; pipe that has been in service fourteen years has a friction loss of about 105 pounds, while that which has been in service fifty years has a friction loss of 270 pounds per thousand feet.

This same ratio holds pretty closely through a long range of flows.

Because of this gradual change in capacity of a water main due to formation of roughness on the interior, which may be classed in tuberculation, corrosion, or incrustation, a main which gives a satisfactory supply upon its installation may, as the years roll by, prove to be unable to meet the demands which are placed upon it. Or, to put it otherwise, when a main is newly laid, it may give plenty of water to supply a first-size engine, but as the years pass, it may be found that a vacuum is created when the pumper is drawing the same amount of water from it. Incidentally, this tendency toward reduced carrying capacities in water mains is a very good reason why hydrants should be tested periodically to determine the flow therefrom.

Mains of small diameters, fed only at one end, are rarely satisfactory, if they run to any great length. To cut down friction loss in mains and to insure a dependable supply, the common design practice today is to cross-connect water mains in the system to form what is commonly termed a gridiron. In this way, if a big demand is placed on any part of the system, water may flow from several directions to that point, and by dividing the flow toward one point between several lines of pipe, the friction loss is reduced to a very small fraction of what it might be if it had to travel through a single line. However, it is frequently impracticable to cross-connect lines feeding suburban developments, particularly where the development is beyond the built-up limits of the city.

Water pressure in the system of a city may be satisfactory at some points and unsatisfactory at others. This difference in static pressure is caused by difference in elevation of the mains in question. Those mains serving high districts will show appreciable less pressure than those serving low districts, due to the less head

creating the pressure. Every foot elevation represents a reduction in pressure of approximately .4 of a pound. It is to overcome this natural difficulty that in some cities special service is afforded to the high districts, and it is commonly known as "high service."

Pressure Available in the Main

And last, but by no means unimportant in bearing upon the capacity of the hydrant, is the pressure available in the main.

There are three types of water service commonly found in this country:

1. gravity pressure.
2. domestic pump pressure.
3. domestic and fire pressures.

In the gravity system, water is supplied without pumping, and the pressure in the system depends upon the height of the water in the reservoir or storage tank above the point at which the pressure is read.

In a gravity system, pressures at all points in the system of the same elevation will be identical, except in the event of heavy flows due to breakage of main, fire demand, etc.

It is not possible to increase the pressure in a gravity system in the event of fire, and if normal pressure is low, there is limitation to what the hydrant can supply, particularly when attached to a small main.

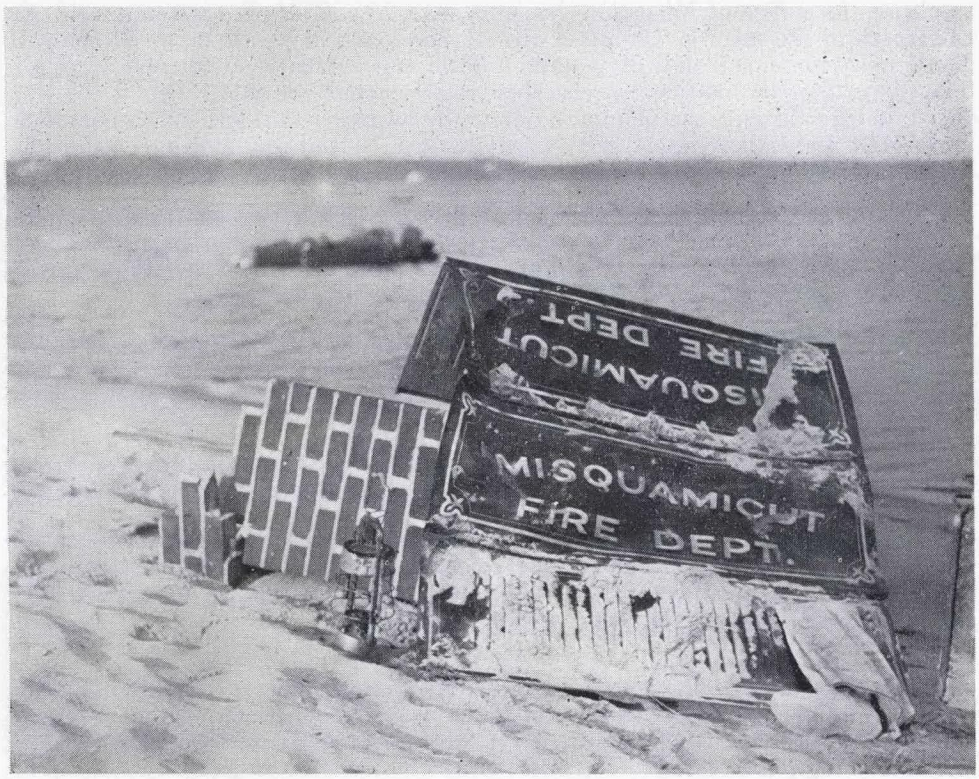
In the second system, commonly known as the direct pumping system, pumps are operated at all times to maintain pressure within the mains. It may or may not be possible to increase the pressure at the pump in the event of fire. If the pump is designed so as not to be able to offer additional fire pressure, then it is a domestic pumping system. Here the pressure will probably be greater than the gravity system, but it cannot be increased in the event of fire, to make available to the Fire Department higher pressures at the hydrant.

The third type of water system is one in which the pressure in the main is supplied by pumping direct, but it is possible to step the pressure up in the event of fire. Of course, there is a limitation above which the pressure cannot be raised, due to danger to plumbing throughout the city.

In some cities and smaller communities, auxiliary storage tanks are provided, usually at a point across the city from the source of supply. These tanks, which are commonly known as "balancing tanks," receive water from the system in periods of small flow, and then when there is a heavy demand on the system, they aid in meeting this demand by returning the stored water to the system, thus reinforcing the supply.

What Happens when the Limit of Capacity of a Main has been Reached?

It is common experience that, when a pumper tries to take more water from a hydrant than the main will supply, a vacuum is created. This vacuum is indicated on the compound gauge. What happens in this process is as follows: The water is drawn through the main at such a rate that the friction loss in the main from the



Alton Hall Blackington

Hood of "Misquamicut", R. I. Ladder Truck. The Engine is in the Pond Fire Station Totally Destroyed

point where it receives its supply to the hydrant amounts to more than the pressure in the system which tends to force the water through the main.

As a specific example, assume two 350-gallon per minute streams (1¼-inch nozzle at 58 pounds nozzle pressure) are wanted from a pumper attached to a hydrant. The main is one of a gravity system and the gravity pressure is forty pounds. The main is six inches in diameter and has been in service about fifteen years. It is not cross-connected, but is fed at one end—2,000 feet away.

Will the hydrant supply the required flow?

The friction loss in a six-inch main fifteen years of age, and of average interior condition, for a flow of 700 gallons per minute, is 26 pounds per thousand feet. As the length of the main is 2,000 feet, the friction loss will be 2 x 26, or 52 pounds The gravity pressure is only 40 pounds. Hence, it is evident that the main will not deliver the desired quantity, because there is not enough pressure within it to force that quantity through the main and out of the hydrant. Incidentally, a four-inch main *1,000* feet in length, and fed only at one end, and of the same age, could not supply even 400 gallons per minute.

Of course, the pumper helps the water along by creating a vacuum, which may be considered as equivalent to so much additional pressure in the main, but there is a very definite limit to the amount of vacuum a pumper can create (10 pounds is a good average), and is equivalent to a water column lift of 23 feet.

Of course, a vacuum at the pump is undesirable, for it has a tendency to cause air leaks, which interfere with the production of good solid streams. And when soft suction is used, a vacuum may be very troublesome in causing interruption of flow through the soft suction.

It is always helpful to the pumper to have a residual pressure at the hydrant when the engine is in operation, for such residual pressure aids the pump directly.

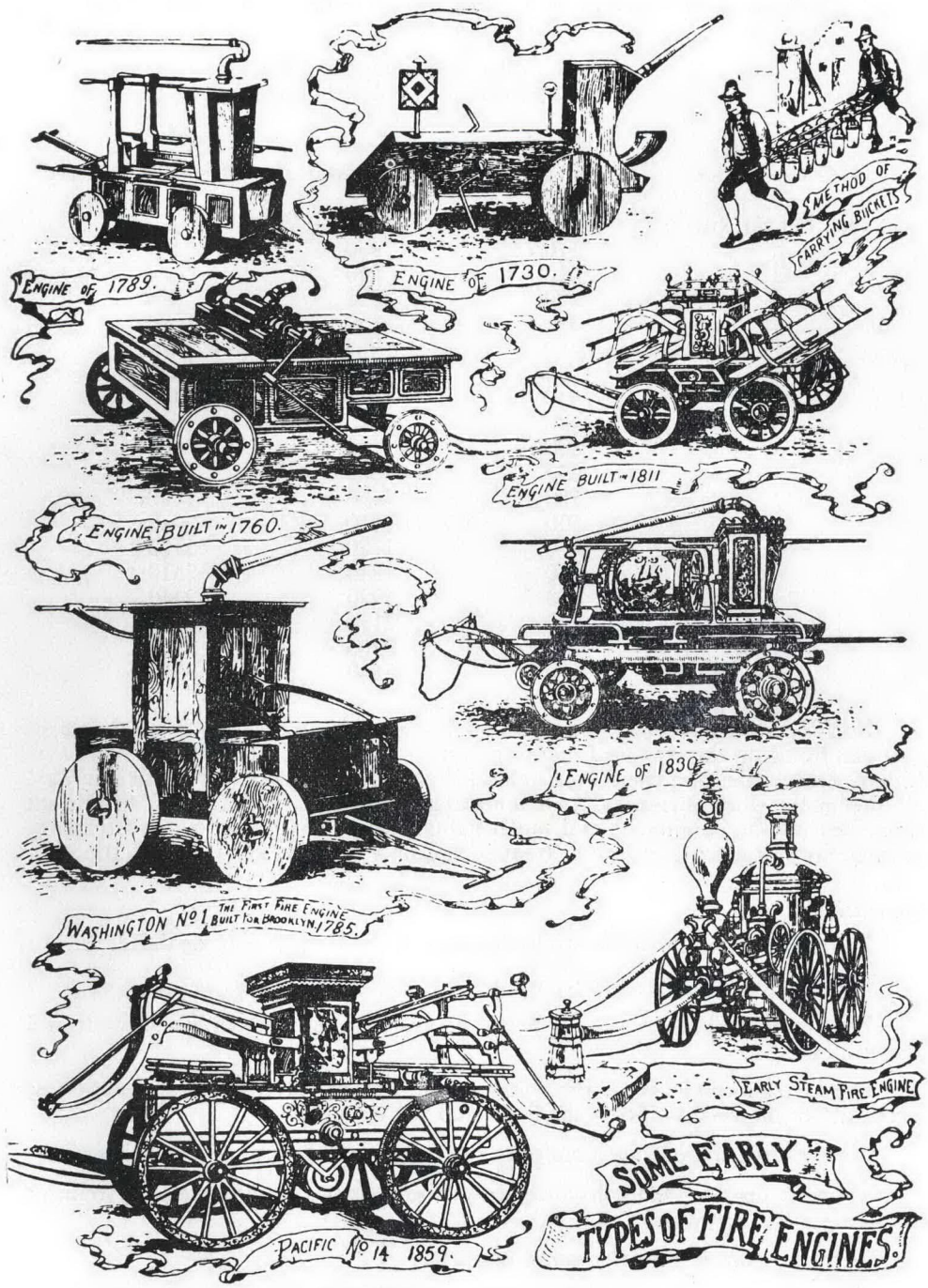
For example, if residual pressure at the hydrant is forty pounds when the pumper is in operation, this pressure is transmitted with but very little loss through the pump (if it is of the centrifugal type) and enables the pumper to increase discharge pressure by practically that amount.

Tests Important

To make sure of capacities of water distribution systems, it is highly desirable that hydrants be tested periodically for flow. If the pressure within the system is good, the test may be conducted by using short lengths of hose with large nozzles, and employing pitot gauges for determining the discharge pressure.

On the other hand, if the water pressure in the system is normally low, the above method of testing shows but a small part of the supply that can be obtained by engine from the system. In that case, the method of testing is by calculating the flow from open butts of hydrants.

In testing the water system in any particular locality, it is usually desirable to start with one hydrant, opening it up and measuring the flow; then a second hydrant is opened and, while both are flowing, readings are taken on both; then a third hydrant is opened up, and while the three are in operation, readings are taken of all three, and so on until it is definitely determined what the flow in any particular area might be. As a matter of interest, a table has been prepared showing the discharge from hydrants under various pressures. The table will not be read here, but it is hoped that it will be included in the Proceedings with this paper.



Fire Engines of Other Days

Discharge from Hydrants where Pressures as Indicated are Maintained at Hydrant Outlet

(from tables appearing in "Fire Prevention and Protection" by A. C. Hutson)

Pressure at Hydrant Outlet in Lbs. Per Sq. In.	*Discharge from Hydrant Outlet in Gallons Per Minute*		
	2½ in.	4 in.	4½ in.
1	170	430	550
2	240	610	770
3	290	750	940
4	340	860	1090
5	380	960	1220
6	410	1050	1330
7	440	1140	1440
8	480	1210	1540
9	500	1290	1630
10	530	1360	1720
12	580	1490	1890
14	630	1610	2040
16	670	1720	2180
18	710	1840	2310
20	750	1920	2440
25	840	2150	2720
30	920	2380	2990
35	990	2540	3210

Finally, every fire chief should know his water system. Hydrants should be branded by using the standard marking system adopted by the New England Fire Chiefs' Association and the New England Water Works' Association. In this way, all the guess work incidental to connecting engines to hydrants of insufficient capacities will be eliminated and much valuable time may be saved, particularly in large fires, in getting effective streams, and only effective ones, in operation.

Conclusions

To sum up, the flow from two hydrants of the same size may be different.

The hydrant will only deliver what the water main gives it.

The water main depends upon the pressure in the system for what it will deliver.

The interior condition of the water main, such as corrosion, tuberculation or incrustation, materially affects the flow from the hydrant.

Cross-connection of mains multiply the capacity of hydrants many times.

No main smaller than a six-inch should be employed in any water system for supplying a fire hydrant.

Eight-inch mains are even more desirable.

The only way to know what water a hydrant will deliver, particularly if attached to one of the smaller size mains, is to test it.

Mark the hydrants so that your men will know what size engines may be safely attached to them.

Make flow tests every few years, for the interior condition of mains is constantly changing and therefore the supply they are able to deliver to hydrants attached to them.

WEDNESDAY, JUNE 22

2 P. M.

FOREST FIRE WARDENS SECTION

Under Direction of

OTTO G. KOENIG, *Supervisor of National Forests in Vermont*

and

PERRY MERRILL, *State Forester, Vermont*

THURSDAY, JUNE 23

9 A. M.

PRESIDENT RANDLETTE: Gentlemen, if you will come to order. A quorum is present and we will proceed with the business session or the last session of the convention.

The first on the order of business is the report of officers. Mr. Secretary, are you ready for your report?

SECRETARY O'HEARN: Mr. President and Members who are present, last year at the Balsams we had just about this number at the last session. Many of the men were interested in getting away and weren't interested in hearing a rehashing of the reports of the Directors' meetings that were held between sessions. They said naturally it would appear in the Red Book and it is business which has been done and water that has gone over the dam and nothing can be done about it. So they asked to omit the reading of the Directors' meetings a year ago, and unless you want me to read them today, I will omit them.

PRESIDENT RANDLETTE: What is the pleasure of the members?

MEMBER: I so move that they be omitted.

(Motion seconded and carried.)

* * * * *

REPORT OF SECRETARY

Mr. President and Members of the Association: This report covers the business transacted for the association by your directors or committees since our last convention.

Dec. 15, 1937.

The first meeting of officers of the Association for 1937–38 was held on above date at the Parker House, Boston.

After a pleasant afternoon spent with the Fire Chiefs of Massachusetts, who were observing their Annual Ladies Day and Christmas party, the meeting was called to order by President Randlette at 4:10 P. M. with the following officers present: Vice President Burns and Pope; Directors, Sanborn, French, Koltonski, Mahoney, Cote and Cavanaugh; Sergeant At Arms, Happny, Chiefs Melendy and Burke of Pittsfield, Press Representative Belknap; Mr. H. L. Farwell of Poland Spring House and President Tierney of International Association.

Mr. Farwell was given an opportunity to outline inducements and reasons why we should hold our 1938 Convention at Poland Springs, after which he was excused from the meeting.

The Secretary briefly outlined what had been done since our 1937 Convention, reported financial standing, together with outstanding amounts due the Association for advertising in "Fire Fighting" and his efforts to collect the same—reported progress on the Red-Book, and so far as known, had cared for the sick and needy among us. The so-called Dugan case was discussed at length, and because of lack of proper information and other circumstances, it was voted not to take any action at this time.

The Secretary reported the following deaths which happened recently: Chief Arthur W. Dugan, Vergennes, Vt., joined June 21, 1936, died July 5, 1937; Chief Isaac M. Hubbard, Greenwich, Conn., joined May 27, 1933, died Aug. 15, 1937; Franklin W. Haines, Peabody, Mass., joined June 24, 1935, died Aug. 28, 1937; Ex-Chief Thomas Lynch, Waterbury, Conn., joined May 31, 1935, died Oct. 1, 1937; Chief Manuel S. Miguel, Manchester, Mass., joined Mar. 7, 1927, died Oct. 3, 1937; Ex-Chief E. W. S. Pickett, Fairfield, Conn., joined May 15, 1923, died Nov. 1, 1937.

In all cases where possible, members were notified and floral tributes sent with one exception, the Secretary being notified of a death by the family two weeks after death occurred.

Chief Melendy outlined another invitation from the Balsams for 1938, but the Directors were of the opinion that we should not go to another pleasure resort so soon. The Secretary reported upon the prospects of holding our Convention at Portland, Me., Bridgeport, Conn., and Springfield, Mass. Chief Burke of Pittsfield, Mass., reported for his city, that he would like the Convention and suggested that our officers visit his City to work with him to this end, and that he would arrange a date with officials and others for a conference.

On motion of Chief Pope, it was voted that we rest for two weeks and not decide on anything until we had more information from Chief Burke. On motion of Chief French, a committee to consist of Chiefs Burke, Koltonski, Cote and the Secretary were appointed to visit Pittsfield with power to arrange for the Convention in that City if conditions were satisfactory.

President Daniel B. Tierney of the International Association expressed his thanks for our support and what a pleasure it was to have New England again honored with the Presidency, that New England was the outstanding divisional organization, and looked forward to a most successful year with our organization back of him. He outlined some problems with which he was confronted, also the

SOME OF OUR "BIG SHOTS" AT BURLINGTON CONVENTION

proposed program of the International 1939 Convention at New Orleans where he expected a record attendance from New England.

After general discussion the meeting adjourned at 6:15 P. M.

JOHN W. O'HEARN, *Secretary*.

On December 27, 28, 1937, your Secretary with Directors Koltonski and Cote visited Pittsfield regarding our next convention. With Chief Burke we visited the Chamber of Commerce, insurance companies and hotels, but with very little encouragement. At noon the 28th, we sat in for lunch at our expense with the President of the Chamber and went over in detail what probable expense and attendance would be—also housing problem, which did not appeal to us, as many would be obliged to live outside the City. After discussion, it was left with the Secretary of the Chamber to write the Secretary as to what the City might do for us other than to say "come"—"but we cannot promise any money."

On January 11, 1938, having received an urgent request to come to Burlington, Vermont, from Chief Stockwell, and not having heard any more from Pittsfield, your Secretary was advised by other Directors to visit Burlington. On January 11 and 12, your Secretary visited Burlington with Chief Koltonski; we were received with open arms by all whom we came in contact with; the Mayor of the City was all enthused—in fact, this was evident everywhere. Chamber of Commerce and Hotels were pleased, it was pointed out that the Chief would probably have all money needed for a three-day Convention. The hotels appear ample to house our members, and with the experience of two previous conventions in Burlington, we closed the place of Convention for 1938 as Burlington, Vt., for June 21, 22 and 23, with exhibits in the Municipal Auditorium and headquarters at Hotel Vermont.

JOHN W. O'HEARN, *Secretary*.

May 5, 1938.

The second meeting of the officers and directors was held on above date in the Parker House, Boston, Mass.

After luncheon the meeting was called to order by President Randlette, and in addition to the President, the following were present: Vice President Burns and Pope, Chiefs Koltonski, French, Happny, Sanborn, Mahoney, Stockwell and President of International Association Chief Tierney of Arlington, Press Representative Belknap and the Secretary. Chief Allen, who had been invited, arrived too late for the lunch or meeting.

Minutes of the previous meeting were read and accepted.

The following deaths were reported by the Secretary since our last meeting of Directors: C. H. Knowles, Ex-Chief, So. Hamilton, Mass., admitted May 17, 1923, died November 11, 1937; James H. Dallagher, District Chief, Fall River, Mass., admitted April 30, 1937, died December 11, 1937; John J. Scully, President American Fire Equipment Co., Boston, Mass., admitted August 16, 1922, died December 29, 1937; Lewis A. Ware, Chief, Hanover, N. H., admitted April 21, 1936, died February 2, 1938. The Secretary reported that in all cases flowers were sent by the Association, except to Ex-Chief Knowles, and that because notice of death was not received until February 3, 1938.

The Secretary read a letter from James Keegan, of Newark, N. J., outlining itinerary for the International Convention, giving costs, time involved, and general

information which appeared attractive. The Secretary was instructed to answer with our suggestions or comments.

A general discussion followed, outlining the program, topics and speakers.

It was decided to open the Convention on Tuesday the 21st with Memorial Exercises, Tuesday afternoon a business session, and Tuesday evening given over to entertainment.

Wednesday morning and afternoon business sessions and Thursday morning unfinished business and election of officers.

Chief Stockwell outlined entertainment program. On motion of Director Mahoney, it was voted to appoint Rev. Michael F. Collins of "Star of the Sea" Church, Marblehead, Mass., as Catholic Chaplain of the Association, he being the first Catholic Priest to join our ranks. It was further voted on motion of Chief Mahoney that we appoint a Protestant Chaplain.

On motion of Chief Burns, it was voted that we invite Rev. Father Collins to deliver the Memorial Address at the Convention.

On motion of Chief Koltonski, it was voted to invite Commissioner Wm. Reilly of Boston to Respond to the addresses of welcome.

On motion of the secretary, it was voted that Chief Daniel B. Tierney of Arlington, Mass., President of International Association, be our guest during the Convention.

In addition to the above, the following persons were invited to prepare papers or address the Convention: President Joe Randlette, Past President Tierney, Frank Cushman, Commissioner Reilly, Boston, Chief Scott Morse, Chief McNally, Somerville, C. R. Lovejoy, State of Maine Insurance Commissioner, Percy Charnock, Dr. Aldrich, Otto G. Koenig, Chief Allen, Brookline, a National Board Speaker, Fred Shepperd.

On motion of Chief Burns, it was voted to adjourn at 5:15 P. M.

JOHN W. O'HEARN, *Secretary.*

In addition to these meetings, the usual routine work of the Association has been carried on by your officers.

Your Secretary, who was elected at the Balsams Convention to represent the Association at Sectional or International meetings, was relieved of this work by two able representatives, President Tierney of International and Vice-President Tom Burns of Bridgeport, who carried out all important assignments at no expense to the Association.

In July 1937, your secretary by authority of the directors, represented the Association and addressed the Convention of the Maratime Province Fire Chiefs at Charlottetown, Prince Edward Island. Your representative was well received and entertained by a fine group of men interested in their work as we are. We look forward to their admission to our Association in a body as another sectional group.

This concludes all the meetings of the directors or officers since our last Convention. You have before you a copy of our last Annual Report and I move you,

Chief MICHAEL J. SHEA, Fitchburg, Mass.

sir, that the report and these records as read be approved as the business done by the Association since our last Convention.

(Signed) JOHN W. O'HEARN, *Secretary.*

* * * * * *

SECRETARY O'HEARN: I will go into the Treasurer's Report, which is not very lengthy.

TREASURER'S REPORT

Following the custom of past years, your Secretary-Treasurer has prepared a brief summary covering membership and financial status since our last convention to the closing of the books June 15, 1938.

The Treasurer's books will show in detail all receipts and expenditures, as testified to by the Auditing Committee, but are not published as part of our Annual Report and are available to any member who may want further information than what is reported here.

On June 15, 1937, the total membership was 794. Since that time we have admitted to membership 103 new members. We have lost by death 11 members, and 53 have been dropped for non-payment of dues or resigned.

The total membership on June 15, 1938 was 833, of which 469 are active and 364 are associate members, classified by states as follows:

Maine	50	Ohio	4
New Hampshire	47	Illinois	2
Vermont	39	Pennsylvania	1
Massachusetts	464	Washington, D. C.	3
Rhode Island	52	California	1
Connecticut	143	New Jersey	1
Louisiana	1	Indiana	1
New York	22	Quebec	1
		Ontario	1

On June 15, 1937, the cash balance was $6,921.38. On June 15, 1938 the cash balance was $6,402.53; $564.24 of this amount is deposited in the Union Market National Bank checking account, Watertown, Mass., and $400.27 in the Savings Account of the same bank; $713.70 is deposited in the Watertown Savings Bank and the balance $4,724.32 is deposited in the Watertown Co-operative Bank.

With reference to funds deposited in the Watertown Co-operative Bank, I wish to present the following statement:

Chief John W. O'Hearn,
New England Association of Fire Chiefs,
Watertown, Massachusetts.

Dear Sir:—

At your request we are pleased to submit the following statement regarding the holdings of the New England Association of Fire Chiefs' accounts in this bank as they will be on June 30, 1938.

The Association holds two matured share certificates for ten shares each, No. 9272, value $2,000, and No. 13854, value $2,000. The dividends on these certificates total $135.00 and were disposed of as follows: $88.00 was credited to your monthly savings account No. 29198; the balance of $47.00 was mailed to you in the form of checks. The bank received from your Association $8.00 to be credited to monthly savings account No. 29198. On this account the Association holds eight shares in series 119. The value of these eight shares as of the above mentioned date will be $724.32.

The foregoing figures show that the value of the Association's accounts will be $4,724.32 on June 30, 1938. Our last report to you in June, 1937 showed the Association's total deposit to be $4,598.72.

Very truly yours,

(Signed) C. H. PARKER,
Assistant Treasurer.

"THE RED-BOOK"

In accordance with the vote of the Balsams convention, our annual report or "Red-Book" was published by the Association and returned a profit.

It is surprising to note the continued lack of co-operation among the members in assisting the secretary in the publication of the book which is our greatest source of profit. Had it not been for the success and receipts obtained, the Association would show a much greater loss. The Association shows a slight financial loss over last year, due in a great measure to the cost of the Balsams Convention being entirely financed by the Association, with the exception of the badges which were contributed by the New Hampshire Fire Insurance Companies.

Increased membership naturally carries an increased cost to the Association. Mailing costs are heavy as are costs involving acts of kindness extended to our members.

Another noticeable loss is caused by members who are dropped for non-payment of dues which usually averages $6.00 to $9.00 per member.

It is interesting to note that our membership at the present time is the highest in our history, a total membership of 833, and that during the past year we paid to International Association a total of $628.00 or $1.00 for each member who had paid dues in our Association.

It is also interesting to note that 150 members at this time owe a balance of from $6.00 to $9.00; all are liable to suspension after this Convention unless the amounts are paid, as the by-laws provide for this at the end of two years.

The membership can and should be increased; urge your neighbor Chief to join, as we are working for all, all should support us in this work.

The secretary-treasurer's books are here at the convention and are available to members who desire further knowledge of source of receipts and each item of expenditure, as all receipts and expenses are included in separate items in our method of bookkeeping, but for the best interests of the Association are not published in our Annual Report.

Your secretary as usual urges continued co-operation with your officers during the time intervening between conventions, as in this way we can keep in closer touch with the members, for after all you are the organization—your officers are your servants.

Notify us at once of sickness, injury or death, of promotions, retirements and change of address, as all of these things are very essential to our success.

At all times little acts of kindness, a word of cheer to the afflicted and recognition of special events are appreciated among our members, so let's show them we are on the job by attending to these things.

Your secretary again expresses his appreciation for your assistance and co-operation and trust that we may continue to carry on with renewed efforts to the end that our Association will hold the confidence and respect of the communities we serve.

JOHN W. O'HEARN,
Secretary-Treasurer.

CHIEF ALLEN, Brookline, Mass.: I move that the report be accepted and made a part of the records.

PRESIDENT RANDLETTE: Except the Treasurer's report, which will be acted upon after the Auditors' report.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: Are the Auditors ready to make their report?

CHIEF SANBORN, Portland, Me.: The Auditors audited all the accounts and books of the Treasurer and found them to be in perfect order.

MEMBER: I move that the Auditors' report be accepted.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: The Chair will now entertain a motion to accept the Treasurer's report.

CHIEF POPE, Boston, Mass.: I move that the Treasurer's report be accepted.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: Is the Registration Committee ready to report?

CHIEF HAPPNY, Concord, N. H.: We will have the report here immediately.

PRESIDENT RANDLETTE: Committee on Exhibits?

CHIEF KOLTONSKI, Rutland, Vt.: There were twenty-nine exhibitors using a space of 5,750 feet, with a total income of $1,435. There is a slight expense out of that, but we will have a net income of approximately $1,200.

PRESIDENT RANDLETTE: You have heard the report of your Exhibit Committee; what do you wish to do with it?

MEMBER: I move it be accepted.

(Motion seconded and carried.)

Alton Hall Blackington

Providence Fire Dept. Diving Squad at "Galilee" Searching for Bodies

PRESIDENT RANDLETTE: Committee on Courtesies?

CHIEF HENEY, Barre, Vt.: Mr. President, your Committee on Courtesies ask for further time in order that they may include all those who have contributed to the success of this convention.

PRESIDENT RANDLETTE: You have heard the report of the Committee on Courtesies.

MEMBER: I move it be accepted and placed in the records.

PRESIDENT RANDLETTE: I would say for the benefit of the members of course we will have a complete report in the record, but the committee has been unable to contact Chief Stockwell to know just who to include in the courtesies, but it will be included in the report in the Red Book.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: Are there any special committees to report? We will call for the Registration Committee report as soon as they are here. They are waiting for the last minute, of course.

Any unfinished business? Any new business?

Chief O'Hearn has a few words.

SECRETARY O'HEARN: Mr. President, during the convention we have had a representative from New Jersey, Jimmy Keegan, who is like yourself a fireman, in charge of salvage work in the Newark Fire Department, and Jimmy is in charge of the trip this year as well as the exhibits for the International Convention. He was to speak to you and answer any questions you might have in relation to the convention. I assume that everybody here, everybody who is on the mailing list, received a copy of the itinerary. I have some here, and if you have not received it and are interested in it, you can have one. I want to assure you if you have any misgivings or any doubt of this trip out of New York as arranged, most everyone who went to Oklahoma will agree with me that we were exceptionally well taken care of. They call them the Eastern Regulars, and believe me, they know how to do things. If you have any idea of going or know anybody who has, get in your reservations as soon as possible. Cancellations are always in order. Don't wait until the last minute. Later, if you can't go, say so. There is no money goes with the reservation. It will be at least ten days before the convention before you are asked to send any money. This trip will start out of New York. The New England members get to New York and get home the best they can but the special train starts from New York, and the idea is to find out how many are going to find out what the train make-up will be. It is early to make reservations or talk of a convention in September, but don't be disappointed. Talk it up and let's make it a real New England sectional convention. When we went to New Orleans before, we had a whole train out of Boston with 125. Things were better than they are now, but I think with the setup if you possibly can make it, if you can get your communities to finance it, if only in part, you will enjoy the convention. New Orleans is advertised as America's most interesting city, and I believe if you go there, when you come home you will agree it is an interesting city. I have pamphlets with reservation blank attached and the whole story. I am saying this in the absence of Jimmy whom I expected to be here. He wanted to talk to you yesterday but the session was very long and we excused him and allowed you to get out of the heat.

I have a few telegrams and letters. This letter is from the Mayor of Boston and sent to the President:

June 20, 1938.

President,
New England Fire Chiefs' Association,
Burlington, Vermont.

My dear Sir:—

As Mayor of Boston I send you greetings on the occasion of your annual convention, Boston being represented by its fire commissioner, William Arthur Reilly.

I desire to invite your association to hold its convention in Boston next year. You have not met in our city for six years and I am sure that our citizens would desire that a hearty invitation be given you.

Commissioner Reilly will present our invitation in person. This letter supplements that invitation. Should you decide to meet here you may count on me to do all that is possible to make your visit happy.

With all kind regards, I remain

Yours sincerely,

(Signed) MAURICE J. TOBIN,
Mayor.

For those of you who don't know the Mayor of the City of Boston, we have an exceptional Mayor there this year. I am not a Bostonian.

I have a telegram dated June 22nd addressed to the Convention:

"Mr. George Wellington, President of the Board of Fire Commissioners of Bridgeport, has been authorized to speak fully in my behalf or in the behalf of Bridgeport.

JASPER MCLEVY, *Mayor* of Bridgeport (Conn.)"

This is the annual one extending congratulations from the New Ocean House, Swampscott. Each year they have sent us a letter of congratulations.

"The New Ocean House at Swampscott, Massachusetts, send greetings to the New England Association of Fire Chiefs and best wishes for a successful meeting.

CLEMENT KENNEDY, *President.*"

One from Providence, R. I., addressed to the Association:

"As Mayor of the City of Providence I desire to extend to your organization a cordial invitation to hold their nineteen thirty-nine convention in Providence.

JAMES E. DUNNE, *Mayor.*"

I also have the following telegrams and letters from Providence which I will read:

"Rhode Island cordially invites New England Fire Chiefs to Providence next year.

ROBERT E. QUINN, *Governor.*"

CITY OF PROVIDENCE, RHODE ISLAND

BUREAU OF POLICE AND FIRE

June 20, 1938.

Mr. Thomas H. Cotter,
New England Fire Chiefs' Convention,
Burlington, Vt.
My dear Chief:
The Bureau of Police and Fire approve any attitude you may take in the matter of extending an invitation to the New England Fire Chiefs' Association to hold their annual Convention in 1939, in the City of Providence.

Yours sincerely,
(Signed) SAMUEL GEE,
Secretary.

June 21, 1938.

Chief Thomas Cotter
Vermont Hotel
Burlington, Vt.

Providence Chamber of Commerce cordially invited Fire Chiefs of New England to meet in Providence, 1939.

PAUL R. LADD,
Manager Convention Bureau.

June 21, 1938.

New England Association of Fire Chiefs,
Vermont Hotel,
Care Chief Thomas H. Cotter

May we extend a hearty invitation to New England Fire Chiefs to meet in Providence next year. The Biltmore will go the limit to make a Providence convention an unqualified success.

CLAYTON S. HICKS,
The Providence Biltmore.

THE PROVIDENCE BILTMORE

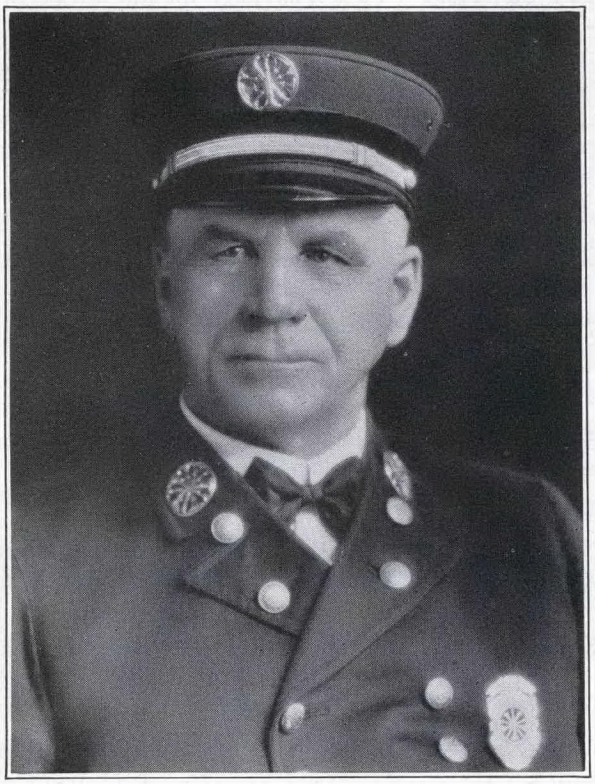
Providence, R. I.

June 18, 1938.

New England Association of Fire Chiefs,
In Convention Assembled,
Burlington, Vermont.
Gentlemen:

The Biltmore Hotel in Providence welcomes this opportunity to extend to the membership of the New England Association of Fire Chiefs a most cordial invitation to meet in Providence in 1939.

Annually this enterprising city is the scene of a large number of successful conventions and each year since its inception, the Biltmore has enjoyed the privilege of entertaining the majority of groups convening here. We point with pride to this record for we feel it a fair indication of our ability to provide for the needs of a group such as yours.



Chief FRANK F. DICKINSON, Brockton, Mass.

Excellent meeting accommodations, entirely adequate for your total requirements, will be placed at your disposal with our compliments. The following brochure shows these accommodations in some detail.

A convention staff, thoroughly skilled in planning for and handling conventions, will devote itself to the success of your meeting.

We sincerely hope to welcome the New England Association of Fire Chiefs to Providence in 1939.

Cordially,

(Signed) DUANE WALLICK,
Vice President and Manager.

PRESIDENT RANDLETTE: The next on our order of business is the consideration of a place for our seventeenth convention.

CHIEF ALLEN, Brookline, Mass.: Mr. President, owing to the limited number of delegates here today, I think we would be unable to arrive at a satisfactory decision. So I move the time and place of the next convention of this organization be left with full authority to the incoming officers and incoming Board of Directors.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: The next order of business is your election of officers. The Chair awaits any nominations for President.

CHIEF REIF, New Haven, Conn.: I nominate Thomas F. Burns of Bridgeport as President of the Association.

PRESIDENT RANDLETTE: Are there any other nominations?

CHIEF ALLEN, Brookline, Mass.: I move the nominations be closed and the Secretary cast one ballot for Thomas F. Burns for President.

(Motion seconded and carried.)

PRESIDENT RANDLETTE: The Secretary has performed that duty and you have elected Thomas F. Burns of Bridgeport, Conn., as President of this Association.

NEWLY-ELECTED PRESIDENT BURNS: I wish to thank the delegates for the honor you have bestowed upon me this morning, and I will try to carry on with the same efficiency as in the past. I thank you.

Now I will have the pleasure of pinning this badge on the Past President.

Your next will be the selection of the First Vice President.

CHIEF ALLEN, Brookline, Mass.: Mr. President, it is with pardonable pleasure that I rise to nominate a colleague, friend and neighbor for this high office, and I place in nomination Samuel Pope, Chief of Boston.

PRESIDENT BURNS: Any further nominations?

CHIEF PACHL, New Haven, Conn.: I move the nominations be closed and the Secretary cast one ballot for Samuel Pope.

(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has performed his duty and you have elected Samuel J. Pope of Boston, Mass., as your First Vice President.

FIRST VICE PRESIDENT POPE: I want to thank all the delegates present for the honor you have bestowed on my city and not on myself. Thank you very much.

PRESIDENT BURNS: The next will be the election of Second Vice President.

CHIEF COTE, Woonsocket, R. I.: I wish to place in nomination the name of Thomas H. Cotter of Providence.

PRESIDENT BURNS: Any other nominations?

CHIEF ALLEN, Brookline, Mass.: Mr. President, I move the nominations be closed and the Secretary cast one ballot for Chief Cotter.

(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has cast one ballot for Thomas H. Cotter and you have elected him as Second Vice President.

SECOND VICE PRESIDENT COTTER: I feel honored and I will do the best I can for the Association.

PRESIDENT BURNS: Secretary-Treasurer.

CHIEF ALLEN, Brookline, Mass.: I don't want to hog everything but I do always welcome the opportunity to pay tribute to this old colleague, a man who has served for many years with credit to himself and honor to the Association. I doubt if many realize the work Chief O'Hearn puts into his office. He goes beyond mere duty. He gives everything he has, the highest sort of service. So again I rise to nominate John O'Hearn for Secretary and Treasurer, and in addition to that, to save anybody the effort of rising, I move the Past President cast one ballot.

(Motion seconded and carried.)

PRESIDENT BURNS: The Past President has cast one ballot for Chief John W. O'Hearn, and you have elected him as Secretary-Treasurer for the ensuing year.

PAST PRESIDENT RANDLETTE: I would move you at this time that the annual salary be paid to the Secretary-Treasurer.

(Motion seconded and carried.)

PRESIDENT BURNS: The State Vice Presidents. Maine.

CHIEF PAYSON, Camden, Me.: I nominate Chief Oliver T. Sanborn of Portland, Maine.

PRESIDENT BURNS: Are there any other nominations?

PAST PRESIDENT RANDLETTE: I move the nominations be closed and the Secretary cast one ballot.

(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has performed his duty and you have elected Oliver T. Sanborn of Portland, Maine, as State Vice President from Maine.

The next is New Hampshire.

CHIEF HAPPNY, Concord, N. H.. I nominate Chief Charles H. French of Manchester, New Hampshire.

MEMBER: I move the nominations be closed and the Secretary cast one ballot for Chief French.

(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has performed his duty and you have elected Charles H. French of Manchester, New Hampshire, as State Vice President from New Hampshire.

Vermont.

CHIEF HENEY, Barre, Vt.: I nominate Chief Alfred H. Koltonski of Rutland, Vermont.

MEMBER: I move the nominations be closed and the Secretary cast one ballot for Chief Koltonski.

(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has cast one ballot for Alfred H Koltonski of Rutland and I declare him elected State Vice President from Vermont

The next is Massachusetts.

CHIEF LAWTON, Middletown, Conn.: I would like to place the name of William Mahoney.

MEMBER: I move the nominations be closed and the Secretary cast one ballot for Chief Mahoney.

(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has performed his duty and you have elected William C. Mahoney of Peabody as State Vice President from Massachusetts.

Rhode Island.

CHIEF SAVAGE, Valley Falls, R. I.: I nominate the name of A. J. Cote.

MEMBER: I move the nominations be closed and the Secretary be instructed to cast one ballot for Chief Cote.

(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has performed his duty and you have elected A. J. Cote of Woonsocket as State Vice President from Rhode Island.

Connecticut.

CHIEF PACHL, New Haven, Conn.: I place in nomination Chief Cavanaugh of Waterbury.

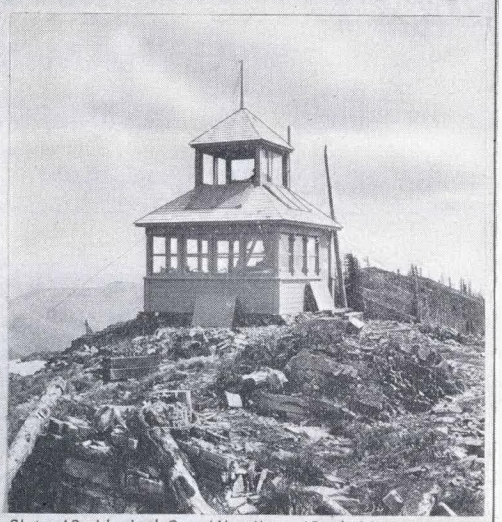
CHIEF CAVANAUGH: Mr. Chairman, I don't think I can handle that this year. There are a lot of things to handle there, and I would like to place in nomination the name of James Downey of Wallingford.

CHIEF PACHL: I move the nominations be closed and the Secretary cast one ballot for Chief Downey.

Chief GEORGE L. JOHNSON, Waltham, Mass.

Protecting Our National Forests

Building a firebreak - Cleveland National Forest, Calif.

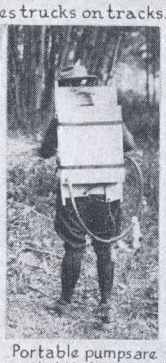


Striped Peak Lookout - Coeur d'Alene National forest, Idaho (note living quarters)

South Carolina uses trucks on tracks.

Photos courtesy of
U.S. FOREST SERVICE

Fire fighters arriving at Kanika National Forest, Idaho

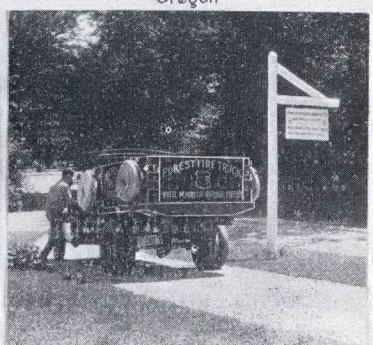


Portable pumps are used at Medicine Bow, Wyoming

Removing burned trees in Mt. Hood National Forest, Oregon

Fighting crown fire in Fremont National Forest, Oregon

Pack Mules on way from "Remount Depot" to fire camp, Montana



Trucks are used in the White Mt. National Forest, N.H.

(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has performed his duty and you have elected Chief James Downey of Wallingford as State Vice President from Connecticut.

The next is the election of Sergeant-at-Arms.

CHIEF LAWTON, Middletown, Conn.: I nominate Chief Happny of Concord as Sergeant-at-Arms.

MEMBER: I move the nominations be closed and the Secretary cast one ballot for Chief Happny.

PRESIDENT BURNS: The Secretary has performed his duty and you have elected Chief William T. Happny of Concord, N. H., Sergeant-at-Arms.

We would like to have a director to the International from our division.

CHIEF RANDLETTE, Richmond, Me.: I would like to place in nomination for the position of representative to the International our present Secretary, who served us last year, and I think where he is in touch with the International as he is that we should keep him on the board of directors, and I therefore nominate John O'Hearn.

(Motion seconded and carried.)

PRESIDENT BURNS: The next on the program will be the selection of the Press Representative.

CHIEF PACHL: I think the President appoints the Press Representative.

CHIEF RANDLETTE: Last year we elected him.

CHIEF KOLTONSKI, Rutland, Vt.: I place the name of Harry Belknap.

MEMBER: I move the nominations be closed and the Secretary cast one ballot for Harry Belknap.

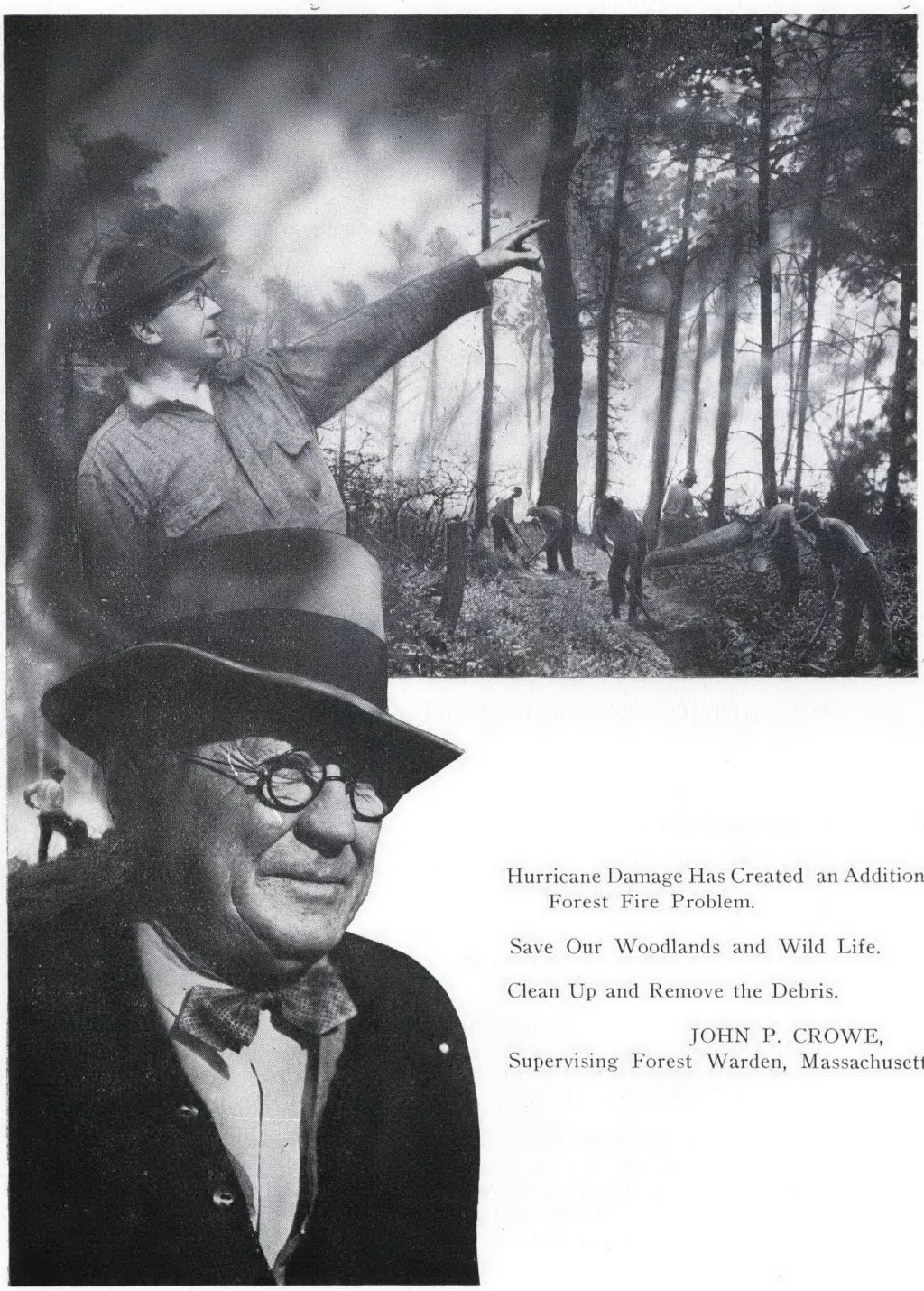
(Motion seconded and carried.)

PRESIDENT BURNS: The Secretary has performed his duty and Harry Belknap is elected Press Representative.

SECRETARY O'HEARN: Mr. President, that completes the officers. As far as I know all of the officers have been elected, and as far as I am concerned, just thanks, and I will carry on as best I can.

What I want to say is that this fellow I was blowing about, Jimmy Keegan, came in and I want you to know who he is. I wish you would step up on the platform and let the fellows see you and tell them yourself and let them know how the mosquitoes talk down in New Jersey.

MR. KEEGAN, Newark, N. J.: Gentlemen, I would like to have all the New England Association come with us. We are going to make this just a week trip, all the way by rail. I would like to have you get your reservations in early, and if you want to cancel them after a while, all right. Don't send any money. Just send your reservations in. We will let you know in time just what you have got to pay. Thank you.



Hurricane Damage Has Created an Additional Forest Fire Problem.

Save Our Woodlands and Wild Life.

Clean Up and Remove the Debris.

JOHN P. CROWE,
Supervising Forest Warden, Massachusetts.

PRESIDENT BURNS: Chief Randlette, will you please step forward?

CHIEF POPE: Mr. President, it is indeed a pleasure for me at this time to make the presentation to Chief Randlette, our Past President. I think one of the things that tends to make an organization successful is due to the fact that they have good leaders, and I don't think there has been anything that has contributed to the success of the New England Fire Chiefs' Association to any greater extent than the fact that we have been blessed by good presidents. At this time we all are assured that Chief Randlette of Maine was no exception to that rule, and true to our New England traditions we never let a President retire without in some small degree letting him have something whereby he may remember our gratitude for him and for his work, and at this time it gives me pleasure to present to you, Chief Randlette, this little token for your good work during the past year.

PAST PRESIDENT RANDLETTE: Chief Pope, Members of the Association, I can assure you that I am very grateful. I want to say that I have enjoyed the office of President of this Association and I have tried to the fullest extent of my ability to serve you as you would like to be served. It has indeed been a pleasure to work with you, and the honor that has been conferred on me I hope has not been without avail. Thank you.

SECRETARY O'HEARN: Mr. President and Members Assembled, I have the report which I was waiting for, the report of the Registration Committee.

June 23, 1938.

On June 20 we had 53 Active and 39 Associate members, 34 male and 49 female guests. On June 21 we had 103 Active and 56 Associate members, 26 male and 82 female guests. On June 22 we had 14 Active and 22 Associate members, 14 male and 9 female guests. There was a total attendance of 170 Active members, 117 Associate members, 74 male guests and 140 female guests, making a total registration of 501. Of this number 25 are new members.

The report of the receipts from the Registrars for the three days is as follows:

226 @ $3.00	$678.00
8 @ 6.00	48.00
1 @ 9.00	9.00
1 @ 5.00	5.00
25 New Members	75.00
	$815.00

CHIEF O. T. SANBORN,
WILLIAM C. MAHONEY,
WILLIAM HAPPNY.

SECRETARY O'HEARN: I move you, sir, that this report be accepted and made a part of our record.

(Motion seconded and carried.)

PRESIDENT BURNS: A motion to adjourn is in order.

MEMBER: I move we adjourn.

(Motion seconded and carried.)

REPORT OF PRESS REPRESENTATIVE

Advance notices of the convention program were mailed to every newspaper, both daily and weekly, in the six New England States.

At the convention a press table was provided and personal visits were made to the editorial offices of the two Burlington newspapers.

The election of officers was sent out over the wires of the Associated Press, International News Service, and United Press Association.

Good space was obtained in the Burlington papers for convention reports. Accounts of directors' meetings and of the convention proceedings were prepared for "Fire Engineering" magazine, also a detailed description of the exhibits.

HARRY BELKNAP,
Press Representative.

June 30, 1938.

THE EXHIBITS

Modern streamlined motor fire engines with enclosed bodies featured the exhibit of apparatus at the 16th annual convention of the New England Association of Fire Chiefs in Burlington, Vt., on June 21, 22, and 23.

The ground floor of the big memorial auditorium was well filled with motor apparatus and accessories, all available space having been engaged. The convention meetings, with the exception of the memorial service, took place in the hall on the floor above the exhibition room so that a good attendance was assured.

The center of interest and attraction was the big new sedan type motor pumper designed by Chief Selden R. Allen for the Brookline, Mass., fire department, and built by the American-LaFrance and Foamite Industries, Inc., of Elmira, N. Y. This machine has a pumping capacity of 1500 gallons of water per minute and represents the last word in ultra modern design and equipment. The entire interior is lined with shining stainless steel. The pump is of the centraflow type. Ample space is provided in lockers and built in cubicles for all kinds of fire fighting implements and there are compartments for carrying the usual amount of two and a half inch hose. Complete protection is afforded the firemen from rain, snow, and cold while going to and from fires.

Besides the new Brookline engine the American-LaFrance firm exhibited a new stream lined motor pumper of the triple combination type and 1000 gallon per minute capacity for the Sussex, N. J., fire department. This machine is fitted with a 100 gallon booster tank, a 24 ft. extension ladder, and a 14 ft. roof ladder. It has a 3 man enclosed cab and space is provided in the body for carrying 1200 feet of 2½ inch hose.

The accessories division of the American-LaFrance company showed a line of equipment including Barker-Eastman nozzles, LaFrance inhalators, shut-off gates, gas masks, first aid kits, and various tools and appliances.

The representatives at the convention were Joe Webber, of Boston; Lester J. Creaser, Boston district manager; Arthur G. Sullivan, apparatus sales manager; Hugh Walker, chief factory engineer from Elmira, N. Y.; Harris Hunt, of Connecticut; Harry J. Monahan, New Hampshire; Ray Sluiter, Rhode Island; James R.

PALS

CHIEF EDWARD F. DAHILL
New Bedford, Mass.

CHIEF CHARLES H. FRENCH
Manchester, N. H.

Shea, Western Massachusetts; George Loomis, Vermont; and S. R. Jones, of the Maine district.

The Seagrave Corporation, of Columbus, O., exhibited a 7 man canopy cab triple combination motor pumping engine of 500 gallon capacity built for Housatonic Engine Company No. 1, of Great Barrington, Mass. This machine has an 8 cylinder motor of 150 B.H.P. and is fitted with a 100 gallon booster tank. The large pump is of the centrifugal type. The equipment includes a 24 ft extension ladder and a 14 ft. roof ladder with a hose body to carry upwards of 1200 feet of 2½ inch hose.

The Seagrave representatives were Lester Stevenson, general sales manager; Frank Taft, New England manager; Howard Ensign, of Hartford, Conn.; Philip Putnam, Boston, Mass.; C. E. Jeffries, Boston; Frederick Alger, Boston; and Charles Blomquist, of Boston.

A handsome motor pumping engine, resplendent in glistening white paint, was displayed by the Ahrens-Fox Fire Engine Company. This was a 750 gallon centrifugal pumper built for Engine Company No. 2, of the Foxboro, Mass., fire department. It carried 1200 feet of 2½ inch hose and was fitted with a Baker portable turret gun.

The Ahrens-Fox men were headed by President Charles A. Fox and included Gordon Litchfield, district manager; Earl Moulton, and Elwood Yoho.

The Maxim Motor Company, of Middleboro, Mass., showed for the first time a brand new type enclosed streamlined motor pumper for a full engine crew. This machine had a 750 gallon centrifugal pump and carries 1200 feet of 2½ inch hose under a sectional removal deck covering extending to the rear of the enclosed section. The motor is a 6 cylinder unit of 150 horsepower and there is also a booster pump and booster tank of 100 gallons size. Two Dietz searchlights are mounted on telescoping tubes, one on each side of the apparatus for floodlight service at night fires.

An unusually complete line of fire department supplies was exhibited by the new accessories division of the Maxim firm. The display included Hewitt hose, Pyrene extinguishers, Hudson and Indian pump cans, the Maxim no-sand strainer, Maxim forest fire pump with ejector primer, and an 85 horsepower, 500 gallon portable gasoline pump for emergency duty.

President Ernest L. Maxim, Treasurer Joseph Whitcomb, Superintendent of Service Earl Shaw, Leighton Maxim, Russell G. Brown, and Robert Clark were on hand to demonstrate and explain the exhibits.

The Mack Motor Truck Company exhibited a quadruple duty city service ladder truck built for Edgartown, Mass. This machine had complete hook and ladder equipment and tools as well as motor pump, booster tank, and hose carrying body making a unit that would constitute almost a complete fire department for a small community or would be equally valuable as part of a larger department. The truck was painted white and occasioned much favorable comment from fire chiefs who examined it. Charles E. Stewart and Mr. Harrington were the Mack representatives on duty.

The Farrar Company, of Woodville, Mass., displayed a new motor fire truck built for Norwich, Vt. and equipped with a 500 gallon Barton pump. This apparatus also carried a Barton portable forest fire pump, a 200 gallon booster tank, 1200 feet

of 2½ inch hose, a 32 ft. extension ladder, and a 10 ft roof ladder. Clarence Farrar and Andrew Williams were the representatives.

The Flexible Ambulance Company exhibited a very fine vehicle, complete in every detail. This company is furnishing the ambulances for the New York World's Fair.

The Rockwood Sprinkler Company, Worcester, Mass., showed the well known Rockwood automatic sprinklers and dual guard fire detecting system, also a new quick acting automatic fire door release and a new quick acting automatic fire control system for air conditioning equipment. The firm was represented by President William J. Carroll, James Ryan, Norman Sherwood and Bert Linval.

The Gamewell Company, of Newton, Mass., the world's foremost manufacturers of fire alarm signalling systems, was well represented at the convention by a delegation headed by President Vincent J. Stanley and E. J. McCarthy, general sales manager. The other Gamewell men were Leonard Dawson, Russell A. Glenn, Everett Angier, Earl Smiddy and Charles Smith.

The Gamewell exhibit included the latest type of Gamewell Peerless 3-fold fire alarm box and a display showing the changes in design of fire alarm boxes that have taken place from 1851 to 1938. A box used on Boston Common in 1851 was shown. The Vitaguard and Vocalarm systems were shown and there was an demonstration of a complete school fire alarm installation including dual alarm, exit alarm, sprinklerstat and sprinkler connections.

The Justin A. McCarthy Company, of Boston, Mass., showed Manhattan fire hose, the Taylor Minute Man hose bridge, Carpenter and Bright Bumper lights, and a complete line of fire department supplies. Justin McCarthy, Arthur Lindh, and W. B. Boucher were in charge.

Harry J. Lovell showed B. F. Goodrich fire hose with samples of the crude rubber used in the manufacture of hose linings. P and Q door openers, siphons, chemical hose, and suction hose were also displayed. Mr. Lovell was assisted by W. E. Sholander and Charles "Sandy" Chapman.

The Gorham Fire Equipment Company, Boston, Mass., represented by Joseph T. Gorham, showed sirens, C O Two extinguishers, Quaker City Rubber Company fire hose, door openers, Buckeye nozzles, pump cans, axes, Clayton sirens, rubber boots, Acme gas masks, and various tools and appliances for fire department use.

The usual handsome display of badges and fire department insignia was shown by the C. G. Braxmar Company, of New York City. George E. Bradbrook and John O. Veit were in charge.

The Mine Safety Appliance Company, represented by Captain Alfred Kinsella and Jules Steffen, showed the M.S.A. hose mask, the oxygen mask, the Burrell all service mask, H and H inhalators, and an explosimeter used for detecting the presence of inflamable and explosive gases in confined spaces.

The Arthur H. Blanchard Company, of Cambridge, Mass., the New England fire hose division of the Boston Woven Hose and Rubber Company, displayed fire

OUR ORGANIZERS

hose, suction hose, nozzles, axes, the Blanchard flexicot, Pacific portable forest fire pumps, and general fire department supplies and tools. The representatives were Arthur Blanchard, Andrew Deibel, Charles Gorman, and Frank Grant.

Lubreux motor solvent was shown by Clifton E. Bain, of Melrose, Mass., representing Lubreux Products, Inc., of Boston.

The well known and highly recommended Atlas life nets, Atlas life belts, and the new Atlas rope nets fitted with shock absorbers for use in fire department drills and training school yards were shown by William Moeller, of New York City.

Indian fire pumps for use in fighting forest and brush fires were displayed by the D. B. Smith Company, of Utica, N. Y. The firm was represented by W. T. Jones and E. Evans.

The American Fire Equipment Company, of Boston, Mass., displayed a fine and complete line of fire department accessories including Republic hose, Wheat lights, C O Two extinguishers, Eastman Barker play pipes, Eastman deck pipes and deluge guns, the Elkhart mystery nozzle, Akron mist nozzle, tools, gates, axes, sirens, first aid kits, extinguishers, pump cans, etc. John F. Scully, Hubert W. Tracy, C. Leo Gravelle, Joseph A. McLoughlin, and S. B. Dyer were in charge. Among the new items shown by this firm was the U. S. portable electric plant for emergency use. Federal sirens, Hume door openers, and Carpenter lights were also shown.

The United Pyro Chemical Corporation, of Lynn, Mass., general fire-proofers, was represented by Mr. and Mrs. William H. Brown and showed the famous "Kant Blaze" blankets for fire department and hospital use.

The Homelite Company showed portable generators and flood lights. William E. Webb, of Boston, was in charge of the display.

FIRE ENGINEERING was represented by Fred Shepperd, editorial director; I. Herbert Case, vice-president and general manager; and Harry Belknap, of Boston, New England correspondent.

The United States Tire and Rubber Company showed the new Royal Master and Ray Master skid control tires for trucks and pleasure cars. J. J. Buckley, of Boston, was in charge.

Rubber coats and turn-outs were shown by the Mid-Western Manufacturing Company of Mackinaw, Ill. I. A. Swift, New England representative, was in charge.

The Fabric Fire Hose Company, of Sandy Hook, Conn., was represented by Robert Many Wood, Leon R. Meaney, Joseph Ringers, sales manager; P. A. Wood, and O. B. Maxwell.

Other exhibitors were the Boston Coupling Company, represented by Clifford Barker; the Quaker City Rubber Company, the Bi-Lateral Fire Hose Company, Harry Prescott and Son and the Eddy Valve Company, the Boston Janitors' Supply Company, and the American District Telegraph Company. E. G. Clewly represented the Bi-Lateral Fire Hose Company and Erlon S. Noyes represented the Quaker City Rubber Company.

The total amount of floor space occupied by the exhibits was 5,750 feet, according to Alfred H. Koltonski, chief of the Rutland, Vt., fire department, and chairman of the exhibit committee.

Just outside the entrance to the hall the Budd Ambulance Company exhibited the flexible ambulance built especially for use at the New York World's Fair—1939.

The Eureka Fire Hose Division of the U. S. Rubber Products Company did not have an exhibit this year, but the firm was represented at the convention by Joseph H. Green, president; John T. Dwyer, Percy R. Lewis, A. Lee Cowles, and William F. Abbott.

Among the organizations represented at the convention were the Massachusetts State Firemen's Association, the Massachusetts Fire Prevention Association, the Fire Chiefs' Club of Massachusetts, the New Hampshire Fire Chiefs' Club, the Rhode Island Fire Chiefs' Club, the State Association, Fire Chiefs of Maine; the Box 52 Association, Inc., of Boston, Mass.; the Boston Sparks' Club, the Middlesex County, Mass., Forest Fire Wardens' Association; the Minute Man Foresters' Protective Association, and the Norfolk and Bristol County, Mass., Forest Wardens' Association, and the Essex County Wardens' Association.

December 8, 1938.

REPORT ON COMMITTEE ON COURTESIES

YOUR COMMITTEE EXTEND OUR APPRECIATION TO HIS HONOR, Mayor Louis F. Dow, Chief and Mrs. Stockwell, the members of the Burlington Fire Department, Chamber of Commerce, the management of the several theatres and the hotels who did so much to make our convention a success, and to many others unknown to your committee who contributed to what has been a most pleasant visit, we can only say we are grateful and thank you in behalf of the Association.

Committee on Courtesies,

JOHN C. HENEY
ALLEN F. PAYSON
FRED H. PYE

Boston Officers' Club on Holiday at Norwell Aug. 21, 1935
"Let's Go to Boston in 1940"

New England Association of Fire Chiefs Constitution

ARTICLE I.

Section 1. The Officers of this Association shall consist of a President, First Vice-President and Second Vice-President, a Secretary and Treasurer, and a Vice-President for each state, who shall hold their offices for one year or until their successors are elected. All of said officers shall be elected by ballot at the annual meeting. None but active members "Chiefs or Ex-Chiefs" shall be elected to office.

Section 2, as amended 1936 convention. There shall be a Board of Directors, consisting of the President, First Vice-President, Secretary and the Vice-President from each state. This board shall meet at the time and place designated by the President. Only the actual expenses of the Board shall be paid by the Association.

Section 3. Three members of the Board of Directors, selected by the President shall constitute the auditing committee.

ARTICLE II.

Duties of Officers

Section 1. It shall be the duty of the President to preside at all meetings of the Association, and perform such other duties as may be incident to his office.

Section 2. It shall be the duty of the Senior Vice-President to perform the duties of the President during his absence.

Section 3. It shall be the duty of the Secretary to keep a complete record of the proceedings of the Association, the Board of Directors and the standing committees; of which he shall be an ex-officio member; to receive and answer all communications pertaining to the Association; cause to be prepared a full report of the proceedings of each annual convention, which report shall be printed in pamphlet form, and one or more copies mailed by him to each member of the Association within 90 days of such annual convention. He shall receive all communications, contributed papers on topics, etc., designed to be presented to the convention. He shall collect all moneys due the Association and pay the same over to the Treasurer previous to the final adjournment of the annual convention and at all other times when the funds in his possession amount to one hundred dollars ($100.00) taking his receipt therefor and shall keep a correct account of same. He shall also employ such assistance as he may need for the collection of dues at the annual conventions and reporting the proceedings of the same and such other expenditures for clerical assistance at other times as may be approved by the Auditing Committee, and he shall execute a bond to the Association in the sum of Five Hundred Dollars to be approved by the Board of Directors, the expense of procuring same to be borne by the Association. The salary of the Secretary to be fixed annually at the meeting of the Association. He shall also perform such other duties as shall be assigned to him by the President and Board of Directors. He shall at all times retain a sufficient sum in his possession to defray the necessary incidental expenses of his office, but he or any other officer shall not assume an indebtedness exceeding twenty dollars without the approval of the auditing committee.

Section 4. The Treasurer shall have the custody of the funds of the Association; he shall receive all moneys from the Secretary except what is necessary for the expenses of the latter's office, giving his receipt therefor; keep a true account of all moneys received and disbursed; pay all bills after the same have been ap-

proved by the Auditing Committee, signed by the President; and countersigned by the Secretary, and at the annual convention of the Association make a full and correct report of the same, and he shall execute a bond to the Association in the sum of One Thousand Dollars, to be approved by the Board of Directors, the expense, if any, of procuring same to be borne by the Association. The salary of the Treasurer shall be fixed annually by the Association at its annual convention.

Section 5. It shall be the duty of the Board of Directors to transact all the business of the Association during the time intervening between the annual meetings and to assign a list of topics to members of the Association. They shall have full power to expunge from the minutes, before printing, anything that is objectionable to the Association or its members. They shall make arrangements with railroads and steamship companies for carrying members to and from the place of holding the annual meetings of the Association, following their appointment, and communicate such arrangements to the members by letters, circulars and otherwise.

ARTICLE III.

Meetings

Section 1. The annual meeting of the Association shall be held at such place as the convention shall designate at its annual meeting, and upon such date as the Board of Directors and Chief of Fire Department of the city in which the convention is to be held shall determine, and twenty members shall constitute a quorum to transact business.

Section 2. Chiefs inviting the Association to hold its annual meetings in their cities shall understand that the Association expects and requires that their cities shall furnish, without cost, a hall suitable for holding the sessions of the Association, an exhibition hall of ample size to accommodate the apparatus, equipment, etc., that may be reasonably expected to be offered for exhibition, and suitable grounds for the testing of pumpers, trucks and other apparatus and appliance. The necessary fire engines, hose, nozzles and a sufficient number of men to carry out the test as may be required by the Exhibit Committee. The exhibit hall and the testing grounds shall at all times be under the sole control of the Exhibit Committee and under such rules as they may adopt. Badges for members, visitors and ladies shall be furnished free to the Association in such numbers as the directors may deem sufficient to accommodate the expected attendance. The material, design and workmanship of badges to be entirely in hands of local Chief. Entertainments, such as the local Chief may wish to arrange for, must not interfere with the business programme of the Association.

Section 3. Nothing in Section 1 shall be construed as prohibiting the Board of Directors in case of extraordinary emergencies from changing place of meeting.

ARTICLE IV.

Membership

The membership shall consist of: A—Active; B—Associate; C—Honorary Life; D—Life; E—Contributing.

A. Active Members—Chiefs and Ex-Chiefs of Fire Departments, Fire Commissioners, Chiefs or Superintendents of Insurance Patrols and Chiefs of Private Fire Departments. Dues, $3.00 annually. B. Associate Members—City or Town Officials, Assistant or Deputy Chiefs or members of fire departments, Individuals representing firms and corporations interested in the protection of life and property against fire. Dues, $3.00 annually. C. Honorary Life Members—Honorary Life Membership may be conferred upon active members upon their retirement from

office, provided they have been members of the Association for a period of five years immediately preceding the date of their retirement, and provided further that they are not identified with fire protection from a commercial standpoint. Honorary Life Membership carries all the privileges of active membership without dues. D. Life Membership—First. Individuals, firms and corporations interested in the protection of life and property against fire shall be eligible to life membership upon the payment of $100.00. Second. The Association may, by a majority vote elect any associate member to life membership without the payment of any fee; and any member so elected shall thereafter be exempt from dues for life. E. Contributing Members—Individuals and firms manufacturing and dealing in fire apparatus, supplies and fire prevention appliances and materials, exhibiting at the annual meetings shall pay an annual membership, of such sum as the Directors may determine from year to year, based upon the number of square feet required and used by them for their exhibit, provided that the membership for any one year shall not be less than ten cents per square foot of space used.

ARTICLE V

Amendments

Section 1. This Association shall have full power, at any time or meeting, to alter, amend or revise this Constitution and By-Laws, but the same shall not be altered, amended or revised, except by a vote of two-thirds of the members present and entitled to vote, but no amendment shall be considered that has not been presented and read at a previous session.

BY-LAWS

Section 1. All members of this Association shall be required to pay a membership fee of Three Dollars ($3.00) in advance.

Section 2. The Association shall have (through its Board of Directors) full dower to levy an assessment and collect from the members an amount sufficient to cover the entire expense of said meeting.

Section 3. Any question coming before the convention for which no provisions are made in the Constitution and By-Laws, the presiding officer shall be governed in his decision by the rules laid down in Cushing's Manual.

Section 4. The President shall appoint all committees, and all standing committees shall be appointed at the first session of each annual meeting.

Section 5. The second day of each convention shall be reserved for exhibitors to display their various articles and improvements in fire apparatus.

Section 6. The exhibition hall shall be closed during the business sessions of the convention.

Section 7. The Secretary and Treasurer of this Association shall receive for his services or their services such sum annually as may be fixed by the Association.

Section 8. All papers to be presented at any meeting of the Association shall be forwarded to the Secretary thirty days prior to date of such meeting; and he may cause them to be published without expense to the Association in the Fire journals of the country.

Section 9. No member who is in arrears for dues and assessments for one year shall be entitled to vote and any member who is in arrears for two consecutive years, his name shall be dropped from the roll.

Section 10. Associate and Life Members shall be entitled to all the privileges of the Association except the right to vote.

Section 11. Applications for all classes of membership shall be approved by the Credentials Committee, and a majority vote of the Association shall elect.

Section 12. The Secretary shall not register or give a badge, or extend any courtesies of the convention to any one, other than ladies accompanying members, representatives of the press, Honorary Life Members and Life Members, except upon the payment of the regular membership fee.

RULES OF ORDER

Section 1. The presiding officer shall preserve order and decorum. All questions of order shall be decided by him, subject to an appeal by any member.

Section 2. Every member, when he speaks or offers a motion, shall rise in his place and respectfully address the presiding officer and when finished shall resume his seat. He shall confine himself to the question under debate, avoid all personalities and indecorous language.

Section 3. When two or more members shall arise to speak at the same time, the presiding officer shall decide who shall have the floor.

Section 4. A member called to order by the presiding officer shall immediately cease speaking on the question before the house, and shall not resume his remarks until the question is settled.

Section 5. No member shall leave the convention meeting when in session without permission from the chair.

Section 6. The evening of the first day of the annual meeting shall be set apart for the holding of services in memory of deceased brothers.

Section 7. The election of officers and selection of place for holding next annual meeting shall take place on the last day of the convention each year.

ORDER OF BUSINESS

1. Call to order.
2. Roll call.
3. Appointment of committees.
4. Reading of record of last meeting.
5. Reading of communications.
6. Topics and essays.
7. Report of Secretary.
8. Report of Treasurer.
9. Report of committees.
10. Unfinished business.
11. Designation of place for holding next convention.
12. Election and installation of officers.
13. Adjournment.

HARRY BELKNAP, Our Press Representative

Membership of New England Association of Fire Chiefs

MAINE

Alden, Ira C., Chief, Gorham, Me.
Anderson, Edwin A., Chief, Thomaston, Me.
Ayer, Herbert D., Chief, 6 Connor Ave., Fairfield.
Badger, Ray, Chief, Pittsfield.
Bancroft, George E., Chief, Auburn.
Barter, Miles F., Asst. Chief, Boothbay Harbor.
Black, George W., Chief, Easton.
Blaquier, Arsene G., First Asst. Chief, Norway.
Bradish, F. L., Chief, Eastport.
Brown, Walter H., Chief, 15 Iredale St., Bridgton.
Butler, James H., Chief Engineer, Berwick.
Carll, Willis G., Asst. Chief, Gorham, Me.
Caron, Louis B., Fire Commissioner, Lewiston.
Clifford, Wm. H., 3rd, Chief, Cape Elizabeth.
Denison, Clifford D., Chief, Harrison.
Doyle, Irving T., Chief, 165 North Main St., Brewer.
Eldridge, John F., Chief, Kennebunkport.
Estes, Reuben E., Chief, Lewiston.
Gorman, Chas. E., No. 28 B. Lincoln St., Augusta.
Gould, Richard K., 192 Middle St., Portland.
Hamor, Roy, Chief, Bar Harbor.
Hellenbrand, W. N., Chief, Old Town.
Herman, S. A., Chief, S. D. Warren Co., Westbrook.
Herrick, G. A., Chief, Mechanics Falls.
Hinkley, J. A., Asst. Chief, 123 Main St., Richmond.
Hogan, Walter E., Chief, Orono.
Hutchinson, Edward J., Chief Engineer, Boothbay Harbor.
Jeffery, Orville J., Chief, Fire Dept., No. Vasselboro, Me.
Lewis, Percy R., 258 Stevens Ave., Portland.
Lewis, W. B., Chief, Wiscassett.
Liscomb, John I., 1 Woodbury St., South Portland.
Lovejoy, C. W., State Fire Marshal, Augusta.
McCosker, Joseph P., Chief, Bangor.
McCurdy, George R., Chief, Augusta.
McGlauflin, Floyd E., Chief, Presque Isle.
Mercier, Solomon A., Chief, Rumford.
Morse, Scott, Chief, Bath.
Noyes, Erlon S., Eastern Fire Equipment Co., Portland.
Nutter, Robert, Maxim Motor Co., Scarboro.
Pate, Edmund, 2nd Asst. Chief, 85 Hill St., Biddeford.
Payson, Allen F., Chief, Camden.
Putney, P. N., York Beach.
Ramsdell, Edgar E., Reserve Deputy Chief, 569 Main St., Lewiston.
Randlette, J. W., Chief, Richmond.
Reny, Edward A., Chief, Westbrook.
Rutledge, Charles B., Fire Apparatus and Equipment, 95 Smith St., So. Portland.
Sanborn, Oliver T., Chief, Portland.
Small, G. K., 74 Green St., Augusta.

Smith, Walter B., Chief, Freeport.
Spear, Charles O., Jr., Chief, South Portland.
Strong, Albert E., Fire Comm., Cape Elizabeth.
Tinker, George L., Chief, New Portland.
Tracy, Harry B., Chief, Calais.
Williams, Cape., Wm. E., 485 French St., Bangor.

NEW HAMPSHIRE

Barrow, Wm. H., Chief, Candia.
Beane, Walter H., Samuel Eastman Co., Concord.
Berquist, Oscar B., Ex-Chief, Berlin.
Chase, Raymond C., Chief, Rollinsford.
Cogan, George T., Chief, Fire Dept., Portsmouth, N. H.
Connell, Harry J., Chief, Hudson.
Conover, Donald S., 66 Manchester St., Manchester.
Cote, Philip T. J., Chief, Gorham.
Crowley, Roger, Chief, International Shoe Co., Manchester.
Coyle, A. W., Chief, Berlin.
Dodge, Fred M., District Chief, Concord.
Dolley, Herbert A., Chief, Tilton.
Doudera, Capt. Frank, Fire Commissioner, Dixville Notch.
Ely, Wm. B., Pittsfield.
French, Charles H., Chief, Manchester.
Goodrich, Ralph S., Chief, Epping.
Happny, William T., Chief, Concord.
Haskell, Robert W., 260 Pleasant St., Claremont.
Hathorne, R. C., Chief, West Lebanon.
Hildreth, Albert F., Ex-Chief, Hollis.
Holland, James J., 39 Carpenter St., Manchester.
Hough, Willis F., Chief, Lebanon.
Lamott, G. H., Chief, Hampton Beach.
Lary, Geo. L., Senior Warden, Gorham.
Lewin, Charles H., Ex-Chief, 3 Pleasant St., Hanover.
Lewis, George E., Chief, Box 453, Newport.
Lintott, H. C., Fire Commissioner, Nashua.
Mansfield, L. P., Chief, Wolfboro.
Melendy, Albert C., Chief, Nashua.
Monahan, H. J., Ex-Chief, Berlin.
Moore, Kenneth G., 480 Elm St., Manchester.
Newman, William E., Ex-Chief, Hillsboro.
Paige, Wm. A., Chief, 40 Elm St., Goffstown.
Palmer, Allen L., Chief, 24 Sullivan St., Claremont.
Pike, C. Willard, Fire Equipment, Colebrook, N. H.
Post, A. H., Chief, Spofford.
Powers, Mark E., Fire Commissioner, West Lebanon.
Riley, E. B., Chief, Keene.
Robinson, Chester, Chief, Suncook.
Robinson, George E., Samuel Eastman Co., Concord.
Rumrill, Eugene C., Chief, Hillsboro.
Sargent, Fred M., Chief, Sunapee.
Smith, H. A., International Shoe Co., Manchester.
Smith, Wm. S., SChief, Hookset F. D., Manchester.
Spring, Arthur W., Chief, Laconia.
Stevens, Geo. B., Chief, Kingston.
Taylor, F. Robert, Chief, Whitefield.

Wheeler, E. H., Chief, 39 West Bow St., Franklin.
White, Alpheus B., N. H. Assoc. Insurance Agents, Keene.

VERMONT

Adams, W. H., Sec.-Treas., Vt. State Firemen Assoc., Vergennes.
Blair, Willard C., Chief, Vergennes.
Burt, Earl C., Chief, Enosburg Falls.
Burt, George C., Central Fire Station, Burlington.
Carty, William E., Asst. Chief, Burlington.
Chapin, George, First Asst. Chief, White River Junct.
Duso, Carmi J., Enosburg Falls.
Dutton, J. M., Box 63, West Hartford.
Dwyer, Richard H., First Asst. Chief, No. Bennington.
Eaton, F. L., Deputy Fire Marshal, Waterbury.
Ferguson, F. Howard. Supt. Fire Alarm, 234 Grove St., Bennington.
Gauthier, Lawrence W., Ex-Fire Comm., Montpeilier.
Gillette, Waters, Chief, Springfield.
Hanna, Chief, No. Springfield.
Heney, John C., Chief, Barre.
Humphrey, E. F., Chief, Newport.
Hurlbut, Charles H., Chief, Richford.
Hutchinson, Fred A., Chief, White River Junction.
Keery, Thomas D., Chief, St. Albans.
Kingsbury, Harold H., Chief, Norwich.
Kinney, F. J., Chief, Orleans.
Koltonski, Alfred H., Chief, Rutland.
Larow, Kenneth, Deputy Chief, Enosburg Falls.
Lawson, Sidney F., Chief, Montpelier.
LeBouf, Howard J., Vergennes.
MacInnes, Malcolm, Ex-Chief, Montpelier.
Parmenter, F. C., Chief, Chester.
Robinson, W. E., Chief, Windsor.
Roby, Horace E., Ex-Fire Comm., Montpelier.
Roscoe, Charles, 1st Asst. Chief, Vergennes.
Rose, Earl J., Chief, Ludlow.
Sass, Carl M., 2nd Asst. Chief, White River Junction.
Shepard, Harley, Chief, Bethel.
Stockwell, Carl, Chief, Burlington.
Whitney, Henry E., Jr., Chief, Brattleboro.
Wilson, Norton, 93 Pine St., Brattleboro.

MASSACHUSETTS

Abel, Henry F., Chief, Westwood.
Abbott, William F., Eureka Fire Hose, Box 262, Shrewsbury.
Adams, Delmont C., Ex-Chief, Millis.
Adams, John F., Chief, Milford.
Adrian, Cal., Maple St., Carlisle.
Aikman, Lewis R., 80 Poplar St., Watertown.
Alger, Fred B., Middleboro.
Allen, E. W., Medfield.
Allen, Selden R., Chief, Brookline.
Ammidown, Raymond L., 36 Mora St., Dorchester.

Angier, Everett L., Gamewell Fire Alarm Co., Newton Upper Falls.
Austin, George W., Box 52 Assoc., U. S. Gauge Co., 170 Summer St., Boston.
Babson, Roger W., Wellesley, Mass.
Baer, Louis, Jr., 36 Orchard St., Marblehead.
Baggs, M. C., Chief, Belchertown.
Barker, John J., Boston Coupling Co., 293 Congress St., Boston.
Barker, Horace R., 87 Sherman St., Springfield.
Barnes, Harold A., 42 Ellis St., Brockton.
Bartlett, Ernest N., Chief, Billerica.
Batchelder, Fred M., 120 Harrison Ave., Boston.
Bayley, L. Wm., Pyrene Mfg. Co., 334 Main St., Wakefield.
Belcher, Warren H., Chief, Winthrop.
Belknap, Harry, 512 Beacon St., Boston.
Belmore, Arthur, Chief, Webster.
Bengston, N. B., Asst. Mech. Supt. Colonial Beacon Oil Co., Everett.
Berry, W. A., Ex-Chief, School St., Danvers.
Bills, Louis W., Supt. Fire Alarm, Lexington.
Bishop, Clayton W., Chief, Onset, Mass.
Blackington, Alton H., 9 Hamilton Place, Boston.
Blair, William J., Chief, Nantucket.
Blanchard, Arthur H., 25 Hampshire St., Cambridge.
Bliss, Philip W. Bliss, 147 Longwood Ave., Boston.
Blois, W. C., Chief, Westboro.
Blood, Geo. Leslie, Chief, Littleton.
Blossom, Fred C., Ex-Chief, Cohasset.
Bolger, Vincent A., 100 Richmond St., Dorchester.
Boston Sparks Association, 1039 Commonwealth Ave., Boston.
Boutchie, Thomas, Jr., Chief, Essex.
Boucher, Wm. B., Bright Bumper Sales Co., 28 Malden St., Watertown.
Box 52 Association, 80 Federal St., Boston.
Breagy, Richard T., Forest Warden, Dover.
Breck, Robert G., Chief, Longmeadow.
Brennan, Edward P., Jr., Chief, Natick, Mass.
Breslin, James E., Jr., Box 52 Assoc., 45 Shattuck Road, Watertown.
Brigham, Harold L., Supt. Water and Sewage Comm., Marlboro.
Brody, Geo. F., 13 Howe St., Marlboro.
Brooks, Wm. Henry, 92 Milton Ave., Dorchester.
Brown, Albert T., Ex-Chief, Cushing House, Hingham.
Brown, Russell G., 80 Central St., Foxboro.
Brown, Wm. H., United Pyro. Chem. Corp., Lynn.
Brownell, Clarence H., Chief, District No. 1, South Dartmouth.
Bryant, William A., Architects and Engineers, 334 Washington St., Brookline.
Buchanan, L. B., Ex-Chief, 10 Bennett St., Woburn.
Buck, Richard C., 12 Oak Knoll Rd., Natick.
Bugbee, Percy, N.F.P.A., 60 Batterymarch St., Boston.
Burgin, Thomas S., Mayor, City of Quincy.
Burke, Thomas F., Chief, Pittsfield.
Burnham, Frederick E., Vio Gen Treatment, Box 185, Wellesley, Mass.
Byrne, Hugh M., 20 Hayden St., Marlboro.
Byron, George E., Engineer, Hudson.
Campbell, John, Supt., 182 Tremont St., Boston.
Campbell, Wm. G., 28 Fay St., Boston.
Carey, John H., Ex-Fire Commissioner, Bennett Building, Fall River.
Carlow, Harry, 60 Church Green, Taunton, Mass.
Carlson, J. Henry, Chief, Ashland.
Carolan, Lawrence, Jr., American La France Co., 28 Brighton Ave., Boston.

Carroll, William J., President Rockwood Sprinkler Co., 36 Harlow St., Worcester.
Carter, L. W., Captain Fire Department, Manchester.
Casey, John L., Chief, Abington.
Chapman, Chas. "Sandy" 10 Pier View Ave., Beachmont, Mass.
Charnock, P. C., New Eng. Ins. Ex., 40 Broad St., Boston.
Chase, C. Hastings, 365 Union Ave., Framingham.
Chase, Edward E., Ex-Chief, 21 Euclid Ave., Lynn.
Chase, Robert R., Maxim Motor Co., Cheshire.
Childs, Alexander S., Chief, Cotuit.
Churchill, Jos R., United Pyro Chem. Corp., Lynn.
Clark, Fred A., Chief, Attleboro.
Clark, L. N., 29 Richardson St., Newton.
Clark, Robert A., Maxim Motor Co., Middleboro.
Clark, Wm. W., Chief, Westfield.
Clark, Wm. M., Chief, National Fire Works, West Hanover.
Clifford, Albert W., Great Neck Rd., Bedford.
Cobb, George F., Commissioner Firemen's Relief Fund, 99 So. Bay Ave., Boston.
Cole, Howard H., Deputy Chief, Scituate.
Coleman, M. James, Chief, Hudson.
Collins, Rev. Michael F., Chaplain N. E. Assoc. Fire Chiefs, Marblehead.
Commins, Charles E., Chief, P. O. Box 591, Warren.
Conlon, Thos. J., Fire Commissioner, 24 So. Grove St., Haverhill.
Conron, Harold J., Chief, North Reading.
Copeland, Frank H., Chief, Raynham.
Corbett, George W., Deputy Chief, Arlington.
Cotton, Carl H., 114 Strathmore Rd., Brighton.
Cotton, Edwin C., Renton Hell Co., Lynn.
Courtemanche, Bert A., 96 West Main St., Marlboro.
Cowles, A. Lee, Eureka Fire Hose Co., 560 Atlantic Ave., Boston.
Cram, William Bartlett, Box 52 Assoc., 17 Leicester Road, Belmont.
Crandall, Leroy H., Andrew J. Morse Co., Gen. Mgr., 6 Northampton St., Boston.
Creamer, Gordon H., Lieut., Holden.
Creamer, Harry A., Captain, Highland St., Holden.
Creaser, L. J., Amer. LaFrance Co., 28 Brighton Ave., Boston.
Creedon, Timothy F., Civil Eng. Aide, Arlington.
Cressy, John, Chief, Beverly.
Crittenden, Rufus A., Chief, Haverhill.
Cross, Gordon, Chief, Hopkington.
Crowe, John P., Ex-Chief, Westboro.
Cummings, Merrill A., Chief, Hanover.
Curtaz, Charles J., Box 52 Assoc., 10 Linnet St., West Roxbury.
Cutter, John F., Ex-Chief, Newburyport.
Dahill, E. F., Chief, New Bedford.
Daley, Warren F., 60 Montvale St., Roslindale.
Dailey, Cornelius P., Chief, North Easton.
Damon, J. F., Ex-Chief, Milford.
Daniels, Albert W., Box 52 Assoc., 147 Brighton Ave., Allston.
Daoust, Samuel, Chief, Marlboro.
Davis, Ernest W., 61 Brantwood Rd., Arlington.
Davis, Harry C., Lieut., 71 Main St., Ashland.
Davison, William E., Chief, Sudbury.
Dawson, L., Gamewell Fire Alarm Co., Newton Upper Falls.
Day, John H., Captain F. D., 1 Lynn Shore Drive, Lynn.
DeCourcy, D. H., Chief, Winchester.
DeCourcy, Harold F., 24 Lebanon St., Winchester.
Dean, Gardner A., 84 Turner St., Brighton.

Deibel, Andrew F., Arthur H. Blanchard Co., 25 Hampshire St., Cambridge.
Deslauriers, Theodore, Chief, Ware.
deVeer, Harold W., 941 Park Square Bldg., Boston.
Dickinson, Frank F., Chief, Brockton.
Dickson, John N., Chief, Holden.
Doherty, M. H., Chief, Lincoln, Mass.
Dolan, Wm. C., 14 Holbrook St., Jamaica Plain.
Donnell, Chester L., Chief, Walpole.
Donohue, Thomas F., 186 Dudley St., Roxbury.
Donovan, J. A., Asst. Chief, Lynnfield.
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Reynolds, Charles A., Chief, Willimantic.
Ringers, J. H., Sandy Hook.
Sanger, John Joseph, Chief, Forest Ave., Sound Beach.
Schepp, Wm. F., Fire Comm., Nichols.
Serafin, Wm. T., 259 Gardner St., New London.
Shanaghan, Edward, Asst. Chief, East Haddam.
Shannon, Frank J., Chief, Stonington.
Sherwood, William D., Ex-Chief, 72 Roanoke Ave., Southport.
Shipman, Thomas H., Chief, New London.

Short, Winthrop E., Chief, 55 Reynolds St., Danielson.
Skilton, Harry A., Ex-Chief, Watertown.
Smith, Fred, Chief, R. 55, Springdale.
Stapley, Sidney R., Chief, 37 Hilltop Drive, Nichols, Bridgeport.
Starkel, Frank, State Police, Hartford.
Stiles, Walter F., Captain State Police, Hartford.
Stowe, Lewis F., Chief, Milford.
Strain, Harold A., Am. LaFrance Co., 252 High St., Milford.
Sturges, William F., Chief, Ridgefield.
Sunderlund, Col. Anthony, State Fire Marshal, Hartford.
Swan, James W., Chief, 7 Swan Ave., Seymour.
Taft, Henry R., Chief, 18 Coit St., Norwich.
Veit, Victor H., Chief, Stamford.
Virelli, Frank, Deputy State Fire Marshal, Bridgeport.
Volk, Chas. A., Chief, Norwalk.
Von Holtz, Edward A., Fire Commissioner, P. O. Box 413, Southport.
Warren, Ira A., Deputy Chief, Danielson.
Wellington, George, Fire Commissioner, 1699 Noble Ave., Bridgeport.
White, Herbert P., Chief, Groton.
Wiltse, James R., Chief, Elm Forest Fire Co. No. 1, 45 Sanford St., East Haven.
Wochomurka, Edward, Chief, Tolland.
Woodworth, Arthur L., Chief, South Coventry.
Zawisza, Joseph J., 14 Fifth Ave., Middletown.

NEW JERSEY

Keegan, James T., Supt. Prot. Dept., 227 Wash. St., Newark.
Reid, Robert A., Chief, Belleville.

NEW YORK

Archer, Dr. Harry M., Hon. Deputy Chief, 47 West 85th St., New York.
Bradbrook, G. E., Braxmer Co., 242 West 55th St., New York.
Case, I. H., Fire Engineering, 24 West 40 St., N. Y.
Cavanagh, Harry G., A. D. T. Co., 155 Sixth Ave., New York.
Chambers, Arthur E., Chief, 583 Palisade Ave., Yonkers.
Daniel, Walter, Empyre-Fire Equip. Mfg. Co., Inc., 22–07 41st Ave., Long Island City.
Dwyer, John T., Eureka Fire Hose Co., 1790 Broadway, New York.
Green, Joseph H., Pres. Eureka Fire Hose Co., 1790 Broadway, New York.
Meek, Clarence E., Ahrens Fox Fire Eng. Co., 17 E. 42nd St., New York.
Moeller, Wm., Atlas Fire Equip. Co., 22 Warren St., New York.
Mulcahy, James J., Ex-Chief, 16 Franklin Ave., Yonkers.
Mullins, Gordon R., 523 West 112th St., New York.
Olson, Earl, Federal Elect. Co., 551 5th Ave., New York.
Shepperd, Fred, Editor "Fire Engineering", 24 West 40th St., New York.
Smith, D. B. & Co., Utica.
Stewart, C. D., American LaFrance Fire Eng. Co., 250 West 57th St., New York.
Sullivan, Arthur G., Am. LaFrance and Foamite Ind., 100 LaFrance St., Elmira.
Sullivan, Joseph N., Chief, Utica.
Woodhouse, D. A., 156 Chambers St., New York.

OHIO

Britton, Tom D., Republic Rubber Co., Youngstown.
Fox, Charles H., Ahrens-Fox Fire Eng. Co., Cincinnati.
Schellin, John C., Akron Brass Mfg. Co., Wooster.
Stevenson, Lester, Seagrave Corp., Columbus.

WASHINGTON, D. C.

Anthony, Nell J., 2127 P Street, N. W., Washington.
Richardson, George J., Sec-Treas. International Association Fire Fighters, 207 American Federation Labor Bldg., Washington.

PENNSYLVANIA

Wood, R. D. Co., 400 Chestnut St., Philadelphia.

ILLINOIS

Davis, Frank M., Chief, 28 North Walnut St., Danville.

INDIANA

Hansen, Elwood S., Elkhart Brass Mfg. Co., Elkhart, Ind.

CALIFORNIA

Fog Nozzle Co., 1530 East Slauson Ave., Los Angeles, Calif.

CANADA

Beaulieu, Rosaire, Chief, Quebec, Canada.
Geo. C. Maitland, Chief, Red Rock, Ontario.
W. J. Scott, Fire Marshal, Toronto, Ontario.

COLORADO

Bryan, W. S., Asst. Chief, Denver.

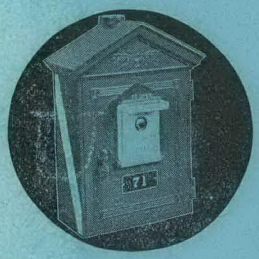
HONORARY MEMBERSHIP LIST

Austin, C. H., Ex. Fire Comm., Nashua, N. H.
Bogardus, Geo. M., Ex-Chief, South Norwalk, Conn.
Chesson, Frederick W., Ex.-Fire Comm., Waterbury, Conn.
Collins, Waldo A., Ex-Chief, Holliston, Mass.
Cushman, Frank, Chief, U. S. Industrial Educational Service, Washington, D. C.
Daggett, W. H., Ex-Chief, 72 Westminster St., Springfield, Mass.
Dougherty, Thomas F., Ex-Asst. Chief, 163 East 81st St., New York, N. Y.
Doyle, John P., Ex Chief, 12 Wellesley Ave., Wellesley, Mass.
Evans, John, Chief, New Orleans, La.
Fortin, Charles E., Ex-Chief, 299 Pine St., Lewiston, Me.
Leonard, Fred A., Ex-Chief, Box 31, Ogunquit, Maine.
Mahoney, Thomas H., Ex-Chief, 16 Grant St., Westfield, Mass.
Morris, F. J., Ex-Chief, 67 Middlebury St., Lawrence, Mass.
Nicolls, John T., Ex-Chief, Malden, Mass.
Ordway, O. O., Ex.-Chief, Reading, Mass.
Saunders, E. F., Ex Chief, 112 Clark Road, Lowell, Mass.
Sennott, Daniel F., Ex-Chief, 66 Landseer St., West Roxbury, Mass.
Shepard, W. C., Ex-Chief, 63 Pollock Ave., Pittsfield, Mass.
Small, Robert O., Director of Vocational Education, Mass., 70 Dane St., Beverly, Mass.
Steinkellner, Peter, Chief, Milwaukee, Wis.
Stratton, M. Norcross, Supervisor of Vocational Education, Mass., 11 Trowbridge St., Arlington, Mass.
Tiffany, F. N., 270 Huntington Ave., Boston, Mass.
Tracey, Frank E., Ex-Chief, Woburn, Mass.
Winslow, Herbert H., Comm. on Firemen's Relief Fund of Mass., 221 Market St., Lynn, Mass.

TOTAL MEMBERS, 833, DECEMBER 31, 1938

MAINE	56
NEW HAMPSHIRE	50
VERMONT	36
MASSACHUSETTS	466
RHODE ISLAND	56
CONNECTICUT	135
NEW YORK	20
ILLINOIS	1
LOUISIANA	1
NEW JERSEY	2
OHIO	4
PENNSYLVANIA	1
WASHINGTON	3
WISCONSIN	1
CALIFORNIA	1
CANADA	3
INDIANA	1
COLORADO	1
	838

PENNSYLVANIA RAILROAD STATION
PHILADELPHIA, PA.



The Pennsylvania Railroad Company selected for the protection of this great railway terminal, the Gamewell Three-Fold Fire Alarm System—replacing a Gamewell System which had been continuously in service in the old terminal for 40 years—an eloquent tribute to the sterling qualities of Gamewell equipment.

THE GAMEWELL COMPANY

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MASSACHUSETTS