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ANNUAL REPORT

OF THE

FIRE DEPARTMENT

FOR THE YEAR 1956.

BOSTON, February 1, 1957.

HON. JOHN B. HYNES,
Mayor of Boston.

DEAR SIR:

I have the honor to submit herewith a concise report of the activities of the Boston Fire Department for the year ending December 31, 1956.

Respectfully submitted,

FRANCIS X. COTTER,
Fire Commissioner.

HISTORY

FIRE COMMISSIONERS	
*1874–1876.	Alfred P. Rockwell.
1877–1879.	David Chamberlain.
1879–1883.	John E. Fitzgerald.
1883–1885.	Henry W. Longley.
1885–1886.	John E. Fitzgerald.
1886–1895.	Robert G. Fitch.
1895–1905.	Henry S. Russell.
1905.	Patrick J. Kennedy. (Acting February 17—March 20.)
1905–1908.	Benjamin W. Wells.
1908–1910.	Samuel D. Parker.
1910.	Francis M. Carroll. (Acting May 27—September 16.)
1910–1912.	Charles C. Daly.
1912–1914.	Charles H. Cole.
1914–1919.	John Grady.
1919–1921.	John R. Murphy.
1921–1922.	Joseph P. Manning. (Acting Nov. 8, 1921—April 1, 1922.)
1922.	William J. Casey. (Acting April 1—August 24.)
1922–1925.	Theodore A. Glynn.
1926.	Thomas F. Sullivan. (Acting January 26—July 6.)
1926–1930.	Eugene C. Hultman.
1930–1933.	Edward F. McLaughlin.
1933.	Eugene M. McSweeney. (October 16, 1933—January 5, 1934.)
1934–1938.	Edward F. McLaughlin.
1938–1945.	William Arthur Reilly.
1945–1946.	John I. Fitzgerald. (June 7, 1945—January 7, 1946.)
1946–1950.	Russell S. Codman, Jr.
1950–1953.	Michael T. Kelleher.
1953–1954.	John F. Cotter.
1954–	Francis X. Cotter.

CHIEFS OF DEPARTMENT	
1826–1828.	Samuel D. Harris.
1829–1835.	Thomas C. Amory.
1836–1853.	William Barnicoat.
1854–1855.	Elisha Smith, Jr.
1856–1865.	George W. Bird.
1866–1874.	John S. Damrell.
1874–1884.	William A. Green.
1884–1901.	Louis P. Webber.
1901–1906.	William T. Cheswell.
1906–1914.	John A. Mullen.
1914.	John Grady. (1 day.)
1914–1919.	Peter F. McDonough.
1919–1922.	Peter E. Walsh.
1922–1924.	John O. Taber.
1925–1930.	Daniel F. Sennott.
1930–1936.	Henry A. Fox.
1936–1946.	Samuel J. Pope.
1946–1948.	Napeen Boutilier.
1948–1950.	John F. McDonough.
1950–1956.	John V. Stapleton.
1956–1956.	Edward N. Montgomery. (June 6, 1956—September 5, 1956.)
1956–	Leo C. Driscoll.

*Previous to 1874, the Boston Fire Department was in charge of the Chief Engineer.

SPECIAL COMMENTS

Great advances were made in 1956 in fire prevention, publicity, and training. It was marked by a reduction in the number of building fires as well as in the number of fires caused by oil heaters.

Oil Burner Fires. In the year 1954 there were 329 fires attributed to space or range oil burners. In 1955 the number of fires from the same cause was 202, while in 1956 the number of fires from this cause was 148, a decrease of 181 in a two-year period. This despite an early, cold winter. We feel this decrease is due to our in-service inspections and our publicity programs as well as our school program.

In-Service Inspections. This project can be credited with a substantial part in reducing the number of building fires from 3,698 in 1954 to 2,755 in 1955, and to 2,360 in 1956.

Church Inspections. At the request of Archbishop Richard J. Cushing to the Fire Commissioner, and under the supervision of the Fire Prevention Division, a series of inspections were made of all churches, schools, parish buildings, and rectories in the city. The purpose of the inspections was to correct any existing fire hazards and also to improve fire protection and alarm systems. This work (number approximately 200 parcels of property) was accomplished by the various district fire chiefs, accompanied by the company officer in the subdistrict affected. A semiannual inspection of such properties is planned in the future, and the program will be expanded to include guidance centers, homes of various descriptions, and all other property owned or controlled by the archdiocese.

Places of Assembly. All places where alcoholic beverages are sold or kept for sale to be consumed on the premises in the entire city, including the so-called "night club," were inspected by the district fire chiefs of the respective districts during the past year and a card system has been adopted in order to facilitate

regular and systematic inspection of these establishments. The number of locations now visited is approximately 500.

Port of Boston. In order to avoid, if possible, a serious fire at any of the various water front facilities in the city, a committee has been set up representative of the Port Commission, United States Coast Guard, Boston Shipping Association, Terminal Operators, Rt. Rev. Monsignor John T. Powers, the Fire Department, and other persons interested. Meetings are to be held on a monthly basis and all possible steps to prevent fire or restrict its extension is the ultimate aim of said committee.

Public Relations and School Programs. This has been delved into extensively in separate sections of this report, and it may be reported here that both of these programs have grown steadily and made the general public much more fire conscious, thus contributing tremendously to the overcoming of the problem of safeguarding life and property against fire.

Fire Prevention Week. Extensive preparation and participation in spreading the fire prevention message to the public was conducted during the entire week. The Fire Commissioner had all division and district fire chiefs take an active part in this work and personally, with his staff of chief of department and three assistant fire chiefs, attended daily demonstrations in connection therewith. The Fire Prevention Week Contest conducted by the National Fire Protection Association was entered into this year, and Boston won honorable mention for the material submitted.

Christmas Season Hazards. The Fire Prevention Division, regardless of the pleas from hundreds of owners and managers of rest homes and centers, "held the line" and would not permit flammable trees or decorations in any occupancy housing large numbers of persons.

FIRE PREVENTION SCHOOL PROGRAM

It is a source of gratification to the department to know that as the realization grows throughout the nation

of the importance of informing the public concerning fire hazards and in gaining the public's cooperation in correcting and eliminating these hazards, the success of the sixth-grade fire prevention educational program in Boston is frequently cited as an example of the good work that can be accomplished.

Under this program, Boston fire lieutenants visited every sixth-grade classroom three times, supplemented by a fourth visit in many instances. These visits included public, private, and parochial schools. In addition to this, the lieutenants adapted their program for institutional schools so as to present instruction and literature, including fire prevention picture books, to boys and girls of various ages.

As part of this regular program, the lieutenants visited 170 schools in Boston which contained a total of 325 sixth-grade classes and enrollment of approximately 15,000 boys and girls. In this work, they incorporated a number of additional activities. They cooperated with the Boston Board of Fire Underwriters, sponsoring the sixth-grade program, and with the National Board of Fire Underwriters in special Fire Prevention Week distribution to schools of various fire prevention material. They also cooperated with the Electrical Division of Inspections, Building Department, in distributing special material aimed at preventing electrical fires, and cooperated further with the School Department and the diocesan schools in supplementing fire prevention instruction with warnings about the dangers of bomb scares, false alarms, abandoned refrigerators, and empty gasoline drums, and were credited with being an excellent influence in curbing vandalism.

Numerous incidents of merit have been attributed to this educational work. In Brighton, prompt action by two girls was credited with bringing apparatus in time to prevent what otherwise might have been a very serious fire. The girls stated that their instruction had been received from "firemen in school."

PUBLIC RELATIONS

The year 1956 saw the Public Relations Department improving all phases of its relationship with the major mediums of news. A résumé of the activities of this office, covering the various types of news mediums, follows:

Local Newspapers. A great deal of space was obtained stimulating interest in Civil Defense and Auxiliary Fire Departments. All carried items of local interest pertaining to actual fire operations during the year. All willingly printed administrative items, such as appointments, promotions, and retirements.

News items regarding the operations of the Fire Department, such as that entitled *"Beating The Blaze,"* giving a concise and clear picture of the operations of the Fire Alarm Office, were introduced. Another major publication carried an item titled *"Eliminate That Danger"* which drove home to the public the common causes of fire in great detail. There were many other news items which brought out the varied facets of the Fire Department. Needless to say, many of these items were of a highly laudatory nature, and worked to create good will for the department.

Television. There are two major stations and an educational channel available for the transmission of news. During Fire Prevention Week, the amount of time provided this department was extremely generous. Time was allotted for live telecasts of members of this department and officials, items of public safety value, children's programs, movies, and fire prevention discussions.

WBZ–TV provides on-the-spot coverage of every major happening within the department as well as daily morning reports as part of the morning news.

Radio. In addition to reporting major fires and fire stories occurring in Boston, seven major radio stations are giving a daily fire report of the activities of the Boston Fire Department. Several of these stations

have been very cooperative in presenting interviews with officials of our department in matters of public interest and public safety. In cases of emergency, every station has placed Fire Department messages before the public whenever request has been made of them.

The high point of the function of this office, of course, was during Fire Prevention Week when the department spent much time bringing home the message of fire prevention to the public and cultivating the good will of the public. Every means of advertising was utilized, such as television, radio, newspapers, window displays, street banners, taxi signs, truck signs, parades, demonstrations, interviews, stenciling, and distribution of fire prevention literature. A résumé of these activities is contained in a presentation entered in the National Fire Protection Association contest. Our entry received Honorable Mention.

I. TRAINING PROGRAM

A. *Available facilities*—as of January 1, 1956, facilities available to the Training Division, were as follows:

1. Navy Fire School, South Boston
2. Drill Tower, Engine 29, Brighton
3. Drill Tower, Engine 2, South Boston
4. Drill Tower, Bowdoin Square, Boston
5. Memorial Hall, Headquarters
6. Pump Test Pit, Headquarters

NOTE.—Specifications and plans were drawn up for the erection of a new training academy at Moon Island. The contract has been awarded, and work on this academy will begin early in 1957, with completion scheduled for late 1957. Upon the completion of this contract and acceptance by the city, the major part of the training activities will focus on this point.

B. *Staff*—consisted of the following personnel:

1. One Assistant Fire Chief, with Aides
2. One District Fire Chief

3. One Captain-Drillmaster
4. Three Fire Captains
5. Two Fire Lieutenants
6. Two Engineers
7. Seven Privates as Watchmen — 4 assigned, 3 detailed

C. *Curriculum*

The cold weather phase embraced the period from January 1 to February 6, 1956.

1. Engine Company and Ladder Company equipment check
2. Single Unit Operation — check of operating procedure and equipment
3. Civil Defense — soliciting and enrollment of volunteers for Civil Defense Auxiliary Fire Department, establishment of training centers
4. Officers' Training and Instructions Course — one class to complete program initiated in 1955
5. Red Cross First Aid Training:
   (*a*) Chiefs' aides — operators of mobile units
   (*b*) Company officers — instructor courses
6. Teacher Training — pedagogical course for twenty-five selected fire officers and training personnel

The temperate weather phase embraced the period from February 6, 1956, to December 28, 1956.

1. Fire School:
   (*a*) Single Unit Procedure
   1st phase of training
   2d phase of training
   (*b*) Single-Double Unit Procedure
   (*c*) Ladder Pipe Procedure
   (*d*) Heavy Stream Appliances and Master Fog Streams
   (*e*) Civil Defense Auxiliary Fire Force — Fire Fighting
   (*f*) New Seagrave Ladder Trucks
   (*g*) Onan Generators — Power Tools
   (*h*) Pump Operation — Hydrant and Draft
   (*i*) Chemical and Mechanical Foam Development
   (*j*) Cardox and Dry Chemical — Operation and Use
   (*k*) Gas Masks — Procedure and Condition
2. Review of operational procedures for district fire chiefs.
3. Elevator Rescue Procedure at housing projects.
4. Resuscitator Training.
5. Probationers' Training School.
6. Company Drill Outlines.
7. Operation of Ladder Trucks.
8. Chlorine Leak Kit Instructions in Operation.
9. Explosimeters — Operation and Maintenance.
10. Testing and Preventive Maintenance of Pumpers.
11. Preventive Maintenance of Hose Wagons.
12. Inspection of aerial ladder trucks and equipment thereon and preventive maintenance.
13. Red Cross First Aid — Instructor Training and Company Training.
14. Single Unit Engine Operation — Two Company.
15. Single-Double Unit.
16. Engine Squad Testing and Training with new units.
17. Exhibition Drill Team.
18. Radiation Hazards — Radioactive Materials.
19. Tests of new equipment and appliances.

II. TRAINING AND INSPECTION

Due to winter weather conditions, it was necessary to curtail outside instructions and training. This interval presented an opportunity to inaugurate programs essential in the over-all training plans.

1. *Engine Company and Ladder Company Equipment Check* — A standard form was developed and training instructors were dispatched to the various fire companies for the purpose of checking the quantity and condition of all tools and appliances, and, at the same

time, review the operation of such tools and equipment with company members. Consolidated lists from instructors' reports indicating replacement or repair of equipment were compiled and directed to the Maintenance Division and properly attended to at that location.

2. *Single Unit Operation — Check of Procedure, Equipment, and Apparatus* — Training instructors visited all single unit companies, checked on familiarity of members with proper operating procedures, condition of equipment necessary in its proper function, and condition of apparatus. Information was compiled from forms furnished, and, where additional equipment was deemed necessary, or minor defects in apparatus were found, the Maintenance Division was notified and the necessary steps taken to remedy the situation. The essential factors in the proper operation of pumps was disseminated to all company members, and question and answer periods held at various intervals of each instruction period.

3. *Civil Defense* — Late in 1955 the activities of Civil Defense in the Boston Fire Department were transferred to the Training Division. As mentioned in the annual report of that year, plans were immediately put in operation for the formation of a trained Civil Defense Auxiliary Fire Force and the necessary steps taken to inaugurate such a force.

Early in 1956 members of this force were sworn in during impressive ceremonies at Memorial Hall, Fire Headquarters. Training centers were established in firehouses throughout the city, with one training center located in each of the eleven fire districts of the city. This allowed the auxiliary member an opportunity of drilling in a location close to his residence. The fire officers in the companies designated as training centers furnished the instructions. To allow a uniformity in the subject matter of the training program, the material was selected by the Training Division and outlines of weekly drill items furnished company officers of the training centers. Publications available in company libraries

were used as a source of reference. When weather permitted, training was moved from indoors to out of doors, and again the necessary drill items supplied by this division.

Continued efforts were made to increase the enrollment figures, and at the close of the year 1956 a total of 273 civil defense auxiliary fire fighters were on the rolls. The excellent assistance given to the enrollment program, by civic-minded organizations who sponsored advertisements in sectional newspapers, by the Boston newspapers, and by radio and television stations is deeply appreciated, and for such cooperation we are most grateful. Each fire station throughout the city was used as an enrollment center, and this added considerably to the convenience of those desiring to enroll.

A number of auxiliary fire badges, rubber coats, and boots was obtained through the office of the Boston Civil Defense Director and issued to those auxiliary members having the best attendance records. It is anticipated that eventually all auxiliary members will be similarly equipped.

4. *Officers' Training and Instructions Course* — To complete the first phase of training and instructions for company officers, class No. 14 began on January third in Memorial Hall, Fire Headquarters. Seventeen officers from Boston and five from nearby cities and towns were in attendance at this class.

This course, which began in November of 1954, furnished instructions to a total of 285 Boston officers and 48 officers from adjacent cities and towns. The evident success of this course points towards the development of additional phases of training along the line. By the close of the current year, the curriculum had been developed and instructors had been assigned for the inauguration of the second phase of this type of training early in 1957.

5. *Red Cross First Aid Training Program* — In the course of a fire fighter's daily response to fires or other emergencies, there are many seriously injured persons

who require first aid to ease their suffering, and, in many cases, to save their lives. We were indeed fortunate in having on the staff on this division one of the finest and most widely known first aid instructors in this section of the country. Immediate steps were taken to inaugurate the program, and at this time it is still in progress.

The first class in this program began on February 6 and was held for the aides assigned to the various chiefs' cars. These classes ran for a four-week period, and a total of forty-eight aides received Red Cross certificates in Standard and Advanced First Aid. At the conclusion of these classes, the chiefs' cars driven by these aides were designated as "Mobile First Aid Units" and are available to render first aid as needed.

With the view of extending this training to other members of the fire department, an instructor course in Red Cross First Aid was inaugurated in Memorial Hall on March 6 for officers from the various fire companies throughout the city. A total of fifty-two officers attended these classes, which ran until late in April. All of these officers received Standard, Advanced, and Instructor certificates in the Red Cross First Aid.

A short time after, these officers began first-aid instruction courses in the stations to which they are assigned, and by the end of the year, a total of 319 fire fighters in the various fire stations throughout the city had received Standard and Advanced Red Cross First Aid certificates. The program is continuing, and it is anticipated that eventually all fire fighters will be trained in first aid. This is truly a fine service available to the victims of accidents, fires, and other emergencies in the City of Boston.

6. *Teacher Training of Department Personnel* — In recognition of the fact that an individual well versed in the phases of his profession is not necessarily a good teacher of the essential points necessary for serious training relative to that profession, arrangements were made with the Massachusetts Department of Education

for a course in teacher training for the personnel of the Training Division and other selected members of the department. The course was established early in 1956 and held two nights weekly in Memorial Hall. A total of twenty-five members of the department attended this course for a thirty-hour period, and upon completion received certificates from the Department of Education.

There is no doubt that, upon completion of the course, our instructors were better versed in teaching methods and the necessary points of lesson planning and delivery. Programs of this nature are of benefit to the Fire Department and the cooperation of the Department of Education made it possible.

III. TRAINING

Fire School — As weather conditions permitted, increased training activities were directed to the Fire School, South Boston. In the course of this training activity, engine and ladder companies were dispatched to the fire school for the necessary instructions and review on the various phases of fire ground operations. In this manner, all members of the companies involved received instructions. The subjects covered were as follows:

(*a*) *Single Unit Procedure* — First Phase of Training — Members of ladder companies and other department members, who had not previously attended single-unit training, were indoctrinated in various phases of single-unit operation, at the Fire School. Early in June all department members had been trained in the basic operating plan, and it was found that the time was opportune to expand this training to include multiple company operations from single-unit apparatus.

(*b*) *Single Unit Procedure — Second Phase of Training* — The establishment of the second phase of training in single-unit operating procedure provided

for the assignment of a single-unit engine company and a double-unit engine company to the Fire School at the same time and their engagement in multiple operations from single-unit companies. Members of both companies were reviewed in the basic operational plan, then trained in the proper procedure for multiple operations.

(c) *Single-Double Unit Procedure* — In order to take advantage of the speedy, preconnected attack line operation of single-unit companies, a survey was made for a method to incorporate this feature in the operation of double-unit engine companies. The necessary procedure was worked out at the Fire School, and the conversion of these pumps for this operation was accomplished at the Maintenance Shop. By the end of 1956, a number of two-unit companies were operating as single-double unit companies. This operation is sufficiently flexible to permit incorporation of the preconnected attack line feature, and at the same time, comply with previous procedure of two-unit companies depending on conditions arising on the fire ground.

(d) *Ladder Pipe Procedure* — The ladder pipe standard operating procedure was reviewed for companies previously equipped with ladder pipes, and this procedure was promulgated to other department members with the intent of having all men versed in the proper operation of this device. Additional ladder pipes were received during the year, and the program expanded accordingly.

(e) *Heavy Stream Appliance and Master Fog Streams* — Although infrequently used, heavy stream appliances are of extreme importance to all fire departments, for it is by the use of these appliances that large fires are checked and conflagrations prevented. Therefore, continuous training in maintaining proper water supply to and in the operation of these appliances is necessary, so that when the occasion arises, there will be no delay in placing them

in operation in the most efficient manner. For this reason, training in heavy streams must be incorporated in the curriculum of all progressive fire departments. Such training took place in this department throughout the year, with efforts directed towards the development of solid streams and so-called master fog streams.

(f) *Civil Defense Auxiliary Fire Force* — When it was indicated that training of civil defense auxiliary fire fighters could and should be carried out, a program of training in the extinguishment of live fires was inaugurated at the Fire School, after working hours. Auxiliary members were trained in the proper method of running lines of hose and in the operation of nozzles and other equipment.

(g) *Instruction in Operation of New Seagrave 100-Foot Aerial Ladder Trucks* — Early in 1956, two new 100-foot aerial ladders were received by the department and assigned to Ladder Companies 8 and 17. Prior to being placed in service, all members of both these companies were trained in the proper operation of the apparatus and the special equipment thereon. Review instructions were held from time to time throughout the year for the members of these companies, and other companies present at the Fire School at the same time were exposed to this instruction.

(h) *Portable Generator Instructions* — Each of the new trucks mentioned above were placed in service with two portable generators and added to the number of generators on engine squad companies. This made a total of nine 3,500-watt portable generators in service with this department. It was necessary to develop an operating and maintenance procedure for these units and initiate a program whereby company members affected would be properly trained to accomplish the operation and maintenance involved. In addition, members of auxiliary divisions who respond to multiple alarm fires were given

this training so that they could take over the operation of these generators at fires, and in so doing, free the company member for other duties.

(*i*) *Pump Operating Instructions* — In the course of training which encompassed single-unit instructions, ladder-pipe procedure, and heavy-stream development, members in attendance were instructed in the proper operation of pumps so as to meet the demand placed on pumps by these appliances. Instructions covered pump operation, both from hydrant and draft, with particular emphasis placed on available water supplies, importance of gauge readings, water requirements for such devices, dangers to avoid to prevent damage to pumps, and the necessity for supplementing water supplies.

(*j*) *Chemical and Mechanical Foam Development* — A majority of engine companies in the department are equipped with facilities for supplying either chemical (powder) or mechanical (liquid) foam at a fire requiring this type extinguishment. This is another item that is used infrequently in normal fire department operations, but when its use is necessary, due to the type of fire encountered, it must be placed into operation without delay. Continued training is necessary to keep company members proficient in the development of foam streams and in the detection of faults in the equipment or materials used. All companies training at the Fire School received such training, and any faults in equipment or materials were corrected.

(*k*) *Cardox-Dry Chemical Instructions* — The development of a special unit carrying large quantities of CO2 and dry chemical necessitated training in the proper use of the equipment on this unit. As it was primarily developed for use at the Logan Airport and nearby oil farms, the unit was assigned to Engine 40 in East Boston. All members of this company

were trained in its proper operation on simulated flammable liquid fires at the Fire School prior to the unit being placed in service.

1. *Gas Mask — Inspection and Use* — As each company in the department is equipped with gas masks for use during fire-fighting operations, it was determined that, during their assignment to the Fire School, every mask in service would be inspected and checked for operating efficiency. A number of minor defects were found and corrected, thereby eliminating the possibility of failure during use of this equipment at fires. At the same time, a review of previous training in the use of masks was held and correct operating procedures stressed.

2. *District Fire Chiefs — Operational Procedures* — For the purpose of having all department personnel familiar with operational procedures, the district fire chiefs of the department attended sessions at the Fire School. The specific procedures which they reviewed were:

1. Procedures involved in placing ladder pipes in operation.
2. Single Unit Operations, Part 2, Multiple engine company operation from single-unit companies.

3. *Elevator Rescue Procedure at Housing Projects* — In order to effect the rescue of occupants of certain housing projects from elevators stopped between floors of the project buildings and to accomplish this in the fastest possible manner with a minimum of damage, this division, with the cooperation of the Boston Housing Authority and the elevator maintenance companies, in 1955, initiated a program of rescue procedure. This rescue procedure continued into 1956 to embrace all projects wherein elevators were located and all fire companies and chief officers who might be directed to these locations. Five additional housing projects were the locations of such training, and a total of sixteen ladder and engine squad companies participated in the

instructions. In locations where elevator door and penthouse keys were a necessity, such keys were obtained and placed on the first arriving fire companies.

A series of photographs depicting the various steps in the rescue procedure were taken at each project involved and are used as a source of refresher drills for members of companies who may respond to such emergencies.

The problem which the development of this particular training procedure solved is typical of the ease with which difficult situations can be remedied by cooperative efforts of the parties concerned.

4. *Resuscitator Training* — Training on this type of equipment must be a continuing endeavor, in order that the equipment may be of greatest value when its use becomes necessary. With this in mind, training on the operation of resuscitators is carried out weekly in companies with occasional visits from Training Division personnel. All reports of minor defects or operational difficulties are received at this office and acted upon to assure that the equipment is in good operating condition. In most instances where it has become necessary to remove resuscitators from service for repairs, one is received on loan from the company making the repairs, and this enables the fire company to continue its resuscitator service when needed.

During the past year, new resuscitators were received with the two new ladder trucks of Ladder Companies 8 and 17. These were dual model resuscitators, and the entire personnel of these companies and other companies in the same quarters were thoroughly trained in proper operating procedure.

The receipt of these new resuscitators allowed the transfer of other resuscitators to Ladders 7 and 29. Members at those houses were instructed in proper operating procedure.

The relocation of Engine Squads 53 and 34 to the quarters of Engines 45 and 29, respectively, placed two resuscitators in the same quarters. To circumvent this

and to provide for a more equitable distribution of these units, the resuscitators of Ladder Companies 11 and 16 were transferred to the inventories of Ladder Companies 14 and 25. Here again, members of these companies were given the necessary training. Such training in all these cases was given by personnel of the Training Division.

5. *Probationers' Training*—Consistent with practices established in 1955, positive control was maintained over the training of fire fighters on probation during their probationary period. The course of instruction included an indoctrination in the fundamentals of fire fighting, supplemented by additional instructions and examinations throughout the probationary period. The indoctrination in the fundamentals of fire fighting consisted of a fifteen-day period at the Brighton drill yard and the Fire School in South Boston, where basic training received prime consideration.

At various intervals during the probationary period, these men were released from their assigned fire companies for lectures and instructions on fire fighting, apparatus and equipment, and over-all Fire Department operations — subjects which were beyond them at the time of their appointment to the department.

An evaluation of each candidate is made in the Drill School, and confidential reports are received monthly from the company officer with whom the probationer works. Such confidential reports are required in detail on forms developed by the Training Division and furnish a means of further evaluating the probationer's progress. Examinations are given at intervals during the probationary period on subjects taught, company operations, and department rules and regulations, and members are graded accordingly.

Upon the completion of all instructions, the successful passing of examinations and drill school requirements, the receipt of favorable reports from company officers, and the establishment of the fact that the probationer does possess a chauffeur's license, recommendation is

forwarded to the Fire Commissioner that the probationer reported on be appointed as a permanent member of the department.

During the past year, twenty-eight probationers appointed in 1956 were processed in this manner, and thirty-five new men were appointed to the department.

6. *Company Drill Item Outlines* — A program was inaugurated during the past year whereby the Training Division would outline various items as the subject matter for company drills. This would allow for a uniformity of drill procedures in each fire station and the subject matter could, from time to time, be directed towards particular problems which were pertinent at the time. The drill outlines were sent out in groups to cover a five-week period, and instructions were promulgated in department orders, establishing the hour and duration of the drill. Outlines were so arranged that material contained in the fire company library and the training pamphlets would be a source of reference.

During the past year, a total of forty-four drill outlines were issued to the department covering the following items:

ITEM	REFERENCE
"Single Unit Operations"	Training Division Pamphlet
"Ladder Pipe Procedure"	Training Division Pamphlet
"Rules Governing the Operation of Fire Department Radio"	Training Division Pamphlet
"Bulk Oil Distribution Plants"	Current Rules of Radio Procedure
	Crosby Fiske Handbook
"Fires in the Open"	Fire Prevention Regulations, No. 7
"Terms and Conditions Applicable to Hazardous Occupancies"	Fire Prevention Regulations, Form S
"City of Boston Fire Hydrants"	General Order, No. 18, 1956
"City of Boston Fire Hydrants, Defects and Operation"	Fire Prevention, Document 1
"Inspection"	Fire Prevention, Document 2
"Residual Pressure at Hydrants"	Special Order No. 41, May 21, 1956
	Special Order No. 41, May 21, 1956
"Alarm Response of Companies — Routes, Locations, etc."	Special Order No. 41, May 21, 1956
"Fire Department Hose and Care"	Training Pamphlet — "Residual Pressure"
"Fire Department Ladders and Ladder Company Equipment"	Company assignment cards
"Operating Procedure at Fires"	Department Rules and company records
"Rules for Winter Driving"	Department Procedures
"Pump Operations"	General Order No. 14, 1956
	Training Division Pamphlet
	"Operating Fire Department Pumpers"

7. *Operation of Ladder Trucks* — As mentioned previously, an intensive training program in the operation of the new 100-foot Seagrave ladder trucks was given to the personnel of Ladder Companies 8 and 17, both prior to and after they had been placed in service. The award of a contract for two more ladder trucks of this type, which will be assigned to Ladder Companies 15 and 26, led to the development of a program whereby the personnel of these last-mentioned ladder companies would be detailed to Ladder Companies 8 and 17 for periods of two weeks, with the point in view of having such personnel thoroughly indoctrinated in all necessary phases of the operation of these new type trucks and the special equipment contained thereon. It is felt that when the new trucks are received early in 1957, a minimum of training will be necessary to place them in service.

The placing in service of these new Seagrave trucks made an 85-foot Pirsch aerial ladder, formerly in service with Ladder 17, available for service with Ladder Company 7. Prior to being placed in service at this new location, the Pirsch ladder truck was given a complete overhauling at the Maintenance Shop, and when ready for service, all members of Ladder 7 were trained in its operation.

Pirsch junior aerial ladders were assigned to Ladder Companies 25 and 29. This was a change in the type of apparatus such companies were familiar with, and consequently training in the proper operation of this equipment was necessary. This was accomplished, and this Pirsch apparatus is at present in service at these locations.

8. *Chlorine Leak Kits* — These kits, the property of the Solvay Process Company, are maintained in the quarters of the Rescue Company in Bowdoin square for use in emergencies involving leaking chlorine cylinders. The infrequent use of these kits necessitates frequent training for company members, so that they will remain familiar with the methods used in placing

this kit in service. With this in mind, the Solvay Company was contacted and an engineer familiar with this equipment was made available to provide refresher training for Rescue Company members.

An inquiry from the district chief of District 11, Brighton, relative to the availability of this kit for use at the Clorox plant in Brighton, where there is a large storage of chlorine, led to a meeting with officials of the Clorox Company, and they procured their own chlorine leak kit, which is now stored at their plant. Again, the Solvay Company made an engineer available, and all members of fire companies in the Brighton area were trained in the use of this leak kit.

9. *Explosimeter Instruction* — Explosimeters used to detect the presence of combustible gas or vapors were acquired for each district fire chief's car. This made instantly available, in all sections of the city, the necessary equipment for determining the presence of dangerous concentrations of explosive gases at emergencies to which the department may respond. Due to the delicate calibration of these instruments, special carrying cases were designed to prevent the possibility of their being out of calibration and were furnished for each explosimeter.

Placing these instruments in service necessitated training of all district fire chiefs, acting district fire chiefs, and district fire chiefs' aides in their proper operation and maintenance. A training division pamphlet covering this operation and maintenance was given to all those receiving this training.

10. *Pump Testing and Preventive Maintenance* — Continuing the program, established in 1955, of pump testing and recording of performance data, all pumpers in the department were ordered to the pump test pit at Headquarters. At that location they were subjected to a service test to determine ability to discharge rated capacity, the motor speed required, and discharge capacity at high pressures. The over-all condition of the unit, discharge gates, suction inlets, pump gauges, pressure regulating devices, and pump shifting levers were thoroughly checked. This performance data and condition of the unit were recorded, and in those instances where pumps failed to meet performance requirements, the Maintenance Division was notified. Repairs were made by them and the pump retested to assure its compliance with the performance requirements. Minor defects in appurtenances were corrected immediately by crews from the Maintenance Division, and when the occasion arose where major defects had to be remedied, the unit was removed from service so that these defects could be remedied.

During the course of these pump tests, all members of the company involved were given refresher instructions in drafting at the pump test pit. At the conclusion of these instructions, the company members were taken to Memorial Hall for instruction and discussion on the theory of pump operation. The presence of two display model pumps at this location allowed these men the opportunity of seeing the integral parts of the pump and the part they play in successful pump operation. These pump tests and instructions were given by engineers from our motor squad. The records of pump tests and performance are on file at this division.

The preventive maintenance of this apparatus was done by the shop mechanics on the same day that the pump was tested. All aspects of motor vehicle upkeep were covered, such as ignition system, fuel system, steering assembly, running gear, tires, braking system, springs, lights, warning devices, etc. Preventive maintenance forms listing various parts and appointments of the apparatus necessary in a maintenance check were filled out by the mechanics with any additional notations incorporated thereon. Such maintenance records are on file at this division.

11. *Preventive Maintenance of Hose Wagons* — Those companies operating as double unit companies with

pump and hose wagon had similar preventive maintenance performed on their wagons, and records of this maintenance are also on file.

12. *Ladder Truck Inspection and Preventive Maintenance* — The success of the program of test inspection and preventive maintenance of the apparatus of engine companies led to the development in 1956 of a similar program for all ladder trucks in the department. It was decided that the aerial ladder, aerial ladder-raising mechanism, ground ladders, and fire-fighting equipment on each ladder truck should receive attention, as well as the mechanical condition of the truck. This necessitated each ladder truck's appearance at the maintenance shop for two consecutive days. The first day was spent in a thorough examination of the aerial ladder, the removal of old lubricants and relubrication, a check on its structural condition, an examination and check of each ground ladder carried, with repairs to or replacement of those found defective, and a check of the tools carried on the ground, with axes being resharpened, handles replaced where necessary, etc. Company members of the various ladder companies assisted in this phase of the program. The second day the apparatus was turned over to the shop mechanics for a complete preventive maintenance check similar to that outlined previously for pumpers and hose wagons.

Training Division forms were developed listing the items requiring attention or checking, and upon which could be recorded the work done and defects remedied. These forms in their completed state are on file at this office.

13. *Red Cross First-Aid Training* — As previously mentioned, an intensive program of training department members in proper first-aid procedure was inaugurated in 1956 and is continuing. It is hoped that eventually this program will encompass all department personnel.

14. *Single Unit Engine Company Operations — Second Phase* — With the completion of the training of all department personnel in the basic operating procedure of single units, it was deemed advisable to supplement this training with what we have termed the second phase in single unit operations. It was correct to assume that members of double unit companies would be less familiar with single unit operations than members of those companies operating as single units. The occasion could arise where it would be more advantageous for a double unit company, on arriving at a fire at which a single unit company was already operating, to run a line direct from the single unit which, in most cases, is located in close proximity to the fire.

There are certain conditions in this multiple operation which must be taken into consideration. Primarily, the discharge from the streams which the single unit company is operating, may approximate the capacity of the feeder line. If another stream is desired from this unit, the supply of water to it will have to be supplemented by an additional feeder line. To demonstrate the necessity of running an additional feeder under such conditions of operation, a single unit company and a double unit company were dispatched to the fire school each day for training in this multiple operation. They were shown, by demonstration, the effect on discharge streams, and the drops registering on pump gauges when consideration was not given to the necessity of supplementing water supplies to the single unit pumper under certain operating conditions. The training was well taken by those in attendance and the efficiency of this operation at fires became more pronounced. This training encompassed personnel in all engine companies of the department and the district fire chiefs.

During the past year, Engine Companies 30 and 32 were converted to and placed in operation as single units.

15. *Single-Double Unit Operation* — The preconnected attack line feature of single unit engine companies is being incorporated into the operation of double unit

companies. After considerable testing and research, an operational procedure was developed and is now in effect. To accomplish this objective, the standard pump in service with double unit engine companies, is taken to the maintenance shop for changes in hose carrying compartments and pump piping. Although this program did not get under way until late in the year, three double unit companies are now operating in this manner, specifically, at Engine Companies 3, 39, and 48. The training in this operational procedure has already been given to the personnel of ten double unit companies by officers of this division, at the Fire School.

16. *Engine Squad Units* — The remainder of these units contracted for in 1955 were received early in 1956 and assigned to companies strategically located throughout the city, with the purpose of having rescue equipment immediately available in all parts of the city. As these units were delivered by the contractor, the members of companies to which they would be assigned, were thoroughly trained by this division in all phases of operation, and then the unit was placed in service.

The squad units were converted from five Mack wagons, and in the process of conversion, were equipped with 750 g.p.m. pumpers, 400-gallon booster tanks, 3,500-watt generators, sufficient compartment space to house essential rescue equipment and hose, and the mounting for carrying a 35-foot extension ladder. The conversion of these Mack wagons into apparatus of special design allowed the formation of five engine squad companies capable of functioning as a rescue unit without losing identity as an engine company.

There are a few outstanding features about this engine squad unit that are worthy of comment.

First, the 400-gallon booster tank exceeds the capacity of tanks normally on hose wagons by 250 gallons. This will allow the operation of a one and one-half-inch attack line for a period in excess of four minutes under conditions of maximum discharge. Secondly, each of these units is equipped with a 3,500-watt generator,

which is capable of supplying the floodlights and the numerous electrical power tools carried as standard equipment.

At the present time, the assignment of engine squad companies is as follows:

Engine Squad 11, East Boston
Engine Squad 14, Roxbury
Engine Squad 18, Dorchester
Engine Squad 29, Brighton
Engine Squad 45, Roslindale

Much favorable comment has been received concerning these units and articles concerning them have appeared in magazines current in the national fire service.

17. *Exhibition Drill Team* — The Boston Fire Department has had for many years a department exhibition drill team consisting of twenty-two fire fighters. It normally functions during the National Fire Prevention Week, giving exhibitions at various locations throughout the city in the handling of hose and ladders and in the art of climbing ladders. The personnel of this team is subject to change during the years, but the training of these men is done by the department drillmaster. This past year, the program of drilling was expanded to encompass more phases of the fire fighter's work, and the number of drills held in various sections of the city was increased over that of previous years.

The department, and especially this division, is proud of the excellent performance given by the members of this exhibition drill team. We are sure that they helped immeasurably in placing the fire prevention message before the people of our city.

18. *Radio-Active Materials — Radiation Hazards* — Recognizing the growing use of radio-active materials with the accompanying hazard of nuclear radiation, steps have been taken to acquaint personnel of this department in the precautions to be taken upon response to emergencies involving such radio-active materials. Two classes have been held in Memorial Hall on this subject, and approximately fifty of our department

officers were given preliminary training on this subject by Doctor Gunter of the Massachusetts Radiac Committee. Steps have also been taken to include this subject in the curriculum of the Officers' Training Course which will begin in January of 1957.

IV. TRAINING — RECAPITULATION AND TABULATION

The following publications were formulated for the information and guidance of the department:

(*a*) Arson Laws and Pertinent General Laws of the Commonwealth.
(*b*) Driver Training.
(*c*) Fire Extinguisher Characteristics.
(*d*) The Fire Fighter and Electrical Equipment.
(*e*) Operation and Maintenance of Onan Generators.
(*f*) Ladder Pipe Procedure.
(*g*) Seagrave 100-foot Ladder Trucks.
(*h*) O'Brien Rotary Cutter.
(*i*) General Precautions and Safe Handling of Oxyacetylene Equipment.
(*j*) Residual Pressure.
(*k*) Single Unit Operations.
(*l*) Skil-Chain Saw Instructions.
(*m*) Revised Specifications, one and one-half-inch, two and one-half-inch, and three-inch hose (collaborating with Fire Fighting).
(*n*) Specifications for 1,250 g.p.m. Pumpers (collaborating with Fire Fighting).
(*o*) Robbins Tourniquet.
(*p*) Boston Water Supply.
(*q*) Winter Driving.

Training Division personnel furnished instructions in the following various functions:

(*a*) Officers' Training and Instruction Course:

One class	17 Boston officers	
	5 Outside city and town officers	
Total	22	

Total officers trained since course opened:

Boston Officers	Other Officers	Total Attending
285	48	333

(*b*) Probationers' Training:

New appointees trained at Drill School	35
New appointees given intermediate examinations	63
New appointees given final examinations	48

(*c*) Rescue Procedure at Housing Projects:

Projects Covered	Companies Trained	Approximate Number of Men Trained
1. Whittier Street	Ladders 4, 12, 26; Engine Squad 14	88
2. Cathedral	Ladders 3, 13; Engine 7	70
3. Brighton	Ladders 11, 14; Engine Squad 29	66
4. Columbia Point	Ladders 7, 20	45
5. Mission Hill	Ladders 12, 26; Engine Squad 14	66
6. Bromley Park	Ladders 10, 30; Engine Squad 14	66
Total number of men trained on this item		401

(*d*) Teacher Training Course:

One thirty-hour course — officers and men trained	30

(*e*) Red Cross First-Aid Training:

Aides-operators of mobile units — Standard and Advanced Courses	48
Company officers — Standard, Advanced, and Instructor Courses	52
Fire fighters by company officer instructors —Standard and Advanced Courses	319
Total number of men trained	419

(*f*) Heavy Stream Appliances and Master Fog Streams:

Companies trained — Engines 1, 2, 3, 4, 5, 8, 9, 10, 12, 13, 14, 16, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 32, 33, 36, 37, 40, 42, 43, 46, 50, 53, and 56. Total of 35 companies. Approximate number of men	550

(*g*) Ladder Pipe Procedure:

Companies trained — Ladders 7, 8, 14, 16, 17, 19, 20, 21, 27, 28, and 30. Total of 11 companies. Approximate number of men	127
Chief officers' reviewing procedure	21
Engine Companies participating in instructions — 40 companies. Approximate number of men	250
Total	398

(*h*) Single Unit Training:

1. Ladder Company members and others missing previous instruction in first phase. Approximate number of men	200

2. Engine companies attending second phase of training—all engine companies excepting Engines 31, 47, and 54.

Total companies trained	47	
Approximate number of company members		950
Chief officers' reviewing procedure		36
Participating total		1,186

(*i*) Single-Double Unit Training:
Engine companies attending — Engines 3, 9, 26, 39, 41, 42, 43, 48, and 50.

Total companies trained	9	
Approximate number of company members trained		160

(*j*) Training on 100-foot Seagrave ladder trucks—Ladders 8 and 17:

Approximate number of company members trained	49

(*k*) Resuscitator Training Instructions:
Ladders 7, 8, 14, 17, and 25; Engines 7, 17, 25, 26, 30, 41, and 52.

Total companies trained	12	
Approximate number of company members trained		245

(*l*) Onan Generator Operating Instructions:
Engine Squads 11, 14, 18, 29, and 45; Ladders 8, 17, and 20.

Total companies trained	8	
Approximate number of company members trained		163
Members of Fire Alarm Construction trained		12
		175

(*m*) Training in Ladder truck operations—Ladders 7, 8, 17, 25, and 29:

Total companies trained	5	
Approximate number of company members trained		116

(*n*) Total Number of Pumps Tested and Total Number of Units Checked for Defects as Part of Preventive Maintenance Program:

Pumpers	66	
Wagons	24	
Ladder trucks	32	
Total units checked		102

(*o*) Instructions in Use of Chlorine Cylinder Leak Kits by Engineers from Solvay Process Company; Rescue Company; Engines 29, 34, 41, and 51; Ladders 11 and 14:

Total companies trained	7	
Approximate number of company members trained		109
District chiefs, District 11		4
Total trained		113

(*p*) Liquid and Chemical Foam Instructions:

Total companies receiving instructions	32	
Approximate number of company members trained		456

(*q*) Gas Mask Check and Instructions:

Total companies checked and instructed	47	
Approximate number of company members trained		480

(*r*) Explosimeter Operating Instructions:

District Fire Chiefs instructed	34
Fire Captains instructed	18
Chiefs' aides instructed	41
Total	93

(*s*) Dry Powder — Cardox Unit Instructions:
Company trained, Engine Company 40:

Approximate number of company members trained	21

(*t*) Radiac Training by Massachusetts Radiac Committee:

Two classes—total company officers trained	30
Training Division and Fire Prevention personnel trained	14
Total trained	44

(*u*) Civil Defense Rescue Training at Topsfield:

Company officers trained	2

(*v*) Training of Auxiliary Fire Fighters at Fire School by Training Division personnel:

Number of training sessions	20
Total of approximate number of auxiliary members drilling at all sessions	620

(*w*) Electric Power Tool Training:

Smoke Ejectors, 4 companies, members trained	85
Skil-Circular Saws, 6 companies, members trained	140
Skil-Chain Saws, 6 companies, members trained	140
O'Brien Rotary Cutters, 5 companies, members trained	118

V. TRAINING DIVISION PROJECTS

In keeping with previously established procedure, the various programs incumbent on this division are broken down into projects to facilitate handling and filing of information relative thereto. Many of these projects have been reported on previously in their initial stage. Others have been completed and require no further report. Those projects worthy of your attention are as follows:

Hose Tests and Specifications — In collaboration with the fire fighting force, revised specifications were drawn up for the procurement of one and one-half-inch, two and one-half-inch and three-inch hose. Revision of original specifications for this item were brought about by recent developments in hose manufacturing practices and field experience with this item in the Boston Fire Department.

Portable Generators — After much research on this subject, a specific make of portable generator was selected as best suited for the needs of this department. The generator output that was considered as adequate for our needs was not available in a portable-type generator and the manufacturer agreed to develop such a generator for the fire service. With such a generator therefore becoming available, one such generator was procured for each of five engine squad companies and two generators for each of two new ladder trucks. These generators have a capacity of 3,500 watts, and because of their location on the different companies throughout the city, allow the placing in immediate service of floodlights and electrical power tools which greatly facilitate the operation of the department throughout the city.

Smaller generators of 2,500-watt capacity have been secured for other locations in the city, and at present are being fitted for service with certain ladder companies. It is anticipated that eventually all areas of the city will be so equipped with portable generating equipment, and that the dispatching of special units of this type will be unnecessary.

Wet Water — Still in the experimental stage insofar as incorporating its use in this department.

Rubber Gloves — In keeping with best accepted practices relative to the handling of emergencies involving electrical hazards, the department in 1955, received and placed in use the best type rubber gloves available with all ladder, engine squad and rescue companies. At the time they were placed in service, leather protector gloves, an essential in proper operating procedure, to be used with the rubber gloves, had not arrived. Upon their arrival early in 1956, they were immediately placed in service with those companies having rubber gloves. The completion of this project with the dispersal of such gloves leaves the department in a much better position relative to electrical hazards than it has ever been in the past.

Apparatus Drainage — The completion of this project, initiated in 1955, has provided prompt drainage facilities for the booster tanks on all apparatus. This allows all such units to respond to fires with full tanks of water to be used in the initial attack stage of a fire. Previous practice has been to run many of these tanks dry, during winter months, to prevent freezing where inadequate quick draining facilities were not available.

In conjunction with this, at all alarms in cold weather where apparatus will be operating for a prolonged period, periodic temperature readings are transmitted to such companies *via* Fire Department radio system. This allows the companies operating under such conditions to have the necessary information so that they can act accordingly to prevent freezing of water in booster tanks not in use.

Resuscitators — In keeping with the program previously developed for better coverage of the entire city with these important life-saving devices, more companies were equipped with and trained in the operation of resuscitators. At the present time, there are in service with this department thirty resuscitators located as follows:

Rescue Company, Engine Company 7, Engine Squad 11, Engine Squad 14, Engine Squad 18, Engine Squad 29, Engine Squad 45.

Ladder Company 1, Ladder Company 2, Ladder Company 4, Ladder Company 6, Ladder Company 7, Ladder Company 8, Ladder Company 9, Ladder Company 12.

Ladder Company 14, Ladder Company 15, Ladder Company 17, Ladder Company 18, Ladder Company 19, Ladder Company 20, Ladder Company 22, Ladder Company 23.

Ladder Company 25, Ladder Company 26, Ladder Company 27, Ladder Company 28, Ladder Company 29, Ladder Company 30, Ladder Company 33.

In addition, the Rescue Company, Engine Company 7, and the Engine Squad units are equipped with large capacity oxygen cylinders and special micro units and fittings so that they will have a reserve of this equipment if the resuscitator normally used by them has been dispatched with a victim to the hospital. It is important that this resuscitator be kept on the victims until such time as they are in a location, such as a hospital, where adequate facilities are available to allow discontinuance of the use of the Fire Department resuscitator.

Mack Wagon Conversions — The arrival of these units from the concern contracted with and their subsequent placing in service with selected companies throughout the city completed this project. Elsewhere in this report is contained information relative to these units.

100-Foot Seagrave Ladder Trucks — Two of these units, contracted for in 1955, were received during the past year and placed in service with Ladder Company 8 at 123 Oliver street and Ladder Company 17 at 194 Broadway, locations in the high-value area of the city. Data relative to the training of department members on this apparatus has been covered under training subjects and recapitulation. Because of their importance and the value of the special equipment they carry, a descriptive pamphlet was prepared by this division and copies issued to all assistant and deputy fire chiefs. Relative to their special equipment, the following is worthy of comment:

1. *Aluminum Ground Ladders* — Each of these trucks is equipped with a sufficiency of aluminum ladders of various types and lengths to cope with the need for more ladders at fires. These ladders are of much lighter weight than the solid beam wood ladders previously in use in this area, and this factor should contribute to the efficiency and speed in placing them in position at fires.

2. *3,500-Watt Generators* — Each of these trucks is equipped with two 3,500-watt generators with a total capacity of 7,000-watt output per truck. This allows the placing in immediate service of floodlights and power tools by first-arriving companies with consequent increase in the efficiency of fire control.

3. *Flood Lights* — Each of these trucks is equipped with the latest type weatherproof floodlights of the following sizes and quantities: two 1,000-watt lights, six 500-watt lights. This aids in increasing the over-all efficiency of fire fighting operations and is an additional safeguard for men operating both within and outside the fire buildings during periods of darkness.

4. *O'Brien Rotary Cutters* — Each of these trucks is equipped with an O'Brien cutter, a tool which facilitates the placing of holes in floors or pier decks for cellar pipe operation or the prompt and efficient removal of water for salvage purposes.

5. *Smoke Ejectors* — Each of these trucks is equipped with an electric-driven 24-inch smoke ejector capable of displacing 11,750 cubic feet of air per minute. This equipment aids considerably in the prompt removal of smoke from an area both for the purpose of assisting fire fighting operations and lessening smoke damage to buildings and contents.

6. *Ladder Pipes* — Each of these trucks is equipped with two ladder pipes, one permanently mounted on the lower fly section of the ladder, and the other maintained portable for placing rapidly into use on the top fly section. The top fly mounting of this portable pipe allows the discharge of water, horizontally, onto a fire at heights up to 80 feet. This is 15 feet in excess of the horizontal discharge of water from water towers.

7. *Deluge Gun* — Each of these trucks is equipped with a large-size deluge gun, permanently mounted on the side of the apparatus with siamese fittings allowing the incorporation of discharge from four lines into one large stream of approximately 2,000 gallons per minute. This is a valuable asset to any fire department in their efforts to contain large-scale fires.

Halligan Hook — This equipment, new in the department, was issued to specific fire companies where it was thoroughly tried, tested, and evaluated. On the basis of reports received from companies equipped with these tools, the insulation on the handles proved inadequate and a new type of insulating covering was obtained. It was placed on these handles at the maintenance shop and the tools were again placed in service. A follow-up survey of this new insulation indicated the effectiveness of the change and the excellence of this tool in assisting in fire-fighting operations and overhauling.

Life Net Survey — As a direct result of the survey of life nets in the department, a replacement program for those found defective was undertaken. Requisition for new life nets was made in 1955, and these nets were received this past year and placed in service as follows:

Engines 1, 4, 5, 7, 8, 10, 12, 19, 21, 24, 26, 28, 30, 32, 34, 36, 37, 40, 42, 43, 48, 50, 51, 54 and 55. Ladders 1, 2, 3, 4, 9, 11, 14, 15, 16, 18, 21, 22, 24, 26, 29, and 30. This project was completed on March 1, 1956.

Electrical Survey — A survey of the requirements relative to the wiring of electric generators, lights, and tools was under way and has continued during the past year. The purpose of this survey is to provide the most reliable and safe operating equipment and materials available for use by this department. The acquisition of the latest type weatherproof floodlights, water submersible electrical fittings, and large capacity electric cable with integral grounding wire has been a forward step in this project. It is a continuing affair with replacements and additions incorporated into departmental equipment as they become available.

Plans have been formulated, and, in some cases, temporary use has been made of the available generators as contained in TD–2, supplying emergency light and power to fire stations where the normal light and power supply has been lost for various reasons. It is the intention of the department, in fulfilling your directive regarding this matter to place in each fire station and at the headquarters and maintenance properties, permanent connections whereby in event of normal electric power failure, portable generators from fire companies can be connected to supply the necessary electric power.

Reflective Materials for Fire Coats and Hats — As the result of a memorandum from his Honor, Mayor John B. Hynes, and a subsequent directive on this subject, a survey of available materials with reflective ability was made by this division. The purpose was to provide

greater visibility of fire fighters clothed in black rubber fire coats and working in areas where darkness and smoke could render them indiscernible and where, if incapacitated by smoke or gases, they might collapse and be unseen by those searching for them.

The survey of such available materials disclosed that the Minnesota Mining Company was manufacturing a reflective fabric which could be adhered to rubber coats and a reflective sheeting which could be adhered to fire hats and that these materials were superior to others tested. Tests at the Fire School under conditions of (*a*) darkness, (*b*) light smoke, (*c*) heavy smoke, disclosed the following: the ability to discern any reflective material under conditions of darkness or smoke-filled atmosphere is entirely dependent on the ability of light rays to penetrate the area and to focus, to some degree, on the reflective material. Under conditions of (*a*) the visibility of the selected reflective materials is practically limitless, being influenced entirely by the length of the light beam. Under conditions as in (*b*) the visibility of the selected reflective materials was fair to good, and under conditions as in (*c*) visibility was in some cases as low as 5 feet. The fact must be borne in mind, however, that under conditions as in (*c*) without the use of reflective materials, there would probably be no discernment whatsoever.

To initiate the program, the fire coats and hats of all fire fighters attached to Engine Companies 7 and 21 and Ladder Company 13 were equipped with these reflective materials. In the specifications for all new rubber fire coats, strips of this reflective material have been included as a necessary item. Further work will be done on this project in 1957.

Auto Safety Belts for Apparatus — Safety belts for fire fighters riding on the seats of fire apparatus was the subject of research and investigation by this division. Of the various belts reviewed, it was the opinion that the product of the Service Belt Company of New York

was best suited for our requirements. One hundred of these belts were purchased and installed on all ladder trucks in the department by maintenance division personnel. It is anticipated that, before completion of this project, all fire apparatus and chiefs' cars will be equipped with this safety feature.

Revised 100-Foot Ladder Truck Specifications — Minor revisions in ladder truck specifications were made in collaboration with the fire fighting division. Such revisions were necessary to comply with increased requirements relative to placing of equipment and a broadening of the specifications to encourage an increase in the number of manufacturers bidding.

Pumper Specifications — We drew up specifications relative to the department's requirements concerning fire pumpers. As a result, in these specifications were the requirements to be met by three 1,250 gallons per minute pumpers successfully awarded on bid.

These specifications were so designed that the department will receive apparatus equipped with a powerful engine of high torque rating, a 1,250 g.p.m. pump, a 400-gallon water tank, large capacity hose compartments, equipment compartments, semiportable deck gun, and a 35-foot, three-piece extension ladder. These units are earmarked for delivery early in 1957.

Miscellaneous Training Division Project — Rope Survey — To determine the over-all condition of life lines, hauling lines, signal lines and guy lines, company commanders of the various fire companies were directed to make a survey of all such lines in service with their companies and report the results thereof to this division. In all cases, when reports indicated the need of replacement of a line or lines, notification was sent to the Maintenance Division and all such replacements were attended to.

The use of the Recall System provided for in the Rules and Regulations, when tried out in 1956, left much to be desired, and a new plan of operation of

recall was set up in order to provide for a speedier, safer, more economical recall in keeping with the best interests of public safety.

A new system of assigning vacations, based on a nine-year cycle of rotating vacation periods was inaugurated in the department in 1956. Each member of the fire force below the grade of deputy fire chief was assigned a vacation group number. The system is arranged so that every member will have a different vacation each year and upon completion of the cycle will have had a so-called good vacation about every third year. The system was designed to remove the element of chance which had been present in past years and which resulted in many cases of members receiving an off-season vacation repeatedly.

Due to fluid liaison existing between fire chiefs at the district, division and assistant levels, a system of journal keeping has been instituted throughout the department so that the oncoming chief officer will have a source of information insofar as developments which have occurred since he was last on duty, whether they be administrative or operational; this becomes a permanent record.

It came to light on the occasion of the death of fire fighters in a fire in East Boston that there were not pictures of all fire fighters in the department. It was not a small number of pictures, but at least one third of the department had never been photographed. We took steps to see that pictures were taken, and speedily, so that all those employed in the department had their photographs on file. It has been made the responsibility of the Training Division to see that all men appointed hereafter have their pictures taken during their probationary period so that we cannot fail to have pictures available for all men actively engaged in fire fighting in Boston.

The Maintenance Division has done an especially good job in keeping the apparatus in repair and in service. They have had, in addition to this, the program

of preventive maintenance added to their duties, as well as the conversion of pumpers to single piece units. In two years they have converted over half the pumps in the department to single piece units — all this without adding one position to those already provided for in 1955. An exceptional job has been done by them.

In 1956, Chief of Department John V. Stapleton, after thirty-two years' service retired, and he was succeeded by Edward N. Montgomery who retired after forty-four years' service. His Honor Mayor John B. Hynes then appointed Leo C. Driscoll as the new chief of department.