

FIRE AND WATER ENGINEERING.

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Representing

The Water Works and Fire Engineers' Associations

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Communications on all subjects relating to Fire Protection and Water Supply are solicited. The publisher does not hold himself responsible for the opinions of correspondents. All advertising copy should be received not later than Thursday to insure insertion in the current number.

Entered at New York as second-class matter.

New York, Wednesday, August 2, 1916.

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The United States Circuit Court of Appeals has recently issued a temporary order restraining the Des Moines (Ia.) Water Company from shutting off the water supply from Fort Des Moines, the United States army cavalry post near Des Moines, which has been practically abandoned for several months in consequence of the troops stationed there having been removed to the Mexican frontier. The Des Moines Water Co. maintains that the government is under contract to pay a minimum of \$10 a day for water and that the water bills have not been met for seven months. The government replies that its contract was for water and presupposes use of water, but that the post has been dismantled for many months and the war department declines to pay \$10 a day without using any water.

A METERAGE DECISION OF INTEREST IN PENNSYLVANIA.

A decision of interest relative to charging for the installation of meters has been rendered by the Pennsylvania Public Service Commission in the case of Carl L. Gable versus the Emporium Water Company. The ruling being that where meters are required by the company. The Commission's ruling the meter and the installation shall be borne by the company. The Commission's ruling might be acceptable in certain localities but not in others. A large number of meters are furnished and set at the expense of utilities but this system might not apply in other places. The Commission favors a meterage

system and thinks it an equitable way to furnish water but that it should object to the company or municipality charging to installation of the system will not meet with the approval of many of those water works men who have given long study to the question. We quote from the decision, in part, as follows: "The company contends that when it has laid its mains in the streets of the borough and secured a sufficient supply of pure water, it has completed the duty laid upon it by its charter, and is at liberty to require that the water taken from its mains shall be measured by meters. It is argued that the complainants are takers of water and not mere purchasers to whom the company may refuse to sell, and that, therefore, it is reasonable for the company to insist that these takers by right furnish the means of measurement. It is, however, the company which is insisting upon this method of measuring the water taken, and the means by which the measurement is made is within the control of the corporation. The meter is a facility used in measuring the quantity of water as much for the benefit of the company as of the consumer, and in order that it should accomplish its purpose it should be under the control of and subject to regulation by the company. Its inspection and repair is not in the hands of the consumer, and in case he discontinues the service the apparatus itself is of no use to him. The installation of meters is, of course, a great expense to the utility and it is to be borne by it in the same manner as other expenses necessarily incurred in the rendering of just and reasonable service to the public, such as the construction of service lines from the mains to the property line of the consumer. This expense is a capital charge and will presumably be taken care of by the equitable adjustment of the rates which will allow the company to recompense itself for the original investment and the usual cost of upkeep. A rule which requires the consumer in the first instance to pay for such additions to the property of the company, when the company insists upon its installation, is unjust and unreasonable, and an order will be issued directing the Emporium Water Company to so amend its rules as to provide that where meters are required by the company to be installed the cost of such meters and the installation thereof shall be borne by the company."

FIREMEN AND THE NEW YORK STATE COMPENSATION LAW.

The New York State Industrial Commission is expected to soon be called upon to make a decision as to whether the state compensation law applies to city firemen, in Rochester, Mrs. Lena Gracey, widow of Tillerman Alfred Gracey, of Truck 5, of Rochester, N. Y., having applied to Commissioner of Public Safety Hamilton for a pension. In such cases it has been the practice to grant a pension of about \$300 a year, but if the firemen are under the workmen's compensation law, should a widow establish her claim before the commission, she would be entitled to a percentage of her husband's salary, which would be fixed by the commission. Commissioner Hamilton referred the matter to Corporation Counsel Cunningham, who decided to consult with the Industrial Commission. It has been the practice in Rochester when a fireman has been injured in the discharge of his duty to pay his salary during his enforced idleness. On July 10th Anthony

Specksgoor and Robert Young, of Truck 6, were injured in a collision and both were incapacitated. Specksgoor is still in a hospital, and the question now is whether these men are to be paid by the city while they are off duty or does the state law provide for compensation for them? It is stated that firemen and policemen are not pleased with the idea of coming under the workmen's compensation act, as they would have to wait a considerable time after an injury before obtaining a benefit, whereas under the present practice their pay goes on while they are incapacitated.

ADDITIONAL RESERVOIR PLANNED FOR CINCINNATI.

Superintendent J. A. Hiller, of the Cincinnati, Ohio, water works is planning for the future needs of his city. He recently stated that there have been times when on certain days 5,000,000 gallons of water in excess of the entire capacity of the water works have been used. It was the reservoir in Eden park that helped out and, so, instead of abandoning such reservoirs as there are, as suggested a year ago, it is clearly necessary to build more. Superintendent Hiller said: "I am planning one of 200,000,000 gallons for the hills west of Mill creek. I have the site in mind. The water for the western portion of the city is pumped by the station on Queen City avenue. It has to run through the entire central part of the city. With a reservoir on the western hills in case of need we could have stop valves this side, prevent the flow to the central portion and pump the water to the western portions. In twenty-five years new water works will have to be built. The gravity tunnel can carry but 100,000,000 gallons a day and the filter plant has a capacity of only 112,000,000 gallons a day. The intake tunnel will permit of but 120,000,000 a day. Recently we used 105,000,000 gallons or five millions more than capacity of the gravity tunnel, the avenue by which the water flows from the California reservoirs to the Eastern pumping station at Torrence road and Eastern avenue. This was a 'peak' load, but it shows what we are approaching. The new loop will come in handily in case of a break in the 60-inch main. It is a 36-inch main and could supply about 15,000,000 gallons a day. But the consumption of the central portion of the city now is 24,000,000. Hence 19,000,000 would have to be found elsewhere. Some of this could be 'bled' off from the high service, but the Eden Park reservoir would have to supply the bulk. It has a capacity of about 100,000,000, so it would carry us about five days. When we had a break, not long since there were five hours during which the western station on Queen City avenue did not pump a drop of water. Had there been a reservoir on the Western Hills it could have gone on for over a week. When we build a new gravity tunnel it will mean an expenditure alone of over a million dollars. The present is four and a half miles long and is seven feet in diameter. There is a stretch of about two miles through Norwood for a new loop main. With that exception it is all completed and the pipe and everything for that section is ready. There is no occasion for alarm about a water supply, but it is the part of wisdom to face actualities and to be prepared for meeting them in due season.

lbs. is not necessary on any particular section between the relay pumps.

A system of check valves must be provided to automatically cut the supply from the gravity or suction tanks when the Fire Department is using the high pressure system or pumping from fire engines below the 500 foot level.

It is not possible in a report of this kind to submit a detailed sketch of each check valve or each fitting attached to a standpipe. I would respectfully refer you to the regulations published by this Department, regulations, which you, as a member of the Board of Standards, practically drafted, giving in detail all the building of this kind. Attached to the regulations is a complete set of drawings showing in detail the position of intermediate tanks, check valves, pumps, etc.

I. A. F. E. CONVENTION.

Chiefs, fire commissioners and those responsible for maintaining the fire service of their municipalities in the highest state of efficiency should make arrangements at once for attending the convention of the International Association of Fire Engineers at Providence. It is the one annual opportunity that the chiefs have to study the newest apparatus and methods employed in first class departments to keep down the fire loss. It will prove a good investment to provide for their attendance as the city or town sending them will obtain one hundred fold benefit by the instruction received at the meeting. Make arrangements now and write the Secretary, James McFall, Roanoke, Va., advising him that the commissioner and chief will attend. Delegates from the West can secure transportation by addressing Mr. Frank C. Stover, Chicago, who has arranged for a special train to leave that city at 11.30 a. m., Sunday, August 27th.

Explosion and Fire at Black Tom Pier

Early Sunday morning damage roughly estimated at over \$10,000,000 was done by explosions and fire at Black Tom wharf, Jersey City, N. J. Warehouses, cars and barges containing ammunition and oil tank boats for the Entente Allies were destroyed. The force of the explosions was such that they were felt in New Jersey, New York City and Long Island. Many windows were shattered on the lower part of Manhattan Island. At 12:45 o'clock in the morning an alarm reached Fire Headquarters in Jersey City by way of the American District Telegraph Company. The report said "some rubbish burning," but as the rubbish was said to be on Black Tom pier, which juts into New York harbor south of Communipaw and for more than a year has been a principal shipping centre for war munitions going to the Entente Allies, Fire Chief Boyle went with five companies. Descending from his automobile about half way down the pier, which is half a mile long, Chief Boyle saw that several freight cars of the Lehigh Valley Railroad Company on the end of the structure, two barges that nestled beside it and one of the two long brick buildings that house eighteen warehouses of the National Docks and Storage Company were aflame. So hot was the neighborhood that the firemen couldn't get within 1,000 feet of the "rubbish heap." They were getting to work to wet down the reachable parts of the pier and buildings and the 150 barges and canal boats crowded into a basin along the pier when every man was thrown flat on his face by the concussion of the first of the big explosion that occurred. It was followed twenty-five minutes later by a still bigger one. Thousands of tons of dynamite, nitroglycerine, nitrocellulose, lyddite and trinitrotoluene joined in two great upheavals. The shock was felt twenty miles around. The New York fire department sent assistance to the scene. Fireboats pushed endangered vessels out into the stream. There was a succession of explosions of war munitions.

The West Australian Fire Brigades

The sixth annual report of the West Australian Fire Brigades Board, being for 1915, shows a decrease in fire calls received from 1914. Chief Officer J. M. Lapsley's report states that the fire calls in 1915 totalled 608, being 91 less than in 1914, and that these fires may be classified as, actual fires, 331; chimney fires, 26; grass and rubbish fires, 133; false alarms, 118. Total 608. Of the premises where fires occurred 257 were insured, 38 were uninsured and 36 were unobtainable. Owing to the centralization of the fire protection of the Goldfields district, the South Kalgoorlie and Williamstown stations were closed. The Board secured two six-cylinder, 50 horse power chasses which the report stated were being converted into motor hose tenders. The Perth Staff Ambulance Service rendered first aid for accidents during the year numbering 476, being an increase of 22 on the previous year. The Fremantle Ambulance van, also operated by the staff, attended 218 calls during the year. The strength of the brigades is: Permanent men, 107; partially paid, 65; volunteers, 371; total 543. The staff consists of: Chief officers, J. M. Lapsley, J. P.; deputy chief officer, C. Hillier; third officer, A. J. Connolly; electrical engineer, W. M. Hill; motor engineer, T. Alton. The number of stations and list of the equipment is given as follows: 42 stations, 8 steam fire engines, 3 motor turbine fire engines, 9 motor tenders, 8 manual fire engines, 11 horse hose carts, 46 hand hose reels, 3 currie fire escapes, 1 turntable fire escape, 179 ladders, 126 hydrants, 49 chemical fire extinguishers, 46 fire bells, 1 lilliput motor first turn-out, 17 horses 7 bicycles, 5 exercise carts, 1 salvage wagon, 1 ambulance van, 4 smoke helmets, 9 jump sheets, 13 hand pumps, 9 salvage sheets, 98,900 feet of hose, 154 telephones in stations, 489 street fire alarms and 67 house bells. The following summary shows how brigades were called to fires: Street fire alarms, 306; fire bell, 26; sprinkler alarm, 5; telephone exchange, 184; civilian, 62; police, 13; firemen, 12. Fire alarms in the various locations were: Perth, 133; Albany, 11; Boulder, 49; Bunbury, 10; Coolgardie, 13; East Fremantle, 8; Fremantle, 29; Geraldton, 10; Guildford, 4; Kalgoorlie, 51; Leederville, 22; Leonora, 5; Maylands, 10; Menzies, 1; Midland Junction, 19; Northam, 9; North Fremantle, 13; North Perth, 11; Osborne, 38; Subiaco, 35; Victoria Park, 9. Causes of fires are summarized as follows: Bush and grass, 129; careless use of light, 9; careless use of matches, 2; curtains blowing on light, 5; chimney fires, 26; cigarette butt, 2; carburetor firing, 2; bees wax and turps boiling over, 1; electric wires fusing, 25; false alarms—short circuit, 36; accidental, 4; ambulance, 3; justifiable, 26; malicious, 35; sprinkler, 2; test calls, 7; fat boiling over, 2; fire falling from stove, 6; gas exploding, 2; heat from other fires, 40; heat from bath-heater, 1; heat from exhaust pipe, 3; heat from boiler, 1; heat from electric iron, 3; lime fires, 1; methylated spirits igniting, 3; oil stove catching fire, 3; primus stove, 5; petrol falling on lamp, 2; petrol exploding, 5; spark from furnace, 1; stove flue overheating, 1; spark from bedding machine, 1; spark from chimney, 3; spark from rubbish, 7; spark from engine, 2; spontaneous combustion, 2; tar boiling over, 5; upsetting lamp, 2; unknown, 191; alleged incendiarism, 2; total, 608. There were twelve motor car fires, ten hotel fires, five fires in boarding houses, two fires in factories, one theatre fire, and seven fires in timber and wood yards. The summary of trades and risks was: Aerated water factory, 1; bake house, 2; bridge, 1; banks, 2; boot factory, 1; boarding house, 5; bootmaker, 1; brewerv 1; butchers, 6; blacksmith shop, 1; boats, 5; chaffcutter, 1; club, 1; chimney fires, 26; carriage builders, 1; cycle manufacturer, 1; council yards, 3; camps, 8; churches, 4; cable poles, 3; cabinetmakers, 3; clothier, 1; chemists, 2; coffee palaces, 2; cafe, 5; confectioners shop, 2; dwellings, 135; dealers (general), 3; drapers, 8; dressmaker, 3; dyer and cleaners, 1. False alarms—short circuits, 36; accidental, 4; ambulance, 3; justifiable, 26; malicious, 35; sprinkler, 2; test calls, 7; fruit shop, 1; flour

mill, 1; factory, 2; foundry, 1; grass, 129; grocers, 20; green grocers, 2; hardware and general merchants, 5; hotels, 10; hay stack, 1; halls, 4; ice works, 1; jetty, 4; lime fires, 1; motor cars, 12; motor garage, 1; offices, 5; produce store, 3; pawnbroker, 1; pavilion, 1; pumping station, 1; power house, 2; stationers, 2; sheds, 3; sleepers, 1; smelters, 1; saleyards, 1; store, 1; scaffolding, 1; schools, 2; stables, 1; shops, 8; tailor, 1; tannery, 2; theatre, 1; tram car, 1; trucks, 2; tar fires, 5; timber and wood yards, 7; tea rooms, 3; tobacconists, 4; wine merchants, 1; engineer, 1; total, 608. The districts in which fires occurred were: Perth, 149; Fremantle, 49; Kalgoorlie, 75; Eastern Goldfields except Kalgoorlie, 79; Suburban, County and Coastal, 249, and Murchison Goldfields, 7. The following summary is given of the extent of the fires: Total destruction, 31; severe, 87; trifling, 213; chimney fires, 26; grass and rubbish fires, etc., 133; false alarms, 118; total, 608.

Chief Sam B. Boyd Has Narrow Escape

Chief Sam B. Boyd, of Knoxville, Tenn., recently had a narrow escape from injury or death while he was a passenger on a railroad train bound from Elkmont to Knoxville. It was Sunday night and when the train was within half a mile of Maryville some miscreant standing on a bank alongside the track fired a shot which went through the car, the bullet crashing through the glass window close to Chief Boyd's head and about on a level with his eyes. He and other passengers near him were covered with fragments of glass. The bullet must have passed out of the car through the open window on the other side as it could not be found in the car. It happened that the car in which Chief Boyd was riding was dark owing to some trouble with the lights and it is believed the man or boy who fired the shot, thought that the car was unoccupied and had no intention of injuring any one.

Improvements to Wheeling Fire Department

Recent improvements made in the fire department, at Wheeling, W. Va., according to a supplementary bulletin issued a short time ago by the Committee on Fire Prevention, of the National Board of Fire Underwriters, include the replacing of the horse-drawn service truck at Ladder Company 6 with 65-foot quick-raising motor aerial truck equipped with a ladder pipe, increasing the total amount of 2½-inch hose in service by about 1,000 feet, providing new boiler for Engine 8, and placing the chemical engine formerly with Hose 1, together with a combination hose reel and chemical, with a volunteer company on Mozart Heights at the South end. The Chief, according to the bulletin, has repeatedly called attention to the inadequate fire force, which at present provides a total of only 28 men on duty during meal hour period to man 15 pieces of apparatus. The fire alarm system has been improved by the recent installation of a 10-circuit automatic repeater, increasing the capacity of the storage batteries to a total of 248 cells, operating 6 box circuits, to which indicators at fire stations are connected, one tower bell circuit and a separate alarm circuit to which gongs in all fire stations are connected.

Storage House Fire in New York

A building extending from 1820 to 1823 Amsterdam avenue, New York City, the two upper floors of which were occupied by the Uneda Storage and Van Company, was the scene of a fire on the night of July 27th in which 750 van loads of furniture were, it was stated, destroyed. Early estimates placed the damage at over \$750,000. Four alarms were sent in and the smoke was so dense the firemen worked in relays. Several stores on the ground floor were damaged by fire. A large clock tower on the building collapsed during the fire.

The firemen of Omaha, Neb. have asked Commissioner McColl for an increase in salary of \$10 a month and for one day off in four.

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An editorial recently appeared in a Columbus, Ind., newspaper dealing with filtration, in which it states: "The city authorities announce with a great deal of pardonable pride that there has not been a case of typhoid fever in Columbus since the filter was started in operation, in a family where the city water was used." A mechanical type of filter is in use at Columbus.

THE WATER SUPPLY OF McKEESPORT.

In another place in this issue is an abstract from a paper prepared by E. C. Trax, chemist of the filtration plant at McKeesport, Pa., containing interesting details of the change made in its source of supply and the benefits derived from such a change. The original works, which were constructed in 1881, obtained its supply from the Youghiogheny river and, as Mr. Trax points out, it was satisfactory according to the standards of those days. The United States Geographical Survey report in 1896 stated "that the water was dangerous and in no sense potable or fit for consumption by human beings," and, as Mr. Trax says, "few municipalities have been supplied with a water as unfit for domestic and industrial uses as that of McKeesport for some years prior to the construction of the water softening plant." After investigations, it was decided to purify the Youghiogheny river water, and a softening and filtration plant was installed. Since that year, 1908, the city has been supplied with a water in all respects equal to a first-class water supply. This is shown by the decrease in the

death rate from 21.4 in 1903 to 11.4 in 1914, per 1,000 population, and the death rate from typhoid fever fell from 69 in the year 1900 to 9 last year per 100,000 population. On account of this good showing the proposed change of source was delayed as there was a feeling that it might be a case of letting well enough alone. The objection to the Youghiogheny river supply was that it drains a large district known as the Connellsville coke region, and received the discharge of acid mine wastes, which increased as more mines were opened. These discharges were highly mineralized and caused an increase in hardness and acidity until a point was reached where fish could no longer live in it. Reports show that the acidity of the river water varied from 0 to 300 parts per million. This was the principal cause that brought to a head the decision to make a change in the source. The treatment of the raw Youghiogheny water, too, required at times enormous amounts of chemicals, the lime used varying from 100 to 3,800 pounds per million gallons, and the soda ash from none to 7,000 pounds per million gallons. The average amount used during the entire period of operation of the softening plant was 866 pounds of lime and 1,450 pounds of ash soda per million gallons, at a cost of \$14.75 per million gallons. The Monongahela river source was selected and while at times it contains free acid and considerable hardening constituents, the amount of acid is comparatively small and the acid periods occur only during exceptionally dry weather with the low flow in the river." The report on this supply made by Mr. Leo Hudson, Consulting Engineer, and Mr. Trax, submitted to the Board of Water Commissioners, setting forth the objections to continuing the Youghiogheny water, and contracts were let at a cost of \$75,000 to change the source. The work has just been completed and no doubt McKeesport will be greatly benefited by the condition of the water furnished its citizens and also by the removal of obstacles that caused considerable expense and difficulties to the management.

RECOVERING COST OF EXTINGUISHING FIRES.

Commissioner Adamson of the New York City fire department has, it is announced, given direction that suit be brought against the owner of the building at 1820 to 1838 Amsterdam avenue, New York, in which a four alarm fire recently occurred, to recover the cost to the city of extinguishing the fire, the Commissioner basing his suit upon the failure of the owner of the building to comply with orders issued by the Department on March 6, 1916. The orders in question called for the fire-proofing of the shutters of all the windows on two walls of the building and for the erection of a fire-wall in the building so as to subdivide the large exposed area. This is regarded as a typical case where compliance with a comparatively simple fire prevention order would have resulted in what was one of the largest fires of the year being only a trifling blaze. During the investigation of the fire by the Commissioner Chief Kenlon gave it as his unqualified opinion that had the orders of the Fire Department been complied with, the fire would have been a very small one and the damage would have been trifling. The Chief stated that the fire wall would have prevented the fire from spreading throughout the large storage warehouse and would have given the firemen a

vantage point from which to attack the fire. As it was, the fire spread almost immediately through the large open floor space and gave the firemen one of the most difficult tasks which they have had to perform in a long time. The orders in question were issued on March 6, 1916, and because of failure to comply with them were sent to the Bureau of Penalties in the Corporation Counsel's office on June the 2nd, for the enforcement of the legal penalty. The building in question was converted into a storage warehouse a few months ago and at the beginning of the summer, when the families in the neighborhood began to move away, was filled with furniture and household belongings. It is stated that the household belongings of about 700 families were stored in the warehouse. The suit in this case is similar to other actions brought by the Fire Commissioner. The first suit of this kind was brought by Commissioner Adamson in 1914, against the owner of a large factory in East Ninety-ninth Street, where a fire prevention order had been ignored. In this case Chief Kenlon and other officers stated that had the fire prevention order been complied with the fire would have been extinguished with little loss. The suit was based upon two sections of the Charter never before resorted to, and the decision of the Appellate Division was unanimous in upholding the Fire Commissioner's right to collect the cost of extinguishing the fire where the owner had been negligent in complying with proper fire prevention orders. Relative to the present suit it was announced that an itemized statement showing the complete cost to the fire department in the services of the firemen, apparatus, expenditure of coal, water, etc., and damage to apparatus would be prepared and the suit be brought for this amount. As it was a four alarm fire a large number of companies participated and the firemen worked from 10:20 p. m. until about 5:30 a. m., indicating that the bill for extinguishing the fire would be a substantial one.

REDUCTION OF BEAVER COMPANY'S VALUATION.

That was a sweeping reduction made by the Public Service Commission recently at Harrisburg, Pa., in the valuation of The Beaver Valley Company's water property. The press report says that in the first decision, in which it has enunciated the physical valuation principle, the Public Service Commission has decided that the property of the company was valued at \$985,000 for rate-making purposes. The company claims a value of \$2,598,361, while the complainants asserted that the value was \$669,835. The company operates a number of supplies in Beaver County, and extended hearings were given the complaints of Solon C. Thayer and others. In the decision of the Commission, which was written by Chairman W. D. B. Ainey, it is held that the company was overcapitalized and that it was entitled to an annual return on its investments of 135.950. At the time of the inquiry, the company had an outstanding capital stock of \$1,000,000 and bonds of \$1,063,000, with notes of \$184,000, no evidence being presented of sales. In the Commission's decision a 7 per cent. rate of return is allowed, \$53,000 given for operation, maintenance, taxes, etc., and \$12,000 for depreciation. It is not known whether the company will make appeal from the Commission's decision, which, as it now stands, is so big a reduction on the valuation that such action may be necessary.

CENTRAL NEW YORK VOLUNTEERS HOLD ANNUAL MEETING

Officers of the Central New York Volunteer Firemen's Association were elected, at Seneca Falls, N. Y., last week, at the twenty-third annual convention as follows: President, Thomas J. Murray, Cortland; secretary, Clayton A. Smith, Waverly; treasurer, Dr. Julian Smith, Union; chaplain, Rev. W. S. Stevens, Moravia; delegate to state convention, Stuart W. Smyth, Owego. Owego gave an invitation for the convention in 1917. The designation will be made by the executive committee. The parade, which was a feature of the meeting, was participated in by many companies, in ten divisions. At one of the sessions of the meeting, Chief Robert C. Ruckholdt, of the Eastman Kodak Company's fire department, Rochester, made an interesting address on fighting gasoline fires, his address being interspersed by questions and remarks by members and delegates, including D. S. Mersereau, of Union, who condemned the methods of selling and handling gasoline and urged co-operation to secure the passage of a law restricting the sale of gasoline. "One pint of gasoline," said Chief Ruckholdt, "will make 200 cubic feet of air explosive. This vapor is two and one-half times heavier than air and will settle. I recall one explosion of a gasoline tank. The only survivor told how he had smelled gasoline fumes while working near a fire 800 feet away from the tank. The last he remembered was seeing a ball of fire start from the fire near which he was working, gradually roll up the hill, followed by a tremendous explosion when it reached the tank. It is extremely dangerous to smoke in and around garages. Empty casks and barrels should always be stored with the bung-hole down. It is often two days before the vapor leaves the cask if turned upward, because of the greater weight of the vapor. Rubber piping and rubber washers should never be used. Too much care cannot be exercised in handling gasoline. If a fire starts from gasoline do not use water except to protect adjoining property. Ventilate the burning building as much as possible. Many different things are used to extinguish gasoline fires." Mr. Mersereau, in his remarks said: "Just as long as people handle gasoline as they would water, just so long will we have dangerous gasoline fires." He produced a newspaper clipping showing the death rate in one municipality. Of a total of 71 deaths, 50 were caused by gasoline and 17 by fires of other nature. Of 140 injured during the same period, 47 were caused by gasoline, 20 by kerosene and 73 by other mediums. He said: "Children by the thousands are allowed to buy and handle gasoline by the pail, can and barrel. I say that gasoline should be sold under a license. Not a prohibitive license. A dealer should

mend a law prohibiting the sale of gasoline to children, and to grown persons only in bottles and cans labeled: 'Do not expose to flames or sunlight.' This would be the greatest fire prevention law ever placed in existence. Put your heart and effort to secure the passage of such a law. In that manner and that manner only will you get it. I will do what I can to help along a law prohibiting unrestricted sale of gasoline." Chief Ruckholdt then described the New York Department. He suggested engaging experts from such departments to lecture to bodies of firemen throughout the state.

Death of Chief W. E. Markwith

Chief William E. Markwith, of East Orange, N. J., died on the evening of August 2. He had been a member of the department for twenty-seven years, and for the last nine years



Chief W. E. Markwith, East Orange, N. J.

had been chief. He joined as a volunteer. Chief Markwith died after an attack of angina pectoris. He was born in Orange fifty-seven years ago. A widow and three children survive. Funeral services were held at Grace Episcopal Church. Interment was at Rose-dale Cemetery.

Changes in Routine of Pittsburgh Firemen

The principal changes made to the rules for firemen in Pittsburgh, Pa., as a result of the

6 o'clock p. m. daily, except as otherwise specified for semi-monthly changes. Semi-monthly changes of shifts from day to night and from night to day will be made at 12 o'clock noon on the 15th and last day of each month, the night shift working until noon of said day and the day shift working from noon until 8 o'clock a. m., thus completing the change necessary. Rule No. 24—All necessary house work must be completed before 10.30 o'clock a. m. (except on clean-up days, Wednesday and Saturday) unless excused by a superior officer. Upon the completion of their duties, members must clean up and be in uniform. Rule No. 27—Any officer or member, acting in any capacity whatever, detailed to fill any position or service in a higher rank, will not be entitled to any additional pay therefor. Rule No. 29—Members shall not be allowed to work in any other member's place on opposite shift, unless so ordered by the director, chief or district chief, except as heretofore provided. Rule No. 55—Every member of the bureau shall devote his whole time to the business of the bureau and is expressly prohibited from being engaged in any other employment. Rule No. 59—The night shift will do all the bright work, including the cleaning and morning feeding of the hoses, or such work as may be done before they are relieved, and the day shift all other house work, such as windows, etc., which must be done in the forenoon unless otherwise ordered by the commanding officer. Rule No. 63—In ordinary routine no work shall be left undone by the shift going off, provided the men be allowed 30 minutes to wash and dress when possible without interfering with their duties. Rule No. 64—Should the return to quarters occur near the shift change, no time shall be allowed to wash or dress. Rule No. 65—Sleeping in beds in the engine house is strictly forbidden during the day turn. Night turn men may occupy the sleeping quarters (when necessary) from 9 p. m. to 5 a. m. When an alarm of fire is sounded, all members must respond promptly on the floor in their respective places, and must be on the alert at all times.

The Explosions and Fire at the Black Tom Pier

On this page appears an illustration giving a view of the Black Tom pier and vicinity near Communipaw, Jersey City, N. J., after the explosion Sunday morning, July 30, the explosions and the fire resulting in damage estimated at over \$10,000,000. In the background of the picture is seen the burned area and in the foreground are freight sheds which sustained damage from the force of the explosion but were not burned, demonstrating the successful efforts of the firemen restricting the fire area. Chief Boyle and the Jersey City department were promptly on the scene and the Jersey authorities were given assistance by the New York fire department fireboats going to the rescue of



View of Black Tom Pier, Near Communipaw, Jersey City, N. J., and Vicinity, After the Explosions. Freight Sheds in Foreground. Burned Area in Background.

be compelled to have a license for the sale of gasoline, something that will restrict the promiscuous sale and compel the use of judgment in dispensing it. Just as long as the people of New York State allow your children and my children to handle gasoline, just so long will you have gasoline fires." Chief Ruckholdt said: "I recom-

establishment of the two platoon system, were: Rule No. 17—Meal hours or days off will not be allowed. Meals must be eaten before reporting and after being relieved from duty. Other meals may be carried and eaten in the engine house. Rule No. 19—Platoons or shifts will go on duty and be relieved promptly at 8 o'clock a. m. and

endangered vessels. As told in last week's issue of this journal, the force of the two great explosions was left for twenty miles around and there were many smaller explosions of war munitions, warehouses, cars and barges containing ammunition for the entente allies being destroyed.