1927.

NEW ZEALAND.

FIRE BRIGADES OF THE DOMINION

(REPORT ON THE) FOR THE YEAR ENDED 30TH JUNE, 1927, BY INSPECTOR OF FIRE BRIGADES.

Presented to both Houses of the General Assembly by Command of His Excellency.

The INSPECTOR OF FIRE BRIGADES to the Hon. the MINISTER OF INTERNAL AFFAIRS.

SIR,— Office of the Inspector of Fire Brigades, Wellington, 5th October, 1927.

Herewith I have the honour to lay before you my nineteenth annual report, for the year ended 30th June, 1927, relative to the working of the Fire Brigades Act, and including matter in connection therewith.

During the 1926 session of Parliament the Act was consolidated and amended, and is now cited as the Fire Brigades Act, 1926. One amendment alters the date of expiry of the year to the 31st March in each succeeding year in place of the 30th June as obtained in previous years.

During the past year two new fire districts have been constituted—viz., Waipukurau, on the 5th July, 1926, and Te Awamutu, on the 23rd November, 1926. Following is a list of the forty-eight Fire Boards now operating :—

Auckland	Hastings	New Plymouth	Tauranga
Balclutha	Hawera	Oamaru	Te Aroha
Christchurch	Hokitika	Ohakune	Te Awamutu
Dannevirke	Invercargill	Onehunga	Timaru
Dargaville	Kaiapoi	Otaki	Waihi
Dunedin	Kaitangata	Pahiatua	Waipukurau
Eltham	Lawrence	Palmerston North	Wairoa
Feilding	Levin	Petone	Waitara
Foxton	Masterton	Port Chalmers	Wanganui
Gisborne	Milton	Pukekohe	Wellington
Greymouth	Mount Roskill	Rotorua	Westport
Hamilton	Napier	Taumarunui	Whangarei.

Additional volunteer Fire Police and Salvage Corps have been formed in Wanganui, New Plymouth, Hamilton, Hokitika, and Foxton, and, according to reports from the respective Superintendents, have rendered valuable service and proved of great assistance to the brigade. These corps are purely voluntary and entirely self-supporting, and are comprised of prominent citizens who are in the position of enabling them to give both their time and money to the work they have undertaken in the interest of their town and fellow-townsmen.

The fire districts and brigades working under Fire Board control, their stations and equipment, were officially inspected as follows :—

Auckland—May 4 and 6, 1927.
Balclutha—January 13, 1927.
Christchurch—March 21, 1927.
Dannevirke—June 7, 1927.
Dargaville—December 14, 1926.
Dunedin—January 17, 1927.
Eltham—October 27, 1926.
Feilding—April 21, 1927.
Foxton—April 12, 1927.
Gisborne—October 13, 1926.
Greymouth—March 13, 1927.
Hamilton—May 11, 1927.
Hastings—February 24, 1927.
Hawera—November 23, 1926.
Hokitika—March 18, 1927.
Invercargill—January 12, 1927.
Kaiapoi—March 22, 1927.
Kaitangata—January 14, 1927.
Lawrence—January 19, 1927.
Levin—April 11, 1927.
Masterton—May 26, 1927.
Milton—January 18, 1927.
Mount Roskill—May 5, 1927.
Napier—February 25, 1927.
New Plymouth—November 24, 1926.
Oamaru—January 24, 1927.
Ohakune—February 7, 1927.
Onehunga—May 4, 1927.
Otaki—June 6, 1927.
Pahiatua—May 25, 1927.
Palmerston North—June 8, 1927.
Petone—June 21, 1927.
Port Chalmers—January 15, 1927.
Pukekohe—August 16, 1926.
Rotorua—November 8, 1926.
Taumarunui—February 8, 1927.
Tauranga—November 10, 1926.
Te Aroha—May 10, 1927.
Te Awamutu—December 7 and 8, 1926.
Timaru—March 23, 1927.
Waihi—November 11, 1926.
Waipukurau—September 22, 1926.
Wairoa—October 11, 1926.
Waitara—October 28, 1926.
Wanganui—November 25, 1926.
Wellington—June 17 and 23, 1927.
Westport—March 16, 1927.
Whangarei—December 13, 1926.

During the inspection visits instruction in fire drill has been given in the smaller towns ; inspections have been made and reports submitted in respect to public buildings and institutions ; also, as usual, advice has been given to local bodies and others in regard to fire-prevention, water-supply, &c., and specifications for the supply of plant and appliances drawn up.

Special visits have been made, of which the following are the principal :—

Palmerston North—July 19, 1926 : Opening of new central fire-station ; presentation long-service medals.
Wanganui—August 16, 1926 : Annual meeting.
Trentham Camp—September 8 and 10, 1926 : Inspection and report.
Mount Roskill—September 16, 1926 : First inspection of district, formation of brigade, &c.
Onehunga—September 17, 1926 : Inspection new station building.
Otaki—October 5, 1926 : Inspection new station building and new motor-engine.
Napier—October 9, 1926 : Annual meeting.
New Plymouth—October 26, 1926 : Presentation long-service medals.
Otaki—December 1, 1926 : Opening of new station.
Mount Roskill—December 9 and 16, 1926 : Arrangement for and testing of new motor fire-engine and pumps.
Lower Hutt—January 5, 1927 : Inspection and report on theatre-exits.
Queenstown—January 20, 1927 : Fire-protection arrangements.
Gisborne—March 1 to 3, 1927 : Conference United Fire Brigades Association.
Rotorua—March 4, 1927 : Report on King George V Hospital.
Masterton—March 30, 1927 : Annual meeting.
Petone—April 16 and 18, 1927 : United Districts Fire Brigades Conference.
Pukekohe—May 9, 1927 : Interim inspection.
Christchurch—May 18, 1927 : Fire protection, Government railway-station and yards.
Timaru—May 19, 1927 : Board meeting in regard to purchase of sections of land.
Waipukurau—June 27, 1927 : Inspection Pukeora Sanatorium, and Board meeting.
Pahiatua—June 28, 1927 : New fire-motor instruction and drill.

Following upon an invitation from the executive officers of the Unite Fire Brigades Association, I attended their annual conference held in Gisborne in March last, and there delivered an address to the conference delegates upon fire-prevention and fire-protection matters generally. At the request of the conference the address is to be printed and distributed to the brigades.

During the year the Department has, as in previous years, on behalf of various Fire Boards and of the United Fire Brigades Association, imported and distributed fire-hose in accordance with the requests received to that effect.

Following are the principal improvements and additions to equipment in various fire districts :—

Auckland—New fire-station to serve the Point Chevalier district completed and in occupation.
Christchurch : New district fire-station in Sydenham completed and in occupation.
Dunedin : 20 h.p. motor runabout car.
Dannevirke : Street fire-alarm system installed, consisting of two circuits with sixteen call-boxes.
Feilding : New 20/35 h.p. motor fire-engine fitted with a 250/300 g.p.m. turbine pump, first-aid outfit, &c.
Gisborne : Street fire-alarm system installed, consisting of four circuits with fifty-seven call-boxes.
Greymouth : New hose-reel station erected for protection of southern portion of the district.
Hastings : Street fire-alarm system installed, consisting of four circuits with thirty call-boxes ; also motor-engine fitted with a first-aid pumping outfit.
Invercargill : Erection of new central fire-station completed and now in occupation.
Mount Roskill : New 20/35 h.p. motor fitted with 250/300 g.p.m. pump, first-aid outfit, &c.
Napier : 20 h.p. motor runabout car.
Oamaru : Considerable additions and alterations to the central fire-station.
Onehunga : Erection of new central fire-station, now in occupation ; new 40/50 h.p. motor, first-aid pump, hose-and-ladder tender.
Otaki : 20 h.p. motor hose-and-ladder tender ; fire station erected and in occupation.
Pahiatua : Additions and alterations to station ; 20 h.p. motor hose-and-ladder tender.
Palmerston North : New Central station completed and in occupation.
Pukekohe : Purchase of site for new station.
Tauranga : Extra land adjoining the central station purchased for extension purposes.
Timaru : Purchase of sections adjoining central station for extension purposes ; 20 h.p. motor runabout car.
Wairoa : Erection of fire-station completed and in occupation ; 20 h.p. motor hose-and-ladder tender.
Wanganui : 30/35 h.p. motor fitted with 250/300 g.p.m. turbine pump, first-aid outfit, &c.
Wellington : 70 h.p. motor fitted with 800 g.p.m. turbine pump.

Superintendents have reported the following casualties as having occurred in their respective districts :—

Christchurch—June 18, 1927 : The Superintendent and the Foreman of the brigade sustained very severe burns due to petrol igniting during progress of a fire. They were removed to hospital, and are now recovering.
Hamilton—March 15, 1927 : Fireman Elvers broke a bone in his foot whilst working at a fire.

Masterton—July 2, 1926 : Fireman McLaren sustained a very severe electric shock, due to a falling wire, was removed to hospital, and is slowly recovering.

Napier—November 1, 1926 : Two male lodgers lost their lives in the fire which totally destroyed the Shakespeare Boardinghouse.

Wellington—May 18, 1927 : A male civilian, forty-five years of age, sustained severe burns in a boardinghouse fire, was removed to hospital, but died next day.

Quite a number of casualties, but of a less serious nature than the foregoing, are reported as having occurred to brigadesmen and civilians during the course of the year.

The number of fire calls received throughout the fire districts for the year 1926-27 totalled 2,740, as against 1,785 for 1925-26. The returns show an increase under all headings as follows : Fires, 1,291 (898) ; increase, 393. Chimney-fires, 340 (231) ; increase, 109. Bush and rubbish fires, 471 (320) ; increase, 151. False alarms, 536 (276) ; increase, 260. Out-of-district fires, 102 (60) ; increase, 42 : a total increase of 955 calls.

Of the 1,291 fires, 32 are reported as due to incendiarism, 43 as having occurred in unoccupied premises, and 409 as of unknown origin. The principal causes as shown by the returns are—Matches, 138 ; electricity, 107 ; motors, 103 ; sparks from fireplaces and copper fires, 91 ; smoking and cigarette-butts, 53 ; live ashes, 22. Included under the heading of " electricity " are 20 fires due to domestic irons being left with the switch on and causing a fire loss amounting to £8,847.

The total fire loss throughout the fire districts for the twelve months ended 30th June, 1927, amounted to £516,366, as against £352,638 for the previous twelve months, an increase of £163,728, but of which increase £111,607 is due to inclusion for the first time of the loss incurred in the Wellington Fire District. The four succeeding heaviest district losses occurred in Auckland (£73,449), Dunedin (£59,793), Christchurch (£40,711), and Palmerston North (£28,154).

It should be noted that the very considerable increase in the number of fires, in the fire loss as also in the aggregate cost of fire brigade, is largely due to inclusion of the result of the first year of operations of the Wellington Brigade under Fire Board Control.

The estimated total population of New Zealand on the 31st March last numbered 1,437,980, and of that total 541,605, or 37·5 per cent., are resident in the fire districts. The insured fire loss throughout the whole of the Dominion for the twelve months ended 31st December, 1926, amounted to £1,129,257. The proportionate loss in the forty-six fire districts for the corresponding twelve months was £364,432, or 13s. 5d. *per capita*, and the insured loss in the rest of the Dominion (*i.e.*, loss in fire districts deducted from the total) amounted to £764,825, or 17s. 1d. *per capita*. The fire waste throughout New Zealand for the year 1926 is estimated at £1,264,766, or 17s. 7d. per head of population, and which amount is most probably an underestimate of the actual loss.

As will be seen from the foregoing figures, the fire loss in New Zealand is assuming a very serious aspect indeed. The carelessness in regard to fire exhibited in this Dominion, and so repeatedly commented upon, is becoming more and more rife, as witness the number of outbreaks (227) under the headings of lighted matches, cigarette-butts, electric irons, and live ashes thrown out—practically sheer carelessness in every case. In addition to the above there are the 471 bush, gorse, and rubbish fires—some deliberate, of course, but very many of them due to the careless use of matches. There are also the 91 fires due to sparks from fireplaces and copper fires, which, if they must not be set down to sheer carelessness, are at least easily preventable. Finally, there are the 409 fires returned as " Cause unknown," in which the fire has destroyed all evidence of its origin—without doubt many of them due to one or other of the causes set down above. In this matter of carelessness undoubtedly the most effective remedy is systematic education in fire-prevention matters in our schools. I would again, as in previous years, advocate adoption of the system in vogue in the United States of America and Canada, where instruction in fire-prevention for one hour per month is compulsory in their State schools and colleges. In this connection I am in receipt of a communication from a schoolmaster in the Auckland Province, who is also an active member of a volunteer fire brigade in his town, in which is set out, in five short lectures or lessons, most valuable instruction in fire-prevention. The lessons, whilst comprehensive, are simple and concise—quite on the best lines I have yet seen ; and I would strongly recommend the lessons be made part of the curriculum in all schools in New Zealand.

There has been an increase during the year of only 26 in the number of automatic and private fire-alarm installations, distributed as follows : Auckland, 3 ; Christchurch, 6 ; Dunedin, 5 ; Wanganui, 8 ; and Hamilton, 4. It was stated in evidence given before the Royal Commission on Fire-prevention sitting in London that on property protected by automatic alarms, periodically tested and kept in order, over a period of ten years the percentage of fire-damage to premium was only 2½ per cent., whilst the normal loss ratio on unprotected property was about 50 per cent. of premiums received. It is rather difficult to understand the attitude of owners of emporiums, factories, and other large risks in the matter of installing automatic fire-alarms in their premises, ensuring as it does almost certain immunity from serious loss by fire, with contingent loss due to dislocation of business, &c. As pointed out year after year, interest on the cost of installation is nearly, if not quite in the case of the largest risks, covered by the rebate in premiums allowed by insurance companies on all properties so protected. It should be generally known that there are automatic alarms invented, patented, and manufactured in New Zealand of proved reliability and subject to the premium rebate mentioned.

At various times attention has been called by Superintendents of brigades and others to the personal danger as well as the danger to property attending the use of celluloid in its varied forms, such as toilet articles, children's toys, ornaments, spectacle-frames, &c., but the danger is not so widely known as it should be. Quite recently two cases have occurred in wellington in which persons were injured due to personal ornaments catching fire. Actual contact with flame or heat is not necessary. In one of the two cases mentioned a lady was sitting with her head distant about 2 ft. from an electric

radiator of the smaller type when, with a distinct explosion, the celluloid hair-combs she was wearing burst into flames, with the result she was so severely injured that her life was in danger for a time. In regard to spectacle-frames, I have heard of cases where the celluloid frames have been distorted by the heat from cooking-stoves. The danger of wearing these frames when striking matches, using candles, &c., is apparent.

A warning to householders in respect to the use of certain makes of matches now being distributed in New Zealand, mostly for advertising purposes: The matches in question are of the "strike-on-the-box-only" type, put up in cardboard cartons generally containing about twenty matches. A part of the stem of the match is made of some fibrous material which, depending upon how long the match is alight, smoulders or glows from fifteen seconds to a minute and more after the match is blown out, whether the head in on or off. In the smouldering of these match-stems lies the very possible danger of causing an outbreak of fire.

Appended are brief detailed reports dealing with each fire district, also the following tables:—

(1) Summary of calls attended by each brigade.
(2) Fire loss in each district.
(3) Annual cost of each brigade.
(4) Summary of the causes of fires in each district.
(5) Personnel and equipment of each brigade.

I have, &c.,
THOS. T. HUGO,
Inspector of Fire Brigades.

The Hon. the Minister of Internal Affairs.

DETAILED REPORTS.

AUCKLAND.

Inspections of the Auckland Brigade, its stations and equipment, were made on the 4th and 6th May, 1927. All stations and equipment were found in proper order, and the drill and turnout at the various stations was carried out in a smart and efficient manner.

Considerable renovation of the central station buildings is to be carried out, and the erection of married quarters, &c., at the Remuera station is now in hand. Erection of a station at Point Chevalier has been completed, which provides accommodation for one married and six single firemen.

The water-supply for fire-extinction purposes in certain portions of the Auckland Fire District is most unsatisfactory, and to an extent that might easily lead to disastrous consequences in the large areas of congested wooden buildings so affected.

BALCLUTHA.

Inspection, 13th January, 1927. One officer and seven firemen were in attendance at the inspection muster.

Although more practice is necessary, there was considerable improvement in the carrying-out of the inspection drills, and the station and equipment was found in good order. At the nine alarms there was an average attendance of 60·6 per cent. of the total membership of the brigade.

For the second time I have had to comment upon the absence of any local member of the Board at these annual inspections, and again state that such want of interest on their part is not in the best interest of the brigade.

CHRISTCHURCH.

Inspection, 21st March, 1927. The inspection drill at the central station and the turnout at the various stations were carried out in a smart and efficient manner, and the stations and their equipment found in their usual good order.

The newly erected district station in Sydenham is a well-designed and commodious building, and should prove a valuable factor in the fire protection of the city.

Provision of more street fire-alarm boxes in the outer-lying portions of the city is necessary; also, I again called the attention of the Board to the advisability of converting the vacant rooms at the St. Albans district station into a set of married quarters.

DANNEVIRKE.

Inspection, 7th June, 1927. Two officers and sixteen firemen were in attendance at the inspection parade. The inspection drills were carried out in a creditable manner, and the station and equipment were in first-class order. The attendance at fourteen general alarms averaged 90·15 per cent. of the total membership of the brigade—a very good record.

During the year a street fire-alarm system has been installed, consisting of two circuits with sixteen call-boxes thereon. The Borough Council are replacing the smaller mains of the reticulation with piping of larger diameter, which will materially improve the supply of water for fire-extinction purposes.

Dargaville.

Inspection, 14th December, 1926. Two officers and ten firemen were in attendance at the inspection parade. The various inspection drills were carried out in a smart and efficient manner, and the station and equipment were found in good order. The attendance at the four fire calls averaged 70 per cent. of the total strength—a fair record.

Alterations and extensions of the reticulation has considerably improved the water-supply for fire-extinction purposes. Recommendations were made in respect to the firebell-ringing apparatus, as also in the matter of forming a volunteer Fire Police Corps.

Dunedin.

Inspection, 17th January, 1927. The inspection drills and turnout at the several stations were performed smartly, and the various appliances were got to work in an efficient manner. The stations and equipment were found to be in their usual good order.

A 20 h.p. motor runabout car has been purchased as additional to the brigade equipment. A section for erection of a new fire-station, for protection of the Anderson's Bay district, has been purchased. Better provision for protection of the Mornington district is very necessary.

Eltham.

Inspection, 27th October, 1927. Two officers and thirteen firemen were in attendance at the inspection parade. The inspection drills were carried out in a fairly satisfactory manner, and the station and equipment were in good order.

Attention was called to the unsatisfactory condition of some of the street fire-hydrants. Purchase of a 35 ft. extension ladder, also six canvas collapsible fire-buckets, was recommended.

The water-supply intake grating at times becomes entirely blocked with leaves or other flotsam, which takes some hours to clear, during which time no water is available for fire-extinction purposes—a very serious condition of things. In my previous reports I called attention to this matter, but up to the time of my last inspection the fault had not been permanently remedied.

Feilding.

Inspection, 21st April, 1927. Two officers and thirteen firemen were in attendance at the inspection parade. The station and all equipment were found in good order and condition. Attendance of brigadesmen at the eleven fire calls averaged 70·8 per cent. of the total membership—a fair record.

A 20/35 h.p. motor combination fire-engine, fitted with a 250/300 g.p.m. turbine pump, first-aid pump outfit, 30 ft. extension ladder, &c., has been purchased. Several efficiency tests of the outfit were made, and results proved the machine to be equal to specifications.

Recommendations were made in respect to an electrically-operated siren, or bell, fire-alarm, as also in regard to minor matters.

Foxton.

Inspection, 12th April, 1927. Two officers and twelve firemen were in attendance at the inspection muster. There is continued improvement in the carrying-out of the inspection drills. The station and equipment were in good order; in this also there is quite an improvement. Attendance at eight general alarms averaged 60·2 per cent. of the total membership.

A volunteer Fire Police Corps has been organized, and should prove a valuable factor in fire-prevention matters in Foxton. A weak point in the organization is the absence of any adequate means of giving an alarm in case of an outbreak of fire in the daytime and early evening, and a recommendation was made that an electrically-operated siren be installed, connected by direct wire with the Telephone Exchange.

Gisborne.

Inspection, 13th October, 1926. Two officers and seventeen firemen and cadets were in attendance at the inspection parade. The inspection drills were carried out in a satisfactory and efficient manner, and station and all equipment proved in good order and condition. Steam was raised in the stationary fire-engine, when pump and auxiliary salt-water reticulation system proved to be in good working-order. Attendance at the thirty-five general alarms averaged 80·1 per cent. of the total brigade membership—a good record.

A street fire-alarm system, consisting of four circuits having fifty-seven call-boxes fixed thereon, has been installed. The brigade had not, at the time of my inspection, been provided with a suitable fire-ladder, a most necessary piece of equipment.

Greymouth.

Inspection, 15th March, 1927. Two officers and fourteen firemen were in attendance at the inspection muster. The inspection drills were carried out in a satisfactory manner, and the stations and equipment were found in good order. The attendance of brigadesmen at eighteen fire calls averaged 90·15 per cent. of the total membership—a very good record.

The substation erected in High Street for protection of the southern portion of the district provides ample accommodation for some time to come. Recommendations were made in regard to alterations to certain fittings on the motor fire-engine so as to enable a more efficient working of the machine.

Hamilton.

Inspection, 10th May, 1927. Two officers and twenty-two firemen were in attendance at the inspection parade. The inspection drills were carried out in a most efficient manner, and the station and appliances were found in first-class order. The attendance at twenty-six general alarms averaged 80·4 per cent. of the total membership of the brigade—a good record.

A volunteer Fire Police Corps has been organized, and will without doubt prove a valuable factor in fire-prevention matters in Hamilton.

As in years past, I have again to comment upon the very inadequate water-supply for fire-extinction purposes obtaining in Hamilton, with the possibility of very serious fire loss in consequence. Also, I have again to recommend purchase of a site for erection of a fire-station in the Frankton section of the town.

Hastings.

Inspection, 24th February, 1927. Two officers and sixteen firemen were in attendance at the inspection parade. The inspection drills were carried out in an efficient manner, and the station and equipment were in first-class order. Attendance at the twenty-nine general alarms averaged 70·5 per cent. of the total membership—a fair record.

During the year a street fire-alarm system has been installed, consisting of four circuits and thirty call-boxes; also, the Dennis motor has been fitted with a first-aid pump outfit.

Hawera.

Inspection, 23rd November, 1926. Two officers and seventeen firemen, the full strength of the brigade, were in attendance at the inspection muster. The required inspection drills were carried out in a smart and efficient manner, and the station plant and all equipment were found in good order and condition. Attendance at fifteen general alarms averaged 60·5 per cent. of the total membership of the brigade.

Alterations in the reticulation and provision of a sump at the corner of High and Albion Streets has materially improved the supply of water for fire-extinction purposes.

Hokitika.

Inspection, 18th March, 1927. Two officers and twenty-two firemen were in attendance at the inspection muster. The inspection drills were carried out in a smart and efficient manner, and instruction was given in the standardized drills.

The several hose-reel stations were found in good order and condition. Attendance at the nine fire calls averaged 93 per cent. of the total membership—a very good record.

A Volunteer Fire Police Corps has been formed in Hokitika, and is proving of great assistance to the brigade.

Invercargill.

Inspection, 12th January, 1927. One officer and sixteen firemen were in attendance at the inspection parade. The inspection drills were carried out in a very creditable manner, and great improvement in the brigade personnel was apparent; the brigade, however, was still numerically weak, and the authorized strength should be increased to not less than twenty-five all told.

The newly erected central fire-station, officially opened in October last, is well designed and built, and commodious enough to meet the requirements of Invercargill for many years to come. Subject to the remark that the Thornycroft motor is old and showing signs of wear, the equipment was in good working-order. Provision of a more suitable type of fire-escape ladder is necessary. The water-supply for fire-extinction purposes in Invercargill is still in a very unsatisfactory state, and calls for prompt steps being taken to remedy the serious position in that respect.

Kaiapoi.

Inspection, 22nd March, 1927. Two officers and ten firemen were in attendance at the inspection muster. Certain drill was carried out in a satisfactory manner, and the station and equipment were in good order. Instruction in squad drill was given, and several matters requiring attention pointed out. Attendance at the twelve general alarms averaged 66 per cent. of the total membership.

Kaitangata.

Inspection, 14th January, 1927. One officer and six firemen were in attendance at the inspection parade—under the circumstances a creditable muster. The inspection drills were carried out in a satisfactory manner, but the motor first-aid and hose tender is not proving a satisfactory appliance. The body design is not suitable, and the material of which it is constructed is too flimsy for such a purpose; also, the first-aid pump fittings are faulty in design. A recommendation was made that the body be entirely remodelled and constructed of more substantial material; also, the first-aid pumping outfit to be remodelled and an hydraulic hose-reel fitted.

Lawrence.

Inspection, 19th January, 1927. One officer and seven firemen were in attendance at the inspection muster. Instruction was given, and certain inspection drills were carried out. The station and equipment were found in good order.

Sections of the water-main, then recently cut out, showed the pipes of the borough reticulation to be in a very dangerous condition from a fire-extinction point of view, and this calls for prompt action, otherwise serious results are to be anticipated.

Levin.

Inspection, 11th April, 1927. Two officers and eleven firemen were in attendance at the inspection muster. The required inspection drills were carried out in a smart and satisfactory manner, and this brigade is becoming very efficient in that respect. The station and equipment were found in first-rate order. Attendance at the nine fire calls averaged 80·4 per cent. of the total membership of the brigade—a good record.

The fitting of an electrical siren alarm, to be operated from the Telephone Exchange, as also the fitting of a siren on the motor fire-engine, is under consideration.

Masterton.

Inspection, 25th May, 1927. Two officers and seventeen firemen were in attendance at the inspection parade. Various inspection drills were carried out in an efficient manner: there is continued improvement in that respect. The station and equipment were in first-class order. Attendance at the fifteen general alarms for fires averaged 74 per cent. of the total membership—a fair record. The brigade should be provided with a couple of smoke-helmets.

Milton.

Inspection, 18th January, 1927. Two officers and seven firemen were in attendance at the inspection muster. The inspection drills were carried out in a fairly satisfactory manner, but more practice in squad drill is necessary. The station and equipment were found in good order.

Arrangements for a prompt supply of the extra pressure of water provided by the pumping plants, and most essential in event of any outbreak of fire, are very unsatisfactory. This was commented upon at the time of my visit, and certain recommendations were made, but apparently no action of any sort was taken, as, according to a press report, at the outbreak which occurred on the 12th April last, which resulted in considerable damage, some forty minutes elapsed before the increased pressure was available.

Mount Roskill.

An inspection and report upon the conditions obtaining in this then-recently-constituted fire district were made on the 16th and 17th September, 1926, at which time there was neither brigade nor fire equipment of any description in the district. The water-supply for fire-extinction purposes is most unsatisfactory, consisting of a very restricted reticulation—none of the piping over 4 in. in diameter, and having numerous dead ends and an inadequate pressure.

Later a Volunteer Brigade was enrolled, a permanent Superintendent appointed, and certain fire appliances purchased. A second inspection made on the 5th May, 1927. At the inspection muster two officers and thirteen firemen were in attendance, when the required drill was carried out in a very creditable manner.

Included in the plant purchased is a 20/35 h.p. motor, fitted with a 250/300 g.p.m. turbine pump, first-aid pumping outfit, 30 ft. extension fire-ladder, &c.; also, tenders have been called for the building of a central fire-station to be erected on a site in Mount Albert Road.

Napier.

Inspection, 25th February, 1927. Two officers and fifteen firemen at the central station and one officer and seven firemen at the Port station were in attendance at the respective inspection musters. There was a decided improvement at both stations in the carrying-out of the inspection drills, and the stations and equipment were found in first-class order.

Additions and alterations to the Port station have materially improved the building as a fire-station. A 20 h.p. utility motor has been added to the brigade plant. Recommendations were made in respect to several minor matters requiring attention.

New Plymouth.

Inspection, 24th November, 1926. Two officers and twenty-five firemen were in attendance at the inspection parade. The various inspection drills were carried out in a satisfactory manner, showing a continued improvement in that respect. The station and all equipment were in first-class order. Attendance at twenty-nine fire calls averaged 80·1 per cent. of the total membership of the brigade—a good record.

A Volunteer Fire Police Corps has been formed, and is proving of great service. A traffic-warning siren has been installed at the corner of Liardit and Devon Streets. Recommendations have been made in regard to sinking sumps in Devon Street, as also to the necessity of providing a substation and fire equipment in the rapidly growing Westown district.

Oamaru.

Inspection, 24th January, 1927. Two officers and nine firemen were in attendance at the inspection muster. Whilst still requiring more practice therein, the standardized drills were carried out in a very creditable manner, and the station and equipment were found in good order. Attendance of brigadesmen at the twelve fire calls averaged 60·1 per cent. of the total strength.

The additions to the central station have been well and suitably carried out, and now provide accommodation for two married and four single firemen. A recommendation was made that, pending installation of a street fire-alarm system, more telephone fire notice-boards should be fixed in various parts of the town. The Board has under consideration purchase of a more powerful motor fire-engine of modern type to replace the present unsatisfactory machine.

Ohakune.

Inspection, 7th February, 1927. Two officers and eight firemen were in attendance at the inspection muster. The station was in better order than on the occasion of my previous inspection, and the equipment, with the exception of the motor hose-tender, was in good order. The trailer motor-pump was in good working-order, but the motor hose-tender is about worn out and is not now equal to the work. Sumps should be dug in the bed of the creek to ensure a supply of water for the motor-pump at all times.

The motor steam fire-engine housed at the Junction is in a most dilapidated and neglected condition, and the cost of putting the engine in effective working-order is an unknown quantity, and it is a question as to whether or not your Board is justified in expending any more money in that direction—certainly not if no guarantee is forthcoming that the machine will be maintained in proper working-order.

Onehunga.

Inspection, 4th May, 1927. Two officers and fifteen firemen were in attendance at the inspection parade—a good muster. The required inspection drills were carried out in a satisfactory and efficient manner, and station and equipment were found in first-class order. Attendance at the thirty-four general alarms averaged 80 per cent. of the total strength of the brigade—a good record.

The new central station was completed and officially opened on the 11th December last, and a new 40/50 h.p. motor first-aid pump, hose-and-ladder tender, is an addition to the brigade equipment. Recommendations were made in regard to several minor matters.

Otaki.

Inspection, 6th June, 1927. Two officers and eight firemen, the full strength of the brigade, were in attendance at the inspection muster. There was a decided improvement in the carrying-out of the inspection drills. The station and equipment were found in good order. Attendance at the six fire calls averaged 71 per cent. of the total membership—a fair record.

A new central station of brick construction was officially opened in December last, and the brigade has been equipped with a new 20 h.p. motor hose-and-ladder tender. Recommendation was made to the Board as to the provision of new hose and other necessary minor equipment.

Pahiatua.

Two inspections made—viz., 25th May and 28th June, 1927. At the first inspection two officers and eight firemen were in attendance. Owing to non-arrival of the long overdue motor hose-and-ladder tender no practical drill was carried out, but verbal instruction on various matters was given. At the second inspection, two officers and seven firemen being present, verbal and practical instruction was given in methods of drill and use of the newly acquired motor machine.

I understand there has been some little improvement in the water-pressure during the last few months, but the water-supply for fire-extinction purposes is quite inadequate, and is practically the same as at the time and as set out in my report of the 22nd April, 1926.

Palmerston North.

Inspection, 8th June, 1927. Two officers and eighteen firemen were in attendance at the inspection parade. Certain inspection drills were carried out in a smart and efficient manner, and stations and equipment were in first-class order.

The new central fire-station, erected at a cost of some £18,000, was officially opened on the 19th July, 1926. The building provides ample accommodation for all purposes, including five sets of married quarters, and should meet all necessary requirements for many years to come.

I consider it necessary to again call attention to the inadequacy of the water-supply for fire-extinction purposes, with its possible serious consequences, and would also again strongly recommend formation of a Volunteer Fire Police Corps. Such corps are rendering valuable assistance in all fire-prevention matters in other towns.

Petone.

Inspection, 21st June, 1927. Two officers and seventeen firemen, the full strength, were in attendance at the inspection parade. Certain drills were carried out in a very efficient manner, and the station and equipment were in their usual good order and condition. Attendance at nineteen general calls averaged 60·4 per cent. of the total membership of the brigade.

I would again (*vide* report of 23rd June, 1926) recommend appointment of a second permanent fireman.

Following is an extract from a report submitted in June, 1921: "I would again, as in years past, call the attention of your Board to the inadequacy of the water-supply for fire-extinction purposes, this applying even more to volume of supply than to pressure, and that is steadily becoming more so." Since then the population of Petone has increased greatly, with a concomitant increase in buildings, both in number and size, but with very little real improvement in the water-supply. For many years past it has been recognized that the laying of 3 in. mains for fire-extinction purposes is both an economic and utilitarian mistake, and one of the worst features of the present reticulation is the very large proportion of 3 in. piping included therein, with the original flow further reduced by corrosion. Altogether the position in regard to the water-supply is most unsatisfactory, and calls for prompt attention.

Port Chalmers.

An inspection visit was paid on the 15th January, 1927, but, with the exception of the Superintendent and two firemen, there was no attendance of the brigade, consequently there was no inspection of the personnel. The station and equipment were found in good order. A recommendation was made that the present motor first-aid hose-and-ladder tender be replaced by a more powerful machine.

Pukekohe.

Inspection, 9th May, 1927. Two officers and ten firemen were in attendance at the inspection parade—a full muster. The various inspection drills were carried out in a creditable manner, and in that respect show a decided improvement since my last inspection. The working equipment was found in good order. Attendance at eleven general alarms averaged 60·2 per cent. of the total membership. A site for a new central fire-station has been purchased, and erection of the station, as also provision of a more efficient street fire-alarm system, should be expedited.

Rotorua.

Inspection, 8th November, 1926. Two officers and fourteen firemen were in attendance at the inspection muster. The inspection drills were carried out in a very satisfactory and efficient manner. The station and equipment were in first-class order.

During the last couple of years a large number of houses have been built in the south-western portion of the town, with more buildings in course of erection. The reticulation and water-supply for protection of property there situated is inadequate to a dangerous degree, and the situation calls for prompt attention.

Taumarunui.

Inspection, 8th February, 1927. Two officers and eleven firemen were in attendance at the inspection muster. The inspection drills were carried out in a satisfactory manner, and instruction was given in the standardized squad drill. The station and equipment were in good order. Attendance at the thirteen fire calls averaged 70·8 per cent. of the total membership—a fair record.

The present motor hose-and-ladder tender has been in use over seven years; it has quite served its purpose, and a recommendation was made that it be replaced by a machine of greater horse-power and more modern equipment; also that six fire-alarm call-points be installed.

Tauranga.

Inspection, 10th November, 1926. Two officers and twelve firemen were in attendance at the inspection parade. The inspection drills were carried out in a satisfactory manner, and the station and equipment were in good order. Attendance at seven fire calls averaged 80·4 per cent. of the total membership of the brigade—a good record.

The Fire Board has finally decided to instal a street fire-alarm system in Tauranga. The reticulation and water-supply for fire-extinction purposes is in a very unsatisfactory state, and becoming more so. There are quite a number of the streets in the northern part of the town, such as Brown, Mission, and Chapel Streets, &c., in which there are no fire-mains laid down; this also applies to a number of the cross-streets in the southern portion of Cameron Road. Altogether, conditions in that respect call for immediate attention.

Te Aroha.

Inspection, 10th May, 1927. One officer and fourteen firemen were in attendance at the inspection muster; these, with the Superintendent on leave, represented the total strength of the brigade. The inspection drills were not carried out in the most satisfactory manner. Attendance at the eleven fire calls averaged 90 per cent. of the total membership of the brigade—a very good record.

Some of the branches and nozzles in use are most defective, and they should be replaced. I had to again report to the Board that the present extension ladder is dangerous for use as a fire-ladder. The street fire-hydrant indicators in some of the central parts of the town were in a most neglected condition—missing altogether in some cases; also, the hydrants require attention. This is a serious matter, and calls for prompt action.

Te Awamutu.

First inspection of the Te Awamutu Fire District, its brigade, station, and equipment, was made on the 7th and 8th December, 1926. The brigade personnel are apparently an active, willing body of men, but numerically weak, and the authorized strength should be raised to not less than fifteen. The station, of concrete, is well situated, and provides sufficient accommodation for present requirements, but some extra internal fittings are required.

Equipment: The motor tender is suitable and in good running-order, but the stock of fire-hose is dangerously low; also, provision of first-aid appliances, such as hand-pumps and chemical

extincteurs, is necessary. Water-supply: The static head provides ample pressure, but the drop from 100 lb. to 58 lb. with one $\frac{7}{8}$ in. delivery at work tends to show that the carrying-main is not in diameter equal to present requirements, and probably corroded also. Provision of one or other of the several systems of public fire-alarms was recommended.

Timaru.

Inspection, 23rd March, 1927. Two officers and nineteen firemen were in attendance at the inspection parade. The inspection drills were carried out in an efficient manner. An explanation and practical illustration was given of the standardized squad drill. The station and appliances were found in their usual good order. Attendance at thirty-nine fire calls averaged 80 per cent. of the brigade membership—a good record.

A permanent Superintendent has been appointed, and a 20 h.p. runabout motor has been added to the brigade equipment. For the purpose of providing additional married quarters the Board have purchased a section, with dwelling thereon, fronting Latter Street, and are negotiating for the purchase of the section intervening between that purchased and the central fire-station. Certain minor recommendations were made in my report to the Board.

Waihi.

Inspection, 11th November, 1926. Two officers and twelve firemen were in attendance at the inspection muster. The inspection drills were carried out in a satisfactory manner, showing very marked improvement in that respect. Attendance at the twelve fire calls averaged 50·6 per cent. of the total membership of the brigade.

In view of the more or less unsatisfactory conditions of the water-supply for fire-extinction purposes, also on account of other local conditions, the attention of the Board was again directed to the necessity of installing a street fire-alarm service; also, a supply of new fire-hose was required.

Waipukurau.

First inspection of the Waipukurau Brigade, its station and equipment, was made on the 22nd September, 1926. An alarm was rung on the station firebell; four minutes later, seven firemen reported present. At the subsequent inspection muster two officers and fourteen firemen were in attendance. A short drill was carried out and technical instruction was given. The personnel are apparently an active, willing body of men of good physique.

The water-supply as to reservoir storage, volume, and pressure is quite inadequate for fire-extinction purposes, but since then extensive improvements have been taken in hand. The brigade equipment is very deficient, and recommendations were made to the Board in regard to the provision of a motor hose-tender, purchase of fire-hose, branches, hand-pumps, chemical extincteurs, &c. The station firebell is altogether too small and light in tone, and the installation of an electrically operated siren, to be operated from certain fixed points, was recommended.

Wairoa.

Inspection, 11th October, 1926. Two officers and twelve firemen were in attendance at the inspection parade. This brigade was only organized in the previous March, and in that view the inspection drills were performed in a very creditable manner. Attendance at the thirteen fire calls averaged 71 per cent. of the total strength—a fair record.

During the year erection of a central fire-station of concrete construction was completed, and is in occupation. An electrically operated fire-alarm siren has been installed, and a 20 h.p. motor hose-and-ladder tender, hose stand-pipes, branches, and other necessary smaller equipment provided by the Fire Board.

Waitara.

Inspection, 28th October, 1926. Two officers and ten firemen were present at the inspection parade—under the then circumstances a creditable attendance. The inspection was satisfactory, and verbal instruction was given to the members of the brigade. The station and equipment were in good order.

Reports received tend to prove that the brigade performed good work at the Waitara Meat-works fire which occurred in February last. Certain conditions in respect to the water-supply for fire-extinction purposes were unsatisfactory, and recommendations were made which, if carried out, would remedy the fault.

Wanganui.

Inspection, 25th and 26th November, 1926. Three officers and twenty-four firemen were in attendance at the inspection; twenty-one officers and members of the Volunteer Fire Police Corps were also present. The required inspection drills were carried out in a smart and efficient manner, and the stations and all equipment were found to be in good order and condition.

Additional equipment includes purchase of a 30/35 h.p. motor fitted with a 250/300 g.p.m. turbine pump, first-aid pumping outfit, &c.

In September last a Volunteer Fire Police Corps consisting of fifty prominent citizens was organized, and this corps has since rendered valuable assistance to the brigade and city generally.

With six motor appliances and other plant to be maintained in good order the brigade should be provided with a properly equipped workshop. For the purpose of providing necessary additional married quarters I have again recommended purchase of the cottage adjoining the central station.

Wellington.

Inspections of the Wellington Fire Brigade, its stations and equipment, were made on the 13th and 17th June, 1927. The personnel generally are apparently of good physique, active and smart in their drill movements. Certain drills were carried out at the several stations in an efficient manner, and all stations, with their equipment and residential quarters, were in good order.

Stations: At the central station more married quarters are necessary. The Thorndon station is well situated, but the engine-house should be reconstructed on the Pipitea Street frontage. The sites recently purchased for new substations at Wadestown, Northland, Brooklyn, and Miramar, are well situated in regard to the fire risks of their respective districts, but erection of a substation on the suggested Adelaide Road site raises the question as to the policy of the Board in regard to the relative situations of the proposed new station and the Constable Street station.

Equipment: The then-present motor fire-machine equipment was quite inadequate, and the body of the central station first-call motor is badly designed for its purpose; but delivery of the two new fire-motors on order should enable some readjustment in that respect.

The present street fire-alarm system, installed over twenty-six years ago, has served its purpose; and, whilst a few of the box movements more recently installed are an improvement on the older instruments, the whole system is out-of-date and unreliable for service in a city the size and with the characteristics of Wellington.

Westport.

Inspection, 16th March, 1927. Two officers and fifteen firemen were in attendance at the inspection parade. The various inspection drills were carried out in a satisfactory manner; there was considerable improvement in that respect, and further instruction was given in the standardized drills. Attendance at the six fire calls averaged 80·5 per cent. of the total strength—a good record.

Two matters requiring the prompt attention of the Board are the better lighting of the fire-station and provision of a street fire-alarm system. Other minor recommendations were made in my report to the Board.

Whangarei.

Inspection, 13th December, 1926. There was an attendance of two officers and twelve firemen at the inspection muster. The inspection drills were carried out satisfactorily, and the station and equipment were found in good order. Attendance at seven fire calls averaged 70·3 per cent. of the total membership of the brigade.

In view of the enlarged borough boundaries, and the number of new buildings erected within the last two or three years, the present motor hose-and-ladder tender, which has been in commission for some seven years, has served its purpose, and is not now equal to requirements, and the brigade should be provided with a more powerful and faster machine.

TABLES.

1. Summary of Fire Calls, 1926–27.

District.	Fires.	Chimney Fires.	Bush and Rubbish Fires.	False Alarms.	Out of District.	Totals.
Auckland	224	28	22	101	21	396
Balclutha	3	4	..	1	1	9
Christchurch	162	35	57	69	31	354
Dannevirke	9	1	1	3	1	15
Dargaville	4	..	..	..	..	4
Dunedin	140	94	48	86	1	369
Eltham	2	..	..	..	..	2
Feilding	11	..	..	..	..	11
Foxton	5	..	2	..	2	9
Gisborne	30	4	1	1	4	40
Greymouth	16	1	..	1	..	18
Hamilton	22	5	6	4	2	39
Hastings	26	3	4	2	4	39
Hawera	7	5	6	5	1	24
Hokitika	8	..	..	1	..	9
Invercargill	44	16	11	21	2	94
Kaiapoi	12	1	1	..	..	14
Kaitangata	3	..	..	..	..	3
Lawrence	2	..	..	..	..	2
Levin	6	..	1	2	..	9
Masterton	21	7	11	1	..	40
Milton	1	4	..	1	..	6
Mount Roskill	2	1	..	..	..	3
Napier	25	7	8	3	..	46
New Plymouth	27	9	7	..	10	53
Oamaru	6	3	1	1	1	12
Ohakune	9	1	2	..	..	12
Onehunga	21	3	2	4	5	35
Otaki	4	1	1	..	..	6
Pahiatua	1	..	..	..	..	1
Palmerston North	48	12	24	19	4	107
Petone	9	2	3	6	..	20
Port Chalmers	5	..	4	..	1	10
Pukekohe	6	..	2	5	..	13
Rotorua	13	8	2	5	..	28
Taumarunui	9	2	..	1	1	13
Tauranga	7	..	1	..	..	8
Te Aroha	8	..	..	3	..	11
Te Awamutu	2	1	..	..	..	3
Timaru	26	5	9	2	..	42
Waihi	9	..	3	..	..	12
Waipukurau	5	..	2	1	1	9
Wairoa	10	1	..	..	2	13
Waitara	2	..	..	..	..	2
Wanganui	49	13	38	24	4	128
Wellington	218	61	188	163	3	633
Westport	4	..	2	..	..	6
Whangarei	5	2	1	..	..	8
Totals	1,291	340	471	536	102	2,740

2. Summary of Fire Losses, 1926–27.

District.	Insured.	Uninsured.	Totals.	District.	Insured.	Uninsured.	Totals.
	£	£	£		£	£	£
Auckland	72,952	497	73,449	Oamaru	552	112	664
Balclutha	64	150	214	Ohakune	3,940	1,374	5,274
Christchurch ..	37,166	3,545	40,711	Onehunga	5,940	492	6,432
Dannevirke ..	3,577	43	3,620	Otaki	1,458	350	1,808
Dargaville	2,000	1,125	3,125	Pahiatua	..	20	20
Dunedin	59,272	521	59,793	Palmerston North ..	28,097	57	28,154
Eltham	21	10	31	Petone	145	56	201
Feilding	4,107	937	5,044	Port Chalmers ..	805	155	960
Foxton	660	451	1,111	Pukekohe	1,077	552	1,629
Gisborne	17,470	6,670	24,240	Rotorua	3,262	202	3,464
Greymouth	23,547	2,585	26,132	Taumarunui ..	1,869	460	2,329
Hamilton	4,084	210	4,294	Tauranga	2,246	975	3,221
Hastings	9,442	397	9,839	Te Aroha	2,602	285	2,887
Hawera	2,082	159	2,241	Te Awamutu ..	250	65	315
Hokitika	1,416	806	2,222	Timaru	2,382	19	2,401
Invercargill ..	6,364	565	6,929	Waihi	970	1,120	2,090
Kaiapoi	6,135	763	6,898	Waipukurau ..	4,401	2,766	7,167
Kaitangata	1,070	150	1,220	Wairoa	5,072	680	5,752
Lawrence	364	185	549	Waitara	4,994	50	5,044
Levin	2,075	551	2,026	Wanganui	8,967	212	9,179
Masterton	12,218	2,320	14,538	Wellington	95,843	15,764	111,607
Milton	1,000	..	1,000	Westport	70	..	70
Mount Roskill ..	42	1	43	Whangarei	400	12	412
Napier	14,403	2,051	16,454				
New Plymouth ..	8,906	57	8,963	Totals ..	465,779	50,587	516,366

3. Cost of Fire Brigades (Capital Expenditure included).

As taken from the Estimates for the respective Years.

District.	Year ending 30th June, 1922.	Year ending 30th June, 1923.	Year ending 30th June, 1924.	Year ending 30th June, 1925.	Year ending 30th June, 1926.	Year ending 30th June, 1927.	Nine Months ending 31st March, 1928.
	£	£	£	£	£	£	£
Auckland ..	18,375	16,325	16,700	18,400	20,000	21,000	15,000
Balclutha ..	350	400	400	500	500	500	425
Christchurch ..	14,113	12,100	12,100	13,000	13,000	12,000	9,000
Dannevirke ..	672	585	739	620	614	636	662
Dargaville ..	675	504	816	600	675	675	450
Dunedin ..	13,500	13,500	13,500	13,500	15,500	15,500	11,625
Eltham	..	..	..	750	600	500	437
Feilding	594	648	623	554	639	528	843
Foxton	..	250	397	626	594	467	388
Gisborne ..	1,517	1,734	2,188	2,200	2,462	3,104	3,346
Greymouth ..	890	887	948	949	1,005	1,483	1,250
Hamilton ..	1,900	2,350	2,650	2,800	2,930	2,650	1,906
Hastings ..	978	837	1,012	1,206	1,120	1,330	1,490
Hawera	751	837	713	1,241	1,302	1,320	956
Hokitika ..	425	570	570	480	550	500	512
Invercargill ..	..	..	10,300	3,200	4,300	4,755	4,331
Kaiapoi ..	..	..	947	1,279	663	636	535
Kaitangata ..	260	192	175	290	230	186	161
Lawrence ..	80	80	90	100	90	100	75
Levin	1,086	921	799	803	586	617	600
Masterton ..	2,029	1,880	1,946	1,649	1,790	1,728	1,298
Milton	250	167	240	340	200	178	110
Mount Roskill ..	..	..	..	..	..	..	1,264
Napier	2,190	1,671	2,886	3,522	3,852	3,730	3,335
New Plymouth ..	2,435	2,183	1,965	1,953	2,076	1,960	1,642
Oamaru ..	800	750	800	950	1,050	1,250	1,300
Ohakune ..	462	435	348	420	537	474	500
Onehunga ..	..	..	..	..	..	1,670	1,334
Otaki	..	..	..	..	325	399	416
Pahiatua ..	..	..	..	..	..	590	320
Palmerston North	2,417	2,100	2,143	2,224	4,502	4,298	3,269
Petone	1,030	1,306	1,450	1,394	1,484	1,591	1,227
Port Chalmers ..	400	325	310	269	252	214	220
Pukekohe ..	..	..	..	..	..	330	745
Rotorua	1,424	1,340	1,328	1,356	958	1,000	890
Taumarunui ..	600	640	650	445	530	500	414
Tauranga ..	547	541	499	559	509	659	588
Te Aroha ..	731	683	573	621	778	833	680
Te Awamutu ..	..	..	..	..	..	..	420
Timaru	2,400	1,750	1,850	2,250	2,050	2,350	2,400
Waihi	990	710	822	651	837	583	622
Waipukurau ..	..	..	..	..	..	..	495
Wairoa	..	..	..	..	..	..	491
Waitara	209	200	120	220	234	263	198
Wanganui ..	5,255	4,800	4,450	7,050	7,400	8,150	6,000
Wellington ..	..	..	..	..	..	18,715	25,400
Westport ..	..	..	..	550	630	570	500
Whangarei ..	680	550	1,000	1,016	1,018	890	800
Totals ..	82,484	74,754	89,052	90,541	98,372	121,412	110,476

4. Summary of Causes.

Summary of Causes.	Auckland.	Balclutha.	Christchurch.	Dannevirke.	Dargaville.	Dunedin.	Eltham.	Feilding.	Foxton.	Gisborne.	Greymouth.	Hamilton.	Hastings.	Hawera.	Hokitika.	Invercargill.	Kaiapoi.	Kaitangata.	Lawrence.	Levin.	Masterton.	Milton.	Mount Roskill.	Napier.	New Plymouth.	Oamaru.	Ohakune.	Onehunga.	Otaki.	Pahiatua.	Palmerston North.	Petone.	Port Chalmers.	Pukekohe.	Rotorua.	Taumarunui.	Tauranga.	Te Aroha.	Te Awamutu.	Timaru.	Waihi.	Waipukurau.	Wairoa.	Waitara.	Wanganui.	Wellington.	Westport.	Whangarei.	Totals.
Ashes, live	3	..	2	..	..	7	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..	..	2	..	..	1	..	1	1	..	..	22
Benzine—proximity to lights	6	..	2	..	..	2	1	..	..	2	2	3	..	1	..	..	..	..	..	1	1	..	..	1	1	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2	16	..	..	44
Candles—drapery, &c., in contact	4	..	3	..	..	6	..	..	..	1	2	..	..	..	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..	..	23
Clothes, airing before fire	2	..	..	..	..	1	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	2	..	..	10
Defective chimneys, hearths	4	1	12	1	..	6	..	1	..	2	1	..	..	1	2	3	..	..	1	1	..	..	..	2	..	..	..	1	..	..	2	..	..	..	3	..	..	..	..	1	..	..	..	..	10	1	1	57
Defective hot-water services	..	..	1	..	..	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	7
Electricity—																																																
Short-circuits, fusing of wires	43	..	6	..	..	8	..	..	..	..	1	1	1	..	..	6	..	..	..	..	3	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	4	4	..	1	80
Domestic irons, switches left on	5	..	2	..	..	..	..	..	..	..	..	1	1	..	..	..	1	..	..	..	1	..	..	3	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	2	..	1	20
Faulty installations	2	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	7
Fireworks, sparks from	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2
Gas—defective fittings	..	..	5	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	12
Gas rings, stoves	5	..	2	..	..	1	..	..	..	1	..	..	..	1	..	1	..	..	..	..	1	..	..	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	3	..	..	..	..	1	..	..	19
Incendiarism	6	..	17	..	..	2	..	..	..	..	..	..	..	..	2	..	..	..	..	..	1	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	32
Kerosene-heaters, incubators	..	1	..	..	..	3	..	..	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	12
Kerosene, lighting fires with	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	3
Matches, children with	2	..	4	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	..	..	..	3	1	..	..	16
Matches thrown down alight	2	..	9	..	..	2	..	..	..	1	1	4	1	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	2	..	..	..	..	..	..	..	..	..	6	83	..	..	116
Miscellaneous causes	8	..	8	..	1	9	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	4	..	..	1	1	2	..	..	1	1	..	1	..	..	3	9	1	..	55
Motors—back-firing, short-circuits	10	..	5	..	..	6	..	..	..	2	..	2	1	..	..	3	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	1	..	..	..	..	1	4	1	..	..	..	1	1	..	..	40
Naked lights	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	5	..	..	8
Overheating—																																															
Beeswax, fat, &c.	2	..	3	..	..	8	..	..	..	..	..	1	..	..	..	2	1	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	1	5	..	..	25
Machinery, exhaust pipes	4	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3	..	..	12
Tar	8	..	4	..	..	4	..	2	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	1	1	..	..	..	1	..	..	..	..	1	..	..	..	2	1	..	..	28
Wood—proximity to furnaces	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Painters burning off paint	2	..	5	..	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	7	..	..	23
Smoking	2	..	7	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	17
Cigarette-butts	4	..	7	..	..	2	..	..	..	5	1	..	..	..	1	2	..	..	..	1	..	..	..	1	2	1	..	1	..	..	1	..	..	..	2	..	..	..	..	..	..	..	..	4	1	..	..	36
Sparks—																																															
From chimneys	..	..	6	2	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	1	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	16
From copper fires	5	..	8	..	..	..	1	2	..	1	..	1	..	1	1	4	..	..	..	..	1	..	1	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	4	8	..	..	41
From locomotives	2	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	8
From fireplaces, furnaces	4	..	10	..	..	2	..	..	..	4	1	1	..	..	..	4	..	..	..	1	1	..	..	2	1	..	1	3	..	..	3	..	..	1	..	..	..	..	..	..	..	..	..	2	9	..	..	50
From other fires	2	..	6	..	..	..	..	..	..	..	..	1	..	..	1	3	..	..	..	..	1	..	..	1	1	..	1	1	..	..	1	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	21
Spontaneous combustion	3	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	3	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	2	1	..	17
Unknown causes	82	1	22	6	3	55	..	6	3	7	5	5	19	2	1	9	9	1	1	2	5	1	..	10	13	1	7	4	4	..	21	2	4	4	1	5	5	6	2	8	7	3	7	2	8	36	1	2	409
Totals	224	3	162	9	4	140	2	11	5	30	16	22	26	7	8	44	12	3	2	6	21	1	2	28	27	6	9	21	4	1	48	9	5	6	13	9	7	8	2	26	9	5	10	2	49	218	4	5	1,291

5. Summary.—Personnel, Plant, and Appliances.

— —	Auckland.	Balclutha.	Christchu-ch.	Dannevirke.	Dargaville.	Dunedin.	Eltham.	Feilding.	Foxton.	Gisborne.	Greymouth.	Hamilton.
Brigades, total strength of ..	70	13	42	20	18	45	17	20	15	25	20	25
Fire-stations—												
Residential	5	1	4	1	1	3	1	1	1	1	2	1
Non-residential	..	..	..	1	..	..	..	1	..	..	..	..
Fire-alarms—												
Circuits (C), boxes (B)	35 (C), 301 (B)	..	21 (C), 159 (B)	2 (C), 16 (B)	..	15 (C), 166 (B)	..	..	..	4 (C), 57 (B)	..	4 (C), 39 (B)
Automatic, private	73	..	44	..	..	38	..	..	..	..	..	6
Telephones (points)	18	3	8	2	4	5	3	3	4	4	8	2
Motors—												
Hose-and-ladder tenders (h.p.) ..	5 (40)	1 (22)	..	1 (40)	..	1 (38)	1 (22)	1 (20)	1 (20)	1 (35)	..	..
First-aid, hose-and-ladder (h.p.) ..	4 (65, 50, 38, 30)	..	3 (40, 40, 25;	..	1 (20)	4 (70; 3, 60)	..	..	..	1 (50)	1 (22)	..
Pump, hose-and-ladder (h.p.) ..	1 (110)	..	2 (70, 30)	..	..	..	..	..	..	2 (36)Trailers	..	1 (60)
First-aid, pump, hose-and-ladder (h.p.)	..	..	3 (50)	..	..	1 (90)	..	1 (20/35)	..	..	1 (30)	1 (40)
General utility	2 (25, 20)	..	1 (20)	..	..	1 (20)	..	..	..	..	..	1 (20)
Petrol-electric, ladders (height) ..	1 (87′)	..	1 (85′)	..	..	1 (85′)	..	..	..	..	..	..
Fire-engines—												
Steam (g.p.m.)	..	..	..	..	..	..	..	..	..	1 (600)	1 (600)	..
Chemical (gals.)	..	..	..	..	..	..	..	..	1 (40)	..	1 (60)	..
Hose-carts, reels, hand-drawn ..	..	1	..	2	1	..	1	2	..	2	5	2
Ladders—												
Motor-traction (height)	1 (65′)	..	1 (65′)	..	..	1 (80′)	..	..	..	..	..	..
Extension (height) (on motor*) ..	2 (22′), 2 (35′)*	1 (24′)*	6 (45′; 3, 35′; 2, 20′)*	1 (35′)*	1 (25′)*	5 (50′; 4, 30′)*	1 (34′)*	2 (30′, 30′)*	1 (26′)*	2 (35′, 24′)	2 (35′, 27′)*	3 (50′, 35′, 30′)*
Single, coupling (total length) ..	12 (240′)	3 (58′)	16 (160′)	3 (75′)	1 (25′)	..	2 (45′)	4 (36′)	..	3 (66′)	5 (98′)	3 (34′)
Jumping-sheets	5	..	3	..	..	1	..	..	..	1	1	1
Smoke jackets (J), helmets (H), masks (M)	2 (J), 4 (H)	..	1 (J), 3 (H)	2 (H)	..	1 (J), 1 (H)	2 (H)	2 (M)	..	1 (H)	..	3 (M)
Hand-pumps	5	1	6	2	1	6	1	1	1	1	1	1
Hand chemical extincteurs ..	10	2	10	2	..	9	1	2	2	4	2	2
Portable standpipes—												
Ratchet valves	17	..	1	..	1	12	1	..	..	..	..	2
Double heads	..	2	19	8	2	7	3	7	3	7	9	2
Single heads	6	..	1	..	2	..	..	..	..	4	1	6
Hos.—												
Rubber-lined (diameter)	2,000′ (2¾″)	..	2,300′ (2¾″)	..	..	200′ (2½″)	..	..	..	..	..	500′ (2½″)
Unlined (diameter)	12,000′ (2¾″); 386′ (4″)	1,600′ (2½″)	14,850′ (2¾″)	3,400′ (2½″)	2,000′ (2½″)	14,200′ (2½″)	2,000′ (2½″)	2,400′ (2½″)	1,500′ (2½″)	3,500′ (2½″)	3,000′ (2½″)	4,500′ (2½″)
Rubber, first-aid (diameter) ..	720′ (¾″)	..	720′ (¾″)	..	120′ (¾″)	640′ (¾″)	..	160′ (¾″)	..	180′ (¾″)	120′ (¾″)	180′ (¾″)
Water-supply (P = pumping; G = gravitation)	P and G	P and G	P and G	G	G	G	G	G	P and G	G	P and G	P and G
Pressure, average, noon–midnight ..	40–120	..	95–105	80–85	85–95	100–150	75–90	85–105	53–120	109–120	85–95	45–48

5. SUMMARY.—PERSONNEL, PLANT, AND APPLIANCES—*continued.*

—	Hastings.	Hawera.	Hokitika.	Invercargill.	Kaiapoi.	Kaitangata.	Lawrence.	Levin.	Masterton.	Milton.	Mt. Roskill.	Napier.	New Plymouth.	Oamaru.
Brigades, total strength of	24	20	30	22	13	10	13	16	23	13	18	37	25	17
Fire-stations—														
Residential	1	1	..	1	1	..	..	1	1	1	1	2	1	1
Non-residential	..	..	5	..	..	1	1	..	..	..	..	1	1	1
Fire-alarms—														
Circuits (C), boxes (B)	4 (C), 30 (B)	2 (C), 20 (B)	..	4 (C), 36 (B)	..	..	..	1 (C), 6 (B)	6 (C), 16 (B)	..	..	3 (C), 25 (B)	2 (C), 26 (B)	..
Automatic, private	..	1	..	7	..	..	..	..	1	..	..	..	..	..
Telephones (points)	3	2	4	2	1	..	..	3	2	2	1	5	4	5
Motors—														
Hose-and-ladder tenders (h.p.)	1 (30)	1 (35)	..	1 (35)	..	..	..	1 (22)	..	1 (22)	..	..	1 (22, 30)	..
First-aid, hose-and-ladder (h.p.)	1 (35)	..	..	..	..	1 (22)	..	..	1 (25)	..	..	..	..	1 (40)
Pump, hose-and-ladder (h.p.)	..	..	..	1 (60)	1 (22)	..	..	..	..	..	..	1 (35)	1 (60)	..
First-aid, pump, hose-and-ladder (h.p.)	..	1 (35)	..	1 (65)	..	..	..	..	1 (40)	..	1 (30)	2 (40, 65)	..	..
General utility	..	..	..	1 (20)	..	..	..	..	..	..	..	1 (20)	..	..
Petrol-electric, ladders (height)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fire-engines—														
Steam (g.p.m.)	..	..	1 (380)	..	1 (300)	..	..	..	..	..	..	..	..	..
Chemical (gals.)	..	..	..	..	..	..	..	..	..	1 (60)	..	..	..	..
Hose-carts, reels, hand-drawn	2	2	5	1	1	2	2	1	2	1	..	2	..	1
Ladders—														
Motor-traction (height)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Extension (height) (on motors*)	2 (35′, 20′)*	2 (35′)	1 (36′)	3 (50′, 35′, 30′)*	1 (30′)*	..	..	1 (26′)	2 (30′, 35′)*	1 (16′)*	1 (30′)	3 (60′, 35′, 35′)*	3 (50′, 35′, 30′)*	1 (30′)*
Single, coupling (total length)	2 (35′)	7 (121′)	3 (59′)	2 (55′)	3 (24′)	1 (20′)	2 (49′)	3 (63′)	6 (79′)	1 (25′)	..	10 (261′)	3 (36′)	2 (41′)
Jumping-sheets	2	..	..	1	..	..	..	1	..	..	..	2	1	..
Smoke jackets (J), helmets (H), masks (M)	2 (M)	1 (H)	..	1 (H)	3 (H)	..	..	..	..	..	..	8 (H)	2 (H)	1 (J)
Hand-pumps	2	2	2	3	1	4	1	..	1	1	..	2	2	2
Hand chemical extincteurs	2	2	2	8	2	..	2	2	2	3	2	8	7	1
Portable standpipes—														
Ratchet valves	..	1	..	..	..	..	1	1	2	..	..	1	..	1
Double heads	5	3	7	2	..	..	1	1	3	2	3	12	7	4
Single heads	..	2	..	8	..	..	..	3	3	..	..	2	1	1
Hose—														
Rubber-lined (diameter)	308′ (2½″)	..	..	..	..	..	..	..	50′ (2½″)	..	..	300′ (2½″)		
Unlined (diameter)	2,430′ (2½″)	2,700′ (2½″)	2,500′ (2½″)	7,000′ (2¾″)	2,700′ (2¾″)	1,600′ (2½″)	1,200′ (2½″)	2,000′ (2½″)	2,000′ (2½″)	1,800′ (2½″)	1,100′ (2½″)	9,600′ (2½″)	200′ (2½″)	..
Rubber, first-aid (diameter)	300′ (¾″)	120′ (¾″)	..	160′ (¾″)	..	120′ (1″)	..	..	120′ (¾″)	100′ (1″)	120′ (¾″)	260′ (¾″)	5,000′ (2½″)	2,800′ (2½″)
Water-supply (P = pumping; G = gravitation)	P and G	P and G	G	P and G	..	G (partial)	G	G	G	P and G	G	P and G	..	100′ (¾″)
Pressure, average, noon–midnight	130–135	35–75	100–105	45	River and sumps	70	65–80	90–100	80–85	60	45	65–139	100–120	90–100

5. Summary.—Personnel, Plant, and Appliances—*continued.*

—	Ohakune.	Onehunga.	Otaki.	Pahiatua.	Palmerston North.	Petone.	Port Chalmers.	Pukekohe.	Rotorua.	Taumarunui.	Tauranga.	Te Aroha.
Brigades, total strength of ..	15	18	11	14	28	19	10	14	19	21	16	16
Fire-stations—												
Residential	1	1	1	1	2	1	..	..	1	1	1	1
Non-residential	..	..	..	..	..	..	2	1	1	1	2	..
Fire-alarms—												
Circuits (C), boxes (B)	..	2 (C), 31 (B)	..	..	5 (C), 38 (B)	1 (C), 21 (B)	..	4 (C), 7 (B)	3 (C), 23 (B)	..	..	2 (C), 3 (B)
Automatic, private	..	..	..	..	1	..	..	..	..	..	..	..
Telephones (points)	1	1	1	1	2	1	..	3	2	4	2	3
Motors—												
Hose-and-ladder tenders (h.p.) ..	1 (20)	..	1 (20)	1 (20)	1 (25)	1 (30)	..	1 (20)	1 (50)	1 (20)	..	1 (20)
First-aid, hose-and-ladder (h.p.) ..	..	1 (40)	..	..	..	..	1 (22)	..	..	..	1 (22)	..
Pump, hose-and-ladder (h.p.) ..	1 (30) Trailer	..	..	..	1 (50)	..	..	..	..	..	..	..
First-aid, pump, hose-and-ladder (h.p.)	..	..	..	..	1 (35)	1 (40)	..	..	1 (35)	..	..	..
General utility	..	..	..	..	..	..	..	..	..	..	..	..
Petrol-electric, ladders (height) ..	..	..	..	..	..	..	..	..	..	..	..	..
Fire-engines—												
Steam (g.p.m.)	1 (400) Motor	..	..	..	..	..	..	..	..	..	..	..
Chemical (gals.)	..	..	..	..	..	..	..	..	..	..	..	..
Hose-carts, reels, hand-drawn ..	..	1	1	1	2	1	2	1	2	..	2	1
Ladders—												
Motor-traction (height)	..	..	..	..	..	..	..	..	..	..	..	..
Extension (height) (on motors*) ..	..	1 (35′)*	1 (26′)*	1 (24′)	3 (60′, 30′, 22′)*	1 (35′)*	..	1 (24′)*	2 (35′, 35′)*	1 (26′)*	1 (34′)*	1 (30′)
Single, coupling (total length) ..	2 (32′)	1 (12′)	2 (28′)	3 (50′)	10 (116′)	4 (32′)	2 (46′)	1 (25′)	7 (100′)	2 (20′)	2 (55′)	2 (30′)
Jumping-sheets	..	1	..	..	1	1	..	..	1	..	..	..
Smoke jackets (J), helmets (H), masks (M)	..	2 (H)	..	..	..	1 (H)	..	..	1 (H)	1 (H)	..	..
Hand-pumps	2	..	2	1	2	2	2	1	1	1	2	1
Hand chemical extincteurs ..	4	2	1	..	1	3	..	2	4	2	..	2
Portable standpipes—												
Ratchet valves	..	..	..	..	1	2	1	1	1	..	..	1
Double heads	..	3	2	4	5	2	2	2	1	3	4	2
Single heads	..	1	..	..	4	5	..	..	5	1	1	..
Hose—												
Rubber-lined (diameter) ..	..	200′ (2½″)	..	..	..	150′ (2¾″)	..	..	250′ (2½″)	..	..	..
Unlined (diameter)	1,000′ (2½″)	2,800′ (2½″)	1,400′ (2½″)	1,550′ (2½″)	6,000′ (2½″)	4,800′ (2½″)	1,300′ (2½″)	1,400′ (2½″)	2,150′ (2½″)	2,400′ (2½″)	2,300′ (2½″)	1,500′ (2½″)
Rubber, first-aid (diameter) ..	..	160′ (¾″)	..	..	120′ (¾″)	120′ (¾″)	100′ (1″)	..	120′ (¾″)	..	120′ (¾″)	..
Water-supply (P = pumping; G = gravitation)	Creeks and races	P and G	G	G	G	P and G	G	P and G	G	G	G	G
Pressure, average, noon–midnight ..	..	100	125–138	60–62	70	51–70	110–150	80–90	60–64	100–125	75–110	110–130

5. Summary.—Personnel, Plant, and Appliances—*continued.*

——	Te Awamutu.	Timaru.	Waihi.	Wairoa.	Waipukurau.	Waitara	Wanganui.	Wellington.	Westport.	Whangarei.	Totals.
Brigades, total strength of	13	21	16	14	17	15	34	82	21	20	1,065
Fire-stations—											
Residential	1	1	1	1	..	1	2	3	1	1	57
Non-residential	1	..	..	..	1	..	2	4	1	..	28
Fire-alarms—											
Circuits (C), boxes (B)	..	6 (C), 27 (B)	..	..	..	..	9 (C), 87 (B)	18 (C), 117 (B)	..	2 (B)	155 (C), 1,253 (B)
Automatic, private	..	2	1	..	..	..	22	68	..	..	264
Telephones (points)	3	3	7	..	..	1	3	11	4	4	149
Motors—											
Hose-and-ladder tenders (h.p.)	1 (20)	..	..	1 (20)	..	..	2 (60, 20)	6 (30, 35, 40, 40, 55, 60)	1 (35)	1 (22)	40
First-aid, hose-and-ladder (h.p.)	..	..	1 (20)	..	..	1 (20)	..	..	..	..	23
Pump, hose-and-ladder (h.p.)	..	1 (60)	..	..	..	..	..	1 (70)	..	..	11
First-aid, pump, hose-and-ladder (h.p.)	..	1 (45)	..	..	..	..	3 (60, 45, 35)	..	..	..	20
General utility	..	1 (20)	..	..	..	..	1 (20)	2 (20, 20)	..	..	11
Petrol-electric, ladders (height)	..	..	..	..	..	..	..	1 (85′)	..	..	4
Fire-engines—											
Steam (g.p.m.)	..	..	..	..	..	..	..	1 (650)	..	..	5
Chemical (gals.)	..	..	..	..	..	..	..	..	..	..	3
Hose-carts, reels, hand-drawn	1	1	2	1	1	2	..	4	3	1	68
Ladders—											
Motor-traction (height)	..	..	..	..	..	..	..	1 (60′)	..	..	4
Extension (height) (on motors*)	1 (35′)*	2 (60′, 35′)*	1 (30′)*	1*	1 (30′)	1 (30′)*	4 (60′; 3, 30′)*	7 on motors	1 (28′)*	1 (50′)	84
Single, coupling (total length)	2 (26′)	8 (205′)	5 (105′)	..	3 (50′)	1 (30′)	6 (77′)	14 (145′)	2 (47′)	2 (45′)	176
Jumping-sheets	..	1	..	..	..	..	2	2	..	..	28
Smoke jackets (J), helmets (H), masks (M)	..	2 (H)	..	2 (H)	2 (H)	..	2 (H)	3 (H)	..	2 (M)	5 (J), 44 (H), 9 (M)
Hand-pumps	1	2	1	1	..	..	3	14	1	2	94
Hand chemical extincteurs	..	4	3	2	2	1	7	15	2	2	148
Portable standpipes—											
Ratchet valves	1	4	..	..	..	..	7	..	2	..	62
Double heads	1	4	5	3	2	3	6	11	5	4	193
Single heads	1	..	..	1	1	..	2	21	4	2	89
Hose—											
Rubber-lined (diameter)	..	..	..	..	..	..	630′ (2½″)	3,000′ (2¾″)	..	..	2,788′ (2½″), 7,330′ (2¾″)
Unlined (diameter)	1,500′ (2½″)	3,000′ (2½″)	1,500′ (2½″)	2,000′ (2½″)	1,300′ (2½″)	1,500′ (2½″)	13,500′ (2½″)	10,800′ (2¾″), 7,050′ (2½″), 1,500′ (3½″)	3,000′ (2½″)	2,000′ (2½″)	137,780′ (2½″), 36,550′ (2¾″), 1,500′, (3½″), 386′ (4″)
Rubber, first-aid (diameter)	..	120′ (¾″)	..	..	..	..	600′ (¾″)	..	..	..	5,380′ (¾″), 320′ (1″)
Water-supply (P = pumping; G = gravitation)	G	G	G	P and G	P and G	G	G	G	G	G	
Pressure, average, noon–midnight	60–110	70–75	90–100	100–105	50–60	100–120	100–140	120–135	90–125	150–165	

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