

SESSION II.

1921.

NEW ZEALAND.

FIRE BRIGADES OF THE DOMINION

(REPORT ON THE) FOR THE YEAR ENDED 30TH JUNE, 1921, BY THE 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, 30th September, 1921.

Herewith I have the honour to lay before you my thirteenth annual report, for the year ending 30th June, 1921, relative to the working of the Fire Brigades Act, and including matter in connection therewith.

No new fire districts have been proclaimed during the year, and following is a list of the thirty-five constituted districts :—

Auckland	Hamilton	Napier	Tauranga
Balclutha	Hastings	New Plymouth	Te Aroha
Christchurch	Hawera	Oamaru	Timaru
Dannevirke	Hokitika	Ohakune	Waihi
Dargaville	Kaitangata	Palmerston North	Waitara
Dunedin	Lawrence	Petone	Wanganui
Feilding	Levin	Port Chalmers	Whangarei
Gisborne	Masterton	Rotorua	Woolston.
Greymouth	Milton	Taumarunui	

I have officially inspected the brigades, with their stations and equipment, working under Fire Board control, as follows :—

Auckland—14th April, 1921.	Napier—25th May, 1921, and 13th July, 1920.
Balclutha—14th January, 1921.	New Plymouth—2nd November, 1920.
Christchurch—17th March, 1921.	Oamaru—11th January, 1921.
Dannevirke—26th May, 1921.	Ohakune—7th April, 1921.
Dargaville—1st December, 1920.	Palmerston North—6th June, 1921.
Dunedin—17th January, 1921.	Petone—16th June, 1921.
Feilding—7th June, 1921.	Port Chalmers—18th January, 1921.
Gisborne—16th May, 1921.	Rotorua—4th February, 1921.
Greymouth—15th March, 1921.	Taumarunui—19th October, 1920.
Hamilton—13th April, 1921.	Tauranga—14th February, 1921.
Hastings—24th May, 1921.	Te Aroha—17th February, 1921.
Hawera—1st November, 1920.	Timaru—21st March, 1921.
Hokitika—16th March, 1921.	Waihi—16th February, 1921.
Kaitangata—13th January, 1921.	Waitara—3rd November, 1920.
Lawrence—19th January, 1921.	Wanganui—9th December, 1920.
Levin—24th June, 1921.	Whangarei—30th November, 1920.
Masterton—21st April, 1921.	Woolston—18th and 19th March, 1921.
Milton—12th January, 1921.	

Also the following special visits were paid :—

Auckland—21st September, 1920 : Consultation with officers of the United Fire Brigades' Association.

Ellerslie—22nd September, 1920 : Fire protection of the district.

Ellerslie—26th November, 1920 : Meeting with Town Board.

Rotorua—4th February, 1921 : King George Hospital—inspection and report.

Hamilton—2nd February, 1921 : Inquiry, motor accident.

Christchurch—3rd May, 1921 : Inspection and report on protection of aviation hangars and aeroplanes.

Trentham—10th May, 1921 : Inspection of camp and equipment.

Waipukurau—24th May, 1921 : Inspection and report on the Pukeora Sanatorium.

Napier—21st June, 1921 : Testing of new motor turbine pumping-machine.

Levin—24th June, 1921 : Appointment of Superintendent.

Following upon an invitation from the executive officers of the United Fire Brigades' Association, I attended their annual conference and demonstration held in Napier in March last, and delivered an address to the delegates, entitled "Electricity: Some of its Risks in relation to Fire-brigade Work." At the request of the conference the address is being printed for circulation amongst the brigades.

Periodical inspections have been made of camps, drill-halls, ordnance stores, and other buildings under the jurisdiction of the Defence Department. As usual, advice has been given to local bodies and others in relation to fire-prevention, fire risks, water-supply, purchase of new plant; valuation of plant has been undertaken, and sketch-plans for new stations and additions have been prepared.

The time of the Deputy Inspector of Fire Brigades has been entirely taken up, in his capacity of Assistant Departmental Fire Inspector, in inspecting the various Government and semi-Government buildings throughout the Dominion; in that connection during the past twelve months he has inspected and reported upon 896 buildings, and there is no doubt that these inspections have been the means of preventing a number of outbreaks of fire.

For the purpose of assisting the United Fire Brigades' Association to hold its annual conference and biennial demonstration, the Government's annual contribution to the association was substantially increased, but conditionally upon improving the competition conditions and the submitting of the programme to this Department for approval. As a consequence several of the old-fashioned and obsolete items were cut out and more modern events substituted. Altogether the competition programme was greatly improved and will tend to considerably improve the efficiency of the brigades. Also, with the purpose of assisting the brigades to standardize their fire equipment, the Government has agreed to indent on their behalf such fire appliances and other equipment that is not manufactured in the Dominion, and in that direction a quantity of fire-hose has already been imported to the order of and distributed to a large number of the brigades.

Following are the principal improvements and additions to equipment :—

Christchurch—Extension of street alarm system to outer districts now in hand.

Gisborne—Section with house thereon adjoining central station purchased.

Levin—New central station in occupation; also a street fire-alarm system having six call-points installed.

Ohakune—New central station in occupation.

Wanganui—New central station approaching completion; also installation of street fire-alarm system nearly completed.

Woolston—Installation of street fire-alarm system having eleven call-points completed.

Motor appliances :—

Levin—20 horse-power motor-chassis purchased and fitted up as hose-and-ladder tender.

Masterton—25 horse-power motor-chassis purchased and fitted up as hose-and-ladder tender.

Napier—New 65 horse-power motor combination machine, fitted with 450–500 turbine pump, first-aid pumping-outfit, and 50 ft. extension ladder.

Ohakune—10 horse-power oil-fuel motor and steam fire-engine; also 20 horse-power motor hose-tender—both second-hand.

Port Chalmers—20 horse-power motor hose-and-ladder tender and fitted with a first-aid pumping-outfit.

Tauranga—20 horse-power motor hose-and-ladder tender and fitted with a C.O.2 first-aid outfit.

Timaru—New 45 horse-power motor combination machine, fitted with 300–400 turbine pump and first-aid pumping-outfit.

Wanganui—New 65 horse-power motor combination machine, fitted with 450–500 turbine pump, first-aid pumping-outfit, and 60 ft. extension ladder; also new 40 horse-power motor hose-and-ladder tender.

Casualties to civilians and firemen due to fires have been reported by Superintendents of Brigades as having occurred in their respective districts as follows :—

Auckland—6th April, 1921 : Private dwelling—male occupant severely burnt about arms and legs.

Christchurch—31st July, 1921 : Three persons badly burnt by explosion of toy cinematograph and removed to hospital, where one, a boy, succumbed to his injuries.

Dannevirke—26th April, 1921 : Private dwelling—elderly female occupant suffocated by heat and smoke.

Greymouth—13th February, 1921 : Private dwelling—elderly male occupant severely burnt and succumbed a few hours later.

Hamilton—19th January, 1921 : Motor fire-engine, carrying eleven officers and men, overturned whilst responding to an alarm, killing two firemen. Four more were more or less severely injured and the remainder shaken and knocked about.

Napier—30th April, 1921 : Superintendent sustained severe injury to knee.

Oamaru—20th September, 1920 : Fireman severely burnt about back and legs.

Wanganui—10th March, 1921 : Private one-story dwelling—three children suffocated by heat and smoke.

The total number of "calls" received throughout the fire districts for 1920-21 was 1,168, as against 1,112 for 1919-20, an increase of 56, and which includes increases under the following headings: Fires, 540 (480)—increase, 60; chimney fires, 132 (124)—increase, 8; bush and rubbish fires, 226 (208)—increase, 18; out-of-district fires, 36 (25)—increase, 11; but a decrease in the number of false alarms, 275 (234)—decrease, 41.

Out of the 540 actual fires 14 are reported as due to incendiarism, 9 as having occurred on unoccupied premises, and 195 as of unknown origin. Of the 540 fires, 219 occurred in dwellinghouses, 36 resulting in total loss; 18 were damaged to the extent of from 50 to 90 per cent. of their value, 24 damaged from 25 to 50 per cent., and in the remaining 141 cases the damage ranged from slight loss to 25 per cent. of their value.

Losses throughout the fire districts: The three heaviest district losses occurred in Auckland (£113,885), Christchurch (£92,692), and Oamaru (£62,205). The total loss for the twelve months ending 30th June, 1920, amounted to £394,704.

The insured loss throughout the Dominion for the year ended 31st December, 1920, amounted to £452,890, and throughout the fire districts for the corresponding period the insured loss amounted to £327,051.

Appended are 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; also detailed reports dealing with each fire district.

I have, &c.,

THOS. T. HUGO,

Inspector of Fire Brigades.

The Hon. Minister of Internal Affairs, Wellington.

1. SUMMARY OF FIRE CALLS.

District.	Fires.	Chimney Fires.	Bush, Grass, and Rubbish Fires.	False Alarms.	Out of District.	Totals.
Auckland	122	17	27	59	6	231
Balclutha	1	..	..	2	1	4
Christchurch	85	22	24	69	7	207
Dannevirke.. .. .	7	..	1	..	1	9
Dargaville	4	..	..	..	..	4
Dunedin	77	44	39	51	2	213
Feilding	10	6	5	..	1	22
Gisborne	18	..	6	4	1	29
Greymouth.. .. .	13	..	2	1	..	16
Hamilton	17	1	20	4	..	42
Hastings	16	..	12	..	..	28
Hawera	4	..	1	..	2	7
Hokitika	2	..	..	..	..	2
Kaitangata.. .. .	..	..	..	..	..	..
Lawrence	1	..	..	..	..	1
Levin	8	1	1	..	..	10
Masterton	11	8	4	..	2	25
Milton	1	1	4	..	..	6
Napier	27	8	14	3	5	57
New Plymouth	11	..	3	2	..	16
Oamaru	6	..	3	..	1	10
Ohakune	1	..	..	..	..	1
Palmerston North	23	3	7	4	..	37
Petone	8	..	2	..	..	10
Port Chalmers	4	..	1	..	..	5
Rotorua	7	5	2	3	..	17
Taumarunui	6	3	1	..	..	10
Tauranga	2	..	1	..	..	3
Te Aroha	3	..	..	..	..	3
Timaru	6	1	8	3	1	19
Waihi	6	1	7	14	..	28
Waitara	1	..	..	..	..	1
Wanganui	22	7	27	12	6	74
Whangarei	4	..	..	1	..	5
Woolston	6	4	4	2	..	16
Totals	540	132	226	234	36	1,168

2. SUMMARY OF FIRE LOSSES.

District.	Insured.	Uninsured.	Totals.
	£	£	£
Auckland	113,500	385	113,885
Balclutha	200	...	200
Christchurch	74,627	18,065	92,692
Dannevirke	628	128	756
Dargaville	1,153	1	1,154
Dunedin	34,256	4,904	39,150
Feilding	847	149	996
Gisborne	7,131	1,641	8,772
Greymouth	1,508	683	2,191
Hamilton	3,000	2,498	5,498
Hastings	1,120	342	1,462
Hawera	12	6	18
Hokitika	265	50	315
Kaitangata	...	...	...
Lawrence	...	10	10
Levin	147	560	707
Masterton	3,133	691	3,824
Milton	...	1	1
Napier	909	863	1,772
New Plymouth	5,455	1,051	6,506
Oamaru	53,310	8,895	62,205
Ohakune	...	...	...
Palmerston North	10,129	160	10,289
Petone	1,265	10	1,275
Port Chalmers	1,500	40	1,540
Rotorua	112	850	962
Taumarunui	1,300	1,255	2,555
Tauranga	402	800	1,202
Te Aroha	619	155	774
Timaru	236	500	736
Waihi	84	96	180
Waitara	50	...	50
Wanganui	1,961	44	2,005
Whangarei	10	10	20
Woolston	8,192	22,810	31,002
Totals	327,051	67,653	394,704

3. COST OF FIRE BRIGADES (CAPITAL EXPENDITURE INCLUDED).

As taken from the Estimates for the respective Years.

District.	Year ending 30th June, 1917.	Year ending 30th June, 1918.	Year ending 30th June, 1919.	Year ending 30th June, 1920.	Year ending 30th June, 1921.	Year ending 30th June, 1922.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Auckland	10,585 0 0	11,700 0 0	12,000 0 0	12,305 0 0	17,000 0 0	18,375 0 0
Balclutha	...	...	233 0 0	260 0 0	140 0 0	350 0 0
Christchurch	6,900 0 0	7,000 0 0	8,585 0 0	8,550 0 0	9,650 0 0	14,113 0 0
Dannevirke	819 9 4	251 9 9	467 13 11	586 9 1	617 15 0	672 13 6
Dargaville	...	...	614 16 6	416 0 0	523 6 7	675 3 6
Dunedin	8,000 0 0	8,500 0 0	8,500 0 0	9,500 0 0	11,500 0 0	13,500 0 0
Feilding	573 11 9	354 0 0	348 0 0	464 16 6	568 18 10	594 2 11
Gisborne	1,620 13 0	958 5 10	1,311 10 0	1,069 3 9	1,586 10 0	1,517 4 5
Greymouth	878 0 0	888 0 0	903 0 0	920 0 0	943 0 0	890 0 0
Hamilton	350 0 0	1,450 0 0	1,100 0 0	1,300 0 0	1,449 13 6	1,900 0 0
Hastings	1,125 0 0	1,300 0 0	1,124 12 3	1,038 0 0	1,024 0 0	978 0 0
Hawera	744 0 0	374 0 0	615 0 0	732 8 4	764 14 3	751 14 5
Hokitika	366 13 4	346 13 4	420 0 0	425 0 0	550 0 0	425 0 0
Kaitangata	...	...	...	...	...	260 0 0
Lawrence	60 0 0	60 0 0	60 0 0	60 0 0	80 0 0	80 0 0
Levin	...	...	...	611 10 0	660 10 0	1,086 3 1
Masterton	1,026 7 2	931 13 0	1,084 0 0	1,501 0 0	1,536 0 0	2,029 3 0
Milton	100 0 0	90 0 0	80 0 0	85 0 0	232 4 9	250 0 0
Napier	...	...	...	...	...	2,190 0 0
New Plymouth	1,500 0 0	1,380 0 0	1,488 10 3	1,302 3 0	1,500 9 0	2,435 0 0
Oamaru	770 0 0	550 0 0	500 0 0	550 0 0	800 0 0	800 0 0
Ohakune	...	...	...	481 0 0	468 2 9	462 0 0
Palmerston North	1,364 12 5	1,400 7 4	1,512 12 11	1,530 10 7	2,055 0 5	2,417 10 7
Petone	870 0 0	850 12 4	850 0 0	838 0 0	893 0 0	1,030 0 0
Port Chalmers	...	...	...	350 0 0	400 0 0	400 0 0
Rotorua	794 0 0	807 0 0	885 10 0	1,490 10 0	875 0 0	1,424 16 0
Taumarunui	...	...	...	...	510 0 0	600 0 0
Tauranga	444 12 11	315 11 6	287 0 0	455 5 0	414 18 4	547 8 4
Te Aroha	...	...	...	...	500 0 0	731 0 0
Timaru	1,810 0 0	1,350 0 0	1,400 0 0	1,930 0 0	1,750 0 0	2,400 0 0
Waihi	...	...	850 0 0	1,160 0 0	930 0 0	990 0 0
Waitara	...	...	...	201 8 0	143 0 0	209 0 0
Wanganui	...	...	...	5,141 15 7	4,505 17 4	5,255 5 10
Whangarei	550 0 0	550 0 0	400 0 0	340 0 0	576 0 0	680 0 0
Woolston	914 4 0	776 2 2	900 0 0	1,047 9 10	1,284 6 2	1,475 1 4
Totals	42,166 3 11	42,183 15 3	46,520 5 10	56,642 9 8	66,433 7 11	82,484 6 11

4. SUMMARY OF CAUSES.

Summary of Causes.	Auckland.	Balclutha.	Christchurch.	Dannevirke.	Dargaville.	Dunedin.	Pelting.	Gisborne.	Greymouth.	Hamilton.	Hastings.	Hawera.	Hokitika.	Kaitangata.	Lawrence.	Levin.	Masterton.	Milton.	New Plymouth.	Napier.	Oamaru.	Ohakune.	Palmerston North.	Petone.	Port Chalmers.	Rotorua.	Tanmairnui.	Tauranga.	Te Aroha.	Timaru.	Vaihiti.	Waikato.	Whangarei.	Woolston.	Totals.		
Ashes, live	4		2	1		1			1							1				1															1	12	
Benzine, proximity to lights			1			1										1																				1	11
Birds' nests						2											1																			1	20
Candles, drapery, &c., in contact	6		8														1																		2	2	
Clothes airing before fire			1																																1	2	
Defective building			2								2										2														1	17	
" chimneys, hearths			1			3															2														2	2	
" hot-water services						2																													2	2	
Electricity short-circuits, fusing of wires	14		1			2																													2	21	
" iron left switched on	4		1			2																													7	7	
" overheating	2					1																													4	5	
Fireworks, sparks from			4																																1	1	
Gas, defective fittings	1																																		3	3	
" explosions	1		2			1																													12	12	
" rings, stoves	5																																		2	2	
Ignition of picture-films										1																										14	14
Incendiarism	4					2																													2	2	
Kerosene-lamp explosions			2			1																														3	3
" heaters, overheated	1		1																																2	2	
Matches, children with	3		1																																	8	8
" rats																																				2	2
" thrown down alight			6			1																														16	16
Miscellaneous causes	1		1																																	9	9
Motors, back-firing	1		3			3																														12	12
Naked lights	2																																			5	5
Overheating beeswax, fat, &c.	6		4																																	15	15
" machinery, exhaust-pipes	2																																			6	6
" tar	5		1			2																														13	13
" wood, proximity to furnaces			1																																	3	3
Painters, burning off paint	1		2			2																														6	6
Phosphorus																																				2	2
Smoking	1					1																														9	9
" cigarette-butts	1		3																																	5	5
Sparks from chimneys	5		5			3																														20	20
" copper-fires	3		1																																	7	7
" engines	5		6			1																														24	24
" fireplaces, furnaces	6		1																																	10	10
" other fires	6		4			1																														23	23
Spontaneous combustion			15			37																														195	195
Unknown	32																																			4	4
Totals	122	1	85	7	4	77	10	18	13	17	16	4	2		1	8	11	1	11	27	6	1	23	8	4	7	6	2	3	6	6	1	22	4	6	540	

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

	Hawera.	Hokitika.	Kaitangata.	Lawrence.	Levin.	Masterton.	Milton.	Napier.	New Plymouth.	Oamaru.	Ohakune.	Palmerston North.	Petone.
Brigades, total strength of	25	30	18	10	13	26	17	52	35	17	19	23	18
Fire-stations—													
Residential	1	5	1	1	1	1	1	2	2	1	1	2	1
Non-residential	..	..	..	..	..	..	..	3	1	1	..	1	..
Fire-alarms—													
(C.) circuits, (B.) boxes	3 (C.), 14 (B.)	..	..	..	1 (C.), 6 (B.)	5 (C.), 14 (B.)	..	2 (B.)	2 (C.), 22 (B.)	..	..	..	2 (C.), 13 (B.)
Automatic, private	..	..	..	..	..	1	..	..	..	..	..	..	4
Telephones, points	2	8	..	..	2	2	..	6	5	5	2	2	1
Motors—													
Hose-and-ladder tenders (h.p.)	1 (35)	..	..	..	1 (20)	1 (25)	..	1 (35)	1 (20)	..	1 (20)	1 (25)	1 (30)
Chemical, hose-and-ladder (h.p.)	..	..	..	..	..	1 (25)	..	..	..	..	..	1 (55)	..
Pump, hose-and-ladder (h.p.)	..	..	..	..	..	..	..	..	..	..	..	..	..
First-aid, pump, hose-and-ladder (h.p.)	..	..	..	..	..	..	..	1 (65)	1 (60)	1 (40)	..	..	..
Electric, ladders (height)	..	..	..	..	..	..	..	..	..	..	..	..	..
Fire-engines—													
Steam (gallons)	..	1 (380)	..	..	..	1 (350)	..	..	..	..	1 (400) motor	..	..
Manual (gallons)	..	2 (80, 60)	..	..	1 (80)	..	1 (50)	..	..	..	1 (80)	..	..
Chemical-engines, hand-drawn (gallons)	..	..	1	..	..	..	1 (30-30)	..	..	..	..	..	..
Hose-carts, reels—													
Horse-drawn	..	..	..	..	..	..	..	..	..	..	..	..	..
Hand-drawn	3	6	1	2	2	2	..	6	2	2	..	2	2
Ladders—													
Motor-traction (height)	..	..	..	..	..	..	..	..	..	..	..	..	..
Extension (height)	1 (35')	..	..	..	..	..	..	1 (35')	1 (50')	1 (30')	..	1 (60')	..
Single and coupling (total length)	6 (121')	5 (99')	..	2 (25', 24')	5 (57')	2 (35', 21')	..	on motor	on motor	on motor	..	on motor	1 (40')
Jumping-sheets (square feet)	..	..	..	..	..	5 (65')	3 (56')	13 (202')	6 (146')	2 (40')	2 (32')	3 (59')	2 (30')
Smoke-jackets (J.), helmets (H.)	1 (H.)	2	..	1	1	2 (H.)	..	2 (H.)	1 (12 x 12)	1 (H.)	..	1 (12 x 12)	1 (9 x 9)
Hand-pumps	3	2	..	1	1	2	..	..	2	2	2	2	1 (H.)
Hand chemical extinguishers	2	..	..	2	..	2	2	6	4	1	2	1	2
Portable standpipes—													
Ratchet valves	1	..	..	1	1	..	..	1	..	1	..	..	..
Double heads	5	5	..	4	..	..	..	8	9	5	..	5	1
Single heads	2	2	..	1	2	3	..	9	2	2	..	4	5
Hose—													
Rubber-lined (diameter)	..	..	..	..	..	..	150' (1")	..	200' (1")	..	..	..	..
Unlined (diameter)	1,900' (2½")	2,500' (2½")	500' (2½")	1,000' (2½")	1,600' (2½")	2,500' (2½")	250' (2")	7,800' (2½")	6,000' (2½")	3,000' (2½")	500' (2½")	7,500' (2½")	3,000' (2½")
Water-supply (G. = gravitation)	G.	G.	G.	G.	G.	G.	Wells and tanks	G.	G.	G.	Creeks and Races	G.	G.
Pressure, average, noon-midnight	40-71	100-105	..	65-80	100-115	85-90	..	65-130	90-110	80-100	..	50-100	45-75

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

	Port Chalmers.	Rotorua.	Taumarunui.	Tauranga.	Te Aroha.	Timaru.	Wahi.	Waitara.	Wanganui.	Whangarei.	Woolston.	Totals.
Brigades, total strength of	19	20	18	16	16	25	18	16	19	20	12	811
Fire-stations—												
Residential	..	1	1	1	1	1	1	1	1	1	1	41
Non-residential	..	1	..	..	..	..	..	1	3	2	..	37
Fire-alarms—												
(C.) circuits, (B.) boxes	..	..	..	..	..	6 (C.), 24 (B.)	3 (C.), 16 (B.)	..	..	1 (C.), 1 (B.)	2 (C.), 11 (B.)	84 (C.), 560 (B.)
Automatic, private	..	..	..	..	..	1	1	..	..	..	..	115
Telephones, points	..	1	4	3	4	8	10	..	7	3	1	143
Motors—												
Hose-and-ladder tenders (h.p.)	..	1 (50)	1 (20)	..	1 (20)	..	1 (30)	..	1 (40)	1 (20)	..	27
Chemical, hose-and-ladder (h.p.)	..	..	..	1 (20)	..	..	..	..	1 (40)	..	..	11
Pump, hose-and-ladder (h.p.)	..	..	..	..	..	1 (60)	..	..	..	..	..	7
First-aid, pump, hose-and-ladder (h.p.)	1 (20)	..	..	..	..	1 (45)	..	..	1 (65)	..	1 (40)	11
Electric, ladders (height)	..	..	..	..	..	..	..	..	..	..	..	2
Fire-engines—												
Steam (gallons)	..	..	..	..	..	..	..	..	..	..	..	7
Manual (gallons)	..	..	..	..	..	..	..	..	..	..	..	7
Chemical-engines, hand-drawn (gallons)	..	..	..	..	..	..	..	..	..	..	..	2
Hose-carts, reels—												
Horse-drawn	..	..	..	..	..	..	..	..	..	..	..	..
Hand-drawn	..	2	2	2	1	1	1	..	3	3	..	75
Ladders—												
Motor-traction (height)	..	..	..	..	..	..	..	..	..	..	..	3
Extension (height)	..	..	..	1 (36') on motor	..	1 (60') on motor	..	..	1 (60') on motor	1 (50')	1 (16')	29
Single and coupling (total length)	3 (53')	4 (83')	3 (46')	2 (59')	3 (45')	9 (240')	3 (75')	1 (30')	3 (42')	2 (30)	..	160
Jumping-sheets (square feet)	..	1 (9' x 9')	..	..	..	1 (12' x 12')	..	..	1 (12' x 12')	..	..	19
Smoke-jackets (J.), helmets (H.)	..	..	1 (H.)	..	..	1 (H.)	..	..	2 (H.)	2 (H.)	..	4 (J.), 35 (H.)
Hand-pumps	1	1	1	2	..	2	1	1	2	2	2	62
Hand chemical extinguishers	..	2	1	..	..	4	2	..	5	..	..	73
Portable standpipes—												
Ratchet valves	1	1	..	..	1	4	..	..	5	..	..	51
Double heads	3	1	3	4	2	4	4	2	7	3	..	137
Single heads	..	5	1	1	..	..	..	..	..	2	1	62
Hose—												
Rubber-lined (diameter)	..	..	..	..	..	..	..	..	..	..	..	3,626'
Unlined (diameter)	1,500' (2½") G.	17,00' (2½") G.	1,600' (2½") G.	2,300' (2½") G.	1,300' (2½") G.	4,500' (2½") G.	2,700' (2½") G.	1,350' (2½") G.	5,935' (2½") G.	1,500' (2½") G.	900' (2½") River and drains	126,665'
Water-supply (G. = gravitation)	..	..	..	..	..	..	..	..	..	..	..	..
Pressure, average, noon-midnight	80-100	56-60	100-125	70-100	110-120	70-75	90-120	90-125	120-140	150-160	..	..

DETAILED REPORTS.

AUCKLAND.

INSPECTIONS, 9th and 11th April, 1921. The "turn-outs" at the various stations were performed smartly and the required drill carried out in a satisfactory manner. The stations and equipment were found to be in good order and condition.

An inspection of the Point Chevalier district, lately amalgamated with the city was made. For the time being it is proposed to work this district with volunteers, and the recommendations made for the interim protection of the district are a reasonable proposition.

A set of Government-pattern standard nozzles are urgently required; in fact, the want of certain sizes is affecting the efficiency of the brigade's work.

Of the more important requirements the proposed new station in Ponsonby Road and the provision of two sets of married quarters at the Remuera Station are the most pressing, the first-mentioned in particular, not only in the matter of providing urgently needed married quarters, but also as consolidating various units of the brigade and enabling more efficient results to be obtained.

BALCLUTHA.

Inspection, 14th January, 1921. Owing to a misunderstanding only eight members of the brigade out of a total strength of thirteen were present at the inspection muster. The various drills were carried out in a fairly satisfactory manner, but more instruction and drill is necessary.

Up to the time of my inspection very little had been done by the Board in respect to improving fire-fighting conditions in Balclutha. The question of purchasing a site for a new fire-station had been discussed, but so far without any practical results. A new station is an urgent requirement, and the Board should take prompt action in the matter.

CHRISTCHURCH.

Inspection, 17th and 18th March, 1921. Various drills with the motors, pumps, &c., as also physical and other drills at the central station, were carried out in an efficient manner. The "turn-outs" at the different stations were performed smartly, and the stations and equipment were in their usual good order and condition.

I had again to call the attention of the Board to the necessity of providing more adequate protection of life and property in keeping with the growth of the city, more particularly due to amalgamations with adjoining districts. Extensions of the street fire-alarm system is now being carried out in the outlying districts. A new 45 horse-power motor 300-400 G.P.M. turbine, first-aid pumping-outfit, and 35 ft. extension ladder combination machine, together with a separate first-aid outfit, is now on order. Also, the Board is endeavouring to finance the purchase of a 90 ft. mechanically operated turn-table ladder. Estimates are also being obtained for the erection of a new substation at Sydenham.

DANNEVIRKE.

Inspection, 26th May, 1921. At the inspection muster the full strength of the brigade was accounted for, and the various drills were carried out in a satisfactory manner. In this respect considerable improvement was shown as compared with previous inspections. The station and equipment was found in good order.

Some new hose is required, and I had to again recommend the provision of a 35 ft. trussed extension ladder to be carried on the motor-tender. Also, the Board should take in hand the installation of a street fire-alarm system.

DARGAVILLE.

Inspection, 1st December, 1920. There were twelve members of the brigade present at the inspection muster, when the various drills were carried out in a satisfactory and very willing manner. The station and equipment were in good order. I had to again call attention of the Board to the necessity of providing mechanical means of transporting men and equipment to fires. Also, I would call attention to the fact that not one local member of the Board was present at my annual inspection, apathy by members of the Board in such matters invariably reacts on the efficiency of the brigade itself.

DUNEDIN.

Inspections, 17th and 18th January, 1921. The "turn-out" at the Central, South Dunedin, and Roslyn Stations were performed smartly, and the inspection drills were carried out in an efficient manner. All stations and equipment, with the exception of the electric turn-table ladder, were found to be in good order. At the time of my inspection visit the services of the volunteer firemen in the Mornington district had then lately been dispensed with, and the services of the volunteer firemen in the Roslyn district were no longer available, thus reducing the numerical strength of the brigade from 67 to 33, and of the latter there is always a certain number not available, either

on annual or weekly leave or through sickness, so that the number at call would probably average between 28 and 30, a quite inadequate strength in a city of the size of Dunedin.

No action had been taken to provide the urgently needed extra married quarters for firemen, nor had any practical steps been taken in respect to the better protection from fire of property on the harbour frontage.

FEILDING.

Inspection, 7th June, 1921. The inspection drills were carried out in a more efficient manner than at my previous inspection, but there is still room for improvement. The station and equipment was found to be in good order. A very weak point in the equipment is not carrying to fires sufficient lengths of ladder to reach the roof of a two-story building, this owing to the present motor being loaded up to its extreme carrying-capacity, and a more powerful motor is required.

Due to the small diameter, and corrosion, of a large proportion of the water-mains, the supply of water for fire-extinction purposes is far from satisfactory, and this is a matter that requires prompt attention.

GISBORNE.

Inspection, 16th May, 1921. There was an attendance of 25 at the inspection muster, and the subsequent drills were carried out in a satisfactory manner; also, I was present at an actual fire on the night of the 15th, and from my observation consider there is a considerable improvement in the work of the brigade.

A hose-reel and its equipment should be stationed in the Te Hapara district and a couple of men residing in the district enrolled in the brigade; also, some new standard nozzles are required. I had again to call the attention of the Board to the necessity for the installation of a street fire-alarm system and for the provision of a motor pumping-outfit.

GREYMOUTH.

Inspection, 15th March, 1921. The full strength of the brigade—viz., Superintendent, Deputy, and 17 firemen—were present at the inspection muster. The various drills were carried out in an efficient manner, and the station and equipment was found to be in good order.

The well sunk in Blaketown having proved a success, I recommended a second well be sunk in the vicinity of Poulter's store.

A further recommendation is that a system of street fire-alarms be installed.

HAMILTON.

The full strength of the brigade was accounted for at the inspection which took place on the 13th April last. The various drills were carried out in a satisfactory manner. A considerable improvement is manifest in that direction.

The gravitation water-supply pressure in Hamilton as available for fire-extinction purposes is very unsatisfactory; also the reticulation is limited, and there does not seem that much improvement will be made for some time to come, and in that view the necessity for the installation of a street fire-alarm system is the more pressing. Other recommendations are contained in one or other of my reports to the Board.

HASTINGS.

Inspection, 24th May, 1921. The full strength of the brigade was present at the inspection muster, and the various drills were carried out in a satisfactory manner. The station and plant was in good order.

The present motor has been in continuous service for nearly six years; it is loaded to its full carrying-capacity, which does not include the carrying of sufficient fire-ladders. A second motor is necessary, and I recommend the purchase of a 1-ton truck chassis, a suitable body to be built thereon.

I have again to direct the attention of the Board to the necessity of installing a street fire-alarm system.

HAWERA.

Inspection, 1st November, 1920. There was a full muster of the brigade, and the various drills were carried out in a most satisfactory manner, showing that this brigade has attained a high degree of efficiency in that respect.

The station, plant, and all equipment were found to be in good order and condition.

HOKITIKA.

Inspection, 16th March, 1921. Twenty-one members of the brigade were present at the inspection muster. The steam-fire engine was got to work on the wharf, but owing to faulty connections the deliveries were not so efficient as usual. The station and equipment were found to be in their usual good order and condition.

KAITANGATA.

Kaitangata was visited on the 13th January, but although constituted a fire district on the 1st January, 1920, up till then there had been no meeting of the Fire Board. There was no brigade in existence at the time, but a brigade has since been organized, and its first meeting was held on the 18th May last.

LAWRENCE.

Inspection, 19th January, 1921. At the inspection muster there was present the Superintendent, Deputy, and six firemen, these with one on leave accounting for the full strength of the brigade—a great improvement on the attendance hitherto. The various drills were carried out in a satisfactory manner and the station and equipment was in good order.

LEVIN.

The new fire-station was opened on the 24th June last. It is constructed of concrete, and contains a commodious engine-room, social room, three bedrooms, office storeroom, and all necessary offices. A 1-ton truck chassis had been purchased and a body suitable for ladder- and hose-tender purposes built thereon. A street fire-alarm system has been installed, consisting of six call-boxes, but the receiving-instrument cabinet is not suitably placed and should be removed from its present position as recommended in my report dated 2nd July, 1921.

As recommended in my previous reports, a competent and experienced officer should be placed in charge of the brigade forthwith.

MASTERTON.

Inspection, 21st April, 1921. At the inspection muster there was present the Superintendent, Deputy, and nineteen firemen. Various drills were carried out with the motor machine and steam fire-engine in a satisfactory manner. The steam-engine is working well after its recent overhaul. The station and appliances were in good order.

The Lansdowne district is now amalgamated with the Masterton Borough. The district is an extensive one with several blocks fairly closely built upon, but the water-supply is limited and inadequate, and the Borough Council should be urged to proceed with the extension of the gravitation supply as soon as possible. In the meantime four street fire-alarm boxes should be installed at or about the positions mentioned in my report dated 26th April, 1921.

MILTON.

Inspection, 12th January, 1921. At the inspection muster there was present the Superintendent Deputy, and seven firemen.

The manual pump was taken to one of the wells and got to work, but again, as at my previous inspection, considerable delay—six minutes—occurred before water was shown. These delays are due to the pump not being kept properly primed, which should be done at least once a week.

Otherwise the station and plant were in good order.

New 2½ in. couplings and an adaptor coupling, 2 in. into 2½ in., are required.

NAPIER.

Following upon the Napier Borough being constituted a fire district, an inspection of the Napier fire brigades and their equipment was made on the 13th and 14th July, 1920, when a report was furnished to the Fire Board, the principal recommendations being as follows: Strength of brigade to be reduced from 55 to 38, 24 to be attached to the town district and 14 at the Port. A site to be purchased and a new central station erected. A new station to be erected at the Port. Tender to be accepted for supply of a 60 horse-power turbine pump and 50 ft. extension ladder to be housed at the central station. A 1-ton truck chassis fitted up as a hose-and-ladder tender to be procured and stationed at the Port in lieu of the present one-horse hose-reel. A street fire-alarm system to be installed. Minor equipment, such as hand-pumps, smoke-helmets, &c., are also required. A second inspection was made on the 31st May last, when the various drills were carried out in a fairly satisfactory manner, but it is apparent that more systematic squad drill is required.

A test of the newly acquired 60 horse-power motor turbine and first-aid pump machine was made on the 21st June. On the whole the trial was satisfactory, but I found it necessary to make several recommendations that will increase the present working efficiency of the machine.

NEW PLYMOUTH.

Inspections, 2nd and 3rd November, 1920. It was evident during the course of the inspection drills that there was considerable room for improvement, and the members of the brigade require more drill and instruction.

Up to the date of my inspection no second permanent man had been appointed as recommended upon several previous occasions. Extensions to the street fire-alarm system has been decided upon, and the positions were fixed for additional boxes. A section of land 82 ft. by 136 ft. adjoining the Central Fire Station in Courtenay Street has been purchased, and plans for the erection of four firemen's cottages thereon have been approved.

OAMARU.

Inspection, 11th January, 1921. There was a manifest improvement in carrying out the various inspection drills. The station and equipment, with the exception of the motor, was in good order.

The Board have reduced the authorized strength of the brigade to sixteen all told. For various well-recognized reasons, rarely, if ever, is the full strength of a volunteer fire brigade available at any one time, and even were that not so, in this case sixteen is not a sufficient number, and the Board would be well advised to restore the brigade to its original strength of twenty.

As previously recommended, it is time that the Board took in hand the installation of a system of street fire-alarm.

OHAKUNE.

Inspection, 7th April, 1921. At the inspection muster there were present the Superintendent, Deputy, and fourteen firemen. This is a newly organized brigade, and none of the members have had any previous practical fire-brigade experience, but they are apparently an active, willing body of men. During the afternoon I witnessed an instruction drill with the recently acquired steam fire-engine, and in the evening oral instruction in fire-prevention matters was given. The new fire-station was approaching completion, and the principal equipment, all newly acquired, consists of a 10 horse-power oil-fuel motor steam fire-engine and a 20 horse-power second-hand motor hose-and-ladder tender. Six hundred feet of new hose and some new standard nozzles are required.

PALMERSTON NORTH.

Inspection, June 6th, 1920. The inspection drills with the motors, hose, ladders, jumping-sheet, &c., were carried out in the efficient manner usual with this brigade, and the stations and equipment were found to be in good order and condition.

For some years past it has been recognized that the present central fire-station is too small for its purpose, and, it being found impossible to procure additional land adjoining the present station, a new and larger site has been secured at the corner of Cuba and Bourke Streets, where a new station will be erected immediately finances will allow. Another urgent matter held up for the time by financial considerations is the installing of a street fire-alarm system, which is a most essential requirement of brigade equipment if efficient results are to be expected.

PETONE.

Inspection, 16th June, 1921. At the inspection muster the full strength of the brigade was in attendance. The various drills were carried out in the efficient manner customary with this brigade, and the station and all equipment was found to be in its usual good order.

I had again, as in years past, to call the attention of the Board to the inefficiency of the water-supply for fire-extinction purposes, which is steadily becoming more and more inadequate, and failing an immediate improvement in the gravitation supply a recommendation was made that a motor fitted with pumping-apparatus be provided.

The Board has an agreement with the Gear Meat Company that in case of emergency the company's pump will be connected with the town mains for the purpose of "boosting" the ordinary supply, and a test was made to ascertain to what extent the supply would be augmented by that proceeding. The results were satisfactory to the extent that if the recommendations contained in my report are carried out I consider, in view of all circumstances, the purchase of a motor fire-pump might remain in abeyance for the time being.

PORT CHALMERS.

Inspection, 18th January, 1921. Only nine members of the brigade out of a total strength of eighteen were in attendance at the inspection muster, but as the absent firemen were working overtime on the wharf the attendance may be regarded as satisfactory under the circumstances.

A 1-ton truck motor-chassis was purchased, and the body, including a first-aid pumping-outfit, was built locally. A trial of the pumping-outfit gave very satisfactory results, but the tank itself is unnecessarily large, consequently the motor is carrying a load of quite 200 lb. more than is needful.

The collapsible fire-buckets had not been provided, nor had the hand pumps been put in proper working-order; also, no progress had been made in respect to the provision of a new central station to be erected on the higher levels of the town.

ROTORUA.

For inspection purposes an alarm of fire was sent from the King George Hospital on the evening of the 4th February last, when from the time the alarm was given until the brigade arrived only two minutes forty seconds elapsed. The "getting to work" and other drill required was performed smartly and efficiently.

The telescopic ladder has not yet arrived, but other recommendations previously made have been carried out and have amply proved their usefulness.

TAUMARUNUI.

The first inspection of the Taumarunui Fire District was made on the 19th October, 1920. At the inspection muster there were present thirteen members of the brigade out of a total strength of eighteen then on the roll. During the course of the various drills it was evident that more instruction and drill is required.

The lower part of the town is fairly well reticulated with 8 in., 6 in., and 4 in. fire-mains, but there are some 2 in. pipes laid down which should be replaced with pipes of larger diameter.

The fire-station is well situated, and if the proposed alterations are carried out should provide adequate accommodation for some years to come.

New branches and nozzles of standard pattern are required; also, the brigade should be provided with helmets, axes, and belts.

TAURANGA.

Inspection, 14th February, 1921. At the inspection muster there was present the Superintendent, Deputy, eleven Firemen, and one messenger, these representing the then full strength of the brigade. The various drills required were carried out in a satisfactory manner.

As recommended, a 1-ton truck chassis was purchased, and the body, including the fitting of a CO₂ chemical outfit, was constructed locally, both design and finish reflecting great credit on the builders. The machine was placed in commission in October and has so far given every satisfaction.

The next work requiring consideration is the installation of a street fire-alarm system, the ringing of the main fire-bell by some mechanical means, and the acquisition of more ground adjoining the central fire-station.

TE AROHA.

My first inspection of the Te Aroha Fire District, its brigade and equipment, was made on the 17th and 18th of February last.

Water-supply: The "head" (300 ft. = 130 lb.) on the lower level is ample, but the conservation (130,000 gallons) is limited, the reticulation very incomplete, and the mains, in general, are under-sized.

Fire-station: This is an old dilapidated wooden building, too small and unsuitable for its purpose.

Fire equipment: Other than the motor hose-tender the equipment is very deficient.

The brigade: The members of the brigade, sixteen all told, are an active, willing body of men and of good physique, but they require more drill and instruction.

Following are the principal recommendations. A new fire-brigade station, a 35 ft. trussed-pattern telescopic ladder, 800 ft. of new hose, one hand-pump, two hand chemical extinguishers, six collapsible buckets, and four standard nozzles.

TIMARU.

Inspection, 21st March, 1921. At the inspection muster the full strength of the brigade was accounted for. Various drills with the first-aid pump, ladder, &c., were carried out in an efficient manner, and the station and equipment was in their usual good order and condition. The newly acquired 45 horse-power 300 400 G.P.M. turbine and first-aid pump combination motor machine was taken to the roof of the wharf for testing purposes. With a 17 ft. suction lift, water was shown in thirty-two seconds, and the pump gave a discharge ranging from 295 G.P.M. with 125 lb. pressure to 425 G.P.M. with 87 lb. pressure. The results were very satisfactory, and the machine as a whole appears to be quite up to specifications.

The brigade should be provided with a set of six standard nozzles.

WAIHI.

Inspection, 16th February, 1921. At the inspection muster there were present eleven members of the brigade out of a total strength of fifteen.

The various wet and dry drills were carried out in a satisfactory manner, and the appliances were found to be in good order.

The additional call-boxes have not yet been installed on the street fire-alarm circuits, nor have the collapsible fire-buckets been provided.

WAITARA.

Inspection, 3rd November, 1920. At the inspection muster there were present only ten members of the brigade out of a total strength of fifteen, and during the course of the various drills it was apparent that more drill and instruction is required. I found that, with the exception of the purchase of 500 ft. of hose and the renovation of the street hydrant-indicators, none of the recommendations contained in my report dated 6th November, 1919, had been given effect to, and commend the said report to the notice of the Board for their immediate attention.

WANGANUI.

Inspection, 9th December, 1920. At the inspection muster the full strength of the brigade—sixteen all told—was in attendance. Various practice drills were, in view of all circumstances, carried out in a satisfactory manner.

The new 60 horse-power motor, turbine pump, first-aid pump, and 60 ft. ladder combination machine was received and put into commission in March last. A new 40 horse-power motor hose-tender has also been placed in commission. The new central station is approaching completion, and the work of installing the street fire-alarm system is now in hand. The brigade should be provided with a modern-pattern smoke-helmet, and I would repeat my recommendation that a fire-main be laid along the frontage of the benzene and wool stores in Heads Road.

WHANGAREI.

Inspection, 30th November, 1921. At the inspection muster there were present fourteen out of a strength of nineteen all told. The various drills were carried out in a satisfactory manner, and improvement is manifest in that particular.

The brigade are much in need of new uniforms, and the station building, particularly the roof, is badly out of repair, so much so that it is a difficult matter to keep the appliances and hose dry and in good order. If there is a likelihood of the erection of a new station being deferred for any length of time, then the present building should be repaired—at least, to the extent of enabling the plant to be kept in proper order.

WOOLSTON.

Inspection, 18th March, 1921. At the inspection muster the total personnel of the brigade was present—ten all told. After each of my inspections I have found it necessary to call attention to the numerical weakness of the brigade, and an endeavour should be made to maintain its authorized strength of fourteen.

The motor was taken to the river for the purpose of testing the newly fitted pumping-outfit. Unfortunately, before the testing was completed the engine broke down, but up to the time of that happening the pump worked well and gave very satisfactory results.

Not more than four men should be allowed to ride on the motor when proceeding in response to an alarm of fire. That number of men, with the CO₂ chemical outfit and the pump apparatus, constitute sufficient load for this particular machine.

The street fire-alarm system, consisting of two circuits with eleven call-boxes thereon, is now installed and is giving every satisfaction.

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