1919. NEW ZEALAND.

FIRE BRIGADES OF THE DOMINION

(REPORT ON THE) FOR THE YEAR ENDED 30TH JUNE, 1919, 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 Inspector of Fire Brigades, Wellington, 27th September, 1919.

Herewith 1 have the honour to lay before you my eleventh annual report, for the year ending 30th June, 1919, relative to the working of the Fire Brigades Act, and including matters in connection therewith.

During the year five new fire districts have been constituted—viz., Port Chalmers (2nd July, 1918), Wanganui (24th September, 1918), Ohakune (4th February, 1919), Waitara (18th February, 1919), and Levin (25th March, 1919). Following is a list of the thirty-one fire districts now constituted:—

$\mathbf{Auckland}$	Greymouth	${f Milton}$	Tauranga
Balclutha	Hamilton	New Plymouth	Timaru
Christchurch	Hastings	Oamaru	Waihi
Dannevirke	Hawera	Ohakune	Waitara
Dargaville	Hokitika	Palmerston North	Wanganui
Dunedin	Lawrence	Petone	Whangarei
Feilding	Levin	Port Chalmers	Woolston.
Gisborne	Masterton	Rotorua	

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

Auckland—28th and 29th March, 1919. Balclutha—5th March, 1919. Christchurch—7th and 9th May, 1919. Dannevirke—9th June, 1919. Dargaville—1st April, 1919. Dunedin—7th and 12th March, 1919. Feilding—15th April, 1919. Greymouth—7th February, 1919. Hamilton—26th May, 1919. Hastings—14th April, 1919. Hokitika—10th February, 1919. Masterton—13th January, 1919.

Milton—6th March, 1919.
New Plymouth—10th October, 1918.
Oamaru—6th May, 1919.
Palmerston North—10th June, 1919.
Petone—30th June, 1919.
Port Chalmers—10th March, 1919.
Rotorua—10th December, 1918.
Tauranga—28th May, 1918.
Timaru—12th February, 1918.
Waihi—29th May, 1919.
Whangarei—2nd April, 1919.
Woolston—8th May, 1919.

Also, special visits were paid as follows:---

Devonport—27th March, 1919: Inspection of the brigade and its equipment.

Rotorua—26th and 27th May and 21st to 27th June, 1919: Attendance at the Magisterial inquiry into the efficiency or otherwise of the brigade and its equipment, &c.

Following upon an invitation received from the executive officers of the United Fire Brigades' Association I attended their annual conference held at Invercargill in March last, and delivered an address to the delegates entitled "Motors for Fire Brigade Service, Auto-detector Fire-alarms versus Night-watchmen, &c." At the request of the conference the address is being printed for circulation amongst the brigades.

1-H. 6a.

In addition to the above, periodical inspections have been made of the military camps and their equipments, as also of the hospitals, forts, and other buildings under the jurisdiction of the Defence Department. Also, the work of Departmental Fire Inspector for the Dominion has been carried out to the extent that my other and more important duties have permitted.

In consequence of the serious position in regard to obtaining suitable fire-hose in the Dominion, in July, 1918, the Department, through the High Commissioner in London, on behalf of a number of the Fire Boards, accepted a collective tender for the supply of some 16,000 ft. of hose, but up to the present only 5,000 ft. of the total quantity has been received in Wellington.

The following casualties to civilians and firemen, due to fires, has been reported to Superintendents

of Brigades as having occurred in their respective districts:-

Auckland.—2nd February, 1919: Fire in private dwelling—an elderly woman severely burned, and subsequently died in consequence. 19th February, 1919: Fire in hotel—one man suffocated and several others injured. 26th May, 1919: Fireman thrown off motor and injured whilst returning from a fire; ultimately recovered.

Christchurch. -4th February, 1919: Fire in private dwelling-the occupier taken to hospital

suffering from severe shock; subsequently recovered.

Dunedin.—14th August, 1918: Fire in private dwelling—woman taken to hospital partially suffocated and in a serious condition; ultimately recovered. 8th November, 1918: Fire in private dwelling—a Chinaman found dead; death caused by suffocation. 26th May, 1919: Fire in three-storied boardinghouse-boarder injured through jumping from top-floor window; ultimately recovered.

Hamilton.—12th March, 1919: Two firemen injured through being thrown off motor fire-

engine whilst returning from a fire; both recovered.

New Plymouth.—20th May, 1919: Whilst working at a fire one of the firemen was severely cut on hand.

Owing to the depleted and continually varying strength of the brigades, due to war exigencies, it is impossible to compile any accurate percentage of attendance of brigadesmen at calls to fires, therefore that computation has not been included in the present report.

The total number of calls received throughout the fire districts for 1918-19 was 876, as against 820 for 1917-18, an increase of 56, including an increase of 10 in the number of actual fires—viz., 416 (406); an increase of 32 in chimney fires—95 (63); an increase of 47 in bush and rubbish fires—105 (58); a decrease of 29 in false alarms—238 (267); and a decrease of 4 in out-of-district

fires—22 (26).

Out of the 416 actual fires, 13 are reported as due to incendiarism, 11 as having occurred on unoccupied premises, and 152 as of unknown origin. A source of danger from fire, lately arisen as an outcome of modern developments, is the domestic flat-iron heated by electricity, several fires having been returned as being caused through leaving the current switched on when the iron is not actually in use.

Losses throughout the fire districts: The three heaviest district losses occurred in Auckland (£45,849), Christchurch (£27,433), and Waihi (£21,446). The total loss for the twelve months ending 30th June, 1919, amounted to £151,153, as compared with £245,806 for the twelve months ending

30th June, 1918, a decrease of £94,653.

The insured loss throughout the Dominion for the year ended 31st December, 1918, amounted to £462,540, and throughout the fire districts for the corresponding period the insured loss amounted to £67,895, or under 15 per cent. of the total loss.

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 I have, &c., district.

THOS. T. HUGO,

The Hon. the Minister of Internal Affairs, Wellington.

Inspector of Fire Brigades.

1. SUMMARY OF FIRE CALLS.

Distrie	t.		Fires.	Chimney Fires.	Bush, Grass, and Rubbish Fires.	False Alarms.	Out of District.	Totals
Auckland			93	5	20	132	6	256
Balclutha			2	• •	1			2
Christchurch		• •	84	24	14	39	5	166
Dannevirke			4	2		• •	1	7
Dargaville			${f 2}$	• •	1		• •	3.
Dunedin			65	31	19	25	2	142
Feilding			5	4 `	3		1	13
Gisborne			20	1	5	9	2	37
Greymouth.,			8	3	1	1		13
Hamilton			18	2	10	2		32
Hastings			12					12
Hawera			6	1	1	1	1	9
Hokitika			11	3				14
Lawrence								
${f Levin}$								
Masterton			7	6	3	1	1	18
Milton			2	 • • •				2
New Plymouth	.,		12		1	2		15
Oamarů			2	$_2$	1			5
Ohakune								
Palmerston North			12	3	1 1	1	1	18
Petone			6		.,	1		7
Port Chalmers			4					4
Rotorua			4	4	5			13
Tauranga			3	• •	2			5
Timaru			9	1	5	6	1	22
Waihi			12	ī	7	13		33
Waitara			`					
Wanganui								
Whangarei			4	2	1 1	• • •		7
Woolston			$\tilde{9}$		6	5	i	21
Totals	• •		416	95	105	238	22	876

2. Summary of Fire Losses.

	D	istrict.			Insured.	Uninsured.	Totals.
					£	£	£
Auckland					45,459	390	45,849
Balclutha			• • •		•••	2	2
Christchurch		• • • •			25,784	1,649	27,433
Dannevirke					333	205	538
Dargaville		• • •	•••		300		300
Dunedin		•.••	•••		5,647	3,474	9,121
Feilding			•••		83	65	148
Gisborne					4,910	1,820	6,730
Greymouth		• • •			64	88	152
Hamilton					3,147	1,370	4,517
Hastings		• • •			5,599	941	6,540
Hawera			• • •	•••	4,255	251	4,506
Hokitika				•••	420	546	966
Lawrence	·		• • •				•••
Levin					•••		•••
Masterton					4,903	1,243	6,146
Milton		• • •			···	25	25
New Plymouth		•••			1,610	202	1,812
Damaru					37	3	40
Dhakune			•••				
Palmerston No	rth	•••	•••		4,069	717	4,786
Petone	•••				335	17	352
Port Chalmers			• • •		1,855	4,780	6,635
Rotorua					7	55	62
Fauranga					$60\dot{2}$	527	1,129
Timaru					80	187	267
Waihi					8,545	12,901	21,446
Waitara			•••		·	12,001	•
Wanganui		• • • •	•••		***		•••
Whangarei	•••		•••	•••	200		200
Woolston	•••	•••		•••	1,023	428	1,451
Tot	als		•••		119,267	31,886	151,153

3. Cost of Fire Brigades (Capital Expenditure included). As taken from the Estimates for the respective Years.

District.	Year ending 30 June, 1915.	Year ending 30th June, 1916.	Year ending 30th June, 1917.	Year ending 30th June, 1918.	Year ending 30th June, 1919.	Year ending 30th June, 1920.
Auckland		£ s. d.	£ s. d. 10,585 0 0	£ s. d. 11,700 0 0	£ s. d. 12,000 0 0	£ s. d. 12,305 0 0
Balclutha					233 0 0	260 0 0
Christchurch	8,000 0	$0 \mid 7,210 \mid 0 \mid 0$	6,900 0 0	7,000 0 0	8,585 0 0	8,550 0 0
Dannevirke	612 6	639 16 1	819 9 4	251 9 9	467 13 11	586 9 1
Dargaville					614 16 6	416 0 0
Dunedin	7,000 0	7,000 0 0	8,000 0 0	8,500 0 0	8,500 0 0	9,500 0 0
Feilding		544 11 2	573 11 9	354 0 0	348 0 0	464 16 6
Gisborne	763 0	$0 \mid 1,125 \mid 0 \mid 0$	1,620 13 0	958 5 10	1,311 10 0	1,069 3 9
Greymouth	864 0	844 0 0	878 0 0	888 0 0	903 0 0	920 0 0
Hamilton	850 0	600 0 0	350 0 0	1,450 0 0	1,100 0 0	1,300 0 0
Hastings	1,105 0	$0 \mid 1,287 \mid 0 \mid 0$	1,125 0 0	1,300 0 0	1,124 12 3	1,038 0 0
Hawera	1 '	647 5 10	744 0 0	374 0 0	615 0 0	732 8 4
Hokitika	433 6	8 460 0 0	366 13 4	346 13 4	420 0 0	$425 \ 0 \ 0$
Lawrence	60 0	80 0 0	60 0 0	60 0 0	60 0 0	60 0 0
Levin	•••	,,,				611 10 0
Masterton	1,151 1	1,246 18 0	1,026 7 2	931 13 0	1,084 0 0	1,501 0 0
Milton	100 0	110 0 0	100 0 0	90 0 0	80 0 0	85 0 0
New Plymouth	1,098 1	$3 \mid 1,200 \mid 0 \mid 0$	1,500 0 0	1,380 0 0	1,488 10 3	1,302 3 0
Oamaru	370 0) 477 0 0	770 0 0	550 0 0	500 0 0	550 0 0
Ohakune					•••	481 0 0
Palmerston North	1,939 3	1,685 19 0	1,364 12 5	1,400 7 4	1,512 12 11	1,530 10 7
Petone	1,076 11	880 13 7	870 0 0	850 12 4	850 0 0	838 0 0
Port Chalmers]	• • • •	350 0 0
Rotorua	614 0	752 7 0	794 0 0	807 0 0	885 10 0	1,490 10 0
Tauranga		655 6 8	444 12 11	315 11 6	287 0 0	455 5 0
Timaru	2,825 0	$0 \mid 1,450 \mid 0 \mid 0$	1,810 0 0	1,350 0 0	1,400 0 0	1,930 0 0
Waihi					850 0 0	1,160 0 0
Waitara				•••		201 8 0
Wanganui			• • • • • • • • • • • • • • • • • • • •			5,141 15 7
Whangarei	600 0	500 0 0	550 0 0	550 0 0	400 0 0	340 0 0
Woolston		•••	914 4 0	776 2 2	900 0 0	1,047 9 10
Totals	41,368 2	40,336 17 4	42,166 3 11	42,183 15 3	46,520 5 10	56,642 9 8

CAUSES.	
Ō.	
SUMMARY	
ند	

Dimedin, Teilding, Gisborne, (ireymouth, Hamilton, Hastings, Hokitika, Tawrene, Jawrene, Masterton,	6												: : : : : : : : : : : : : : : : : : : :			: : : : : : : : : : : : : : : : : : : :		: : : : : : :	· · · · · · · · · · · · · · · · · · ·			: : : : : : : : : : : : : : : : : : : :		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		25 3 12 3 6 7 2 3 3 1 4	65 5 20 8 18 12 6 11 7 2 12
J)annevirke, J)argaville,	::	::	:	: :	:	::	:	: :	:	: :	:	::	:	: :	::	:	: :	:	::	:	::	:			1 :	ः :	4 2 6
Summary of Causes. Auckland. Balclutha. Christohurch.		et	Clothes, airing before fires 2			iron left switched on.	imperfect insulation 1	: : : : : : : : : : : : : : : : : : : :	: : : : : : : : : : : : : : : : : : : :		:	Kerosene-lamps, explosions, upset	다 :	.	Motors, back-firing	Naked lights	machinery, exhaust-pipes 2	tar 2 2	60 lurnaces2	:	· · · · · · · · · · · · · · · · · · ·	: : : : : : : : : : : : : : : : : : :	96	other fires	 ! ?! : :	38 1 14 3	93 2 84 4

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

Danciura, Cansveinter, Danie, 148	Dannevirke.	a;	Dunedin.	Dargaville.	Fellding.	Gisborne.	Greymouth.	Hamilton,	Hastings,
37 21	21		18	50	5 1	24	15	58	55
eo :			ा च	, , , , , , , , , , , , , , , , , , ,		~ ↔			- :
16 (C.), 104 (B.) 30 Tel. 4 Tel.	 Tel.		7 (C.), 73 (B.) 28 15	ଚ ୁଚା		;গৰ	: :°	1 (C.), 1 (B.)	; : ^{દજ}
3 (40, 46, 14) 3 (75, 30, 50)	1 (40)		2 (35, 15) 2 (70, 60) 3 (60, 60, 60)		1 (20)	1 (20) 1 (50) 	::::	 1 (60), 400 gal. 	1 (30)
:	:		1 (84)	:	•	:	:	:	:
2 (260, 450)	:::		:::	:::	: : :	1 (600) 1 (100) 	1 (600) 1 (60)		1 (600)
;≎I	: જા		লে খা	ંઘ	;¢1	; œ1	:º	:67	:63
1 (65') 3 (45', 40', 35')	::		1 (80') 4 (50', 32', 18',	2 (25′, 24′)	::	1 (35')	1 (30′)	1 (50′)	::
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	_		1 (12° x 12°) 1 (12° x 12°) 1 (J.), 1 (H.) 9	:::::	6 (85') 1 2	5 (81') 1 (H.) 1	4 (81') 1 (10' x 10')	6 (153')	10 (184') 2 (12' x 14') 2
1 19 ::	; » ;			ल ा हा	:9 :	; p-4	. 6π	9	:°:
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2,500' (2½") G. 80–88		$\begin{array}{c} \dots \\ 11,600'(2\frac{12}{2}'') \\ G. \\ 120-150 \end{array}$	 1,700′ (2½″) G. 80–85	$3,200'(2\frac{3}{2}")$ G. $90-105$	$3,500' (2\frac{1}{2}'')$ G. 90-120	$\begin{array}{c} \ddots \\ 4,800' \left(\stackrel{?}{2}\stackrel{1}{2}" \right) \\ G. \\ 85-100 \end{array}$	4,600′ (2½″) G. 40.42	$4,000'$ $(2\frac{1}{2})'$ G

-continued.
APPLIANCES-
AND
PLANT,
.—Personnel,
SUMMARY.

	Hawera,	Hokitika.	Lawrence.	Levin.	Masterton.	Milton.	New Plymouth.	Oamaru.	Ohakune.	Palmerston North.	Petone.
Brigades, total strength of	21	30	គួ	12	08	16	29	20	:	23	17
Residential		. 10	;=	; e1	==	ᢇ :	8		::	8 -	- :
Fire-darms (C.) circuits, (B.) boxes Automatic, private	3 (C.), 14 (B.)	: :°	::	: :	5 (C.), 12 (B.)	::	2 (C.), 22 (B.)	: : ๓	: :	::4	2 (C.), 10 (B.)
Motors— Hose and ladder tenders (h.p.) Chemical, hose-and-ladder (h.p.) Pump, hose-and-ladder (h.p.) First-aid, numn, hose-and-ladder.	1 (35) 	o : : :	: :::	: ;:::		: :::::	1 (20)	::::	: ::::	1 (25) 1 (55), 350 gal.	1 (30)
(h.p.) Electric, ladders (height)	: :	•	:	: :	: ;	: :	:		:	•	:
Fre-engines— Steam (gallons) Manual (gallons) Chemical-engines, hand-drawn (gallons)	:::	1 (380) 2 (80, 60) 	:::	1 (60)	1 (350)	1 (50) 1 (50)	: : :	:::	:::	:::	:::
Hose-carts, reels— Horse-drawn	: "	: 10	ं ा	:61	: m	::	; 4	L 63	::	: 60	e1
Motor-traction (height) Extension (height)	2 (35′, 28′)	1 (40′)	::	::	1 (35)	::	1 (50′)	2 (20', 25')	::	1 (50′)	1 (40')
Single and coupling (total length) Jumping sheets (square feet) Smoke-jackets (J.), helmets (H.) Hand-pumps Hand-pumps	3 (85') 1 (H.) 2	3 (59') .: .: : .:	. :	:::::	on motor 5 (65') 2	3 (56') .: 	on motor 6 (108') 1 (12' x 12') 2 4	1 (16') 1 (H.) 1	:::::	8(97) 1 (12° x 12°) 2	7 (62') 1 (8' x 8') 1 (H.) 2
Ratchet valves Double heads Single heads Single heads	L 10 51	∶ୟବରା	- :-	· ·	ପଷୟ	:::	$\begin{matrix} 1 \\ 10 \\ 2 \end{matrix}$	- m m	:::	:,04	: 19
Rubber-lined (diameter) Unlined (diameter) Water-supply (G. = gravitation) Pressure, average, noon-midnight	3,000′.(2½″) G. 50–75	$2.500'(2\frac{1}{2}")$ G. $100-105$	200′ (2½″) G. 65–80	$\begin{array}{c} 0.00'.(2rac{1}{2}") \\ 0.05-125 \end{array}$	2,500' (2½") G. 85–90	375' (2") Wells and tanks	6,600′ (2½″) G. 120–135	$2,800'$ $(2\frac{1}{2}'')$ $G.$ $7.5-100$::::	5,000′ (2\frac{\frac{2}{3}''}{G}. 80-100	4,300′ (2½″) G. 55–65

5. SUMMARY.—Personnel, Plant, and Appliances—continued.

20 17 18 25 16 2 1 1 1 1 1 3 3 3 3 3 3 3 3 3		Port Chalmers.	Rotorua.	Tauranga.	Timaru.	Waihi.	Waitara.	Wanganui.	Whangarei.	Woolston.	Totals.
boxes	Brigades, total strength of	20	1-	18	25	91	:	:	16	6	682
boxes	Fire-stations— Residential Non-residential	; o₁	01	= =	- :	H:	::	: :	-21	٦:	33
dder	Fire-alarms— (C.) circuits, (B.) boxes Automatic, private Telephones, points		: :	; ; ^{co}	.6 (C.), 24 (B.)	3 (C.), 16 (B.) 1 8	:::	:::	1 (C.), 1 (B.)	::-	84 (C.), 533 (B.) 115 96
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Motors—Hose-and-ladder tenders (h.p.) ('hemical, hose-and-ladder (h.p.) Pump, hose-and-ladder (h.p.) First-aid, pump, hose-and-ladder	::::	1 (45) 	::::	 1 (60), 400 gal. 	1 (30)	::::	::::	ı (15) 	1 (40)	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	(h.p.) Electric, ladders (height)	:	•	:	;	:	:	:	:	:	61
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	s) hand-drawn	:::	:::	.:::	: : :	:::	:::	:::		:::	∞ ಀ ᢇ
h) $6(96')$ $6(85')$ $2(49')$ $8(170')$ $3(90')$ 1 $(11'x 11')$ 1 $(12'x 12')$ $3(90')$ 1 $(12'x 12')$ 2 $(12'x 12')$ 2 $(12'x 12')$ 1 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 4 $(12'x 12')$ 2 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 4 $(12'x 12')$ 5 $(12'x 12')$ 5 $(12'x 12')$ 5 $(12'x 12')$ 5 $(12'x 12')$ 6 $(12'x 12')$ 1 $(12'x 12')$ 1 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 4 $(12'x 12')$ 5 $(12'x 12')$ 5 $(12'x 12')$ 6 $(12'x 12')$ 6 $(12'x 12')$ 6 $(12'x 12')$ 1 $(12'x 12')$ 1 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 5 $(12'x 12')$ 6 $(12'x 12')$ 1 $(12'x 12')$ 1 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 5 $(12'x 12')$ 6 $(12'x 12')$ 1 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 5 $(12'x 12')$ 6 $(12'x 12')$ 1 $(12'x 12')$ 2 $(12'x 12')$ 3 $(12'x 12')$ 4 $(12'x 12')$ 5 $(12'x 12')$ 6 $(12'x 12')$ 6 $(12'x 12')$	Hose-carts, reels— Horse-drawn	1.2	્ભ	; e1	H H	;31	::	::	: +#	::	65
h) $6(96')$ $6(85')$ $2(49')$ $8(170')$ $3(90')$ 1 $(112'x 12')$ 1 $(12'x 12')$ 1 $(141'x 11')$ 2 $(141'x 11')$ 3 $(141'x 11')$ 2 $(141'x 11')$ 2 $(141'x 11')$ 3 $(141'x 11')$ 4 $(141'x 11')$ 5 $(141'x 11')$ 5 $(141'x 11')$ 5 $(141'x 11')$ 5 $(141'x 11')$ 6 $(141'x 11')$ 1 $(141'x 11')$ 1 $(141'x 11')$ 2 $(141'x 11')$ 3 $(141'x 11')$ 3 $(141'x 11')$ 4 $(141'x 11')$ 5 $(141'x 11')$ 5 $(141'x 11')$ 5 $(141'x 11')$ 6 $(141'x 11')$ 7 $(141'x 11')$ 9 $(141'x 11')$ 1 $(141'x 11')$ 1 $(141'x 11')$ 1 $(141'x 11')$ 2 $(141'x 11')$ 3 $(141'x 11')$ 4 $(141'x 11')$ 5 $(141'x 11')$ 6 $(141'x 11')$ 9 $(141'x 11')$ 1 $(141'x 11')$ 1 $(141'x 11')$ 1 $(141'x 11')$	Ladders—— Motor-traction (height) Extension (height)	::	: :	1 (36′)	1 (60′)	1 (30′)	::	::	1 (50′)	1 (20′)	27.03
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Single and coupling (total length). Jumping sheets (square feet) Smoke-jackets (J.), helmets (H.) Hand-pumps Hand chemical extincteurs	(,96) 9 	6 (85') 1 (11' x 11') 1	2 (49') 	98 (170) 1 (12' x 12') 1 (H.) 1 3	3 (90')	:::::		1 (30')	notor : : : : : : : : : : : : : : : : : : :	139 17 5 (J.), 9 (H.) 46 48
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Ratchet valves Single heads	:ea :	: 10	· ++	ଦ୍ୟ ୧୯ ୧୯	:e :	:::	:::	; eo eo ;	:::	45 113 55
$80-120$ $50-60$ $70-110$ $70-75$ $90-125$ \cdots	nosc Rubber-lined (diameter) Unlined (diameter) Water-supply (G. = gravitation) Pressure, average, noon-midnight	$\begin{array}{c} \dot{\cdot} \cdot (2\frac{1}{2}'') \\ 1,375' (2\frac{1}{2}'') \\ G. \\ 80-120 \end{array}$	2,300′ (2½″) G. 50–60	2,300' (2½") G. 70~110	$2,500' (2\frac{1}{2}'')$ G. $70-75$	$\frac{1}{2}$, 800 $(2\frac{1}{2}'')$ G. 90–125	::::	::::	600' (2½") G. 115-125	No water supply	2,000 103,950

DETAILED REPORTS.

AUCKLAND.

An inspection of the Auckland Brigade and its several stations was made on the 28th and 29th March last. The following report forwarded to the Secretary of the Fire Board covers the inspection:

An inspection of the Auckland Fire Brigade with its stations and equipment was made on the 28th and 29th ultimo, when the turnout at the several stations was performed efficiently and in quick time. The stations and equipment generally were in good order, and a decided improvement was manifest in the drills carried out at the central station on the evening of the 28th.

No improvement has yet been made as to the distinctive marking of the positions of the street fire-alarm boxes, but I understand this matter will be attended to simultaneously with the work of

installing the new fire-alarm system.

In its local conditions, particularly in respect to the block risks and to the rapidly increasing number of individual buildings of larger cubical capacity, Auckland now has all the characteristics of a large city, and with a view to the future effectual co-ordination and economic working of the brigade, together with, as far as possible, the standardization of plant and appliances, a scheme covering the policy to be followed now and in the future should be drawn up. In the past, owing to the long-drawn-out negotiations for the amalgamation of the various suburban districts with the city proper, it has not been possible to lay down any definitely comprehensive line of action, but the time has arrived when such a scheme can be drawn up with some degree of certainty, and to that end I submit the following recommendation for the considerations of your Board:—

1. With the exception of the Dennis and Thorneycroft machines, all your motor host tenders are more or less underpowered for the work they are called upon to perform. Reserve horse-power is an essential for all motor fire appliances, and, as one at least of the motors now in use has become unreliable, I recommend that a 60 horse-power motor machine, of special construction for fire-brigade work, be procured, the equipment of the machine to include a first-aid pump outfit and a 35 ft. Ajax

ladder.

2. Workshop at the central station to be fitted out with a lathe, drill, forge, taps and dies, and other necessary smaller tools. (Note.—The economical and other aspects in connection with this

recommendation were discussed when in Auckland.)

3. The erection of a new substation at or in the immediate vicinity of the junction of Ponsonby and Franklin Roads. (Note.—This would enable both St. Mary's Road and Rose Road Stations to be done away with, and in addition to greater efficiency would also prove a more economical system of working.)

4. Provision of married quarters at the Remuera substation. (Note.—In connection with this recommendation, for various reasons, the remaining portion of the original section (about 20 ft. frontage)

on which the station is erected should be purchased immediately.)

5. The provision of a fire-station on the waterfront. (Note.—This is a matter that in its several bearings towards the scheme as a whole requires serious consideration, but beyond that does not call for action at present.)

I have to suggest that the two first recommendations, marked 1 and 2 respectively, be given effect to immediately, and in that connection enclose herewith a specification embodying certain requirements in the equipment of the proposed new motor machine.

I have, &c.,

Thos. T. Hugo,

Percy Butler, Esq., Secretary, Fire Board.

Inspector of Fire Brigades.

A 40-gallon CO₂ chemical, with the necessary hose, hydraulic reel, and other fittings, was purchased and mounted on the six-cylinder Thorneycroft motor-chassis, and most satisfactory results in minimizing water damage has attended its use.

Again (as during the previous year) an excessive number of false alarms have been received—viz., 132—of which number eighty-one are set down as having been maliciously given, and the remaining fifty-one as due to line faults, accidents, &c. Altogether, during the last two years the Auckland Brigade has received nearly double the number of false alarms that have been received in all the other fire districts put together.

During the year 1918-19 ninety-three fires occurred, as against ninety-seven during 1917-18, a decrease of four. The fire loss for the year amounted to £45,849, as compared with £18,118 for

1917–18, an increase of £27,731.

BALCLUTHA.

An inspection of the Balclutha Brigade was made on the 5th March last. The following report covers the inspection:—

SIR,—
An inspection of the Balclutha Fire Brigade and its equipment was made on the 5th instant, when at the inspection muster there were present the Deputy Superintendent and eight firemen;

2-H. 6A.

these, with the Superintendent and two firemen on leave, accounting for the full strength of the brigade then on the roll.

Various wet and dry drills were carried out, during the course of which it was very evident the men required more instruction and drill; also, every effort should be made to bring the brigade up

to its full authorized strength of fifteen.

Shortly before 9 a.m. on the morning of the 6th an alarm sounded on the firebell, and I estimated it was quite twelve minutes from the time the messenger started from the fire to give the alarm until the brigade arrived on the scene, accounted for as follows: First, the distance—over one-third of a mile—the messenger had to run to the firebell; second, delay in obtaining a motor vehicle to tow the hose-reel; third, delay caused by the brigade not knowing the locality of the fire. Fortunately the fire proved to be in a small detached, dilapidated outhouse; had it occurred in one of the larger wooden buildings it would certainly have obtained a good hold thereof before the brigade arrived. There was a good muster of the brigade, eight of its members being in attendance.

For the better protection of the town I now submit the following recommendations:

A chassis to be purchased, and a suitable hose-tender body built thereon. The body may be built locally or otherwise as your Board may decide. I estimate the machine should be delivered at the fire-station complete for £325. Two siren fire-alarms worked by water-power to be installed, one towards the east end and the other towards the western end of the town. I estimate the cost of the sirens with turbines complete at £15 each. If your Board does not see its way to carry out the above recommendations in the immediate future the alternative is the building of a new fire-station in a more central position—say, on or about the site of the present firebell. A new fire-station more centrally situated and containing residential and sleeping quarters for a certain number of men will have to be built ultimately, but if the first-mentioned two recommendations are given effect to this last might remain in abeyance for the time being.

It is not possible by letter to explain my various recommendations and other matters in connection with the brigade in full detail, and it is to be regretted that after receiving due notice of my visit the local members of your Board, with the exception of the Chairman, did not make it convenient to meet me either on the evening of the inspection or during the following day. I would also point out in that connection that any apathy on the part of local members of a Fire Board will certainly react on

the efficiency of their brigade.

In reference to my recommendation for the purchase of a motor-chassis, for your fuller information I enclose herewith an excerpt from my address given at the United Fire Brigades' Conference at I have, &c., Thos. T. Hugo, Invercargill on the 5th instant.

W. Carroll, Esq., Secretary, Fire Broad, Balclutha.

Inspector of Fire Brigades.

Only two fires, with an approximate loss of £2, occurred in the district throughout the year.

CHRISTCHURCH.

An inspection of the Christchurch Brigade, its several stations and equipment, was made on the 7th and 9th May last.

The turnouts were performed smartly, and the various drills carried out in a satisfactory manner;

also, the stations and plant were found to be in good order and condition.

A new 45-50 horse-power motor machine, fitted with a 300-450-gallon turbine pump, a 35 ft. telescopic ladder, &c., was received from England and put into commission in February last; also, the Draeger smoke-helmet outfit has been received.

I have again to recommend that a 90 ft. mechanically operated fire-ladder be added to the

equipment of the brigade.

During the year just ended eighty-four actual fires occurred in the district, as against seventy-five during the previous year, an increase of nine. The fire loss for 1918-19 amounted to £27,433, as compared with £29,860 for 1917-18, a decrease of £2,427.

DANNEVIRKE.

An inspection of the Dannevirke Brigade was made on the 9th June last, and in that connection the following is a copy of a report sent to the Secretary of the Board:—

18th June, 1919. SIR.

An inspection of the Dannevirke Brigade and its equipment was made on the 9th instant, when at the inspection muster there were present the Superintendent, Deputy, eleven firemen, and one messenger; these, with three on leave, accounting for seventeen out of the full strength of twentyone then on the roll.

Various drills, both wet and dry, were carried out in a satisfactory manner, and the station and appliances are in good order.

11 H.—6A.

The body part of the new motor hose-and-ladder tender is more bulky and spacious than is necessary, and it is not designed on the most efficient lines, but it is well and strongly built, and on the whole the machine is equal to local requirements.

A 35 ft. trussed telescopic fire-ladder, either Ajax or Pretoria pattern, should be provided and carried on the motor machine, and I have also recommended that an order should be placed for a further supply of 500 ft. of hose.

Your Board should now take into consideration the installation of a system of street fire-alarms.

I have, &c.,

THOS. T. HUGO,

W. Dobson, Esq., Secretary, Fire Board.

Inspector of Fire Brigades.

A 40 horse-power motor-chassis was purchased, and a body to suit requirements built thereon locally.

Four fires occurred during the year, the same number as for 1917–18. The fire loss for the year amounted to £538, as against £113,834 during 1917–18, a decrease of £113,296.

DARGAVILLE.

An inspection of the Dargaville Brigade was made on the 1st April, 1919. The following report covers the inspection:—

Sir,— 8th April, 1919.

An inspection of the Dargaville Fire Brigade and its equipment was made on the 1st instant, when there were present at the inspection muster the Superintendent and nine firemen; these, with three on leave, accounting for thirteen out of a total strength of fourteen then on the roll.

Various wet drills were carried out in a smart and competent manner, and the station and equip-

ment, with the exception of the steam fire-engine, are in good order and condition.

A test was made of the three recently installed siren fire-alarms, which served to prove that whilst the balance and running of the working-parts is exceptionally good, this particular pattern and size of siren, at any rate when worked by water-power, as in this case, is not effectual as a fire-alarm at a greater radial distance than three-quarters of a mile at the outside. However, a little adjustment of positions will provide your town with an efficient fire-alarm service—viz., the bell and tower at present situated at the wharf at the foot of Hokianga Road to be removed and re-erected at the central fire-station, where it will serve as the principal alarm, when the tower also can be utilized for hose-drying purposes, and the siren now fixed on the roof of the station removed and fixed at the Bank of New Zealand corner or in that immediate vicinity. The several reasons governing the above recommendations were fully explained to certain members of your Board and to the Superintendent at the time of my visit.

In regard to the provision of a motor fire machine for the transport of men and appliances, I recommend that a 1-ton chassis be purchased, and a body built thereon to suit your local requirements. This matter was also discussed with certain members of your Board both in Dargaville and Auckland, but for their further information in this matter I enclose herewith an excerpt from an address given at the conference of the United Fire Brigades' Association recently held in Invercargill.

The brigade has not yet been supplied with a hand-pump as previously recommended, and they

should be provided with one as soon as possible.

I have, &c.,

Thos. T. Hugo,

C. Bagnall, Esq., Secretary, Fire Board, Dargaville.

Inspector of Fire Brigades.

Two fires occurred in the district during the year. The fire loss for 1918–19 amounted to £300, as compared with £20 for 1917–18, an increase of £280.

DUNEDIN.

An inspection of the Dunedin Brigade, its stations and equipment, was made on the 7th and 12th March last, when the various turnouts, drills, &c., were carried out smartly and efficiently; also, the various stations with the plant and appliances were found in good order and condition.

In Roslyn the old Borough Chambers were in course of conversion into a temporary fire-station, pending the erection, when opportunity will allow, of a modern substation on the section owned by the Board in Beta Street.

No practical action has yet been taken by the Dunedin Harbour Board, or other of the local authorities in the matter of the better protection from fire of the wharves and shipping.

authorities, in the matter of the better protection from fire of the wharves and shipping.

I would again point out that the North-east Valley section of the city should be provided with

some greater degree of protection than it has at present.

During the year sixty-five actual fires occurred in the district, as against seventy-four for the previous year, a decrease of nine. The fire loss for 1918–19 amounted to £9,121, as compared with £51,798 for 1917–18, a decrease of £42,677.

FEILDING.

An inspection of the Feilding Brigade was made on the 15th April, 1919. The following report covers the inspection:

2nd May, 1919.

An inspection of the Feilding Fire Brigade and its equipment was made on the 15th April last, when at the inspection muster there were present the Superintendent, Deputy, and thirteen firemen: these, with one on leave, accounting for sixteen out of a total strength of eighteen.

Various drills, wet and dry, were carried out in a satisfactory manner. The motor hose-tender worked well, and the station and equipment were in good order.

In one or two of the side streets I noticed that some of the street hydrants were more or less

covered over with debris; they should be kept clear.

For the safety of the firemen in case of fire I recommended some time ago that gangways should be fixed on the all-glass verandas in front of a number of the business premises in Feilding, but up to the present nothing has been done in that direction.

I have, &c.,

THOS. T. HUGO,

Alex. Geary, Esq., Secretary, Fire Board, Feilding.

Inspector of Fire Brigades.

During the year five fires occurred in the district, an increase of one over the preceding year. The fire loss for 1918-19 amounted to £148, as against £186 for 1917-18, a decrease of £38.

GREYMOUTH.

An inspection of the Greymouth Brigade was made on the 7th and 8th February, 1919, and in that connection the following report was forwarded to the Secretary of the Board:-

20th February, 1919.

Following upon an inspection of the Greymouth Fire Brigade, its stations and equipment, made on the 7th and 8th instant, I submit the following for the consideration of your Board:-

At the inspection muster there were present the Deputy Superintendent and sixteen firemen; these, with the Superintendent absent through sickness and one man on leave, accounted for the full strength then on the roll-viz., nineteen all told.

The central and hose-reel stations with their equipments were in good order and condition. Having tested one length of the new hose, I consider it to be of fairly good quality, and would advise that the remaining 300 ft. of the 500 ft. originally ordered be purchased at the price paid for the first 200 ft.

The sinking of the experimental well at Blaketown, which was started about nine months ago, is not yet completed. At the time of my visit it was low water and there was only about 1 ft. of water in the bottom of the well, which is now some 16 ft. deep; therefore it will be necessary to sink it another couple of feet. After the already long delay, and as it only means a few hours' work, it should be taken in hand at once.

A matter to which I consider it necessary to direct the serious attention of your Board is the present unreliable condition of the water-supply for fire-extinction purposes. First, in respect to the supply of water to the pumps supplying the reservoir, this is drawn from what is now merely a very small backwater of the river that a rising bank of shingle is gradually circumscribing, and which may be entirely closed up at any time as a result of one of the many recurring floods. Then, as to the pumping installation: At the present time, to keep the supply of water in the reservoir at its normal height, it is necessary to keep both sets of pumps running for some sixteen hours daily, though the foundations of these are insecure and sinking; a casual glance at the machinery when in motion is sufficient to show how badly some of the shafting is out of alignment. Secondly, in respect to the auxiliary system of supply as provided for the steam fire-engine: The more particular points of supply in connection with this system are the two suction-pipes laid under the wharf; but upon testing the pipe situated opposite Tainui Street by means of priming it from a street hydrant the water leaked out of the pipe nearly as fast as it was put in, and as, according to my information, the foot-valve is in good order and perfectly tight, it points to either a badly defective joint or a fracture in the piping; in any case, as at present it is useless for fire purposes. In respect to the second pipe, situated opposite Boundary Street, it is unget-at-able, being entirely buried in the railwayline road-metal. Altogether, the water-supply for fire purposes in Greymouth is in a most unsatisfactory state, and to the extent that very serious, even disastrous, loss may occur at any time in consequence, and the whole matter should receive immediate attention. In the meantime, particularly seeing it is neither a long nor expensive job, the two suction-pipes should be put in working-I have, &c.,

THOS. T. HUGO,

F. Barrowman, Esq., Secretary, Fire Board, Greymouth.

Inspector of Fire Brigades.

The time has arrived when the brigade should be provided with some better means of transport, and a recommendation has been made that a 1-ton chassis be purchased, and a body to suit local requirements built thereon.

Eight fires occurred in the district during the year, as against thirteen during the preceding year. The fire loss for 1918-19 was £152, as compared with £3,003 for 1917-18, a decrease of £2,851.

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HAMILTON.

An inspection of the Hamilton Brigade was made on the 26th May last. The following report covers the inspection:

12th June, 1919.

An inspection of the Hamilton Fire Brigade and its equipment was made on the 23rd ultimo, when at the inspection muster there were present the Superintendent, Deputy, and twenty firemen; these, with six on leave, accounting for the full strength of the brigade.

Various wet and dry drills with the motor pump, escape-ladder, &c., were carried out in a

satisfactory manner, and the station and plant are in good order and condition.

The attendance of members of the brigade at fires within the first few minutes after the alarms have been given, and upon which so much depends, is still very unsatisfactory. I understand that at several night fires only the Superintendent and the driver were riding on the fire-motor when it left the station in response to the call. The proper solution of the difficulty is the building of a cottage on the back portion of the section to accommodate the motor-driver and his family, and the rooms in the main building to be used for their original purpose—viz., the housing of single men. I note the alarm wire and bell is not yet installed in the house of the auxiliary fireman who lives immediately adjacent—within 50 yards of the station.

A tower should be erected at the rear of the central station for hose-drying purposes.

I heard the siren fire-alarm when it was sounded on the morning of the 24th ultimo, and again heard it on the afternoon of the 30th, and on both occasions it appeared to me that as a fire-alarm it was fairly satisfactory, although I consider that better results would be obtained if it were fixed at a lower elevation.

Another unsatisfactory feature of fire-protection in Hamilton is the inadequate water-pressure, which averages only 40 lb. to 42 lb. If the Frankton water-tower was utilized for the purpose it would increase the pressure in the fire-mains to approximately 80 lb., a very fair provision under present local conditions. I understand the Borough Council is now moving in the direction of improving the reticulation and supply generally, the Borough Engineer recommending the installation of a set of new and more powerful pumps capable of pumping into the tower tank 50,000 gallons of water per hour, and against a head of 350 ft.—152 lb.; and if the capacity of the pumps is increased to 60,000 gallons per hour, and they are connected up in such a manner that in case of a large fire the tower can be cut out and the pumps worked directly into the street mains, I consider the proposition will, from a fire-fighting point of view, prove efficient for a long time to come.

I have, &c. Thos. T. Hugo,

Inspector of Fire Brigades.

F. W. Luxford, Esq., Secretary, Fire Board, Hamilton.

During the year eighteen fires occurred in the district, as against four during the previous year, an increase of fourteen. The fire loss for 1918-19 amounted to £4,517, as compared with £283 for 1917-18, an increase of £4,234.

HASTINGS.

An inspection of the Hastings Brigade was made on the 14th April last. The following report covers the inspection:

SIR.--22nd April, 1919.

An inspection of the Hastings Fire Brigade, its station and equipment, was made on the 14th instant, when at the inspection muster there were present the Superintendent, Deputy, fifteen firemen, and two messengers; these, with two on duty and two on leave, accounting for twentythree out of a total strength of twenty-four then on the roll.

Various wet and dry drills were carried out in a satisfactory manner, and the station and

equipment are in good order and efficient condition.

The motor hose and chemical machine has been fitted with magneto ignition, which has improved

the running of the engine.

I would again (see report dated 11th May, 1917) call attention to the necessity for the installation of a street fire-alarm system in Hastings, and recommend your Board should give this matter early I have, &c., Thos. T. Hugo, consideration.

Inspector of Fire Brigades.

J. B. Pickering, Esq., Secretary, Fire Board, Hastings.

During the past year twelve fires occurred in the district, as against fourteen for the previous year, a decrease of two. The fire loss for 1918-19 amounted to £6,530, as compared with £3,528 for 1917-18, an increase of £3,002.

HOKITIKA.

An inspection of the Hokitika Brigade, its stations and equipment, was made on the 10th February, 1919, when at the inspection muster there were present the Superintendent, Deputy, and twenty-two firemen; these, with two on duty and one on leave, accounting for twenty-seven out of a total strength of twenty-nine then on the roll.

Various wet and dry drills were carried out in a satisfactory and efficient manner, and the several stations with the plant and appliances were found to be in their usual good order and con-

At the time of my visit the fire-station gauge registered a pressure in the town mains of only 48 lb. The reservoir had been undergoing repairs, but was then in course of being refilled.

During the year eleven fires occurred in the district, or one less than during the previous year. The fire loss for 1918-19 amounted to £966, as against £1,732 for 1917-18, a decrease of £766.

MASTERTON.

An inspection of the Masterton Brigade was made on the 30th January last. The following report covers the inspection:

16th January, 1919. SIR,-

An inspection of the Masterton Fire Brigade and its equipment was made on the 13th instant, when there were present at the inspection muster the Superintendent, Deputy, and twenty-two firemen; these, with one fireman on leave, accounting for the full membership then on the roll.

Various drills with hydrants, hose, ladders, and the chemical equipment were carried out in a satisfactory manner; also, the motor with the steam fire-engine was taken for a trial run, which proved quite satisfactory.

Several (about eight) of the brigade members are without belts and axes, which are a very necessary part of a fireman's outfit, and they should be so equipped; also, half a dozen canvas collapsible water-buckets are required.

I note that the new lengths of suction-hose for the steam fire-engine, although, I understand,

ordered some time ago, are not yet to hand.

The motor ran very well, but the magneto, which was burnt out, has been taken off the machine altogether, and it is now running on a battery and coil ignition only. With the view of reliability all fire-motors should be fitted with dual ignition; therefore I have to recommend that a new magneto be provided. It is remarkable that the bosses of both back wheels should have carried away, and as, according to my information, on both occasions the accidents happened when the machine was on a straight run on a level road, it points to weak construction of that particular part. Several of the fittings of the chemical extincteur apparatus are quite out of date, and the working arrangements are not as efficient as they should be. The alterations to the interior of the hose-box, as carried out by your Superintendent, are a considerable improvement, and in accordance with modern methods of working. I note the motor is fitted with the left-hand drive, which is certainly not an advantage.

I have, &c., Thos. T. Hugo,

R. Brown, Esq., Secretary, Fire Board, Masterton.

Inspector of Fire Brigades.

During the year seven actual fires occurred in the district, as against ten during the previous year, a decrease of three. The fire loss for 1918-19 amounted to £6,146, as compared with £258 for 1917-18, an increase of £5,888.

MILTON.

An inspection of the Milton Brigade and its equipment was made on the 6th March, 1919, when at the inspection muster there were present the Superintendent, Deputy, and six firemen; these, with three on leave, accounting for eleven out of a total strength of twelve then on the roll.

Certain drills were carried out in a satisfactory manner, and the station and appliances were in

good order and condition.

No improvement has yet been made in the water-supply for fire-extinction purposes in this town, and a serious fire loss may occur at any time in direct consequence.

Two fires occurred in the district during the year, one more than took place during 1917-18. The fire loss for 1918-19 amounted to £25, a decrease of £75 as compared with the previous year.

NEW PLYMOUTH.

An inspection of the New Plymouth Brigade and its equipment was made on the 10th October, 1918

Various drills with the motor pump, escape-ladder, &c., were carried out in a satisfactory manner, and the stations with the plant and appliances were found to be in good order and condition.

During the year twelve fires took place in the district, as against nine during the previous year, an increase of three. The fire loss for 1918-19 amounted to £1,812, as compared with £1,632 for 1917--18, an increase of £180.

H.-6A.

OAMARU.

An inspection of the Oamaru Brigade was made on the 6th May last. The following report covers the inspection :--

SIR.--16th May, 1919.

An inspection of the Oamaru Fire Brigade and its equipment was made on the 6th instant, when at the inspection muster there were present the Superintendent, Deputy, and nine firemen; these, with one on duty and five on leave, accounting for the full strength of the brigade then on the roll-viz., seventeen all told. The brigade is three short of its authorized membership, and on the night of the inspection, with five on leave and out of the town, it left only eleven in all as the total available strength of the brigade-an unsatisfactory condition of things.

Various drills were carried out, but not in a satisfactory manner.

A pressure-gauge should be fixed in the fire-station. Also, I noticed that some of the street hydrants were covered with road-metal or otherwise hidden from view, and this matter should receive prompt attention.

In reference to the new motor first-aid pump and hose-tender, the hose-box should be fitted with

side doors so that the hose can be got to work from either side of the machine.

I note that a considerable number of new buildings have been erected on the higher levels of the town, and in view of the very inadequate pressure of water available thereabouts an improvement of the water-supply on the said levels is essential.

I have, &c., Thos. T. Hugo,

E. Piper, Esq., Secretary, Fire Board, Oamaru.

Inspector of Fire Brigades.

During the year two fires occurred in the district, as against four during the previous year, a decrease of two. The fire loss for 1918-19 amounted to £40, as compared with £516 for 1917-18, a decrease of £476.

PALMERSTON NORTH.

An inspection of the Palmerston North Brigade was made on the 10th June last. The following report covers the inspection:

SIR,—

19th June, 1919.

An inspection of the Palmerston North Brigade and its equipment was made on the 10th instant, when at the inspection muster there were present the Superintendent and thirteen firemen; these, with two on duty and five on leave, accounting for twenty-one out of the twenty-two then on the membership roll.

Certain instructional drills were carried out, and the station and appliances were in good order

and condition.

To ensure reliability in running, all petrol motor-engines used for fire purposes should be fitted with dual ignition, and the new Clydesdale motor should be so fitted.

The installation of a street fire-alarm system, which for various reasons has been held over for

some years past, should now be proceeded with.

The provision of additional married accommodation will have to be faced in the very near future, and, as the present site is altogether too cramped in area to serve as headquarters fire-station for a large and rapidly growing town such as Palmerston North, your Board would be well advised, with the least possible delay, to either purchase the adjoining section or procure a larger piece of ground elsewhere. I have, &c.,

Thos. T. Hugo,

Inspector of Fire Brigades.

W. H. Barnard, Esq., Secretary, Fire Board, Palmerston North.

During the year twelve fires have occurred in the district, as against twenty-four for the previous year, a decrease of twelve. The fire loss for 1918-19 amounted to £4,781, as compared with £5,441 for 1917–18, a decrease of £660.

PETONE.

An inspection of the Petone Brigade was made on the 30th June, 1919. The following report covers the inspection:-

Str,-

9th July, 1919.

An inspection of the Petone Fire Brigade and its equipment was made on the 30th ultimo, when at the inspection muster there were present the Superintendent and thirteen firemen; these, with three on leave, accounting for the then full strength of the brigade.

Various drills were carried out in a very satisfactory manner, and the station and equipment were in good order and condition. I have again to commend the members of the brigade on the improvements to the station carried out by them.

I understand the work of fitting a magneto on the motor hose-tender is now in hand, and also that it is your Board's intention to install three more call-boxes on the street fire-alarm circuits.

I have to recommend that a swivel searchlight be fitted on the motor hose-tender, and also that

the fire-station should be connected up with the public telephone service.

Whilst the station gauge showed an improvement in the water-pressure since my last reading— 66 lb. as against 48 lb. unless a substantial improvement in the pressure can be expected in the immediate future, in view of the increasing number of buildings in Petone, particularly in the way of large manufacturing plants, I would suggest to your Board the advisability of providing the brigade with a second motor machine fitted with pumping-apparatus.

I have, &c., Thos. T. Hugo,

Inspector of Fire Brigades.

The Secretary, Fire Board, Petone.

During the year six fires occurred in the district, the same number as during the previous year. The fire loss for 1918-19 amounted to £352, as compared with £290 for 1917-18, a decrease of £62.

PORT CHALMERS.

My first inspection of Port Chalmers, its fire brigade and fire-prevention equipment, was made on the 10th March, 1919. The following report covers the inspection:-

19th March, 1919. SIR,---

Having made an inspection of Port Chalmers on the 10th instant, and an inspection of the fire brigade and its equipment on the evening of the 11th instant, I herewith submit the following

report for the consideration of your Board:-

The town is approximately two miles in length, running north and south, and varying in widthabout half a mile across at its broadest part. The levels are very irregular, with a maximum height of 200 ft.; the only level ground is a strip immediately along the waterfront; the streets are irregular in gradient, some of them very steep. The business portion is practically confined to a limited area in the neighbourhood of the harbour-front, with buildings, one and two stories in height, of stone and The buildings throughout brick construction, interspersed with a number of old wooden buildings. the remainder of the borough are residential and of wooden construction.

Water-supply: The town is supplied by water from a reservoir with a storage capacity of 5,500,000 gallons, situated at Sawyer's Bay, about two miles distant, and has a static head of 277 ft. = 121 lb. The carrying-main to the borough boundary is of two diameters, 9 in. and 7 in.; but as to the respective length of each section no information was available at the time. The principal distributing-main, of 5 in. diameter only, about 45 chains in length, runs along George Street and Wickliff Terrace. The remainder of the reticulation consists of 4 in. and 3 in. piping.

Fire brigade: A volunteer brigade with an authorized strength of twenty all told-

tendent, Deputy, and eighteen firemen.

Fire-stations: There is a main fire-station situated on the level ground in Beach Street and facing the wharves; there is also a hose-reel station on the higher levels (180 ft.) in Laing Street.

Fire-alarms: There are two firebells, one (24 in.) in Beach Street, in the vicinity of the main

station, and the other (18 in.) in Grey Street, on a higher level.

Principal equipment: At the main station there is a one-horse two-wheeled hose-cart, two handdrawn hose-reels, 1,350 ft. of $2\frac{1}{2}$ in. unlined canvas hose, three standpipes, seven branches, two L.F.B. hand pumps in pails, one 25 ft. and two shorter ladders. At the outer station there is an old handdrawn hose-reel with 200 ft. of 1 in. rubber hose, one standpipe, and one branch with ½ in. nozzle.

Comments and Principal Recommendations.

Water-supply: The static head may be considered reasonably adequate, except for the comparatively small area of the borough lying above the 150 ft. level; but the available flow or volume is far below any point of efficiency, and this is due to the generally restricted capacity of the pipes throughout the system. In the absence of any definite information of the respective lengths of the 9 in. and 7 in. piping forming the carrying-main, I estimate the output at the boundary as approximately 900 gallons per minute. The chief fault, however, lies in the short length (some 45 chains only) and small diameter (5 in.) of the distributing-main, together with the inadequate sizes of the pipes forming the general reticulation; added to which, judging from the tests made in Beach Street and at the 185 ft. level on the crown of the Harrington Street hill, it would appear that the mains are more or less corroded—in fact, the betterment of the whole of the water-supply system demands consideration.

Brigade personnel: The members of the brigade are apparently an active, willing body of men, of good physique, but during the course of the inspection drills it was evident that they are in need of more instruction. The membership of the brigade should not be allowed to fall below the authorized strength of twenty, which should be the fixed minimum; and, in addition, local conditions call

for, and the size of the town warrants, the appointment of a permanent man.

Main fire-station: The position of the station and the station itself are most unsuitable in all respects. A more central site should be acquired at or in the immediate vicinity of the intersection of Grey, Scotia, and Currie Streets; a new central station to be erected, or some present building in that neighbourhood adapted to the purpose, which should include a set of married quarters and sleeping-accommodation for three or four men.

17 H.-6A.

Fire-alarms: Another alarm-point is required somewhere in the vicinity of the hose-reel station in Laing Street, and I suggest the installation of a siren alarm. Such an alarm, worked by hand,

water, or electrical power, can be installed at a cost of about £15.

Principal equipment: A motor fire-machine to be provided; and in this connection I recommend the purchase of a 1-ton chassis, the body to be built to suit your requirements, and preferably to be fitted with a first-aid apparatus. There is 1,350 ft. of the 2½ in. canvas hose in stock, but of that amount, I am informed by the officers of the brigade, not more than 800 ft. is in good serviceable condition. There should be not less than 2,000 ft. of good hose in hand; therefore it will be necessary to purchase 1,200 ft. of new hose. A 30 ft. extension ladder is required. The two hand-pumps should be taken out of the pails, the leather cups removed, and stirrups fitted on the barrels of the pumps; the leather delivery-hose should be softened with soft-soap in hot water and then treated with dubbin. I have, &c., Thos. T. Hugo, Six collapsible canvas buckets are required.

Inspector of Fire Brigades.

J. W. Fraser, Esq., Secretary, Fire Board, Port Chalmers.

The brigade completed its first year of work under Fire Board control on the 30th June. During the year four fires occurred in the district, and the fire loss amounted to £6,635.

ROTORUA.

An inspection of the Rotorua Brigade and its equipment was made on the 10th December, 1918, and following upon which a report was forwarded to the Secretary of the Board containing the result of the inspection, summed up as follows: "Altogether, fire-protection and fire-prevention matters in Rotorua are in a most unsatisfactory condition, and I have before pointed out that, owing to the number of large two-story boardinghouses, largely habited by more or less infirm people, such conditions should be more than usually efficient." The report mentioned also contained my recommendations for the improvement of the service.

A second inspection was made on the 27th May last, when, whilst some improvement was manifest and some of the faults were in course of being remedied, the service generally was still in

an unsatisfactory state.

Chiefly as the outcome of the resignation of the officers and the experienced members of the brigade, the matter culminated in the appointment of a Magisterial Commission of Inquiry, which, after some adjournments, ultimately sat on the 25th to 28th June, and again on the 15th July, 1919. After an exhaustive inquiry the Magistrate practically sums up his finding in the following sentence: "The fire-prevention service generally is not satisfactory yet, for the following reasons . . ." The reasons follow, and the Board would be well advised to, as far as lays in their power, take the necessary steps to place the fire service in Rotorua on a satisfactory footing.

During the year four fires occurred in the district, as against five for the previous year. The fire loss for 1918-19 amounted to £62, as compared with £1,133 for 1917-18, a decrease of £1,071.

TAURANGA.

An inspection of the Tauranga Brigade was made on the 28th May, 1919. The following report covers the inspection:

5th June, 1919. Sir,

An inspection of the Tauranga Fire Brigade and its equipment was made on the 28th ultimo, when at the inspection muster there were present the Superintendent, Deputy, thirteen firemen, and one messenger; these, with two on leave, accounting for the full strength of the brigade—viz., eighteen all told.

Various wet and dry drills were carried out in a satisfactory manner, and, in this particular, great

improvement is manifest when compared with conditions previously subsisting.

I herewith confirm the recommendation made at the meeting of the local members of your Board as to the suitability of the 1-ton truck chassis for use in your town as a fire-brigade motor appliance, and in that connection enclose herewith a report containing full particulars in the matter.

I have, &c., Thos. T. Hugo,

The Secretary, Fire Board, Tauranga

Inspector of Fire Brigades.

Three fires occurred in the district during the past year, as against two during the previous year. The fire loss for 1918-19 amounted to £1,129, as compared with £504 for 1917-18, an increase of £625.

3-H. 6a.

TIMARU.

An inspection of the Timaru Brigade was made on the 12th February, 1919. The following report covers the inspection:

24th February, 1919.

An inspection of the Timaru Fire Brigade and its equipment was made on the 12th instant, when there were present at the inspection muster the Superintendent, Deputy, and twenty-two firemen; these, with one on leave, accounting for the full strength of the brigade.

Various wet and dry drills with the motor pump, hose and hydrant, ladders, &c., were carried

out in a satisfactory manner.

The station and appliances were in good order and condition.

The new street fire-alarm boxes recently fixed on an extension of the D circuit are well situated for the protection of the Highfield district.

The hydrant-indicators along Stafford Street are still (see report dated 5th April, 1918) in an

The paint on some of the street fire-alarm boxes and on the poles to which they are fixed has faded to a neutral greyish colour, so that at a little distance it is difficult to distinguish box from pole: this is a matter that should receive immediate attention.

I have, &c., Thos. T. Hugo,

H. H. Fraser, Esq., Secretary, Fire Board, Timaru.

Inspector of Fire Brigades.

The Board ordered from England in February last a second combination motor machine fitted with a 45 horse-power engine, 30/350 gallons turbine pump, 30 ft. extension ladder, &c.

During the year nine fires occurred in the district, as against eight for the previous year. fire loss for 1918-19 amounted to £267, as compared with £790 for 1917-18, a decrease of £523.

WAIHI.

An inspection of the Waihi Brigade was made on the 29th May, 1919. The following report covers the inspection:-

SIR.

4th June, 1919.

An inspection of the Waihi Fire Brigade and its equipment was made on the 29th ultimo, and in that connection I submit the following report for the consideration of your Board:-

At the inspection muster there were present the Superintendent, Deputy, and thirteen firemen; these, with one on leave, accounting for the full strength of the brigade. Drill, both wet and dry, was carried out in a satisfactory manner, and the equipment is in good order and condition.

I note that, as recommended in my previous report, the ladder, hand-pump, nozzles, and axes have been provided, but the No. 1 fire-alarm circuit has not yet been cut, nor have the three new call-boxes been installed, and this matter should receive attention; also, the brigade should be provided with six collapsible canvas buckets for use with the hand-pump as well as for other purposes.

As arranged and for the purposes explained at the time of my visit, I enclose herewith specimen page of occurrence-book, and two copies of the pamphlet "The Use and Maintenance of some of the I have, &c.,

Smaller Fire Appliances.'

Thos. T. Hugo,

J. J. Ritchie, Esq., Secretary, Fire Board, Waihi.

Inspector of Fire Brigades.

A serious fire broke out at 3 a.m. on Sunday, the 23rd March, involving an estimated loss of £20,000.

During the year twelve fires occurred in the district, as against nine for the previous year. The fire loss for 1918-19 amounted to £21,446, as compared with £2,757 for 1917-18, an increase of £18,689.

WHANGAREI.

An inspection of the Whangarei Brigade was made on the 2nd April, 1919. The following report covers the inspection:-

22nd April, 1919.

An inspection of the Whangarei Fire Brigade, its station and equipment, was made on the 2nd instant, when there were present at the inspection muster the Deputy Superintendent and eleven firemen; these, with three on leave, accounting for fifteen out of a total strength of sixteen then on

During the course of the inspection drills there was considerable confusion in carrying out the required work—this due to lack of officers. The Superintendent was absent through illness, and there is no one filling the position of foreman, thus leaving the Deputy as the only officer available. This is a serious position, and the position of foreman should be filled forthwith.

19 H_{\bullet} — 6_{A} .

To all appearances the motor hose-tender worked in a satisfactory manner. Should, however, any serious faults develop in the machine, I would advise that no more money be spent on it, but that it be sold (I understand that as much or nearly as much can be obtained as the machine cost in the first place) and a 1-ton truck chassis be purchased, and a body suited to your local requirements built thereon. For the further information of your Board in this matter I enclose herewith an excerpt from an address given at the recent conference of the United Fire Brigades' Association held in Invercargill in March last.

Steps should be taken to ensure that the testing of the electric fire-alarm apparatus is periodically

and properly carried out.

The station and appliances were in good order and condition.

I have, &с., Tноs. Т. Hugo,

C. J. Eccles, Esq., Secretary, Fire Board, Whangarei.

Inspector of Fire Brigades.

During the year four fires occurred in the district, the same number as during the previous year. The fire loss for 1918-19 amounted to £200, as compared with £1,575 for 1917-18, a decrease of £1,375.

WOOLSTON.

A visit was paid to Woolston on the 8th May last for the purpose of inspecting the brigade and its equipment. The following report covers the proceedings:-

20th May, 1919. SIR,-

I paid a visit to Woolston, of which due notice had been given, on the evening of the 8th instant, with the intention of inspecting the Woolston Brigade and its equipment, but upon arrival at the fire-station I found the only members of the brigade in attendance were the Superintendent, Deputy, and two firemen, and that, instead of the authorized strength of ten, these four, with two on leave, constituted the then total membership of the brigade. Also, the motor chemical-engine was out of commission owing to the breaking of the front axle, and for the time being the district was relying upon the Christchurch Brigade for its protection from fire.

Fire-protection matters in the Woolston Fire District have always been in a more or less unsatis-

factory state—firstly, in reference to the maintaining of the membership of the brigade up to its

authorized strength, and, secondly, in reference to the provision of an adequate equipment.

As the new Board is now on the point of assuming control, they should go thoroughly into the whole matter and place the brigade and its equipment in a more efficient and satisfactory condition, either, as previously recommended, by the purchase of a motor pumping-machine and its necessary equipment, and which would also involve the building of a number of underground concrete tanks in those portions of the district where water from the river is not available to supply the pump, or, if the foregoing scheme is beyond their financial means, by making an agreement with the Christchurch Fire Board for the protection of Woolston as a contiguous district.

I have, &c., Thos. T. Hugo,

- Siddall, Esq., Secretary, Fire Board, Woolston.

Inspector of Fire Brigades.

During the year nine fires occurred in the district, as against six during the previous year, an increase of three. The fire loss for the year amounted to £1,451, as compared with £270 for 1917-18, an increase of £1,181.

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