

Inspection of Machinery Department for the year ended 30th June, 1878, and to state that the Act continues working in a satisfactory manner, financially and otherwise.

The boilers, on the whole, continue to be favourably reported on by the several Inspectors, who find on each subsequent visit an improvement in their keeping and working.

The number of boilers inspected during the year has been 1,129, which shows an increase of 39 over last year. The Nelson North District could not be completed before 30th June (for reasons given below), or the number would have reached 1,167.

There have been extensive repairs effected to 21 boilers, 75 have had slight repairs done to them, 16 were adjudged to be dangerous, and 5 have been condemned.

With reference to the dangerous boilers, I would remark that the chief cause of danger was from corrosion. In each district the Inspectors have caused the brickwork of all old or doubtful boilers to be removed, so that the parts long in contact with the brickwork might be seen, and in several cases the plates were found to be much corroded, the boilers having been set too near the ground.

There have been three boiler explosions, two of which were of a slight character, the other one being of a more serious nature, resulting in the attendant (the owner) being severely scalded.

In the first instance, one (a Cornish boiler) was used at the Wellington Gasworks, the explosion taking place from the plates being over-heated, owing to the fire having been lighted before the water had covered the fire-tube, and, the water being then allowed to flow over the heated plates, the sudden contraction rent the tube, the water then putting out the fire. The boiler was in thorough good order at the time of the accident, and beyond the crack above mentioned no damage was done. The second case was that of a boiler at Glen Oamaru, Otago District, belonging to Stackman and Co., and was used for sawmill purposes—also a Cornish boiler. It would appear from the information to hand that the angle-iron rim connecting the flue to end of boiler must have had a flaw in it. No repairs have been effected, and the boiler remains unused. The third case was again a Cornish boiler, at Messrs. Barrowman and Nordloff's sawmill, Sawyer's Bay, Otago. The accident was caused through collapse of the flue, fortunately unattended by any loss of life, although the owner was scalded on the leg and hand, he having lighted the fire without first ascertaining the quantity of water in the boiler, which must have been very low, as the feed check-valve had been leaking from Saturday till Monday morning; without drawing his fire he injected water on to the heated furnace tube, causing it to collapse and tear asunder, the force of the explosion breaking the furnace-door, and driving out the fire. The necessary repairs are now being effected. Two of the cases above reported have occurred through the carelessness and neglect of the attendants.

There have been eight accidents reported during the year (statement herewith) four of which, I regret to say, were fatal; two of these were persons not employed about the machinery.

An accident to the winding machinery of the Patent Slip at Evans's Bay, Wellington, which might have been attended with fatal results, occurred through the engineer in charge allowing the engine to attain a speed for which the fly-wheel had never been intended; a rupture of the wheel followed. The centrifugal force drove segments of the rim weighing at least 4 cwt. a hundred yards from the scene of the accident. The wheel was by no means well-proportioned, but quite equal to 55 revolutions per minute, the proper speed for such an engine. A new wheel of better design has been fitted.

On reference to Table No. 4 it will be seen that the machinery inspections are twenty-two less than last year. This is accounted for by the Nelson North District not being completed by 30th June, owing to my other duties in connection with marine inspection, caused by the absence of the Chief Inspector of Machinery on leave; the inspections being, in consequence, made in July, and thus omitted from this report.

In almost every case where owners of machinery have been directed to fence the work has been put in hand while the Inspectors were on the spot, and carried out to their satisfaction.

I forward herewith returns showing the number of boilers and different kinds of machinery inspected in the various districts during the year; the number of accidents; the amount of fees collected; and the cost of working the department.

I have, &c.,

H. A. MCGREGOR,

Acting Chief Inspector of Machinery.

The Hon. the Minister for Public Works.

Enclosure No. 1 in Appendix K.

RETURN showing the AMOUNT of FEES collected in the INSPECTION of MACHINERY DEPARTMENT during the Financial Year ended 30th June, 1878.

Name of District.							Amount Collected.		
							£	s.	d.
Otago ...	...	...	...	...	...	...	572	0	0
Canterbury ...	...	...	...	...	...	...	493	0	0
Auckland ...	...	...	...	...	...	...	454	0	0
Wellington ...	...	...	...	...	...	...	252	0	0
Marlborough ...	...	...	...	...	...	...	91	0	0
Taranaki ...	...	...	...	...	...	...	22	0	0
Nelson North ...	...	...	...	...	...	...	27	0	0
Nelson South ...	...	...	...	...	...	...	26	0	0
Westland ...	...	...	...	...	...	...	53	0	0
Hawke's Bay ...	...	...	...	...	...	...	60	0	0
Total ...	...	...	...	...	...	...	£2,050	0	0