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PARLIAMENT OF TASMANIA.

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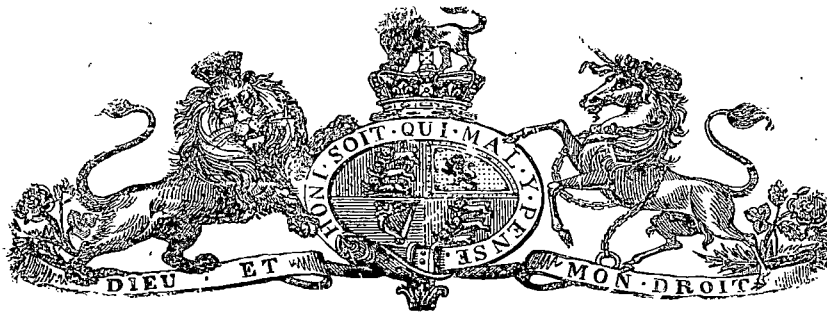
INSPECTION OF MACHINERY DEPARTMENT:

REPORT FOR 1899.

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Presented to both Houses of Parliament by His Excellency's Command

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## INSPECTION OF MACHINERY DEPARTMENT.

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*Hobart, 29th January, 1900.*

SIR,

I HAVE the honour to submit herewith my Annual Report on the working of "The Inspection of Machinery Act, 1889," for the year ending 31st December, 1899.

### *General.*

The machinery in the Colony still continues to increase at a gratifying rate. Eighty-two new boilers have been added during the year, the total number of land boilers on the books having gone up to 657 in consequence. The increase for 1898 was 75 boilers, which, added to that for 1899, gives a total increase of 27 per cent. for the past two years. As well as these, 55 marine boilers and machinery require inspection during the year. This represents, to any thinking person, a very large amount of work and responsibility, which is often of an arduous and frequently unpleasant character, and calls for special skill and training to effectually carry it out. The number of repairs ordered by the Inspectors for the year has been large, exceeding 300, and some friction necessarily, on this account, has taken place upon several occasions with the public; however, on the whole, the Inspectors' demands have been cheerfully met and complied with. As a matter of fact, although only a year elapses between the inspections, the majority of these defects show that if neglected they would have led to disaster, resulting, very probably, in loss of life and destruction of property. Explosions and accidents, traceable to faulty construction of boilers and neglect to repair, have never occurred since the inauguration of the Department, where regular inspection has taken place; and this should be a sufficiently high eulogium to satisfy the most bitter opponent of compulsory inspection.

The number of boilers made in the Colony during the year shows a very satisfactory increase on those for 1898, and the Inspectors have been assiduous in seeing that good workmanship has been put in, and in having complete tests made of the materials used; this work is very important, and has required a good deal of time to be given up to it. As usual, every encouragement has been offered to the manufacturers by the Inspectors, and disputes over sizes and scantlings, with the exception of one case, have been quietly settled. I can safely say that most of the boilers made in the Colony compare favourably with imported ones, and are much superior to some of them. When it is recognised that every imported boiler means a loss of weeks of good employment to skilled men, and militates against the training and advancement of the rising young men of the Colony who are engaged in this line, the above state of affairs may be held as very satisfactory, and bears testimony to the progress and present prosperity of the Colony. Whilst on this subject I would urge that the rules of the Manchester Steam Users Association of Great Britain be adopted and embodied in the Act for all new land boilers to be planned from, which will allow the manufacturers to know exactly what is required of them, and avoid differences and disputes.

Considerable work has been done for other Departments during the year, and no money returns can be shown for it. This has been before pointed out by me, and I hope to see the Act amended to deal with this point in the future.

### *Number of Inspections made.*

Land boilers inspected and certificates granted for same .....	416
Ditto inspected but condemned.....	9
Marine inspections made and declarations given .....	55
Total number of inspections made ( <i>see Return, page 6</i> )...	703

### *Engine-Drivers' Certificates.*

Ninety certificates have been issued,—43 service, and 47 competency. Besides these, 8 more candidates were examined, but failed to pass.

*Port Engineers.*

Eight candidates were examined and passed; two failed in their examination.

*Examination under "The Merchant Ships Officers' Examination Act."*

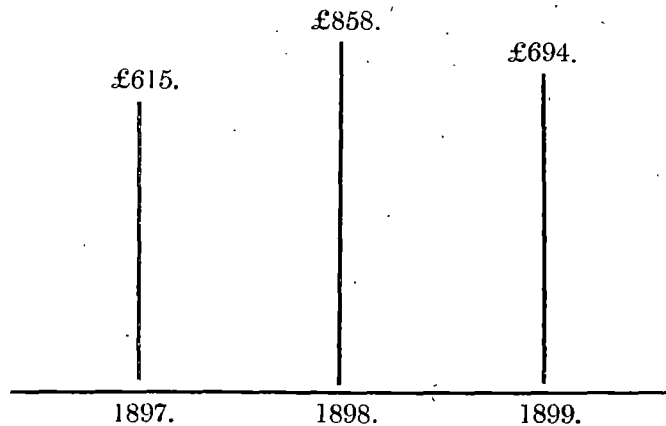
Two candidates presented themselves for examination, one for first-class, and one for second-class. Both passed.

*Fees Earned.*

I regret to have to report a decrease in the fees, as compared with 1898, amounting to £153 15s. Comparative figures are shown in the diagram below:—

Fees payable on Land Boilers & Machinery.	Fees payable on Marine Boilers and Machinery.	Engine-Drivers' Fees.	Fees for Board of Trade Engineers' Examinations.	TOTAL.
£ 601	£ s. d. 62 10 0	£ s. d. 25 15 0	£ 5	£ s. d. 694 5 0

Estimated Government work (not charged for) £20.



This decrease has been caused by the transfer of the second Assistant (Mr. Green) to the West Coast as resident Inspector there, and no other having been as yet appointed to fill his place. It was found necessary to transfer an Inspector to the Coast, owing partly to the increase in the amount of machinery there, and partly for the moral check his presence would be on the numbers of small tribute parties and others who are never at any time too ready in complying with the law. I also found that twelve months was too long, in many cases, to allow the boilers on the West Coast to run without inspection, owing to the destructive and corrosive nature of the water used for feeding purposes, and a considerable number of the boilers have to be inspected twice, and even three and four times a year, although the fee can only be charged the once. I would like to point out here that a large and increasing amount of "dead" work has also to be performed by the officers of the Department in inspecting machinery as distinguished from boilers, over and over again every year, without payment of fees. In accordance with the Act, machinery can only be charged for once, and that is when it is first put to work, and never again after that. It is very necessary that shafts, brakes, clutches, &c. should be regularly inspected, and receive watchful care from the Inspectors, which takes up considerable time; and I cannot see any reason why an annual charge should not be made for this, seeing that it occurs, and has to be attended to as regularly as the boiler-work. A charge of, say, 5s. each would net a sum to the good of the Department of at least £100 per annum, and would hardly be felt by the power-users.

Right here, in view of its importance, permit me to press for the early consideration of the appointment of an

*Additional Assistant Inspector.*

This has become urgently necessary since the transfer of Mr. Green, and it is quite impossible for the present staff to cope with the work. The want of another Inspector means, to begin with, a sure loss in fees, and, what should be of more importance than that, a considerable amount of machinery going uninspected, courting possible disaster. The technical staff of the Department is the same now as regards numbers as it was in 1892, and yet the machinery in the Colony has increased at least 33½ per cent. since that time. Here one of two things must be admitted,—either that the staff in 1892 was excessive (which is negated by the fact that it was found impracticable to reduce it, even during the years of depression and retrenchment which followed), or that it is now insufficient for the above 33½ per cent. increase, and I think it is plain that the latter is the case. It is not possible for the Chief Inspector to inspect more than half the

boilers in the Southern District, and this involves his never leaving Hobart, his services being required every few days by the Marine Board; so, with the present staff, half, at least, of the southern land-work must remain undone, and the Chief Inspector be confined to Hobart. But I desire to point out here that it is very necessary that the Chief Inspector should leave Hobart and occasionally visit, at unexpected times, the various districts in the Island, for the following reasons:— First, to see that the Assistant Inspectors are carrying out all duties properly, and to personally hear any complaints; secondly, to check and put a stop to such practices as the carrying of too high steam-pressures, having unskilled men in charge of machinery, &c. The Assistant Inspectors cannot effectively do this, because, in order that the boilers and machinery may be ready for their inspection, they require to notify and arrange with the owners to that effect; therefore, the steam-users being forewarned, are always on the *qui vive* and prepared for the Inspectors' visits. It is, moreover, desirable that the Inspectors should notify when they will be in a district, to enable persons requiring engine-drivers' certificates to undergo examination. Rumours of extra weights on safety-valves, and such like practices, frequently reach me, and I have myself from time to time surprised cases of this sort. If it be conceded that the Chief Inspector should thus periodically visit the districts, it will be seen that, in view of the Marine Board work in Hobart, this leaves him with little time to inspect the land boilers in the south, and, obviously, another assistant is required to take his place whilst he is away from Hobart. I would like it to be further noted that the work for the Hobart Marine Board is quite five times as much as that of any other Marine Board in the Island; and then, I think, it will be clear that if the Chief Inspector attends to it, periodically visits the districts, has the management of the Department on his shoulders, and is a general consulting engineer to the other Government Departments as well, he will have no idle time. With another Assistant Inspector, and the small annual charge made for inspecting machinery proposed above, the Department would at once be rendered self-supporting, and its efficiency be restored.

#### *Accidents.*

There has been an unusual number of fatal accidents occurring with machinery during the past year; in all six people have lost their lives. One man at the Penguin slipped his foot into the feed-aperture of a threshing drum, by which he lost his life; another man was killed at Hastings by a piece of wood catching on the top of a circular saw and striking him; another, a young lad at the Glen Dhu Brickworks, Launceston, in a moment of heedlessness, put his foot into the feed-aperture of a pair of clay-crushing rolls, resulting in his death. A man was killed at Mount Lyell by a truck breaking loose on a small haulage line and striking him. In the early part of the year a disastrous accident occurred at the New Mount Zeehan Mine, two men losing their lives through foolishly attempting to hold down a safety-valve with iron bars, when under considerable steam-pressure. Beside the above there was one serious accident, resulting in a man at St. Mary's losing his arm in a chaff-cutter, and four more of a trivial nature. All the above accidents have been attributable to want of care on the part of the victims, and could not have been prevented by any system of guarding known to me. My constant instructions to the Assistant Inspectors have been to take every opportunity of impressing on operatives and employees the great importance of using every care when tending running machinery of any description, and to wear suitable clothing, which is not likely to become entangled amongst it. Only one boiler accident was reported, and this happened to a boiler which had not been inspected at its proper time, owing to want of sufficient staff to do it. Fortunately, the result was only the disablement of the boiler, but was a close shave to a grave disaster; had the boiler been inspected at its proper date the accident would not have occurred.

#### *Amendments required in the Act.*

As the Act was not altered during the past year, the objections which I urged in the 1898 Report I must again bring under notice. First, in regard to engine drivers. All boilers should be in the charge of a certificated person, but by the Act those under 8-horse power do not require qualified persons to attend to them. This is inadvisable, and especially so in the case of mining machinery, which is, as a rule, erected in remote spots with no engineering assistance handy in case of defects being discovered, &c. There is a very considerable risk run when a small winding-engine is in charge of an unqualified driver. As I have pointed out before, the interval elapsing between the inspection of a boiler and the payment of the fee and consequent issue of the Certificate is, in many cases, far too long. In order to mend this, I would suggest weekly returns of fees due for collection being sent to the Commissioner of Taxes instead of quarterly ones, as at present. As pointed out in an earlier part of this Report, a small annual charge for the inspection of running machinery is advisable, and I think the rules of the Manchester Steam-Users Association should also be embodied in the Act to guide those making new land boilers.

Just after the lamentable accident at the Mount Zeehan mine, resulting in the scalding to death of two men, I endeavoured to take proceedings against the engine drivers concerned, in order to revoke and cancel their Certificates, and although the advice of the Solicitor-General was taken by me and acted upon right through, eventually I was chagrined to find that the regulations for the issue, &c. of engine drivers' Certificates were apparently *ultra vires*, so the matter had to drop; these men still hold their Certificates, and comment is unnecessary. From the foregoing there appears to be abundant evidence that the Act requires amending in several directions, and I would be glad to see this done during the coming Parliamentary Session.

*Synopsis of other duties performed.*

Engineer and Iron Shipwright Surveyors to the Hobart, Launceston, Strahan, and Mersey Marine Boards; Examiners in steam to the same. Examiners under "The Merchant Ships Officers Examination Act;" Examiners of Land Engine-drivers. Inspecting and reporting on various Government machinery at Gaol, Printing Office, Bonding Warehouse, Hospital, &c.

*RETURN for the Year ending 31st December, 1899.*

Description of Information.	No.
Certificates granted to land boilers.....	416
Marine declarations taken .....	55
Total inspections of land boilers.....	515
Ditto ditto of marine boilers .....	188
Steam-gauges tested and found serviceable .....	348
Ditto ditto unserviceable .....	24
Steam-boilers and machinery found defective, and owners instructed to repair same	302
Steam-boilers condemned .....	9
Accidents ending fatally .....	6
Ditto causing serious bodily harm .....	1
Ditto trivial .....	4
Certificates issued to Land Engine-drivers .....	90
Ditto ditto Port Engineers .....	8
Ditto ditto under "The Merchant Ships Officers Examination Act" .....	2

I have the honour to be,

Sir,

Your obedient Servant,

E. S. ROSS, *Chief Inspector of Machinery.*

*The Hon. the Chief Secretary.*