1927.

NEW ZEALAND.

MARINE DEPARTMENT.

ANNUAL REPORT FOR 1926–27.

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

YOUR EXCELLENCY,— Marine Department, Wellington, 27th September, 1927.

I do myself the honour to transmit for Your Excellency's information the report of the Marine Department of the Dominion for the financial year ended the 31st March last.

I have, &c.,
G. JAS. ANDERSON,
Minister of Marine.

His Excellency General Sir Charles Fergusson, Bart., LL.D., G.C.G., K.C.B., D.S.O., M.V.O., Governor-General of New Zealand.

REPORT.

The SECRETARY, MARINE DEPARTMENT, to the Hon. the MINISTER OF MARINE.

SIR,— Marine Department, Wellington, 24th September, 1927.

I have the honour to submit this my fourth annual report on the operations of the Marine Department for the financial year ended the 31st March, 1927.

FINANCIAL.

The Department's cash position shows an appreciable improvement on last year's figures, the surplus of receipts over payments for 1925–26 being £7,445, and for 1926–27 £13,702. The following comparative statements of the receipts and payments for the past six years are interesting, showing as they do that the Cash Account has risen from a deficit of £78,000 in 1921–22 to a surplus of £13,702 in 1926–27 :—

Receipts.

Branch.	1921–22.	1922–23.	1923–24.	1924–25.	1925–26.	1926–27.
	£	£	£	£	£	£
Shipping Branch—						
Light dues	41,311	39,689	76,868	80,469	78,709	82,082
Engagements, discharges, &c.	3,968	4,108	4,027	4,155	4,532	4,074
Survey fees	3,354	3,202	4,666	5,027	5,750	5,310
Examination fees	586	396	370	417	431	379
Miscellaneous receipts ..	1,076	1,288	1,331	1,174	823	449
Harbours—						
Pilotage, port charges, &c. ..	648	765	769	843	871	934
Foreshore revenue	1,175	1,131	2,904	4,579	5,374	6,041
Fisheries—						
Sale of oysters	7,763	7,702	7,356	8,395	10,205	8,345
Sundry receipts	324	324	926	667	804	738
Inspection of Machinery—						
Inspection of boilers, &c. ..	13,102	17,300	16,568	18,417	17,289	19,136
Examination fees	602	618	635	649	568	464
Tramways Act—						
Examination fees	57	49	104	84	91	92
Ross Sea Revenue	..	..	200	200	1,721	2,921
Miscellaneous Receipts ..	..	..	653	307	2,278	2,519
Totals	73,696	76,572	117,377	125,383	129,446	133,484

Payments (Net Vote).

Branch.	1921–22.	1922–23.	1923–24.	1924–25.	1925–26.	1926–27.
	£	£	£	£	£	£
Head Office	*	9,169	8,433	9,378	9,148	9,687
Harbours	5,194	4,216	6,279	3,911	3,862	4,338
Lighthouses	37,085	27,734	25,503	26,018	26,038	25,273
Meteorological Office	3,909	5,314	5,671	6,009	6,007	..
Mercantile Marine	12,632	11,901	13,422	14,262	15,413	14,813
Inspection of Machinery ..	27,492	25,279	24,821	24,714	26,181	28,294
Fisheries	13,784	10,456	10,792	12,539	15,351	14,922
Government Steamers ..	34,184	19,675	21,155	19,956	18,642	21,215
Miscellaneous Services ..	17,415	3,460	1,573	2,676	1,359	1,240
Totals	151,695	117,204	117,649	119,463	122,001	119,782

* It was formerly the practice to include Head Office expenditure under miscellaneous services.

It will be observed that the receipts have increased from £73,696 in 1921–22 to £133,484 in 1926–27, while the payments have decreased from £151,695 in 1921–22 to £119,782 in 1926–27. Thus by an increase of £59,788 in receipts and a decrease of £31,913 in payments the Department has improved its cash position to the extent of £91,701 in six years.

Turning now to the Income and Expenditure Account, which gives a real indication of the Department's financial position, the figures for the past five years are as follows:—

Revenue.

Branch.	1922–23.	1923–24.	1924–25.	1925–26.	1926–27.
Shipping Branch—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Light dues	39,688 16 8	76,867 15 6	80,467 6 2	82,875 6 3	81,064 9 8
Engagement and discharge fees	3,179 11 0	3,218 15 0	3,420 14 0	3,664 15 3	3,124 13 3
Survey fees	3,095 9 0	4,785 2 6	5,010 0 4	6,137 16 11	5,371 7 8
Examination fees ..	395 12 6	369 12 0	417 5 0	429,10 0	379 5 0
Miscellaneous	1,289 0 4	1,389 8 0	1,175 6 3	823 14 3	505 18 3
Harbours—					
Pilotage, port charges, &c.	764 14 6	768 13 1	842 18 7	870 11 8	920 17 1
Foreshore revenue ..	1,126 14 1	2,909 0 4	4,393 19 1	5,704 2 4	5,988 17 4
Inspection of Machinery—					
Inspection fees, &c. ..	17,126 19 0	16,125 11 2	17,256 2 10	18,005 8 10	19,531 8 3
Examination fees ..	667 0 0	738 18 0	732 18 0	657 5 0	556 4 0
Fisheries—					
Net profit from sale of oysters	2,546 9 6	2,310 19 9	2,139 10 1	2,517 3 11	1,347 11 7
Fishing-boat license fees, &c.	324 9 6	627 14 1	477 14 6	575 5 4	629 15 9
Rental of toheroa-beds ..	10 0 0	300 0 0	300 0 0	300 0 0	300 0 0
Government Steamers—					
Freight, passage-money, &c.	1,785 0 7	2,788 1 8	4,793 0 10	3,185 17 8	5,134 9 6
Ross Sea Revenue	..	200 0 0	200 0 0	1,720 12 6	2,921 5 0
Miscellaneous Revenue ..	2,800 11 4	2,658 4 9	1,696 1 6	1,818 1 10	1,693 12 2
Totals—General Accounts ..	74,800 8 0	116,057 5 10	123,322 17 2	129,285 11 9	129,469 14 6

Expenditure.

Branch.	1922–23.	1923–24.	1924–25.	1925–26.	1926–27.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Head Office	9,612 2 8	8,574 3 2	9,292 7 4	9,626 13 9	10,007 16 10
Harbours	4,826 13 2	3,739 17 5	3,921 2 11	4,295 13 3	3,938 6 0
Lighthouses	26,995 19 5	25,302 19 4	26,823 6 5	24,220 2 2	24,157 5 4
Meteorological	5,374 0 3	5,572 6 2	5,863 19 2	6,124 12 6	..
Mercantile Marine	15,150 17 11	16,585 15 1	17,896 11 0	24,626 5 5	25,021 18 8
Inspection of Machinery ..	27,015 0 0	25,802 1 2	26,124 16 11	20,793 2 9	22,288 13 8
Fisheries	4,545 3 2	3,743 11 8	2,890 13 10	3,179 2 6	3,385 5 11
Government Steamers ..	21,697 19 6	22,819 8 9	21,837 5 4	24,309 19 11	22,605 0 4
Miscellaneous Services ..	2,655 3 8	3,939 7 5	1,734 3 1	2,189 17 10	2,861 17 4
Grants and Subsidies ..	1,510 0 0	900 0 0	150 0 0	540 0 0	290 0 0
Depreciation	8,035 4 9	7,911 18 8	8,844 18 9	8,862 19 6	9,032 5 3
Interest on Capital	15,716 7 3	17,471 16 8	17,737 15 7	17,811 11 0	18,005 6 0
Totals—General Accounts ..	143,134 11 9	142,363 5 6	143,117 0 4	146,580 0 7	141,593 15 4

The following statement setting out the financial result of each of the past six years, both before and after the payment of interest on capital, gives an indication of the Department's progress towards the equalization of expenditure and revenue:—

Year.	Before paying Interest on Capital.	After paying Interest on Capital.
	£ s. d.	£ s. d.
1921–22	Deficiency 74,146 4 2	Deficiency 95,153 14 11
1922–23	,, 53,456 11 3	,, 69,172 18 6
1923–24	,, 9,759 8 1	,, 27,231 4 9
1924–25	,, 2,144 4 11	,, 19,882 0 6
1925–26	Surplus 517 2 2	,, 17,294 8 10
1926–27	,, 5,881 5 2	,, 12,124 0 10

The 1925–26 result was improved upon to the extent of approximately £5,000 during 1926–27, but the Department has still to find at least another £12,000 annually before it will be self-supporting. This loss is made up somewhat as follows: Survey of ships, £5,500; inspection of machinery, £5,500; fisheries, £1,000.

Survey of Ships.

The actual deficiency on this branch for the year was £5,818 7s. 5d., made up as follows:—

	£ s. d.
Engineer surveyors' salaries	5,046 19 8
Deck surveyors' salaries	4,707 5 9
Travelling-expenses	635 9 8
Miscellaneous expenses	200 0 0
Head Office administration	600 0 0
Total expenditure	11,189 15 1
Total revenue	5,371 7 8
Deficiency for the year	£5,818 7 5

The survey fees, with one or two exceptions, are up to the maximum allowed by law, but in many cases these fees are insufficient to compensate the Department for the services involved, and, indeed, are noticeably below what is charged in other countries.

Inspection of Machinery.

The revenue, amounting to £20,087 12s. 3d. from this branch for 1926–27 showed an appreciable increase on the previous year's figure—viz., £18,662 13s. 10d. The loss on the branch for the year was £5,601 1s. 5d. made up as follows:—

	£ s. d.
Salaries	13,919 15 11
Travelling-expenses	5,021 18 3
General expenses	3,346 19 6
Head Office administration	3,000 0 0
Interest, sinking fund, and depreciation	300 0 0
Total expenditure	25,688 13 8
Total revenue	20,087 12 3
Deficiency for the year	£5,601 1 5

This is the best year experienced in connection with this branch since the commercial balance-sheet system was introduced.

The following table gives an indication of the rapid increase in the number of inspections of recent years :—

Year.	Number of Inspections.	Year.	Number of Inspections.
1915–16	17,857	1921–22	31,876
1916–17	19,362	1922–23	33,124
1917–18	21,118	1923–24	32,891
1918–19	22,614	1924–25	35,797
1919–20	25,824	1925–26	42,529
1920–21	28,553	1926–27	47,209

Fisheries.

The loss on the Fisheries Branch for 1926–27 amounted to about £1,200. This was largely due to the poor oyster season, which was the worst experienced for a considerable number of years. The net profit for the season was £1,347 11s. 7d., as compared with £2,517 3s. 11d. for the previous season. The inferior quality of the oysters necessitated closing the season much earlier than usual. The following is a return of the number of sacks picked from the beds since 1911, the gross sales each year, and the net profit earned :—

Year.	Number of Sacks.	Gross Sales.	Year.	Number of Sacks.	Gross Sales.
		£ s. d.			£ s. d.
1911	4,782	3,013 6 8	1919	7,256	5,363 8 3
1912	7,728	5,212 0 0	1920	6,979	6,296 8 6
1913	9,069	6,157 14 0	1921	7,219	7,763 7 4
1914	8,361	5,770 3 0	1922	7,323	7,702 10 0
1915	9,634	6,714 18 6	1923	6,800	7,355 17 6
1916	8,172	5,692 11 6	1924	6,841	8,395 9 3
1917	10,357	6,890 3 0	1925	8,297	10,205 5 0
1918	10,422	7,516 13 6	1926	6,771	8,344 10 0

During the past year or so erratic climatic conditions and sea temperatures have prevailed. The Chief Inspector of Fisheries has been giving the subject his close attention, but it is impossible at the present juncture to venture definite opinion.

Ross Sea Dependency.

The royalties on whale-oil received in connection with the Ross Sea Dependency realized a substantial increase during 1926–27. The following shows the revenue year by year since the Dependency has been under the Department's administration : Year, 1923–24, £200 ; 1924–25, £200 ; 1925–26, £1,720 12s. 6d. ; 1926–27, £2,921 5s.

Foreshore Revenue.

The revenue from foreshores for the year under review amounted to £5,988 17s. 4d., as compared with £5,704 2s. 4d. for the previous year.

Meteorological Branch.

The Meteorological Branch was transferred to the Department of Scientific and Industrial Research during the year, this Department thereby being relieved of expenditure approximating £6,000 per annum. As the appropriation for the branch had been included under vote "Marine Department," we continued to make payments for the whole year on behalf of the Department of Scientific and Industrial Research.

WESTPORT HARBOUR.

The cash account in respect of Westport Harbour also shows a substantial surplus. The following are the receipts and payments ofr the past six years :—

Year.	Receipts. £	Payments. £
1921–22	31,412	75,642
1922–23	44,020	50,303
1923–24	44,126	44,588
1924–25	49,566	40,949
1925–26	56,920	49,876
1926–27	63,181	46,907

Receipts have increased from £31,412 in 1921–22 to £63,181 in 1926–27, and payments have decreased from £75,642 in 1921–22 to £46,907 in 1926–27, which means that there has been a net improvement of £60,504 in the six years the Department has had control of the port.

With regard to the Income and Expenditure Account the surplus for the year amounted to £10,207 1s. 4d., which sum was transferred to Harbour Maintenance Reserve. This is by far the best result achieved since the Department assumed control of the harbour. The year was an exceedingly good one from the revenue viewpoint, no stoppages of any consequence having occurred at the mines, and the coal output having shown a large increase.

The following statement shows the net tonnage of shipping entering the port, the tonnage of coal exported, and the financial result for each year since 1921–22 :—

Year.	Net Tonnage of Shipping entered.	Tonnage of Coal exported.	Financial Result.	£	s.	d.
1921–22	273,706	480,873	Deficiency	38,113	2	7
1922–23	332,401	573,487	,,	12,038	9	4
1923–24	275,762	442,070	,,	4,333	14	7
1924–25	334,827	556,669	Surplus	5,711	17	0
1925–26	386,669	552,949	,,	5,630	8	0
1926–27	459,670	637,165	,,	10,207	1	4

These figures are a clear indication of the satisfactory improvement in the finances of the Harbour under departmental control.

The large increase in tonnage of vessels entering the port during 1926–27 is accounted for by the substantial improvement in the bunkering trade, forty-four overseas vessels having called for bunkers as compared with twenty for the previous year.

The bucket dredge "Mawhera" was chartered from the Greymouth Harbour Board from the beginning of the year until the 16th December, 1926, during which period she was engaged on dredging the berthage and swinging-basin areas. The total quantity of material dredged from these areas was 175,173 cubic yards. On the return of the "Mawhera" to the Greymouth Harbour Board on the 16th December, 1926, the suction dredge "Eileen Ward" was commissioned for work on the bar. The total quantity of material dredged by this vessel was 178,210 cubic yards. The total quantity of material dredged during the year was therefore 353,383 cubic yards.

A good depth of water has been maintained on the bar throughout the year, the average depth at high water being 24 ft. 10 in. as compared with 24 ft. 1 in. for the previous year. The average depth in the river fairway at high water from the Crane Wharf to the bar was 26 ft. 8 in., the previous year's average being 26 ft. 9 in.

The year under review was marked by numerous floods at Westport, as may be gathered from the fact that the river was in flood on ninety-nine days of the year. Some of these floods were particularly heavy, that of the 5th November being the highest ever recorded in the history of Westport, and damaging so far as the Department's dredging operations were concerned. As a matter of fact, this flood had the effect of nullifying a great deal of the work carried out by the dredge "Mawhera" in the berthages during the previous nine months, and, furthermore, it has necessitated the Department embarking on an extensive and costly scheme of works. It has been decided to proceed with the dredging of the harbour to a greater depth and width in order to improve the swinging-basin, and generally to degrade the river-bed up to the Buller Bridge. With this end in view arrangements have been made to charter the bucket dredge "Maui" from the Gisborne Harbour Board.

The conversion of the navigation lights on the eastern side of the river from kerosene-burning to electric has been attended with excellent results. The lights are now much more powerful, and at the same time considerably less expensive to maintain.

The coal-handling appliances, which are under the control of the Railway Department, are being improved. One of the cranes was heightened some time ago, and another is being raised at present. The Railway Department is also calling for tenders for an up-to-date electric crane for the Coal Wharf. It is hoped that by the provision of these improvements the handling of coal will be facilitated. The most frequent cause of delay, however, is undoubtedly shortage in the supply of coal to ships when a greater number than usual are in port, and this factor is, of course, one over which the Department has no control.

During last session the following legislation affecting Westport Harbour was promoted and passed :—

(*a*) The Westport Harbour Amendment Act, 1926, the object of which was to clear up a number of legal anomalies and to convert the wharfage of 9d. per ton on coal to special coal rate, thus amalgamating it with the 3d. per ton already being charged under the latter heading.

(*b*) The Forests Amendment Act, 1926, in which provision was made to place timber areas in the Buller Coalfields Reserve under the administration of the Forestry Department. Previously these areas were under the sole control of the Warden's Court, which was an unsatisfactory arrangement from the viewpoint both of revenue and of skilled administration.

Harbour Board Loan Bills.

Under existing general statute, whenever a Harbour Board proposes to construct a breakwater, graving-dock, dock, or an area of reclamation, or, alternatively, to raise a loan for harbour-works, it must promote a special Act of Parliament. This Act is not, however, an authority, complete in itself, enabling a Board to proceed with the raising of the loan and the carrying-out of the works.

In the case of a Harbour Board having no rating-powers there is no necessity to submit the loan proposals to a poll of ratepayers, but in the case of Boards which do possess such powers the approval of the ratepayers is necessary unless special exemption is provided in the local Act.

The Harbours Act requires that, before commencing any harbour-works, the constructing authority must first submit for the approval of the Governor-General in Council a plan, in duplicate, of the whole work, showing all the details of the proposed work and the mode in which it is proposed the same shall be carried out. A Board which carries out such works without proper legal authority is, by the Act, subject to penalties.

A further control is to be found in the provisions of the Local Government Loans Board Act.

It has been suggested that because of the safeguards of the Harbours Act, Local Bodies' Loans Board Act, and the poll of the ratepayers, the Local Bills Committee and Parliament might reasonably pass any Harbour Bill. Such contention is really not sound, for the following reasons: When the Department is called upon to report on a Harbour Bill to the Local Bills Committee, little or no information has been furnished to it, as a rule; the plan is usually little more than a picture; there has been no opportunity of engineering investigation of the proposals, no opportunity of checking estimates of cost, nor, in many cases, do the printed accounts available to the Department give sufficient data to enable an accurate idea to be formed of the economic soundness of the proposed expenditure.

The Department would place itself, and eventually the Local Government Loans Board, in an entirely invidious position if it acquiesed in the passing of a Bill without being satisfied that the proposals were sound from every point of view.

The right of the ratepayers, where such a control exists, to approve or disapprove the raising of the loan can really only be regarded as an agreement on their part, if they all voted, to their land being made security for the proposed loan, and to the imposition of a rate should the harbour undertaking not prove self-supporting. There is, of course, always the hope, and often the belief, that rating on land will not be necessary.

It commonly happens that only a small proportion of the ratepayers vote at all; and in any case it cannot be said that ratepayers, as a body, are in a position to express a valuable opinion on a problem usually involving close study, in relation to each particular case, of the marine engineering, navigational, financial, and economic aspects.

Harbour Boards Special Legislation.

During the year the following Bills were promoted and passed:—

Auckland Harbour Board Empowering.—This dealt with the following matters:—

(*a*) Varied the schedule of works prescribed in the Board's Act of 1924, for which a loan of £750,000 was authorized:

(*b*) Provided for the maintenance of certain portions of Quay Street West by agreement with the Auckland City Council:

(*c*) Transferred certain endowment land at Takapuna to the Takapuna Borough Council for street and drainage purposes.

Napier Harbour Board and Napier Borough Enabling Act.—This Act authorized the Board to sell, and the Borough Council to purchase, reclaim, and cut up for sale or leasing purposes, a small area of about 7 acres of Harbour Board endowment, which was useless for harbour purposes, and a receptacle for storm-water and rubbish.

Lyttelton Harbour Board Loan.—This Bill sought loan authority for £300,000 for harbour-works and equipment. Although the Board had created quite substantial sinking funds, they were not required by law to do so, and therefore the amount accumulated might have been diverted to purposes other than repayment of loans. With the consent of the promoters, a compulsory sinking fund of 1 per cent. was established over all loans.

Otago Harbour Board Empowering Act.—This Act empowered the Board to borrow £350,000 for the acquisition of dredging plant and the carrying-out of certain harbour-works. Some of these works were renewals of works which had been paid for out of previous loans, and it was found that when these loans were raised there was no provision for a sinking fund. Two loans, amounting in total to £933,800, fall due in 1928 and 1934. Provision was made in this Act, at the request of the Department and with the consent of the Board, that when the Board is renewing these loans, it shall establish a sinking fund of not less than ½ per cent. of the amounts to be borrowed for the repayment of the original loans. For this new loan of £350,000 a sinking fund of 1 per cent. was established, so that all the Board's loans are now covered by sinking-fund provisions.

Tutukaka, Whangaruru, and Whananaki Harbours Control Act.—This extended the jurisdiction of the Whangarei Harbour Board, for administrative purposes, to these harbours which are within the Whangarei Harbour District.

Wanganui Harbour District and Empowering Amendment Act.—This empowered the Board to borrow the sum of £40,000 for the acquisition of freezing-works and cool chambers, warehouses, offices, and other buildings for harbour purposes.

The Napier Harbour Board Loan and Empowering Bill, which proposed to authorize the expenditure of a further £75,000 on reclamation works, was opposed by the Department on various grounds, and, as petitions had been presented praying for an investigation into the affairs of the Board, the Local Bills Committee recommended that the Bill be not allowed to proceed pending the report of the Commission. This Commission commenced its sittings on the 4th August, and is now preparing its report.

HARBOUR-WORKS.

Karamea Harbour.—During the previous period a substantial addition to the original wharf has been added to cope with the timber traffic, and to this has been added tram and road accommodation to give access to the timber-skidways. A new wharf shed is in process of erection. A tramway is being built from the limestone and granite deposits at the Oparara to the training-wall. This tramway has been put in to tap the stone deposits in the Oparara Gorge for the purpose of gradually replacing the existing wooden structure by a permanent stone wall.

Little Wanganui.—A new wharf has been erected here, and it is proposed to carry out further improvements by means of a groyne when the traffic warrants it.

Russell.—A new reinforced-concrete wharf has been erected by the Bay of Islands Harbour Board, assisted by a substantial subsidy from the Government.

Waikokopu Harbour.—A considerable amount of work has been carried out here. The s.s. "Talune," which was sunk on the seaward side of the wharf to act as a breakwater, has been very effective in improving the conditions at the wharf. Recent heavy weather has, however, damaged her somewhat considerably, and she will probably require strengthening with stonework at an early date. The existing goods-shed has been enlarged, and additional traffic facilities provided to deal with the business of the port, which has increased considerably during the past year.

Waikawa Harbour.—A small wharf has been erected here for the convenience of the fishermen.

Waikouaiti River Entrance.—A small training-wall has been built, and wind-breaks erected across the sandspit at the entrance of this harbour. The work has been partly financed by the Government and partly by the local residents.

Wharf and Shed, Hui House, Whangape.—This work has been completed and handed over to the trustees.

Havelock Wharf.—Fairly extensive repairs have been carried out to this wharf, the moneys being provided and the work carried out by the Department.

Paihia Wharf.—The construction of this wharf on a new site near the post-office was finished during the year.

Horeke Launch-landing.—This launch-landing was undertaken and carried out during the year.

Mangawai Wharf.—Alterations to this wharf, consisting of the dismantling of the old shed and the erection of a new shed, were completed during the year by the Otamatea County Council.

Gisborne.—Owing to representations made to you by the Board the Marine Engineer visited Gisborne, and, after having inspected the works in company with the Board's Engineer, conferred with the Board. The Board's request, it was found, was not for a comprehensive report, but for a reply to certain questions, to which answers were furnished as far as was practicable. The answering of a questionnaire prepared by a Harbour Board does not necessarily afford a Marine Engineer an opportunity of fully advising. The Board's position is unfortunate in that so much money has been expended in directions which would show full proportionate result only in a completed comprehensive scheme, and it has been particularly unfortunate in the quarrying operations which were to produce the stone for breakwater purposes. The scheme of works is one which can produce the full benefit only as a completed whole, and the Board's undertakings to the ratepayers apparently preclude their raising further moneys, at any rate until the position is better understood and the benefits of an overseas ship harbourage appreciated.

Napier.—Matters in Napier have been very unsettled, and as a result of petitions it was decided to set up a Royal Commission to go into the whole matter, and it is hoped that the findings of this Commission (which has a most comprehensive order of reference) will settle a number of matters which have been in doubt and the cause of dissension on the Board and in the district, and will bring about a better state of things.

LIGHTHOUSES.

Piako River Leading-lights.—The original oil-burning leading-lights have been replaced by a small automatic flashing acetylene burner mounted on a reinforced-concrete pile dolphin.

Kahurangi Point.—This light has now been converted from an oil-burning watched light to an automatic flashing light on the Dalen principle. The installation was completed during the year, but an additional burner is being provided and will be installed on arrival.

Dog Island.—The existing accommodation for the keepers, which dates back to 1868, has become somewhat out of date and weather-worn. A contract has been let for the erection of two new and up-to-date dwellings, and material is now being landed on the island for that purpose.

French Pass Beacon.—This beacon, which was originally an oil-burner, has been converted to automatic operation. Previously it had to be attended to daily from the mainland, and was a source of considerable inconvenience. The new installation is a decided improvement.

Pencarrow Lighthouse.—The fog-signal at this lighthouse, which was of the old explosive type, has been dismantled, and a compressed-air diaphone signal has been erected in a suitable building and is now in operation. This signal, which gives a distinctive blast of three seconds every minute, is one of the latest developments in this branch of engineering.

North Cape Light.—It is now proposed to erect a light on this point, and an order has been placed for an automatic flashing light with a range of approximately fifteen miles. The apparatus is expected to arrive shortly, when the work of erection will be put in hand.

Kaikoura Point.—An order has been placed for an automatic flashing light with open flame burner for this locality, and the apparatus has been landed. In order to proceed with the erection of the light, and to enable it to be attended to after erection, it is necessary to form about 20 chains of road, and this work is now being put in hand.

Kahu Rocks.—Provision was made on last year's appropriations for a sum to cover the erection of a light on these rocks. After a careful investigation it was found to be a very expensive matter to build a tower on the rock itself on account of the impossibility in finding shelter for the workmen on the rock itself or a suitable base of operations on the mainland from which the work could be carried out. It was then decided to place the light on the mainland, and after careful examination of the coast it was found that what is locally known as the Honeycomb Rock would provide a very suitable location, giving a clear view up and down the coast, and being comparatively close to the Kahu Rocks, which can be covered by a red sector. It is also of sufficient elevation to give a range of from twelve to fifteen miles.

Godley Head.—A modern diaphone fog-signal operated by compressed air has been landed for this station, the excavation of the site has been completed, and the foundations of the shed to house it have been put in. It is anticipated that the signal will be in operation shortly.

Cape Brett.—Various renewals and repairs were carried out to the keeper's residence.

Manukau South Head.—Arrangements are being made to convert this light from a watched light to automatic operation. Specifications have been prepared and orders placed for the apparatus.

Adjustment and Survey of Ships' Compasses.

The regulations for adjustment of compasses of ships, which require that the compasses of every foreign-going, intercolonial, and home-trade vessel shall be examined, adjusted, &c., periodically, have been carried out with care, and the results of all compass-adjustments have been investigated in the Nautical Adviser's office. There are qualified adjusters of ships' compasses in the main ports who are licensed by this Department, and during the year it has been found this important work has been carried out by them with care and skill. The work performed by the licensed adjusters is subjected to examination by this Department's Inspectors of Compasses, and the results of their inspections show the desired standard of this important direction-giving instrument to have been well maintained.

During the year it has been found unnecessary to delay any ship owing to inefficient compass equipment, but in a few cases in which the compass errors closely approached the maximum error allowed by the regulations it was found necessary to subject those ships to short periodical inspections for the purpose of ascertaining the stability of their compass system.

The gyroscopic compass, an electrical energy-consuming device requiring a constant supply of that energy to enable it to function, is not yet in use on any of our coastal ships. It would appear a considerable time will elapse before it will supplant the magnetic compass.

Marine Casualties.

The year witnessed a normal number of marine casualties at or near our coasts, varying considerably in their nature. The usual number of minor casualties caused by stranding, collision, fire, &c., continue to occur, and preliminary inquiries have been held by the departmental officers when considered advisable. Formal investigations before a Magistrate for the purpose of endeavouring to ascertain the cause and to allocate the blame, if any, were held in respect of seven casualties.

It is extremely gratifying to be able to record that no lives were lost during the year through marine casualties.

One casualty, the loss of a pleasure launch near Cape Maria van Diemen, closely approached a catastrophe. This launch, with five persons on board, none of whom was a competent navigator, left Auckland with the intention of meeting a schooner and proceeding with her to Norfolk Island, a very hazardous undertaking should the ships through any unforeseen reason become separated. However, the schooner was not met, and those on board the launch unwisely attempted to proceed to Norfolk Island alone. Fortunately, the weather frustrated this shortly after they had left New Zealand, and they returned to the land. Subsequently the launch became a total wreck, and its occupants underwent much risk in gaining the shore. It would appear this launch was designated a pleasure yacht, and as such would not be subject to the Department's requirements to the same extent as is a trading-vessel.

The s.s. "Manaia" was totally lost whilst on a voyage from Tauranga to Auckland. All lives were saved. This was effected with promptitude owing to the "Manaia" having been fitted with a wireless-telegraph installation in accordance with this Department's recent legislation, and communication was established with other vessels immediately.

A collision between rival launches engaged in capturing whales in Cook Strait created much interest among the whaling community of Marlborough Sounds. It would appear that rival parties are prepared to take considerable risk when in pursuit of whales, and this becomes much accentuated as the chase become a close one, especially if the whales are scarce or if only one whale is in sight at the moment. The colliding launches suffered from damage, but no injury to persons resulted. Whilst the collision regulations apply to all ships, it would appear that they are ignored by or inapplicable to vessels racing at high speed to capture a whale.

Some anxiety was caused owing to a small fishing-steamer, the "Awarua," bound from Chatham Islands to Wellington being overdue, and having signalled a passing steamer that she was short of coal, and required assistance to be sent to her. This information was promptly repeated by wireless telegraphy, and a search was organized, but was much hampered by adverse weather. Eventually and with commendable promptitude she was found and towed to port by H.M.S. "Dunedin."

One coastal steamer, the "Opua," became a total loss by stranding during weather of low visibility.

One large oversea steamer, the s.s. "Northumberland," sustained serious damage on our coast as the result of striking a submerged obstruction at a position which is shown by Admiralty charts to have been well surveyed and clear of obstruction. A search for the obstruction at the position supplied by the master of the damaged steamer has been made, and depths corresponding closely to those shown on the charts were found to exist. Endeavour is being made to have this locality minutely examined as soon as a suitable vessel can be arranged for. In the meantime shipping has been notified that the locality should be avoided.

Notices to Mariners.

Authentic navigational information of importance, mainly relating to alterations or additions to the several descriptions of "aids" to navigation on our coasts and at our harbours and at more remote parts of the world frequented by our ships, also information concerning newly discovered obstructions, derelicts, wreckage, &c., or other dangers which might affect shipping in general, has been published and circulated throughout the Dominion and overseas where such has been deemed necessary.

Such information is published in the form of a notice to mariners conveying the information in a prescribed form suitable for use on ships and in Hydrographic offices for amending charts used by navigators. During the year seventy-nine such notices to mariners were issued.

Information of a similar nature, but requiring more prompt publication, has been broadcasted by wireless telegraphy when such has been considered necessary.

The issue and circulation of notices to mariners is to some extent an international system of exchanging world-wide information concerning matters affecting the safe navigation of ships. New Zealand, being a comparatively small country having little information of this nature to circulate, benefits to a greater extent in this direction than do larger countries, as we receive copious information from them for which we, owing to our comparative size, have little to send in return.

Radio Direction-finding for Navigational Purposes.

The application of radio in a form suitable for use in connection with the navigation of ships has proceeded slowly, and the time has arrived when it may be said to have passed the purely experimental stage. Its application at present may be divided into two general directions, the first comprising methods by which ships are told by a shore station where they are or where they should be, and the second that of some system by which a ship may itself observe a line or lines of bearing from signals emitted from a radio apparatus situated in a known position, either alone or in conjunction or in combination with some other form of signalling. The former methods, each in some measure resembling one another, are in use in some parts of Europe and North America; but their use does not appear to have been much extended during the past two years, and it is difficult to foresee if those methods will be pursued in the near future, mainly on account of installation expenditure and the costs of subsequent upkeep. The second system has been considerably developed and extended in its application in such forms as the emission of radio signals in conjunction with some descriptive sound signals, and by the emission of radio signals alone. The latter system has been largely adopted as being both cheap and efficient over comparatively short distances; and, furthermore, this system rightly places the responsibility of finding where the ship is on the shoulders of those who are responsible for its safe navigation. The commonest and most widely used form of this system is that now known as the "radio beacon," located at a known salient point (as is a lighthouse), which transmits, either manually or automatically, prescribed identification radio signals at definite periods. This system is particularly useful during fog, as it provides an efficient fog-signal covering distances far exceeding those of any fog-signal transmitted by sound-waves. Such radio signals are, however, of use only to such ships as are fitted with a suitable radio receiving-device. A few overseas ships are now so fitted, and it is hoped the use of this receiving-device will become more common when it is obtainable at a more reasonable cost, and when the responsible officers who may use it in ships have had more opportunities of understanding its use and dependability.

Resulting from this Department's tests with experimental radio beacons which have been carried out at Three Kings Islands, on Motu Opao (the small island on which the lighthouse known as Cape Maria Van Diemen is situated), and at Tiritiri, it was decided that an agitation for the provision of an efficient fog-signal for the use of ships when in the locality of Three Kings Islands would best be satisfied by installing a radio beacon on Motu Opao (Cape Maria Van Diemen) as near as practicable to the existing lighthouse. The distance separating the lighthouse and Three Kings Islands is about thirty miles, and the maximum effective range at which the radio beacon fog-signals may be used is fifty miles. This appeared the best method of providing a fog-signal to serve Three Kings Islands, and arrangements made in 1925 for this to be carried out were somewhat delayed owing to difficulty in procuring some portion of the equipment of a sufficiently robust nature. However, this difficulty being surmounted, the radio beacon was erected during July and August, 1926, and after being subjected to practical tests it commenced operations as a fog-signal on the 1st December, 1926. The radio beacon is attended to and operated by members of the lighthouse staff, who are qualified in wireless telegraphy; but the actual radio fog-signals which are sent out by it are transmitted by means of an automatic interrupter.

The development of the use of radio beacons as fog-signals in other countries is being closely watched, as there has already arisen a divergence of opinion of experts as to the relative efficiency of the spark and the interrupted continuous-wave system of transmission, but it is yet too early to decide this point. The system most widely used in radio beacons at present is the spark system, similar to

that used at our radio beacon, and it would appear that at some later date, the spark system may be entirely discarded. Concerning the installation of our first radio fog-beacon it is opportune to note this Dominion is the first country in the Southern Hemisphere to install one of these modern aids to navigation. Although this radio-beacon fog-signal has been in existence for only a few months, it is shown that during the months of December, January, and February it has been put into operation on twenty-six occasions during foggy weather, totalling 168¾ hours of transmitting fog-signals. The two longest continuous periods of operation were one of thirty and a half hours, and one of twenty hours, the balance of the occasions being periods of operation varying between half an hour and nineteen hours.

It is as yet too early to be able to state how many ships equipped with a suitable receiving-device have made use of this radio beacon during foggy weather, but only one ship has made a special request for service.

Having regard to the difference of opinion, previously referred to as to whether spark or interrupted continuous wave will emerge as the better system, and knowing that the Canadian authorities had established stations with the former system but were experimenting with the latter, we communicated with them in order to ascertain their experience and opinion. Their reply was to the effect that difficulty was being experienced with the spark system owing to interruption, and that, so far as experiments with the interrupted continuous-wave system had gone, it was proving satisfactory, but that the experiments had not been continued over a sufficiently long period to justify a conclusive pronouncement in its favour. They indicated that they did not intend to install any more spark stations until they had come to a proved conclusion as to which system was definitely the better, or, to use their own expression, "until we have our feet on the ground."

In view of all the circumstances it has been decided in the meantime not to proceed further with the proposed installations at Wellington and Lyttelton.

Coastal Survey.

Question has been raised from time to time by navigators and others as to the correctness of Admiralty charts of certain portions of our coasts. The existing Admiralty charts have been produced mainly from the earlier surveys by H.M. ships during the years 1848–55. These charts, which were comprehensive and sufficiently correct for the class of ship and method of navigation in vogue many years ago, have been found in later years to be in error to some extent. Some parts of the coast have, since 1848–55 undergone re-examination, but from a survey point of view the only work of any real value is that of the H.M.S. "Penguin" in 1901–5, towards which the New Zealand Government contributed a total amount of £29,698. The result of this work enabled the Admiralty to republish charts of the localities resurveyed—namely, Poverty Bay to Mercury Bay, and Hauraki Gulf within a line from Te Arai Point to Port Abercrombie (Great Barrier). These charts are quite satisfactory. In 1911–12 some surveying-work of modified extent was carried out by the "Terra Nova" in the localities of French Pass and Three Kings Islands. This was at the expense of the New Zealand Government, and charts of these localities were republished by the Admiralty.

The resurvey of those portions of the coast which have had no later survey than that of the period 1848–55 is admittedly desirable. The Naval authorities have estimated that with a properly equipped vessel and specially trained personnel the annual cost would be approximately £50,000, and that the work would take twenty years to complete. The total estimated cost on this basis would therefore be £1,000,000. As this did not seem a practicable proposition within our means, it became necessary to explore other possibilities of getting the work completed within reasonable time and within our means. The matter was taken up with the Admiralty authorities by the Right Hon. the Prime Minister during the last Imperial Conference. The essential information gathered from this discussion may be noted as follows:—

(1) No Admiralty survey-ship is available for the work.
(2) It is inadvisable to attempt the work unless with a ship specially designed and equipped for the purpose.
(3) The Admiralty would not accept for Admiralty chart purposes any survey data not the work of specially Admiralty-trained personnel.
(4) Tenders were invited for a vessel of a type allegedly suitable for the work, and these tenders ranged from £50,000 to £58,000 exclusive of the cost of surveying and other special apparatus. I use the words "allegedly suitable" because the designs on which tenders were called were subjected to considerable criticism by an Admiralty officer.
(5) Admiralty advised that the actual cost of maintenance of a survey-vessel of 800 tons displacement was £33,000 at Home, and estimated that it would be £37,000 abroad. The actual cost of maintaining a survey-vessel of 1,750 tons displacement was £50,400 at Home, and estimated at £56,300 abroad. These estimates are doubtless based on Naval rates of pay, but rates of pay and costs generally would, of course, be considerably higher here.
(6) The previous estimate that it would take a vessel twenty years to do the work required if the whole of her time were devoted to it was confirmed. "Whole time" does not mean whole time surveying, but only eight months of the twelve at sea on survey work. Weather conditions more adverse than usual would, of course, reduce the period at sea.

As a new ship for lighthouse work is now becoming a necessity, consideration has been given to the question as to whether the new ship could be designed for dual purpose of lighthouse tender and survey work. While, doubtless, that could be done so far as design is concerned, it does not appear to be a practicable proposition at present. The lighthouses must be served regularly and at reasonable

intervals. This would leave insufficient time in which to make any material progress with survey work. Under present conditions it takes the "Tutanekai" all her time to maintain a reasonably satisfactory service to the lighthouses. By a process of conversion of more lights to automatic, and working them from the shore instead of from the sea, the time of the ship can be saved, but there will always be lights which must remain as watched lights. In the meantime the idea of a dual-purpose ship must be regarded as impracticable.

Although an up-to-date coastal survey is a very desirable thing, it is not a vital necessity, and any disabilities that may arise may readily be overcome by careful navigation and the avoidance of corner-cutting. Having regard to the cost of acquiring and maintaining a survey-vessel, and also to the existing financial position, it has been decided to defer the matter for further consideration when circumstances are more favourable.

Examination of Masters and Mates.

The total number of examinations for certificates of competency as master and as mate, and for voluntary examination in compass-deviation, during the year was ninety-six. The proportion of passes to the total number of examinations held during the past five years was 38½ per cent. in 1927, 34 per cent. in 1926, 46 per cent. in 1925, 51 per cent. in 1924, and 43 per cent. in 1923. By this it will be seen the percentage of passes, although slightly higher than last year, has not greatly improved. Reviewing this, it would appear reasonable to assume the changes made in the examinations during the year have resulted in requiring some candidates to attend examinations more than once before being successful in obtaining the desired certificate. Eighteen candidates passed at first attempt, and of the total number of examinations eight were for certificates for restricted-limits ships only.

Of the total examinations, 59 per cent. were held at Wellington, 23 per cent. at Auckland, and 18 per cent. at Lyttelton. The figures for last year were 52 per cent., 28½ per cent., and 19½ per cent. respectively.

There were two examinations held for the higher certificate as extra master, and in each case the candidate was unsuccessful. This examination lasts a full week, and it is not surprising that few candidates compete for this certificate.

Four examinations were held for the voluntary examination in compass-deviation, and three candidates were successful in passing. This qualification entitles the holder to apply for this Department's license as an adjuster of ship's compasses.

There were no candidates for examination for a certificate as colonial pilot.

Three candidates for certificates of competency elected to pass the higher-speed signalling examination, and each was successful in doing this.

A condition to becoming eligible to sit for a certificate for sea-going ships requires that a candidate shall have passed examination in "first aid to the injured," but in the case of a certificate for home-trade ships any candidate who desires to sit for his first certificate is required also to have passed the wireless signallers examination. This latter requirement was introduced on the 1st January, 1926. During the year four candidates obtained their first home-trade certificate, and one failed to pass on two occasions.

The examinations for certificates for foreign-going ships are identical with those conducted by the Board of Trade in Great Britain, and are altered from time to time as may be necessary so as to ensure uniformity with those of the Board. The Board revised its regulations in 1926, and this Department's regulations are now under revision so as to be in conformity with them.

Examination in Form and Colour Vision.

These examinations have been carried out at Wellington by the Department's Examiners of Masters and Mates, and at Auckland, Dunedin, and Lyttelton by local officers of this Department. A total of sixty-eight examinations were held. Of this total, 38 per cent. of the examinations were held at Wellington, 28 per cent. at Lyttelton, 25 per cent. at Auckland, and 9 per cent. at Dunedin. Of the total number, one candidate failed to pass the letter test, and seven the lantern test, one of whom was found to have defective colour vision.

Examination of Lightkeepers in Signalling.

During the year the examination of lightkeepers in signalling has been carried out by this Department's Examiners. The results of these examinations show that a good standard of signalling is maintained in the lighthouse service. A total of fourteen examinations were held; three lightkeepers were credited with having passed a fair examination, five a good examination, and five a very good examination. Since its inauguration in 1922 thirty-three lightkeepers have passed this examination.

Nautical Almanac and Tide-tables.

The compilation, printing, and production of the 25th edition of this very necessary annual publication was carried out as usual, and the book was issued early in December, 1926. Information

relating to the most used ports within the Dominion was revised by the various local Harbour Boards, thus ensuring that ships would be enabled to obtain the most up-to-date information for navigating this Dominion's ports used by them, and much care has been taken to provide only information which has been obtained from a quite reliable source. Resulting from the tidal observations and data supplied by the Surveyor-General, Department of Lands and Survey, it has been possible to issue the usual tide-tables relating to six of the main ports, and arrangements have now been completed and the necessary data is to hand for the purpose of providing a very desirable extension to these tide-tables by including the tide-tables for the growing port of New Plymouth. This will be done in the next (1928) edition of the Nautical Almanac, which is now in course of preparation. The daily tide-tables, and the tables of daily tidal streams for Tory Channel and for French Pass, are an essential requirement to those ships whose progress depends to a great extent upon the rise and fall of the tides and the direction and strength of tidal streams around our coasts. The publication also contains the necessary astronomical ephemeris as used for navigation by nautical astronomy; daily sunset and sunrise tables for the principal towns; and much information of importance to ships and those who navigate them. Owing to popular request it has been decided that in future this publication shall be issued annually early in November, so as to enable the information which it contains to become earlier available for ships proceeding overseas.

Wireless Telegraphy on Ships.

The Department has always maintained that extension of the Wireless on Ships Regulations to still smaller ships must be a matter of gradual application, or otherwise the movement will break down of unreasonableness or impracticability.

The long coastal drift of the fishing-vessel "Awarua" gave fresh energy to the demand that our regulations should go further despite the fact that they now go further than the regulations of any other country. It was decided to reinvestigate the position with a view to seeing whether extension might reasonably be insisted upon, and to this end conferences were held with northern shipowners' representatives at Auckland, and with the representatives of all other owners at Wellington.

Objection to extension of the regulations was made on the following grounds:—

(*a*) That the loss of life at sea was not such as to justify a demand for extension. This argument was difficult to withstand in view of the fact that during the past two years only two lives have been lost through marine casualties to ships, and as these two were lost through the lifeboat capsizing in the breakers on the beach, wireless would not have availed to save them. The only argument against the contention is that a marine casualty may happen at any time. It is interesting to note that during the past two years there have been approximately fifty thousand departures of vessels from all ports, and with every such departure there is the possibility of loss of life, yet only two lives have been lost on our coasts.

(*b*) That wireless on a ship which becomes a casualty does not necessarily mean the saving of the lives of those on board. This, of course, has to be admitted. There are many circumstances in which a ship may be casualtied where it would be impossible for another ship to render assistance. On the other hand, of course, the circumstances may be such that another ship can render assistance.

(*c*) That the extension of wireless to smaller ships would result in hardship to many of the masters and mates at present employed on them.

The contention is that many of the masters and mates employed on these smaller ships are middle-aged and elderly men who would be quite unable to qualify as wireless signallers, or even if they could, it would take them a long time, during which they would be ashore without pay. The point is that in many cases the masters and mates who were unable to qualify would be forced out of the only employment they are likely to obtain, in order to make way for younger men who had qualified in wireless, but who were comparatively inexperienced in the working of these small vessels.

This objection was strongly supported by the Secretaries to the Merchant Service Guild, both at Auckland and Wellington. The Merchant Service Guild have been so wonderfully helpful in doing their part to make the installation of wireless on home-trade vessels an economically practicable thing that their present attitude towards further extension was entirely unexpected. That they do object to further extension at the present juncture is clear evidence that such extension would result in inflicting hardship on a considerable number of masters and mates in the class of vessels under consideration.

Up to date 181 deck officers have passed the wireless signaller's examination.

There was a strong conviction among shipowners and Merchant Service Guild representatives that the best solution lay in the wireless telephone. In its present stage of development, however, it is certainly not a practicable solution. Certainly it is in use—for instance, at Port Phillip in connection with the signal service—but these are land stations supplied by land power-lines, and any height and span of aerial necessary for transmission can be obtained. It is a very different thing when it comes to fitting a plant into a small ship where there are restrictions in space, power, and aerial. I am advised that the ordinary wireless-telegraph plant is capable of transmitting a message about ten times as far as a wireless-telephone plant with the same power and aerial.

Even were wireless telephony practicable at the present day there would, until it was universally adopted by ships, remain the serious disadvantage that while the wireless-telephone ship "A" could call the wireless-telegraph ship "B," "B" could not reply, because "A" would not have an officer trained to read auditory morse. Similarly, if ship "B" were in distress it could obtain no assistance from ship "A," for the same reason. It may be presumed, however, that the rapid progress being made in wireless research work will in all probability evolve a wireless telephone suitable for small ships.

After full consideration of all the circumstances it was decided meantime to extend the application of the regulations down to ships carrying twenty persons, which means that in the future wireless-telegraph installations will be required on all ships which (*a*) are authorized to carry twelve passengers or over, (*b*) whose crew plus the number of passengers the ship is authorized to carry exceeds twenty persons, (*c*) over 1,600 tons gross register.

Survey of Ships.

The numbers of certificates of survey issued during the year are as follows: Seagoing steamships and auxiliary-powered vessels, 209; steamships and auxiliary-powered vessels plying within restricted limits, 581; sailing-vessels, 26; making a total of 816, as compared with a total of 794 for the previous year. A number of sailing-vessels, principally of the scow type, have had oil-engines installed. Proper precautions were taken to secure immunity from fire by isolating the machinery in fire-resisting and watertight compartments. Plans of a gravel suction dredge and a boiler for a ferry-steamer were approved. Investigation was made as to the stability of a number of passenger-vessels plying in river limits. Under existing conditions these vessels were found to be safe provided the passengers and cargo were distributed as permitted by the certificates, but approval of extensions to the passenger accommodation could not be recommended. It was found necessary to require extensive repairs to many vessels. 324 vessels were surveyed for seaworthiness and efficiency under section 226 of the Act. Circulars relating to the following items were issued during the year: Wooden derricks, anchors and cables, coal-carrying vessels, and electrical installations in ships carrying benzine.

Regulations.—Safe Working-loads for Cargo Gear.

Regulations governing the safe working-loads for chains and ropes, including the usual attachments such as hooks, shackles, &c., used for working cargo on board ships, hulks, or lighters, came into force on the 1st January, 1927. The object of these regulations is to ensure as far as is humanly possible the safety of all persons engaged in working cargo on board ships. Overloading is a common cause of accidents to lifting-appliances, and it is universally recognized as a precaution against such accidents that information relating to the safe working-loads for a lifting-appliance should be readily available to the user. The regulations contain numerous tables of safe working-loads for all sizes of chain and rope, so that the safe working-load can be ascertained without calculation of any sort.

In the fixing of the safe working-loads, quality of material had to be considered as well as dimension. To ensure quality, chains and ropes, &c., are required to have been tested to prescribed breaking-loads and in other ways. The regulations also deal with worn chain (the revised regulations referred to below with worn wire rope also), and with dangerous practices in the working of cargo gear. Since the regulations came into force some minor amendments have been considered advisable, chiefly in regard to fibre ropes. For heavy lifts, ropes of the minimum possible circumference are favoured, so that, in the case of yardarms, the rope may be more easily handled, especially when wet; and in the case of slings, so that the cargo will be more tightly held in the sling without danger of its slipping out. These difficulties have been largely overcome by provision being made for an additional grade of fibre rope having a breaking-load 25 per cent. in excess of that of the ordinary-grade rope provided for in the original tables. The revised regulations came into force on the 1st June, 1927.

Numerous conferences have been held between representatives of shipowners, Harbour Boards, waterside workers, and fibre-rope manufacturers and the Department. It is well known that great differences of opinion exist amongst users of lifting-appliances as to what are suitable factors of safety, and, as was expected, there was much controversy at the conferences on this aspect of the regulations. As an instance of the lack of uniformity in safe loads, I may say that the opinions of recognized authorities on chain selected from all available sources abroad vary to the extent of from 3 to 8 tons as the safe load for a 1 in. chain. The divergence of opinion in regard to fibre ropes is even greater still. Notwithstanding these difficulties, it has been possible to secure agreement. It is hoped that the regulations, embodying as they do many useful suggestions from sources of conflicting interests, will be found helpful as a work of reference for users of lifting-appliances, whether they are experts or not, and that they will prove beneficial in minimizing the number of accidents on the waterfront.

Transportation of Sulphuric Acid.

Earlier in the year representations were made by the Waterside Workers' Federation urging that regulations should be made with the object of securing a greater measure of safety to those concerned in the handling of sulphuric-acid containers during transport, and also of protection of claims for compensation for injury, particularly in cases where the claim is based on negligence on the part of a consignor who is domiciled outside New Zealand.

It was suggested that the Sea Carriage of Goods Act, which provides that neither ship, her owners, agent, or master shall be held liable from losses arising from inherent defect, quality, or vice of the thing carried, or from insufficiency of the package, should be amended in the direction of placing on the shipowners such liability in the case of special claims for compensation. The object of this was to avoid the necessity of suing a consignor in his own country, an exceedingly expensive process which may be impossible for the injured person.

It was pointed out, however, that the Sea Carriage of Goods Act is what may be termed an Imperial Act, and any amendment would be subject to His Majesty's assent, and such assent would be unlikely to be forthcoming unless with the concurrence of all other parts of the Empire which have adopted the Act. For this reason, amendment of the Act in the direction suggested did not appear to be a practicable solution of the difficulty.

The question of regulating the transport of this acid in a reasonable and practicable way, and at the same time safeguarding the interest of those concerned in handling the containers, is one of considerable difficulty. The recorded accidents in New Zealand are few, but nevertheless the risk of accident cannot be ignored, and it is desirable that what precautions are possible should be taken in both directions. Investigations to this end are in progress.

Examination of Marine Engineers.

During the year 168 (187) candidates passed their examinations and 121 (119) failed. Of those who passed 70 (91) were engineers of seagoing steamships, 8 (10) were engineers of steamers plying within restricted limits, 21 (33) were engineers of seagoing motor-vessels, and 69 (53) were engineers of motor-vessels plying within restricted limits. The figures in parentheses are those of last year.

Inspection of Machinery.

The number of inspections carried out during the year total 39,223, as compared with 34,634 during the year 1925–26, an increase of 4,589. Twenty drawings of cranes and thirty-nine drawings of lifts were examined. Circulars were issued in reference to guards for dough-rollers, motor-tractors, cranes, and the inspection of machinery generally.

There were twelve fatal accidents during the year, causing the deaths of thirteen persons. One accident occurred in a Government workshop not subject to the Department's inspection, and three other accidents were in connection with machinery which were subject to inspection, but at the time of the accident had not been inspected by the Department. The machines at which the accidents happened are tractor locomotive, sand-screen, shafting, swing goose saw, circular saw, revolving fan, pumping-engine, lifts (two), water-wheel, loghauler, brickmaking-machine. In all cases the causes of these accidents have been fully investigated, and steps have been taken, wherever practicable, to prevent a recurrence.

During the year there were ninety-eight non-fatal accidents caused by machinery subject to inspection. Thirty-seven of these accidents were caused by woodworking machinery, and five were caused by lifts. Thirteen of the woodworking machinery accidents can be attributed to failure to use the guards provided or to improper adjustment, and even more accidents were due to carelessness on the part of the operator. One operator was so foolhardy as to use his right foot to push a piece of wood through a mechanically fed planer. He lost four toes and part of his right foot in consequence. The five lift accidents were due to the following causes: one to the lift having been loaded to double its rated working-load, one to the injured person jumping out of the cage of a slow-moving lift and misjudging the distance between the cage and the floor above, one to leaning over a lift-well gate, one to the forcing open of an interlocked lift-well gate (subsequent examination of the lock proved it to have wanted oiling but that it was otherwise in good order), and the fifth accident was due to the person riding in the lift being caught by the heel between the moving cage and the floor. In this case the lift was intended for goods purposes only, and a notice was exhibited prohibiting any one from riding in the lift. The remaining accidents were caused by a variety of machines.

A Bill to amend the Inspection of Machinery Act, 1908, was drafted during the recess for presentation to Parliament this session. Power is being sought in the Bill to make regulations relating to the safe working of boilers, machinery, cranes, and lifts. At present cranes and lifts are dealt with as machinery generally, but the time has now arrived for dealing with these separately. It was necessary to redraft several sections of the principal Act in order to give a clearer expression of the law, and several minor amendments were made in order to remove existing anomalies. One of the main objects of the Bill is to clear the way for a consolidation of the legislation on the subject, and it is intended to proceed with this as soon as it is practicable to do so.

Inspection of Boilers.

The number of new boilers inspected during the year totals 327, as against 342 the previous year. The total number of boilers inspected for the year is 7,986, and for the previous year, 7,895. Plans of boilers of types not in general use submitted include a gas-fired boiler, waste-heat boilers, and electrically heated boilers, and several boilers of ordinary type generally, but with one or more special features introduced. Circulars dealing with autogenous welding repairs and tube-plate staying were issued.

Examination of Engine-drivers and Electric-tram Drivers.

These examinations were held at the various offices of the Inspectors of Machinery throughout the Dominion at the regular intervals provided for in the regulations—namely, in the months of May, August, November, and February. In addition, a few special examinations were granted, but the holding of special examinations is not encouraged, as it is considered that the regular examinations are of sufficient frequency, and, except in very exceptional circumstances, candidates are expected to arrange that they may attend the scheduled examinations.

The full list of places where the examinations were held is shown in an appended return, as also is the number of candidates examined at each place. The classes of certificates for which examinations were held were—Extra first-class land engineer, first-class engine-driver, second-class engine-driver,

steam-winding engine-driver, electric winding engine-driver, locomotive-engine driver, traction-engine driver, locomotive and traction engine driver, and electric-tram driver. The total number of candidates examined was 528; of this number 371 passed and 157 failed in their examinations.

Recognition of Certificates from Abroad.—Under section 49 of the Inspection of Machinery Act, 1908, certificates of the appropriate grade were granted, without examination, to holders of certificates from abroad, as follows: New South Wales, 1; Tasmania, 1; Queensland, 1.

Government Shipping Offices.

In the Government shipping offices the administration of the Shipping and Seamen Act has been efficiently carried out. Appended is a statement showing the number of seamen engaged and discharged at the various ports during the year, and the fees received for such transactions. The total numbers engaged and discharged were 17,188 and 17,069 respectively, as against 19,285 and 19,348 respectively during the previous financial year. The transactions at the four main ports were as follows (the figures in parentheses being those of the previous year):—

Port.	Engagements.	Discharges.	Fees.	
			£ s. d.	£ s. d.
Auckland	5,606 (6,523)	5,608 (6,608)	991 19 0	(1,210 17 0)
Wellington	6,429 (7,205)	6,504 (7,239)	1,156 18 0	(1,294 5 0)
Lyttelton	1,262 (1,556)	1,319 (1,416)	221 8 0	(271 3 0)
Dunedin	1,392 (1,688)	1,161 (1,744)	236 4 0	(322 12 0)

Inspection of Seamen.

This service has been maintained. A record of men applying for work is kept for the purpose of filling vacancies as they occur.

Sick and Injured Seamen.

The total amount paid by shipowners to sick and injured seamen, under the provisions of the Shipping and Seamen Act, 1908, and its amendments, was £24,445 15s. 3d., as against £21,853 14s. 9d. in the previous year, an increase of £2,592 0s. 6d.

Registration of Shipping.

On the 31st December last there were on the register of vessels in the Dominion 92 sailing-vessels, of 11,634 tons register; 262 steamers, of 101,594 tons register; and 204 motor-vessels, of 4,109 tons register; as compared with 117 sailing-vessels, of 19,452 tons register; 281 steamers, of 100,765 tons register; and 181 motor-vessels, of 3,476 tons register, at the end of the previous year. The number of seamen and boys employed on board was 3,545, as compared with 3,990 at the end of 1925.

S.s. "Tutanekai."

The lighthouse tender continued to perform her regular function throughout the year, with the exception of the period from the 16th April to the 8th June, 1926, during which time she was engaged in conveying His Excellency the Governor-General round the Cook Islands.

In March, 1927, the vessel left for the cruise round the Southern islands. All the castaway depots, boats, sheds, and stores were examined and found intact. There were no signs of any one having used the depots since the previous visit of the vessel.

The s.s. "Tutanekai" is now thirty-one years old, and is becoming very costly to maintain. The increasing cost of annual overhaul is becoming a serious consideration, and it would appear that the vessel is approaching the end of her utility as a lighthouse tender. It has therefore been recommended that a new vessel, specially constructed to meet the requirements of the lighthouse service, be ordered. The work of drawing up the plans and specifications is now nearing completion.

Prosecutions.

During the year prosecutions for offences under and breaches of the various Acts administered by the Department were taken as follows: Fisheries Act, 33; Harbours Act, 5; Inspection of Machinery Act, 9; Shipping and Seamen Act, 10.

Whaling in Ross Dependency.

Ross Dependency, which was declared a dependency of this Dominion on the 30th July, 1923, has since that date been visited annually by ships of the Norwegian whaling enterprise which carries on its operations under license now controlled by this Dominion. The license is for a period of twenty-one years, and in their operations the licensees are entitled to use two floating factories and ten whale-catchers. The licensees appear to have conformed to the conditions of the license, which amongst its provisions requires that whale carcasses shall not be discarded, and that the whole of the carcasses shall be utilized in the production of oil.

This year has marked the fourth whaling season in Ross Dependency. The "Sir James Clark Ross" and five whale-catchers left Stewart Island for Ross Dependency on the 5th November, 1926, returning there at the end of the season. The "C. A. Larsen" and five whale-catchers left on the

23rd November, 1926, returning on the 27th March, 1927. After a few days stay in New Zealand each factory left for the United States of America to discharge its oil, and onwards to Norway to refit for the next season, all the whale-catchers remaining at their base, Stewart Island.

During the first (1923–24) season the expedition was accompanied by Captain George Hooper, Nautical Adviser. During the fourth season Captain William Whiteford accompanied the expedition as official representative.

The floating factory "Sir James Clark Ross," 7,630 tons, assisted by five whale-catchers has operated during each of the four seasons. The fourth season, now just completed, was marked by the addition of a new floating factory, the "C. A. Larsen," 12,093 tons, and her attendant five whale-catchers.

The total personnel amounted to about four hundred. The "C. A. Larsen" is the largest existing floating whale-factory, and marks an innovation in modern whaling, she being fitted with stem-tunnel having an inclined plane for the purpose of hauling whales upon her decks. This enables whaling operations to be carried on outside the shelter of a harbour, &c., this ship being equipped for anchoring in reverse if such became desirable or necessary. This floating factory, therefore, is able to continue operations under conditions of weather in which the usual method of cutting up whales in the water alongside the ship would be impracticable; and in this respect had considerable advantage over the "Sir James Clark Ross," which latter factory requires fine weather or some sheltering ice to enable the older method of cutting up whales alongside the ship to be carried out.

The past season as a whole has been a profitable one for the licensees, but the results of the two floating factories taken separately show a good season for the "C. A. Larsen" and a poor one for the "Sir James Clark Ross." In this respect the poorness of the season must not be taken as an indication that whales were scarce, as other factors, such as bad weather, bad ice conditions, &c., were the cause of much working-time being lost during the season.

The total catch for the season was 786 whales, producing 70,300 barrels of oil. Of this total the "C. A. Larsen" secured 532 whales, producing 47,500 barrels, and the "Sir James Clark Ross" 254 whales, producing 22,800 barrels of oil. The results of each of the four seasons' operations, which terminate in March of each year, were:—

Season.	Factory.	Number of Whales.	Barrels of Oil.
First season (1923–24) ..	"Sir James Clark Ross" ..	221	17,791
Second season (1924–25) ..	,, ..	427	32,165
Third season (1925–26) ..	,, ..	531	37,700
Fourth season (1926–27)	"Sir James Clark Ross" and	254	22,800
	"C. A. Larsen"	532	47,500

(1 barrel = 40 imperial gallons.)

In last year's report mention was made of a suggestion that an unlicensed floating factory intended to pursue whaling in Ross Dependency by carrying on operations outside the territorial waters of that dependency. This has occurred, and a Norwegian floating factory, "N.T. Nielsen Alonso," 9,232 tons, with four whale-catchers, operated in Ross Sea during this season. This factory, using Hobart, Tasmania, as a base, is reported to have secured about 36,000 barrels of oil—a fairly profitable result, which in all probability will induce them to return again next season, and may induce others to follow. This unlicensed factory with her whale-catchers was seen in Ross Sea by our official representative; but as she apparently confined her whaling operations to areas beyond the territorial limits of Ross Dependency she could not be interfered with. It is reported that her method of dealing with whale carcasses did not comply with the exacting conditions under which our licensees are required to work; and that when whales were plentiful the whales used by her were stripped of their blubber only, and the carcasses allowed to float away—a very wasteful procedure; whereas our licensees are, under the terms of the license issued by this Department, required to utilize the whale carcasses to their fullest possible extent, and they are not allowed to discard them unless they have been so utilized.

In anticipation of such unlicensed operations, this Department, as far as existing legislation permitted, made regulations governing the whaling industry in Ross Dependency; but as such can have application to territorial waters only, the unlicensed factory, which apparently did not enter the territorial waters, was enabled to carry on its operations without any restriction or interference. The attention of the Imperial authorities has been drawn to this, and it is hoped some action may be taken so as to more effectively control the capture of whales in Ross Dependency.

The areas of Ross Sea in which whaling operations were carried out during this season were extended farther eastward than formerly; and towards the end of the season some whales were obtained in the locality of Balleny Islands, a locality hitherto untried from a whaling standpoint.

From observations made during the present season it would appear the number of whales has not become unduly depleted, and that, provided the killing of whales can be satisfactorily regulated their capture should provide a remunerative occupation for many years to come.

It is significant that whaling operations in Ross Sea may, as during the season just completed, be carried out wholly without entering the territorial waters of Ross Dependency. By this it is obvious that, in respect of Ross Sea at least, the preservation of whales from decimation can be achieved only by international agreement. The total extinction of whales in Ross Sea as a direct process by whalers is highly improbable, as the capture of whales would necessarily cease when they

became insufficiently numerous to be hunted with profit; but there would then remain a considerable number of whales to propagate their species. The enormous cost of a whaling expedition such as visits the Ross Sea and the loss involved in a poor season is a very healthy check to overfishing.

The licensees now have a permanent depot on shore at Paterson Inlet, Stewart Island, at which their whale-catchers are overhauled and kept during the winter season, a number of their men being left there annually for that purpose. It is expected the licensees will continue their whaling operations at Ross Dependency during the coming season, and that they will, as during the last season, operate with two floating factories and ten whale-catchers. The factories should arrive in New Zealand in sufficient time to enable them with their whale-catchers to depart for Stewart Island early in November.

A great deal has been said and written in recent years about the extermination of whales and the necessity for regulating catching operations, if not wholly stopping them, for a period, or in certain waters. The fact is that whaling in international waters can be regulated or prevented only by international agreement, and individual Governments have no jurisdiction except in territorial waters. Furthermore, no thorough investigation of the life history of the Southern Ocean whale, his migrations and his food-supplies, has ever been made, and therefore there is no data on which to argue the case for control. Possibly the investigations of the "Discovery" expedition, which is reported to have returned to Falmouth from the Southern Ocean, may provide the necessary data and so make useful discussion possible. The greater part of the world's whaling operations is in the hands of one country or of its nationals, and it would appear unlikely that that country would enter into any international agreement to place restrictions upon itself or its nationals.

Fisheries.

It is with regret that I record the death of Mr. L. F. Ayson, who served this Department in the capacity of Chief Inspector of Fisheries for twenty-seven years, and retired from the Service in July last. I desire to place on record the Department's high appreciation of his services in pioneering the activities of the Fisheries Branch over a very difficult period. The country's gratitude is due to him for the acclimatization of the Quinnat and the Atlantic salmon, and for the cultivation of the rock-oyster, which are the results of his untiring devotion to duty.

Mr. A. E. Hefford succeeded the late Mr. Ayson as Chief Inspector of Fisheries. Mr. Hefford's report on his work as Fisheries Expert for the year is appended, together with the report of the Chairman of the Board (Hon. G. M. Thomson, M.L.C.) on the Portobello Marine Fisheries Investigation Station.

Conclusion.

In conclusion, I desire to express my appreciation of the manner in which members of the staff have performed their official duties. Their co-operation has made it possible to successfully carry out the varied activities of the Department, and has been the means of maintaining the efficient conduct of business.

G. C. Godfrey, Secretary.

FISHERIES.

Sir,— 26th July, 1927.

I have the honour to submit the following report upon my work as Fisheries Expert to the Marine Department for the year 1926–27.

My attention during the year has been given to matters of departmental routine, to the gathering of general information as material for a report on the condition of the fisheries as a whole, and to certain special subjects to which further reference is made below.

The following places were visited: Russell and the Bay of Islands; Whangarei; Auckland; Thames and the Hauraki Gulf; Muriwai Beach; Tauranga and Whakatane; Foxton and the Manawatu River; Picton; Blenheim and the River Wairau; Kaikoura; Christchurch; Lyttelton and the River Waimakariri; Temuka and the River Opihi; Greymouth; Hokitika and rivers in north Westland; Hakataramea Hatchery and the Rivers Waitaki and Arahura; Dunedin, Port Chalmers, and Portobello Fishery Investigation Station; Kaitangata and Clutha River; Invercargill, Bluff, and Stewart Island; Te Anau Hatchery, and Rivers Upukororo and Eglinton; Lake Manapouri and Home Creek; Tuatapere and the lower course of the River Waiau.

Fishery Statistics.

Our records in the past have given only annual totals of quantity of fish landed and the approximate value of the same without reference to separate kinds of fish or the time employed and the number or kind of vessels actually engaged in the fishing. Such records can throw little or no light upon the condition of the fisheries or the progress of the industry. With regard to the Hauraki Gulf fisheries, this year a commencement has been made to obtain more complete and informative returns. The skippers of all classes of fishing-vessels at Auckland and Thames have been provided with log-books in which to enter particulars as to the kinds and quantities of fish caught each voyage. The data so obtained will provide material for fishery statistics of real value and significance, and the method should be extended to other fishing-ports, with suitable modifications where necessary, as soon as the required organization can be made with regard to staff for the collection and collation of the statistics.

Snapper Observations.

The task of obtaining measurements of snapper caught by vessels fishing in the Hauraki Gulf has been continued with the help of the Inspectors of Fisheries stationed at Auckland. Up to date the sample catches so measured make up a total of over twenty-five thousand fish. It is believed that the data so obtained will yield a reliable representation of the size composition of the snapper stocks in the waters fished. Their significance would be better shown if similar measurement data were available from former years, when the fisheries were nearer their virginal condition. It is proposed to obtain similar data from other fishing-grounds as soon as facilities for this work are available.

For the past two years the conditions of the Hauraki Gulf fisheries has been a subject of considerable controversy between parties practising different methods of fishing. By far the greater proportion of the fish landed of late years has been caught either by the trawl or by the Danish seine, and these methods of fishing have been subject to general condemnation on the part of the set-net and line fishermen, and more particularly amateur fishermen, who now find that it is very difficult to catch fish in places where formerly it was present in abundance. It is suggested that depletion is due to "power" fishing—*i.e.*, to the operations of the aforesaid trawlers and Danish-seiners. In the absence of definite statistics it was difficult to judge the true position or to say precisely how the fishing-conditions in 1926 compared with those in, say, 1923; but on gathering evidence from whatever sources were available there was no avoiding the conclusion that considerable depletion had taken place.

As a measure to diminish the danger of overfishing, special regulations were brought in during the spring of 1926, by which net fishing by trawl, Danish seine, or any other kind of net was prohibited in that part of the Hauraki Gulf which includes the chief spawning-grounds of the snapper from the 15th November until the end of January (the period in which the spawning season of this species normally occurs). The areas in which Danish-seining is entirely prohibited were extended to include the western portion of Tamaki Strait and the whole of the Coromandel Harbour. Moreover, in order to obviate the capture of undersized fish, an evil which had resulted from the use of the European patterns of Danish-seine first introduced, a new mesh regulation was brought in by which the mesh in the cod end of the Danish-seine was enlarged to 4½ in. The effect of this closure of the schooling-grounds to power fishing-vessels was to induce the trawlers to go farther afield for their catches. Some of the Danish-seining boats stopped working entirely and their crews devoted themselves to the old method of line fishing for snapper, and in most cases made fairly good catches on the schooling-grounds. Others continued to fish outside the restricted area. The result of the restriction was to save very considerable quantities of fish which would otherwise have been destroyed before they had time to shed their spawn; and there is no doubt but that this will be of appreciable benefit to the future supplies, though, of course, the return will not be seen in the case of the increased factor of propagation for some three or four years. The embarrassment caused to the industry can be said to be negligible. The present conditions of the snapper-fishery in the gulf are such that I have no hesitation in recommending not only that the same closure be applied during the coming schooling season, but that the period be extended to include from the 15th November to the 15th of the following February, and the closed area extended to a line from Rodney Point to Cape Colville. I would further recommend that the area in which trawling is entirely prohibited be extended so as to keep a greater part of the Hauraki Gulf free from the operations of these vessels, and that the waters of Tamaki Straits be closed against Danish-seining, which, although not so destructive to undersized fish as trawling, is too intensive a method of fishing for such narrow waters. For this reason also it is recommended that the prohibition of Danish-seining should be enforced in Whangarei Harbour (above the Heads), Whangaroa Harbour, and Kaipara Harbour.

Meanwhile I would recommend that the Department should undertake Danish-seining investigations in all parts of the Hauraki Gulf, to determine with more precision than can be obtained by any other method of gaining information the degree of productivity of the different fishing-grounds and the exact nature of the catches made by this method of fishing, so that adequate information may be secured not only as as to its productiveness, but also as to its destructive effects. Such a scheme of investigation would also provide for observations upon the feeding habits of fishes and other marine biological phenomena which have an important bearing upon fishery problems.

Oysters.

The services of Mr. M. W. Young, the Marine Biologist of the Portobello Fishery Investigation Station, having been made available, a commencement has been made upon the investigation of the Foveaux Strait oysters. During the 1926 season Mr. Young made observations and measured a large number of oysters on commercial oyster-dredgers, and in January, 1927, the steam oyster-dredger "Despatch" was chartered for ten days for a special survey of the grounds in the Foveaux Strait. Unfavourable weather curtailed the work in the open strait in the first three or four days, but the opportunity was taken to dredge in the sheltered waters of Port Adventure, and to examine the rock-oyster beds which occur there. The catches, made with a 10 ft. dredge, were recorded with regard to position, quantity, and duration of haul. Samples were measured and examined as to condition. Records were made of the general fauna of the oyster-grounds, and water temperature and salinity observations were made. The detailed results of these investigations are given in a separate report prepared by Mr. Young.

So far as possible the rock-oysters of the Hauraki Gulf beds have been kept under observation during the year, a series of biological records having been kept by Captain C. Daniel in continuation of observations which I had commenced in the summer of 1925–26. These records show sex, sexual condition, and state of nutrition of samples of oysters taken from different beds at monthly intervals.

Arrangements are now being made whereby not only the biological condition of the oysters may be kept under frequent observation, but also the physical conditions, such as temperature of water, sunshine, and water-movements, which are factors affecting the growth, fattening, and reproduction of these molluscs.

Toheroas.

In August, at the request of the local acclimatization society, about one thousand toheroas of various sizes were successfully transplanted from the Muriwai Beach to the Papamoa Beach, near Tauranga. The fact that a larger number was not transferred was due to a wash-out on the road to Muriwai Beach, which prevented access by car to the beach. It is by no means certain that this part of the Bay of Plenty is suitable for toheroas, and it is open to question whether the place where the toheroas were liberated was the most promising habitat in the neighbourhood of Tauranga. Until more is known about the habits and vital requirements of this species it is doubtful whether there is anything to be gained from further plantings. While on this tour a visit was paid to Whakatane, where the toheroa species (*Mesodesma ventricosa*) was found naturally occurring, though not in very considerable quantities. These shell-fish have been utilized for food by local residents, but have been generally regarded as a different species of bivalve from the toheroa.

As the opportunity occurred samples of toheroas from different beds have been measured with a view to obtaining a census of the relative abundance of the different size groups (which may be regarded as approximately representing age groups). In this way it is sought to obtain a picture of the relative abundance of the different generations comprising the stock, and hence an idea of the natural productivity (or survival) of the species in different years. What it has been possible to do so far in this direction must be regarded as preliminary and tentative. The method requires to be applied on a larger scale to produce conclusive results. If and when facilities and staff can be provided to extend this work, and to combine with it a scientific survey of the principal toheroa-beds, we shall obtain the knowledge which is essential as a basis for the rational conservation and development of these valuable natural resources. Up to the present the north Kaipara beds have received most attention. From observations made at the beginning of 1925, and again in the past year, it appears probable that these molluscs grow approximately 1 in. every year. The preponderant age-group in 1926 was the three-year-old (averaging 3 in.). This year the same group shows a marked preponderance, being now four years old and averaging 4 in. in length. Consequently on these beds there is an abundance of toheroas of the best marketable size. The younger age-groups are not so well represented, and this finding may be correlated with the prolific "setting" of young toheroas which took place four years ago, and was remarked upon by local observers, who report that nothing like so good a spawning season has been noticed since that year. All indications tend to show that the propagation of toheroas is subject to very considerable variation, but that it is possible to anticipate fat and lean harvest seasons for three or four years in advance, and to regulate exploitation accordingly.

Whitebait.

The fisheries which are carried on for the capture of the ascending shoals of young *Galaxias attenuatus* in numerous rivers of both Islands have hitherto received very little departmental attention, except in those places where whitebaiting occupies an important position among other industrial fisheries. Even for such places the annual quantities landed in past years are not on record, the value of the statistics having been nullified by the practice of combining all sorts of fish into one total weight. There is therefore no statistical evidence as to whether the abundance of whitebait is being maintained or not; but from what can be gathered in a general way it is evident that, except in rivers which are remote from populated areas, there has been a considerable diminution in the abundance of these fish of recent years. In some rivers which are now in close proximity to urban populations it would appear that the whitebait-fisheries have been reduced to a mere vestige of what they were in former times. Attention has been drawn to the necessity for measures of conservation by acclimatization-society officials, who from their local knowledge are in the best position to observe the conditions and to judge the significance of their trend. At the 1926 conference of the New Zealand Acclimatization Societies' Association, the following remit was passed: "That the time has arrived to restrict the period wherein whitebait can be taken to two and a half months per season." The chief difficulty about carrying out this recommendation is that the season when whitebait run is subject to variation in different rivers, and in the same river it may be early one year and late another year. It must be recognized, however, that it is time to pay special attention to the conservation of this most important of all native fresh-water fishes. It provides a much appreciated article of food—though nowadays frequently more of the nature of a luxury than a food for the people—and affords the means of earning a livelihood to a considerable number of people. Preserved in cans, it constitutes an article for export for which there is an increasing demand; and, finally, *Galaxias attenuatus*, both in its fry stage as whitebait and in its adult form, "minnow" (or inanga), provides an important element in the food of acclimatized trout. The view has been put forward that the rapid growth and fine condition of the trout in New Zealand rivers have been very largely due to this item in their food-supplies, and that the superiority in size and abundance of the brown trout of a generation ago was in consequence of the abundance of whitebait and inanga food which was then to be found in all the rivers. This reasoning doubtless holds good to a considerable degree, especially in certain of our rivers, but it does not cover the whole of the problem. The subject of the relation of acclimatized fish to their indigenous food-supplies is one of great importance, but in New Zealand it has scarcely been touched upon up to the present time although two biologists have made brief essays in this field of research. Problems of this sort, however, cannot be solved by investigations of brief duration, but require a more comprehensive and continuous scheme of work than has hitherto been possible.

The longer this class of fishery work is neglected the greater will be the difficulties to be faced when it commences to be taken in hand. A praiseworthy effort has been made during the year by the Wellington Acclimatization Society for the encouragement of scientific research in connection with fresh-water fisheries. A grant of £400 per annum for three years has been guaranteed to the Victoria College for the purpose of founding a post-graduate research fellowship for the study of the conditions in the rivers of the district. It is a matter for regret that so far no suitably qualified candidate has presented himself.*

To return to the whitebait: Measures for its conservation must be based on an understanding of the life-history of the species, about which very little is known at the present time. More especially we require to know its spawning-places and the extent of its migration. It is of importance to ascertain, for instance, whether the whitebait which run up a particular river are derived from parent fish which inhabited the same river, or whether they may be derived from the stock of some other river. It has been stated that shoals of whitebait are to be found in the open sea; but this needs scientific confirmation. Preliminary arrangements have been made for the investigation of these problems of whitebait biology and it is expected that in the course of the current year some useful light may be thrown upon this question.

The problem of better regulation of fishing operations has also received attention, especially with regard to the Hokitika fishing, where the present position is far from satisfactory, and involves the local Inspector in an undue amount of trouble and responsibility. It would appear that fresh legislation will be necessary before any fundamental inprovement can be effected.

Quinnat Salmon.

The trapping of quinnat salmon to be stripped for the hatchery at Hakataramea was carried out on the Hakataramea and Ahuriri Rivers. Heavy floods and debris rendered operations in the latter river extremely difficult, and only thirty-one fish were secured. The Hakataramea, however, was favoured by an unusually good run, and 594 fish were captured (285 males and 309 females), making a total of 625 fish, from which 1,076,000 ova were obtained. The eggs were of especially good quality this season. 100,000 were sent to Tasmania, 750,000 were used for the stocking of the Wairau River, and the balance hatched out and liberated at Hakataramea.

The quantity of fish cured at Hakataramea for marketing totalled 1,257 lb., the value being £52 15s. 10d. Though the supply was greatly in excess of the previous year's total of 292 lb., the demand was such that much more could have been marketed.

As foreshadowed in last year's report, the issue of salmon-netting licenses for the Waimakariri River was limited to four, and it was decided to give precedence to whole-time professional fishermen in preference to people who have other whole-time occupation. The total number of salmon reported as caught by the four license-holders was 767, having an aggregate weight of 8,542 lb., the average weight being approximately 11 lb.

In the Rangitata one netting license was taken out, but only three fish, of 52½ lb. total weight, were caught. It is clear that the lower reaches of the river are unsuitable for netting operations, owing to the roughness of the bottom and the rapid flow of the water.

Twenty-three returns received from holders of licenses for selling rod-caught quinnat salmon show that catches by angling ranged from sixty-eight fish per rod downwards, the average weight of the fish being 12½ lb.

The best fishing appears to have been obtained in the Rangitata. The season opened most promisingly, good catches being made in February and March, but towards the end of the latter month floods and discoloured waters became prevalent, and fishing of all kinds was considerably impeded and practically prevented in most of the rivers for the remainder of the season.

It is impossible to estimate the numbers of fish which ran up to spawn, but from all reports it would appear that a very satisfactory spawning took place, more especially in the Rangitata.

For the purpose of ascertaining the age, rate of growth, and other biological conditions of quinnat salmon running into the Waitaki, scale-samples have been collected from fish captured in connection with the hatchery operations at Hakataramea. This collection can represent only a very partial sample of the total run of quinnat salmon for the year. It is hoped that next year facilities will be available for the collection and study of a more comprehensive series, and that arrangements may be made for the examination of a whole season's catch of fish. The important conclusions to be drawn from the examination of scale-samples may be gathered from the report received last year from Professor Gilbert, Stanford University, California, who made a study of a small collection obtained from Canterbury rivers.

Atlantic Salmon.

The hatchery operations for the 1926 season were adversely affected by the occurrence of heavy floods in the Upukororo River, in which the salmon-trap for the capture of spawning fish was placed. The total number of fish caught for stripping was 428, of which 204 were males and 224 females. From the Te Anau Hatchery 612,000 ova were distributed. 430,000 were sent to the Kakahi hatchery, and liberated in the Wanganui River and tributaries, 150,000 were hatched out at Pembroke and liberated in the upper Clutha, and the balance were hatched and the fry liberated in streams flowing into Lake Te Anau.

* Since this was written the fellowship has been granted to Captain J. S. Phillips, who has now commenced investigations upon the conditions in some of the trout-waters of the Wellington District.

The Te Anau fishing season was probably the most successful which has yet been experienced for this species. The capture of between seven hundred and eight hundred fish has been reported for Lake Te Anau and the Upukororo River, the majority of fish, as usual, being taken in the lake near the outlet of the Waiau River. Several Atlantic salmon were reported to have been taken in the vicinity of the mouth of the Waiau by trout-fishermen belonging to Tuatapere.

During the year new regulations were gazetted with respect to the taking of Atlantic salmon in the Southland Acclimatization District.

With the steady yearly increase in the number of Atlantic salmon caught in Lake Te Anau and associated rivers, there can be no doubt as to the establishment of this species being the result of the Department's importation of ova some sixteen to eighteen years ago. It may be recalled that the fry originally planted out in the river Upukororo or in Lake Te Anau were derived from hatching of the ova obtained from the following sources: Canada (150,000 ova, imported in 1908); Scotland (500,000 ova); England and Wales, (175,000 ova); River Rhine (340,000 ova, imported in 1909); England and Wales (400,000 ova); Germany (Rhine) (600,000 ova, imported in 1911).

There are many problems not only of scientific interest but of practical importance to be solved regarding this species. One of them, and by no means the most difficult, is as to the characters by which the species may be most conveniently and unmistakably recognized. This question has assumed a special interest from two distinct aspects. In the first place, the introduction into the upper waters of the River Wanganui of the fry of Atlantic salmon hatched out at the Department's hatchery at Kakahi from ova obtained from the River Upukororo since the year 1923 is due to produce results in the form of adult salmon which should be returning to spawn at the age of three to four years. One fish suspected to be a salmon was forwarded from the Wanganui in October, 1926. Careful anatomical examination proved it to be not a salmon, but a sea-run trout (which would be termed in England a sea-trout). The difference between this species (*S. trutta*) and the closely related *Salmo salar* (the Atlantic salmon) is not always easily detected by the superficial examination of a single specimen, though if a number of both species were observed side by side there would be little difficulty in separating the one species from the other.

An increasing amount of interest is being taken in our Atlantic salmon by students of and writers on scientific or semiscientific salmon problems in Britain. They have been handicapped—as indeed, we have—by lack of reliable information. For several years all the material evidence they have had to go upon has been what could be obtained from the examination of odd samples of scales from New Zealand salmon. When subjected to a scientific investigation a collection of scale-samples can be utilized to throw considerable light upon the life-history of the fish from which they are derived. In Europe, for example, it has been convincingly demonstrated that the age, the duration of fresh-water life and of sea life, the rate of growth year by year, and the incidence of sexual maturity of a salmon can be deduced with a high degree of accuracy by examination of the markings on its scales. The "reading" of New Zealand salmon-scales has been a matter of peculiar difficulty and uncertainty for English salmon-scale experts. Their difficulties have been greatly increased by the fact that insufficient information as to the habits of the New Zealand salmon has accompanied the scale-sample. They have, in fact, been provided with inaccurate information. For example, scales from fish taken in Lake Te Anau at the River Waiau *outlet* have been described as coming from the "*mouth* of the Waiau." The English student would therefore naturally assume that the scale belonged to a sea-run fish, whereas the probability is that the salmon from which it was taken had remained and continuously fed in fresh water. The markings on a salmon's scale are simply a register of growth, or more strictly speaking, they indicate variations in rate of growth. The scale of a British salmon reveals well-marked zones of varying growth-rate which correspond to the, generally speaking, quite clearly distinct phases of accelerated and retarded growth which the fish undergoes with change of season. The most conspicuous demarcation is that between the slow growth which the young salmon makes while inhabiting its natal stream and the greatly augmented growth which takes place after it has migrated into salt water. The English scale-reader would naturally be confronted with a very unusual picture when looking at a New Zealand salmon-scale from a fish which had never entered the sea, and, moreover, had lived in the lake even in its parr stage.

The question arises as to whether any appreciable proportion of the New Zealand Atlantic salmon migrate to sea. It is understood that a certain number have been caught in the tidal waters near the mouth of the Waiau, in the Tuatapere neighbourhood, as well as in the River Wairaurahiri, which flows into the sea twenty miles or so from the Waiau mouth, which must have been to sea, in which case it is very probable that their scales would show markings of a different character from those of the fish which remain in fresh water. But hitherto no scales from these sea-run fish have been obtained. All that can be said at present is that there is a high degree of probability that the majority of the fish caught in Lake Te Anau have never left fresh water. Their habits, in fact, resemble those of lake trout, which is sufficient to account for the close resemblance of their scale-markings to those of trout. It has, indeed, been suggested, chiefly on the basis of evidence from scale-structure, that the Atlantic salmon of Te Anau may not be a pure species, but may have been hybridized with the brown trout. To clear up this question of specific identity a few Te Anau salmon have been examined with regard to certain structural characters, so that the points distinguishing them from trout may be elucidated.

Quite definite results have been obtained, which in my opinion prove the purity of the *S. salar* strain. The details cannot be given here, but when further data have been obtained the results will be embodied in a separate report. Specimens have also been sent, thanks to assistance rendered by the president and other officials of the Southland Acclimatization Society, to England for examination by the biologist of the Salmon and Trout Association, and the British Museum ichthyologists, and identified by these authorities as *Salmo salar*.

Of the stripped salmon marked with distinguishing tags during the hatchery season of 1925, two were recaptured during the 1926–27 season. The particulars are as follows: MD 17: Liberated in Upukororo River, June, 1925; recaptured in Lake Te Anau on 18th December, 1926. On liberation its weight was 5 lb. and its length 25 in.; on recapture its weight was 6 lb. and its length 26 in. MD 387: Liberated in Upukororo River, July, 1925; recaptured in Upukororo River, 28th February, 1927. On liberation its weight was 5 lb. and its length 24 in.; on recapture its weight was 5½ lb. and its length 26 in.

One must not generalize too sweepingly from the indications given by only two fish; but the results from these two cases indicate that very little growth is made by a Te Anau salmon after it has attained maturity. It would appear that the nourishment obtained has been largely utilized in the development of the reproductive organs for the subsequent spawning. It points to a deficiency of food-supplies as compared with the food-supplies available to this species in its European habitat. It is most probable that these two fish had not left the fresh water. Now, the acclimatized quinnat salmon of Otago and Canterbury which do go to sea make very rapid growth, which demonstrates that suitable salmon-food exists in the sea off these coasts.

The lesson of this is that if the establishment of the Atlantic salmon is to be permanently satisfactory they must be induced to migrate to sea and feed in salt water, which is in fact their ancestral habit. The Upukororo breed, generally speaking, has apparently been satisfied with the inland fresh-water "sea" of lake Te Anau. The transplantations of Atlantic-salmon fry to the Wanganui River, made each year since 1923, will afford a test as to the possibility of producing a sea-feeding stock of salmon, for there they will have no lake in which they may be tempted to linger. It is early yet to gather any evidence in the shape of adult salmon from this Wanganui River acclimatization experiment, though there should have been four-year-old fish running in the past season. There is yet another open question: Is the Atlantic salmon species as well adapted to escape the many dangers of the open sea as is the Pacific quinnat species? It is well known that a large proportion of the quinnat salmon show scar-marks indicating attacks by predaceous marine fishes or porpoises, which were partially successful. But the quinnat salmon in New Zealand waters are probably at least twenty times as numerous as the Atlantic salmon, and thus sheer numbers at the outset would ensure a "run" of survivors. There is no need to pursue the discussion further, but one is forced to the conclusion that the problem of salmon acclimatization in New Zealand is by no means disposed of by the successful transport of ova and the satisfactory production of fry from hatchery operations. There are other factors which condition the growth, reproduction and survival of the salmon upon which light must be thrown if the work of acclimatization is to be carried beyond the stage of planting out the fry and then hopefully leaving the matter in the hands of nature and the fishermen. Culture implies intelligent control, and this involves the understanding of the conditions, which can only be attained by systematic investigation.

I have, &c.,

The Secretary, Marine Department, Wellington. A. E. Hefford.

MARINE FISHERIES INVESTIGATION STATION.

Sir,— Portobello, Dunedin, 26th May, 1927.

I have the honour, on behalf of the Board in control of the above station, to forward the following report of its operations during the year ending 31st March, 1927.

The station was originally founded to facilitate the introduction of foreign food fishes and crustaceans, as contemplated by successive Governments at the close of last and the early part of this century. This work was carried on until 1913, when the last shipment of European lobsters, crabs, and turbot was received from Britain. The intervention of the Great War suspended all such arrangements, and the resulting dislocation of shipping precluded any immediate return to previous conditions. Recently, however, the Board has communicated with Sir James Parr with the object of ascertaining whether it is possible to resume shipments of Crustacea, and it is hoped that the result of the inquiries will be favourable to the proposal.

Oysters.

As stated in last year's report, the services of Mr. M. Young, biologist, have been transferred to the Marine Department. That gentleman, while still controlling the biological and hydrographical work of the station, has devoted a large portion of his time throughout the past year to an investigation of the Foveaux Strait oyster-beds. This work, carried on in co-operation with and under the supervision of Mr. A. E. Hefford, is the subject of a special report to the Department. Towards the end of October a large quantity of oysters was brought to the station for observational work. Part of these were placed on a rack in one of the ponds, while the remainder were kept in one of the inside tanks. In spite of the very shallow water, the great growth of Algæ in the pond—a matter very difficult to contend against—and the generally adverse conditions, the oysters have done well. One spawned in a tank in January, and the spat attached themselves to the glass sides in large numbers. By the end of March these small oysters had attained a diameter of 2 mm. This observational work is fully dealt with in Mr. Young's separate report.

Dr. Malcolm, Professor of Physiology in Otago University, has continued his researches on the food values of fishes, and has also been engaged on a research on the seasonal variations in the composition and food value of the Foveaux Strait oysters. He has been assisted by Mr. Young in connection with the supply and grading of his material.

Toheroas.

In connection with an investigation by Messrs. Hefford and Young of the toheroa-beds on the Riverton Beach (Southland), a number of these molluscs have been under examination at the station. They have been supplied with tow-nettings to furnish the food necessary for their sustenance. It has proved difficult, however, to imitate the natural conditions in which they live on an open surf-exposed beach, and at the end of eight months only a small proportion have remained alive.

Sprats.

The occurrence of these fish on the coast of Otago has been most erratic throughout the year. They have been reported by fishermen on several occasions as having been seen in various localities, chiefly in the vicinity of Cape Saunders. Mr. Adams states that the shoals were probably of small size, and did not remain for any length of time on the surface. He reports that "On several occasions after receiving a report from fishermen as to the position of these small fish we have lost no time in going to the spot where they were last seen. We have, however, always arrived to find that there were no signs of sprats on the surface, and, with the exception of those taken from the stomachs of other fishes, no others were seen. Sprats were plentiful on the bottom during June and July. The stomachs of all fish caught off Cape Saunders during these months contained large quantities of them. When trawling off Hayward's Point a small number of sprats was caught in the trawl net. On one occasion (in January) the lighthouse-keeper at Cape Saunders informed me by telephone that large quantities of sprats were being washed ashore. As there was a southerly gale blowing at the time, nothing could be done."

Hydrographic Work.

Owing to the exceptionally unsettled weather experienced during the greater part of the year, all work outside Otago Heads was much hampered, and the regularity of observational and collecting work was interfered with. Two fixed stations were selected early in the year, one at Cape Saunders and the other about two miles east of Otago Heads, and at these water-samples were taken as regularly as possible by Mr. Adams and handed over to Mr. Young, and temperatures were also recorded. Mr. Young took a further series of water-samples from the ponds previous to the oyster-transplantation experiment. Mr. Oliver, of the staff of the Dominion Museum, also collected a series of samples during the cruise of the "Tutanekai" to the southern islands, and at all stations temperatures were recorded. These samples have been titrated for salinity only, as there is no provision for full water-analysis at the station. Professor Inglis, of Otago University, kindly supplied the necessary standard solutions for testing salinity. The results of all these examinations form the subject of a special report by Mr. Young to the Department.

Drift Bottles.

Mr. Young reports: "A total of 252 drift bottles were liberated during the year. With the exception of a series liberated by Mr. Oliver on the southern-islands cruise, these bottles were cast adrift in the vicinity of Foveaux Strait. Captain Bollons liberated a series at the western extremity of the strait, and Mr. N. Beer, of Riverton, put out two small lots in the Centre Island area at the beginning of the experiment. The majority of the bottles were liberated either by myself or by members of the crew of the 'Despatch' on the oyster-beds. Returns are to hand from as far north as the estuary of the River Avon. The total number returned to date is 6 per cent., which, considering the nature and extent of the coast-line, is quite good. There is also a probability of some of the bottles liberated well off shore being retained by the ocean currents and never being cast up."

General Station Work.

Throughout the greater part of the past year, owing to the unsettled weather, the sea-bottom outside Otago Heads at a depth of 5 to 15 fathoms has been covered with a quantity of loose drift weed carried along the coast by stormy weather. Owing to this foul condition of the ground, less time has been spent in trawling than in previous seasons. A trawl was lost on one occasion when working in Blueskin Bay; the weight of weed proved too much for the net, which parted close to the boards, leaving only the otter-boards and chain to be lifted. In deeper water than 20 fathoms, well off shore, the ground was fairly clean, and, though flat fish were not plentiful, the catches taken by the large trawlers were larger than those recorded during the previous year. The Board's boat made hauls with the trawl on all suitable occasions from Papanui Head to Blueskin Bay, to a depth of 15 fathoms. Line fishing was carried out mostly in the vicinity of Cape Saunders, as a greater variety of fish is usually caught there than at any other part of the local fishing-grounds. Descriptions of all fish taken by trawl, seine, or line fishing, with locality and condition, were noted, and examination of all stomach-contents was carried out. Mr. Adams reports that "During the spring and summer months there was a marked absence of the minute pelagic life which is usually to be seen in large quantities both inside and outside of Otago Heads. The scarcity was more noticeable in the vicinity of Cape Saunders. Vast numbers of jellyfish of minute size are often to be seen during the summer months being carried north by the current, which, after passing the Cape, sweeps away from the coast. It is also a common

occurrence for whale-feed to occur in patches, sometimes extending for miles. The past year has, however, been an exception. Whale-feed, of small size only, made its appearance on the surface of the harbour for a few days in December, while outside the Heads only scattered specimens were met with during our visits to the off-shore fishing-grounds."

During the year a further series of tubes of tow-net material has been forwarded to the United States National Museum. Most of the collection of marine fauna made during winter in Foveaux Strait has been handed over to the Otago University Museum, where it has in part been gone through for further examination, and this was augmented by a quantity of material obtained during the summer months. Specimens of local hydroids and ascidians have also been handed to the Museum. Mollusca from all sources have been supplied to Mr. H. J. Finlay, and Crustacea to Professor Chilton.

Mr. Adams reports that "The supply water for the observation-tanks has, since September, been pumped up to the reservoir by a 2 h.p. motor, which is capable of lifting the same volume of water as the oil-engine. The reduction in cost of maintenance is very considerable. The average cost for power used by the motor was 5s., whereas the cost of running the oil-engine, for petrol alone, was never below £1 5s. per month. The station was connected to the electric power from Portobello during the latter part of August. The oil-engine was given a thorough overhaul, and is ready to be put into commission again should occasion demand. All the water-supply pipes from the heater to the observation-tanks were renewed. This line of pipes had been in use since the station was built (1904), and had become in places almost rusted through. The pipes leading from the reservoir to the heater were renewed some three years ago, and on being disconnected for cleaning were found to be in good condition and almost free of rust. Since the pipes were renewed the supply of water to the tanks has increased considerably, as has the pressure."

Mr. Broadley's duties as Inspector of Fisheries for the Otago District have necessitated his absence on visits of inspection from Moeraki to the Nuggets, and also regularly to the Dunedin Fish-market. From the 1st April to the 6th May of last year he was engaged on behalf of the Department in netting quinnat salmon at the mouth of the Clutha River.

The station has now been connected by telephone to Port Chalmers, which has proved not only a great convenience but also a great saving of time. The buildings, paths, launch, and dinghy are all in first-class order.

I have, &c.,

GEO. M. THOMSON, Chairman.

Hon. G. J. Anderson, Minister of Marine, Wellington.

TABLES.

STATEMENT OF REVENUE FOR THE YEAR ENDED 31ST MARCH, 1927, IN COMPARISON WITH THE TWO PREVIOUS YEARS.

Item.	1924–25.	1925–26.	1926–27.
	£ s. d.	£ s. d.	£ s. d.
Shipping Branch—			
Light dues	80,467 6 2	82,875 6 3	81,064 9 8
Engagement and discharge of seamen, &c.	3,420 14 0	3,664 15 3	3,124 13 3
Survey of ships	5,010 0 4	6,137 16 11	5,371 7 8
Examination fees	417 5 0	429 10 0	379 5 0
Miscellaneous receipts	1,175 6 3	823 14 3	505 18 3
Harbours—			
Port dues, &c.	842 18 7	870 11 8	920 17 1
Foreshore revenue	4,393 19 1	5,704 2 4	5,988 17 4
Inspection of machinery—			
Inspection fees	17,256 2 10	18,001 19 4	19,523 5 3
Examination fees	732 18 0	657 5 0	556 4 0
Miscellaneous receipts	..	3 9 6	8 3 0
Fisheries—			
Net profit from sale of oysters	2,139 10 1	2,517 3 11	1,347 11 7
Fishing-boat license fees, &c.	365 4 9	505 2 6	443 17 5
Rental of toheroa areas	300 0 0	300 0 0	300 0 0
Sale of trout-ova, &c.	112 9 9	70 2 10	185 18 4
Government steamers—			
Fares, freights, &c.	4,793 0 10	3,185 17 8	5,134 9 6
Ross Sea Dependency—			
Royalties on whale-oil	200 0 0	1,720 12 6	2,921 5 0
Miscellaneous revenue—			
Sale of charts, books, and forms	1,263 2 6	1,447 1 4	1,336 4 4
Sale of "New Zealand Nautical Almanac"	129 13 3	146 16 4	137 6 4
Rents of buildings and reserves	235 9 8	207 17 8	199 13 0
Miscellaneous receipts	67 16 1	16 6 6	20 8 6
Totals, general accounts	123,322 17 2	129,285 11 9	129,469 14 6
Westport Harbour Account	50,378 11 0	57,539 12 11	62,976 13 10
Totals	£173,701 8 2	£186,825 4 8	£192,446 8 4

N.B.—The figures quoted for 1926–27 are subject to audit.

SUMMARY OF EXPENDITURE FOR THE YEAR ENDED 31ST MARCH, 1927, IN COMPARISON WITH THE TWO PREVIOUS YEARS.

Branch.	1924–25.	1925–26.	1926–27.
	£ s. d.	£ s. d.	£ s. d.
Head Office	9,292 7 4	9,626 13 9	10,007 16 10
Harbours	3,921 2 11	4,295 13 3	3,938 6 0
Lighthouses	26,823 6 5	24,220 2 2	24,157 5 4
Meteorological	5,863 19 2	6,124 12 6	..
Mercantile marine	17,896 11 0	24,626 5 5	25,021 18 8
Inspection of machinery	26,124 16 11	20,793 2 9	22,288 13 8
Fisheries	2,890 13 10	3,179 2 6	3,385 5 11
Government steamers	21,837 5 4	24,309 19 11	22,605 0 4
Miscellaneous services	1,822 0 5	2,189 17 10	2,861 17 4
Grants and subsidies	150 0 0	540 0 0	290 0 0
Depreciation	8,844 18 9	8,862 19 6	9,032 5 3
Interest on capital	17,737 15 7	17,811 11 0	18,005 6 0
Totals, general accounts	143,204 17 8	146,580 0 7	141,593 15 4
Westport Harbour Account	44,666 14 0	51,909 4 11	52,769 12 6
Totals	£187,871 11 8	£198,489 5 6	£194,363 7 10

N.B.—The figures quoted for 1926–27 are subject to audit.

TABLE SHOWING THE NUMBER OF SEAMEN ENGAGED AND DISCHARGED IN NEW ZEALAND, AND THE FEES COLLECTED, FOR THE YEAR ENDED 31ST MARCH, 1927.

Port.	Engagements and Discharges, Foreign and Intercolonial Trade.				Engagements and Discharges, Home Trade.				Total Engagements.		Total Discharges.		Grand Totals.	
	Engagements.		Discharges.		Engagements.		Discharges.							
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Auckland	2,867	272 0 0	3,081	298 19 0	2,739	212 5 0	2,527	208 15 0	5,606	484 5 0	5,608	507 14 0	11,214	991 19 0
Dunedin and Port Chalmers ..	828	75 6 0	667	66 2 0	564	50 17 0	494	43 19 0	1,392	126 3 0	1,161	110 1 0	2,553	236 4 0
Gisborne	8	0 14 0	20	1 15 0	174	13 16 0	179	13 12 0	182	14 10 0	199	15 7 0	381	29 17 0
Greymouth	31	3 2 0	23	2 6 0	25	1 16 0	30	2 6 0	56	4 18 0	53	4 12 0	109	9 10 0
Hokianga	1	0 2 0	..	..	..	..	1	0 2 0	1	0 2 0	1	0 2 0	2	0 4 0
Hokitika	..	..	..	..	7	0 4 0	..	..	7	0 4 0	..	..	7	0 4 0
Invercargill	30	2 18 0	29	2 16 0	25	1 6 0	22	1 0 0	55	4 4 0	51	3 16 0	106	8 0 0
Lyttelton	477	47 14 0	482	47 17 0	785	61 12 0	837	64 5 0	1,262	109 6 0	1,319	112 2 0	2,581	221 8 0
Napier	80	7 9 0	91	8 9 0	416	30 6 0	425	32 4 0	496	37 15 0	516	40 13 0	1,012	78 8 0
Nelson	12	1 4 0	4	0 8 0	714	55 10 0	704	53 14 0	726	56 14 0	708	54 2 0	1,434	110 16 0
New Plymouth	37	3 12 0	29	2 14 0	66	5 5 0	77	5 14 0	103	8 17 0	106	8 8 0	209	17 5 0
Oamaru	2	0 4 0	2	0 4 0	4	0 8 0	1	0 2 0	6	0 12 0	3	0 6 0	9	0 18 0
Onehunga	..	..	..	..	403	34 6 0	389	32 18 0	403	34 6 0	389	32 18 0	792	67 4 0
Patea	..	..	..	..	13	0 13 0	13	0 13 0	13	0 13 0	13	0 13 0	26	1 6 0
Picton	27	3 1 0	26	2 19 0	14	1 8 0	10	1 0 0	41	4 9 0	36	3 19 0	77	8 8 0
Russell	2	0 4 0	1	0 2 0	..	..	..	..	2	0 4 0	1	0 2 0	3	0 6 0
Tauranga	..	..	..	..	14	1 6 0	13	1 4 0	14	1 6 0	13	1 4 0	27	2 10 0
Thames	12	1 2 0	12	1 2 0	..	..	..	..	12	1 2 0	12	1 2 0	24	2 4 0
Timaru	16	1 12 0	12	1 4 0	34	3 8 0	28	2 16 0	50	5 0 0	40	4 0 0	90	9 0 0
Wairau	..	..	..	..	50	1 10 0	49	1 10 0	50	1 10 0	49	1 10 0	99	3 0 0
Wanganui	12	1 4 0	12	1 6 0	139	9 13 0	129	8 18 0	151	10 17 0	141	10 4 0	292	21 1 0
Wellington	4,522	408 4 0	4,634	416 0 0	1,907	166 16 0	1,870	165 18 0	6,429	575 0 0	6,504	581 18 0	12,933	1,156 18 0
Westport	36	3 6 0	39	3 10 0	95	7 18 0	106	8 16 0	131	11 4 0	145	12 6 0	276	23 10 0
Whangarei	..	..	1	0 2 0	..	..	..	..	..	..	1	0 2 0	1	0 2 0
Totals	9,000	832 18 0	9,165	857 15 0	8,188	660 3 0	7,904	649 6 0	17,188	1,493 1 0	17,069	1,507 1 0	34,257	3,000 2 0

TABLE SHOWING TOTAL COST OF MAINTENANCE (EXCLUDING INTEREST ON CAPITAL AND DEPRECIATION) OF NEW ZEALAND COASTAL LIGHTHOUSES FOR THE YEAR ENDED 31ST MARCH, 1927.

Name of Lighthouse.	Salaries and Wages.	Oil consumed.		Stores and Maintenance.	Totals.
		Gallons.	Value.		
	£ s. d.		£ s. d.	£ s. d.	£ s. d.
Akaroa Head	493 18 3	672	50 7 8	211 17 9	756 3 8
Brothers	748 4 3	742	55 12 10	230 19 2	1,034 16 3
Cape Brett	804 15 6	711	53 6 8	322 16 2	1,180 18 4
Cape Campbell	525 9 8	664	49 16 5	216 1 2	791 7 3
Cape Egmont	488 15 0	619	46 8 10	68 17 8	604 1 6
Cape Foulwind*	140 2 6	249	18 12 9	2 5 7	161 0 10
Cape Maria	736 3 9	850	63 15 5	247 10 3	1,047 9 5
Cape Palliser	526 8 4	646	48 8 7	127 12 2	702 9 1
Cape Saunders	516 11 11	639	47 18 2	154 11 1	719 1 2
Castlepoint	490 1 8	631	47 6 6	84 16 7	622 4 9
Centre Island	613 7 9	636	47 14 7	189 14 5	850 16 9
Cuvier Island	708 11 11	809	60 13 8	208 15 2	978 0 9
Dog Island	591 1 2	782	58 12 3	231 16 10	881 10 3
East Cape	510 8 4	767	57 10 1	109 12 0	677 10 5
Farewell Spit	746 7 2	758	56 17 0	238 8 6	1,041 12 8
French Pass	260 1 8	197	18 5 0	56 14 9	335 1 5
Godley Head	503 8 4	802	60 3 0	321 8 4	884 19 8
Jack's Point	269 6 8	272	20 7 10	85 9 0	375 3 6
Kahurangi Point*	163 5 1	254	19 1 5	9 14 5	192 0 11
Kaipara Heads	863 13 2	970	72 14 10	300 13 7	1,237 1 7
Manukau Heads	500 16 6	629	47 2 9	178 0 10	726 0 1
Moeraki	491 1 8	659	49 8 6	87 9 10	628 0 0
Moko Hinou	750 10 4	770	57 15 7	173 1 0	981 6 11
Nugget Point	640 13 8	735	55 2 11	135 5 0	831 1 7
Pencarrow Head	594 16 4	741	55 11 3	143 8 6	793 16 1
Portland Island	695 10 7	841	63 0 11	316 7 10	1,074 19 4
Puysegur Point	715 11 5	743	55 14 9	256 9 0	1,027 15 2
Stephens Island	808 5 3	768	57 11 7	221 11 4	1,087 8 2
Tory Channel	100 0 0	182	21 19 10	10 0 3	132 0 1
Waipapapa Point	476 7 5	752	56 7 10	103 11 10	636 7 1
Automatic lights	..	..	..	1,022 11 3	1,022 11 3
Totals	16,473 15 3	19,490	1,473 9 5	6,067 11 3	24,014 15 11

* Converted to automatic during the year.

RETURN OF ESTATES OF DECEASED SEAMEN RECEIVED AND ADMINISTERED IN PURSUANCE OF THE PROVISIONS OF THE SHIPPING AND SEAMEN ACT, 1908, DURING THE YEAR ENDED 31ST MARCH, 1927.

Name of Seaman.	Balance to Credit of the Estate on 31st March, 1926.	Amount received.	Amount paid.	Balance to Credit of the Estate on 31st March, 1927.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Boyle, R.	..	40 13 10	40 13 10	..
Carroll, D.	4 14 0	..	4 14 0	..
Chesterman, W. H.	..	17 1 11	17 1 11	..
Corbett, W.	9 5 10	..	9 5 10	..
Cossar, B.	3 8 5	..	3 8 5	..
Dacey, T.	..	0 11 9	..	0 11 9
Diamond, H.	..	11 9 4	11 9 4	..
Edwards, A.	..	11 15 5	11 15 5	..
Engdahl, A.	13 16 10	..	13 16 10	..
Hamilton, W. T. W.	9 3 7	3 1 5	12 5 0	..
Hogg, W.	19 18 7	..	19 18 7	..
Hollam, A.	8 17 0	..	8 17 0	..
Jones, W.	..	121 7 10	121 7 10	..
Lewis, A.	20 14 3	..	20 14 3	..
Lowe, E.	..	46 15 8	..	46 15 8
Lundgren, V.	13 16 10	..	13 16 10	..
Measham, T. J.	..	75 0 2	75 0 2	..
Millett, D.	17 17 2	..	17 17 2	..
McIntyre, A.	11 8 7	..	11 8 7	..
Peterson, F.	32 1 7	2 8 6	..	34 10 1
Poi, J.	..	8 3 10	8 3 10	..
Pratt, Thos.	9 17 1	..	9 17 1	..
Ravenswood, R.	5 4 6	..	5 4 6	..
Rennie, L. J.	..	15 15 8	15 15 8	..
Richardson, H.	..	78 19 6	78 19 6	..
Riley, Chas.	..	4 15 6	4 15 6	..
Riley, John	8 9 0	..	8 9 0	..
Saunders, F.	6 10 3	..	6 10 3	..
Shepherd, A.	..	19 15 8	19 15 8	..
Small, Thomas	..	13 1 6	0 6 0	12 15 6
Thomassen, T.	..	17 12 4	11 5 0	6 7 4
Trapp, O.	..	15 19 4	..	15 19 4
Weir, John	..	6 17 0	6 17 0	..
Welsh, T. B.	..	8 7 0	..	8 7 0
Wold, H.	10 5 4	..	10 5 4	..
	205 8 10	519 13 2	599 15 4	125 6 8

RETURN SHOWING AMOUNTS RECEIVED PRIOR TO 1ST APRIL, 1926, STANDING TO CREDIT OF ESTATES OF DECEASED SEAMEN, AND FOR WHICH CLAIMS HAVE NOT BEEN PROVED.

	£	s.	d.
Alexander, S., late trimmer, s.s. "Moeraki"	0	9	2
Cliffe, F., late A.B., s.s. "Storm"	5	10	6
Darling, J., late deck hand, s.s. "Otea"	1	8	8
Fowler, C., late A.B., s.s. "Kokiri"	5	18	4
King, C., late A.B., scow "Herald"	8	5	2
Lancaster, J. A., late A.B., s.s. "Gale"	50	1	11
Manchin, J., late fireman, s.s. "Maori"	26	12	9
Morley, J., late fireman, s.s. "Waimarino"	1	11	10
Nelson, R., late fireman, s.s. "Ripple"	1	1	7
	£100	19	11

TABLE SHOWING THE NUMBER OF STEAM TRAWLERS, OIL-ENGINE TRAWLERS, AND OTHER VESSELS EMPLOYED IN LINE AND SET-NET FISHING, WITH THE NUMBER OF FISHERMEN EMPLOYED AND APPROXIMATELY THE TOTAL NUMBER OF PERSONS ENGAGED IN THE FISHING INDUSTRY, AT EACH PORT, FOR THE YEAR ENDED 31ST MARCH, 1927.

(Compiled from the returns given in the District Inspectors' reports.)

Name of Port.	Steam Trawlers.	Oil-engine Vessels.	Danish-seining Vessels.	Line and Set-net Fishing Vessels.	Number of Persons employed.		
					Fishermen.	Others.	Total.
Mangonui	..	..	..	5	8	..	8
Hokianga	..	..	..	17	24	..	24
Russell	..	..	..	57	60	150	210
Kaipara	..	..	..	61	80	20	100
Whangarei	..	..	..	8	18	23	41
Auckland (including Thames, Coromandel, and Manukau)	5	..	26	215	525	360	885
Tauranga	..	..	..	39	30	16	46
Whakatane	..	..	..	6	14	20	34
Opotiki	..	..	..	6	10	6	16
Gisborne	..	..	..	15	34	12	46
Napier	11	18	1	91	175	20	195
Kawhia	..	1	..	1	2	..	2
New Plymouth	..	..	..	21	45	28	73
Wanganui	..	..	..	10	4	..	4
Foxton	..	..	..	26	50	4	54
Wellington	1	..	..	105	180	115	295
Eastbourne	..	..	..	3	11	..	11
Picton	..	..	..	48	28	8	36
Blenheim	..	15	..	..	26	5	31
Nelson	..	3	4	75	112	8	120
Westport	1	8	..	11	24	6	30
Greymouth	..	..	..	10	12	5	17
Hokitika	..	..	..	1	1	10	11
Kaikoura	..	1	..	13	24	1	25
Kaiapoi	..	..	..	28	28	..	28
Akaroa	..	..	..	17	24	..	24
Lyttelton	2	..	..	12	25	3	28
Southbridge (Lake Ellesmere)	..	..	..	12	12	20	32
Timaru	..	..	..	24	28	8	36
Oamaru	..	..	..	9	14	..	14
Moeraki	..	..	..	26	35	..	35
Otago District	5	11	..	106	212	130	342
Invercargill	..	..	..	48	100	25	125
Bluff	..	..	..	56	133	20	153
Stewart Island (Half-moon)	..	..	..	30	77	9	86
Chatham Islands	..	..	..	..	..	..	..
Totals	25	57	31	1,212	2,185	1,032	3,217

TABLE SHOWING NUMBER AND SPECIES OF WHALES TAKEN ON NEW ZEALAND COAST, AND VALUE OF PRODUCTS.

Whaling-station.	Number of Whales taken.	Species.	Yield of Oil.	Quantity of Bonedust or Fertilizer.	Total Value.
			Tons.	Tons.	£
Whangamumu (Russell)	35	Humpback ..	150	35	3,350
Marlborough Sounds ..	43	Humpback ..	240	5	3,725
Totals ..	78	..	390	40	7,075

TABLE SHOWING THE VARIOUS KINDS OF FISH CAUGHT AND APPROXIMATELY THE TOTAL QUANTITIES AND VALUE OF FISH LANDED AT THE DIFFERENT FISHING-PORTS FOR THE YEAR ENDED 31ST MARCH, 1927.

(Compiled from the figures given in the District Inspectors' reports for the year.)

Name of Port.	Principal Kinds of Fish caught.	Quantity.	Total Value. £ s. d.
Mongonui ..	Snapper, tarakihi, trevally, kingfish, rock-cod, gurnard, kahawai, flounder, hapuku	100 cwt.	186 0 0
Hokianga ..	Snapper, mullet, kahawai, flounder	No returns supplied	..
Russell	Crayfish, mullet, hapuku, snapper, flounder, kahawai, kingfish, maumau	11,700 cwt.	8,970 0 0
Whangarei ..	Snapper, mullet, flounder, hapuku	2,600 cwt.	4,500 0 0
Kaipara ..	Snapper, flounder, mullet, kahawai, trevally, gurnard ..	4,450 cwt.	9,350 0 0
	Toheroa	1,328 cases	2,325 0 0
Auckland District	Snapper, tarakihi, trevally, flounder, sole, gurnard, hapuku, john-dory, kingfish, moki, rock-cod, kahawai, butterfish, crayfish, barracouta, mullet, garfish, mussels	120,138 cwt.	125,556 0 0
	Crayfish	2,000 cases	2,500 0 0
	Mussels	1,000 sacks	350 0 0
Tauranga ..	Snapper, hapuku, trevally, kahawai, rock-cod, garfish, moki, flounder, crayfish	3,500 cwt.	6,533 0 0
Whakatane ..	Snapper, moki, flounder, mullet, kahawai, hapuku, gurnard, tarakihi, barracouta, shark, kingfish, butterfish, mackerel, eel, frost-fish, red cod, trevally, sole, warehou, herring, trumpeter, rock-cod	2,080 cwt.	3,800 0 0
Opotiki ..	Snapper, hapuku, kingfish, flounder	260 cwt.	485 0 0
Gisborne ..	Tarakihi, gurnard, snapper, flounder, sole, kahawai, hapuku, crayfish	3,705 cwt.	5,348 0 0
Napier	Tarakihi, snapper, moki, kahawai, gurnard, trevally, hapuku, southern kingfish, barracouta, john-dory, flounder, sole, brill	23,400 cwt.	29,670 0 0
	Crayfish	500 sacks	937 0 0
	Whitebait	24 cwt.	337 0 0
Kawhia ..	Mullet, flounder, snapper, hapuku	232 cwt.	297 0 0
New Plymouth ..	Snapper, hapuku, kingfish, tarakihi, kahawai, cod, crayfish, gurnard	866 cwt.	1,325 0 0
Wanganui ..	Blue-cod, hapuku, flounder, snapper	272 cwt.	381 0 0
Foxton	Flounder, snapper, hapuku, kahawai, whitebait	600 cwt.	1,800 0 0
Wellington ..	Tarakihi, gurnard, flounder, sole, snapper, ling, warehou, hapuku, moki, butterfish, blue cod, southern kingfish	54,182 cwt.	99,681 0 0
Eastbourne ..	Groper, moki, snapper, hake	120 cwt.	224 0 0
Picton	Hapuku, moki, butterfish, garfish, crayfish, blue cod ..	6,107 cwt.	11,440 0 0
Blenheim ..	Red cod, sole, flounder, ling, snapper, moki, hapuku, gurnard, tarakihi, mackerel, butterfish, crayfish, and whitebait	3,200 cwt.	6,000 0 0
Nelson	Snapper, flounder, gurnard, bream, hapuku, cod, crayfish, barracouta	2,525 cwt.	3,413 0 0
Westport ..	Red cod, crayfish, flounder, groper, gurnard, hapuku, kahawai, ling, moki, snapper, sole, turbot, whitebait	412 cwt.	1,511 0 0
Greymouth ..	Flounder, sole, cod, groper, snapper, whitebait, herring ..	40 cwt.	224 0 0
	Whitebait	Amount not stated	1,800 0 0
Hokitika ..	Groper, snapper, flounder, herring, kahawai	214 cwt.	210 0 0
	Whitebait	503 cwt.	4,672 0 0
Kaikoura ..	Groper, ling, trumpeter, southern kingfish, butterfish, tarakihi, moki, crayfish	3,571 cwt.	8,400 0 0
Kaiapoi ..	Whitebait, kahawai, flounder	320 cwt.	1,600 0 0
Akaroa	Groper, ling, conger eel, flounder, sole, brill, blue and red cod, crayfish, barracouta, kingfish, kahawai, moki, butterfish, &c.	1,100 cwt.	2,000 0 0
Lyttelton ..	Groper, barracouta, red cod, ling, flounder, sole, gurnard, brill	2,980 cwt.	5,560 0 0
Southbridge (Lake Ellesmere)	Flounder, herring	600 cwt.	1,750 0 0
Timaru ..	Flounder, sole, brill, groper, ling, red cod, gurnard, kingfish, barracouta	5,280 cwt.	14,884 0 0
Oamaru	Groper, red cod, blue cod, moki, barracouta, ling	2,475 cwt.	3,126 0 0
Moeraki	Groper, red cod, blue cod, moki, crayfish, barracouta, ling ..	4,303 cwt.	6,000 0 0
Otago District ..	Groper, ling, red cod, barracouta, kingfish, blue cod, moki, trumpeter, tarakihi, trevally, mullet, garfish, kahawai, gurnard, kelpfish, sole, flounder, brill, skate	49,600 cwt.	52,080 0 0
Invercargill ..	Blue and red cod, groper, moki, flounder, kingfish, mullet, ling, sole, crayfish, barracouta, whitebait	2,650 cwt.	5,300 0 0
Bluff	Groper, blue cod, flounder	3,545 cwt.	6,617 0 0
	Oysters	27,828 sacks	19,479 0 0
Stewart Island ..	Blue cod, groper, trumpeter, moki	8,125 cwt.	10,484 0 0
Chatham Islands ..	Blue cod, hapuku, trumpeter	1,283 cwt.	2,395 0 0
	Totals	331,390 cwt.	473,500 0 0

TABLE SHOWING THE NUMBER OF SACKS AND VALUE OF THE OYSTERS DISPOSED OF IN THE DOMINION FOR THE YEAR ENDED 31ST DECEMBER, 1926.

Locality.	Disposed of in Dominion.	Total Value (Wholesale).
DREDGE-OYSTERS.		
	Sacks.	£ s. d.
Foveaux Strait	27,828	19,479 0 0
ROCK-OYSTERS.		
Bay of Islands	2,769	
Whangarei	234	
Kaipara	1,112	8,344 0 0
Hauraki Gulf	1,989	
Coromandel	269	
Great Barrier	398	
Totals	6,771	8,344 0 0

TABLE SHOWING THE TOTAL QUANTITY AND VALUE OF FISH IMPORTED INTO AND EXPORTED FROM NEW ZEALAND DURING THE YEAR ENDED 31ST DECEMBER, 1926.

Fish imported.

Description of Fish.	Quantity.	Value.
		£
Fish, preserved in tins	3,945,505 lb.	168,237
Fish, frozen, smoked, dried, pickled, and salted	2,038 cwt.	6,839

Fish exported.

Description of Fish.	New Zealand Produce.		Not New Zealand Produce.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Oysters, fresh	145,660 doz.	1,650	..	..
Fish, preserved in tins	146,222 lb.	15,332	62,839 lb.	2,945
Fish, frozen, smoked, dried, pickled, and salted ..	17,436 cwt.	47,677	1 cwt.	4

SUMMARY OF EXAMINATIONS FOR CERTIFICATES OF COMPETENCY AS MASTER, MATE, OR ENGINEER.

Class of Certificate.	Auckland.			Wellington.			Lyttelton.			Dunedin.			Other Places.			Totals.		
	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.	Passed.	Failed.	Total.
Foreign-going masters and mates	4	11	15	13	28	41	6	8	14	..	..	..	..	..	..	23	47	70
Voluntary examination in compass deviation	..	..	..	3	1	4	..	..	..	..	..	..	..	..	..	3	1	4
Home-trade masters and mates	1	1	2	3	7	10	..	2	2	..	..	..	..	..	..	4	10	14
Masters of river steamers ..	5	..	5	2	..	2	..	1	1	..	..	..	..	..	..	7	1	8
Seagoing engineers (steam) ..	19	18	37	10	14	24	5	8	13	11	19	30	25	29	54	70	88	158
River-steamer engineers ..	3	5	8	1	2	3	..	..	..	..	..	..	4	4	8	8	11	19
Marine engine-driver ..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Seagoing engineers (oil) ..	16	3	19	..	3	3	..	..	..	1	..	1	4	3	7	21	9	30
River engineers (oil) ..	32	6	38	4	..	4	..	..	..	..	..	..	33	6	39	69	12	81
Totals ..	80	45	125	36	55	91	11	19	30	12	19	31	66	42	108	205	180	385

RETURN OF STEAMERS AND OIL-ENGINE VESSELS TO WHICH CERTIFICATES OF SURVEY WERE ISSUED IN NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1927. (RIVER-LIMIT VESSELS NOT INCLUDED.)

Name of Vessel.	Tons Register.	Nominal Horse-power of Steam-engines and Brake Horse-power of Oil-engines.	Indicated Horse-power of Steam-engines.	Nature of Engines.	Nature of Propeller.	Class of Certificate.	Minimum Number of following Classes of Crew Law requires to be carried.			
							Able Seamen.	Firemen.	Trimmers.	Greasers.
Ahuriri*	33	17	70	Compound	Screw	Home trade	2	1	..	..
Akaroa	24	28	114	,,	,,	,,	1	1	..	..
Alexander	185	72	372	,,	Twin screw	,,	4	3	..	..
Alma	21	45	..	Oil-engine	Screw	,,	1	..	..	..
Altair	30	48	..	,,	Twin screw	,,	2	..	..	..
Alwin G.	4	20	..	,,	Screw	,,	1	..	..	..
Anamba*	1,159	161	611	Triple expansion	,,	,,	7	3	..	..
Apanui	135	28	218	,,	,,	,,	4	2	..	..
Arahura	765	145	1,312	,,	Twin screw	,,	7	6	3	3
Arapawa	128	47	269	,,	Screw	,,	4	3	..	..
Atua	1,895	329	2,671	,,	,,	Foreign	9	9	3	3
Awahou	152	74	269	Compound	Twin screw	Home trade	4	3	..	..
Awarua (Fish V.)	87	50	163	,,	,,	Foreign	..	..	..	..
Baroona	54	24	149	,,	Screw	Home trade	2	2	..	..
Breeze	275	84	371	Triple expansion	,,	,,	4	3	..	..
Brittania	10	12	..	Oil-engine	,,	,,	2	1	..	..
Calm	523	550	689	Triple expansion	,,	,,	5	3	..	..
Canopus	835	250	1,128	,,	,,	,,	6	3	2	3
Clansman	338	99	586	Compound	,,	,,	5	3	..	..
Claymore	119	54	419	Triple expansion	,,	,,	4	3	..	..
Corinna	791	141	825	Compound	,,	,,	6	3	2	3
Coronation	59	100	..	Oil-engine	,,	,,	2	..	..	..
Countess	57	28	180	Compound	,,	,,	2	2	..	..
Cowan	30	24	140	,,	,,	,,	2	2	..	..
Cygnet	70	43	150	,,	,,	,,	2	2	..	..
Dominion	5	30	..	Oil-engine	,,	,,	1	..	..	..
Dredge 350	488	117	766	Triple expansion	Twin screw	,,	5	3	..	..
Dunedin	125	500	1,099	,,	,,	,,	4	3	2	3
Echo*	100	95	..	Oil-engine	,,	,,	4	..	..	..
Elsie	24	30	..	,,	Screw	,,	1	..	..	..
Elsie Mary	60	100	..	,,	,,	,,	2	..	..	..
Excelsior	6	46	..	,,	Twin screw	,,	1	..	..	..
Express	36	25	89	Compound	Screw	,,	2	1	..	..
Fairburn	60	90	..	Oil-engine	Twin screw	,,	2	..	..	..
Futurist*	90	385	463	Triple expansion	Screw	,,	2	3	..	..
Gael	55	20	93	Compound	,,	,,	2	1	..	..
Gale	287	450	319	Triple expansion	,,	,,	4	3	..	..
Glenelg	156	75	286	Compound	,,	,,	4	3	..	..
Gunbar	196	89	590	,,	Twin screw	,,	4	3	..	..
Haere	59	60	..	Oil-engine	,,	,,	2	..	..	..
Hananui II	44	58	266	Triple expansion	Screw	,,	2	3	..	..
Hawera	92	31	210	Compound	,,	,,	2	2	..	..
Herekino	185	76	446	Triple expansion	,,	,,	4	3	..	..
Hikurangi	163	64	263	,,	,,	,,	4	3	..	..
Hinemoa	282	150	538	Compound	,,	Foreign	5	3	..	..
Holmdale*	295	99	484	Triple expansion	,,	Home trade	4	3	..	..
Huanui	56	60	..	Oil-engine	,,	,,	2	..	..	..
Huia	166	160	..	,,	,,	Foreign	4	..	..	..
Huon Belle	20	30	..	,,	,,	Home trade	1	..	..	..
Inaha	116	300	..	Motor	Twin screw	,,	4	..	..	..
Invercargill*	123	41	228	Compound	Screw	,,	4	2	..	..
Isabella de Fraine*	76	90	..	Oil-engine	Twin screw	,,	2	..	..	..
James C.	14	100	60	Compound	Screw	,,	1	1	..	..
Jane Gifford	6	24	..	Oil-engine	Twin screw	,,	1	..	..	..
John	134	90	254	Compound	Screw	,,	4	3	..	..
John Anderson	34	25	80	,,	,,	,,	2	1	..	..
Kahika	528	103	624	Triple expansion	,,	Foreign	5	3	..	..
Kaiaia	24	55	..	Oil-engine	Twin screw	Home trade	1	..	..	..
Kaikorai	1,860	430	1,783	Triple expansion	Screw	Foreign	8	6	3	3
Kaimai	784	126	706	,,	,,	Home trade	6	3	..	..
Kaimanawa	1,247	213	1,234	,,	,,	Foreign	7	3	2	3
Kaiapoi	1,246	201	1,004	,,	,,	,,	7	3	2	3
Kairanga	1,726	148	1,194	,,	,,	,,	8	3	2	3
Kaitangata	1,195	200	968	,,	,,	,,	7	3	2	3
Kaitoa*	141	65	298	Compound	Twin screw	Home trade	4	3	..	..
Kaitoke	1,862	434	1,629	Triple expansion	Screw	Foreign	8	6	3	3
Kaituna	1,208	200	979	,,	Twin screw	,,	7	3	2	3
Kaiwarra	1,847	358	1,731	,,	Screw	,,	8	6	3	3
Kamo	725	150	749	,,	,,	,,	6	3	..	..
Kamona	903	117	729	,,	,,	,,	6	3	..	..
Kapiti	114	35	209	Compound	,,	Home trade	4	2	..	..
Kaponga	1,167	274	1,246	Triple expansion	,,	Foreign	7	3	2	3
Kapua	6	31	..	Oil-engine	,,	Home trade	1	..	..	..
Kapuni	97	30	184	Compound	,,	,,	2	2	..	..
Karori	1,194	147	954	Triple expansion	,,	,,	7	3	2	3
Kartigi*	1,167	274	1,245	,,	,,	Foreign	7	3	2	3
Katie S.	6	12	..	Oil-engine	,,	Home trade	1	..	..	..
Katoa	1,382	335	1,559	Triple expansion	,,	,,	7	6	3	3

* Surveyed twice.

RETURN OF STEAMERS AND OIL-ENGINE VESSELS TO WHICH CERTIFICATES OF SURVEY WERE ISSUED, ETC.—*continued.*

Name of Vessel.	Tons Register.	Nominal Horse-power of Steam-engines and Brake Horse-power of Oil-engines.	Indicated Horse-power of Steam-engines.	Nature of Engines.	Nature of Propeller.	Class of Certificate.	Minimum Number of following Classes of Crew Law requires to be carried.			
							Able Seamen.	Firemen.	Trimmers.	Greasers.
Kauri	1,830	304	1,250	Triple expansion	Screw	Foreign	8	6	3	3
Kawatiri	1,856	429	1,606	,,	,,	,,	8	6	3	3
Kawau	53	20	95	Compound	Twin screw	Home trade	2	1	..	..
Kawau*	17	15	80	,,	Screw	,,	1	1	..	..
Kekeno	19	50	..	Oil-engine	,,	,,	1	..	..	..
Kekerangu	1,866	430	1,487	Triple expansion	,,	,,	8	6	3	3
Kennedy	131	38	156	Compound	Twin screw	,,	4	2	..	..
Kiritona	75	150	..	Oil-engine	,,	,,	2	..	..	..
Kittawa	708	120	721	Triple expansion	Screw	Foreign	6	3	..	..
Kiwitea*	1,166	275	1,249	,,	,,	,,	7	3	2	3
Koau	77	170	..	Oil-engine	Twin screw	Home trade	2	..	..	..
Kohi	20	90	..	,,	,,	,,	1	..	..	..
Kokiri	713	135	793	Triple expansion	Screw	Foreign	6	3	2	3
Komata	1,294	260	1,236	,,	,,	Home trade	8	3	2	3
Koromiko*	1,541	313	1,325	,,	,,	Foreign	8	6	3	3
Kotare	83	20	123	Compound	,,	Home trade	2	2	..	..
Koutunui	98	26	153	,,	Twin screw	,,	2	2	..	..
Kurow	1,540	330	1,628	Triple expansion	Screw	Foreign	8	6	3	3
Lady Eva	3	120	..	Oil-engine	,,	Home trade	1	..	..	..
Louis Theriault	339	100	..	,,	,,	Foreign	4	..	..	..
Lyttelton	24	108	278	Compound	Paddle	Home trade	1	3	..	..
Maggie	6	8	..	Oil-engine	Screw	,,	1	..	..	..
Maheno	3,318	600	6,188	Turbines	Twin screw	Foreign	12	18	9	3
Mahurangi	95	80	234	Compound	Screw	Home trade	2	2	..	..
Mako	247	65	461	Triple expansion	,,	,,	5	3	..	..
Manuka	2,813	357	3,119	,,	Twin screw	Foreign	11	9	6	3
Maori	1,567	5,600	5,859	Turbines	Triple screw	Home trade	9	15	9	3
Mararoa	1,329	530	3,882	Triple expansion	Screw	,,	8	9	6	3
Matangi	635	233	1,198	,,	Twin screw	,,	7	3	2	3
Miro	29	60	..	Oil-engine	Screw	,,	1	..	..	..
Moeraki	2,735	357	3,394	Triple-expansion	Twin screw	Foreign	11	9	6	3
Motu	109	160	..	Oil-engine	,,	Home trade	4	..	..	..
Muriel	22	18	134	Compound	Screw	,,	1	2	..	..
Murihiku	369	70	492	Triple expansion	Twin screw	,,	4	3	..	..
Navua	1,773	220	1,949	,,	,,	Foreign	9	6	3	3
Ngaio	725	130	1,009	,,	Screw	Home trade	7	3	2	3
Ngakuta	949	248	1,113	,,	,,	Foreign	6	3	2	3
Ngapuhi	311	160	942	,,	Twin screw	Home trade	5	3	2	3
Ngatiawa	220	55	398	,,	,,	,,	5	3	..	..
Nikau	98	55	299	Compound	,,	,,	2	3	..	..
Nora Niven	66	40	187	Triple expansion	Screw	,,	2	2	..	..
Nor' West	6	15	..	Oil-engine	,,	,,	1	..	..	..
Oban	24	20	..	,,	Twin screw	,,	1	..	..	..
Ohinemuri	52	30	132	Compound	Screw	,,	2	2	..	..
Opawa	54	110	..	Oil-engine	,,	,,	2	..	..	..
Opihi	638	116	620	Triple expansion	,,	,,	6	3	..	..
Opua	288	80	337	,,	Twin screw	,,	4	3	..	..
Orepuki	224	78	338	Compound	Screw	,,	4	3	..	..
Oreti	72	30	145	,,	,,	,,	2	2	..	..
Orewa*	35	17	68	,,	,,	,,	2	1	..	..
Otimai	111	160	..	Oil-engine	Twin screw	,,	4	..	..	..
Owhiti	6	30	..	,,	Screw	,,	1	..	..	..
Pakura	304	115	508	Triple expansion	,,	,,	4	3	..	..
Parera	251	85	365	,,	,,	,,	4	3	..	..
Paroto	48	120	..	Oil-engine	Twin screw	,,	2	..	..	..
Pearl Kasper	16	60	..	,,	Screw	,,	1	..	..	..
Pegasus	10	30	..	,,	,,	,,	1	..	..	..
Piri	115	200	..	,,	,,	Foreign	4	..	..	..
Plucky	29	40	260	Compound	,,	Home trade	1	3	..	..
Pono	30	52	..	Oil-engine	Twin screw	,,	1	..	..	..
Poolta	933	176	704	Triple expansion	Screw	Foreign	6	3	..	..
Progress	181	28	181	Compound	,,	Home trade	4	2	..	..
Putiki	168	60	320	,,	,,	,,	4	3	..	..
Rahiri	6	16	..	Oil-engine	,,	,,	1	..	..	..
Rakanui*	6	120	..	,,	,,	,,	1	..	..	..
Rakiura*	13	10	..	,,	,,	,,	1	..	..	..
Rarawa	460	140	1,170	Triple expansion	Twin screw	,,	6	3	2	3
Regulus	232	150	587	Compound	,,	,,	4	3	..	..
Resolution	29	30	..	Oil-engine	Screw	Foreign	1	..	..	..
Rimu	169	95	520	Triple expansion	Twin screw	Home trade	4	3	..	..
Ronaki	129	270	..	Oil-engine	,,	,,	4	..	..	..
Ruru	62	50	194	Compound	Screw	,,	2	2	..	..
Scot	16	16	..	Oil-engine	,,	,,	1	..	..	..

* Surveyed twice.

RETURN OF STEAMERS AND OIL-ENGINE VESSELS TO WHICH CERTIFICATES OF SURVEY WERE ISSUED, ETC.—*continued.*

Name of Vessel.	Tons Register.	Nominal Horse-power of Steam-engines and Brake Horse-power of Oil-engines.	Indicated Horse-power of Steam-engines.	Nature of Engines.	Nature of Propeller.	Class of Certificate.	Minimum Number of following Classes of Crew Law requires to be carried.			
							Able Seamen.	Firemen.	Trimmers.	Greasers.
Serfib*	82	58	340	Triple expansion	Screw ..	Home trade ..	2	3	..	..
Southern Cross ..	403	117	445	,,	Twin screw	Foreign ..	6	3	..	..
Storm	371	94	520	,,	Screw ..	Home trade ..	4	3	..	..
Tamahine ..	803	440	3,076	,,	Twin screw	,, ..	7	9	6	3
Te Aroha ..	56	125	..	Oil-engine ..	,,	,, ..	2	..	..	..
Te Awhina ..	87	99	490	Triple expansion	,,	,, ..	2	3	..	..
Tees	247	78	372	,,	Screw ..	Foreign ..	5	3	..	..
Teine Vinuela ..	79	110	..	Oil-engine ..	,, ..	,, ..	2	..	..	..
Terawhiti ..	91	99	503	Triple expansion	,, ..	Home trade ..	4	2	..	..
The Portland ..	39	60	..	Oil-engine ..	Twin screw	,, ..	2	..	..	..
Theresa Ward ..	75	95	471	Triple expansion	Screw ..	,, ..	2	3	..	..
Thomas Currell ..	84	75	430	,,	,, ..	,, ..	2	3	..	..
Tiroa	94	31	192	Compound ..	,, ..	,, ..	2	2	..	..
Titoki	247	86	584	Triple expansion	Twin screw	,, ..	4	3	..	..
Tofua*	2,634	355	2,671	,,	,,	Foreign ..	11	9	3	3
Toia*	20	116	1,200	,,	Screw ..	Home trade ..	5	3	2	3
Torea	28	60	..	Oil-engine ..	Twin screw	,, ..	1	..	..	..
Totara	147	55	251	Compound ..	Screw ..	,, ..	4	3	2	3
Tuatea	58	28	225	,, ..	,, ..	,, ..	2	2	..	..
Tuhoe	98	120	..	Oil-engine ..	Twin screw	,, ..	2	..	..	..
Wahine	1,798	720	7,938	Turbines ..	Triple screw	,, ..	9	18	12	3
Waverley ..	93	25	120	Compound ..	Twin screw	,, ..	2	2	..	..
Waihora* ..	2,993	410	1,728	Triple expansion	Screw ..	Foreign ..	10	6	3	3
Waikonini ..	6	60	..	Oil-engine ..	,, ..	Home-trade ..	1	..	..	..
Wainui	411	99	667	Compound ..	,, ..	,, ..	6	3	..	..
Waiotahi.. ..	168	56	337	,, ..	Twin screw	,, ..	4	3	..	..
Waipahi	1,080	134	1,092	Triple expansion	Screw ..	,, ..	7	3	2	3
Waipori	1,221	180	1,032	,,	,, ..	Foreign ..	7	3	2	3
Waipu	76	50	157	Compound ..	Twin screw	Home trade ..	2	2	..	..
Wairau*	56	20	105	,, ..	Screw ..	,, ..	2	2	..	..
Wairoa	48	16	69	,, ..	,, ..	,, ..	2	1	..	..
Waitomo.. ..	2,719	372	1,468	Triple expansion	,, ..	Foreign ..	10	6	3	3
Whakarire ..	449	120	589	Compound ..	Twin screw	Home trade ..	5	3	..	..
Whangape ..	1,901	280	1,181	Triple expansion	Screw ..	Foreign ..	8	3	2	3
Will Watch* ..	48	45	..	Oil-engine ..	,, ..	Home trade ..	2	..	..	..
Wingatui ..	1,344	1,300	1,227	Triple expansion	,, ..	Foreign ..	7	3	2	3
Zingara	53	220	..	Oil-engine ..	,, ..	Home trade ..	2	..	..	..

* Surveyed twice.

RETURN OF SAILING-VESSELS SURVEYED DURING THE YEAR ENDED 31ST MARCH, 1927, WITH PARTICULARS OF TONNAGE, ETC.

(River-limit vessels not included.)

Name of Vessel.	Tons Register.	Class of Certificate.	Minimum Number of Seamen required by Law to be carried.		
			Able Seamen.	Ordinary Seamen.	Apprentices or Boys.
Alert	98	Home-trade	2	1	..
Combine	24	,, ...	1	..	..
Deveron	26	,, ...	1	..	..
Ethel Wells	19	,, ...	1	..	..
Herald	73	,, ...	2	1	..
Hero	25	,, ...	1	..	..
Huia	166	Foreign	4	..	1
Kitty Fraser	25	Home-trade	1	..	..
Moa	99	,, ...	2	1	..
Ngaru	66	,, ...	2	1	..
Rangi	86	,, ...	2	1	..
Saucy Kate	25	,, ...	1	..	..
Seagull	25	,, ...	1	..	..
Talisman	70	,, ...	2	1	..

Return of Wrecks and Casualties to Shipping reported to the Marine Department from 1st April, 1926, to 31st March, 1927.

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1925. Nov. 14	Fetu Ao, aux., 20 years	Ketch ..	22	6	Nil	General, 7 tons	Total loss ..	Nil	Fakaofu, Tokelau Island	Calm	..	Vessel arrived off Takaofu, Union Islands, to load, and, according to custom, as no anchorage was available, lay off and on at night. Inquiry shows that vessel was set on shore by contrary currents and became a total loss	H. Van de Made.
1926. April 2	King Malcolm, s.s., 1 year	Schooner	3,128	43	Nil	Basic slag, 5,000 tons	Strained rivets ..	Nil	Between Antwerp and New Zealand	S.W.	Gale ..	During heavy S.W. gale a number of rivets became loose, bilges making water, and cargo was damaged	W. M. Davies.
April 10	Progress, s.s., 44 years	Schooner	181	12	Nil	Timber, 140,000 sq. ft.	Bumped near bar ..	Nil	Hokianga Heads, N.Z.	Calm	..	While leaving Hokianga and rounding up between the North and South Heads, vessel bumped slightly before reaching bar. No damage to ship or cargo	H. L. Hay.
April 11	Holmwood, sail, 26 years	Schooner	696	15	Nil	Coal, 530 tons ..	Stern bumped pile No. 29	Nil	Wanganui River, N.Z.	Calm	..	When being towed by s.s. "John" into Wanganui River and when abreast of the moles, towline parted. Port anchor was let go, when "Holmwood" lost steerage-way. Fresh towline passed off port bow ahead to s.s. "John," and anchor hove up, but the "John" swung down-stream with ebb tide and "Holmwood" bumped her stern on pile No. 29. Damage to "Holmwood's" rudder estimated at £400	A. H. Gifford.
April 24	Marama, s.s., 18 years	F. and A.	3,992	131	285	General, 1,395 tons	Valve-spindle carried away	Nil	Tasman Sea, lat. 36·7° S., long. 158·33° E.	N.N.W.	Rough ..	Intermediate valve-spindle carried away on starboard engine. New valve-spindle fitted, and proceeded on voyage full speed	E. A. Williamson.
May 11	Piri, o.e.v., 9 years	Topsail schooner	114	12	Nil	Shingle, 100 tons	Explosion ..	Nil	Off Cape Runaway, N.Z.	W.N.W.	Moderate	After starting main engines explosion occurred in secondary silencer, blowing out sides and bottom of same and causing slight fire, which was immediately extinguished	W. C. H. Watt.
May 12	Tuhoe, o.e.v., 7 years	F. and A.	97	8	Nil	Coal, 50 tons ..	Starboard bracket broken	Nil	Awanui River, N.Z. ..	N.W.	Slight ..	While discharging coal the starboard bracket sat on a mud-bank. Next day found bracket bent and broken	C. W. Cumming.
May 13	Komata, s.s., 19 years	Schooner	1,294	33	Nil	Coal, 2,700 tons	Grounded ..	Nil	Westport Harbour, N.Z.	S.W.	Moderate	While berthed at the Crane Wharf it was found at low water that the stern of the vessel was resting on a shingle patch, 18 ft. of water over it. Vessel's draught when loaded, 18 ft. 6 in.	J. Rankine.
May 13	Clansman, s.s., 42 years	Schooner	335	26	17	General, 30 tons	Smashed lifeboat ..	Nil	Opua, N.Z. ..	N.W.	Calm ..	While coaling the crane fell inboard, smashed No. 1 lifeboat, starboard derrick, rail, and other minor damage	E. J. Keatley.
May 15	Hawera, s.s., 14 years	Schooner	92	10	Nil	General, 5 tons	Struck wharf ..	Nil	Wanganui River, N.Z.	S.	Light ..	While going down river to Castlecliff Wharf and on nearing same, the s.s. "John" was proceeding up the river, to clear her carried too much way, and came alongside with glancing blow, doing slight damage to upper part of stern	A. McKinnon.

May 15	Kotare, s.s., 22 years	Schooner	83	9	Nil	Timber, 100 tons	Collision ..	Nil	Invercargill, N.Z. ..	N.	Slight ..	The "Kotare" was approaching the jetty to berth; owing to the proximity of mud-banks there was no room for manœuvring, and the "Kotare" carried the launch "Pakeha" on to the bridge north of the jetty. No damage to "Kotare"; £25 damage to "Pakeha"	W. E. Mumby.
May 15	Pakeha, o.e.v. ..	..	..	..	Nil	Nil							
May 28	Resolution, aux., 1 year	Schooner	29	9	Nil	General, 50 tons	Gear-clutch flange broken	Nil	Off Tiritiri Island light, N.Z.	W.S.W.	2	Gear-clutch flange broke; could not be avoided	W. H. Carter.
May 31	Echo, o.e.v., 22 years	Schooner	99	10	Nil	General, 45 tons	Crank-shaft broken	Nil	Wellington, N.Z. ..	S.E.	Light ..	While berthing in Wellington Harbour, the starboard engine-crank-shaft web broke on the forward crank	F. G. L. Radford.
June 2	Opua, s.s., 24 years	Schooner	288	18	Nil	General, 50 tons	Grounded ..	Nil	Manukau Harbour, N.Z.	N.E.	Light ..	While crossing Manukau Bar in line of beacon, ship steering N.E., white flashing-light was opened at 5.42 a.m. The course was altered to N.E. by N. ¾ N. When on the course three minutes the ship grounded. No damage	E. H. Fowler.
June 3	Koa, o.e.v., 3 years	Cutter ..	6	4	Nil	Nil	Total loss ..	Nil	Twilight Bay, N.Z. ..	S.W.	9	On account of cyclonic gale, vessel put into Twilight Bay for shelter; wind veered round to S.W.; found position hopeless, and decided to beach vessel	V. Harrison.
June 6	Manaia, s.s., 29 years	F. and A.	629	36	55	General, 30 tons	Total loss ..	Nil	Slipper Island, N.Z. ..	N.W.	4	The Court found that while the vessel was on her usual course she was carried off that course nearly three miles by the time she was in the vicinity of Slipper Island. The Court was of opinion that the vessel was lost owing to a strong set taking her off her course and to the poor visibility preventing the vessel's position being realized until too late. The Court exonerated the master and commended his action in connection with his conduct after the vessel struck. With regard to the third officer, who was on watch at the time, while not blaming him for the loss of the vessel, the Court was of the opinion that, in view of his having had no previous experience of the Auckland to Tauranga run, he showed overconfidence in not calling the master earlier, owing to heavy rain-squalls, poor visibility, and want of experience on the run. While the Court was of opinion that the third officer was wrong in not calling the master earlier, and although the comment stood, yet no order would be made in regard to his certificate	W. F. Norbury.
June 7	Ngoiro, s.s., 13 years	Steam ..	139	4	50	Nil	Struck wharf ..	Nil	Auckland, N.Z. ..	Calm	..	While berthing at Auckland, at the usual place of reversing the engines, rang down to engine-room and got no reply, consequently hit wharf	W. G. Sutcliffe.
June 30	Waikouaiti s.s., 12 years	F. and A.	2,379	41	Nil	Timber, 700 tons	Struck wharf ..	Nil	Wellington, N.Z. ..	S.E.	Fresh ..	While berthing at King's Wharf, vessel struck corner of wharf, denting a plate in bow, starboard side, and bending three frames	D. McDonald.

RETURN OF WRECKS AND CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT, ETC.—*continued*

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force		
1926.													
July 1	Pakura, s.s., 4 years	Schooner	304	17	Nil	General, 160 tons	Grounded ..	Nil	Gisborne, N.Z. ..	S.W.	Fresh ..	When entering Gisborne River in tow of the tug "Pelican," vessel sheered to starboard, and the starboard bilge struck a bank about 200 ft. inside and opposite the breakwater, causing slight damage	C. W. Coldicutt.
July 9	Fairburn, o.e.v., 20 years	Schooner	60	6	Nil	General, 30 tons	Fire	Nil	Karamea Bight, N.Z.	Calm	..	Engineer was testing a spark-plug of the benzine electric-light engine; the spark-plug being unscrewed but connected and lying on the engine, it ignited some benzine spilt on the engine. Fire put out promptly; no damage	W. H. Sawyers.
July 10	Teine Vineula, aux., 8 years	Schooner	79	6	10	General, 13 tons	Total loss ..	Nil	Nukunonu, Union Islands	N.E.	2	While on a voyage from Atafu to Nukunonu, went ashore on reef. Evidence at preliminary inquiry stated Island of Nukunonu wrongly charted. Ship abandoned after eighty days' attempt to refloat. Cargo salvaged with exception of two bales of wool	G. H. George.
July 11	Pahiki, sail, 21 years	Schooner	20	3	Nil	Shingle, 40 tons	Sunk at anchor ..	Nil	Hauraki Gulf, N.Z. ..	N.E.	Gale ..	Sunk at anchor during gale. Accident could not have been avoided, as vessel was down to her marks and cargo shifted while trying to straighten the cargo up. No damage. Vessel raised next day, and cargo landed in Auckland	J. Grogan.
July 11	Kamona, s.s., 25 years	F. and A.	903	25	Nil	Coal, 1,897 tons	Fire	Nil	Greymouth, N.Z. ..	E.S.E.	3	While lying at wharf, smoke was found issuing from No. 1 hatch. Hatch opened up and fire extinguished by ship's fire-hose. No damage	G. B. Hoddinott.
July 12	Kawau, s.s., 35 years	Schooner	37	5	Nil	Nil ..	Broken mast ..	Nil	Foveaux Strait, Ruapuke Island, N.Z.	E.N.E.	Breeze	Accident caused through snapping of a link of the chain attaching the rigging to mast. The dredger is towed at the side of the vessel from a yard-arm supported by the mast. When the dredger fouled a rock, the rigging snapped at the chain, making the mast take the full strain. Casualty purely accidental, £10 damage	J. I. F. Nixey.
July 15	Kawau, s.s., 35 years	Schooner	37	5	Nil	Nil ..	Collision	Nil	Foveaux Strait, Ruapuke Island, N.Z.	N.E.	Moderate	Both steamers were dredging for oysters close together off Ruapuek Island. While the dredgers were being hauled up a proper lookout was not maintained, there being no man at the wheel on either vessel. This appears to be a dangerous practice. When trouble was imminent, the "Kawau" was sent astern, but the reversing-gear of the "Dispatch" jammed. Damage to "Dispatch," £10; "Kawau" undamaged	J. I. F. Nixey.
July 15	Dispatch, s.s., 43 years	Schooner	9	5	Nil	Nil ..							A. W. Rouse.

July 23	Success, o.e.v., 20 years	Cutter ..	2	2	Nil	Nil	Sank	Nil	Oamaru Harbour, N.Z.	N.E.	Strong	During a rough sea the range in the harbour wrenched the vessel from her mooring, and drove her on the rocks at the south-west corner of the harbour, where she was stove in and sank in 6 ft. of water. £60 damage.	A. Wardle.
Aug. 6	Tiroa, s.s., 11 years	Schooner	94	10	Nil	Nil	Leaking	Nil	King's Wharf, Auckland, N.Z.	W.	Fresh ..	Ship found to be leaking port side forward; could not be avoided	L. W. Clark.
Aug. 11	Zita, s.s., 48 years	Schooner	73	8	Nil	Nil	Broken crankshaft..	Nil	42 miles S.S.W. Cape Egmont, N.Z.	N.W.	Strong..	The crank-shaft of the starboard engine broke; apparently unavoidable	J. Francis.
Aug. 13	Hinemoa, s.s., 51 years	F. & A.	282	29	3	General, 82 tons	Lost anchor and 30 fathoms chain	Nil	Niue Island ..	W.	Light ..	Ship riding to a westerly swell; chain caught in ledge of reef: lost anchor and 30 fathoms of chain, which may be recovered	A. R. Cant.
Aug. 13	Sittang, s.s., 16 years	Schooner	2,748	65	Nil	In ballast ..	Lost propeller ..	Nil	8 miles off Tairoa Heads, N.Z.	S.S.W.	4·5	While on a voyage from Dunedin to Westport, the vessel was felt to tremble violently, and "Stop" was immediatly rung. Chief engineer reported that propeller was gone. Anchor was let go, and later vessel towed to Port Chalmers for repairs	G. Patterson.
Aug. 20	Opawa, s.s., 20 years	F. & A.	5,858	66	Nil	General, 8,000 tons	Shipped heavy sea	Nil	Lat. 33° 20′ S., long. 159° 35′ W., Pacific Ocean	W.N.	9	Shipped heavy sea forward. Damaged three ventilator-cowls and port wire-reel; carried away forward bell, and burst in two doors to crews' quarters: ripped upper tarpaulins from No. 11 hatch. Vessel eased down, and ventilators and tarpaulins secured and lipline rigged. Firemen's forecastle was flooded at after end. Men quartered in bridge space	D. Macmillan.
Aug. 21	Miro., o.e.v., 1 year	Ketch ..	29	5	Nil	Oats, 35 tons; explosives, 4½ tons	Fire	Nil	Lat. 44° 13′ S., long. 172° 36′ E., Pacific Ocean	N.	0·3	Fire in engine-room. Cause unknown. Supposed that tank overflowed on top of engine. Not discovered until fire taken hold. Damage to skylight and minor damage to electric-lighting circuit	H. T. Himainen.
Aug. 23	Clansman, s.s., 42 years	F. & A.	338	31	Nil	General, 160 tons	Collision ..	Nil	Auckland, N.Z.	N.E.	4	While the "Elsie Mary" was leaving King's Wharf, she accidentally collided with the "Clansman," piercing No. 4 lifeboat with her bowspit	E. J. Keatley.
Aug. 23	Elsie Mary, sail, 25 years	Schooner	99	6	Nil	..							
Aug. 28	Wingatui, s.s. 12 years	Schooner	1,344	32	Nil	General, 1,000 tons	Guide-rod end broke	Nil	Between Dunedin and Timaru, N.Z.	S.	4	Between Dunedin and Timaru the low-pressure guide-rod end broke off. Eccentric strap disconnected, and engines worked compound	S. Hewitt.
Aug. 28	Karori, s.s., 23 years	F. & A.	1,194	30	Nil	Timber and coal, 2,675 tons	Leaking	Nil	Lat. 39° 4′ S., long. 170° 16′ E., off N.Z. coast	W.N.W.	Strong ..	While on a voyage from Westport to Auckland, on soundings being taken, water was found to be in the forepeak. Examination from inside showed a small crack on edge of plate. No damage	J. Green.
Sept. 2	Kennedy, s.s., 61 years ..	F. & A.	131	12	Nil	General, 77 tons	Grounded ..	Nil	Foxton bar, N.Z. ..	Var.	..	When crossing the Foxton bar, vessel grounded and remained fast: refloated later. No damage	A. McP. Stuart.

RETURN OF WRECKS AND CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT, ETC.—*continued.*

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1926.													
Oct. 2	Opua, s.s., 24 years	Schooner	288	18	Nil	General, 8 tons	Total loss ..	Nil	Near Cape Palliser, N.Z.	N.E.	Light ..	The Court found that the casualty was contributed to by an error of judgment on the part of the master in setting too fine a course from Castlepoint to Cape Palliser, and in having no lookout with a knowledge of the coast during the second officer's watch: further, that the second officer, who was unacquainted with the coast, committed an error of judgment in failing to call the master after 2 a.m. when the weather towards the land became so hazy. There is no evidence of neglect or default by any officer or member of the crew. The certificates of the master and second officer were returned, but the Court ordered the master to pay £6 6s. and the second officer £3 3s. towards the cost of the inquiry	E. H. Fowler.
Oct. 8	Tokelau, aux. ketch, 2 years	Ketch ..	38	6	Nil	General, 20 tons	Total loss ..	Nil	Fakaofo, Union Islands	S.W.	4	Engines failed to start when required, and vessel would not manœuvre under sail in sufficient time to prevent the mishap. Ship total loss. All cargo landed, but partly damaged	T. Rowlands.
Oct. 13	Kaituna, s.s., 22 years	Schooner	1,208	32	Nil	Coal, 1,500 tons	Grounded ..	Nil	Tauranga Harbour, N.Z.	N.W.	Smooth	While entering Tauranga Harbour ship touched lightly, and remained fast for one and a quarter hours, coming off with own engines. Went ashore again on bank other side of channel and remained fast three hours, coming off with rising tide and own power. Bottom of vessel slightly damaged	H. M. Hurley.
Oct. 15	Omana, s.s., 13 years	F. and A.	49	6	Nil	General, 10 tons	Grounded ..	Nil	Off Tiritiri Island, N.Z.	N.W.	Fresh ..	Cleared Motukete passage at 1.20 a.m. Helmsman told to steer for Tiritiri light, which was visible ship's head compass S.E. by E. Later heavy rain obscured light. Continued on same course for one hour, then slowed down for fifteen minutes as no land visible owing to heavy rain. Was about to put to sea when vessel struck. Floated off seven hours later. Proceeded to Auckland; vessel made very little water. No damage to cargo or ship	R. McKinnon.
Oct. 20	Colac, s.s. 6 years	F. and A.	1,938	38	Nil	General, 4,112 tons	Grounded ..	Nil	Panama Canal ..	S.E.	2	While steaming through Panama Canal struck soft mud through vessel sheering to port, apparently without cause. No damage	J. C. Leslie.

Oct. 24	Rona, s.s., 8 years	F. and A.	3,784	49	Nil	Sugar, 4,000 tons	Shackle-pin came out	Nil	Suva Harbour ..	Calm	..	While coming to anchor the pin of shackle at 15 fathoms came out. Anchor and 15 fathoms of cable lost; not recovered	J. A. Wallis.
Oct. 31	Echo, o.e.v. ..	Schooner	100	10	Nil	General, 130 tons	Mainmast carried away	Nil	Wellington Harbour, N.Z.	N.	Moderate gale	When beating up Wellington Harbour a squall struck ship and foremast-head carried away. Before sail could be shortened, mainmast went overboard. Dropped anchor and 60 fathoms cable	F. G. L. Radford.
Oct. 31	Kaitia, sail, 20 years	Ketch ..	20	2	Nil	Nil	Grounded ..	Nil	Motukorea Island, N.Z.	N.W. to W.	Fresh ..	When on port tack vessel heeled over in sudden squall and lost steerage-way. Sudden shift of wind from N.W. to W. making vessel shoot in wind, sheet let fly one minute later. Vessel struck owing to heavy list; centreboard would not lift. Slight damage to centreboard	A. W. Humphreys.
Nov. 2	Koau, o.e.v., 9 years	Cutter ..	148	8	Nil	Nil	Grounded ..	Nil	Wangaehu Bay, N.Z.	N.N.E.	2	Anchored at usual anchorage at dead low water; felt vessel touch slightly. Soundings in locality not marked on chart. No damage	G. A. Nairn.
Nov. 3	Rona, s.s., 8 years	Schooner	3,784	49	Nil	Sugar, 8,225 tons	Fire	Nil	Lat. 22° S., long. 177° E. between Suva and Auckland	S.E.	3	Fire was discovered in fore 'tween-decks. Water played on fire from No. 1 hatchway. Extinguished after considerable difficulty. The seat of the fire was found to be in the cattle fittings where the coal-baskets were stowed. Cause of outbreak unknown	J. A. Wallis.
Nov. 9	Maori, s.s., 19 years	F. and A.	1,567	84	373	General, 100 tons	Struck floating object	Nil	Between Lyttelton and Wellington, N.Z.	Variable airs	..	Vessel struck floating object, probably a tree-trunk from the flooded Waimakiriri River. A bump was first felt forward and later aft, when the object damaged the starboard propeller	B. B. Irwin.
Nov. 10	Tees, s.s., 15 years	Schooner	247	17	Nil	Nil	Struck wharf ..	Nil	Auckland Harbour, N.Z.	N.	Slight ..	While berthing, the telegraph was rung "Full speed astern." As order was not complied with "Stop" was rung, and then again "Full astern." As order was not complied with, vessel consequently struck wharf, twisting her stem and buckling six plates. The third engineer, who was at the engines, admitted making a mistake	A. T. Dowell.
Nov. 10 approx.	Ruahine, s.s., 16 years	Schooner	6,670	152	585	General, 5,256 tons	Propeller-blade broken	Nil	Approximately 6·35° N., 80·43° W.	S.W.	3	Blade port propeller broken; time and place unknown	E. T. Smith.
Nov. 13	Coronation, o.e.v., 24 years	Schooner	59	6	Nil	Sulphur ..	Lost anchor and chain	Nil	South side of White Island, N.Z.	S.	7	While getting under way at White Island, port anchor and 15 fathoms of chain lost. Fresh S. breeze at time, and sea choppy	A. Berridge.
Nov. 13	Pono, aux. scow, 13 years	F. and A.	30	2	Nil	Wool, 5 tons ..	Grounded	Nil	Little Bay, near Kareta Bay, N.Z.	S.W.	9	While at anchor loading wool, vessel was driven ashore. Accident could not have been avoided, owing to wind suddenly changing, blowing hard, and sea getting up, causing ship to drag her anchor, and not having sufficient power to steam out. No damage to cargo; ship, about £20	R. McKinnon.
Nov. 14	Tekoa, s.s., 4½ years	Schooner	5,328	54	Nil	General, 9,880 tons	Main stop-valve fractured	Nil	Lat. 3·33° S., long 92·44° W., Pacific Ocean	E.S.E.	3	Main stop-valve of starboard boiler fractured. Arrangement of stop-valve and piping enabled this valve-chest to be isolated, using this boiler for auxiliary steam only	H. Barrett.

RETURN OF WRECKS AND CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT, ETC.—*continued.*

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1926. Nov. 17	Combine, sail, 16 years	F. and A.	24	3	Nil	Timber, 29,050 ft.	Bumped s.s. "Kaiapoi"	Nil	Auckland Harbour, N.Z.	S.S.W.	5	When leaving the western wharf under lower sail, moderate wind, laying head to wind, swing on stern caused new 4½ in. doubled coir rope to part. Vessel not being under command, bumped into s.s. "Kaiapoi." Foretopmast carried away, jib and jib topsail torn, and one plank of port bow stove in	W. J. Lang.
Nov. 28	Mollyhawk, s.s., 3 years	F. and A.	180	4	Nil	Vehicles ..	Collision ..	Nil	Auckland Harbour, N.Z.	S.W.	Squally	That the collision was caused by an error of judgment on the part of the master of the "Centaur," in that he left the wheel-house with no one in charge to go below to attend to a defect in the engine, and gave no signal that his vessel was not under command. The Court is of opinion that if the master of the "Centaur" had maintained his course and speed, or had given a signal that his vessel was not under command, the collision would have been avoided, and that it was his failure to comply in this respect with the regulations that caused the collision.	G. Webb.
Nov. 28	Centaur, o.e.v., 14 years	..	4	1	10	Nil						The Court is further of the opinion that the master of the "Centaur" acted as he did from want of knowledge of the regulations, and it regards it as important that oil engineers, before being granted a certificate entitling them to control a vessel carrying passengers, should be required to prove to the Examiner of Seamanship a knowledge of the rule of the road. The master of the "Centaur" will be ordered to pay £10 towards the cost of the inquiry	S. Hunter.
Dec. 11	Wahine, s.s., 12 years	Schooner	1,798	94	267	General, 90 tons	Struck wharf ..	Nil	Lyttelton, N.Z. ..	N.W.	8 to 9	While berthing at No. 2 wharf, during N.W. gale with heavy squalls, the vessel blew down to the wharf. A pile caught the lower half of the main-deck gangway-door, forcing it in	W. D. Cameron.
Dec. 12	Omana, s.s., 13 years	F. and A.	1,513	33	Nil	Poles, 100 tons	Struck wharf ..	Nil	Auckland, N.Z. ..	N.W.	4	When berthing, wind and tide put her inside line of wharf, and she touched wharf, damaging two plates well above water. Could not be avoided as vessel refused to answer helm	J. Benton.
Dec. 13	Hikitia, s.s., 1 year	Crane ..	357	18	Nil	Nil	Struck submerged object	Nil	Lat. 33·25° S., long. 172·32° W., Pacific Ocean	S.E.	4	Vessel received shock, apparently caused by striking submerged object awash. Ship examined inwardly and no indication of damage found	J. G. Fullerton.

Dec. 23	Remuera, s.s., 15 years	Schooner	7,113	153	500	General ..	Fire	Nil	Lat. 1·51° S., long. 90·15° W., Pacific Ocean	Fire ..	..	Smoke observed coming from No. 1 ventilator. No. 1 hatch opened and fire located in after chamber No. 1 tween-deck. Water played on and fire extinguished	J. J. Cameron.
Dec. 28	Kapiti, s.s., 24 years	Schooner	113	12	Nil	General, 80 tons	Leaking	Nil	Wanganui, N.Z. ..	..	..	On taking off hatches from fore hold it was found there was about 3 ft. of water in hold. Cause of damage not known, as leak is under water-line at bottom of hold	W. H. Sawyers.
Not known	Northumberland, s.s., 10 years	F. and A.	7,229	80	Nil	General, 11,000 tons	Engine trouble ..	Nil	Unknown: Between United Kingdom and New Zealand	..	..	On examination at Auckland of port H.P. turbine it was found that the impulse blading in wheel and top half of casing had carried away, also the nozzle-plate was badly damaged. Cause, date, and locality unknown	C. S. Broughton.
1927.													
Jan. 4	Clansman, s.s., 44 years	Schooner	338	31	53	Nil	Leaking	Nil	Auckland, N.Z. ..	E.	Light ..	Just before sailing-time a small hole was discovered in ship's bottom under the boilers. It was plugged and filled over with cement and made watertight.	E. J. Keatley.
Jan. 13	Devon, s.s., 19 years	Schooner	5,561	105	Nil	General ..	Collision ..	Nil	Wellington Harbour, N.Z.	N.W.	8	While berthing the hulk "Arawatta" with the tug "Terawhiti," alongside the s.s. "Devon" in the stream, the "Devon's" stern sheered to port and her stern struck the "Arawatta" just forward of break of poop. Her propellor apparently pieced the "Arawatta's" hull, for she began to make water. Hulk was beached at Kaiwarra	H. W. Gardner.
	Arawatta, hulk in tow of s.s. "Terawhiti"	Hulk ..	..	..	..	Coal				Squalls	10		
Jan. 25	Echo, o.e.v., 22 years	Ketch ..	99	10	Nil	General, 100 tons	Engine trouble ..	Nil	Cook Strait, N.Z. ..	N.E.	Breeze	When crossing Cook Strait the forward cylinder of the port engine carried away above the holding-down bolts	F. G. L. Radford.
Jan. 25	Northumberland, s.s., 10 years	Schooner	7,229	85	Nil	General, 7,000 tons	Struck submerged rock	Nil	Lat. 38·41° S., long. 178·14° E., off New Zealand	Light	..	The Court found that the vessel while on a voyage from Auckland to Napier, and while taking the usual course, which according to the chart was a safe and proper one, struck a submerged rock, and that no blame is attachable to any one	C. S. Broughton.
Feb. 2	Kiwi, s.s., 32 years	Cutter ..	79	4	30	Nil	Collision ..	Nil	Auckland, N.Z. ..	Calm	..	When leaving Queen's Wharf master of "Kiwi" saw launch crossing on starboard bow. Ported helm, but as launch's steering gear had broken down, she did not give me room to keep clear. Went full speed astern, but could not avoid collision	J. Smith.
	Miss Billie ..	Launch	..	..	..	..							L. Davey.
Feb. 8	Theresa Ward, s.s.	Ketch ..	75	8	Nil	Nil	Grounded ..	Nil	Off Bluff Harbour, N.Z.	E.	2	After putting pilot aboard s.s. "Port Campbell," which was lying off Bluff Harbour, and when returning to port, the weather being foggy, apparantly the master got too close to the shore, and in turning ran aground. No damage to vessel.	G. N. Lindsay.
Feb. 10	Calm, s.s., 17 years	Schooner	523	19	Nil	General, 430 tons	Grounded ..	Nil	Wanganui River, N.Z.	Calm	..	When proceeding up Wanganui River the white light at Putiki was not clearly visible, and vessel struck on soft bank of mud, slightly off line of beacons. No damage.	R. V. Manson.

RETURN OF WRECKS AND CASUALTIES TO SHIPPING REPORTED TO THE MARINE DEPARTMENT, ETC.—*continued.*

Date of Casualty.	Vessel's Name, Age, and Class.	Rig.	Register Tonnage.	Number of		Nature of		Number of Lives lost.	Place where Casualty occurred.	Wind.		Finding of Court of Inquiry.	Name of Master.
				Crew.	Passengers.	Cargo.	Casualty.			Direction.	Force.		
1927.													
Feb. 12	Oreti, s.s., 26 years	Schooner	72	10	7	General, 5 tons	Bumped bar ..	Nil	New River, N.Z. ..	S.W.	4	Outward-bound vessel took her usual course over the bar, in accordance with semaphore direction made by the Harbourmaster. Vessel bumped on bar twice. Upon docking at Port Chalmers it was found that the brass shoe carrying the lower bearing pintle had broken away; a new shoe was cast and a fresh pintle fitted	F. Mackenzie.
Feb. 14	Express, s.s., 45 years	Schooner	36	4	Nil	4 cwt. fish ..	Shipped water and leaking badly	Nil	Six miles off Otago Heads	S.W.	7–8	When taking in trawl, vessel rolled heavily, causing water to come in freely through topsides in bunkers below deck line and copper sheathing. As vessel was leaking badly, made for Port Chalmers, and just managed to reach port under her own steam	W. J. Anderson.
Feb. 16	Wainui, s.s., 41 years	Schooner	411	32	31	General, 408 tons	Wasted plate ..	Nil	Between Auckland and Tokomaru Bay	E.	2	Forecabin steward reported water in forward storeroom, and on investigation being made one of the plates on forward starboard side was found to be rusted through	G. A. Grey.
Feb. 27	Cygnet, s.s., 42 years	Schooner	69	10	Nil	General, 30 tons	Grounded ..	Nil	Motunau Reef, off N.Z.	S.W.	Strong	While on a voyage from Wellington to Lyttelton vessel grounded on Motunau Reef. Cause of casualty was on account of ship being navigated too close to the outliers of Motunau Island. Weather conditions and visibility very bad at the time. Ship grounded for four minutes only. Slight damage to ship	L. Larsen.
Mar. 7	Ahuriri, s.s., 40 years	Ketch ..	33	4	Nil	Nil	Collision ..	Nil	Hauraki Gulf, N.Z. ..	..	..	Court delivered an oral judgment to the effect that cause of collision was that the "Ahuriri" did not have a light showing, as required by the Collision Regulations, and that collision was due to very great carelessness on the part of that vessel. The Court ordered the master and owner of the "Ahuriri" to pay a sum of £24 to cover the cost of the inquiry, and £5 5s. to each of the other parties, making a total of £34 10s.	J. Neal.
	Elsie Mary, o.e.v., 26 years	Schooner	60	7	Nil	Coal, 129 tons ..							J. P. Owen.
Mar. 23	Kaitangata, s.s., 20 years	Schooner	1,195	32	Nil	General, 1,400 tons	Small hole in plating	Nil	Lat. 36·40° S., long. 159·50° E., Tasman Sea	N.W.	4	Chief engineer reported water making in engine-room bilges, starboard side. A small hole was found in steel plating. Wooden plug fitted. No damage	A. B. Sizer.
Mar. 30	Wetere, s.s., 13 years	F. and A.	45	8	Nil	Timber, 17,000 ft.	Grounded ..	Nil	Mokau River bar, N.Z.	S.W.	Light ..	Vessel grounded in taking the Mokau bar, owing to shoaling up of sand in the channel. Apparently unavoidable. Slight damage to vessel.	T. Henderson.

Summary of Casualties to Shipping reported to the Marine Department during the Year ended 31st March, 1927.

Nature of Casualty.	Casualties on or near the Coasts of the Dominion.									Casualties outside the Dominion.									Total Number of Casualties reported.		
	Steamers.			Sailing-vessels.			Total within Dominion.			Steamers.			Sailing-vessels			Total outside Dominion.					
	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.	No. of Vessels.	Tonnage.	No. of Lives lost.
Strandings—																					
Total wrecks	3	923	..	..	..	..	3	923	..	3	139	..	..	..	..	3	139	..	6	1,062	..
Slight damage	10	11,430	..	1	20	..	11	11,450	..	..	..	..	..	..	..	..	..	..	11	11,450	..
No damage	9	2,828	..	..	..	..	9	2,828	..	1	1,938	..	..	..	..	1	1,938	..	10	4,766	..
Total strandings	22	15,181	..	1	20	..	23	15,201	..	4	2,077	..	..	..	..	4	2,077	..	27	17,278	..
Collisions—																					
Total loss	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Slight damage	8	365	..	..	..	..	8	365	..	..	..	..	..	..	..	..	..	..	8	365	..
No damage	6	6,118	..	..	..	..	6	6,118	..	..	..	..	..	..	..	..	..	..	6	6,118	..
Total collisions	14	6,483	..	..	..	..	14	6,483	..	..	..	..	..	..	..	..	..	..	14	6,483	..
Fires—																					
Total loss	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Slight damage	2	143	..	..	..	..	2	143	..	2	10,897	..	..	..	..	2	10,897	..	4	11,040	..
No damage	2	963	..	..	..	..	2	963	..	..	..	..	..	..	..	..	..	..	2	963	..
Total fires	4	1,106	..	..	..	..	4	1,106	..	2	10,897	..	..	..	..	2	10,897	..	6	12,003	..
Miscellaneous, including damage by heavy seas to hull and cargo, loss of masts, sails, &c., and breakdown of machinery	20	12,258	..	3	740	..	23	12,998	..	11	37,896	..	..	..	..	11	37,896	..	34	50,894	..
Total number of casualties reported	60	35,028	..	4	760	..	64	35,788	..	17	50,870	..	..	..	..	17	50,870	..	81	86,658	..

Return of the Number of Land Boilers and Machinery inspected during the Financial Year ended 31st March, 1927.

Boilers.

Class.	Not exceeding 5 Horse-power.	Exceeding 5 but not exceeding 10 Horse-power.	Exceeding 10 Horse-power.	Total.
Stationary	2,380	1,455	2,520	6,355
Portable	205	971	455	1,631
Totals	2,585	2,426	2,975	7,986

Machinery.

Class.	Number.	Class.	Number.
Hydraulic lifts	142	Oil-engines	14,724
Electric „	1,116	Gas-engines	693
Gas „	1	Electric-motors	20,826
Oil „	8	Miscellaneous	10
Steam „	18		
Gas, hydraulic, and electric-motor hoists ..	1,297	Total	39,223
Water-engines, peltons, turbines, and water-wheels	388		

Return of New Boilers inspected for the Year ended 31st March, 1927.

District.	Made in Dominion.		Imported.		Total.	
	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.
Auckland	48	87	30	266	78	353
Auckland North	..	..	..	..	..	..
Auckland South	5	..	3	9	8	9
Canterbury North	65	359	17	70	82	429
Canterbury South	1	..	1	2	2	2
Gisborne	..	..	6	74	6	74
Hawke's Bay	9	20	8	6	17	26
Nelson	..	..	7	5	7	5
Otago	6	49	28	56	34	105
Southland	4	38	4	42	8	80
Taranaki	2	31	3	3	5	34
Taranaki North	..	..	..	..	..	..
Wellington	29	278	39	192	68	470
Wellington North	..	..	2	4	2	4
Westland	5	75	5	147	10	222
Totals	174	937	153	876	327	1,813

Return of the Number of Certificates issued to Land Engine-drivers and Electric-tram Drivers during the Year ended 31st March, 1927.

Class.	Number.	Class.	Number.
Service—		Competency—*continued.*	
First-class engine-driver	3	Electric winding engine-driver	2
Second-class engine-driver	1	Locomotive- and traction-engine driver ..	79
		Locomotive-engine driver	6
Competency—		Traction-engine driver	35
First-class engine-driver	30	Electric-tram driver	87
Second-class engine-driver	172		
Steam-winding-engine driver	2	Total	417

RETURN OF LAND-ENGINE DRIVERS' AND ELECTRIC-TRAM DRIVERS' EXAMINATIONS HELD THROUGHOUT NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1927, SHOWING THE NUMBER OF SUCCESSFUL AND UNSUCCESSFUL CANDIDATES.

Place.	Extra First Class.		First Class.		Second Class.		Steam Winding.		Electric Winding.		Locomotive and Traction.		Loco-motive.		Traction.		Electric-tram Driver.		Total.		Grand Total.
	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	
Auckland ..	..	1	1	..	27	12	..	..	..	..	10	1	..	..	..	..	24	1	62	15	77
Christchurch ..	..	..	..	2	3	5	..	..	..	..	1	3	..	..	11	1	30	..	45	11	56
Dunedin	..	..	2	4	6	4	..	..	..	..	3	..	4	..	4	2	..	..	19	10	29
Gisborne ..	..	..	..	2	11	..	..	..	..	..	1	..	..	..	..	..	..	..	12	2	14
Greymouth ..	..	..	5	6	9	4	1	..	..	..	3	3	..	..	..	..	..	..	18	13	31
Hamilton ..	..	..	1	3	24	4	..	..	2	..	11	1	..	..	2	1	..	..	40	9	49
Invercargill ..	..	..	3	4	19	25	..	..	..	..	4	2	..	..	3	..	1	..	30	31	61
Karamea..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Napier	..	..	1	1	7	..	..	..	..	..	2	..	..	..	2	..	..	..	12	1	13
Nelson	..	..	2	2	10	7	..	..	..	..	..	..	..	..	2	..	..	..	14	9	23
New Plymouth ..	..	..	2	2	11	12	..	..	..	..	2	..	..	..	2	..	..	..	17	14	31
Palmerston North..	..	..	4	1	13	8	..	..	..	..	3	1	..	..	2	..	..	..	22	10	32
Timaru	..	..	1	1	2	1	..	..	..	..	..	..	1	..	6	1	..	..	10	3	13
Wanganui ..	..	..	..	1	5	2	..	..	..	..	..	..	..	..	..	..	4	..	9	3	12
Wellington ..	..	1	3	3	6	9	..	..	..	..	4	..	1	2	..	2	28	4	42	21	63
Whangarei ..	..	..	1	..	9	5	..	..	..	..	8	..	..	..	..	..	..	..	18	5	23
Totals ..	..	2	26	32	163	98	1	..	2	..	52	11	6	2	34	7	87	5	371	157	528

Approximate Cost of Paper.—Preparation, not given; printing (1,300 copies), £82 10s.

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Price 1s.]

RETURN OF LAND-SERVICE DRIVERS AND ELECTRIC-TRAM DRIVERS' EXAMINATIONS HELD THROUGHOUT NEW ZEALAND DURING THE YEAR ENDED 31ST MARCH, 1927, SHOWING THE NUMBER OF SUCCESSFUL AND UNSUCCESSFUL CANDIDATES.

	Motor-car First Class		Motor-car Second Class		Motor-lorry		Motor-omnibus		Motor-cycle		Tractor		Locomotive		Electric Tram Driver		Total		Grand Total
	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.	F.	
Auckland	...	...	1	...	27	12	...	...	...	...	...	...	...	...	...	...	28	12	40
Christchurch	...	...	3	...	3	3	...	...	...	...	...	...	...	...	...	...	6	3	9
Dunedin	...	...	3	...	6	4	...	...	...	...	...	...	...	...	...	...	9	4	13
Gisborne	...	...	...	...	14	2	...	...	...	...	...	...	...	...	...	...	14	2	16
Greymouth	...	...	5	...	6	6	...	...	...	...	...	1	...	...	...	...	11	7	18
Hamilton	...	...	1	...	24	4	...	...	...	...	...	...	...	1	...	...	25	5	30
Invercargill	...	...	3	1	10	25	...	...	...	...	...	...	...	...	...	1	13	26	39
Kaitaia	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Levin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Napier	...	...	...	...	12	1	...	...	...	...	...	...	...	...	...	...	12	1	13
Nelson	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	5	...	5
New Plymouth	...	...	...	...	17	...	...	...	...	...	...	...	...	...	...	...	17	...	17
Oamaru	...	...	...	...	11	...	...	...	...	...	...	...	...	...	...	...	11	...	11
Palmerston North	...	...	...	...	12	...	...	...	...	...	...	...	...	...	...	...	12	...	12
Petone	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...	2
Rotorua	...	...	...	...	5	1	...	...	...	...	...	...	...	...	...	...	5	1	6
Stratford	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	6	...	6
Timaru	...	...	1	...	6	2	...	...	...	...	...	...	...	...	...	...	7	2	9
Wanganui	...	...	1	...	6	...	...	...	...	...	...	...	...	...	...	...	7	...	7
Wellington	...	...	3	...	6	...	...	...	...	...	...	...	2	...	4	...	15	...	15
Whangarei	...	...	1	...	6	...	...	...	...	...	...	...	...	...	...	...	7	...	7
Totals	**...**	**...**	**18**	**1**	**165**	**64**	**...**	**...**	**...**	**1**	**2**	**1**	**2**	**1**	**4**	**1**	**191**	**69**	**260**

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[Price 1s.]