(1) பக்கங்களின் எண்ணிக்கை 54

(2) புதுக்கித் திருப்பிய நாள் 10-10-90

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P.W.D. துறை

Administration Report.

அரசாணை எண்.
மு. கோப்புத் தாள் எண். 2622-W

அச்சகம்
பல்வகை

நாள் : 6-10-1890

198 .

27

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

ஆவண. கா-1—18,006—15-6-87.

ADMINISTRATION REPORT

OF THE

TRUSTEES OF THE MADRAS HARBOUR FOR THE YEAR 1889-90.

The Trustees have the honor to submit their report on the administration of the Madras Harbour Board for the official year 1889-90.

Constitution of the Harbour Trust Board.

2. From the commencement of the Trust, in June 1886 until March 1887 there were only nine members; from March 1887 until March 1889 there were thirteen members and from March 1889 until the close of the year under review, there were the following ten members.

Elected by the Chamber of Commerce.
1. Mr. G. G. Arbuthnot; resigned in April 1889 and was succeeded by Mr. C. E. P. VansAgnew.
2. Mr. S. R. Turnbull.
3. The Hon. Mr. J. A. Boyson.

Elected by the Trade Association.
1. Mr. C. Seton.

Nominated by Government.

(*a*) Officials including Chairman.
1. Sir Richard Barlow; resigned in November 1889 and was succeeded by Mr. Geo. McWatters, M.A.
2. Captain H. A. Street, H. M's. I. M.
3. Captain W. L. C. Baddeley, R.E.

(*b*) Non-officials.
1. Mr. Cowasjee Eduljee Panday.
2. Mr. Mirza Mehdy Isphani.
3. M.R.Ry. M. Varadarajalu Chetty Garu.

Number of Meetings held and average attendance.

3. The Board held 37 Meetings during the year; the minimum number prescribed by the Act being 26 or one every fortnight. The average attendance was 9·35.

Balance Sheet for 1889-90.

4. The actual closing balance of 1888-89 was Rs. 5,65,313 and this was taken as the opening balance of 1889-90. Including this and the Port Fund contribution of Rs. 2,75,000 the total receipts for the year were Rs. 12,05,639. The total expenditure was Rs. 4,18,604, leaving a balance at the end of the year of Rs. 7,87,035.

Ordinary Receipts.

5. Omitting the opening balance, the contribution from Port Funds, interest on Government Securities and Porterage receipts, the income of the Trust was Rs. 3,26,746, as follows:—

	Rs.	A.	P.
Harbour Dues, Imports	2,07,098	14	7
Do. Exports	1,00,945	7	6
Godown rent	10,225	0	1
Ground rent	2,836	0	0
Rent of Trust's properties	2,945	11	1
Miscellaneous	2,695	10	8
	3,26,746	11	11

The ordinary receipts for the year were Rs. 91,858 less than the total expenditure.

Comparison of Budget and Revised Estimates with Actuals.

6. The following table compares the Budget Estimates, with the Revised Estimates and the actuals for the year.

Items.	Budget Estimate for 1889-90.	Revised Budget Estimate for 1889-90.	Actuals of 1889-90.	Plus or Minus.	
Revenue Account.	Rs.	Rs.	Rs.	Rs.	
Opening Balance	5,15,458	5,65,313			
Receipts.					
Contribution from Port Funds	1,50,000	2,75,000	2,75,000		
Beach Imports	88,000	1,04,000	1,18,680	+ 14,680	Due to imports of V.G. State Railway material.
Pier Imports	83,000	88,000	88,419	+ 419	Due to improved facilities at Pier
Beach Exports	34,000	34,000	34,738	+ 738	
Pier Exports	49,000	64,700	66,208	+ 2,208	Due to improved facilities at Pier.
Ground Rent	3,500	2,500	2,836	+ 336	
Godown Rent	7,000	10,000	10,225	+ 225	
Penalties (Section 84)	...	...	...	...	
Rent of Harbour Trust Properties	4,000	2,500	2,946	+ 446	
Miscellaneous	1,200	1,200	2,696	+ 1,496	Includes charges for haulage by H. W. Engine of Railway Waggons on H. T. Lines.
Interest on Investments	20,000	37,000	37,278	+ 278	
Porterage	...	...	1,306	+ 1,306	
Total	4,39,700	6,18,200	6,40,327		
Total including the opening Balance	9,55,158	11,83,513			
Charges.					
Refunds	300	400	342	— 58	
Interest (under Section 30)	1,20,000	1,17,244	1,17,244	...	
Repayment of Loan for Construction of Harbour	1,00,000	1,00,000	1,00,000	...	
Chairman's Salary	4,800	4,800	4,800	...	
Secretary's Salary	7,750	7,750	7,710	— 40	1st Instalment refund of increase sanctioned by Board and disallowed by Government.
Establishment.					
Office Establishment	33,000	30,000	28,830	— 1,170	Fines and Savings.
Harbour Trust properties Establishment	504	212	211	— 1	
Contingencies in connection with Harbour Trust Properties	1,750	4,800	4,752	— 48	Arrears paid from 1st April 1884 to 31st May 1886 under G/O 218 Marine, 21st May 1889.
Contribution to Government for Pensions	...	...	...	...	
Office Rent	1,800	1,800	1,800	...	
Preventive Service	18,240	18,036	18,099	+ 63	
do. Boat Establishment	1,164	1,164	1,104	— 60	
Fees to Trustees	13,500	10,900	9,180	— 820	The Board consists of fewer members and fewer Meetings have been held.
Contribution to Provident Fund	2,400	2,400	2,134	— 266	
Contingencies.					
(a) Subject to Regular Audit					
Postage Stamps					
Receipt Stamps					
Telegrams	75	75	43	— 32	
Furniture	150	175	174	— 1	
Fees for Audit	50	50	37	— 13	
Law Charges	200	400	366	— 34	
Pier Cooly Contractor's Bills	400	750	750	...	
Stationery and Printing	1,000	1,500	1,358	— 142	
Advertisement Charges	19,000	22,500	23,118	+ 618	Due to the cost of working Steam Cranes, and extra work upon the Pier.
Uniform to Preventive Service, &c	1,500	1,500	1,482	— 18	
(b) Admissible without detailed audit	150	150	661	+ 511	Chiefly due to the charge (Rs. 320) for adv. Acct. Genl's. audit report.
Fees to Establishment for working overtime and on Sundays and Holidays	1,000	1,000	998	— 2	
Fees to Preventive Service	4,000	3,000	2,694	— 306	Due to care taken in the appointment of staff for overtime work.
Miscellaneous	2,700	2,800	3,194	+ 394	More overtime work has been done by steamers.
Petty Constructions and Repairs.	4,000	4,000	2,962	— 1,038	
New Works	30,000	18,000	17,173	— 827	
Repairs to Pier, Machinery &c.	50,000	65,000	62,531	— 2,469	
Tools and Plant	15,000	5,000	3,360	— 1,640	
Porterage	...	...	6,499	+ 6,499	
	4,29,343	4,19,506	4,18,606		

H. E. HOPE ROSS,
Chief Accountant, Harbour Trust Board.

Increase in Imports.

7. It will be seen from the above that the actual receipts, excluding the opening balance, were Rs. 2,00,627 in excess of the Budget Estimates and Rs. 22,127 in excess of the Revised Estimates. Credit, however, was only taken in the Budget Estimates for Rs. 1,50,000 as Port Fund contribution, which was subsequently raised to Rs. 2,75,000. The increase is noticeable, in order, under beach imports, pier exports and pier imports. The increase in regard to import dues generally is attributed to the expansion of the trade of the Port during the year; and to the large quantity of Railway materials sent out from England, for the Villapuram Dharmavaram and Guntakal State Railway.

There has been a steady increase in the importation of coal and patent fuel during the past three years, which will most probably continue, but as the completion of the Villapuram Dharmavaram and Guntakal State Railway proceeds northwards the Railway materials will, it is said, be shipped to Marmagoa and sent direct to Guntakal by the Southern Mahratta Railway, which will obviate a break of gauge.

Increase in Exports.

8. In regard to exports it is said that an attention in rates introduced by the Madras Railway is having the effect of attracting to Madras for shipment, goods which would otherwise have been taken to the West coast. The increase in exports was chiefly in cotton, ground nuts, jaggery and seeds. The exports in seeds, however, were much below the figures of 1887-88.

Expenditure.

Omitting the item of Rs. 6,499 entered against porterage (which is a temporary debit to advances recoverable) the total expenditure was Rs. 7,399 less than the Revised Estimates and Rs. 17,236 less than the Budget Estimates. In addition to the repayment of Rs. 1,00,000 towards the Government loan, a sum of Rs. 1,17,244 was paid to Government as interest at 4½ per cent. The small decrease in the Secretary's salary was due to the postponement by order of Government of the date from which he was to draw his increment. There was a saving of Rs. 1,170 under establishment, of Rs. 820 under 'Trustees' Fees' and of Rs. 1,038 under Miscellaneous; while there was an increase of Rs. 618 under the Pier Cooly Contract due chiefly to the cost of working the steam cranes and extra work upon the Pier, and of Rs. 511 in Advertisement Charges owing to the Auditor's report having had to be published in the papers as required by law, and to all supplies required being advertised for public tender.

Cost of Establishment.

10. Government has frequently called the attention of the Board to "the large and increasing outlay on establishment" and has compared the strength and cost on the 1st April 1884 on the 1st June 1886, when the Trust was constituted, and on the 1st April 1889.

The following was the result :—

—	No. of officers employed.	Cost per annum.	Revenue collected.	Percentage of Establishment to Revenue.
On 1st April, 1884 ...	114	Rs. 27,864	Rs. 3,70,000	7·53
On 1st June, 1886 ...	122	,, 32,052	,, 3,12,000	10·27
On 1st April, 1889 ...	182	,, 46,608	,, 2,67,000	17·46

In 1884 the Harbour Dues were Rs. 1-9-6 and Rs. 1-5-6 per ton ; while in the other periods taken they had been reduced to Re. 1 on the pier and 12 annas on the beach. A comparison cannot be made therefore with 1884 unless the same rates of Harbour Dues are taken, for the larger the rates and consequent receipts, the smaller will be the percentage of establishment to Revenue collected. Moreover, in June 1886 the establishment was far too inadequate. The Trust must keep up an establishment that is adequate to cope with any emergency that may rise.—Circumstances vary greatly ; every moorings in the Harbour may be occupied ; there may be nine steamers in it or there may be none, and extra hands that may be suddenly required cannot be taken on at pleasure. As a rule, the strength of the present establishment is strained to the utmost. The Trustees have, however, done their best during the year under report to keep down expenses in every form ; and applying the above calculations to the establishment for 1889-90 which actually cost Rs. 43,243 against the Sanctioned Establishment of Rs. 45,720, the following result is arrived at :—

	No. of officers employed.	Actual cost per annum.	Revenue collected.	Percentage of Establishment to Revenue.
1st April, 1890	186	Rs. 43,243	Rs. 3,27,000	13·22

and if the old Harbour Dues rates be adopted, the percentage would, allowing for the salaries of additional Preventive Officers entertained prior to the constitution of the Board, be reduced to 7·14 ; on an income of Rs. 5,21,310-4-0.

Preventive Service.

It is the Preventive Service which adds so much to the charges of the general establishment. The Preventive Service costs over Rs. 14,000 a year, and is employed in the interests of consignees, rather than in that of the Trust. In Bombay it is understood that the Preventive Service is paid by Government. It is hardly required for the regulation, conservancy, or improvement of the Harbour, and it is doubtful therefore whether it is a charge properly debitable to Harbour Dues.

Comparison of actuals of 1888-89 and 1889-90.

11. Comparing the expenditure of the year under report not with the estimates of the year but with the actuals of the year before, the savings under several heads are noticeable.

	1888-89.	1889-90.
Fees to Trustees ...	13,740	9,180
Establishment ...	47,026	43,243
Overtime Fees ...	6,273	5,887

The first is due to fewer meetings having been held; the second to economy in appointing establishment; and the third to care taken in endeavouring to minimise overtime fees, which is to a great extent, however, beyond the Board's control. Applications to work overtime and on Sundays and holidays are, as a rule, acceded to, and the overtime fees, under existing arrangements, depend on the number of such applications.

Petty Construction and Repairs.

12. Under Petty Construction and Repairs the following sums have been expended during the year :—

Screw pile pier...	Rs. 62,531
New works	,, 17,173

The plan accompanying the Engineer's report shows the progress that has been made in the repairs to the screw pile pier—588 lineal feet of timber work was renewed, and only a few bays of the iron work remained to be renewed to complete the whole of the repairs to the pier—so far as the Trustees are able to judge at present, the work has been done very satisfactorily. The more important items making up the Rs. 62,500 are as follows :—

Renewal of iron tie bars and rods of the screw pile pier Rs. 34,300. This work is being carried out by Messrs. Massey and Co., on contract, under the supervision of the Board's Engineer.

Renewal of pier beams and deck planking Rs. 17,000. This renewal is being made Departmentally by the Board's Staff. *Cranes.* Rs. 4,900 ; repairs to *Pier trucks* Rs. 926, this is a very economical item, old pier timber being used almost exclusively. *Duty lamps* Rs. 947, this includes staging fitted 20 feet out from the pier to guard against danger to the structure from fire. *Pier gangways* Rs. 417, these were made some time since, and this item is the cost of fitting; the old ladders were becoming insecure, but have been utilized to give a foot way on either side of the pier, at the shore end, from the Deck to the Beach.

The new works Rs. 17,173 are chiefly for Beach Improvements, under which head as nearly as possible Rs. 10,000 have been spent. These improvements include a new Railway siding upon the North side of the pier, which has been of the greatest service in railing away State Railway Stores, as much as 700 tons having been handled in one day; upon the South the previously existing lines have been extended to meet emergent requirements as such arose; a turntable has been placed in position at the inner end of the pier ; portions of the spaces served by the railway lines have been remetalled ; and a substantial concrete flooring has been provided to two of the three new iron exports sheds. The sum of Rs. 3,467 has been spent in adapting the old north tile shed to the requirements of the Commissariat, Ordnance and Public Works Departments; and Rs. 664 in fitting up a portion of the South shed for the Quarter Master General's Department, the whole of the shed being placed at his disposal when troops land or embark.

Contributions to Pensions.

13. The contribution for pensions will be a decreasing charge, but the large increase over the estimate was due to arrears having been ordered by Government to be paid from the 1st April 1884 to 31st May 1886.

Pier Cooly Contract.

14. The Pier Cooly Contract requires notice. The expenditure in the year under report was Rs. 23,118 against Rs. 19,345 in 1888-89. Government in reviewing last year's report drew attention to the increase in the contract in the face of diminishing receipts, and desired an explanation. The Deputy Traffic Manager has given an explanation in paras. 14—19 of his report. The contractor's fees were calculated on the data furnished by the import and export applications showing the payment of Harbour Dues. The Pier Cooly Contract expired on the 28th February 1890, and since that date the Trust has undertaken to work the pier departmentally, and also to porterage foreign cargo, under bye-law No. 4, from where it is landed on the beach to the Custom House or, if heavy material, to the places set apart for it on the beach. Only one month of the work falls into the year under report; but judging from the results to date it would seem that, if the Board continue the work, it would probably be able to save not only the large amount hitherto paid to the Pier cooly contractor but also the cost of the entire Preventive establishment or in all over 36,000 Rupees a year. The question is being reported on in a separate communication.

Traffic on the Pier.

15. The Traffic over the Pier is steadily on the increase, which is due to the greater facilities afforded by the connection of the Trust's lines with those of the Madras Railway and the South Indian Railway; to the construction of three large sheds for imports and exports; and to the use of steam cranes. The Pier line has recently been doubled as far as the Custom House, to enable empty trucks to return from the Custom House to the Pier without delay or unnecessary shunting. The largest import passed over the pier during the year under report on any single day was 980 tons but on the same day 300 tons of exports also passed over it, making a total of 1,280 tons; and since the Trust's assumption of the departmental management the tonnage has reached as high as 1,310 tons in a day.

A still further increase is anticipated with the opening of the double line to the Custom House.

Limit of Government loan.

16. *Harbour Construction.*—The original estimate for constructing the Madras Harbour was Rs. 57,45,165. This was greatly exceeded and finally Rs. 65,54,490 were charged to General Revenue. The figures given in the G. O., reviewing last years report are Rs. 65,55,939. The new estimate is for Rs. 45,90,051 and this sum and the expenditure between the 1st April 1883 and 31st December 1884 taken together make up the amount entered in Schedule B of the Madras Harbour Trust Act, Rs. 46,51,641 taken under Section 29, to be due from the Trust to the Secretary of State for India in Council.

Expenditure under new estimate.

17. The outlay on the Harbour Works up to 31st March 1889 had reached Rs. 30,33,478-5-7; the amount expended in the year under report was Rs. 7,40,751-14-2. The total expenditure up to 31st March 1890 was thus Rs. 37,74,230-3-9.

Progress made during 1889-90.

18. The plan accompanying the Engineer's report shows the state of the Harbour Works on the 31st March 1890. The Engineer states that he had only 76 working days during the year, owing to various causes, that is, days when the water was smooth enough for divers to do block setting work. Work had been stopped pending discussion of the entrance question, and was only ordered to be resumed in G. O. dated 22nd January 1889 which communicated the Secretary of State's telegram. The discussion in regard to the abutment blocks suggested by the late Mr. Parkes then lasted until August 1889, when Government withdrew its previous orders on the subject, and directed the "Set" blocks on the wave breaker of the North arm to be placed in at random. Mr. Pogson points out that the setting of these blocks in the first instance was a tedious and difficult operation, and raising them again and conveying them to the South arm, work requiring the greatest skill and care.

North Pier.—During the year 726 large blocks were set in the superstructure by divers, which advanced the pier by 454 lineal feet. The total length completed was 3,279 feet (vide plan). The total length of the North arm is to be 3,580 feet, and the pier head is to be 268 feet, or 3,848 feet altogether. All the blocks are ready for this arm up to the pier head, and if the weather continues fine the head will be reached in a few months time.

South Pier.—The number of blocks put down during the year was 307, increasing the length of the pier by 187½ lineal feet, and making the total length finished 3,706½ feet. Since the close of 1889-90 the Engineer, by extraordinary efforts, has actually completed three courses or 19½ feet of the South Pier head. The total length of the South arm is 3712′ 6″, and the pier head is to be 268′ 9″, or 3,981 feet 3 inches altogether.

Wave breakers.—In the North pier wave breaker, 523 blocks were deposited, and in the South pier wave breaker 493 blocks. The latter was completed in full section of 40 feet, as the pier itself progressed; but, owing to imperfections in the only crane available, the section of the North pier wave breaker has only been extended to 28 feet; when "*the new all round titan crane,*" which has been ordered from England arrives, the full section will be rapidly completed.

Concrete blocks.—3,035 blocks were made during the year, 1,751 being for the pier superstructure.

Rubble base.—6,320½ tons of material were deposited for this work, and in addition the South pier rubble base was consolidated

with Portland cement concrete, as suggested by Mr. Lee Pogson and approved by Sir Alexander Rendel, for a length of 139 by a width of 20 feet, and since April last it has been completed nearly the entire length of the South arm.

Pallaveram Quarries.—No less than 61,083½ tons of stone were brought in from these quarries during the year.

High charge of South Indian Railway Company for haulage.

19. In connection with the Pallaveram quarries, the Trustees beg to point out the excessive haulage charges made by the South Indian Railway. The following statement shows the value of stone supplied, and the cost of haulage respectively, during the last three years.

Year.	Value of stone.	Paid for haulage.
1887-88 ...	Rs. 19,710	Rs. 40,453
1888-89 ...	,, 19,924	,, 53,856
1889-90 ...	,, 33,905	,, 64,962

The Trust has to pay 1 anna per ton per mile whereas the rate for the public is only 6 pies per ton. This excessive and unreasonable charge adds very considerably to cost of the Harbour.

Erosion and accretion due to Harbour Works.

20. The Engineer's plan shows the high water mark at the commencement of the Harbour Works, and in September 1889 and April 1890. Since September 1889, the high water mark has receded a little throughout the whole width of the Harbour, but noticeably between the Screw pile pier and the north arm—on the south, outside the arm of the Harbour, there has been some accretion quite close to the arm. The Deputy Conservator states it as 120 feet. To the north of the Harbour, there has been very serious erosion going on, and the Engineer has expended during the year Rs. 25,999 out of the estimate of Rs. 43,773 sanctioned by Government in January 1890.

The Trustees lately inspected the protective works at this place, and it is feared that even the total estimate of Rs. 62,139 submitted by the Engineer originally, will not be sufficient. The erosion question is a very serious one, and will probably land the Harbour Trust Board in financial difficulties, if it is not protected by legislative enactment as suggested by Sir Alexander Rendel.

Inspection by Sir Alexander Rendel.

21. The Trustees had the pleasure during the year under report of meeting Sir Alexander Rendel who was asked by the Secretary of State to inspect and report upon the Madras Harbour Works.

At a special meeting convened on the 21st February 1890 to receive Sir Alexander Rendel he read the following memorandum—

"I have this day and yesterday inspected the Harbour and the plans on which the works are now being carried out.

"I quite recognise the fact that in the opinion of the Trustees and many other competent persons the question of the ultimate position of the entrance must be determined by experience of the entrance facing eastwards now under construction

I would only urge, and urge most strongly, that the works now under construction should be executed at once, as if no subsequent alteration of the site of the entrance was in contemplation. Not to do so is, in my opinion, to tempt disaster in case of a cyclone occurring during the period of experiment; and with no sufficient cause, for the work which the Trustees and the Government of Madras proposed to omit may nearly all be taken up in a condition which would allow of its being used again at the cost only of taking it up and replacing it in position. In other words, I am of opinion that the wavebreaker blocks should be made 40 feet wide at once on the North Pier extension, and should not be omitted or made of less width than 40 feet on the part of that Pier which would be removed if the entrance was shifted to the north-east.

"In regard to the entrance, on further consideration, I am so much more strongly of opinion, than I was when I made my report in April 1889, that 450 feet is too narrow, that I have most strongly to recommend that it be made not less than 500 feet, and had it been possible, I should have preferred to see it made 550 feet wide as originally proposed by Mr. Parkes; for the current across the Harbour entrance is much greater I find than I was aware of in April last.

"In respect to the construction of heads at the entrance, I think that ultimately each breakwater should be finished off with a solid mass of concrete made in an iron caisson, floated to the entrance, and there sunk in its proper position. But recognising the possibility of the entrance being shifted, I would propose that for the present the South Breakwater only should be finished in this manner, the North Breakwater being finished in block work, as shown on the plans already prepared by Mr. Lee Pogson and determined on. A light-house can then be built on the south head. A beacon (lighted of course) will be sufficient on the north head, at all events for the present.

"I consider that both heads should be so founded that there should be alongside them nowhere less than 39 feet of water below De Havilland's mean sea-level.

"For the purpose of laying wavebreakers 40 feet in width a new Titan crane will be necessary. This crane should be made to turn, so that it may either set blocks in the breakwaters or wavebreaker blocks outside them. This new crane would be a very valuable adjunct to the appliances of the Harbour for handling heavy weights, and might be also made available for the purposes of dredging alongside the inner faces of the breakwaters.

"In regard to the works which have been already executed, the mode of making the concrete appears extremely satisfactory, and the blocks are standing well; but I should like to see a large proportion of cement, say 1 to 6, employed in the concrete in and about the caisson on the South Pier head.

"The removal of the sunken Titan at the head of the North Pier will enable that pier to be finished without the curve proposed by Mr. Parkes. This curve was, I understand, proposed solely because it was supposed that the Titan could not be removed. The Titan having been removed, the North Pier should, I think, be built without the curve in exactly the same form as the South Pier. The curve inside both heads should also be flattened, I think, as much as possible, to give the greatest possible width to the entrance.

"I do not propose to press the question of orderly rows of wavebreaker blocks in place of random. The latter do their work very well, and the works are so far advanced that a change does not appear desirable. But I would advise that the surface of the rough deposits on the inner face of the breakwaters be paved with concrete made *in situ* in accordance with a plan which Mr. Lee Pogson has proposed and made a successful experiment with. This work should be executed as soon as possible. It requires no machinery and the cost is not large."

The Trustees resolved to give effect at once to Sir Alexander Rendel's suggestions, and indents have been sent to England for a new Titan Crane and a Steam Launch which are expected to arrive by the end of the current year.

22.—The Trustees beg to invite the special attention of Government to para. 43 of the Engineer's report. Mr. Lee Pogson states that the estimated rates have been insufficient all through the work, and that the total cost will exceed the estimate by Rs. 3,82,545. The Trustees hope that Government will be able to advance the further sum required to complete the Harbour.

The Conservator of the Port and Shipping Master.

23. The Deputy Conservator, who represents the Board as Conservator of the Port and Shipping Master, has given details of the year's operations under both these heads. There was a considerable increase in the number of ships and tonnage over the previous year. 681 ships of 10,21,537 tons against 630 ships of 9,21,814 tons. The revenue was Rs. 1,47,007 against Rs. 1,48,024 the previous year; a lower rate of Port dues was levied from the 1st September 1889. There was nothing to put the Harbour Works to test during the year, no cyclone or heavy weather of any moment. The roughest weather was perhaps experienced when H. R. H. Prince Albert Victor embarked for Burma, and when H. E. the Governor subsequently embarked for the Northern Districts. There was no day on which the ordinary working of the Port could not be easily carried on.

24. Owing to the smoothness of the water inside the Harbour it was possible to arrange for two new moorings. Nine steamers can now anchor inside the Harbour. The details of the shipping office call for no remarks.

Biden Home and Disabled Seamen's Fund.

25. The Harbour Board administers the Biden Home and Disabled Boatmen's funds but both subjects have been separately dealt with.

26. The Trustees desire in conclusion to place on record their very high appreciation of the services rendered during the year by their Engineer, Mr. Lee Pogson, their Secretary, Mr. Pinsent and their Deputy Traffic Manager, Mr. Hutchence; and they consider that the Harbour Masters deserve the greatest credit for the able manner in which they have handled, without accident of any sort, the numerous large steamers which have entered and left the Harbour during the year.

GEO. McWATTERS.
Chairman, Harbour Trust Board.

C. PINSENT,
Secretary Harbour Trust Board.

MADRAS,
15th July 1890.

No. 1361.

MADRAS HARBOUR TRUST BOARD.

Statement of Receipts and Charges from 1st April 1889 to 31st March 1890.

CHARGES.	RS.	A.	P.	RS.	A.	P.	RECEIPTS.	RS.	A.	P.	RS.	A.	P.
Refunds	342	7	11				Opening Balance				5,65,313	2	9
Interest (under Section 30) paid on 5th April 1889	1,17,244	2	11				Contribution from Port Funds				2,75,000	0	0
Repayment of loan for construction of Harbour	1,00,000	0	0										
Chairman's Salary	4,800	0	0				HARBOUR DUES COLLECTIONS.						
Secretary's Salary	7,710	0	0	2,30,096	10	10							
ESTABLISHMENT.							Beach Import	1,18,680	1	10			
							Pier do.	88,418	12	9			
Office Establishment	28,829	9	1				Beach Export	34,737	8	5			
Harbour Trust Properties Establishment	210	13	3				Pier do.	66,207	15	1			
Contribution to Government for pensions	4,751	15	9				Godown Rent	10,225	0	1			
Office Rent	1,890	0	0				Ground do.	2,836	0	0	3,21,105	6	2
Preventive Service	13,098	9	7										
Do. Boat-Establishment	1,104	4	2										
Fees to Trustees	9,180	0	0				MISCELLANEOUS.						
Contribution to Provident Fund	2,134	4	4	61,109	8	2							
CONTINGENCIES.							Harbour Trust, Properties rent	2,945	11	1			
							Provisions	542	0	0			
(a) Subject to regular Audit.							Water collections	505	12	6			
							Sale proceeds of unserviceable articles	39	3	8			
Postage	43	0	6				Engine haulage of railway wagons over Trust sidings	1,608	11	0	5,641	5	2
Receipt Stamps	174	7	0										
Telegrams	36	13	0										
Furniture	366	2	9										
Fees for Audit	750	0	0										
Law charges	1,358	6	0				Interest realized on Government 2½ of India 4 per cent Pro-notes						
Pier Cooly Contractor's Bill	23,117	9	7										
Stationery and Printing	1,481	9	1										
Advertisement charges	661	0	0										
Uniform to Preventive Service &c.	997	12	0	28,986	11	11	Porterage Receipts				1,306	7	11
(b) Admissible without detailed Audit.													
Overtime Fees to Establishment	2,693	8	1										
Do. Preventive Service and Boatmen	3,193	11	1										
Miscellaneous	2,961	9	10	8,848	13	0							
PETTY CONSTRUCTION AND REPAIRS.													
New works	17,173	5	9										
Repairs to Pier, Machinery &c.	62,530	8	6										
Tools and Plants	3,360	6	6	83,064	4	9							
Charges in connection with Porterage				6,498	8	0							
Total Expenditure				4,18,004	8	8							
CLOSING BALANCE.													
* Amount invested in Government of India Pro-notes for 7,85,000	7,73,666	4	10										
Interest on Government paper accrued at time of purchase paid to sellers	1,287	13	1										
Bank of Madras	11,693	9	4										
General Cash	276	15	10										
Contingent Cash	200	0	0	7,87,934	11	1							
				12,05,639	3	9					12,05,639	3	9

* Value on 31st March 1890, at current market rate 99¾ per cent, Rs. 7,82,050-4-0.

H. F. HOPE ROSS.
Chief Accountant,
Harbour Trust Board.

C. PINSENT.
Secretary, Harbour Trust Board.

COMPARATIVE STATEMENT OF RECEIPTS AND EXPENDITURE DURING THE YEARS 1888-89 AND 1889-90.

REVENUE ACCOUNTS.	1888-89.	1889-90.	REMARKS.
RECEIPTS.	Rs.	Rs.	
Opening Balance	6,92,032	5,65,313	
Current Receipts—			
(a) Harbour Dues—Imports	1,72,481	2,07,099	
(b) Do. do. Exports	78,568	1,00,945	
(c) Godown and Ground Rents	14,594	16,007	
(d) Miscellaneous	1,324	2,696	
(e) Interest on Balance invested in Govt. Securities	11,176	37,273	
(f) Contribution from Port Funds ...	25,000	2,75,000	
Porterage Receipts (March 1890) ..		1,306	
	3,03,143	6,40,326	
Grand Total ...	9,95,175	12,05,639	
EXPENDITURE.			
Salaries of Chairman and Secretary	11,950	12,510	
Fees to Trustees	13,740	9,180	
Establishments	47,026	43,243	
Overtime Fees	6,273	5,887	
Pier Cooly Contract	19,345	23,115	
Other Charges	8,502	12,765	
Contribution for Pensions	3,738	4,752	
Refunds	...	342	
Porterage Charges (March 1890)	...	6,499	
	1,10,574	1,18,296	
Petty Construction and Repairs ... Works ...	56,413	17,173	
Repairs ...	53,338	62,531	
Tools and Plant...	9,292	2,360	
	1,19,043	83,064	
Interest on Loans from Secretary of State ...	1,00,245	1,17,244	
Repayment of Loans from Secretary of State	1,00,000	1,00,000	
Total Expenditure...	4,29,862	4,18,604	
Closing Balance...	5,65,313	7,87,035	
Grand Total...	9,95,175	12,05,639	

No. 1395 A.

H. E. HOPE ROSS,
Chief Accountant,
Harbour Trust Board.

To
THE SECRETARY,
Harbour Trust Board,

To
THE SECRETARY,
HARBOUR TRUST BOARD,
Madras.

SIR,

I have the honor to submit the following report on the working of the Traffic Department for the year 1889-90, together with a review of the work of the two preceding years.

2. The year under report has been a busy one, and the Revenue receipts compare favorably with previous years. Excluding contribution from Port Funds, interest realized on Government Pro-notes and Porterage receipts the estimated income and actual receipts during the past three years have been as follows, viz:—

	Estimated. Rs.	a.	p.	Actuals. Rs.	a.	p.
1889-90	3,06,200	0	0	3,26,746	11	11
1888-89	2,73,350	0	0	2,66,966	13	2
1887-88	2,96,300	0	0	2,96,583	10	11

The above figures show an increase of Rs. 59,799-14-9 as compared with the receipts of 1888-89, and of Rs. 30,163-1-0 as compared with those of 1887-88.

3. The following statement gives the sources of revenue from which the above amounts have been realized.

Current Receipts.	1887-88.	1888-89.	1889-90.
(a.) Harbour Dues Imports...	1,79,799 15 3	1,72,480 14 7	2,07,098 14 7
(b.) Do. Exports...	93,145 10 2	78,568 1 7	1,00,945 7 6
(c.) Godown rent ...	13,530 10 10	8,574 5 1	10,225 0 1
(d.) Ground rent ...	3,609 2 5	2,773 4 6	2,836 0 0
(e.) Rent of Trust Properties.	4,902 0 9	3,246 0 3	2,945 11 1
(f) Miscellaneous ...	1,596 3 6	1,324 3 2	2,965 10 8
	2,96,583 10 11	2,66,966 13 2	3,26,746 11 11

(a). *Imports.*—The large increase of Rs. 34,618 under this head, is mainly due to items Rs. 12,230-3-5 having been collected on Railway materials for the Villupuram Dharmavarum and Guntacal State Railway; and Rs. 14,157-0-0 collected on 18,876 tons of Fuel landed in excess of previous years, the balance of Rs. 8,230-12-7 being due to ordinary increase in the trade of the Port.

(b). *Exports.*—The increase of Rs. 22,377-5-11 under this head is largely due to increased quantities of produce for export; principally cotton, ground-nuts, jaggery and seeds; having been brought to this Port for shipment. The Madras Railway Company have, during the year under report, adopted a system of differential rates on goods passed over their lines. This has reduced the charges on goods coming from long distances, and has had the effect of diverting goods to Madras, from Bellary and other distant places, which formerly went to Ports on the West Coast.

(c & d). *Godown and Ground Rent.*—The increases under these heads are due to larger quantities of goods having been imported. Collections for Godown rent on Import cargo may be expected to fall off, now that better facilities are afforded to consignees for removing their goods.

(e). *Cassimode Property.*—These rents are steadily decreasing, as the area available for rental is reduced yearly, by the erosion of the sea at Cassimode. The greater part of the buildings have been demolished, to prevent the sea washing away the materials.

The sum of Rs. 1,306-7-11 collected under the head of Porterage has not been included in the above statment of collections as the work was undertaken only on the 1st March 1890. A brief report of this work is included under the head of Pier Cooly Contract.

4. The tonnage of goods landed and shipped at this Port is as follows *viz.* :—

	1887-88.	1888-89.	1889-90.
Pier Imports, Tons ...	86,258	85,133	88,419
Do. Exports „ ...	54,562	47,262	66,208
Total Tons...	1,40,820	1,32,395	1,54,627
Beach Imports, Tons ...	1,24,721	1,16,464	1,58,240
Do. Exports „ ...	51,445	41,741	46,317
Total Tons...	1,76,166	1,58,205	2,04,557
Total Tonnage of Pier and Beach Tons...	3,16,986	2,90,600	3,59,184

5. *Coal and South Beach Railway sidings.*—The following additional lines of railway have been laid down during the past three years.

1887-88	Feet.	2520
1888-89	„	2978
1889-90	„	2329
Total		7827

Considerable advantages have been derived from the use of these lines. The facilities afforded and the saving effected appear to have increased the importation of coal and patent fuel. The saving in cart hire, bagging and wastage has been estimated at Rs. 2 per ton; and this saving appears to have been the turning point making the price of coal as a motive power, cheaper than firewood, as it is removed to its destination in Railway wagons, direct from the Board's premises.

6. The following statement shows the increase of importation during the past three years—

	1887-88.	1888-89.	1889-90.
Coal ...	10,000	21,645	23,970
Coke ...	608	997	645
Patent Fuel ...	4,884	6,443	9,753
Total Tons...	15,492	29,085	34,368

7. The Coal Hard was constructed in 1887-88, at a cost of Rs. 4954. These improvements resulted in the immediate increase of the Fuel trade, the excess in the two following years being 32,479 tons; bringing an increased revenue of Rs. 24,359-4-0, during that period. In addition to the above mentioned increments of revenue, Rs. 1,608-11-0 has been realized by the charge for haulage of goods over the new lines, and Rs. 995 as rent for the storage of Fuel on the Hard. The facilities afforded by these lines may also be fairly considered as having

brought the greater part of the Villapuram Dharmavaram and Guntacal State Railway stores and materials to this Port; as without these lines it would practically have been impossible to have handled the large quantities received, except at a prohibitive cost for cart and cooly hire. Revenue to the extent of Rs. 12,404-15-0 including ground rent was realized on these stores during the year under review.

Further, as these lines all connect with the Pier, greater facilities are afforded to shippers and consignees, consequently an increasingly large proportion of the Traffic of the Port is passed over the Pier; and as each ton of goods pays an additional charge of 4 annas per ton, the facilities afforded render a direct benefit to the Trust. The Imports and Exports at the Pier in 1889-90 exceeded those of the previous year by some 22,000 tons, giving an additional revenue of Rs. 5,500.

8. *Screw Pile Pier.*—The repairs of this Pier have been proceeded with during the whole of the year, and have, to a considerable extent, prevented it being utilized to its full capacity, as the principal shipping and landing place in possession of the Board, but the introduction of 2 steam cranes on the Pier, has more than compensated for the loss of working space, caused by the Pier Deck being opened out for repairs. To connect this structure with the Beach lines, and the Madras and South Indian Railway systems, it was necessary to shorten the shore-end of the Pier, by running the foreshore farther out, and on the triangular piece of ground thus reclaimed, three large, well-built sheds have been erected, for the accommodation of import and export goods, which were formerly stacked on the bare ground, without any protection whatever from rain and sun. These sheds are much appreciated by shippers, and are usually quite full of valuable export produce awaiting the arrival of steamers.

9. To the introduction of steam power, shelter afforded by the sheds, and facilities given by the lines connected with the Pier, may be fairly attributed the increased revenue collected on goods imported at, or exported from this place. The traffic over the Pier shows a steady increase, and appears to be limited only by the capacity of the appliances for handling the goods, and as all goods passing over the Pier pay an extra sum of annas 4 per ton, this may be considered very satisfactory. The following statement shows the revenue collected on goods passing over the Pier :—

	1887-88.	1888-89.	1889-90.
Pier Imports ...	81,258 8 9	85,132 14 2	88,418 12 9
Pier Exports ...	54,561 8 9	47,261 11 3	66,207 15 1
	1,40,820 1 6	1,32,394 9 5	1,54,626 11 10

10. After deducting Rs. 25,668-13-7 from the Beach imports revenue for 1889-90, *viz.*, Rs. 11,511-13-7 Harbour Dues collected on materials landed on the beach for the Villapuram Guntacal State Railway, and Rs. 14,157-0-0, collected on 18,876 tons excess importations of coal during 1889-90, (as these goods cannot be considered as the ordinary imports of the year 1889-90) the percentage of revenue collected upon goods imported at, or exported from, the Beach and Pier respectively, during the past three years have been as under :—

	1887-88.	1888-89.	1889-90.
Pier ...	51·59	52·74	54·74
Beach ...	48·41	47·26	45·26

This shows that goods are being steadily attracted to the Pier, although a higher rate of Harbour Dues is levied there.

11. *Pier Cooly Contract.*—Under this head is paid the sums due for actual work done on the Pier, at contract rates, for hoisting and removing to the places set apart for their reception, all import goods, and for taking on to the Pier, and loading into boats, all export goods passed over the Pier. This contract was entered into on the 1st of March 1887, after calling for tenders, the lowest of which was accepted. The rates are slightly in excess of the previous contract.

12. The sums paid to the Pier cooly contractors during the past three years are as follows, viz :—

	1887-88.	1888-89	1889-90.
Rs.	18,999 15 7	19,345 3 9	23,117 9 7

13. The excess paid during 1888-89, when some 8000 tons less of cargo passed over the Pier, is due to bills to the amount of Rs. 2,961-3-0 for work done during the previous year, having been paid at the beginning of the year. The excess in 1889-90, is due to some 22,000 tons of cargo in excess of the previous year, having been landed at, or shipped from the Pier.

14. As G. O. Nos. 490-491, Marine, dated 20th November 1889, calls for a special explanation regarding this expenditure, the following explanation of the manner in which the tonnage statements for the preparation of Pier cooly bills are prepared in the Accounts Department, is necessary. The tonnage statements are prepared from data furnished by passed import and export applications, on which Harbour Dues have been paid. This method assures to the Board that no Pier cooly can be paid, unless Harbour dues have actually been levied on the goods.

15. The tonnage accounts cannot be kept daily as the goods are actually landed or shipped, unless every package were measured or weighed at the time of hoisting from, or lowering into boats, which is impracticable; so all goods are deposited ready for delivery, and the statements of weights or measurements taken from the applications, after Harbour dues have been paid. This system works well, but it cannot show a monthly or yearly expenditure agreeing with the actual operations of the month or year, as many applications for goods are not submitted for long periods after importation.

16. The contract was in force for the three years under review, and the total expenditure can be checked very closely with the actual revenue received from goods passed over the Pier during that period.

17. Goods passing over the Pier pay Harbour dues at the rate of Re. 1 per ton, on the great bulk of the goods. A few items, such as machinery and heavy weights, pay an enhanced rate, which prevents a perfectly accurate check, but as Rs. 4,27,840 were levied during the three years, this may be taken as closely representing the same number of tons.

18. The Pier cooly contractor is paid at the rate of annas 2-4 per ton on dead weight, and annas 2-2 on measurement goods, and as the quantities of each class of goods are about equal, the average rate is annas 2-3 per ton. This rate on

427,840 tons, gives a sum of Rs. 60,165, while the actual sum paid to the Pier cooly contractor during the three years amounts to Rs. 61,463.

19. The data and tonnage statements are carefully checked and counter checked, before the bills are paid, and the above comparison of the three years work will show that no cooly hire has been paid, except for work actually done, and that all work done has been paid for by merchants in the extra 4 annas.

20. The cooly contract expired on the 28th February 1890, and the Board having directed that the whole of the porterage work should be done departmentally, this work, as forming part of the porterage work, has been done by the Traffic Department since that date, and the result would appear to indicate that the whole of this expenditure will be saved to the Board, and a considerable sum of money be realized. This porterage work is to be continued provisionally, for six months as a tentative measure, and it is estimated that at the end of this period a considerable saving will have been effected.

21. The whole of the Traffic Department staff have worked well during the past year. The work, owing to exposure to the sun and rain, is very hard and trying; still I have always found the men at their posts, and attentive to their duty. The hours of attendance are from 6 A.M., till 6 P.M., and work is often continued till 9 P.M., and occasionally till midnight or later.

22. Appended are eight statements showing the quantities of goods landed at or exported from this port during the past three years, viz :—

Appendix I. Goods imported from foreign ports.
II. Stores imported by the Madras Railway Company.
III. Stores imported by the South Indian Railway Company.
IV. Goods imported from coast ports.
V. Goods exported to foreign ports.
VI. Goods exported to coast ports.
VII. Stores, &c., imported by Government.
VIII. Stores, &c., exported by Government.

I have the honor to be,
Sir,
Your obedient Servant,

S. HUTCHENCE,
Deputy Traffic Manager.

TRAFFIC MANAGER OFFICE,
HARBOUR TRUST BOARD,
Madras 1st July 1890.

I. STATEMENT OF GOODS IMPORTED FROM FOREIGN PARTS.

——	Packages.	1887-88.	1888-89.	1889-90.	Remarks.
Apparel and Effects ...	Packages ...	1,579	1,368	1,217	
Alum	Barrels ...	424	496	504	
Asphalt, Tar, and Pitch	Casks ...	2,296	2,797	3,133	
Acids	Cases ...	791	1,484	775	
Arms and Guns ...	,, ..	188	516	235	
Arrack	Casks ..	665	832	773	
Blankets	Bales ...	68	25	36	
Beef and Pork ...	Cases ..	1	2	.....	
Bricks	100 ..	580	420	1,497	
Beer	Cases ...	7,658	6,697	5,664	A large decrease in the importation of Beer is noticed, due probably to the operation of the Murree Brewery Company, now working at Ootacamund and Bangalore.
	Barrels ...	.....	2,160	935	
	Hogsheads ...	7,170	4,424	3,649	
Boiler ..	No. ..	45	33	19	
Corks	Bundles ...	181	191	133	
Canvas	Bales ...	334	140	77	
Candles	Cases ..	11,911	14,278	20,539	Increase largely due to the use of Candles in the several Gold Mines in Mysore.
Colours	,, ..	898	1,980	1,056	
Confectionery Provisions and Oilmanstores	,, ..	17,425	17,042	14,214	
Crockery and Glassware	Crates and Casks	2,990	2,942	3,018	
Chalk	Barrels ..	292	377	95	
Cement	Casks ...	6,742	17,203	8,868	Large increase in 1888-89 appears to have been caused by a partial cessation of the Madras Cement Company's work at Madras during the year.
Cast Iron Tubes and Pipes	Tons ..	451	683	1,009	
Camphor	Tubs				
Coal and Coke ...	Tons ...	2,615	2,675	1,560	
Crackers	Cases ...	6,054	13,773	11,992	
Copper Plates and Tiles	No. ..	1,200	879	975	
Corrugated Iron ...	Packages ...	258	498	5,012	Transactions in this metal have been very [illegible] during 1888-89 and 1889-90, owing to the unsettled state of the Home and Continental Markets.
Dynamite	Cases ...	2,000	4,998	6,450	Steadily increasing quantities of Dynamite are imported for use in Gold Mines, and for other blasting purposes.
Earthenware ...	Crates				
Fire Clay	Casks ...	3,837	2,104	794	
Flour	Bags and Barrels.	43	234	147	
Flannel	Bales	785	483	675	
Gunpowder	Packages ...	56	74	23	
Harmonium	Cases ..	700	476	962	
Hardware	Cases and Casks.	8	4	11	
		7,670	4,247	2,924	The apparent large decrease in this class of good is due to cases and casks of old files imported for use as steel, having been in previous years classed as Hardware. These packages we now shown under the head of Steel.
Hops	Packets				
Iron	Tons ...	615	269	115	
		19,902	17,771	12,762	Large imports had taken place in 1887-88 and 1888-89, and considerable stock of iron had not been cleared at the beginning of the year; prices also being kept at home and against importers.
Iron Safes	No.				
Kerosine Oil	Cases ...	411	577	343	
		86,489	2,48,024	2 48,505	The large increases in the imports of this oil bids fair to continue, as it is coming into general use amongst the poorer classes of natives.
Lime Water					
Malt	,, ...	126	108	31	
Millinery and Haberdashery	Bags ...	61	565	609	
Matches	Cases ...	2,043	1,640	1,393	
	,, ...	6,087	11,739	4,928	The large quantities received in 1888-89 overstocked the market. The whole of the Combustible shed and a large portion of the open enclosure being often crowded.
Machinery	Tons				
Nails	Kegs ...	640	1,752	1,799	
		9,971	19,256	4,409	The importations have been very uncertain. During 1888-89 large quantities of wire nails were imported direct, and the market appears to have been overstocked.
Oil and Turpentine ...	Drums ...	3,963	6,984	8,863	
Piece Goods and Twists	Cases & Bales	76,522	105,495	97,383	
Paper	Bales ...	5,526	3,236	3,988	The decrease under this head appears to be due to large importations from Calcutta, which have increased largely during the past three years.

STATEMENT OF GOODS IMPORTED FROM FOREIGN PARTS.—(Concluded.)

——	Packages.	1887-88.	1888-89.	1889-90.	Remarks.
Piano	No. ...	102	102	135	
Printing types ...	Cases ...	419	330	348	
Pig lead	No. ...	1,013	1,895	2,647	
Paint	Kegs ...	5,784	7,837	7,945	
Rattan	Bundles ...	4,945	949	6,527	
Soaps	Cases ...	1,544	2,075	2,191	
Salt	,, ...	938	488	620	
Steel	Cases & Casks	.....	921	3,577	
Shovels	Bundles ...	34	173	13	
Sodawater Bottles ...	Crates ...	708	846	997	
Sulphur	Casks ...	425	825	831	
Shot ...	Kegs ...	306	220	348	
Sundries	Packages ...	34,366	32,262	39,934	
Specie	No. ...	1,877	1,330	1,541	
Slates and Pencils ...	Cases ...	303	1,389	645	
Spelter ...	Cakes ...	7,465	13,343	3,255	
Saw	Cases ...	49	34	7	
Twine and Rope ...	Bales & Coils	362	71	221	
Tin Plates ...	Boxes ...	3,611	4,194	3,771	
Wine and Spirits ...	Cases ...	38,227	45,173	46,479	
	Casks or Puncheons.	.....	2,094	3,240	
		2,195	256	392	
Window Glasses ...	Cases ..	4,498	1,987	5,158	
White and Red Lead ...	Kegs ...	1,040	859	969	
Yellow Metal ...	Cases ...	3,141	907	2,722	Owing to the uncertainty of the home markets, imports in these goods have been very unsettled.
Zinc Sheets ...	Packages ...	1,096	1,221	1,174	
Horses	No. ...	619	837	696	
Ponies	,, ...	3	3	6	
Cows	,, ...	2	5	5	
Dogs	,, ...	21	14	13	
Elephant	,,	.....	... ..	1	

II. STATEMENT OF STORES IMPORTED BY THE MADRAS RAILWAY COMPANY.

——	Packages.	1887-88.	1888-89.	1889-90.	REMARKS.
Stores	Packages	186,911	34,697	81,723	
,,	Tons ...	.....	...	171	
Fuel	,, ...	4,884	5,587	9,753	
Coke	,, ...	608	997	645	
Coal	,, ...	718	52	2,702	
Timber	,, ...	831	1,622	1,483	
F. Bricks ...	100	.....	141	140	

III. STATEMENT OF STORES IMPORTED BY THE SOUTH INDIAN RAILWAY COMPANY.

——	Packages.	1887-88.	1888-89.	1889-90.	REMARKS.
Stores	Packages	140,270	109,131	694,812	
Fuel	Tons	.....	856	.....	
Coke	,, ...	.....	.....	.....	
Coal	,, ...	3,091	5,276	6,582	
Timber, ...	,, ...	.....	10	.....	
Boiler	,, ...	.....	.....	10	

IV. STATEMENT OF GOODS IMPORTED FROM COAST PARTS.

	Packages.	1887-88.	1888-89.	1889-90.	Remarks.
Apparel and Effects ...	Packages ...	149	378	414	
Alum ...	Barrels ...	15	51	56	
Acids	Cases	50	140	11	
Arms and Guns ...	Do ...	21	15	49	
Boilers	No. ...	2	3	1	
Bricks and Tiles ...	100 ...	1,577	120	1,239	
Coffee ...	Bags ...	757	715	461	
Candles	Cases ...	996	1,871	682	
Colours	Do ...	635	1,667	1,067	
Crockery and Glassware ...	Do ...	216	782	413	
Coal and Coke ...	Tons ...	1	2,351	186	
Carpets	Cases ...	137	112	178	
Camphor ...	Tubs ...	1,647	1,488	1,535	
Copra	Bags ...	2,844	191	124	
Crackers ...	Cases ...		10		
Copper	Do	772	1,350	1,061	The uncertainty in the home markets have drawn a large quantity of Copper from Calcutta.
,,	Tiles and Ingots ...	...	...	11,053	
Cocoanuts ...	No. ...	10,399	900	600	
Earthenware ...	Crates ...	97	169	30	
Do.	Pipes ...	690	2,080	...	
Firewood ...	Tons ...	396	1,212	892	
Flour	Bags and Barrels ...	1,689	2,819	4,352	The Bombay flour mills turn out a superior class of flour, which appears to find a good market in Madras, as the importations are steadily increasing.
Gunnies	Bales ...	7,197	7,993	11,863	Increased quantities of goods for export has caused an extra den and for Gunnies.
Gram and Peas, &c.	Bags	1,68,359	1,25,942	1,91,357	The large importations of these articles of food consumption was due to the threatened partial failure of the North-East Moncoon in November and December last.
Garlic	Do	3,897	1,899	7,077	Do do do
Hardware	Cases	737	542	469	
Horns	Bundles ...	1,068	702	1,043	
Hides	Bales	7,138	4,449	7,400	
Iron	Tons	639	277	457	
Iron safes	No.	6	65	47	
Leaves	Bundles	6,945	5,116	5,796	
Machinery	Tons	6	171	109	
Millinery and Haberdashery.	Cases	155	254	268	
Oil and Turpentine ...	Drums ...	2,244	2,794	2,540	
Piece Goods	Cases	5,080	7,306	6,237	
Paper	Bales	3,223	3,820	5,003	
Paint	Kegs	49	212	1,098	
Piano	No	7	6	7	
Rice	Bags	42,400	26,769	69,446	Do. do do
Rose Water	Cases	877	1,409	1,867	
Seeds	Bags	14,285	13,066	13,212	
Skins	Bales ...	8,314	5,729	5,727	
Silk	Do. ...	1,045	887	883	
Sandalwood	Bundles ...	227	145	297	
	Bags ...	4,163	6,900	2,816	
		107	201	184	
		44,567	43,462	38,472	
			165	179	
				173	
				541	
				1,922	
				3,434	
				8,423	

V. STATEMENT OF GOODS EXPORTED TO FOREIGN PORTS.

	Packages.	1887-88.	1888-89.	1889-90.	Remarks.
Beer and Ale ...	Cases	22	13	30	
	Casks	21	...	2	
	Hogsheads ...	...	1	1	
Cinchona Bark	Bales	2,791	2,185	1,299	
Chillies	Bags and Bundles ...	6,333	2,225	3,262	
Cigars	Cases	1,120	1,239	1,423	
Coffee	Bags	14,879	23,456	15,515	
Cotton	Bales	82,394	55,173	101,837	
Cotton Twist	,, ...	2,893	3,960	5,956	
Coriander and Omum Seeds ...	Bags	8,891	9,281	11,610	
Carpets	Bales	526	645	725	
Coal	Tons	50	182	115	
Deer Horns	Packages... ...	866	874	1,366	
Explosive	Cases	9	14	25	
Firewood	Tons	8	23	...	
Four-wheeled Carriage ...	No.	3	30	3	
Ground Nuts	Bags	105,529	95,642	206,096	
Gram, Peas, &c.	,, ...	3,379	937	1,454	
Horns, Cow and Buffalo ...	Tons	242	199	66	
Hides, Tanned	Bales and Bundles ...	20,376	17,858	17,532	
Indigo	Cases and Chests ...	27,482	22,762	27,618	
Iron	Tons	20	29	23	
Jaggery	Bags	79,358	23,520	111,032	
Myrabolams	Bags	1,744	195	452	
Miscellaneous	Packages... ...	19,381	23,607	17,990	
Onions	Bags and Baskets ...	6,089	7,979	9,078	
Oil	Casks	933	331	587	
Piece Goods	Bales and Cases ...	4,033	3,372	8,419	
Potatoes	Bags and Baskets ...	2,892	3,837	2,703	
Poonac	Bags	14,847	13,116	15,187	
Piano	No.	3	10	8	
Rice	Bags	5,250	17,586	65,475	
Redwood	Tons	1,145	1,382	2,052	
Seeds, Gingelly and Castor ...	Bags	132,295	20,137	80,411	
Skins, Sheep & Goat, Tanned.	Bales	31,249	32,498	30,399	
Sandalwood	Bundles	840	672	637	
Spirits and Wine ...	Cases	714	135	331	
	Casks	49	5	87	
	Puncheons ...	...	...	18	
Sugar	Bags	912	1,112	7,296	
Specie	Boxes	164	158	33	
Tamarind	Bundles	3,573	8,277	2,549	
Turmeric	Bags	24,230	1,898	1,526	
Tea	Cases	4,300	4,275	3,822	
Two-wheeled Carriage ...	No.	...	...	...	
Wool	Bales	991	970	1,043	
Yellow Metal	Tons	98	3	5	

VI. STATEMENT OF GOODS EXPORTED TO COAST PORTS.

	Packages.	1887-88.	1888-89.	1889-90.	Remarks.
Beer and Ale	Cases	262	249	456	
	Casks	28	16	110	
	Hogsheads	...	161	10	
Cinchona Bark	Bales	...	...	...	
Chillies	Bags and Bundles	80	178	186	
Cigars	Cases	2,341	2,908	5,535	
Coffee	Bags	857	1,488	1,298	
Cotton	Bales	567	506	574	
Cotton Twist	,,	2,977	1,972	4,761	
Coriander and Omum Seeds	Bags	2,923	3,816	3,075	
Carpets	Bales	2,435	2,728	7,071	
Coal	Tons	10	34	26	
Deer Horns	Packages	249	...	94	
Explosive		4	85	7	
Eggs	Cases				
	Pots	152	201	303	
Firewood	Tons	2,631	2,717	3,882	
Four-wheeled Carriage	No.	67	28	8	
Ground Nuts		21	26	9	
Gram, Peas, &c.	Bags	22,711	30,757	20,996	
	,,	701	15,204	8,987	
Horns, Cow and Buffalo	Tons				
Hides, Tanned	Bales and Bundles	79	198	336	
		246	407	495	
Indigo	Cases and Chests				
Iron	Tons	324	989	743	
Jaggery					
Kerosine Oil	Bags	433	376	296	
	Cases	250	1,516	4,680	
Myrabolams					
Miscellaneous	Bags	714	322	139	
	Packages	26,540	12,419	20,868	
Onions					
Oil	Bags and Baskets	15,838	9,705	11,516	
	Casks	1,771	790	1,844	
Piece Goods					
Potatoes	Bales and Cases	3,273	3,429	3,613	
Poonac	Bags and Baskets	14,485	24,229	21,992	
Piano	Bags	3,121	2,210	1,469	
Paddy	No.		5	42	
	Bags	18,655	27,149	4,019	
Rice	Tons	3,370	6,790	8,198	
Redwood		223	62	194	
Seeds, Gingelly and Castor	Bags	56,137	19,374	28,756	
Skins, Sheep & Goat, Tanned	Bales	635	510	758	
Sandalwood	Bundles	998	224	342	
	Cases	2,629	2,143	2,098	
Spirits and Wine	Casks	44	150	162	
	Puncheons	...	2	16	
Sugar	Bags	265	460	2,307	
Specie	Boxes	401	278	164	
Tamarind	Bundles	5,423	2,010	3,598	
Turmeric	Bags	11,491	8,972	463	
Tea	Cases	51	55	544	
Two-wheeled Carriage	No.	4	14	8	
Wool	Bales	9	37	567	
Yellow Metal	Tons	23	88	25	

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VII. STATEMENT OF STORES &c., IMPORTED BY GOVERNMENT.

Departments.	Description.	Class.	1887-88.	1888-89.	1889-90.	Remarks.
Accountant-General	Specie Silver	Boxes	2,423	1,789	1,109	
	,, Copper	,,	352	335	1,320	
	,, Silver&Copper	...	...	174	...	
	,, Notes	,,	4	19	21	
	,, Packages	Nos.	7	...	1	
State Railway	Packages and pieces.	,,	11,940	593	...	
	Rails	,,	26,602	...	...	
	Sleepers	,,	78,513	...	...	
	Bridge work	Tons	267	...	...	
Public Works Department	Boilers	Nos.	2	2	...	
	Coal	Tons	...	106	44	
	Iron	,,	63	220	442	
	Stores	Pkgs.	3,084	1,691	1,127	
Ordnance	Coal	Tons	186	86	1,968	
	Ammunitions	Boxes	2,160	1303	51	
	Stores	Pkgs.	11,333	15,838	22,268	
Madras Harbour Works	Cement	Casks	11,168	35,764	40,241	
	Stores	Pkgs.	790	821	1,009	
	Coal	Tons.	...	...	496	
Clothing	Packages	No	2,525	1,773	2,831	
Police	,,	,,	211	248	135	
Salt Revenue	,,	,,	69	75	115	
Post Office	,,	,,	1,733	980	1,858	
Medical	,,	,,	2,879	1,384	1,616	
Telegraph	,,	,,	34,690	6,899	16,414	
Stationery	,,	,,	1,503	1,088	743	
Stamps	,,	,,	1,263	1,435	1,439	
Commissariat	,,	,,	3,841	1,811	1,779	
Gazette Press	,,	,,	91	52	32	
Marine	,,	,,	147	32	182	
Supt., Railway Mail Service	,,	,,	270	52	31	
Revenue Survey	,,	,,	103	252	52	
Agriculture	,,	,,	28	1	6	
Govt. Central Museum	,,	,,	13	6	4	
Under Secy. to Government	,,	,,	81	87	84	
Supt. of Prisons	,,	,,	6	3	9	
Revenue Board	,,	,,	36	65	86	
Forests	,,	,,	66	31,811	175	
Bank of Madras	,,	,,	...	...	3	
Do.	Specie Silver	Boxes	...	...	56	
Presidency College	,, Copper	,,	...	...	13	
School of Arts	Packages	No.	...	2	2	
Sanitary Commissioner	,,	,,	...	1	...	
Inspector of Cattle Diseases	,,	,,	...	116	10	
Chemical Examiner	,,	,,	49	25	15	
Medical College	,,	,,	11	50	2	
Dy. Collectors	,,	,,	12	...	...	
Camp Equipage	,,	,,	5	...	1	
Astronomer	,,	,,	4	11	6	
Presidency Pay Master	,,	,,	1	8	6	
Registration	,,	,,	19	24	2	
Director of Public Instruction	,,	,,	43	...	9	

VIII. STATEMENT OF STORES &c., EXPORTED BY GOVERNMENT.

Departments.	Description.	Class.	1887-88.	1888-89.	1889-90.	Remarks.
Accountant-General	Specie Silver	Boxes.	342	118	174	
	,, Copper	,,	176	136	216	
	,, Notes	,,	4	5	4	
Bank of Madras	,, Packages	Nos.	1	1	1	
	,, Silver	Boxes.	...	...	10	
Ordnance	,, Copper	,,	...	...	37	
Public Works Department	Packages and pieces.	Nos.	7,467	5,765	25,038	
Clothing	,,	,,	1,100	4,420	18,358	
Police	,,	,,	1,401	916	1,018	
Salt Revenue	,,	,,	690	749	849	
Medical Department	,,	,,	152	330	493	
Telegraphs	,,	,,	1,794	1,049	1,868	
Stationery	,,	,,	4,078	355	1,125	
Stamps	,,	,,	915	777	398	
Commissariat	,,	,,	177	165	171	
Gazette Press	,,	,,	5,881	5,128	5,179	
Marine	,,	,,	828	445	567	
Revenue Board	,,	,,	926	419	307	
Revenue Settlement	,,	,,	29	26	52	
Revenue Survey	,,	,,	154	157	55	
Superintendent of Prisons	,,	,,	80	31	77	
Registration	,,	,,	68	151	91	
Conservator of Forests	,,	,,	29	80	64	
Quarter-Master General	,,	,,	35	28	49	
Government Central Museum.	,,	,,	28	...	...	
Deputy Collectors	,,	,,	9	7	6	
Camp Equipage	,,	,,	12	20	...	
Government Astronomer	,,	,,	244	...	...	
Agriculture	,,	,,	6	5	2	
General Hospital	,,	,,	7	...	...	
State Railways	,,	,,	3	...	...	
Inspector of Cattle Diseases	,,	,,	98	293	...	
Chemical Examiner	,,	,,	9	11	11	
Director of Public Instruction.	,,	,,	1	...	1	
Registrar of University	,,	,,	2	9	2	
Collector	,,	,,	12	14	16	
Curator of Government Gardens, Ooty	,,	,,	1	...	...	
Engineer, H. T. Board	,,	,,	2	...	2	
Crown Officer, High Court	,,	,,	...	..	1	
School of Arts	,,	,,	...	1	8	
Secretary to Government Public Department	,,	,,	...	1	...	
Registrar-General of Births, Deaths, and Marriages	,,	,,	...	4	1	
Inam Commissioner	,,	,,	...	9	...	
Consulting Engineer to Governmet; Railways	,,	,,	...	...	1	
	,,	,,	...	...	4	

S. HUTCHENCE,
Dy. Traffic Manag

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MADRAS HARBOUR WORKS.

ADMINISTRATION REPORT FOR THE YEAR 1889-90.

The progress in the reconstruction of the Madras Harbour during the official year 1889-90 was most satisfactory, and the outturn of work, and length of bonded Superstructure built at the North Pier, was greater than any previous year's record, at either arm.

2. The Entrance question again came before the Trustees and caused some little delay, but after some further correspondence, the orders directing the temporary stoppage in construction, were withdrawn and the works allowed to progress.

3. **Plan of Harbour, &c.**—A plan to a scale of 500 feet, 1 inch will be found attached at the end of this report.

Upon it is clearly shown all warehouses, and the state of the Harbour under reconstruction at the close of the year under review.

4. The length of each Pier built since the formation of the Harbour Trust Board in June 1886 and all newly erected goods sheds under their direction, including the forming of the Beach, Coal and Iron Hards and formation of the High Level Approach to the Iron Pier, are shewn colored red upon the plan.

5. The contours are given at fathoms below Low Water Ordinary Spring Tides, reduced from the latest Survey of the Madras Roadstead.

6. **Inspection by Sir Alexander Rendel, K. C. I. E.**—One of the important events of the year was the arrival of Sir Alexander Rendel, K.C.I.E., Consulting Engineer to the Secretary of State, on the 24th February 1890 to inspect and report upon the state and condition of the Works.

7. Sir Alexander Rendel thoroughly went into all details connected with the construction of the Madras Harbour, both past and future, and made his report accordingly, approving of all the plans and arrangements prepared for the completion of the Works by the Trust's Engineer.

8. He also settled many valuable points under discussion through being on the spot, which would otherwise have taken months to decide through official correspondence, and in the meantime the works would have been at a standstill in reference to the Pier Head Designs, Rubble Base Protection, alteration in the width of the entrance on account of currents, and requirements of new and improved machinery for the completion of the works.

9. **North Pier Superstructure.**—At the North Pier of the Harbour, the opening work of the official year, was to undo much of last year's work, by removing 266 of the large Wave-breaker blocks which had been ordered to be placed in orderly rows (vide G. O. No 2277 W, dated 19th August 1889) instead of being dropped in at random as in the sanctioned Design, and to again deposit others to a section of 40 feet from the bonded wall at High Water Mark.

10. The setting of these blocks in uniform rows was a slow and most difficult undertaking as the foundation for them, between the old and new walls had to be levelled up by Divers, at a point where the sea was generally too rough for a Diver to remain below water, without great risk. The raising of these 30 Ton Blocks required the greatest skill and attention both with the cranes and the native Divers, but the delay caused in raising them, cannot be regretted, as the work is now more substantial; and the alterations were accomplished without any serious mishap.

11. This arm of the Harbour then made rapid progress until the 12th of July, when a telegram was received directing a second stoppage of all further work, until the necessity of inserting a special abutment in the Superstructure had been argued out. The Engineer in charge of work, as soon as he took the matter up, found that this special abutment, (which would also have been a point of weakness), was not required at all in the Pier for which it was intended, and that he could open up the entrance designed by Mr. Parkes without it, if ever it was necessary, whereupon the orders were withdrawn and the work of building the Superstructure commenced in earnest, early in August, and continued without any further interruptions to the close of the year.

12. It is gratifying at last to know that this great work, as far as it has gone, and that all future proposals for its completion have met with the entire approval of Sir Alexander Rendel, and will, without doubt, and further interruptions reach an early and satisfactory completion in the hands of the Harbour Trust Board and staff.

13. Notwithstanding these hindrances which reduced the official year to only 76 working days, 726 large blocks were set in the Superstructure by Divers advancing the work by a length of 454 lineal feet which makes the present termination of the North Pier 3279 feet from the commencement of the blockwork, begun in the year 1876.

14. **Wavebreaker.**—The Wavebreaker to the North Pier necessitated 523 large blocks being deposited by the Titan crane, to bring this protection up to the end of the built Superstructure. This screen, on the outerstraight portion of the North Arm of the Harbour should be made to a width of 40 feet east or seaward of the Pier, but as the special Crane sent out for the purpose, with the extra overhang is doing work at the South Pier, the North Pier Titan Crane has to deposit the blocks instead. The drawback to the Titan Crane being used is, that its greatest reach or overhang is only 28 feet from the wall, which means, this important protection to the North Pier can never be made up to its full strength until the new "All Round Titan Crane" designed and already indented for by the Engineer has been received and erected on the works.

15. This new Crane will be capable of doing the work of all the three Cranes now in use, and will have other special movements which have been found wanting in the present Cranes.

16. It will also be the future wharf Crane of the port for landing all heavy Machinery, Guns, Cargo, &c., and will also be capable of dredging from either Pier; or deepen the entrance at a radius of 70 feet from its wheel base.

17. **Rubble Base.**—There were 4,204 tons of Rubble Stone deposited from boats, into the North Pier base or foundations, to complete the required section of base.

18. This quantity of stone should have been put down a year or more back to reduce the settlement of the Piers to a minimum, but the undecided state of affairs concerning the entrance and what form it should finally take, precluded preparations being made at the proper time.

19. This much discussed question of entrances was only brought to a close through the submission to the Secretary of State, and acceptance of Design No. IV A, for a North East entrance, which will enable the eastern entrance being completed and either proved a failure or otherwise before a North East entrance is attempted.

20. **Concrete Blockmaking.**—The work of making Concrete Blocks was carried on steadily until the Locomotive for the purpose, completely broke down, when all work under this branch of the work had to wait until a new and more powerful engine arrived from England.

21. Under the circumstances, 3,035 Concrete Blocks were made in the year, of which 1,751 were for the superstructure. The contents of these blocks represented on outturn of 38,983¼ cubic yards of Concrete.

22. **Supply of Portland Cement.**—7,534 tons of Portland Cement was used during the year, all of which was from England delivered through the India Office. The whole quantity was received in 42,189 special casks and was tested under the recognized Cement tests, and found to be suitable and in accordance with the specification of the works.

23. The cost of the Cement delivered on works, was considerably in advance of the previous year's rates, viz., Rs. 48-4-4 per ton in 1888-89 against Rs. 51-14-8¼ per ton in 1889-90.

24. This increase if permanent, must considerably raise the cost of Concrete, and the total cost of the works, will exceed the sanctioned estimate.

25. **Pallavaram Quarries.**—The total quantity of materials required from the Pallavaram Quarries was far in excess of last year's outturn and the Contractor met the extra supply without any difficulty or delay, 61,083¼ tons was therefore the outturn of stone, which was brought to Madras in 10,142 South Indian Railway wagons, of this quantity 19,028 tons was stone for the Rubble Base and the balance 42,055¼ tons was specially blasted stone called chips, for Block making.

All the Quarry lines were maintained in excellent order and several improvements were made in the drainage system of the Quarries with the result that there were no breaches in the line during the rainy seasons or derailments throughout the year.

26. **South Pier Superstructure.**—The progress made at the South Pier was very good as far as building and completing the 24 feet section of Superstructure went, but then came delay; until the form of Pier Head could be settled upon, and this of course was a difficult question to decide so long as there was any doubt as to which form of Entrance was to be tried first. However, work was carried on to the end of February and by that time 307 Blocks had been set in the Superstructure by Divers, which advanced this arm by 187½ lineal feet making the total length of the Superstructure 3706½ feet from the first block set in shore.

27. It was the duty of Mr. Parkes, the designer of the Madras Harbour, to furnish a design, and complete working details of the two Pier Heads, but when the Entrance question arose this information was not supplied by him, and after his death, the task involved itself upon the Engineer to the Trust to design them for himself; this was done; and to the satisfaction of the Trustees on the arrival of Sir Alexander Reudel to inspect and report upon the Works, the plans met with his entire approval, and were adopted and determined upon with a slight modification, on the 25th of February this year.

28. To show that no time was lost in commencing the work, it may be mentioned that every detail was thoroughly worked out and only waiting for sanction, upon receipt of which, and within 5 weeks from date of signing the plans, 12½ lineal feet of the South Pier Head had been built, both to a wider section of Blockwork, and a deeper foundation.

29. An enormous Steel Caisson is to terminate this Pier Head and the solid mass of concrete to be formed by it, will be equal to one solid mass, or block of Concrete weighing no less than five thousand tons. This Caisson has also been ordered and is being supplied through the India Office.

30. **Wavebreaker.**—The Wavebreaker protection at the South Pier was generally strengthened throughout the curved portion of the Pier, and along the newly built Superstructure to a width of 40 feet from the Superstructure, which section can be carried out at this arm, with the special Wavebreaker crane which was transferred from the North Pier in the place of which, the new crane has been ordered.

31. This crane, therefore deposited 493 Wavebreaker blocks, completing the screen of Wavebreaker to the full section, as it travelled outwards to sea.

32. **Rubble Base.**—In April the South Pier Rubble Base was extended a short distance towards the old Pier Head by adding 2,116½ tons of material made up of 1,927½ tons of rubble from Pallavaram deposited by boats and 189 tons of base, added by blasting a few of the blocks, which had fallen from the old wall, the removal of which was carried out either by the Pontoon or by blasting with dynamite.

33. In September a further deposit of 1274½ tons of stone was made to the base as follows:—360¾ tons of rubble was used in the Foreshore, 562¾ tons in the foundations and 351 tons was formed into rubble by blasting old blocks recovered by the Pontoon from the old South Pier.

34. **Apron or Protection to Rubble Base.**—The South Pier Rubble Base was paved or consolidated with Portland cement concrete for a length of 139 running feet by a width of 20 feet, from February to the close of the year.

This method of protection is in lieu of the proposal made by Mr. Parkes to form an apron along the Superstructure by filling bags with concrete and setting them upon the base.

35. The original proposal would have necessitated heavy plant being got out from England, which would have delayed progress and have been more costly; while the protection would not have been equal to a proposal which the Engineer in charge, made and successfully experimented with, previous to the arrival of Sir Alexander Rendel, who after his inspection proposed that this method should be adopted as it afforded a better protection against a scouring sea, was more economical to carry out, and required no extra machinery.

36. **Summary of Progress.**—The following is a summary of the above details of the progress made throughout the works, during the official year under review.

MADRAS HARBOUR WORKS.

STATEMENT SHOWING PROGRESS DURING OFFICIAL YEAR 1889-90.

No. of Items.	PARTICULARS AND QUANTITY OF WORK, &c.	Sub Heads of work.	North Pier Rubble Base.	South Pier Rubble Base.	Do. Superstructure.	Do. Wavebreaker.	Do. Superstructure.	Do. Wavebreaker.	Do. Base Protection.	Pallavaram Quarries out-turn.	Concrete Blocketanding.	Protective Works.	Total Expenditure 1889-1890.
	Note.—The figures in **red** denote for comparison progress and quantity of work done in official year 1888-1889.												
1	Total quantity *Rubble* stone received on Works and deposited	Tons.	2,544	4,037						48,258		11,984	
	... ...	...	4,204	3,502½						61,083½			
2	Concrete *Blocks*, set by *Divers* ...	Number.	...	...	658	76	94	...	...	...	...	...	
					307	523	526						
3	,, ,, deposited in Wavebreaker	,,	...	...	...	...	...	...	714	...	1,751	...	
4	,, ,, made for Superstructure	,,	...	...	...	...	...	...	403	...	1,284	...	
5	,, ,, ,, Wavebreaker	,,	...	...	...	...	73	...	...	...	36,800	...	
6	Wrought *Iron* cramps fixed in position ...	,,	...	...	72	...	...	...	...	...	38,983	...	
7	Total outturn of concrete ...	Cub. yds.	...	...	...	...	...	...	139	...	...	...	
8	Advance or progress of completed Superstructure	Ry. ft.	...	...	187	...	69	...	...	...	...	...	
9	Rubble Base protected with concrete ...	,,	...	...	...	...	24	...	...	...	...	...	
10	Expenditure under Sub-Heads of Work...	Rupees.	13,537	11,099	35,512	9,089	10,290	1,818	98,573	4,10,048	21,654	6,46,963	

Tons. cwt. qrs. lb.

42,189 Casks of cement received on works in the year containing ... 7,533 16 0 21

37. **Marine Survey of Harbour and Roadstead.**—A marine survey of the Harbour and Madras Roadstead was made in July, August and September repeating exactly, on the same lines, the extensive surveys of 1878-1882 and 1886.

38. From a careful comparison with these former surveys, the general depth of water inside the Harbour remains about the same as heretofore. The depth of water at the entrance has deepened about 6 inches, while the High Water mark inside the Harbour has advanced slightly; due to a large quantity of sand having found its way through some irregularities in the old Blockwork set in 1877. This evil, as soon as the sea was smooth enough, was stopped by filling in the spaces left between the blocks, with rubble and concrete.

39. The general contour lines outside the Harbour remain the same with the exception of at the root of the South Pier where accretion of sand still continues, but at a much lessening pace, as the depth of water increases.

40. In addition to this marine survey several cross sections of the rubble bases and wavebreaker were taken during the year, all of which show, as far as the a restoration works" have gone to date, that a most careful watch has been kept upon the deposit of stone, and that the work is strictly in accordance with the required section of the foundations.

41. **Expenditure.**—The total outlay on the works during the past year, including the further expenditure on the protective works north of the Harbour and new machinery required, has been Rs 7,83,392 made up as follows:—

Outlay on Works	Rs.	6,59,977
,, ,, Establishment	,,	56,055
,, ,, Tools and Plant	,,	24,720
Total Rs.		7,40,752
Net debits to Suspense Heads ...		42,640
Net outlay in the year	Rs.	7,83,392

42. The total expenditure up the end of the official year was Rs. 37,74,230 against the total estimated cost of Rs. 45,90,051.

43. A complete statement of the comparison of expenditure under each of the sub heads will be found attached at the end of this report, from which it will be seen that the estimated rates have been insufficient all through the work, and as shown in the Engineer's revised estimate, dated October 1888, the total cost of the works must exceed the sanctioned estimate by approximately Rs. 3,82,545.

44. **Beach Improvements.**—Under the Beach Improvement Scheme submitted and sanctioned last year, the alterations have made great strides, and the thorough overhauling of all machinery in connection with the landing and shipping of goods has made itself conspicuous in the easy working of the Traffic Department. To facilitate traffic, and complete the direct connection with the Madras and South Indian Railways 2329 feet of broad and narrow guage Railway lines were laid, on and about the Beach, within the Trust's boundaries.

45. Several alterations were made in the masonry goods shed to accommodate the different Government Departments receiving and shipping goods direct from the Beach.

46. Thirteen of the Pier Traffic trucks were rebuilt and turned out equal to new, while many others underwent repairs during the year.

47. Eleven hand cranes in use upon the Iron Pier, were thoroughly repaired, and as second 2 Ton Steam crane was erected and handed over to the Traffic Department. This crane in conjunction with the fellow one erected last year and the two large Doty Lamp newly erected at each end of the T. Head of the Iron Pier, enabled the Traffic Department to deal with export and import cargoes up to midnight.

48. **Iron Pier.**—The Iron Screw Pile Pier has been undergoing thorough repair both to the decking and T. Iron bracing throughout.

49. During the year 588 lineal feet of the timber work was renewed only a few bays of the Iron work remained to be renewed to complete the repairs to the whole structure.

HARBOUR WORKS OFFICE,
MADRAS, 1*st July* 1890.

A. LEE POGSON,
Engineer, Harbour Trust Board.

17

ADMINISTRATION REPORT.

OF THE DEPUTY CONSERVATOR OF THE PORT OF MADRAS.

During the year under notice the number of vessels entering the Port was as follows, and compared with the previous year shows a considerable increase.

	1888-89		1889-90.	
	No.	Tonnage	No.	Tonnage
Steam Ships, Mercantile	... 518	879,860	*570	978,251
Sailing do. do.	... 15	14,495	† 11	13,764
Do. Native Craft	... 85	9,860	84	10,597
Men of War, Government Ships and Hired Transports ...	... 12	17,599	16	18,925
	630	921,814	681	1,021,537

Increase, number of Vessels, 51 and of Tonnage, 99,723 tons.

The whole of the Steam vessels with the exception of 12 entered the Artificial Harbour.

* Including 27 French
Do. 5 German
Do. 24 Austrian.

† 6 Sailing vessels amounting to 7806 Tons called for orders only.

2. The number of vessels which left the Port during the year was—

	No.	Tonnage
Steam Ships	...	...
Sailing do.	...	...
Do. Native Craft	...	...

3. The Revenue from the various sources during the year amounted to Rs. 1,47,037 against Rs. 1,48,024 for the year 1888-89 and was as stated below.

	Rs.
Port Dues	1,07,644
Salvage	373
Divers' services	283
Hire of Port Raft and Port Boat	1,219
Boat Licenses from 1st September	345
Shipping Office Fees	618
Office Fees for Overtime from 1st September ...	568
Sale of old Masulah boat	159
	1,12,920
Pilotage, and boat charges connected ...	34,087
	1,47,007

4. *Artificial Harbour.*—The improvement in the smoothness of the water inside the Harbour by the extension of the walls and the absence of cyclones during the year has permitted shipping operations to be carried on during the whole of the year with the exception of one day, and work could have been carried on on that day had the vessels which left the Harbour the night before, returned the following morning as they intended.

No gale or cyclone having been experienced during the year, there has been no opportunity of judging the effect of the extension of the walls during bad weather.

5. Outside the Harbour to the north, a good deal of erosion has taken place, and to the south the sand has extended about 120 feet close to the breakwater.

6. *Weather.*—The Warning signals have been hoisted on four occasions, 17th November, 20th December and 23rd and 24th December 1889 when a good deal of sea was felt inside the Harbour but no gale or cyclone.

7. *Accidents and Casualties.*—The S.S. "Malda" parted the Port cable on 3rd May and proceeded out of the Harbour to get another anchor ready for use and returned inside, the anchor and cable were recovered by the Port Diver on the 4th.

The S.S. "Inchulva" on 22nd May, while mooring during a squall parted the stern hauling line before the vessel's stern had been hauled close up to the buoy, and swung round to the wind, clear of the vessel lying in the next berth.

The French S.S. "Tibre" on the 13th June parted the Port cable while mooring, but a buoy being available the vessel was brought to it and moored, the anchor and cable were recovered next day by the Port Diver.

The French S.S. "Bleville" arrived in the Roads on 26th June disabled, in tow of S.S. "Chindwara" having been on shore at Covelong and lost rudder and damaged propellor, this vessel was brought inside by means of warps and the assistance of her engines, and moored and then discharged cargo and was fitted with temporary rudder to enable her to proceed to Calcutta to dock, escorted by the Steam Tug "Retriever" which had arrived for the purpose. No enquiry was held into the cause of the stranding.

The S.S. "Clan Matheson" on the 16th of March 1890, lost part of an anchor to which she had been riding outside the Harbour.

Two other cases of vessels parting their stern lines happened, in one case, through the bad condition of the lines, in neither case was any damage done.

Two Lighters and two Masulah boats were sunk while receiving cargo alongside vessels, and were recovered with their cargoes by the Port Diver.

One Lighter was sunk alongside the Iron Pier and was recovered with its cargo by the Port Diver.

One Lighter and one Masulah boat were capsized alongside vessels, twenty eight Masulah boats were damaged and rendered for the time unserviceable by the surf at the beach and pier chiefly while discharging cargoes of iron, five were damaged and rendered unserviceable while alongside vessels.

Loss of life occurred on one occasion through the capsizing of a Masulah boat, (No. 86) on the 6th August 1889 at the beach outside Harbour on the south side while engaged landing Kerosene Oil from S.S. "Cyphreenes," when two of the crew were lost.

A boatman was drowned on 12th September 1889 alongside S. S. "New Guinea" having fallen from that vessel's upper deck and struck against the gunwale of a boat lying alongside the vessel.

One of the Harbour Masters on the 23rd April 1889 was injured by falling on the gangway when boarding the French S.S. "Tibre" inside the Harbour, and was unable to carry on his duties for one month and three days.

A batta Lascar was injured on board the S.S. "Malda" on the 3rd August and died in hospital two days afterwards.

8. *Moorings.*—Additions and alterations have been made in the positions of the moorings in the Harbour, four of the five buoys of the inshore moorings have been brought nearer to the shore which the smoother water of the Harbour permitted, and this arrangement gave space for two berths along the breakwaters on either side, and buoys and moorings were laid down,

the anchors ranging from 43 cwt. to 73 cwt. were procured from the Indian Marine Dockyard, Bombay, at a cost of Rs. 7,620, and the chains and buoys from the Harbour Works Stores.

The work of laying the additional moorings was carried out by the permanent establishment assisted by hired labour and was completed on the 6th March 1890.

The usual six monthly overhauling and painting was carried out and there was found to be very little wear on the chains as compared with former years consequent on the smoother water in which the moorings now lie.

One anchor of 15 cwt. and 30 fms. of 1¼ ins. chain was lost from the northern buoy off Cassimode in September 1889 and the Port Diver has been unable to recover after several searches.

Several of the anchors of the moorings are too light and invariably drag when a large vessel is moored to them during strong winds.

9. *Boats.*—The Harbour Master's Port and Preventive Service boats and catamarans have carried out the duties assigned to them, the reserve boat on the Harbour Master's establishment will require to be replaced next year, being worn out, the complement of men for the Harbour Master's boats is scarcely sufficient and when any of the men are sick or absent from other causes, the boats are short-handed.

A second hand gig was procured for the Port from Calcutta in October 1889, but was unfortunately lost on the morning of the 23rd December by being driven under the Iron Pier by the surf.

A new catamaran was also purchased for the use of the Harbour Master.

A second-hand lighter was purchased for the use of the Port Diver, also a second hand jolly boat, the former from the Superintendent of Pearl Fisheries, Tuticorin, at a cost of Rs. 450 the latter from the Harbour Works at a cost of Rs. 200.

One masulah boat was sold, there being no further use for it.

10. *Port Rafts.*—The Port Rafts have been in use fifteen times and earned Rs. 914-7-7 in addition to the work of laying and overhauling the moorings and buoys. Thirty-nine old logs were condemned and twenty-five new logs were purchased to replace them at a cost of Rs. 1,000.

11. *Cargo Boats.*—The daily average number of cargo boats employed was 50 masulah boats and 20 lighters out of a total of 97 masulah boats and 75 lighters on the register. Masulah boats averaged 2½ trips and lighters ½ a trip per diem. Seven new lighters have been added to the register and ten old ones removed.

12. *Time Signals.*—The Time Signal has failed 36 times during the year which cannot be considered a satisfactory state of things, the Government Astronomer is advised of every failure when it occurs. An additional temporary signalman was appointed on the 10th August 1389, bringing the establishment up to three.

13. *Leading and Buoy Lights.*—The Leading and Buoy lights have been maintained at a cost of Rs. 380 including the fitting up of store-room and have answered the purpose for which they were erected, the buoy lights are only used when vessels leave the Harbour at night; the leading lights are lit every night.

14. *Life Saving Apparatus.*—In accordance with G. O., Marine No. 135 of 4th April 1887, the Life Saving Rocket Apparatus was got into working order, and has been exercised monthly by the boatmen of the Harbour Master's boats under Harbour Master Taylor to whom credit is due for the trouble he has taken to bring it into a state of efficiency.

15. *Harbour Masters.*—On the 23rd of April 1889 Harbour Master Taylor met with a serious accident while boarding the French S.S. "Tibre" which kept him in hospital for thirty-three days, during which time the services of another Harbour Master had to be obtained, the Senior Harbour Master being then on leave in England, only one consequently remained available for duty, it however fortunately happened that Mr. J. J. Morris, Port Officer, of

Gopaulpore, had just arrived from England and was permitted by the Presidency Port Officer to carry on the duties of Harbour Master until Mr. Taylor recovered and resumed his duties on the 27th of May.

Senior Harbour Master N. Corfield returned to duty from privilege leave granted him in March, on 3rd July.

1177. vessels have been boarded, berthed, and taken to sea to and from the artificial Harbour, a considerable number of them being taken to sea at night, by the Harbour Masters.

No accident has occurred to any vessel while under charge of the Harbour Masters, and reflects much credit on those officers, considering the small and frequently crowded area in which they have to handle vessels of a large size.

16. *Port Diver.*—The services of the Port Diver have been constantly applied for to recover cargo lost overboard alongside of vessels and from boats sunk and capsized. He has been successful in recovering nearly the whole of the lost cargo in addition to other salved property of which no notice of its loss had been received, and which included an anchor and 60 fms. of cable which from its make, which is not usual now, must have lain many years at the bottom. The approximate value of the property recovered is Rs. 5000.

The second-hand lighter purchased for the use of the Diver has been found a much more convenient boat to work from that the masulah boat formerly used.

17. The Deputy Conservator, Capt. H. B. Simpson, proceeded on 30 days privilege leave on the 8th of April 1889, Mr. H. D. Baddeley, Agent for Government consignments, acted in his absence.

SHIPPING OFFICE

18. The number of seamen shipped and discharged has shown a slight increase compared with the preceding year, and stands as follows:

		No.
European Seamen shipped	... ...	
Do. discharged	... ...	23
Do. sent to Hospital	... ...	31
Do. do. Jail	... ...	10
Do. do. Home distressed	... ...	4
	...	8
Native Seamen shipped		
Do. discharged	... ...	286
Do. sent to Hospital	... ...	313
Do. do Jail	... ...	3
	... ...	1

The fees collected amounted to Rs. 618. The usual periodical returns to the Board of Trade and Government have been furnished as they fell due.

PORT OFFICE,
MADRAS, 1st *July* 1890.

H. B. SIMPSON, CAPTAIN, I. M.
Deputy Port Conservator.

Printed by G. W. TAYLOR, Lawrence Asylum Press, Madras—1890.



No. 277 Dated 10th September 1890

2622

From

The Executive Engineer

Godavari Western Dn.

To

The Supdg. Engineer

Dt. Circle.

Sir,

I have the honor to request that you will be good enough to obtain the sanction for the following modification of allotments under Provincial.

Name of work	Existing grant for current year	Proposed Increase	Proposed Reduction	Amount at which grant for work will stand after reduction or increase	Remarks.
Original Works.					
Reconstructing Divisional office building at Chettipet	7687	..	6,587	1,100	Cannot be utilized as the design for the building will require revision as stated by the Presidency Architect in his no. 1676 of 28-8-90 communicated with Sr. Dt. no 1141 G.D of 2-9-90
Congr. Sub-Registrars office at Amalapur	2,600.	..	2,600	..	The commencement of the work is postponed with reference to Inspector General of Registrations no. 3790 of 27-8-90 communicated with Sr. E. Dt. no. 1141 G. 88/2-9-90
Deputy Tahsildars Cutcherry with out houses at Razole.	10,870	..	2,870	8000	Excavation of foundations cannot be commenced till after the irrigation season is over

2622

2

I have &c

/Sd/ B. H. Young:

Executive Engineer

No. 1230 G.D.

Copy submitted to the Chief Engineer P. W. Department with the request that the sums surrendered may be resumed for the reasons entered against each item

14th September 1890

Decf 317

/Sd/ [illegible]

Supg: Engineer

I Circle

16/9/90

JK

FROM

J. W. Martin Esqr

SUPERINTENDING ENGINEER

FIRST CIRCLE.

TO,

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

MADRAS.

DATED 14 8
DESPATCHED 17 } September 1890
RECEIVED 23

No. 1230 G.D.

ENCLOSURES.

SUBJECT.

Modifications of allotments
Requests sanction to
certain — under Provi-
-sion in the Godavari Western
Dn

29TH AUGUST 1890, Nos. 322, 323, MARINE.

2622/3

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

READ—the following paper :—

From G. MACWATTERS, Esq., M.A., C.S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated Madras, 28th July 1890, No. 2900.

I have the honor to submit, for the information of Government, six copies of the Madras Harbour Trust Board Administration Report for the year 1889-90.

ORDER—dated 29th August 1890, No. 322, Marine.

In their letter recorded in G.O., No. 230, dated 31st May 1889, the Government of India requested that an annual report on the administration of the Madras Harbour Trust, with the remarks of the Madras Government thereon, might be submitted to them, and in G.O., No. 490, dated 20th November 1889, the Government of Madras reviewed the working of the Trust from its inauguration in June 1886 to the end of the official year 1888-89. The Chairman has now submitted a report on the administration of the Trust during the year 1889-90.

2. There were during the year under review only ten trustees as against thirteen in the previous year; 37 meetings were held with an average attendance of 9·35, as against 47 meetings during the previous year with an average attendance of 10. It is observed that the number of meetings held is still considerably in advance of the minimum number laid down in section 17 (2) (*a*) of Act 11 of 1886, which is one every fortnight. The amount of fees paid to trustees fell from Rs. 13,740 in 1888-89 to Rs. 9,180 in 1889-90.

	1888-89.	1889-90.
Elected by Chamber of Commerce	4	3
„ Trades Association		1
Nominated by Government—		
(*a*) Officials, including Chairman	3	3
(*b*) Non-officials	6	3
	13	10

3. Owing to the large contribution of Rs. 2,75,000 made from Port funds, the current receipts of the Trust amounted to Rs. 6,40,327. Adding to this the opening balance of the year, which was Rs. 5,65,313, the total receipts amounted to Rupees 12,05,640. As the expenditure was Rs. 4,18,606 a balance of Rs. 7,87,034 remained in hand at the end of the year. The current receipts* exceeded those in 1888-89 by Rs. 3,37,184, and this large increase is accounted for principally under the items noted in the margin.† The increase under "Imports" is attributed to the expansion of the trade of the port and to the large quantity of railway materials landed, whilst that under "Exports" is said to be due to larger

	Rs.
* 1889-90	6,40,327
1888-89	3,03,143
	3,37,184

	1888-89.	1889-90.
	Rs.	Rs.
†Contribution from Port Funds ..	25,000	2,75,000
Harbour dues on imports	1,72,481	2,07,099
Harbour dues on exports	78,568	1,00,946
Interest on balance invested in Government securities ..	11,176	37,273

	Rs.
* Total expenditure	4,18,606
Ordinary receipts	3,28,054
	Rs.
† Repaid to Government	1,00,000
Interest paid to Government ..	1,17,244
Porterage (recoverable)	6,499

shipments of cotton, ground-nuts, jaggery and seeds. Omitting the contribution from Port Funds and the interest on Investments, the ordinary receipts of the year were less than the total expenditure; * the latter, however, included the items shown in the margin †

4. The total expenditure ‡ of the year compares favorably with that for 1888-89; the decrease is principally under the items noted in the margin.§ The decreases in the cost of establishments and in the amount paid as overtime fees are satisfactory. The latter however is due entirely to a smaller number of applications for work to be done on Sundays and holidays having been made. The items under which there was an increase in expenditure are shown in the margin ‖, and the reason in each case is explained in the report.

	1888-89.	1889-90.
	Rs.	Rs.
‡ Total expenditure ..	4,29,862	4,18,606

	1888-89.	1889-90.
	Rs.	Rs.
§ Fees to trustees ..	13,740	9,186
Establishments ..	47,026	43,243
Petty construction and repairs	1,19,043	83,064
Overtime fees ..	6,273	5,885

	1888-89.	1889-90.
	Rs.	Rs.
‖ Pier cooly contract ..	19,345	23,118
Repairs	53,338	62,531
Pensionary contribution	3,738	4,752

5. During the year a new railway siding was constructed upon the north side of the pier, and the existing lines upon the south side were extended. Extensive repairs to the screw-pile pier were carried out, and two existing sheds were adapted to the requirements of the Commissariat, Ordnance, Public Works, and Quartermaster-General's departments.

6. The remarks regarding the Preventive Service in the concluding portion of paragraph 10 of the report will be remitted for consideration in the Revenue Department. The original Protective Establishment was sanctioned by G.O., No. 382, Marine, dated 20th July 1883, and it was subsequently increased by G.O., No. 1126, Revenue, dated 2nd October 1885. The control of the establishment was transferred from the Marine Department to the Chairman of the Harbour Trust by G.O., No. 744, Revenue, dated 30th August 1886. It seems doubtful whether Harbour Dues should bear the entire cost of the Preventive Service, as is the case at present.

7. The payments made on account of the pier cooly contractor's bills amounted to Rs. 23,118 against Rs. 19,345 in the preceding year. It is reported that the contract expired before the close of the year and that the work was then taken up departmentally. The further report on the question promised in paragraph 14 is awaited. The increase of traffic over the pier mentioned in paragraph 15 is satisfactory.

8. The expenditure on "Harbour construction" during the year was Rs. 7,40,752 as against Rs. 6,17,226 in the preceding year. The total expenditure up to the 31st March 1890 was Rs. 37,74,230, against the estimate of Rs. 45,90,051. Owing to various causes, block-setting was feasible on only 76 working days during the year. The North Pier of the Harbour was advanced by 454 lineal feet to a total length of 3,279 feet, and a length of 301 feet remained to complete it. The length of the South Pier was increased by 187½ lineal feet, giving it a total length of 3,706½. The south arm when completed will measure 3,712½ feet and the pier head 268¾ feet, or a total of 3,981¼ feet in all, a length of 274¾ feet therefore remained to complete the South Pier.

9. The outturn of stone from the Pallâveram quarries exhibits a considerable increase over the amount for 1888-89. The remarks in paragraph 19 regarding the cost of haulage will be remitted to the Public Works Department (Railway Branch) for consideration. Although the

	Tons.
1888-89	48,585
1889-90	61,083

2622/4³

cost of haulage compares more favorably with the value of the stone than it did in the two preceding years, still it was almost double the value of the stone in 1889-90.

10. It appears from paragraph 20 of the report that the erosion caused by the sea to the north of the Harbour continues in spite of the protective works that have been carried out. The suggestion made by Sir Alexander Rendel, and referred to by the Chairman, that the Board should be protected by legislative enactment from financial difficulties that may be caused by the erosion question does not appear to have been submitted to Government.

11. The request of the Trustees for a further advance of funds will be dealt with in the Financial Department, and the Conservancy administration of the port will be noticed in reviewing the Presidency Port Officer's general administration report.

12. The attention of the Government Astronomer will be called in the Public Department to the statement made at paragraph 12 of the report of the Deputy Conservator with regard to the unsatisfactory working of the time signal.

13. The Government notes with pleasure the testimony borne by the Trustees in paragraph 26 of the report to the good services rendered by its officers, and the remark of the Deputy Conservator with regard to the exertions of Harbour Master Taylor in bringing the working of the life-saving apparatus into an efficient condition.

(True Extract.) W. C. Bonderson Major AE
Flader Lieut RNR
for Chief Secretary.

To the Chairman, Harbour Trust Board.
" Presidency Port Officer.
" Financial Department.
" Public Department.
" Public Works Department. Sent to Report
" Public Works Department (Railway Branch).
" Revenue Department.
" Chairman, Chamber of Commerce, Madras.
" Secretary to the Port Trust of Bombay.

ENDORSEMENT—dated 29th August 1890, No. 323, Marine.

Copy to the Government of India, Department of Finance and Commerce.

J. F. PRICE,
Chief Secretary.

Exd. A. Raitt.

Govt. of {1890} Madras.

MARINE.

Issued

Recd. 13-9-90 Encl. 1 (Copies)

G.O., &c., 29th August 1890,
Nos. 322, 323.

AUGUST.

Harbour Trust Board.

Reviewing the Administration Report of the —
r 1888-90.