Archives I 10,006—16-8 77.

(1) Number of pages 116

(2) Date of repair 20.3.87

(3) Initials of the Referencer LCNS

MIL NADU ARCHIVES

ERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No. / ~~B.P. No.~~	1382-W	Press. / ~~Mis.~~
Dated	5-6-1882	~~197~~

folded or roughly handled

N. Sane

1382/1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

No. 21.

READ—the following letter from the Harbour Committee, to the Chief Secretary to Government, Marine Department, dated Madras, 5th April 1882 :—

We have the honor to report that, acting under the instructions contained in G.O., 14th October 1881, No. 2512 W., we have reassembled to consider the points named by Government for our opinion. We would have sent in our report at a much earlier date, but we were under the impression that the damage caused to the Harbour by the cyclone of the 12th November last rendered it unnecessary to consider for the present the question of levying fresh dues. In obedience, however, to the expressed wish of Government, we have the honor to advise that we have considered what would be the best "arrangements for managing the Harbour and levying dues for its use, and for landing and shipping goods under the improved facilities afforded."

We have had the advantage of having before us a letter, dated December 1881, written to our President by Captain J. H. Taylor, and a copy of which is submitted for the information of Government. We have also ascertained from the principal trading and commercial firms what their landing and shipping goods costs them now that the shelter of the Harbour is partially available. The conclusion at which we have unanimously arrived is that it would be undesirable to have two rates for goods as suggested by Captain Taylor, and that if all goods pay Rs. 2-2-0 per ton (computed according to the Madras Chamber of Commerce tonnage scale) this would not be unduly burdensome on the trade, while it would give fully one rupee per ton to go towards the revenue of the Harbour. For the charge of Rs. 2-2-0 per ton the goods would be taken charge of, landed or shipped, as the case may be, a police guard provided, and the porterage to and from the Custom House or Beach defrayed.

Government will no doubt observe that, in recommending a consolidated rate for landing and shipping, it is contemplated that the whole control of the trade of the port should be undertaken by some department. Hitherto the various firms engaged in trade have made their own arrangements for landing and shipping, and we are not unaware of the objections that may be raised to the proposal we have indicated. But in our opinion the best arrangement for levying dues for the Harbour must include a consolidated rate for which everything will be done.

Captain Taylor, it will be seen, proposes that the work connected with the landing and shipping be undertaken by his department, and he estimates that for an extra Rs. (260) two hundred and sixty per mensem he could provide all the additional establishment required. We simply call attention to his figures, without assuming any responsibility for them. But it is our duty to point out to Government that if one of their departments is made to undertake the whole landing and shipping of the port, and to charge a consolidated rate for so doing, then of course Government is responsible for all loss and damage to goods while under their charge. It may be

that this is not a very serious responsibility, but it is one that Government will have to incur.

(Signed) P. MACFADYEN.
(,,) R. J. MELVILLE.
(,,) R. C. WALKER.
(,,) R. G. ORR.
(,,) J. H. TAYLOR.
(,,) A. M. SAUNDERS.
(,,) N. St. B. BEARDMORE.
(,,) H. L. PRENDERGAST, Col., R.E.

It has to be noticed that the Hon. Mr. Coleman's signature is wanting to the report, owing to that gentleman having left for England before the report was ready, but it may be mentioned that he fully concurred in Captain Taylor's views.

(Signed) J. H. TAYLOR,
Secretary.

ENCLOSURES.

From J. H. TAYLOR, Esq., Lieutenant, R.N.R., Master Attendant, Madras, to the President, Harbour Committee, dated December 1881.

I have now the honor to advance my opinion that the injury to the Harbour walls, though necessitating considerable delay in the completion of the work, does not and should not interfere with a thorough re-organisation of the Harbour arrangements, and the levy of a sufficient annual sum to justify the Government in prosecuting this important work. With this view I have drawn out a scheme which will provide for revenue, establishment, order and discipline; and, while removing many disabilities under which the port now labors, will not increase the burden now placed on trade, nor inequitably affect any branch of legitimate business.

2. For convenience I have expressed the terms of this scheme in tons, which, however, will also be shown in trips, the word that most generally obtains at present.

3. The import and export cargo from Europe is the most important item. This is almost entirely landed and shipped from the Pier. The duty of conducting this work falls upon the Pier Contractor, superintended by the Pier Master, Traffic Manager and staff, Peons, &c.

4. The present charge for this duty is 8 annas a trip, half of which is given to the contractor, the remaining half goes for establishment, upkeep, repairs, &c., of the Pier and its belongings.

5. The Pier Contractor delivers all free goods and machinery at the inner end of the Pier, and carries the remainder into the Custom House, and unloads it into sheds.

6. Before the Pier was constructed all this work was done by an individual called the Custom House Contractor, and by some extraordinary oversight he has been allowed since that period to continue in his position and make the same charges as before, although the main portion of the work is done for him and charged in its proper place. He has no contract, and apparently never had one, and no responsibility, except what he has taken upon himself with a view to keep things quiet. I had always been under the impression that he was paid by the Custom House out of revenue for the sole duty he exercises of arranging and giving out packages. His scale of charges is traceable on an old almost effaced card, but he has private separate arrangements with most of the great importers, which have been carried out under the supposition that the charge was one authorised by the Collector. Here at once is an instance where the trade directly suffers, and reform is demanded. I propose that all the duty be transferred to the Pier Contractor to be called Harbour Contractor, and that he conduct the small additional duty that will devolve upon him, receiving a small increase, say 5 annas in lieu of 4; and I would suggest that all goods intended for the Custom House be made to pass over the Pier as a safeguard against loss or damage until the new jetties are completed.

7. The charges connected with this branch of business I estimate as follows:—

		Per Ton. RS.	A.	P.
Nominal boat-hire to Pier is at present Rs. 1-3-0, but a deduction of 8 annas is made from it for Pier porterage.	Boat-hire	0	8	0
	Porterage	0	5	0
	Police	0	2	0
	Tax for Harbour	1	0	0
		1	15	0

8. The present trip to consist of two tons.

9. The ordinary boat-hire may be reduced, when more shelter is given, to one rupee a trip, or 8 annas a ton, the sum thus saved being credited to the Government to cover additional capital required for the Harbour since the accident to its walls.

10. The establishment required for the work will be treated of in conclusion.

11. It is to be observed that these charges are simply for work done, and do not interfere with agency and commission at present ruling.

12. With regard to the Beach cargo or free goods, there is absolutely no choice, but for the Harbour management to take all duties upon itself and realise the greater portion of the present profits.

13. It will be manifestly impossible to levy a rupee a ton in excess of present rates, and there is very much in the existing arrangements that call for alteration in the interests of trade.

14. The profits at present made are not earned by any service. It is an astounding fact that with no responsibility, no expenses of landing or shipping, which falls on the boatman, large charges are sanctioned and paid, simply because the trade cannot look into matters, and are powerless to help themselves. Large importers assure me that so multifarious are the charges now obtaining that they really never know what they do pay under the head of porterage. I propose to land and separate all free goods through the medium of a responsible contractor to arrange the various cargoes, and enable every merchant to see that the terms of his Bill of Lading are complied with. The saving under this head alone to the trade will be enormous.

15. A sufficient space on either side of the iron Pier enclosing the new jetties should be handsomely palisaded, and large covered sheds placed to ensure a weather protection. The present charges for watching would be done away with, as the porterage and police charge will cover everything, by which another large saving to trade will be effected. A very sufficient style of shed is being erected within the Custom House, iron pillars and teak beams, circular in shape, covered with corrugated iron. A narrow covered way should lead also from the main shed to the inner end of the jetty for protection to Europeans.

16. The expense of these improvements can be met from Port Funds.

17. The charges would be almost identical with the bonded goods—

	Per Ton. RS.	A.	P.
Boat-hire	0	12	0
Porterage	0	5	0
Police	0	2	0
Harbour revenue	1	0	0
	2	3	0

Grain, which is now subject to much loss, would be greatly benefited at the same rate as now rules, *e.g.*, if we name 14 bags to a ton, the present rate of 2½ annas a bag exactly amounts to Rs. 2-3-0. Other goods in same proportions.

18. The same test may be applied to all other goods with almost same conclusions. It corresponds very nearly with the Bombay Port Trust rate on packages recommended by the Madras Chamber of Commerce.

19. *Boat-hire.*—With regard to this item it has been the practice hitherto to deduct 8 annas a trip for the facilities offered by the Pier, thus reducing the hire to one rupee a trip, while the Masulah boats landing on the Beach receive Rs. 1-8-0, the men unloading their own boats. It will be for the Committee to discuss this plan among others. I am myself in favor of doing all the Beach work by cooly contract, in which case, if one rupee a trip would rule both on Pier and Beach, a reduction of 4 annas a ton is thus at once reached, bringing the total charge to Rs. 1-15-0 a ton.

20. The crew of the Masulah boats working inside the Harbour might be reduced to six rowers, one tindal, and one boy, which would cause a reduction of expense.

21. I find on looking to old Almanacs that 50 years previous to 1873 the rate of boat-hire to vessels in the outer roads was only Rs. 1-8-0, and inner roads 15 annas, but it would appear that, owing to the competition of the lighters, which injured greatly the Masulah boat trade, an increase of 1 rupee was made, bringing it up to Rs. 2-8-0 a trip.

22. I find that in practice even now the dubashes charge the consignees Rs. 2 a trip, although the charge is only Rs. 1-8-0, and they also charge porterage, although that is met from the real hire of Rs. 1-8-0. All these matters demand consideration, and are clearly connected with the prosperity of the Harbour, and the levy of revenue without pressing too much on trade.

23. For the joint establishment of Pier and Beach, I recommend that the Pier Master's present pay be increased from—

	Increase.
	Rs.
Pier Master and General Superintendent, Rs. 225 to 275	50
Deputy to be Assistant Traffic Manager, Rs. 60 to 120	60
Present Head Clerk, giving security Rs. 500, combining Cash-keeper's duty, Rs. 25 to 40	15
Two Clerks, Rs. 20 and 17	37
One Head Conicopoly, security Rs. 500	16
Four Conicopolies, at Rs. 10	40
Six Peons, at Rs. 7	42
	260

24. This will be met from the porterage after paying the contractor.

25. Mr. Thorowgood's estimate for Harbour I enclose, but that may stand over for the present.

Report of Trades' Association through the Chairman.

1. I see no good grounds for delaying the consideration of Captain Taylor's proposals. In G.O., No. 2512, of 14th October, the Government stated that in appointing the Committee "the object of the Government was to obtain their advice as to the best arrangements for managing the Harbour and levying dues for its use," because "it is essential that a reasonable revenue should be raised."

2. The Government are fully entitled to some return for the monies already expended, and as Captain Taylor proposes a plain and practical scheme, and shows how funds can be obtained without, perhaps, *any* increase upon present rates, I consider that it should at once be discussed, if the Committee have any desire to assist Government with practical advice.

3. I do not see that Mr. Parkes' views at all affect the consideration of the real question before the Committee. Those views can have reference only to the construction and maintenance of the Harbour Works, and can scarcely relate to the question as to the dues that may be fairly levied upon goods shipped and imported.

4. As a whole I entirely approve of Captain Taylor's proposed scheme, and hope that, before long, it, or something similar, may be adopted.

21*st December* 1881. (Signed) ROBERT G. ORR.

MINUTE of dissent by the Hon. P. MACFADYEN.

I am not in favor of Captain Taylor's proposal that the whole control of the trade of the port should be handed over to the Marine Department. To effect this fresh legislation will be necessary, and this being the case I beg respectfully to express my opinion that it would be better to proceed with the Port Trust Bill, whose provisions have met with the approval of the Chamber of Commerce, and which having been amended by and reported on by a select Committee could be passed in the Legislative Council without further prolonged discussion. The proposed consolidated rate for landing and shipping is a wide departure from the arrangements at present existing, and I feel confident that a body like the Port Trustees, in which all trading interests would be represented, is better adapted to inaugurate such a change than any Government Department however well intentioned.

(Signed) P. MACFADYEN.

1382/3

MINUTE by A. M. SAUNDERS, Esq.

I agree with the remarks made above by the Hon. Mr. Macfadyen.

6*th April* 1882. (Signed) A. M. SAUNDERS.

MINUTE by J. H. TAYLOR, Esq.

As the only member of the Committee, who has advanced any practical scheme for the levy of Harbour dues, I feel it necessary to add some remarks that have suggested themselves after the discussion of the scheme in Committee. It seemed to me to be thoroughly understood by the Committee that a consolidation of the various existing charges is the only method by which the sum required can be raised, and the necessary establishment supported. This therefore, or some almost identical plan, would be forced upon any Port Trust, Marine Board or Department. As many of the members of the Committee are not familiar with the subject before them, I may be allowed to point out what the nature of all existing Port Trusts is.

They all possess Harbours more or less secure, never exposed like Madras. They have advanced through all the phases of initial expense to their Governments, of assistance and support from them, until a period has arrived when they can stand alone with ample funds at command, with no prospect of any future State support being needed, and when the funds raised from port dues, from mercantile and shipping interests, can reasonably be administered by mercantile and shipping men. Nothing can be more equitable, and Government may well grant the necessary powers.

But the situation of Madras is entirely different, so much so that the title Port Trust would be inadmissible.

A debt of (60) sixty lakhs has been incurred, raised from the credit of the whole empire, which is responsible for it, and for its interest; that debt is rapidly advancing towards a million, and no one can say in the exposed position of Madras Harbour, and with walls erected on sand, when that debt may not be extended. A Port Trust could not go on raising money on its own resources, and guarantees it would not possess, for the sum it is now contemplated to raise will merely cover the interest of the present debt.

The mercantile community seek to secure the largest share in the administration, yet their interests would soon conflict with those of Government. The position would be anomalous and charged with grave and increasing difficulties.

Then as to the purely executive duties connected with the Harbour, I by no means wish them transferred to the Marine Department, or to my sole control. No one appreciates the value of technical experience and advice more than myself, and I have always respectfully recommended to Government that a Marine Board, as nearly as possible constituted as a Port Trust, should be the medium of communication between the Government, the public, and the Harbour authorities. The Chamber of Commerce might be invited to select two of their members to represent the Chamber, the Trade Association two, one of the boat-owners selected by themselves, the Collector, the Master Attendant, and his (Deputy, the Executive Officer of the Port), the District Engineer, and the Harbour Works' Engineer, Government Solicitor. Of this Board the non-official members should be entitled to a fee for attendance, which I would propose to be about Rs. (25) twenty-five. Meetings might be held monthly, at which all objects and references connected with the Harbour could be brought to notice. A paid Secretary would also be a desideratum at the same fee.

This would represent a sum of Rs. (150) one hundred and fifty monthly, (1,800) one thousand and eight hundred per annum. The Government would thus be kept at a small charge in direct communication with the best advice that can be available.

As to responsibility I may be allowed to point out that nothing in this arrangement will cause any increase in its present amount, while by consolidation under one controlling authority it will in all probability be materially reduced.

Government will have, moreover, the security of the zeal and intelligence of its own officers and establishment, while the contractor or contractors, if the Board select that course of proceeding, will be chosen for their solvency and give ample security. I cannot anticipate any difficulty on that head.

The responsibility at present sits very easily on the shoulders of those who bear it, and if the Board elect to do the work departmentally, the payment hitherto made as compensation for all causes of loss combined being calculated, any office would be glad to enter into an insurance that would remove even the shadow of loss.

Nine-tenths of the English import cargo and much of the export are already administered by the Pier Department, and the extension of the duty to the whole trade is a mere matter of detail, which a practical Board could easily dispose of satisfactorily.

30*th March* 1882. (Signed) J. H. TAYLOR.

Minute by R. J. MELVILLE, Esq.

I agree with Captain Taylor. I consider it premature to start a Port Trust when the only things to be entrusted to the Trustees are an incomplete Harbour and a debt of more than half a million of money. Anything that could be done by Port Trustees could be done as well by a Harbour Committee, on which, if considered advisable, the mercantile or trading community might be more fully represented than at present. I add this to meet one of the objections suggested in the Hon. Mr. Macfadyen's minute of dissent.

6th *April* 1882.

(Signed) R. J. MELVILLE.

Minute by R. G. ORR, Esq.

Captain Taylor's Minute accompanying this report appears to me conclusive as against a Port Trust in the present state of Harbour affairs. As stated in my dissent of 23rd August I still consider that a Committee or Board can afford Government all the practical advice Government may require, and will fully represent various local interests. To invest such a body with legal powers, as would be the case with a Port Trust, would be, I respectfully submit, inexpedient and entirely unnecessary.

5th *April* 1882.

(Signed) R. G. ORR.

Minute by R. C. WALKER, Esq.,

I concur in the views expressed in Mr. Macfadyen's minute. The objections raised by Captain Taylor to the formation of a Port Trust appear to me to be chimerical. In fact the powers and organization of the latter body, than which it would, therefore, in my opinion, work far less satisfactorily both to Government and the mercantile community.

5th *April* 1882.

(Signed) R. C. WALKER.

No. 22.

Order—dated 5th June 1882, No. 1382 W., Public Works.

The Committee, reassembled under G.O., 14th October 1881, No. 2512 W., for the purpose of reporting on certain points connected with the management of the Madras Harbour, levying dues for its use, and landing and shipping goods, have unanimously recommended a consolidated charge of Rs. 2-2-0 per ton on all goods landed and shipped in the Harbour for which the goods would be taken charge of, landed or shipped, guarded, and the porterage to and from the Custom House defrayed.

2. His Excellency the Governor in Council therefore now directs the Master Attendant to place himself in communication with the Advocate-General in view to the draft of a short Bill being prepared to enable the Government to levy this charge, and to entrust the duty to such Government Officer or Department, or specially constituted body, as it may think fit, and to credit the proceeds :—

1*st*, to the expenses connected with the performance of the service ;

2*nd*, and any surplus towards—

1*st*, defraying the interest on the Capital cost of the Harbour,

2*nd*, and to form a Sinking Fund for reducing the Capital cost.

3. As regards the administrative agency to be employed with the above object, the Government, after very carefully weighing all that has been advanced in favor of the immediate creation of a Port Trust, are of opinion that under the existing circumstances of the Harbour Works such a measure would clearly be premature, though ultimately it might be both useful and advisable.

4. On the passing of the Bill above directed to be framed His Excellency in Council will nominate such executive agency as will in his opinion offer the best available guarantees for securing the highly important interests involved and satisfying the reasonable requirements of the trading community.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Master Attendant, Madras.
„ R. C. Walker, Esq.
„ A. M. Saunders, Esq.
„ the Superintending Engineer, Fifth Circle.
„ the Superintendent, Madras Harbour Works.
„ the Chairman, Chamber of Commerce.
„ the „ Trades, Association.
„ the Marine Department.
„ the Revenue Department.
„ the Legislative Department.

Exd. C. Howarth.
Spare Copies

GENERAL.
ESTABLISHMENT.

Govt. of (1882) Madras.

PUBLIC WORKS.

Dated June, 5th.

Read. *Encl.*

G.O., 5th June 1882, No. 1382 W.

JUNE.

Nos. 21-22.

Madras Harbour.

Passing orders on the report of the Committee appointed to report on the management of the — levying dues for its use and landing and shipping goods.

1382
5

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

28th January 1881, No. 234 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 153. Proceedings of the Madras Harbour Works Committee, Monday, 17th January 1881.

Present:

Honorable P. Macfadyen.
Captain J. H. Taylor.
R. C. Walker, Esq.
Major J. Pennycuick, R.E.
W. Parkes, Esq.
F. N. Thorowgood, Esq.

Resolved that Captain Taylor be asked to draft a letter for submission to Government to be circulated to Harbour Committee embodying his proposals for the improvement of the beach and the erection of jetties.

Resolved also that Government be informed that, in the opinion of the Harbour Committee, it is of great importance that a Port Trust Bill for Madras be passed with as little delay as possible.

(Signed) P. MACFADYEN.
(„) J. H. TAYLOR.
(„) J. PENNYCUICK.

Submitted to the Secretary to Government, Public Works Department, for orders with letter from Captain J. H. Taylor referred to herein.

Madras, 19th January 1881.

(Signed) J. H. TAYLOR,
Secretary.

From J. H. TAYLOR, Esq., Lieutenant, R.N.R., Secretary, to the Harbour Committee, dated Madras, 19th January 1881.

The proposals referred to in the resolution passed yesterday in committee have received the approval of Colonel Sankey, Chief Engineer and Secretary to Government, Department Public Works, and of Mr. Parkes and Mr. Thorowgood, on the part of the harbour. It is briefly to level up the beach from a line 200 feet from the sea to its junction with the municipal road. The materials being sand taken from low water mark, covered with one foot of road material, partly obtainable on the spot, and partly from Ambatoor by rail, the whole having a slope towards the sea, in order to carry off storm water and relieve the beach road, which is now inundated in rainy weather. From the broad causeway thus obtained, I propose to run out two jetties, 40 feet in width, and carried out into 6 feet of water M.S.L., the platform to be also 6 feet above M.S.L., and the extreme length to 100 feet of screw pile construction, the piles for which are already at hand. Mr. Parkes also suggests, and I strongly approve the suggestion, that the inner half of the present pier be cut down half way, or say 9 feet above M.S.L., by which addition the trade of the port can be conveniently carried off by these three jetties, to be added to if occasion requires. The facility thus afforded will admit of a much cheaper and quicker shipment and discharge of cargo, and relieve the port of its chief grievance. On the formation of a Port Trust, or such legislative enactment as will admit the levy of dues on goods departmentally, I propose that the whole trade of the port, with all its charges of boat hire,

cooly hire, &c., be taken in hand by the trustees or authorities, and a rate of Rs. 2-8-0 per ton levied upon all cargo landed or shipped. I calculate that 1 rupee, or at most, Rs. 1-4-0 will represent the outlay, and the remainder, Rs. 1-8-0 or Rs. 1-4-0, be credited to the Port Fund for the interest of the capital sum expended on the harbour and the upkeep and establishment.

2. The simplicity of this arrangement will, I hope, recommend it to the Government and the public. The trade certainly can have no reason to complain if the advantages of the harbour are secured to them at no higher charge than it is now subjected to, and the increased security to property and the relief from the oppressive charges of dubashes, &c., will be a very great boon. I need not enter into detail upon the present unsatisfactory method under which the port is worked, the facts are very generally known, and the remedy is, I submit, at hand as soon as legislation is effected.

3. Meanwhile, as no time should be lost and a large amount of work has to be carried out, I would propose that the present balance of Port Funds to the actual credit of Madras itself be utilized by a simple order of Government. A sum of Rs. (1,38,010-9-5) one lakh thirty-eight thousand and ten annas nine and pies five is thus available for the most imperative requirements of the new order of things, to which I have drawn attention above.

4. It will be observed that the proposal does not include any extra tonnage dues on shipping. I would strongly deprecate any attempt to press upon the ship-owner for advantages which he has very little to do with; his duty ends when his vessel reaches Madras, or as near to it as he can safely approach. The harbour cannot be considered one of refuge, and despatch, which is the chief desideratum, is even now on as favorable terms here as at either Calcutta or Bombay. The charges of moorings, pilotage, towage, &c., will of course be legitimate taxes on the ship, and should be calculated to meet all expenses under those heads.

5. The plans and estimates of the proposed works are necessarily incomplete, the levelling and making of the beach causeway will be nearly all pure daily labor, to be carried out by a contractor. For the shore portions of the jetties, the DeHavilland bulwark can be utilized, it is entirely of large granite blocks brought from the Adyar, and the quantity available will be sufficient. The screw pile estimate I submit with the remark that, while the timber is calculated at 2 rupees per cubic foot, I can obtain it from the Gun Carriage factory at on very much more reasonable rate. I consider the two new jetties could be completed for less than 40,000 rupees, and the beach operation for 20,000, making a total of 60,000 rupees.

6. No doubt it will be found ere long necessary or advisable to build warehouses on the beach and transfer all Sea Custom work to them. There will still be ample use for the present Sea Custom godown for the inland work.

7. At present, however, my proposals are limited to the bare necessaries of the situation. I would recommend that Government be asked to sanction the commencement of this work from Port Funds, a monthly account being furnished as a guide to expenditure, duly checked and countersigned by myself.

Seen and approved.

(Signed) P. MACFADYEN.

Ditto. The position of the jetties should be fixed with reference to the easy transfer of goods between them and the custom house or future warehouses.

(Signed) R. C. WALKER.

I think it will be found that the work will cost rather more than the Rs. 60,000 estimated by Captain Taylor, but it will be desirable to carry it out, the funds being available, even if it costs as much as Rs. 1,00,000.

(Signed) J. PENNYCUICK, Major, R.E.

No. 154. ORDER THEREON, 28th January 1881, No. 234 W.

THE proposals in the paper above recorded have been submitted to Government in a very crude form, but what is proposed has been for some time in contemplation and is unquestionably necessary, while funds are available for the work.

2. The Right Honorable the Governor in Council sanctions the reclamation of the strand between the harbour groynes, and the construction of the two pile jetties or boat piers, the outlay being met from the accumulated Port Funds at credit of the Madras port, but somewhat more formal estimates (to be prepared without delaying commencement of the work) should be submitted to Government as early as possible.

1382
6

3. The suggested cutting down of the iron screw pile pier, which is not urgently needed, will be postponed for the present, and meanwhile the Government desire to be furnished with more detailed information as to what is proposed to be done. The work is not included in the estimate now submitted, as indeed is not the strand reclamation project.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Secretary, Madras Harbour Committee.
" Superintendent, Madras Harbour Works.
" Marine Department.
" Legislative Department.

Exd. E. C. Shunkor.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1881] Madras

PUBLIC WORKS

To

THE SECRETARY, MADRAS
HARBOUR COMMITTEE.

&c., &c.,

Dated January, 28th.

Issued

Read.

G. O., 28th January 1881, No. 234

JANUARY.

Nos. 153-154.

Improvement of the Beach and the erect
of Jetties in the Madras Harbour.—Passi
orders on proposals for the —.

1382
7

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

31st January 1881, No. 257 W.

Buildings and Roads.
Civil Works.

Read the following paper :—

No. 164. From W. PARKES, Esq., M. INST. C.E., Engineer-in-Chief, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 14th January 1881.

I HAVE the honor to transmit herewith copy of a report I addressed yesterday to the Under Secretary of State for India on the progress of the Madras Harbour Works during the quarter ending 31st December 1880.

From W. PARKES, Esq., M. INST. C.E., to the Under Secretary of State for India, dated Madras, 13th January 1881.

Report of Progress on the Madras Harbour Works for the Quarter ending 31st December 1880.

I HAVE the honor to inform you that I arrived here on the 6th instant, and having made a general inspection of the works and examined the records of the past three months, I think it will be the most convenient course for me to submit to you my ordinary report of progress during the quarter, thus preserving the continuity of these reports and enabling me to base any further recommendations I may have to make on facts independently recorded in the ordinary way.

2. I therefore beg to submit a plan of the harbour showing the extent of the works on the 31st December, and I hope to forward in a few days a photograph and a statement of the expenditure to that date compared with the estimate.

3. It will be seen that the progress during the quarter has been small. In the early part of October the setting of blocks was retarded for a few days in consequence of the unprecedentedly rapid progress of the previous month having exhausted all the blocks of sufficient age to be placed in the works. Immediately upon the renewal of work a threatening of bad weather necessitated a further suspension to allow of the end blocks and machinery being secured, and since then there has been an almost continuous succession of bad weather rendering sea work generally impracticable.

4. The superstructure of the north pier advanced 94 feet, and is now within 275 feet of its extreme end. The south pier advanced 167 feet and is within 810 feet of its extreme end. The former will be almost certainly carried to its full extent in the ensuing favorable season, though perhaps the special work of the head may not be quite completed; the latter will be brought to a similar state in the favorable quarter from July to September.

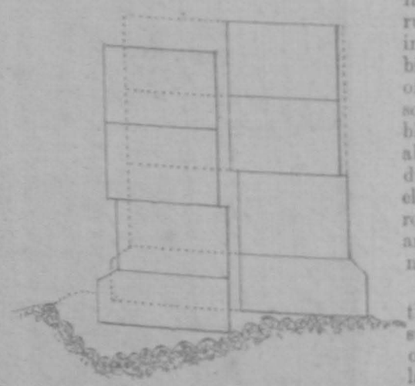
5. The rubble bases have advanced in greater proportion than the superstructures, and the north pier base will be completed this month. The discrepancy to which I alluded in my last report has been explained satisfactorily. The July to September records showed a tonnage of stone much more than sufficient to form the length of bases shown on the plans and sections. It appears that a considerable proportion of this tonnage was used in making up deficient width in other portions of the banks, of which no advice was sent to me. This explanation makes the tonnage and measurements quite consistent.

6. The past quarter, though not one of great importance in respect of the progress of the works of construction, is of more than ordinary importance in respect of the tests of stability to which they have been exposed, and also as affording the first definite evidence of the value of the works for the purposes intended.

7. The north-east monsoon burst with rather more than ordinary violence in the last day of October, and the sea carried away 50 feet of railway on the north pier, the repair of which of course caused some delay. It was, however, repaired and a few days' work executed, when a further interruption occurred on the 21st November by a heavy sea from an unusual quarter, S.E., evidently the disturbance propagated from a severe cyclone which caused much damage to shipping at Negapatam, about 150 miles south of Madras. At Madras the sea was accompanied by very little wind, thus affording another illustration of the law that the limits of sea disturbance and atmospheric disturbance are not coincident.

8. This day will be especially memorable as the occasion of a lamentable accident by which seven lives were lost. Mr. James Duffy, Foreman of the South Pier, and H. Patching, a European Diver, accompanied by nine native coolies, attempted to pass along the pier with a trolly for some purpose unknown. A heavy wave swept them all off, and four natives alone escaped. No bodies have been found. Mr. Duffy's loss is much felt as he was a valuable man who had been employed on these works from the commencement, and previously at Kurrachee. Patching was also a useful man.

9. This sea is also especially noteworthy, because by it, for the first time, have some blocks fairly set at the proper depth and on a clean rubble foundation been disturbed, thus affording some direct evidence of the limits of stability of the work. At the north pier the rush of water round the end was so violent as to scoop out a hole in the rubble at the foot of the blocks into which the end blocks dropped down about 3 feet, being at the same time laterally displaced slightly as shown in sketch. The iron clamps by which they were attached to the third row behind them were not broken, and that row and the one intermediate between them were not disturbed.



10. The most obvious effect of the sea on the completed portion of the North Pier was to strip off the railway from the top, but this effect only extended for the length built since the last heavy sea in November 1879. In the older portions it was not disturbed. The cause of this difference was apparent on examination of the blocks themselves. They had evidently been subjected to a very severe shaking for the surfaces were found to be abraded by rubbing against one another to such an extent as in some cases to form indentations 4 inches deep. To produce this result the whole structure must have been in a state of violent vibration, and this would break the connection between the tops of the individual blocks and the continuous rigid railway laid upon them. When the block-work has once been subjected to this vibrating action it becomes consolidated and rigid, and the railways maintain their connection with it. The sea does not appear to have caused any general subsidence.

11. Reverting to the subsidence of the end blocks, it may be well to point out how this bears on the sufficiency of the design for the permanent pier head. The weak points in the temporary termination are evidently the following :—

1*st*.—Rubble stone at 22 feet below the surface is not proof against the scour of a wave rushing round the abrupt end of the pier.

2*nd*.—The abruptness of the end increases the force of the scour.

3*rd*.—The blocks have a hold of only 4 feet 6 inches, their own thickness, in the solid work.

Now, though the exact form of the whole of the permanent pier head is not yet determined, yet some features have been long settled on :—

1*st*.—The depth of foundation of the blocks on the rubble will be 28 feet instead of 22.

2*nd*.—There will be no sharp corners to aggravate the scour, the corners being formed of blocks in the quadrant of a circle 12 feet radius.

3*rd*.—All the blocks exposed to the end between these curved angle blocks will be set as "headers" with their ends instead of their sides exposed, so as to have a hold in the work of 12 feet instead of 4½ feet.

With these additional elements of stability it is clear that the permanent pier head will be proof against a much heavier sea than the temporary one.

12. The south pier head did not suffer in the same way. This may have been due to its having been provided with a protection which had been intended at the north pier, but which could not be carried out on account of the sudden rising of the sea, viz., the foundation blocks of the next row having been set so as to protect the foot of the work from the scour. This naturally suggests the propriety of giving a similar protection to the permanent pier heads, and this will be further considered.

13. In other respects the effects on the south pier were very similar to those on the north. The roads were washed off and the new parts of the work settled down. A very considerable disaster, however, was rather narrowly escaped. The strongly-framed base on which the Titan was standing was seriously strained, and would have given way if the sea had continued much longer. This is a contingency which I have always looked upon as possible, and it would no doubt involve considerable expense and much delay if it were to occur, but it could only be provided against by precautions which would involve as a *certainty* expenses and delays equal to those of which there is now only a *risk*, so that I have thought it better to face the risk than the

1382/6

certainty. We are now pretty safe so far as the north Titan is concerned, and we have, I hope, only one more season of possible risk for that on the south pier.

14. It may be as well to mention that the washing off of the roads does not involve the loss of the materials (rails and sleepers). The roads are in the first instance relaid with spare materials, but the old ones are picked up from the bottom of the sea almost without loss by the divers and are used again.

15. With respect to the changes of the shore line, a portion of the accumulation formed to the south of the Harbour in the late south-west monsoon is now being washed away, and the year 1880 shows a strip of accretion about equal in width to that formed in 1879; but as the action is still going on, the present is not a good time for making a definite comparison. All local misgiving as to the injurious result of this accretion on the Harbour appears to have subsided, and the land gained is now being utilized in various ways, especially by the Commissariat Department, and should be a source of revenue to the Harbour.

16. Within the Harbour the remarkable accumulation formed by the wave reflected from the north pier between the screw pile pier and the south harbour pier during the south-west monsoon has been carried northward again by the wave reflected from the south pier. The line of beach is now parallel to what it was in December 1879, but about 80 feet further seaward. This additional width of beach, formed as it has been by a corresponding deepening of the neighbouring water, is rather a gain.

17. The shore line north of the Harbour has rather recovered since the northerly seas set in, but there has been some extension of the rough stone revetment formed for protection, and a further extension is under consideration, upon which I shall have to report specially to the Government of Madras. The revetment itself stood well in the late heavy seas.

18. The Harbour now forms a considerable shelter from northerly seas and some from due southerly seas, but in the easterly and south-easterly seas lately prevalent it is as yet quite useless. The distance between the pier heads is about 1,600 feet, and the wave entering this spreads to 3,000 feet, which would produce some reduction were it not from the waves being reflected from the faces of both piers and thus forming a confused sea in the Harbour, quite as troublesome as the rather higher but more regular seas outside. These evils will be materially reduced when the entrance is reduced to one-third its present width, but seas from this direction will always be the most troublesome. Fortunately they are comparatively rare.

19. Notwithstanding this drawback all steamers now, as a rule, anchor within the piers, and find a considerable advantage in the saving of time in landing and shipping cargoes. Native sailing craft also anchor inside, but as a rule European sailing vessels anchor outside, and unfortunately too often in the fairway of the entrance, thus seriously incommoding the steamers. There is an urgent call for the fixed moorings, which I hope will soon be complied with.

20. I am glad to find that the important questions of exercising an efficient control over the shipping and cargo boats, and of the best means of obtaining a revenue from the Harbour are under serious consideration, and it seems likely that practical steps will shortly be taken.

21. I am submitting a duplicate of this report to the Government of Madras.

No. 165. ORDER THEREON, 31st January 1881, No. 256 W.

ORDERED to be recorded and copies furnished to the Government of India.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Secretary, Harbour Works Committee.

No. 166. (DOCKET No. 257 W., dated 31st January 1881.)

Forwarded.

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

Exd. S. T. Austin.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1881] Madras

PUBLIC WORKS.

To

THE SECRETARY TO THE
GOVERNMENT OF INDIA.

Dated January, 31st.

Issued *Encl.*

Read.

G. O., 31st January 1881, No. 267 W.

JANUARY.
Nos. 164-166.

FORWARDING Mr. Parkes' Progress Report of the Madras Harbour Works for quarter ending 31st December 1880.

1382
9

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

1st March 1881, No. 560 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 3. From F. N. THOROWGOOD, Esq., M. INST., C.E., Superintendent of Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 4th February 1881, No. 85 W.

I HAVE the honor to submit the following report of the progress on these works during the past month of January.

2. *North Pier Superstructure.*—The month commenced with favorable weather and work was carried on fairly well up to January 6th, but from that date until the 24th the state of the sea rendered the end of the north pier inaccessible and stopped all progress. Since the 24th the weather has been more favorable for work, and with the month of February there seems to have come the usual smooth sea. In January 114 blocks were set, advancing the pier by a length of 60 feet, and bringing the work to within 203 feet of the actual termination. The pier-head is now being built, and the section of the pier at the present date is five blocks in height and three blocks in width, which entails much more work per row of blocks than formerly, and consequently the rate of advance will not be so rapid as heretofore.

3. *North Pier Rubble Base.*—The rubble base of the north pier may now be considered as completed, although it may be necessary to add small quantities here and there as the blocks are set. The amount deposited in January was 7,457 tons, and the total quantity of rubble used in the north pier base has been 482,447 tons. The estimated quantity was 479,909 tons.

4. *Concrete Block-making.*—The making of concrete blocks was suspended during the early part of the month as there was no room in the yard for more. In the latter part of January 317 blocks were made, most of these being for the head of the north pier. I reported last month that all the blocks required for the north pier would be finished in January. This, however, is not the case, although there are not now many remaining to be made.

5. *Quarries.*—The out-turn from the quarries has not been very large, as the roughness of the sea interfered greatly with the construction of the rubble bases. From Ambatúr 14,165 tons of laterite were received and from Pallávaram 13,016 tons of granite rock, giving a total for the month of 27,181 tons. The work at Ambatúr is being reduced to a minimum since the completion of the north pier base, but the Pallávaram quarry will have to be worked for some months to come.

6. *South Pier Superstructure.*—The progress at the south pier was better than at the north, but was below the average. During January 184 blocks were set, advancing the pier by a length of 106 lineal feet, and making the total length 3,245 feet. Since February 1st the sea has been calm and quiet and the progress at this date is consequently much more rapid. There now remains a length of 712 feet of the south pier to be constructed, of which more than half will be built by the end of March.

7. *South Pier Rubble Base.*—The base of the south pier is well in advance of the block work, and will shortly be well on the way towards completion. During January 15,919 tons of stone were deposited, of which 6,000 tons were brought by

the steam-hoppers. There seems to be every prospect of effecting a saving on the estimated quantity of rubble in the south pier base.

8. *Protective works north of Harbour.*—The condition of the shore to the north of the harbour is now very satisfactory, and by the judicious use of boulders I hope to be able to maintain the present line fairly well. During January 308 tons of stone were used for this purpose, and in addition to this quantity some of the material from existing groynes was utilised to extend the rough revetment. On the general question of the encroachment of the sea and the measures to be taken in consequence Mr. Parkes has addressed Government separately.

9. *Stores received on works.*—Three vessels brought stores from England in the past month, viz.:—

Ship *John Allen*, with 1,067 casks of cement.
" *Windermere*, with 1,169 casks of cement.
Steamer *Adjutant*, with gauge glasses and sundry stores.

I regret to state that much of the cement on board the *Windermere* is damaged by water, and is rendered useless, but at the present date I am not able to state the full extent of the damage, as the whole cargo is not yet discharged.

10. *Expenditure.*—The expenditure during January has been Rs. 98,757, and the total outlay (approximately) to the end of the month is Rs. 49,56,408.

11. *Plans, &c.*—The usual lithographed plan and two longitudinal sections accompany this report, showing the extent of the rubble bases of both piers and the line of high-water at the end of January. It will be observed that the north base has been tipped too high, which is much to be regretted, but is due to my having kept the steamers at work when the sea was rough rather than lay them off and cancel the running of a stone train.

12. *General.*—The distance between the ends of the two piers on January 31st was 1,410 feet, and at the date of writing it is 1,350 feet, the finished entrance being designed for 550 feet. Each week's work now makes an appreciable difference in the smooth water area, and by the end of next month the protection afforded will be considerable.

13. On the 7th January the works were inspected by the Right Honorable the Governor who visited both piers, the block-making ground and the protective works to the north of the harbour. His Excellency was accompanied by the Chief Engineer of the Public Works Department, and by Mr. Parkes, Engineer-in-Chief of the Harbour Works, who arrived in Madras on January 6th.

No. 4.

ORDER THEREON, 1st March 1881, No. 560 W.

ORDERED to be recorded.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent of Madras Harbour Works.
" Secretary to the Harbour Works Committee.
" Marine Department.

Exd. S. T. Austin.
Spare Copies

1282
10

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1881) Madras.

PUBLIC WORKS.

To

THE SUPERINTENDENT, MADRAS
HARBOUR WORKS.

&c., &c., &c.

Dated March, 1881.

Issued

Read.

G. O., 1st March 1881, No. 560 W.

MARCH.
Nos. 3-4.

Progress Report of the Madras Harbour Works.—The — for January 1881 recorded.

1282
11

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

1st March 1881, No. 561 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 5. From the Engineer-in-Chief, Madras Harbour Works, dated 25th January 1881.

No. 6. ORDER THEREON, 1st March 1881, No. 561 W.

THE Right Honorable the Governor in Council has perused with interest Mr. Parkes' report on the erosions north of the harbour and the best method of dealing with them.

2. It seems desirable, in view of future possible encroachment of the sea in this direction, that the longitudinal revetment should be continued for some further distance, its effect and the progress of erosion being constantly watched, and the extension of the sea wall made contingent on these observations and the orders on them.

3. The question raised by Mr. Parkes in paragraph 20 of his report as to the value of reclaimed land to the south being in some way shown as a set off against the expenditure due to the erosion on the north of the harbour will be deferred for future consideration.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Engineer-in-Chief, Madras Harbour Works.
" Superintendent, Madras Harbour Works.
" Marine Department.

Exd. E. C. Shunker.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1881} Madras.

PUBLIC WORKS.

To

THE ENGINEER-IN-CHIEF,
MADRAS HARBOUR WORKS,
&c., &c.,

Dated March, 1st

Issued

Rec'd.

G. O., 1st March 1881, No. 561 W.

MARCH.
Nos. 5-6.

Erosions north of the harbour and the best method of dealing with them.—Passing order on Mr. Parkes' report on the

1382
12

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

10th March 1881, No. 637 W.

Buildings and Roads.
Civil Works.

Read the following paper :—

No. 25. From F. N. THOROWGOOD, Esq., M. INST. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated 4th March 1881, No. 90 W.

I HAVE the honor to submit the following report of the progress on these works during the past month of February.

2. *North Pier Superstructure.*—The weather having been very favorable for work the progress with the north pier head was considerable, and 286 blocks were satisfactorily set in position, advancing the work by a length of 93¾ lineal feet and bringing the end to within 109¼ feet of the actual termination. In the early part of the month the excavation for the bottom course of blocks was so very heavy, owing to the rubble base being accidentally tipped too high, that we determined to raise the level of the foundation for a short distance so as to make a more rapid advance. The depth of foundation of the finishing courses of blocks will be the same as originally designed. The section of the north pier at the present date is four rows of blocks in width and five tiers in height, which necessitates setting 20 blocks for every complete row, in place of eight blocks as in the ordinary section of the work.

3. *North Pier Rubble Base.*—I stated in my last report that the base of the north pier was practically finished in January, and so, with one exception, it was. That exception is the foundation for the return wall or horn shown at the end of each pier on the accompanying plan. The work of constructing this is now taken in hand and will soon be completed. During February 1,019 tons of stone were deposited in the north pier base for filling up hollow places and making up the full width at the top.

4. *Concrete Block-making.*—The making of concrete blocks had to be suspended occasionally for want of space to stack them, but 360 blocks were made during the month. The blocks for the north pier head are completed with the exception of a few for the return wall or horn which will be made during the current month.

5. *Quarries.*—The outturn from the quarries has not been so large as I could wish, but it is absolutely impossible to keep the full number of coolies at work at quarrying when they wish to be cultivating their land. From Ambathoor the daily number of trains has been reduced to two, and the total amount of laterite received in February was only 13,778 tons. From Pallávaram 17,183 tons of granite were received, but latterly I have had to cancel several trains on account of insufficient coolies at the quarry. This difficulty with the coolies is likely to continue for some time longer, as the season is exceptionally good for cultivation.

6. *South Pier Superstructure.*—The progress at the south pier has been most satisfactory during February, and has nearly equalled the greatest amount hitherto achieved in one month (September 1880). There were 376 blocks set during the month, advancing the pier by a length of 218½ lineal feet in twenty-three working days. The total length is now 3,463¾ feet from the commencement, and there remains a length of 493 feet to be built to finish the pier. The width of the opening between the two piers was 1,110 feet on February 28th.

7. *South Pier Rubble Base.*—The formation of the rubble base of the south pier has been pushed on as rapidly as possible, and in February 24,323 tons of stone were deposited, of which 13,404 tons were brought by the two steamers. Every exertion will be made to complete the base by next May, but the deficient outturn from the quarries is against this being accomplished.

8. *Protective Works, north of Harbour.*—Very little work is being done towards protecting the north beach, as there is no tendency of the sea to encroach. During February about 500 tons of boulders were removed from an abandoned groyne and placed to the north of the Police tannah. I shall reduce expenditure on this head to a minimum in future.

9. *Stores received on works.*—Only one vessel arrived with stores for the works during February, and that was the ship *Her Majesty* with 2,596 casks of Portland cement. The whole of the cement for these works is now received.

10. *Expenditure.*—The expenditure during February has been approximately Rs. 1,17,075, and the total expenditure recorded in the books is Rs. 50,77,933, to this some additions must be made for outstanding accounts.

11. *Plans and Sections.*—The usual lithographed plan and two sections accompany this report. On the north pier section is shown the rise in the foundation to avoid the heavy excavation referred to in paragraph 2 of this report. The completed pier is shown in a black dotted line.

No. 26.

ORDER THEREON, 10th March 1881, No. 637 W.

WITH reference to the statement in paragraph 2 of Mr. Thorowgood's report, that the foundation of the bottom course of blocks has been raised for a short distance owing to the rubble base having been accidentally tipped too high, it is desirable that a further report should be submitted as to the extent of the deviation allowed, as well as an assurance from Mr. Parkes that no danger to the solidity of the pier is in consequence likely to accrue.

2. As regards the stoppage of the work of revetting the shore line north of the harbour, adverted to in paragraph 8, attention is called to G.O., No. 560 W., dated 1st March, in which instructions as to the further prosecution of the work are given.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent of Madras Harbour Works.
" Engineer-in-Chief, Madras Harbour Works.
" Marine Department.

Exd. S. T. Austin.
Spare Copies

1382
13

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1881) Madras

PUBLIC WORKS

To

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS,
&c., &c., &c.

Dated March, 10th.

Issued

Recd. *Encl.*

G. O., 10th March 1881, No. 637 W.

MARCH.
Nos. 25-26.

Madras Harbour Works.—Orders on progress report of the — for February 1881.

ABSTRACT of Estimates for the Madras Harbour Works as recast.

ORIGINAL.						REVISED.					
Quantity.	Per.	Rate.	Cost.	Total.	Item Number.	Sub-heads.	Quantity.	Per.	Rate.	Cost.	Total.
						Preliminary Works.					
					1	Railways: Marine surveys	..	..	..	6,408	
					2	Railways: Rails from England ..	..	..	..	1,38,699	
					3	Railways: Sleepers	..	..	..	39,402	
					4	Railways: Formation, &c. ..	..	..	..	69,020	
					5	Block ground, original	..	..	..	45,032	
					6	Do. at south pier	..	..	..	9,958	
					7	Buildings	..	..	..	65,451	
				3,80,000		Total, Preliminary Works ..	..	..	..		3,73,970
						North Pier.					
479,910	Ton ..	1·5	7,19,865		8	Rubble stone in surf bank and base .. { Original .. 4,79,910 / Extra required 10,000 }	489,910	Ton ..	2	9,79,820	
100,050	C. yard ..	10	10,00,500		9	Concrete blocks .. .. { Original estimate 1,00,050 / Extra for pier head 5,813 }	105,863	C. yard..	8·9	9,42,181	
550	Linl. foot..	70	38,500								
3,350	Do. ..	80	2,68,000		10	Setting blocks	105,863	Do. ..	1·9	2,01,140	
				20,26,865		Total, North Pier ..	..	..	..		21,23,141
						South Pier.					
479,910	Ton ..	1·5	7,19,865		11	Rubble stone in surf bank and base { Original .. 4,79,910 / Saving effected 35,000 }	444,910	Ton ..	2	8,89,820	
100,050	C. yard ..	10	1,00,500		12	Concrete blocks .. .. { Original estimate 1,00,050 / Extra pier head 4,581 }	104,631	C. yard..	8·9	9,31,216	
550	Linl. foot..	70	38,500		13	Setting blocks	104,631	Do. ..	1·9	1,98,799	
3,350	Do. ..	80	2,68,000								
				20,26,865		Total, South Pier ..	..	..	..		20,19,835
				60,000	14	Lighthouses (site and design not yet decided on) ..	..	..	..	..	20,000
						Tools and Plant.					
					15	Locomotive engines	..	..	..	55,171	
					16	Rolling stock	..	..	..	26,066	
					17	Floating plant	..	..	..	1,44,285	
					18	Do. Expenses of hopper barges previous to being employed on the works.	..	..	..	41,004	
					19	Cranes, machinery, &c. ..	..	..	..	2,56,388	
					20	General tools	..	..	..	44,858	
					21	Office furniture	..	..	..	4,029	
				4,20,000		Total, Tools and Plant ..	..	..	..		5,71,801
				49,13,730							51,08,747
5 per cent.				2,45,687	22	Establishment, 7 per cent. ..	..	..	..	..	3,57,612
10 " "				4,91,373	23	Contingencies, $3\frac{1}{2}$ per cent. ..	..	..	..	..	1,78,806
				56,50,790		Grand Total ..	..	..	..	..	56,45,165
For extra rubble (not required).				2,00,000		Moorings	..	..	..	..	2,00,000
											58,45,165
						Deduct— Probable recoveries due to sales of tools and plant ..	..	..	..	..	1,00,000
						Net Total ..	..	..	..	..	57,45,165

1382/14

1382
15

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

16th March 1881, No. 712 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 45. From W. PARKES, Esq., M. Inst., C.E., Engineer-in-Chief, Madras Harbour Works, to the Secretary to Government, Public Works Department, Buildings and Roads, dated Madras, 1st March 1881.

At the suggestion of the Examiner of Public Works Accounts, I have the honor to submit herewith a revised estimate of the Harbour Works in a form that can be more easily compared with the expenditure than the original estimate. The two are shown side by side on the accompanying statement A.

2. As you will observe the total amount is the same within 6,000 rupees as that of the original estimate, but the items which go to make up that amount have been altered so as to be more nearly proportional to the actual expenditure. On each of these items there is up to the present time a saving amounting in the aggregate to upwards of a lakh of rupees independent of "contingencies," and I have every hope this saving will be maintained to the completion of the work, but I do not think it would be desirable at the present stage to submit an estimate of reduced total amount. The estimate as now presented however includes the cost of the proposed additions to the pier heads.

3. I should explain also that no credit is taken for the value of the plant and machinery now on the works. These may probably be valued at about $1\frac{1}{2}$ lakhs of rupees, but whether such an amount be realised will depend of course on the demand. The original estimate however was intended to cover the first cost of these materials.

4. I may take this opportunity of explaining the reasons for some of the differences both in quantity and price between the corresponding items of the two estimates, which will be substantially equivalent to explaining the differences between the original estimate and the rate of expenditure to the present time.

5. The two sub-heads "Preliminary Works" (items 1—7) and "Tools and Plant" (items 15—21) were included in my original estimate in one item "Plant and Preliminaries" for which £80,000 was allowed. This was afterwards divided rather arbitrarily into two sub-heads estimated respectively at Rs. 3,80,000 and 4,20,000 which I have adopted in the accompanying abstract A, so that they may be inserted side by side with the similar sub-heads in the revised estimate. The sums inserted against the several items in the revised estimate are simply the expenditure upon those several items up to the 31st December last except in one case "General Tolls," No. 20, where a further sum of Rs. 6,000 is estimated as liable to be required before the work is completed.

6. My original estimate of £80,000 was for the supply of a sufficient stock of plant for carrying on the work at full speed, and it was intended that the account should be closed when this was accomplished, leaving any future additions to be

charged to the works. I was desirous of closing the account in February 1879 (see report of that date G.O., No. 608 W., of 27th February 1879) in order that for the future the expenditure on the works might be definitely compared with the estimate. Under the direction of the Examiner however the accounts of expenditure were kept upon a different system which involved keeping them all open to a much later stage. I do not offer any opinion on the relative merits of the two systems, but it is clear that an estimate made on one system is not fairly comparable with an account of expenditure on the other.

7. Besides this the apparent cost of most of these items has been materially enhanced by the purchases in England being converted into Indian currency at the depreciated rate, while the estimate was converted at par. In the case of some of the articles purchased also, the prices in England had materially risen from those on which my estimate was based. These facts will, I think, sufficiently explain the reason of an excess of Rs. 9,45,771 over Rs. 8,00,000, which in a great measure is more apparent than real. I should also here mention that the cost of the Goliath crane and other machinery at the south pier block ground which has hitherto been charged to "Contingencies" as having been procured after the account for plant was supposed to be closed is now charged to "Tools and Plant." Some other similar transfers have also been made in accordance with the same principle.

8. Passing now to the rubble stone in surf banks and bases (items 8 and 11), it will be seen that I have added 10,000 tons to the quantity originally estimated for the north pier, and deducted 35,000 tons from that for the south pier. In the original estimate I made a liberal allowance for an excess of stone actually to be used over that calculated from the bare sections, and this has been on the whole more than enough, notwithstanding the greater depth of water in which the heads are now placed. I made the allowance however on a supposition which has not been confirmed by experience. I thought it would sink into the sand, and more so near the shore than in deep water, so I made my greatest allowance for the work first executed. It saving in quantity, but the higher bank in deeper water consolidated to an extent I did not anticipate, and to allow for this an extra quantity had to be deposited which more than balanced the saving on the earlier portions of the north pier, and reduced them materially in the case of the south pier.

9. The increase of price from $1\frac{1}{2}$ to 2 rupees is partly due to the fact that, though I made an allowance over the ordinary prices for rubble stone which prevailed in 1873 for the extra cost which is sure to follow a pressing demand for labor, yet that allowance was not sufficient. It is to be remarked that there is no effectual competition for the contracts. A rise of price followed immediately on a public advertisement being issued for tenders in 1878, since which time the only contractors who have command of labor appear to have felt themselves more secure of their monopolies.

10. The steam hopper barges also have been unexpectedly expensive owing to the long periods during which they were unable to work either from being out of repair or obliged to shelter at Cocanada. While they are at work however they deposit the stone at a very cheap rate, and I have no doubt they have served to keep down the price of the deposit from cargo boats.

11. The saving of rather more than a rupee per cubic yard in the cost of the concrete blocks is due to the stone of which they are formed being supplied from Pallávaram at Rs. 2 per ton instead of from Tirutani at Rs. $2\frac{1}{2}$ as estimated. The saving would have been greater, but for the enhancement of the apparent cost of the Portland cement by the state of the exchange.

12. In the cost of setting blocks the estimated rate of Rs. 80 per lineal foot is equivalent to Rs. 3-3-0 per cubic yard, while the actual cost is rather under Rs. 1-9-0, a saving of 40 per cent. This is solely due to the increasing skill and care displayed in the various departments of the work.

13. *Lighthouses.*—In the original estimate £3,000 was allowed for each lighthouse, but this was before any definite design had been considered for the pier heads, and the amount is sufficient to allow of independent submarine foundations. These

will be unnecessary with the widened pier heads now proposed, and the cost of them may therefore be transferred to the estimates for the piers, leaving 20,000 rupees for the superstructures only.

14. *Establishment.*—This was originally estimated at 5 per cent., but during the years 1877 and 1878 first one pier and then the other were so many months without making much progress that the expenditure was reduced without a corresponding reduction in the cost of establishment, which latter consequently rose to 9 per cent. at the end of 1878. In the two following years the greater rate of expenditure reduced it to $6\frac{1}{4}$. As, however, during the later stages the expenditure on works will be reduced before that on establishment can be, the percentage of the latter will again rise, though I hope the allowance of 7 per cent. will leave a surplus.

15. *Contingencies.*—This was originally taken at 10 per cent., but up to 31st December 1880 the charges debited to this head had amounted to little over 3 per cent. on the expenditure on works. The $3\frac{1}{2}$ per cent. now taken on the whole will allow 7 per cent. on the unexpended portion of the estimate for any future contingencies. The only further charge in prospect, however, is for storm water channels from the outlets of the drains to the water's edge amounting to Rs. 5,000.

16. There is indeed one claim now being made which, if substantiated, will make a further charge against the Harbour Works; I allude to the claim of the Madras Railway Company for a payment to cover their alleged loss in the carrying of the stone from Ambatúr. I do not at present offer any opinion on the merits of this claim, but I would remark that, inasmuch as the cost of conveyance was an item which I was obliged to take on the word of the Agent and Manager quite irrespective of my own judgment, a special amendment of the estimate should be made by an order of Government to cover the amount of the claim.

17. Abstract B is a statement of the expenditure to 31st December 1880 compared with the revised estimate, which I hope may be found suitable in form for future monthly statements. In the case of four sub-heads, "General Tools," "Stores," "Contingencies" and "Establishment," I have given the details in separate schedules so as to show particulars of expenditure which should be placed on record, but which, not having corresponding details in the estimate, cannot be conveniently inserted in the body of the statement.

No. 46. ORDER THEREON, 16th March 1881, No. 712 W.

WITH this letter the Engineer-in-Chief, Madras Harbour Works, submits the estimate for the works recast so as to admit of easier comparison with expenditure.

2. The total amount of the estimate as now submitted amounts to Rs. 58,45,165 and includes Rs. 2,00,000 on account of the moorings, but excludes a corresponding sum for extra rubble not now required. It also includes an additional sum of Rs. 10,394 for the pier heads, the amount being transferred from lighthouses under the circumstances explained in paragraph 13 of Mr. Parkes' report. No credit has been taken for recoveries by sale of tools and plant on completion of the works for which they have been procured. A sum of Rs. 1,00,000 may be shown on this account as a deduction from the total amount of the estimate, the full provision under "Tools and Plant" being allowed to stand. This course will admit of the full expenditure on the sub-head, while the recoveries can be checked when the work is finished and the accounts closed.

3 As regards the lump sum provision for lighthouses (Rs. 20,000), and moorings (Rs. 2,00,000), it seems desirable that detailed abstract estimates should be submitted so as to have some record of the kind of work executed as well as the quantity, rate, and cost thereof in the event of future reference becoming necessary.

4. It is noticed that the revised estimate provides Rs. 1,78,806 for contingencies, of which Rs. 1,41,899 would appear from Schedule 2 to have been already expended. A sum of Rs. 79,751 only of this sum, however, is shown as outlay on the protective

works north of the harbour, the probable cost of which as estimated by Mr. Thorowgood will be about $1\frac{1}{4}$ lakhs if the revetment is to be proceeded with. This point, as well as the claim for compensation by the Madras Railway Company for conveyance of material, will require further special consideration and orders.

5. With these remarks the revised estimate as amended by the deduction entry of Rs. 1,00,000 on account of sale of tools and plant will be printed for future guidance in the execution and accounts of the works.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Engineer-in-Chief, Madras Harbour Works.
" Superintendent, do. do.
" Examiner of Public Works Accounts.
" Marine Department.

Exd. E. C. Shunker.
Spare Copies

1382
17

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of 1881 Madras.

PUBLIC WORKS.

To

THE ENGINEER-in-CHIEF,
MADRAS HARBOUR WORKS.

&c., &c., &c.

Dated March, 1881.

Issued

Read.

Read.

G. O., 16th March 1881, No. 712 W.

MARCH.
Nos. 45-46.

Madras Harbour Works.—Orders on letter from the Engineer-in-Chief submitting a revised estimate for the —.

1382
18

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

2nd April 1881, No. 901 W.

General Account.

Read the following paper:—

No. 3. Despatch from the Most Honorable the Secretary of State for India.

Public Works.

No. 6.

INDIA OFFICE, LONDON,
10th March 1881.

SIR,—I have received and considered in council your Excellency's letter in this department, dated 18th November 1880, No. 55, requesting that inquiries might be made as to the cost of a tug of the dimensions and kind mentioned by the Master Attendant.

2. I enclose for your information a copy of a letter from the Secretary of the Admiralty, dated 5th ultimo, No. 12,438/805 S, which appears to give the information required.

3. With regard to the plan and specification requested by the Master Attendant, it is considered preferable that the firm from whom the tug is purchased should submit a design, for which they would be entirely responsible; but it is not thought right to call upon contractors to submit tenders and designs at the present moment, merely for the purpose of obtaining information.

I have, &c.,
(Signed) HARTINGTON.

His Excellency the Right Honorable
The Governor in Council, Fort St. George.

From ROBERT HALL, Esq., Secretary of the Admiralty, to the Under Secretary of State for India, dated 5th February 1880, No. 12,438/805 S.

I AM commanded by my Lords Commissioners of the Admiralty to acknowledge the receipt of your letter of the 17th December last, relative to the cost, &c., of a steam tug for service in Madras Harbour, and in reply I am to acquaint you, for the information of the Secretary of State for India in council, that it is considered that a vessel could be built to answer the purpose required on the following dimensions:—

Length, 60 feet,
Breadth, 15 feet,
Draft of water (mean), 4 feet 11 inches,
Tonnage, B.M. 61,
Displacement, 69 tons,

but it is not seen that the engines on these dimensions could be got to give more than 130 indicated horse-power with a maximum speed of nine knots, if the tug is to have paddle wheels working independently. A twin-screw arrangement could be designed to give the necessary handiness and with a power of about 150 horses for the same weight, and it is possible that a firm accustomed to designing and building such vessels might improve a little on this result.

2. It is recommended that the frames of the tug should be of iron, and the bottom plating and bulkheads of steel.

3. The cost of the tug would probably be about £4,800 if the engines for paddles and probably a little less if the twin-screw is adopted.

No. 4. ORDER THEREON, 2nd April 1881, No. 901 W.

COMMUNICATED to the Marine Department with reference to G.O., No. 2,543 W., dated 5th November 1880.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Marine Department.
,, Superintendent, Madras Harbour Works.

Exd. E. C. Shunker.
Spare Copies

1382
19

GENERAL
ACCOUNT.

Govt. of {1881} Madras.

PUBLIC WORKS.

To

THE MARINE DEPARTMENT,

&c., &c., &c.

Dated April, 2nd.

Issued

Recd. Encl.

G. O., 2nd April 1881, No. 901 W.

APRIL.

Nos. 3-4.

Madras Harbour Works.—Despatch from the Secretary of State forwarding copy of a letter from the Secretary of the Admiralty regarding the cost of a tug for the —, communicated to the Marine Department.

1382
20

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

7th April 1881, No. 934 W.

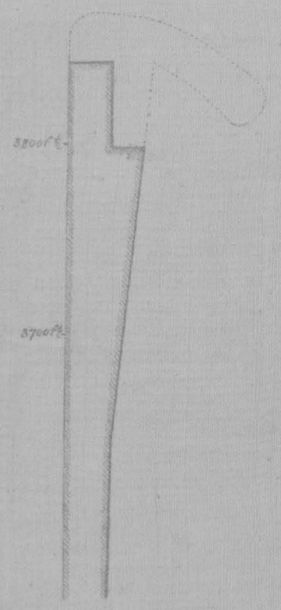
Buildings and Roads.
Civil Works.

Read the following paper :—

No. 29. From F. N. THOROWGOOD, Esq., M. INST. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department (Buildings and Roads), dated Madras, 4th April 1881, No. 1 W.

I HAVE the honor to submit the following report of the progress on these works during the past month of March.

2. *North Pier Superstructure.*—I hoped that the north pier would be quite completed during the official year 1880-81, but owing to complications in the work of constructing the pier head, there yet remains a considerable amount of work to be done. The advance during March has necessarily been small, owing to heavy excavation in the rubble base and to the increasing width of the pier. On March 23rd I transferred all the divers from the south pier to the north pier, so as to get on more rapidly with the more complicated work of the head. This was attended with good results and there were 327 blocks set during the month, advancing the pier by a length of 84¼ lineal feet. One half of the pier head is now within 25 feet of the extreme end, but the southern portion has to be built up, and the return wall or horn has yet to be constructed. The state of the pier head on March 31st was as shown in the sketch in the margin,— the dotted lines showing what has yet to be done to finish the north pier. The advance of the pier during the first quarter of 1881 has been 239 lineal feet.



3. *North Pier Rubble Base.*—The Rubble Base of the north pier is now practically completed,—the foundation for the return wall or horn being also finished. In March there were 2,303 tons of laterite deposited in the foundation for the latter work, which brings the total amount of rubble used in the north pier to 485,770 tons.

The amount shown in Mr. Parkes's revised estimate (G.O., No. 712 W., March 16th 1881) is 489,910 tons. It is probable that when we come to set blocks upon the return wall we shall want some hundreds of tons more, but the quantity will still be within the revised estimate.

4. *Concrete Block-making.*—The making of concrete blocks has been carried on as rapidly as the complicated shapes of the blocks will admit, and at the present date all the blocks for the north pier are completed. The first concrete block for the north pier was made on August 14th, 1876, the last one on April 2nd, 1881. During the past month only 283 blocks were made,—the greater number of these being for the south pier head.

5. *Quarries.*—The work at the quarries just now is not altogether satisfactory, owing to the continued difficulty in keeping the coolies steadily at work. From Ambatúr only two trains daily are being received, and the quarry is nearly worked out. I am removing large quantities of rails and railway material from there for use on the harbour works themselves. In March 13,650 tons of laterite were received from Ambatúr. From Pallávaram the supply has been unsatisfactory and insufficient, but I have been unable to increase it. In the current month, I hope the outturn will be greater by 30 per cent., as the coolies are beginning to return to work. From these quarries 10,803 tons of granite were received in March, giving a total supply for the month from both quarries of 24,453 tons.

6. *South Pier Superstructure.*—During the early part of the month, the advance at the south pier was very rapid,—so much so indeed that the superstructure gained upon the rubble foundation, as the supply of stone to the latter was deficient. There were 296 blocks set in March, advancing the pier by a length of 172 lineal feet, and making the total length from the commencement 3,635 feet on March 31st. There remains now only a distance of 322 lineal feet to be built to bring the south pier to its full length. The advance made in the quarter ending March 31st is 496 lineal feet, or 46 feet in excess of the estimated rate of 150 feet a-month for the same period.

7. *South Pier Rubble Base.*—The rubble base of the south pier is not so far formed as it ought to be, but, as I have already mentioned, I cannot increase the supply of stone yet. In March 20,470 tons of granite and laterite were deposited, but still the superstructure gained on the foundation, and the accompanying longitudinal section will show that at the end of March, the base was still not so far forward as it ought to be. This being so, the transfer of all divers from south to north pier, mentioned in paragraph 2, was not in any way a source of delay to the south pier, as we must under any circumstances have waited for some days to allow the rubble base work to get on in advance. I hope now to keep on a steady rate of progress until the month of May, when it will be necessary to withdraw the south pier Titan from the end of the pier.

8. *Improvement to Beach.*—An additional work is now in hand, sanctioned by G.O., No. 234 W., dated 28th January 1881, viz., forming up the beach between the piers and constructing jetties for loading and unloading of cargo boats. At present, the work done has been confined to excavating sand from low-water level and putting it into embankment on the upper portion of the foreshore. There have been about 3,000 cubic yards of material shifted in this way at the present date. This work does not form a portion of the harbour works proper, and will be paid for out of Port Funds. I should be glad to learn whether it is right that I should include a report of this work in the monthly reports of the harbour works, as it is being carried out by my staff.

9. *Expenditure.*—The outlay during March has been approximately Rs. 1,21,768, and the total expenditure to the end of March 1881 has been Rs. 51,97,828. These figures may be subject to some alterations when the accounts for the financial year are closed and made up.

10. *Plans and Sections.*—The usual lithographed plan and two longitudinal sections accompany this report. On the plan the outline of the proposed jetties is drawn in red lines, but the work of embankment with sand cannot be satisfactorily shown as yet. The distance between the terminations of the two piers was on March

31st 870 feet, or 320 feet more than the proposed entrance. The longitudinal section of the north pier shows how nearly the full length of the work is reached.

11. In conclusion, I would remark that Mr. Parkes, the Engineer-in-Chief, who arrived here on January 6th, left for England *vid* Bombay on March 14th.

No. 30. ORDER THEREON, 7th April 1881, No. 934 W.

ORDERED to be recorded.

2. The Superintendent will include in his monthly reports a statement of the progress of the strand reclamation project sanctioned in G.O., No. 234 W., dated 28th January 1881.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent of Madras Harbour Works.
" Secretary of Madras Harbour Committee.
" Marine Department.

Exd. A. Raitt.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1881] Madras.

PUBLIC WORKS.

To

The SUPERINTENDENT, MADRAS
HARBOUR WORKS,

&c., &c., &c.

Dated April, 7th.

Issued

Rec'd.

G. O., 7th April 1881, No. 934 W.

APRIL.
Nos. 28-30.

Madras Harbour Works.—Progress report of the — for March 1881, recorded with remarks.

1382
22

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

28th May 1881, No. 1,340 W.

Buildings and Roads.
Civil Works.

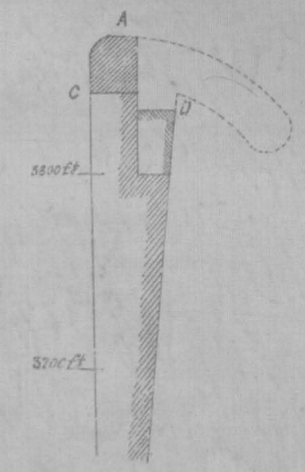
Read the following paper:—

No. 60. From F. N. THOROWGOOD, Esq., M. INST. C. E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, Buildings and Roads, dated Madras, 5th May 1881, No. 10 W.

I HAVE the honor to submit the following report of the progress on these works during the past month of April, and I regret that it cannot be viewed as being altogether satisfactory.

Three accompaniments.

2. NORTH PIER SUPERSTRUCTURE.—In my report for the month of March (G.O., No. 934 W., of 7th April 1881) I alluded to the approaching completion of the north pier head which I fully believed we should accomplish (with the exception of the return wall or horn) in April, but which has given a great deal of trouble and caused much delay. On 5th April the corner blocks A had been, with much difficulty, satisfactorily set in position bringing the north pier to an end in a *vertical* face, exactly in accordance with Mr. Parkes' design. On the 8th I was annoyed, but not entirely surprised, to find that the sloped or battering courses at the back of the vertical quoin had pushed the latter over considerably. On the following morning there was rather a heavy swell from the south, and this caused the whole pile of blocks in the vertical quoin to vibrate seriously. I then determined that, notwithstanding great delay ensuing, we must take up all the vertical work, together with two rows of the battering work and alter the design of the extreme end so as not to terminate in a vertical face. At the same time I telegraphed to Mr. Parkes informing him of what I was obliged to do.



3. Nearly the whole of the remainder of the month of April has been occupied in pulling up this piece of work, but I am pleased to report that now this is done and the alterations in the blocks are carried out, so that in June we shall be ready to rebuild the end of the pier in a less elegant but infinitely more substantial manner. The actual progress on the north pier during April has been confined to bringing the end up to an even termination as shown by the line C D on the marginal sketch, this has involved the setting of 141 concrete blocks. The Titan crane is now withdrawn for the stormy season.

4. NORTH PIER RUBBLE BASE.—A small quantity of rubble base was required for levelling up the beds of some of the rows, the amount used in April being 252 tons. This brings the total quantity used in the north pier base to 486,022 tons as compared with 489,910 tons given in Mr. Parkes' estimate.

5. CONCRETE BLOCK-MAKING.—The difficulty we met with at the north pier end has rendered the building of some special blocks necessary; I therefore am obliged to

correct my statement in paragraph 4 of the report for March, that all the blocks for the north pier are completed. During April 245 concrete blocks were made by machinery, nearly all of them being for the south pier head. The staff employed in making blocks is now reduced to a minimum.

6. QUARRIES.—From the laterite quarry at Ambathur 10,851 tons of material were received in April, and the quarry is now practically closed, although for the work on the beach a considerable quantity will still be required which can be obtained from those parts of the quarry that have ceased to yield suitable stone for the rubble bases. From Pallávaram the outturn in April was 15,418 tons, nearly 50 per cent. above what was quarried in March. The intense heat at these quarries at midday interferes seriously with the quarrying operations.

7. SOUTH PIER SUPERSTRUCTURE.—The progress at the south pier has been good and the commencement of the pier head is now reached. During April 256 blocks were satisfactorily set and the work advanced by a length of 150 feet, bringing the total length up to 3,785 feet from the commencement. As at the north pier the south Titan is now withdrawn back from the pier end and stands upon blocks which have been already severely tested by the storms of last November. This position of safety will be maintained throughout the present month of May.

8. SOUTH PIER RUBBLE BASE.—The base of the south pier is now approaching completion, and little remains to be done except for the foundation of the return wall or horn. In April 23,014 tons of stone were deposited, of which the steamer *Salisbury* conveyed 8,168 tons from the north pier. The remaining portion of the south pier base will be formed of Pallávaram granite.

9. EXPENDITURE.—The expenditure during April has been approximately Rs. 1,04,917, and the total outlay to the end of April Rs. 52,98,014.

10. STORES RECEIVED ON WORKS.—The only stores received from England in April consisted in flax spun yarn brought by the *El Dorado* and much needed.

11. PLANS AND SECTIONS.—The usual plan and two sections accompany this report. The longitudinal section of the north pier shows the vertical termination of the work on the evening of 2nd April. It will be observed in the south pier section that the rubble base is nearly completed.

12. PROTECTIVE WORKS TO NORTH BEACH.—The line of coast has been preserved very well for the last two months without any extension of the revetment or other protective works. The coast is constantly watched and the revetment will be extended as required.

13. STRAND RECLAMATION PROJECT.—The work of improving the beach is being carried out as rapidly as circumstances will permit. There have been 28,640 cubic yards of sand excavated and formed. Three drains have been extended under the newly formed works, and three chains of railway line laid in for tipping the first jetty. I hope to make better progress during May when the pressure of work on the harbour staff is diminished.

No. 61. ORDER THEREON, 28th May 1881, No. 1,340 W.

ORDERED to be recorded with the observation that Mr. Parkes be requested to report his opinion as to the stability of the design as now modified for the pier ends; also whether a proper system of bonding and the use of joggles for all the work at the end should not have been originally adopted.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent of the Madras Harbour Works.
" Engineer-in-Chief do. do.
" Marine Department.

Exd. E. C. Shunker.
Spare Copies

1382
23

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1881} Madras.

PUBLIC WORKS.

To

The SUPERINTENDENT, MADRAS
HARBOUR WORKS.

&c., &c.

Dated May, 1881.

Issued

Read.

G. O., 25th *May* 1881, *No.* 1,340 W.

MAY.
Nos. 60-61.

Madras Harbour Works.—Progress report for April 1881 recorded with certain observations.

1382/25

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

8th June 1881, No. 1,436 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 21. *Memorandum on the Columbo Harbour Works.*

With reference to G.O., No. 657 W., dated 11th March 1881, authorising our visiting the Columbo Harbour Works we desire to record very briefly the results of our inspection of the same on the 5th and 6th ultimo.

2. In the first place we would submit for perusal the documents noted in the margin and a map showing the present condition of the works and the various proposals for their completion which have been submitted for the decision of the Ceylon Government.

1. Proceedings of the Ceylon Legislative Council, Session 1880 (discussion on the Columbo Harbour question, pages 32 to 40).
2. Further correspondence relative to the Columbo Harbour Works with Report by Sir John Coode, dated 16th June 1880.
3. General plan of the Columbo Harbour showing the several schemes proposed.
4. Three cross sections of the work; also one of the Madras Breakwater.

3. An inspection of the map will show that in the scheme recommended by Sir John Coode the main breakwater would be carried from its root along the line of the Isaure rock for a distance of 4,200 feet, where would be placed the harbour mouth 600 feet wide in 40 feet of water facing the north-west. Beyond this would be the north arm 2,500 feet long having a general direction of south-west by west.

4. The Surveyor-General's (Colonel Fyer's, R.E.,) scheme follows the same line as regards the main breakwater, but which is made to curve round to the north-east and is carried out further than in Sir John Coode's scheme so as to dispense with the necessity for the so-called north arm.

5. The third scheme proposed as a *pis aller* need not be adverted to as having apparently been rejected by all authorities.

6. Somewhat more than half the main breakwater as proposed by Sir John Coode has already been completed and the whole will, it is supposed, be out of hand in about four years more.

7. Considering the high authorities ranged in both sides of the discussion and our own want of local knowledge, it would be out of place to express any opinion as to the merits of questions at issue. At the same time we feel no difficulty in saying that the work as hitherto carried out is most creditable both to the projector, Sir John Coode, and to the officer who has hitherto executed the work Mr. Kyle.

8. What chiefly struck us in reference to the work already carried out was, not only the massive section given to the breakwater which commences with more than double* the width of that at Madras, there being, first on the seaface two bonded concrete blocks side by side each 12 feet across, second an interval of the same width packed with rubble stone, and lastly on the harbour face a wall consisting of single concrete blocks of the same dimensions in all 50 feet in width, while as the Government are aware the Madras work has only a wall standing on the rubble base consisting of two concrete blocks and measuring in the aggregate 24 at top, 28 at bottom in thickness.

9. In addition we found that from the action of the sea during the south-west monsoon it is held to be necessary to further protect the seaface by tipping in masses of *pierre per due* the majority of the stone so used (very hard granite) being of large size, the intention being apparently to establish all along the face an outer rough-stone revetment which when settled down shall rise to about 12 feet below M.S.L.

* The root seawall from the Battenbury bastion advances 665 feet and meets the junction line of the root and pier; from this seawards the 50 feet wall advances 1,327 feet, after which commences the 34 feet wall of three blocks with no intermediate span.

10. It is needless for us to say that the work thus carried out presents a very different section to the Madras work (see annexed sections comparing the two works).

11. Its massiveness is no doubt in great degree necessitated—first by the way in which the general line of the breakwater faces perpendicularly the direction of the seas during the south-west monsoon, to the full swing of which it is exposed; and second to the violent* manner in which the seas apparently break on the Isaure rock along the line of which the work is carried.

12. The two cases are not therefore altogether comparable and it would not by any means follow that the difference in section indicates any radical difference in power of resisting the forces to which the breakwaters are respectively exposed.

13. At the same time we think it would not be out of place now that the Madras work has been advanced so far towards completion (without, however, during its construction having had to sustain the shock of any very heavy gale or cyclone sea) to ask the projector Mr. Parkes to explain his own views as to the difference in section in the two works.

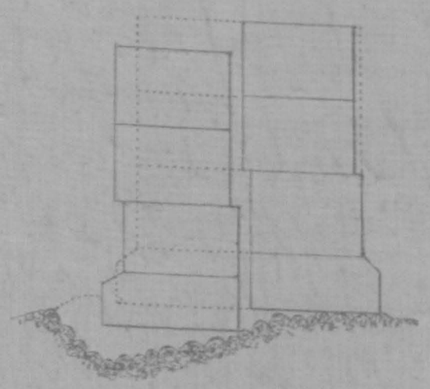
14. It would no doubt be satisfactory to Government and the public if he were distinctly to affirm his opinion that the different circumstances of the Madras work are such as to enable him to pronounce definitely his conviction as to its stability, not only in regard to the shocks to be sustained by the sea in a maximum cyclone, but also in case of a heavy ship being at such time driven against the breakwaters as now constructed.

15. Viewing the extra protection now being given as above noted to the Colombo work by means of rough stone on the seaface it would be desirable to know whether some similar operation might not be wanted particularly along the exposed portions, especially the northern arm of the Madras work.

16. It is perhaps as well that this point should receive Mr. Parkes' attention, as it will be seen by the observations† extract given for ready reference in the foot note, from his report of the 14th January 1881 printed with G.O., of 31st idem, No. 256 W.,

* Mr. Ryle mentioned the fact that, after the previous south-west monsoon portion of the breakwater 470 feet in length 34 feet broad was found to have been gradually pressed inwa- ion of the sea to the extent of 15 inches at the outer end—a remarkable testimony to the continuous sea during four months monsoon weather.

† "This sea is also especially noteworthy because by it for the first time have some blocks fairly set at the proper depth and on a clean rubble foundation been disturbed, thus affording some direct evidence of the limits of stability of the work. At the north pier the rush of water round the end was so violent as to scoop out a hole in the rubble at the foot of the blocks into which the end blocks dropped down about 3 feet, being at the same time laterally displaced slightly as shown in sketch. The iron clamps by which they were attached to the third row behind them were not broken, and that row and the one intermediate between them were not disturbed.



"The most obvious effect of the sea on the completed portion of the north pier was to strip off the railway from the top, but this effect only extended for the length built since the last heavy sea in November 1879. In the older portions it was not disturbed. The cause of this difference was apparent on examination of the blocks themselves. They had evidently been subjected to a very severe shaking, for the surfaces were found to be abraded by rubbing against one another to such an extent as in some cases to form indentations 4 inches deep. To produce this result the whole structure must have been in a state of violent vibration, and this would break the connection between the tops of the individual blocks and the contiguous rigid railway laid upon them. When the block work has once been subjected to this vibrating action it becomes consolidated and rigid and the railways maintain their connection with it. The sea does not appear to have caused any general subsidence.

"Reverting to the subsidence of the end blocks, it may be well to point out how this bears on the sufficiency of the design for the permanent pier head. The weak points in the temporary termination are evidently the following:—

"1st.—Rubble stone at 22 feet below the surface is not proof against the scour of a wave rushing round the abrupt end of the pier.

"2nd.—The abruptness of the end increases the force of the scour.

"3rd.—The blocks have a hold of only 4 feet 6 inches, their own thickness in the solid work.

"Now, though the exact form of the whole of the permanent pier head is not yet determined, yet some features have long been settled on.

"1st.—The depth of foundation of the blocks on the rubble will be 28 feet instead of 22.

"2nd.—There will be no sharp corners to aggravate the scour, the corners being formed of blocks in the quadrant of a circle 12 feet radius.

"3rd.—All the blocks exposed to the end between these curved angle blocks will be set as 'headers' with their ends instead of their sides exposed so as to have a hold in the work of 12 feet instead of 4½ feet.

"With these additional elements of stability it is clear that the permanent pier head will be proof against a much heavier sea than the temporary one."

that during the rough weather of the 21st November the upper portion of the rubble base having as reported been scooped out by the sea-action at the end of the north pier, the two outermost concrete blocks which had shortly before been set "dropped down" about 3 feet, and would in all probability have fallen had it not been for special precautionary arrangements previously adopted by the Superintendent of the Works, thus showing that under certain conditions the sea-movement extends down to the rubble base and that too in weather which, although rough, cannot be said to compare with what may be looked for in a cyclone of great intensity.

17. The inquiry now raised appears to us to be the more important as Mr. Parkes in his concluding words as quoted does not expressly guarantee the work against the effects of an extreme cyclone, and further as Major-General Walker when Chief Engineer purposely inserted an extra item of two lakhs of rupees for the rubble base with the view of affording additional protection to the work.

18. In conclusion, there is one other point to which, as it has a very direct bearing on all the harbour schemes along our coasts, we desire to draw the attention of Government, and that is the depth of water which, with the present class of large vessels, it is considered essential to secure at the entrances of all such.

19. In Colonel Fyer's proposed scheme modifying Sir John Coode's the end of the breakwater is taken out to 35 feet depth of water; but, as will be observed, the latter, in the following extract from his report on the Columbo harbour, dated 16th June 1880, does not look upon this as sufficient, viz., "in a case like the present and more especially where there is such a small rise of tide, provision should certainly be made to admit of the safe entry and exit of the heaviest draughted ships *at low water*; thus the depth of forty feet provided for in design B may be regarded as the ruling working depth in the entrance. If it is desired that the new harbour should be adapted for the reception either for coaling or other purposes of the ships of Her Majesty's navy during the south-west monsoon, it will be necessary that a depth of not less than forty feet shall be available in the entrance. The draft of an ironclad may be put down at twenty-eight feet, and of the largest of the merchant steamers at twenty-three feet. Adding eight feet for "scend" or vertical rise and fall of a ship during the south-west monsoon and allowing four feet for clearance under the keel when at the lowest level, these figures give forty feet as the depth required in the entrance for the safe passage of the ironclad and thirty-five feet for the "merchant steamer."

20. It will be in the recollection of Government that during the discussion on the subject of the conditions which it was considered essential to secure in regard to the proposed harbour at Cochin, the Master Attendant gave it as his opinion that the breakwaters should at least be carried out into thirty feet water.

21. It is thus satisfactory to find that experts of the high standing of Sir John Coode exact even a greater depth, and as this matter has an immediate bearing on the question to be solved at Pámban, which forms the subject of our next report, we have thought it desirable to place his opinion prominently on record for the information of Government.

(Signed) J. H. TAYLOR, Captain, R.N.R.,
Master Attendant, Administrative Department.

2nd May 1881.

(Signed) R. H. SANKEY, Col., R.E.,
Chief Engineer, P.W.D.

No. 22. ORDER THEREON, 8th June 1881, No. 1,436 W.

FORWARDED to Mr. Parkes for such observations as he may desire to offer.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Engineer-in-Chief, Madras Harbour Works.
" Superintendent, Madras Harbour Works.
" Marine Department.
" Exd. E. C. Shunker.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1881] Madras.

PUBLIC WORKS.

To

THE ENGINEER-IN-CHIEF,
MADRAS HARBOUR WORKS,
&c., &c., &c.

Dated June, 8th.

Issued

Read. *Encl.*

G. O., 8th June 1881, No. 1,436 W.

JUNE.

Nos. 21-22.

Colombo Harbour Works.—Memorandum by the Chief Engineer, Public Works Department, Madras, and the Master Attendant, Madras, on the — forwarded to Mr. Parkes for such observations as he may desire to offer.

1382
27

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

16th August 1881, No. 2,011 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 62. Despatch from the Most Honorable the Secretary of State for India.

INDIA OFFICE, LONDON,
23rd June 1881.

Public Works.
No. 17.

Herewith is forwarded, for the information of Your Excellency's Government, copy of a report* by Mr. Parkes on the progress made on the Madras Harbour Works for the quarter ending 31st March last.

* Dated 12th May 1881.

2. Mr. Parkes has further supplied this office with copies of three reports, which he submitted to your Government during his recent visit to Madras. These reports relate to a revised and slightly higher estimate of the cost of the works, changes of the coast line north of the harbour, and reclamation of the beach, and erection of boat jetties within harbour limits.

3. As the works connected with the Madras Harbour are now approaching their completion, I shall be glad to be furnished with an expression of the opinion of your Government on the several points raised by Mr. Parkes in his reports, and also to be made acquainted with any action which it appears probable to Your Excellency will be needed soon in respect to the administration, maintenance, and financial management of the harbour in the future.

4. With reference to these points, I observe, from the Proceedings of the Government of India, in their Department of Revenue, Agriculture, and Commerce, for April 1879, that communications were addressed to your Government by the Government of India, dated the 19th April 1879, requesting that the necessary steps might be taken for the constitution of a Port Trust for the management of the Madras Harbour, forwarding, at the same time, for the opinion of your Government, the draft of a bill by which it was proposed by the Government of India to make some necessary amendments in the Indian Ports Act of 1875, in order to meet the local and financial requirements of the harbour at Madras.

5. I request to be informed what steps have been taken by your Government to give practical effect to the suggestions of the Government of India in respect to the formation of a Port Trust. These suggestions were made more than two years ago, and, considering the approaching completion of the harbour, no delay should occur in creating the necessary machinery for its management.

I have, &c.,
(Signed) HARTINGTON.

His Excellency the Honorable
The Governor in Council, Fort St. George.

MADRAS HARBOUR.

REPORT of Progress for the Quarter ending 31st March 1881.

23, ABINGDON STREET,
12th *May* 1881.

I HAVE the honor to enclose herewith a plan, showing the state of the works on the 31st March, and a photograph taken 5th April. I also enclose copies of three reports made to the Government while I was at Madras. The first, dated 25th January, on the changes of the coast line north of the harbour, with two tracings attached. The second (printed with General Order, No. 712 W.,) dated 1st March, on the estimate and statements of expenditure. The third, dated 14th March, on the reclamation of the beach and the boat jetties proposed to be erected within the harbour, with a plan attached.

2. I was myself at Madras from the 6th January till the 5th March, and again for a day on the 14th, so that the greater portion of the work executed within the quarter was done under my own inspection.

3. The progress made was good, the north pier having advanced in the quarter 239 feet, and the south pier 496 feet, notwithstanding the work was much impeded in the month of January by frequent rough seas.

4. The shorter length of the north pier is due to its having been widened out to form the head. The actual amount of work done was equivalent to a length of nearly 400 feet of the normal section.

5. Its present termination is within a few feet of its extreme end, and some of the end blocks were actually set during the first four days of April, but, for the first time in the course of this work, a partial failure occurred. The tier of blocks which is to form the south-east corner of the pier head, being set upon the unconsolidated rubble foundation, proved unable to withstand the lateral pressure of the adjacent blocks which lean against it, and it was forced so much out the vertical in both directions that it was necessary to take it up. A different arrangement of the blocks will have to be made to prevent a repetition of this. This will be prepared for during the necessary suspension of the work for the anticipated rough weather of May, and I see no reason to doubt that the next attempt will be quite successful. If so, the remainder of the pier head will be easily finished in the following fine season.

6. The rubble base for the north pier is completed, with the exception of such small quantity as may be required for levelling the foundations for the blocks not yet in place.

7. The forms of the pier heads have been finally determined on in consultation with the Master Attendant. The north pier will require 5,813 cubic yards, and the south pier 4,581 cubic yards of concrete blocks additional to the quantity originally estimated for, involving a total extra cost of Rs. 1,12,255, but of this Rs. 40,000 is met by the reduction which the alteration renders possible in the estimate for the lighthouses, and the remainder is well within the amount already saved on the total original estimate for the piers.

8. The south pier was, on the 31st March, 320 feet from the extreme end, and some further progress will have been made before the ensuing rough season. What remains will, I hope, be finally completed before next north-east monsoon in November. The advance had been somewhat delayed by the difficulty of getting labour for the quarries, so that the rubble base did not advance so fast as the superstructure, and the latter had to be retarded, but the quantity of stone now remaining to be deposited (about 34,000 tons) is less than half that (71,396 tons) deposited in the last quarter, so there is little fear of any ultimate delay from this cause.

9. Unless, therefore, anything very unforeseen should occur, it may be expected that the two piers will be completed, and the establishment much reduced, if not entirely broken up, before November.

10. For several months past the harbour has been used by the great majority of the steamers frequenting the port, notwithstanding the incomplete state of the piers, and the want of fixed moorings. Native sailing craft also anchor in considerable numbers under shelter of the piers, both inside and outside the harbour. The larger class of sailing ships have not yet come inside; the only exception being that of the "Czarewitch," the Indian Government troop-ship which has twice sailed in and out. It is considered, however, that there should be a steam tug provided for use when necessary before ordinary merchant sailing ships of large size can prudently use the harbour.

11. The advantage to the operation of landing and shiping cargo is found to be so great that the legal rate of boat hire has been reduced from 2½ to 1½ rupees per trip. This is equivalent to half a rupee per ton. Another half rupee might certainly be saved by the use of larger boats and more convenient jetties.

12. Up to the date of my leaving Madras, however, no arrangements had been made by which this saving was credited to the harbour revenue.

13. It may be anticipated that the addition which has been made to the south pier in the last quarter will have the effect of increasing the effective shelter of the harbour more than the same length of pier in any part previously built. Some disappointment appears to have been felt at the imperfect shelter afforded in the last south-west monsoon, and still more during the heavy seas from the east and south-east which prevailed in the middle of November, but at that time the length of the south pier was not sufficient to embay any considerable area of the harbour, and the north pier was rather injurious than otherwise, by reflecting the waves from its south face into the middle of the harbour. Every addition made since then, however, has covered a proportionate area in the width of the harbour, and I think in the ensuing south-west monsoon a great improvement will be perceptible. This will be further increased by the addition of 300 feet, as yet incomplete.

14. A reference to the plan will show that the annual addition to the shore south of the harbour continues as anticipated. The last year's addition looks rather large, but not to an extent beyond the range of variation from year to year that may be expected. The former vague fears of the local public as to the evil effects of this accumulation appear to have vanished, and to be replaced by a general desire, both in public and private interests, to occupy the ground gained from the sea for useful purposes.

15. The attention of the Government of Madras has been called to the question whether the annual value of this land be not a legitimate source of revenue to the harbour. The buildings shown in red upon the plan have recently been erected by the Commissariat Department as stables for horses and mules landed from ships.

16. With regard to the shore line within the harbour, I would remind you that, in my report on the quarter ending September 1880, (paragraphs 8—11), I pointed out the change that had taken place in the previous south-west monsoon was the opposite of that which had occurred in former monsoons. The north half was cut away and the south half advanced. The recent north-east monsoon has restored the line to nearly what it was in March 1880, but there is an advance of about 100 feet at the northern end. This is due to a deepening at a little distance from shore, which I mentioned in the same report. The additional width of beach is rather an advantage, especially as it is accompanied by a slightly increased depth of water abreast of it. Now that the beach is brought under more complete shelter of the piers, it is probable that there will be little more change.

17. The changes of the coast line north of the harbour form the subject of the appended report to the Government of Madras, dated 25th January, but I may here summarize my general conclusions.

18. A length of 1,100 yards of coast measured from the line of the north pier is now completely protected, the northern half of that length being faced with a rubble stone revetment, and on this there is nothing to remark at the present time. Northward of this, however, for a length of 2,000 yards, which is shown on tracing No. 1 accompanying that report, the coast was cut away between 1876 and 1878 for a width of 150 feet near the southern end, gradually diminishing to nothing at the northern end.

19. From 1878 to 1880 there was found, on comparing the lines of beach at corresponding seasons of the several years, to have been no further loss on the whole. There were gains of land during the north-east and losses during the south-west monsoons, which nearly balance one another each year. Moreover, the northernmost 600 yards of the length of land lost in 1877 and 1878 was regained in 1880, leaving the line of shore in that year very nearly what it was in 1876.

20. There were, however, in the early part of November 1880, some heavy seas from the north-east, which made rather serious inroads, but these were subsequently made up by the more moderate seas which followed from the same quarter, showing that heavy and moderate seas from the same quarter have opposite effects.

21. Some claims for compensation have been made by the owners of land abutting on the coast, and the claimants have submitted in support of their claims plans which show that changes larger in amount than those which are attributed to the action of the harbour works had taken place at former times. This is very clearly seen in the case of the shaded area marked on the tracing No. 1, as now offered for sale.

22. The above facts seem to point to the following conclusions:—

1st That the erosive action due to the harbour works has, for the present at least, ceased.

2nd That causes of erosion other than the harbour works have been in former times, and still are, in existence, and the adjoining land has always been held subject to the risk of the changes due to these causes.

3rd That a recuperative action is also going on.

23. In view of these conclusions, I advised that the Government should abstain from taking action which would involve an admission of liability for damage due to other causes than the harbour works, and that, in accordance with this principle, any further costly protective works were for the present unadvisable. It might be desirable, with the view of simplifying the

question where claims for compensation were made, however, to purchase such land abutting on the shore as could be obtained at a reasonable rate.

24. I would beg to call attention to the plan appended to my report of 14th March, showing the intended improvements of the beach between the piers. The works for these are now in hand, the cost being temporarily met from a balance of Rs. 1,38,000 standing to the credit of Port Funds, independent of the harbour works grant. I think there is no doubt that the interest upon this will be more than covered by the revenue that may be derived from letting the land for trade purposes, but no permanent financial arrangements have, I believe, been as yet determined on. As soon as the new jetties are completed, the existing screw pile pier will be for a time disused, but it will form the foundation of the next extension of accommodation that may be required. The piles are very strong, and suitable for carrying a new superstructure more adapted to the new system of landing and shipping. The present superstructure is not only inconvenient, but in a bad state of repair.

25. I have not yet received the statement of expenditure up to 31st March. When it comes to hand I will at once submit to you an abstract of it, compared with the estimate, as usual.

I have, &c.,
(Signed) W. PARKES.

The Secretary of State for India.

No. 63. ORDER THEREON, 16th August 1881, No. 2,011 W.

ORDERED that the Secretary of State be addressed.

2. Meanwhile the Honorable the Governor in Council considers it desirable, in view of the incomplete condition of the Harbour, that the question as to its immediate management pending the constitution of a Harbour Trust and as to the dues which may be fairly levied in present circumstances in the interests of all concerned should be considered by a carefully selected Committee.

3. The following gentlemen will therefore be requested to form themselves into a Committee for consideration and report on these points :—

The Honorable P. Macfadyen.
" " J. G. Coleman.
" Collector of Sea Customs.
" Master Attendant.
" Secretary of the Trades Association.
Major J. Pennycuick, R.E.
Mr. R. C. Walker.
Mr. Thorowgood.
The Government Solicitor.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Marine Department.

Ed. S. T. Austin.
Spare Copies

1382
29

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1881] Madras.

PUBLIC WORKS.

To

THE MARINE DEPARTMENT.

Dated August, 1881.

Issued

Rect. Encl.

G.O., 16th August 1881, No. 2,011 W.

AUGUST.

Nos. 62-63.

Madras Harbour.—A Committee appointed to consider and report on certain points relating to the immediate management of the — pending the constitution of a Harbour Trust and as to the dues which may be fairly levied.

1382/30

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

14th October 1881, No. 2512 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 46. Report of the Harbour Committee, to the Secretary to Government, Public Works Department, dated Madras, 28th September 1881.

WE have the honor to inform you that, acting on the instructions contained in G.O., No. 2011 W., of the 16th August 1881, we have considered the questions therein referred to us in connection with the harbour.

2. The only dues at present levied are such as can be collected from sailing vessels and steamers, and we have arrived at the unanimous conclusion that the harbour ought to look for the greater part of its income rather to charges on goods than to dues on vessels coming to the port. Before elaborating any scheme for raising a revenue from goods we thought it desirable to obtain advice as to whether, without fresh legislation, Government could give effect to any recommendations we might make. We accordingly consulted the Government Solicitor, and we annex a copy of the opinion received from him. It will be seen that he is quite clear that before goods can be touched for the purpose of harbour revenues, legislation will require to be resorted to. Under these circumstances we have deemed it our duty to consider the direction that we would recommend this legislation should take. Government may introduce an Act empowering themselves to levy dues on goods, or they may proceed with the Port Trust Bill, which we understand has already been before the Legislative Council. By a majority of seven to two, we have decided respectfully to ask Government to expedite as much as possible the passing of the Port Trust Bill, as we believe that measure will best meet the requirements, both immediate and future, of the Harbour administration. We have given every weight to the various arguments that have been adduced in favor of a purely Government administration, but, in the opinion of the majority of the Committee, the interests of Government as well as of the trade of the port will be best guarded by a body like the Trustees to be created under the Port Trust Bill. This being the result of our deliberations, and having in view the fact that one of the most important functions of the Harbour Trustees will be to frame a scale of charges for both goods and vessels, we have not thought it desirable or necessary to go into the question of the dues that ought to be levied. As no effect could be given to our recommendations it seems best not to anticipate the course that a legally created body of Trustees may take.

The immediate management of the harbour will require to remain as it is, pending such legislative action as Government may see fit to take.

(Signed) P. MACFADYEN.
(„) C. A. GALTON.
(„) J. H. TAYLOR, with dissent.
(„) ROBERT G. ORR.
(„) F. N. THOROWGOOD.
(„) EARNEST BARCLAY.
(„) J. G. COLEMAN.
(„) R. C. WALKER.
(„) J. PENNYCUICK.

From EARNEST BARCLAY, Esq., Government Solicitor, to the Master Attendant, Madras, dated Madras, 14th September 1881, No. 391.

WITH reference to the enclosed Proceedings of the Committee appointed under G.O., Public Works Department, dated 16th August 1881, No. 2011 W., under date the 6th instant, I have now, as arranged in Committee, to advise you that the Government has no power to impose any port dues on goods landed or shipped at this port.

2. The only Act which relates to port dues at the port of Madras is Act XII of 1875. The Indian Ports Act, 1875, and the provisions of that Act only enable Government to levy port dues on vessels entering this port.

3. I shall be obliged if you will communicate this opinion to the Chairman of the Committee, with a view to a day being fixed for the Committee meeting again to carry out the directions contained in the above-mentioned order of Government.

From J. H. TAYLOR, Esq., Lieutenant, R.N.R., Master Attendant, Madras, to the President, Harbour Committee, Madras.

I HAVE the honor to record with the following remarks my dissent from the recommendation of the majority of the Committee appointed in G.O., No. 2011 W., dated August 16th last, to consider questions relating to the harbour at Madras. The Committee with few exceptions have declined entering into any arguments, or giving any opinion except upon the one point of establishing at once a Port Trust. I cannot see that this advice is asked for by the terms of the Government Order. I believe the Committee to be a practical one to advise Government upon management, ways and means, &c., so that if the harbour is ultimately made over to private hands, it will not be done in entire ignorance of the principles that will govern future action.

The following objections to an early Port Trust Board present themselves forcibly to my judgment.

(1.) There is very little to place in trust at present. The moneys arising from port dues, and landing and shipping charges when definitely settled, will be all required for the interest on harbour outlay and the establishment. To create more paid officers to conduct this business would be a useless expense, and a Board would only embarrass the Marine officers, who will have to provide for the safety of the ships in bad weather, and to anticipate storms and make requisite preparation for them.

2. The harbour is as yet experimental, and no one can say, even approximately, what sum will be required for repair and contingencies. The erosion of the North Beach has cost a large sum, and will be a standing source of expense which will be ignored by a Port Trust as not within port limits.

3. The chief use of a Port Trust would be to institute improvements, like docks, slips, &c., as mercantile requirements indicated, but no one would dream of undertaking such things until the beach had been exposed to a storm or very rough weather.

4. The trade of the port now suffers severely from the private actions of individuals into whose hands it has drifted, extortionate charges prevail, and great discontent in trade generally. A complete change of front could now be taken by Government, and the port put in a healthy condition, whereas if it is at once made over to those whose interests are concerned in perpetuating the present system, the chief benefit of the harbour will probably be lost to the town.

Again, in the interests of Government, I would respectfully recommend that complete information be obtained as to the sums that will be levied on the beach. The clamour that has attended a rise in port dues, which dues will only just provide for the establishment, clearly indicates to my mind that efforts will be made to show that the trade will suffer if the full interest for the harbour is called for. If rates are to be charged in addition to those now obtaining, *no doubt they would be excessive*, though

money enough without extra charge could be obtained if the whole business of the port was remodelled. This the Government could carry out, but I see no disposition that way in any members of the mercantile world, and I fear the official members of a Trust would give way to the mercantile ones in a matter in which they might be supposed to have special knowledge.

Again, there is no precedent, all Port Trusts without exception have been the outcome of undoubted financial prosperity, and the sites of such Trusts are always at a distance from, and entirely removed from, the influence of such ocean vicissitudes and contingencies as threaten Madras, unless future experience shows that the harbour can keep them out.

Finally, the responsibility of the harbour will be thrown upon Government by a Trust when any difficulty arises, such as may reasonably be anticipated, so that the plea that Government would be saved all trouble about it is unreliable. Madras as an integral portion of the Marine is now able to dispense with any Imperial support in money, and if a fair adjustment of the future charge (in the direction I have indicated) was followed, would continue to do so, without either the assistance of the present increase of port dues or any additional charges on shippers or ship. But if removed from the General Port Fund, the port will soon become a heavy Imperial charge.

Mr. C. S. Crole, than whom no officer of Government has more carefully studied the subject, and who knows the wants and difficulties of the port, has in his letter to Government, dated 20th October 1880, recorded his opinion that the introduction of a complete Port Trust must almost of necessity be postponed for some considerable time, and the working of a simple enactment would, while providing for all present necessities, supply a sure ground work on which to base a complete Port Trust Act, when legislation in that direction may seen desirable. That opinion coincides with my own. I by no means say the time may not come when a Trust will be useful, and I would welcome it when the season arrived, but I believe it to be advisable for Government to be in a position to show (before parting with its authority) that the money can be equitably and satisfactorily raised, and general contentment throughout the trade be secured.

MEMORANDUM OF DISSENT.

I am unable to agree with the majority of the Committee in their recommendation that a Port Trust should be appointed for the management of harbour affairs.

I consider such a step would be both inexpedient and premature—inexpedient because the interests of the most influential section of the projected Port Trust Board will, I believe, be at variance with public interests, and premature because it is impossible to predict what expenditure may yet have to be incurred by Government, either for the possible extension of the breakwater or for its repair and maintenance. I submit that the control of all such expenditure should be solely with Government and not with a practically irresponsible body. Until the harbour has become an assured success, causing no anxiety as to its stability or usefulness, I can see no good reason why the executive officers of the port should be trammelled by a Board whose non-official members are *not* "experts" (as they have been designated), and can bring no practical experience or technical knowledge to bear upon the management of the harbour. I have not heard a single argument advanced to show how "the interests of Government will be best guarded by a body like the Trustees;" if this body would undertake to find and advance any capital that may be required or give a guarantee even for the interest on capital already expended, or in any way take upon itself some burden of responsibility, I could, perhaps, understand the statement I have quoted from the accompanying letter. I concur with the majority in considering that the framing of a scale of charges for both goods and vessels will be "one of the most important functions of the Harbour Trustees," but I venture to think that when that function has been performed the legitimate occupation of the Board will be gone. When the time arrives that the harbour receipts far exceed the expenditure there may be a *raison d'être* for a Port Trust, (to take charge of surplus funds), but in the meantime I

respectfully submit that a standing Harbour Committee can afford all the assistance and advice of which the Government may stand in need.

MADRAS,
23rd August 1881.

(Signed) ROBERT G. ORR,
Chairman, Madras Trade Association.

No. 47. ORDER THEREON, 14th October 1881, No. 2512 W.

THE papers above recorded contain the Report of the Committee assembled under G.O., No. 2011 W., dated 16th August 1881.

2. While thanking the Committee for their Report, the Honorable the Governor in Council observes that it is apparent that they have misapprehended the object for which they were requested to assemble and the scope of the Proceedings of Government indicating the points on which an expression of their opinion was desired.

3. The object of the Government was to obtain their advice as to the best arrangements for managing the harbour and levying dues for its use, and for landing and shipping goods under the improved facilities afforded, pending the transfer of the harbour to a Trust Board, the formation of which at present the Government consider would be premature. Meanwhile, however, it is essential that a reasonable revenue should be raised from the use of the harbour, to cover current expenses and interest on capital expenditure. Legislation may be necessary, but there need be no difficulty on that account.

4. The Honorable the Governor in Council would be glad if the Committee would reassemble and afford the Government such advice as they may wish to offer in the direction indicated.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Marine Department.
" Honorable P. Macfadyen.
" " J. G. Coleman.
" Collector of Sea Customs.
" Secretary of the Trades Association.
To Major J. Pennycuick, R.E.
" R. C. Walker, Esq.
" F. N. Thorowgood, Esq.
To the Government Solicitor.
" Marine Accountant

Exd. S. T. Austin.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1881) Madras.

PUBLIC WORKS.

To

THE MARINE DEPARTMENT.

&c. &c. &c.

Dated October, 14th.

Issued

Recd. Encl.

G. O., 14th October 1881, No. 2512 W.

OCTOBER.

Nos. 46-47.

Madras Harbour—The Committee appointed for reporting on certain points connected with the immediate management of the — requested to reassemble for further reporting on the best arrangements for managing the — and levying dues for its use, and for landing and shipping goods.

No.

Recd. the following G.O. dated 18th April /82.

1382/33

Madras April 5th 1882

To

The Chief Secretary to Government
Marine Department
Fort Saint George

Sir

We have the honor to report that, acting under the instructions contained in G.O. 14th October 1881, No. 2512 W., we have reassembled to consider the points named by Government for our opinion. We would have sent in our report at a much earlier date, but we were under the impression that the damage caused to the Harbour by the Cyclone of the 12th November last rendered it unnecessary to consider for the present the question of levying fresh dues. In obedience, however, to the expressed wish of Government, we have the honor to advise that we have considered what would be the "best arrangements for managing the "Harbour and levying dues for its "use, and for landing and shipping goods

goods under the improved facilities afforded.

We have had the advantage of having before us a letter dated December 1881, written to our President by Captain J. H. Taylor, and a copy of which is submitted for the information of Government. We have also ascertained from the principal trading and Commercial firms what their landing and shipping goods costs them near the shelter of the Harbour is partially available. The conclusion at which we have unanimously arrived is that it would be undesirable to have two rates for goods as suggested by Captain Taylor, and that if all goods pay Rupees 2/2 per ton (computed according to the Madras Chamber of Commerce tonnage scale) this would not be unduly burdensome on the trade, while it would give fully one Rupee per ton to

to go towards the revenue of the Harbour. For the charge of Rupees 2/2 per ton, the goods would be taken charge of, landed or shipped, as the case may be, a police guard provided, and the portage to and from the Custom house or beach defrayed.

Government will no doubt observe that, in recommending a Consolidated rate for landing and shipping, it is contemplated that the whole control of the work should be undertaken by some Department. Hitherto the various firms engaged in trade have made their own arrangements for landing and shipping, and we are not unaware of the objections that may be raised to the proposal we have indicated. But in our opinion the best arrangement for levying dues for the Harbour must include a Consolidated rate for which everything

everything will be done.

Captain Taylor, it will be seen, proposes that the work connected with the landing and shipping be undertaken by his Department, and he estimates that for an extra Rupees (260) Two hundred and sixty per mensem, he could provide all the additional establishment required. We simply call attention to his figures, without assuming any responsibility for them. But it is our duty to point out to Government that if one of their Departments is made to undertake the whole landing and shipping of the Port, and to charge a consolidated rate for so doing, then of course Government is responsible for all loss and damage to goods while under their charge. It may be that

this

P3

this is not a very serious responsibility, but it is one that Government will have to incur.

1382/35

Ruoefodyger

[illegible]

Robt. Fraser

Hobelt Ove

W Clayton

Aitken M Saunders

Nathl B. Beardmore

Alexr Prendergast Colonel

It has to be noticed that the Honble Mr Coleman's signature is wanting to the rep report, owing to that Gentleman having left for England before the Report was ready, but it may be mentioned that he fully concurred in Captain Taylor's views.

W Clayton
Secretary

Madras,
December, 1881.

1382
37

To

The President, Harbour Committee,
MADRAS.

Sir,

I have now the honour to advance my opinion that the injury to the Harbour walls, though necessitating considerable delay in the completion of the work, does not and should not interfere with a thorough re-organization of the Harbour arrangements, and the levy of a sufficient annual sum to justify the Government in prosecuting this important work. With this view, I have drawn out a scheme, which will provide for revenue, establishment, order and discipline; and while removing many disabilities under which the Port now labours, will not increase the burden now placed on Trade, nor inequitably affect any branch of legitimate business.

2. For convenience, I have expressed the terms of this scheme in tons, which, however, will also be shown in trips, the word that most generally obtains at present.

3. The import and export cargo from Europe is the most important item. This is almost entirely landed and shipped from the Pier. The duty of conducting this work falls upon the Pier Contractor, superintended by the Pier Master, Traffic Manager and Staff, Peons, &c., &c.

4. The present charge for this duty is 8 annas a trip, half of which is given to the Contractor, the remaining half goes for establishment, upkeep, repairs, &c., of the Pier and its belongings.

5. The Pier Contractor delivers all free goods and machinery at the inner end of the Pier, and carries the remainder into the Custom House, and unloads it into sheds.

6. Before the Pier was constructed, all this work was done by an individual called the Custom House Contractor, and by some extraordinary oversight, he has been allowed since that period to continue in his position, and make the same charges as before, although the main portion of the work is done for him, and charged in its proper place. He has no contract, and apparently never had one, and no responsibility, except what he has taken upon himself with a view to keep things quiet. I had always been under the impression that he was paid by the Custom House out of revenue, for the sole duty he exercises of arranging and giving out packages. His scale of charges is traceable on an old almost effaced card, but he has private separate arrangements with most of the great importers, which have been carried out under the supposition that the charge was one authorized by the Collector. Here at once is an instance, where the Trade directly suffers, and reform is demanded. I propose that all the duty be transferred to the Pier Contractor to be called Harbour Contractor, and that he conduct the small additional duty that

will devolve upon him, receiving a small increase, say 5 annas in lieu of 4; and I would suggest that all goods intended for the Custom House be made to pass over the Pier as a safeguard against loss or damage until the new jetties are completed.

7. The charges connected with this branch of business I estimate as follows:—

Nominal boat hire to Pier is at present Rs. 1-8-0, but a deduction of 8 annas is made from it for Pier porterage.

	Per ton. Rs.	A.	P.
Boat hire	0	8	0
Porterage	0	5	0
Police	0	2	0
Tax for Harbour	1	0	0
	1	15	0

8. The present trip to consist of two tons.

9. The ordinary boat hire may be reduced when more shelter is given, to one Rupee a trip, or 8 annas a ton, the sum thus saved being credited to the Government to cover additional capital required for the Harbour since the accident to its walls.

10. The establishment required for the work will be treated of in conclusion.

11. It is to be observed that these charges are simply for work done, and do not interfere with Agency and Commission at present ruling.

12. With regard to the Beach cargo or free goods, there is absolutely no choice but for the Harbour Management to take all duties upon itself, and realize the greater portion of the present profits.

13. It will be manifestly impossible to levy a rupee a ton in excess of present rates, and there is very much in the existing arrangements that call for alteration in the interests of Trade.

14. The profits at present made are not earned by any service. It is an astounding fact that with no responsibility, no expenses of landing or shipping, which falls on the boatman, large charges are sanctioned and paid, simply because the Trade cannot look into matters, and are powerless to help themselves. Large importers assure me that so multifarious are the charges now obtaining that they really never know what they do pay under the head of Porterage. I propose to land and separate all free goods through the medium of a responsible Contractor to arrange the various cargoes, and enable every merchant to see that the terms of his Bill of Lading are complied with. The saving under this head alone to the Trade will be enormous.

15. A sufficient space on either side of the iron Pier enclosing the new jetties, should be handsomely palisaded, and large covered sheds placed to ensure a weather protection. The present charges for watching would be done away with, as the porterage and police charge will cover everything, by which another large saving to Trade will be effected. A very sufficient style of shed is being erected within the Custom House, iron pillars and teak beams, circular in shape, covered with corrugated iron. A narrow covered way should lead also from the main shed to the inner end of the jetty for protection to Europeans.

16. The expense of these improvements can be met from Port Funds.

17. The charges would be almost identical with the Bonded goods:—

	Per ton. Rs.	A.	P.
Boat hire	0	12	0
Porterage	0	5	0
Police	0	2	0
Harbour revenue	1	0	0
	2	3	0

Grain, which is now subject to much loss, would be greatly benefited at the same rate as now rules—*e. g.* if we name 14 bags to a ton, the present rate of 2½ annas a bag exactly amounts to Rupees 2-3-0. Other goods in same proportions.

18. The same test may be applied to all other goods with almost same conclusions. It corresponds very nearly with the Bombay Port Trust rate on packages recommended by the Madras Chamber of Commerce.

19. Boat hire.—With regard to this item, it has been the practice hitherto to deduct 8 annas a trip for the facilities offered by the Pier, thus reducing the hire to one Rupee a trip, while the Masulah boats landing on the Beach receive Rs. 1-8-0, the men unloading their own boats. It will be for the Committee to discuss this plan among others. I am myself in favour of doing all the Beach work by cooly contract, in which case, if one Rupee a trip would rule both on Pier and Beach, a reduction of 4 annas a ton is thus at once reached, bringing the total charge to Rupees 1-15-0 a ton.

20. The crew of the Masulah boats working inside the Harbour might be reduced to six rowers, 1 tindal, and 1 boy, which would cause a reduction of expense.

21. I find on looking to old Almanacs that 50 years previous to 1873, the rate of boat hire to vessels in the outer roads was only Rupees 1-8-0, and inner roads 15 annas, but it would appear that, owing to the competition of the lighters, which injured greatly the Masulah boat trade, an increase of 1 Rupee was made, bringing it up to Rupees 2-8-0 a trip.

22. I find that in practice even now the dubashes charge the consignees Rupees 2 a trip, although the charge is only Rupees 1-8-0, and they also charge porterage, although that is met from the real hire of Rupees 1-8-0. All these matters demand consideration, and are clearly connected with the prosperity of the Harbour, and the levy of revenue without pressing too much on Trade.

23. For the joint establishment of Pier and Beach, I recommend that the Pier Master's present pay be increased from—

		Increase.
Pier Master and General Superintendent	Rs. 225 to 275	50
Deputy to be Assistant Traffic Manager	„ 60 to 120	60
Present Head Clerk, giving security Rupees 500, combining Cash-keeper's duty	„ 25 to 40	15
Two Clerks, Rs. 20 and 17		37
One Head Conicopoly, security Rupees 500		16
Four Conicopolies at Rupees 10		40
Six Peons at Rupees 7		42
	Rupees	260

24. This will be met from the Porterage after paying the Contractor.

25. Mr. Thorowgood's estimate for Harbour I enclose, but that may stand over for the present.

I have the honor to be,
Sir,
Your most obedient servant,

Master Attendant,
Administrative Department.

Report of Trades' Association through the Chairman.

1. I see no good grounds for delaying the consideration of Captain Taylor's proposals. In G. O. 2512, of 14th October, the Government stated that in appointing the Committee "the object of the Government was to obtain their advice "as to the best arrangements for managing the Harbour and levying dues for its "use," because "it is essential that a reasonable revenue should be raised."

2. The Government are fully entitled to some return for the monies already expended, and as Captain Taylor proposes a plain and practical scheme, and shows how funds can be obtained without, perhaps, *any* increase upon present rates, I consider that it should at once be discussed, if the Committee have any desire to assist Government with practical advice.

3. I do not see that Mr. Parkes' views at all affect the consideration of the real question before the Committee. Those views can have reference only to the construction and maintenance of the Harbour Works, and can scarcely relate to the question as to the dues that may be fairly levied upon goods shipped and imported.

4. As a whole, I entirely approve of Captain Taylor's proposed scheme, and hope that, before long, it, or something similar, may be adopted.

21st December 1881. ROBERT G. ORR.

Marine 265/82

Minute of dissent by Mr. Macfadyen.

1382/39

I am not in favour of Captain Taylor's proposal that the whole control of the trade of the port should be handed over to the Marine Department. To effect this, fresh legislation will be necessary, and this being the case, I beg respectfully to express my opinion that it would be better to proceed with the Port Trust Bill, whose provisions have met with the approval of the Chamber of Commerce and which having been amended by and reported on by a select Committee could be passed in the Legislative Council without further prolonged discussion. The proposed Consolidated rate for landing and shipping is a wide departure from the arrangements at present existing, and I feel confident that a body like the Port Trustees, in which all trading interests would be represented is better adapted to inaugurate such a change than any Government Department however well intentioned

[Signed] P. Macfadyen

I agree with the remarks made above by the Honorable Mr. Macfadyen.

April 6th 1882 [Signed] Arthur M. Saunders.

[True Copy]

Secretary Harbour Committee

MM

As the only member of the committee, who has advanced any practical scheme for the levy of Harbour dues, I feel it necessary to add some remarks that have suggested themselves after the discussion of the scheme in Committee. It seemed to me to be thoroughly understood by the Committee that a Consolidation of the various existing charges is the only method by which the sum required can be raised, and the necessary establishment supported. This therefore of some almost identical plan would be forced upon any Port Trust, Marine Board or Department. As many of the members of the Committee are not familiar with the subject before them, I may be allowed to point out what the nature of all existing Port Trusts is.

They all possess Harbours more or less secure, never exposed like Madras. They have advanced through all the phases of initial expense to their Governments, of assistance and support from them, until a period has arrived when they can stand alone

alone with ample funds at Command, with no prospect of any future State support being needed, and when the funds raised from port dues, from mercantile and Shipping interests, can reasonably be administered by Mercantile and Shipping men. Nothing can be more equitable, and Government may well grant the necessary powers.

But the situation of Madras is entirely different, so much so that the title Port Trust would be misadmissible.

A debt of (60) sixty lakhs has been incurred against the credit of the whole Empire, which is responsible for it, and for its interest; that debt is rapidly advancing towards a million, and no one can say in the exposed position of Madras Harbour, and with walls erected on sand, when that debt may not be extended. A Port Trust could not go on raising money on its own resources, and guarantees it would not possess, for the sum it is now contemplated to raise will scarcely cover the interest of the present debt.

The Mercantile Community seek to secure the largest share in the administration, yet

yet their interests would soon conflict with those of Government. The position would be anomalous, and charged with grave and increasing difficulties. 1382/41

Then as to the purely Executive duties Connected with the Harbour, I by no means wish them transferred to the Marine Department, or to any sole control. No one appreciates the value of technical experience and advice more than myself, and I have always respectfully recommended to Government that a Marine Board, as nearly as possible Constituted as a Port Trust, should be the medium of Communication between the Government, the Public and the Harbour authorities. The Chamber of Commerce might be invited to select two of their members to represent the Chamber, the Trade Association two, one of the Boat owners selected by themselves, the Collector, the Master Attendant, and his (Deputy- the Executive Officer of the Port), the District Engineer, and the Harbour Works' Engineer, Government Solicitor. Of this Board the non Official Members should be entitled to a fee for attendance, which I would propose to be about Rupees (25) twenty

five

free. Meetings might be held Monthly, at which all objects and references Connected with the Harbour could be brought to notice. A paid Secretary would also be a desideratum at the same fee.

This would represent a sum of Rupees (150) one hundred and fifty Monthly, (1800) one thousand and eight hundred per Annum. The Government would thus be kept at a small charge in direct Communication with the best advice that can be available.

As to responsibility I may be allowed to point out that nothing in this arrangement will cause any increase in its present amount, while by Consolidation under one controlling authority, it will in all probability be materially reduced.

Government will have, moreover, the security of the zeal and intelligence of its own Officers and establishment, while the Contractor or Contractors, if the Board select that course of proceeding, will be chosen for their solvency and give ample security. I cannot anticipate any difficulty on that head.

The responsibility at present sits very easily on the shoulders of those who bear it, and if the Board elect to do the work Departmentally, the payment hitherto made as Compensation for all causes of loss Combined being Calculated, any Office would be glad to enter into an insurance, that would remove even the shadow of loss.

Nine tenths of the English import cargo and much of the export are already administered by the Pier Department, and the extension of the duty to the whole trade is a mere matter of detail which a practical Board could easily dispose of satisfactorily.

30th March 1852 [Signed] J. W. Taylor

[True Copy]

J. W. Taylor

Secretary to the Harbour Committee

AP 12

1382
43

I agree with Captain Taylor.
I consider it premature to start a Port
Trust when the only things to be entrusted
to the Trustees are an incomplete harbour
and a debt of more than half a million
of money. Any thing that could be done by
Port Trustees could be done as well by a
Harbour Committee, in which if considered
advisable the Mercantile or Trading Com
munity might be more fully represented than
at present. I add this to meet one of the objec
tions suggested in the Honourable
Wm Macfadyen's Minute of dissent.

April 6th 1882. /Signed/ R. J Melville
Collector of Sea Customs

/True Copy/
Wayne
Secretary Harbour Committee

MM

Marine 26/5/82

No 13

1382/49

Remarks

Captain Taylor's minute accompanying this Report appears to me conclusive as against a Port Trust in the present state of Harbour affairs. As stated in my Dissent of 23d August. I still Consider that a Committee or Board can afford Government all the practical advice Government may require, and will fully represent various local interests. To invest such a body with legal powers - as would be the case with a Port Trust - would be, I respectfully submit, inexpedient and entirely unnecessary.

/Signed/ Robt G. Orr

5th April 1882

/True Copy/

W Naylor

Secretary Harbour Committee.

MR

Minute by Mr. R. C. Walker

1382/45

I Concur in the views expressed in Mr. Macfadyen's Minute. The objections raised by Captain Taylor to the formation of a Port Trust appear to me to be chimerical. In fact the Marine Board as proposed by him would be very similar in Constitution to a Port Trust only without the powers and organization of the latter body, than which it would, therefore in my opinion, work far less satisfactorily both to Government and the Mercantile Community.

/Signed/ R. C. Walker

5th April 1882.

/True Copy/

W Cooper

Secretary Harbour Committee

MM

1882 Marine Dept.

From (Madras Harbour)

The Harbour Committee

Dated April 5th 1882.

Recd. 16

Reports on the arrangements for levying Dues &ca in connection with the Madras Harbour

I understand that the Committee are unanimous in recommending a consolidated charge of R. 2-2- per ton on all goods landed & shipped in the Harbour (or at the Port) provd. the goods sd be taken charge of - landed or shipped - guarded & the porterage to & from the Customs Ho. or beach defrayed.

I wd. direct the Mr. Attd. to put himself in commn. with the Adv. Gen. in view to drafting a short Bill being prepared to enable the Govt. to levy this charge & to entrust

Hon W Huddleston CSI

Rt. Hon the Governor

For Orders 1382 R. / 1382 / 47

The S of S having in his despatch No 62 D. 23d June 1881 requested to be informed what steps had been taken in respect to the formation of a Port Trust for the Madras Harbour, a Committee was appointed G.O. 16: August 1881 No 2011 W to report on the management of the Harbour pending the constitution of the Trust, and as to the dues which might fairly be levied

The Report of the Committee dated 28t. Sepr. 1881 having been submitted in a manner which showed ~~that~~ ~~some misapprehension~~

Exactly ^as to the objects in view they were in G.O. 14th October 1881 No 2512 W requested to reconsider the Report Their report in reply to this call dated 5th April is herewith submitted in order accompanied by certain dissents and statements by the Master Attendant

The Committee without suggesting any scheme of their own are unanimously of opinion that instead of two rates as proposed by Capt. Taylor a single one of Rs as 2 - 2 per ton will be preferable and will "not be unduly burdensome on the trade".

They consider that under the proposals

the duty of such Govt. Officer or department or specially constituted body as it they think fit & to credit the proceeds

1 to all expenses connected with the performance of the service

2 & any surplus (1) towards defraying the interest on the capital cost of the Harbour &

(2) & to form a sinking fund for redeeming the capital cost.

As to the agency to be employed, I think that any proposal to

Moreover the Harbour its working & its finances by a Harbour Trust would in my opinion be simply to make the Govt. the laughing stock of the Community

That the Mercantile Members of the Com. cd gravely advocate such a course, is to my mind proof positive that they contemplate some results from having a Harbour Trust such as the Govt. have never anticipated.

Seeing that large vested interests are bound up in the present system of landing & shipping goods &c. is entirely

made by the Master Attendant fully one Rupee of the above rate would go towards the revenue of the Harbour - The imposition of a consolidated rate such as that named involves the necessity of the whole control of the trade of the port being undertaken by some one department and this being the case the Committee, without however dissenting to the arrangement, draw attention to the fact that the department concerned or rather Government would thus become responsible for all the loss & damage to goods while under their charge - They are not however prepared

to say that this risk would be serious

The Hon'ble Mr Macfadyen and Mr A Saunders dissent from Captain Taylor's pro-posal to take control of the trade as fresh legislation would be needed, and as in their opinion it would be better to proceed with the Port Trust Bill which had met with the approval of the Chamber of Commerce

They consider the imposition of the suggested consolidated rate would be a wide de-parture from the present arrangements and that such being the case a body like the Port Trustees would be better adapted for the inauguration of the change than any Government Department

As opposed to this view Mr. R. G. Orr sees no ground for delaying

in the hands of the Harbour Agency & this Intention [illegible] what was that Govt. to convert into the Trustees oppose or obstruct the reform as are indispensable if the Harbour is to be made a paying concern -

Ultimately the Trust might be adopted & advisable & then at a nothing in the Legisl. that I suggest the present the Govt. from eventually handing over the port service to it - but meanwhile I think Capt. Taylor's scheme of an Executive agency administered by the Marine authorities & supervised by a Committee constituted as he

purposes would both well & bring the system into a form in which it could ultimately be transferred to the Port Trustees for administration.

The Trade Assocn. of Madras as represented by Mr. Orr are in favor of his scheme. So is the Collr. of Sea Customs

Of course a Monopoly of the service has to be created if the Harbour is to earn an adequate income - the only question is whether it should once be created in favor of a Harbour Trust - or whether in view of the position of the Harbour both as to structure & finances - some inter-mediate arrangt. is not

consideration of Capt. Taylor's plan which he holds to be a plain and practical scheme of which he entirely approves

Captain Taylor in his memorandum of the 30th March 1882 points out that Port trusts have hitherto been constituted where the harbours have advanced through all phases of initial expense till they can stand alone with ample funds at command with no prospect of any further State support being needed, but that the situation of the Madras harbour is entirely different as a debt of over 60 lakhs has already been incurred and much more is in-

in prospect –

As regards the purely executive duties connected with the Harbour far from wishing these to be placed under his sole control he would suggest the formation of a Marine Board constituted as nearly as possible on the lines of the proposed Port Trust so as to serve as a medium of communication between the Government and the public & to consist as follows –

2 Members selected by the Chamber of Commerce
2 ditto by the Trades Association
1 ditto by the Boat owners
6 "Ex Officio" Members viz.t Master Attendant, Deputy M A (as Executive [illegible]

absolutely necessary.
I think it is so.
& so I understand think the majority of the Committee.
[illegible]
29/5/82

Collector of Madras, the Presidency Engineer, the Harbour Works Engineer and the Government Solicitor with a paid Secretary.

Capt. Taylor further points out ~~that~~ as regards responsibility nothing in the proposed arrangements would cause any increase in its present amount, while the consolidation of the control would probably cause material reduction ~~that~~ such as may be anticipated can be ~~easily~~ readily met by insurance and ~~that~~ as a fact already nine ~~tenths of~~ the English import and much of the exports are administered by the Pier Department

Mr. Melville Collector of Sea Customs concurs with Captain Taylor ~~that~~ with a debt of

over half a million
the formation of a Port
Trust would be premature
and that anything re-
quiring to be done could
be done as well by a
Harbour Committee in
which the Mercantile &
Trading Community
might be represented

As opposed to these
views Mr R C Walker
endorses Captain Taylors
objection to a Port-Trust
as Chimerical, that
his proposed Marine
Board would be instant
the power and organisation
of a Port-Trust and
would work less satis-
factorily both to the
Government and the
Mercantile Community

The discords it will
be observed are pretty
fairly divided but I
confess to sharing my
self entirely Captain
Taylors views as to the

which appear to me
alone feasible in the
present condition of
the works, the heavy
amount of present &
prospective debt and taking into account
the necessity of pro-
-ceeding the works under
immediate Government
control till completed
and the no less pressing
necessity for raising a
revenue for meeting
the interest on the debt

It is not unreasonable
to suppose that were
the Port Trust placed in
a position to control the
Expenditure necessary to
completing the works
instead of Government
a serious conflict of
opinion might arise

It therefore appears
to me that the con-
-stitution of a Board
such as the lines laid
down by Captain Taylor
would meet the wants

objects in view, and ~~that the~~ formation of ~~the~~ Port Trust may be deferred.

Captain Taylors proposals are contained in his letter of December 1881 addressed to the President of the Harbour Committee

He proposes to pass all goods intended for the Custom house over the Pier till the improvements are completed, to palisade a space on either side of the iron Pier, erect within this space large covered sheds to ensure protection to goods against the weather, erect side Jetties to the main Pier each 24 ft. in width and 8 ft. above mean Sea level, to Separate the So called North Verandahs at the custom house (a matter which has

received the support of the Collector of Sea Customs) with other measures unnecessary ~~to specify~~ to ensure complete & satisfactory working of the Harbour

The expense of the various erections for this purpose will be met from balance of Port funds stated ~~to~~ to amount to Rs 140,000 at present date and as the matter will not fall on either Imperial or Provincial Funds the details can be settled locally without reference ~~to the G of I~~

It will suffice here to observe ~~that~~ taking into account ~~the~~ the increase which he considers essential to working the Scheme of Rs 260 per mensem he will be enabled to shew by the clear profit of 1 Rs out of the 2-2 a charged as dues for tow-

as also by a further profit of ~~[illegible]~~ 2 annas per ton which will be earned out of the boat hire on completion of the jetties, a clear net income of 3 lakhs per annum on the total trade of the harbour

In case the scheme thus submitted receive the sanction of Govt. it appears desirable to shew its precise financial bearings as regards the payment of interest due on the cost of the works

The Examiner is of opinion that under G.O. No 936 dated 7th May 1880 (Fin. Dept.) interest is to be charged only upon the sum given by Imperial and not upon any portion given by Provincial, further that no interest which has been borne by Imperial during construction or

prior to the levy of dues shall be claimed from Provincial which latter shall be liable for interest upon Rs 62 80000 only from completion of the work regardless as to whether or not dues are levied at once on such completion or at any subsequent period - Interest therefore in his opinion can only accrue from date of completion

In this view assuming completion and the levy of dues to take place in Sept. 1884 Provincial will be liable from that date for interest for 1884-85 at 4 per cent on Rs 62,80000 or Rs 1,25,600 and thereafter will be liable for Rs 2,51,000 annually

But this leaves entirely out of account the

probability indeed
certainty that the
total ultimate expen-
-diture on the works
will amount to some-
-thing between 80 & 90
and 92 Lakhs (See
linked file) instead
of 62,80,000 Rs and
that whatever [illegible]
provided by Imperial
and partly by Provincial
or wholly by the former
must be less than the sum
as the ultimate outlay
will have to be provided
for. Unless the S of S
sees fit to make a
Grant-in-aid free of
interest to the work
the all outlay over
and above the amount
of the original Estimate

No very reliable
Estimate has as yet
been made, nor indeed
is it quite possible in
the present state of
matters, as to the

future maintenance
Charges on the work

Mr Thornwaite's
Estimate of Rs 60,000
per annum including
it is believed Establi-
-shment as the works are extant
but taking into account
the efforts of any severe
cyclones on the works it
appears improbable that
so moderate a sum
would suffice over a long
series of years, and that
it would be more prudent
to assume Rs 80,000 or
even 1 Lakh per annum
as this amount

Summarising the results
we may generally con-
-clude that the mini-
-mum annual Charge
if all has to be borne
by Provincial Revenues
does as Rs

(1) Interest on 80½
Lakhs @ 4 per cent 3,22,000

(2) Maintenance
charges including
Establ 1,00,000

Total 4,22,000

In the same way the maximum Charges would be

(1) To interest on Rs 92 Lakhs @ 4 per cent 3,68,000

(2) To maintenance as before 1,00,000

Total 4,68,000

In other words of the total yield of the present Harbour dues should always realize an estimated 3 Lakhs per annum the amount to be made up annually from Provincial Funds until in all probability vary from a minimum of Rs 1,22,000 to Rs 1,63,000 unless some means be found to avoid the Imperial interests involved in the work of relieving the local resources to this extent

29.5.82

No. 1382 W 382 Calcutta Genl 16
55

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 5th January 1882

Read the following:—

From

The Harbour Committee (M.C. dy 5th April 1882)

with enclosures.

The Committee, reassembled under GO. No. 2512 W dated 11th October 1881 for the purpose of reporting on certain points connected with the management of the Madras Harbour, levying dues for its use, and landing and shipping goods, have unanimously recommended a consolidated charge of Rs 2-2-0 per ton on all goods landed and shipped in the Harbour (~~at the ports~~) for which the goods

would be taken charge of, landed or shipped, guarded, and the porterage to and from the Custom House, defrayed.

2. His Excellency the Governor in Council therefore now directs the Master Attendant to place himself in communication with the Advocate General in view to the draft of a short Bill being prepared to enable the Govt. to levy this charge, and to entrust the duty to such Government officer or Department, or specially constituted body, as it may think fit, and to credit the proceeds,

First to the expenses connected with the performance of the service

Second, and any surplus towards

1st defraying the interest on the capital cost of the Harbour,

2nd and to form a Sinking Fund for reducing the Capital cost.

3. As regards the administrative agency to be employed with the above object the Government after very carefully weighing all that has been advanced in favor of the immediate creation of a Port Trust are of opinion that under the existing circumstances of the Harbour works such a measure would clearly be premature though ultimately it might be both useful and advisable.

4. On ~~Consequent~~ to the passing of the Bill above directed to be framed His Excellency in Council will

1382/57

~~be prepared to~~ nominate such ~~an~~ Executive ~~Committee~~ agency ~~composed of officers of Government and members of the mercantile community~~, as will in his opinion offer the best available guarantees for securing the highly important interests involved and satisfying the reasonable requirements of the trading community.

~~satisfying the requirements ... trading community~~

1/6/52

The Master Attendant Madras ✓ despd 5/6.
Supt. Madras H. Works
Chairman C. of C. ✓
Do. Madras Architect
Marine Dept ✓
Rev. Dept ✓
Legislative Dept ✓
R. C. Walker Esq ✓
A. M. Saunders Esq ✓
Supg. Engr. V Circle ✓

despd 9/6.

Council 1.6.72

1252
58

3587

Govt. of [1882] Madras.

PUBLIC WORKS.

Dated

Rcvd. Encl.

June

G. O., [illegible] 1882, No. 1382 W.

Nos. 21 to 22

Madras Harbour

Passing orders on the report of the Committee appointed to report on the management of the — levying dues for its use & landing & shipping goods —