(1) Number of pages 48

(2) Date of repair Jan. 88

(3) Initials of the Referencer bwa ✓

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W.D. DEPARTMENT

G.O. No. / B.P. No.	911 W	Press. / Mis.
Dated	25.3.1887	~~198~~ .

Not to be folded or roughly handled

Archives 1--10,006 1 -80.

25th March 1887, No. 911 W., Public Works.

21/

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following papers :—

From the Honorable R. W. BARLOW, C.S., Chairman, Harbour Trust Board, to the Secretary to Government, Public Works Department, dated Madras, 10th December 1886, No. 1479.

I have the honor to forward, herewith, for the information of Government, copy of progress report by the Superintendent of the Madras Harbour Works for the month of November 1886, No. 467 M., dated 6th December 1886.

2. Paragraphs 12 to 23 deal fully with the effects of the late cyclone on the harbour works, report on which is called for in G.O., No. 3072 W., dated 19th November 1886.

3. The plan referred to is in circulation amongst the Harbour Trustees, and will be forwarded to you at an early date.

Enclosure.

From F. N. THOROWGOOD, Esq., M. Inst., C.E., Superintendent, Madras Harbour Works, to the Chairman, Harbour Trust Board, Madras, dated 6th December 1886, No. 467 M.

I have the honor to submit the following report of progress on the harbour works during November, together with a chart of soundings, to which reference will be made further on.

2. *North pier works.*—The month of November being always a stormy one, no attempt was made at carrying on work briskly on the north pier, and, as a matter of fact, the state of the sea would have prevented any such attempt on nearly every day of the month. There were, however, 524 tons of stone deposited in the rubble base, and after that the boats were withdrawn.

3. There were also 31 blocks of 30 tons each deposited in the wave-breaker to the north of the pier, the crane being brought home every night, as mentioned in my report for October. On 29th November an attempt was made to go on with this work, but the sea was too high, and the crane was withdrawn.

4. *Concrete block-making.*—Very little work at block-making was carried on in November, as the boilers, engines and stone crushers all needed most thorough overhauling and repairing. Up to 3rd November there were 18 blocks of 30 tons each made, and then the machinery was stopped till the end of the month.

5. The two 40-horse power engines were partly dismantled, and the pistons examined; the 4 Cornish boilers were minutely inspected, and afterwards tested by hydraulic testing apparatus to 50 per cent. over their regular working pressure. The machinery of the concrete mixers and stone crushers was examined and repaired, and a large teakwood tank for water-supply was erected, in place of the old one now decayed. All machinery for block-making is now in good order for working another 12 months. There were 112 blocks for the south pier superstructure removed from the north to the south block ground.

6. *South pier works.*—There was no work attempted at the south pier during November, the state of the sea rendering any such attempt out of the question. The only operation carried on was that of making a still further withdrawal of the Titan crane, to a point 384 feet from the shore end of the pier.

7. *Pallavaram quarries.*—Rain interfered greatly with working of the quarries in November, and from the 2nd to the 8th no trains were run. From the 8th, generally speaking, three trains were run daily, to supply stone for the protective works along the beach, described hereafter. There were 10,834 tons of stone sent from the quarries in November.

8. *Survey of harbour and roadstead.*—The accompanying survey, which has been carried out with the greatest possible care, and checked and corrected in every possible way, shows the state of the sea bottom at the end of October. The blue contour lines give the fathom and half-fathom depths in October 1886, and those in red are reproduced from the survey of October 1882. We have therefore a complete record of the changes in depth during four years.

9. Commencing at the south of the harbour, outside, it will be seen that the place of the 4 fathom line of 1882 is now occupied by the 2 fathom line of 1886, and so, out to sea, there is gradual shoaling till at 9 fathoms the depths coincide. Inside the harbour, at the south-west corner, there has been shoaling up to the 3 fathom line, but at 5 and 5½ fathoms the *average* depth appears unaltered. In the middle of the harbour opposite the entrance, there is shoaling of 2 feet at the 7 fathom line of 1882, but this diminishes on each side of the centre. At the entrance the depth is unaltered, being 48 feet in 1882 and 1886. At the head of the iron pier the depth is one foot less than in 1882.

10. It must be remembered, in looking at this chart, that the soundings are reduced to depths below what is called DeHavilland's mean sea level, as that has always been the datum for these works. Regular tidal observations have now shown that this datum is only 6¾ inches below high water of the tide-tables, and a correction must therefore be made before the soundings can be used for navigating purposes. A reduction of 2 feet $7\frac{9}{16}$ inches must be made off all soundings, to bring them to depths below low water of the official tide-tables.

11. *Stores received on works.*—Three vessels brought stores from England during November as follows:—

S.S. Goorkha.—200 tons Portland cement.
„ *Rewa.*—200 „ do.
„ *Dacca.*—150 „ do. canvas, carpenters' tools, galvanized blocks.

The delivery of a supply of sleepers from Mr. Brown of Tellicherry was commenced, the sleepers being much needed all over the works and at Pallávaram.

12. *Cyclone of 8th and 9th November.*—On 6th November the sea began to grow rather boisterous from the north of east, and I observed that there were signs of encroaching along the shore opposite the Biden Sailors' Home. I therefore ordered a train of large stone to be sent from Pallávaram, so as to be ready, in case of further encroachment, at this spot. On Monday (8th) the sea had risen considerably, and after 2-0 P.M., on that day, it became very high indeed. The wind was from the north-west, and was consequently a good deal against the sea, but the latter increased in height and force throughout the day, in spite of the wind, and by 6-0 P.M. (about one hour before high water) it was, to my thinking, as heavy a sea as I have ever witnessed at Madras.

13. Nothing could be seen of the north pier, the whole being one mass of confused broken water and white spray, from the outer end, right up to the very innermost concrete block. Inside the harbour the sea was breaking very heavily, in about 6 fathoms, opposite the entrance, and I observed three seas, running shorewards, struck the planking of the iron pier with much force.

14. At the south pier the sea was attacking from the north side principally, and the crests of the rolling waves mounted about 7 feet above the top of the blocks, there being, generally speaking, about 500 feet interval between the crests.

15. At this time, about 6-0 P.M., the positions of the three large cranes were as follow: The north Titan was drawn in shore as far as it could go and stood at the spot indicated "October 31st 1886" on the plan herewith; the wave-breaker crane was alongside it as shown, and the south Titan was in the position dated "October 31st 1886."

16. The sea occasionally struck the south Titan with some force, but not sufficiently to do any harm. On the other hand, the north Titan was in a more perilous position, as the waves occasionally broke all around it and washed the ballast out from under the rails. I made a protection of rails and stone, to keep off the sea, and fortunately no harm followed.

17. On the morning of the 9th the sea was no higher than on the night of the 8th, but was running with about equal force. Severe encroachments had occurred during the night, the road from the Ráyapuram station northward having been continuously washed by the waves, which ran far back into the station compound. The wall of the Biden Home was washed down, and also the wall of a compound slightly north of this. The wall of "Carlton" House was likewise knocked over by the blows of the sea (not washed away as the others) for the third time since these works have been in progress. The sites of this damage are marked on the plan herewith.

18. At the root of the north pier the "surf bank" was very nearly cut through, and two lines of rail were completely undermined; the rails and sleepers were saved.

19. On examining the north pier, the next day, it was found that, at the commencement, the line of rail for the Titans had been knocked up. This line is of 75-lb. steel rails, to which are rivetted, at every 2½ feet, square plates of iron 1 inch thick; these are securely built in with cement mortar, the mortar surrounding the web of the rail; and reaching to the underside of the top. Farther along the pier 81 feet of similar line was torn up and thrown into the harbour, from which it has been recovered by divers.

20. The wave-breaker blocks have been rubbed against one another, and have all been driven up hard against one another. I find four blocks broken in two, but none of these are the regular wave-breaker blocks 9′ 0″ × 9′ 0″ × 6′ 0″, but the thinner and wider blocks originally intended for the old superstructure.

21. At the end of the straight work the sea has overturned one of such blocks weighing 28 tons, and in falling against the sharp edge of another block, this overturned block has broken in two pieces. The larger piece, weighing about 15 tons, was thrown on top of the pier, and hurled along for a distance of 21 yards.

22. The new work has sustained no damage. Where the new and old work join, there has necessarily been some movement and opening of joints between old and new, but this is no more than any one could expect. A corner of a block, previously cracked, has been washed off; and, as usual after storms, the new work has settled down slightly to its proper bearings, but has received no damage whatever.

23. Some of the blocks in the old ruined walls have been upset and displaced on both sides of the harbour. To prevent further damage from encroachment of the sea, I have caused 8,670 tons of large and small rubble to be placed along the shore in front of the Biden Home and northward. This work is still going on.

From the Honorable R. W. BARLOW, C.S., Chairman, Harbour Trust Board, to the Secretary to Government, Public Works Department, dated Madras, 20th December 1886, No. 1611.

In reference to paragraph 3 of my letter, No. 1479, dated 10th December 1886, I have the honor to forward, for your information, chart of soundings showing the alterations in depths which have taken place in and around the harbour works between October 1882 and October 1886; and request that it may be returned at your early convenience.

ORDER—dated 25th March 1887, No. 911 W., Public Works.

Recorded.

(True Extract.)

Captain, R.E.,
Under Secy. to Govt., P.W.D.

To the Chairman, Madras Harbour Trust Board, with chart returned.
„ Marine Department.
„ Consulting Engineer for Railways.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1887) Madras.
PUBLIC WORKS.

Dated March, 25th.

Recd. *Encl.*

G.O., 25th March 1887, No. 911 W.

MARCH.

Madras Harbour Works

Report of progress on the — during November 1886, recorded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads
Civil Works.

Read—the following letter from the Hon. R. W. BARLOW, C.S., Chairman, Harbour Trust Board, Madras, to the Secretary to Government, Public Works Department, dated Madras, 15th November 1886, No. 1161:—

I have the honor to forward herewith, for the information of Government, copy of a letter from the Superintendent, Madras Harbour Works, No. 410 M., dated 6th November 1886, reporting progress made during the month of October 1886, together with the original plan and photographs referred to therein, which I request may be returned.

Enclosure.

From F. N. THOROWGOOD, Esq., M. Inst. C. E., Superintendent, Madras Harbour Works, to the Chairman, Harbour Trust Board, Madras, dated Madras, 6th November 1886, No. 410 M.

I have the honor to submit, with the report of progress on these works during October, four photographs of the break-waters and blocks as they were on October 20th, 22nd and 23rd, together with a plan showing what progress has been made.

2. *North Pier Rubble Base.*—The extension and filling in of the rubble foundation at the north pier was worked at with fair regularity during October. As the swell rolls over the new base the slopes get flattened and the whole gets consolidated, so that much stone has to be added on top of what was deposited in June. The actual advance of the work in lineal measurement was only 140 feet in October, but the greater part of the stone deposited was used in making up the base that had settled down. The quantity of stone deposited in October has been 13,646 tons. All this has had to be brought across from the south pier to the north base, a method which I dislike, as I fear the boats laden with stone often obstruct the traffic in the harbour. I have not, however, been able to avoid this arrangement lately on account of the position of the large crane which, when working effectually, closes the line from which boats would be loaded at the north pier. I do not think this system of working across the harbour will ever have to be adopted again

3. *North Pier Superstructure.*—As the 15th October is the date from which stormy weather may be expected, I had to time all operations which required the use of cranes, so as to allow of their being in safety by the 15th. The north titan set 28 blocks in the new superstructure, advancing the work by a length of 18¼ feet, and bringing the termination of the new work to a distance of 2,280¼ feet from the point B, where blockwork commences. On October 8th the titan was turned round with its "beak" pointing north-east, and wavebreaker blocks were dropped between the old line of work and the new, filling up the space completely. Where the opening was very narrow, large boulders and cement concrete in bags were jammed in. The whole of the new work was then securely cramped together, and on the 14th the titan was safely drawn home to land. I am sorry to say that two or three of the blocks in the new work have cracked slightly in setting down by reason of the weight of the titan over them, but I believe I know the cause of this, and hope I can prevent it in future.

4. I cannot think that any more could be done to render the new work more secure than it is, but in the event of a heavy sea from the E.N.E., I should not be surprised to see some of the wavebreaker blocks thrown on top of the pier.

5. *North Pier Wavebreaker.*—On the 13th October the large wavebreaker crane was drawn home to the shore. By the 19th I had laid in a special road on which the north titan was shunted to one side, as I mentioned I intended to try in my last report (paragraph 5). On the 20th the wavebreaker crane was drawn out again (leaving the titan behind), and every day during the month work has been carried on with it, the crane being drawn home by two locomotives every evening. By adopting this measure 267 blocks were dropped alongside the north pier during October, thus affording protection to very nearly the whole length as shown on the plan herewith.

6. *Concrete Block-making.*—The making of blocks was carried on with fair speed during October, 196 blocks having been made. Blocks were also removed from the north to the south stacking ground. The stone-crushing machines, the engines and boilers all want overhauling and repairing, and this must be done during the current month.

7. *South Pier Works.*—At the south pier no rubble base was deposited in October, but 10 blocks were set in the new superstructure, bringing it to a satisfactory termination for the time being. The titan was turned round on the 7th, and after depositing 59 blocks to complete the wavebreaker at the end of the work, it was on the 13th October drawn back to a safe place on the pier where it was secured. I consider that nothing more could be done as preparation against bad weather.

8. *Pallávaram Quarries.*—The quarries were kept at work with regularity during October, but for various reasons it was necessary to cancel 43 trains during the month. There were 16,344 tons of stone sent down to Madras for block-making and for rubble foundations. The lines have been maintained in good order, but one derailment of wagons occurred, which was the result of carelessness on the part of the platelayers. No damage was done to either rails or wagons.

9. From correspondence between myself and the Consulting Engineer for Railways it appears that the South Indian Railway Company consider me responsible for the *working* of the quarry lines as well as for their repair and efficiency. This I did not before understand to be the case, and am glad that it is so, as in future I shall be able to regulate the speed of the South Indian Railway engines. No serious additional expense will be incurred under this arrangement, but I have had to put on a few extra platelayers and signal-men to regulate the traffic and the speed, as well as to keep strict watch over the line.

10. *Survey of Harbour and Surroundings.*—I am glad to report that we have completed a most searching survey of the harbour and of the sea bottom north and south and outside. Mr. A. L. Pogson did the greater part of the work, but I repeated his lines independently, and also ran lines of soundings diagonally across his work as a check. The survey is not yet wholly plotted on paper, but it will be a most interesting plan when finished. I am sorry to say that there is undoubted silting in the south-west corner of the harbour, but until all the soundings are all plotted and compared with the survey of 1882, it would be premature to make any remarks.

11. *Stores received on works from England.*—During October the S.S. *Manora* arrived with 120 tons of Portland cement, and the *Navarino* with 200 tons of cement, as well as fish-bolts for railway lines, stone-crusher jaws and divers' air pipes.

12. *Estimate and Expenditure.*—For the first time since the work of reconstruction was commenced, the monthly accounts (for September) have been prepared in conformity with the new estimate. I did intend to append with this report a summary of expenditure as compared with estimate over the whole works, but I think it will be better to wait for the return of the accounts after the Examiner's audit, as there may be errors in this first set of papers. I will therefore forward a sheet, showing expenditure compared with estimate, when I have heard from the Examiner.

13. *Mr. W. S. Boteler.*—On October 25th Mr. W. S. Boteler assumed charge of his post as General Foreman of these works, and bids fair to do very well.

14. *Sea Encroachment to the North.*—I have not taken any steps to protect the coast to the north until I hear from Mr. Parkes, as this is a subject on which he is, I know, desirous to be very cautious. If the present month passes by without serious erosions there will be valuable accretion until the end of March, and then the sand may be impounded by a revetment if thought advisable.

ORDER—dated 19th November 1886, No. 3072 W., Public Works.

Recorded.

2. Paragraphs 8 and 9 will be communicated to the Consulting Engineer for Railways.

3. The result of the survey of the harbour and surroundings is awaited.

4. The Government would be glad to have a report on the effects of the late cyclone on the harbour works.

(True Extract.)

Capt., R.E.,
Under Secy. to Govt., P.W.D.

To the Chairman, Harbour Trust Board,
with plan and photographs returned.
„ Consulting Engineer for Railways.
„ Marine Department.
„ Newspapers.

Exd. T. O'Connor.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of 1886 Madras.

PUBLIC WORKS.

Dated November, 19th.

Recd. *En*

G.O., 19th Nov. 1886, No. 3072 W

NOVEMBER.

Madras Harbour Works.

The progress report of the — for Oct
1886, recorded with remarks.

V. & Co. H.T. No. 1

Read the following paper:—

25th Nov/83 No 511 B
B.P.W.
Civil Works

Harbour Trust Board Office,
MADRAS, 10th December 1886

No. 1479

9/11/3

FROM
The Honorable R. W. Barlow C.S.
CHAIRMAN, HARBOUR TRUST BOARD,
MADRAS,

TO
Colonel J. O. Hasted R.E.
~~CHIEF~~ SECRETARY TO GOVERNMENT,
Public Works ~~Marine~~ Department.
Chepauk.

SIR,

I have the honor to forward herewith for the information of Government Copy of Progress Report by the Superintendent of the Madras Harbour Works for the month of November 1886, No. 467 M dated 6th December 1886.

2. Para's 12 to 23 deal fully with the effects of the late cyclone on the Harbour Works, report on which is called for in G.O. No. 3072 W, dated 19th November 1886.

3. The plan referred to is in circulation amongst the Harbour Trustees, and will be forwarded to you at an early date.

I have the honor to be
Sir
Your most Obedient Servant
R W Barlow
Chairman
Harbour Trust Board.

C. Sec H.T.B.

307 ½ . 19.11.86

Mehs 9715

MARINE DEPARTMENT.

FROM ,

THE CHAIRMAN,
HARBOUR TRUST BOARD,
MADRAS,

TO

THE ~~CHIEF~~ SECRETARY TO GOVERNMENT,
Public Works ~~Marine~~ Department.
Chepauk

DATED 10th } December 1886.
RECEIVED 11 }

11 DEC 86

ENCLOSURE 1
Memorandum

No. 1479

[illegible]

SUBJECT.

Submitting for the information of Government Copy of Progress Report of the Madras Harbour during the month of November 1886.

SAW

Enclosure

No. 467 M

From

The Superintendent
Madras Harbour Works

911/7

To

The Honorable R. W. Barlow C.S.
Chairman Harbour Trust Board
Madras

Madras 6th December 86

Sir,

I have the honor to submit the following report of progress on the Harbour Works during November, together with a Chart of Soundings to which reference will be made further on.

North Pier works

2 The month of November being always a stormy one; no attempt was made at carrying on work briskly on the North Pier and, as a matter of fact, the state of the sea would have prevented any such attempt, on nearly every day of the month. There were however 524 tons of stone deposited in the rubble base, and after that the boats were withdrawn.

3 There were also 31 blocks, of 30 tons each

deposited in the wavebreaker to the North of the pier, the crane being brought home every night, as mentioned in my report for October. On November 29th an attempt was made to go on with this work but the sea was too high, and the crane was withdrawn.

Concrete Block-making

4 Very little work at blockmaking was carried on in November, as the boilers, Engines, and stone crushers, all needed most through overhauling, and repairing. Up to November 3rd there were 18 blocks of 30 tons each made, and then the machinery was stopped till the end of the month.

5 The two 40 H P engines were partly dismantled, and the pistons examined, the 4 cornish boilers were minutely inspected, and afterwards tested, by Hydraulic testing apparatus, to 50 per cent over their regular working pressure. The machinery of the concrete mixers, and stone crushers, was examined and repaired, and a large teakwood tank for water supply was erected, in place of the oldone, now decayed. All machinery for blockmaking is now in

good order for working another 12 months. There were 112 blocks, for the south pier superstructure, removed from the North to the South blockground.

South Pier Works

6 There was no work attempted at the South pier during November, the state of the sea rendering any such attempt out of the question. The only operation carried on was that of making a still further withdrawal of the Titan Crane, to a point 384 feet from the shore end of the pier

Pallavaram Quarries

7 Rain interfered greatly with working of the quarries in November, and from the 2nd to the 8th no trains were run. From the 8th generally speaking three trains were run daily, to supply stone for the protective works along the beach, described hereafter. There were 10,834 tons of stone sent from the quarries in November.

Survey of Harbour and Roadstead

8 The accompanying survey, which has been carried out with the greatest possible care, and checked and corrected in every possible way, shows the state of the sea bottom at the end of October. The blue

contourlines give the fathom and half-fathom depths in October 1886, and those in red are re-produced from the survey of October 1882. We have therefore a complete record of the changes in depth during 4 years.

9 Commencing at the South of the harbour, outside, it will be seen that the place of the 4 fathom line of 1882 is now occupied by the 2 fathom line of 1886 and so, out to sea, there is gradual shoaling, till at 9 fathoms the depths coincide. Inside the harbour at the south west corner there has been shoaling up to the 3 fathom line, but at 5 and 5½ fathoms the average depth appears unaltered. In the middle of the Harbour, opposite the entrance, there is shoaling of 2 feet at the 7 fathom line of 1882, but this diminishes on each side of the centre. At the entrance the depth is unaltered being 48 feet in 1882 and 1886. At the head of the Iron Pier the depth is one foot less than in 1882.

10 It must be remembered in looking

at this Chart, that the soundings are reduced to depths below what is called DeHavilland's mean sea level, as that has always been the datum for these works. Regular tidal observations have now shewn that this datum is only 6¾ inches below High Water of the tide tables, and a correction must therefore be made before the soundings can be used for navigating purposes. A reduction of $2^{\text{feet}} - 7\tfrac{9}{16}^{\text{In}}$ must be made, off all soundings, to bring them to depths below Low Water of the official tide tables.

Stores received on Works

11 Three vessels brought stores from England during November as follows.

S S "Goorkha"	200 tons	Portland Cement
— " — "Rewa"	200	do
— " — "Dacca"	150	do Canvas, Carpenter's Tools, Galvanized Blocks

The delivery of a supply of sleepers from Mr Brown of Tellicherry was commenced, the sleepers being much needed, all over the works, and at Pallavaram.

Cyclone of November 8th & 9th

12 On November 6th the sea began to grow rather boisterous from the North of East and I observed that there were signs of

encroaching along the shore, opposite the Biden Sailor's Home. I therefore ordered a train of large stone to be sent from Pallavaram. so as to be ready, in case of further encroachment, at this spot. On Monday 8th the sea had risen considerably, and, after 2.0. P.M. on that day, it became very high indeed. The wind was from the N.W., and was consequently a good deal against the sea, but the latter increased in height, and force throughout the day, in spite of the wind, and by 6.0. P.M. (about 1 hour before high water) it was, to my thinking, as heavy a sea as I have ever witnessed, at Madras.

13 Nothing could be seen of the North pier, the whole being one mass of confused broken water, and white spray, from the outer end, right up to the very innermost concrete block. Inside the Harbour the sea was breaking very heavily, in about 6 fathoms, opposite the entrance, and I observed 3 seas running shorewards struck the planking of the Iron pier with much force

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attacking from the Northside principally and the crests of the rolling waves mounted about 7 feet above the top of the blocks, there being, generally speaking, about 500 feet interval between the crests.

15 At this time, about 6.0 P.M. the positions of the 3 large cranes were as follow. The North Titan was, drawn inshore as far as it could go and stood at the spot indicated "October 31st 1886" on the plan herewith, the wavebreaker crane was alongside it as shewn, and the south Titan was in the position dated "October 31st 1886."

16 The sea occasionally struck the south Titan with some force but not sufficiently to do any harm. On the otherhand the North Titan was in a more perilous position, as the waves occasionally broke all around it and washed the ballast out from under the rails. I made a protection of rails and stone, to keep off the sea, and fortunately no harm followed.

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the mortar surrounding the web of the rail, and reaching to the underside of the top. Further along the pier 81 feet of similar line was torn up and thrown into the harbour, from which it has been recovered, by divers.

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movement, and opening of joints, between old and new, but this is no more than any one could expect. A corner of a block, previously cracked, has been washed off; and as usual after storms, the new work has settled down slightly to its proper bearings, but has received no damage whatever.

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I have the honor to be
Sir
your most obedient Servant

(Signed) F. N. Thorowgood M. Inst. C.E.
Superintendent
Madras Harbour Works

(True Copy)

Secretary
Harbour Trust Board

cog

Harbour Trust Board Office,
MADRAS, 20th December 1886.

No. 1611

FROM
The Honorable R. W. Barlow C.S.
CHAIRMAN, HARBOUR TRUST BOARD,
MADRAS.

TO
Colonel J. O. Hasted R. E.
~~Chief~~ SECRETARY TO GOVERNMENT,
Public Works ~~Marine~~ Department.
Chepauk.

SIR,

In reference to para 3 of my letter No. 1479+ dated 10th December 1886, I have the honor to forward, for your information, Chart of Soundings showing the alterations in depths which have taken place in and around the Harbour Works, between October 1882 and October 1886; and request that it may be returned at your early convenience.

+ Lro 9713. S.a.W.g. 11/12.

I have the honor to be
Sir
Your most Obedient Servant
R W Barlow
Chairman
Harbour Trust Board

Secy HTB

MARINE DEPARTMENT.

FROM P.W.C. No. 10225

THE CHAIRMAN,

HARBOUR TRUST BOARD,

MADRAS,

TO

THE ~~CHIEF~~ SECRETARY TO GOVERNMENT,

Public Works ~~Marine~~ Department.

DATED 20th December 1886.

RECEIVED 21st

ENCLOSURE 1 (+ plan)

No. 1611

No. 18. C. [illegible]

SUBJECT.

Forwarding for the information of Government chart of Soundings of the Madras Harbour Works.

G.H.W.

Telephone message

To Ch. H. T. Board.

9/11
19

Para 3 of your 1479 - of 10th inst. Please submit enclosure soon.

13.12.86

D.W.

What enclosure is wanted - the plan? If so it is not [illegible] asking for that as it will come [illegible]

Ans. [illegible] Wait for charts

13.12.86

The papers can not be disposed of without the chart showing result of the survey. May the papers await receipt of the chart? H.B. 13/12

Seen 13/12/86

Shoaling on the o

Pwd

9/11
22

...rman

Madras Harbour Trust Board

Sir,

With reference to your letter No 1611 dated 20th December 1886, I am directed to request that you will be good enough to furnish me ~~with~~ for comparison, with charts of the Harbour for previous years, as far back as they may be available.

I have &c

17/1/87

W

17/1/87

IV

911/22

The chart shews the fathom & half fathom contour lines of the Madras Port, adjacent to & including the Harbour works, as now surveyed, and as drawn in 1882.

As might be expected, the accretion to the South of the Harbour, outside, has steadily increased, the 4 fathom line of 1882 being now occupied by the 2 fathoms, and this shoaling continues in a diminishing quantity to the 9 fathom line where practically there is the same depth of water as in 1882.

In other words, at the present 2 fathom line, a depth of 12 feet ~~over~~ ~~over 2 feet in depth~~ of sand has accumulated in 4 years.

There has been slight shoaling on the outside

Pwd

911/22

rman

Madras Harbour Trust Boar

Sir,

With reference to your letter No 1611 dated 20th December 1886, I am directed to request that you will be good enough to furnish me ~~with~~ for comparison, with charts of the Harbour for previous years, as far back as they may be available.

I have &c

W

17/1/87

17/1/87

of the North arm,
except ~~from the shore~~ down
up to the 3 fathom
line, where there has
been little change.
~~To the East~~ Seaward of the works,
~~inside~~ there has been
some shoaling, but
the entrance remains
practically unaltered.
Within the harbour there
has been shoaling throughout
to a slight degree
between 4 and 5½ fathom
In the SW corner between
the South arm & the
shore, there has been
considerably more
accumulation of sand
there in the opposite or
N W corner –
The chart clearly shows
that there is a gradual
accumulation of sand
going on within & around the harbour
which must [illegible] seasons;
and the deduction to be
drawn from the chart
is in my opinion, clear –

Viz
If the Eastern entrance
is closed, & the ~~Sea~~
opening made in the
North Arm as proposed
originally by the
Madras Committee & lately
brought forward by the
Harbour Trust; the
accumulation of sand
within ~~in~~ the Harbour will
be almost entirely stopped

Wier

22.12.86.

Ask the Board to be good
enough to forward for comparison
with this chart, the charts of
former years, so as far back
as they may be available.

Lee
17/1/86.

Pwd

911/88

...irman
Madras Harbour Trust Board

Sir,

With reference to your
letter No 1611 dated 20th
December 1886, I am
directed to request
that you will be good
enough to furnish
me ~~with~~ for Comparison,
with Charts of the
Harbour for previous
years, as far back
as they may be available.
I have &c

Lee

17/1/87.

W

17/1/87

9/14

Pwd

911/22

C/

To The Chairman

Madras Harbour Trust Board

Sir,

With reference to your letter No 1611 dated 20th December 1886, I am directed to request that you will be good enough to furnish me with for Comparison, with Charts of the Harbour for previous years, as far back as they may be available.

I have &c

W

17/1/87

17/1/87

No. 3072 W of 19-11-86

B & R
& works

PUBLIC WORKS DEPARTMENT.

No. 911 W

A

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 25th March

911/23

READ the following

Prism with sifts. Report –

From the Chairman M. H. T. Bd No. 1474 of 10.12.86
— do — – 1611 of 20.12.86

15

Note – The report has been kept back in view to the Chart of Soundings being compared with charts of previous years

Recorded

24/3/87.

5/4

Chairman M. H. T. B, with Chart returned – } will be given to despatcher by T. section
Marine Dept
Consy Engr Harbours.

3072 W aj 19.11.86 A.
183 c aj 19.1.87

~~The Hon~~ P.P. Hob

Circ. 21.3.87 Rd: 25/3/87

911/284

Govt. of [1887] Madras.

PUBLIC WORKS.

Dept.

No.

Recd.

Encl.

G.O. 25 march 1887, No 911 W

Madras Harbour works

=

Report of progress on the — during November 1886, recorded.

7/1

26/3