

(1) Number of pages 12
(2) Date of repair _____
(3) Initials of the Referender _____

MADRAS RECORD OFFICE.

Government of Madras. *Public Works* DEPARTMENT.

G.O. No. 575 Press
Mis-
Dated 11-8-1877

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT

11th August 1877, No. 575 W.

Buildings and Roads.

Civil Works.

Read the following paper:—

No. 117. From F. N. THOROWGOOD, Esq., C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, Buildings and Roads, dated Madras, 4th August 1877, No. 36 W.

I HAVE the honor to report the following amount of progress on these works since the date of my last report.

2. *North Pier.*—I regret that no blocks have been set on the north breakwater, although on every day when the sea has been quiet the divers have been at work. My intention was to set the proper abutment of the block work in July, but the sand that accumulated at the end of the pier caused the waves to break at that spot nearly every day, although the sea was tolerably smooth in other places. Every day the divers were ready at 7 A.M. to start work, but on no occasion could they work later than 11 A.M.

3. This constant delay is evidently most serious, but I see no way of avoiding it at the same time, I believe that in this month of August diving work can be carried on more constantly.

4. *Protective Work.*—During the past month 1,450 tons of laterite stone have been tipped as a protective foreshore on the north side of the north breakwater. On the top of this foreshore thirty-five blocks weighing $13\frac{1}{2}$ tons each have been built; of these five have been undermined since July 20th. They have fallen down and made an excellent protection to the work of the pier itself.

5. *Block-making.*—No block-making has been carried on during July, except in the way of small blocks made by hand labor. The men employed formerly in block-making by machinery are discharged. The reason for not carrying on the making of large blocks is only because there is no room for placing them except on the south block ground, and there work must be stopped for a time to complete the block ground itself.

6. *Concrete Block Platform.*—The platform for making blocks for the southern pier has been extended as quickly as possible, and during July 160 feet lineal have been added. The godowns of the Peninsular and Oriental Company have been removed to make way for this platform.

7. *South Pier Works.*—The southern groyne or surf bank has gone on in a most satisfactory way, although the supply of stone has been rather hazardous because of the 15th mile quarry having failed. The stone work is well in advance of the sand as will be seen on the plan accompanying this report.

8. I cannot help regretting that the stone supply to the south groyne will have to be reduced to a minimum. But I think no serious evil will arise to the whole work

of the harbour, unless a very large accumulation of sand should come up during this month, which is a most unlikely occurrence.

9. The amount of stone tipped into the southern surf bank during July is 6,272 tons, and the advance in length consequent on this is 150 lineal feet.

10. *General matters connected with works.*—The Titan crane is being built as quickly as can be managed. Much delay occurred through the difficulty of getting a good Syrang, all useful men being engaged at landing rice. All other work on the southern pier has been carried on as quickly as possible, and I hope the progress is considered satisfactory.

11. The soundings and sections referred to last month have not been carried out quite so well as might be wished, owing to the illness of the Assistant Engineer and his Surveyor. The visits to the crabs by Mr. Beardmore showed no difference at all since the last time that the diver saw them; Mr. Beardmore visited all the crabs on the 16th and 17th of July.

12. A large tank (4.0 x 4.0 x 4.0) will be towed out and sunk on the first opportunity, but at present no day has been smooth enough for this experiment.

13. The cube of laterite mentioned in my last report was allowed to hang in the sea for one month, and was afterwards weighed. There was an increase of half a lb. in weight, which is accounted for by the accumulation of barnacles and shells on the block. These spoil the experiment.

14. *Stores.*—The stores received during July from England were brought in the ships *Sea Queen* and *Reigate*, both containing cement in casks. There appears to be only one more ship to arrive here with cement, and then the first contract for English cement will be at an end.

No. 118. ORDER THEREON, 11th August 1877, No. 575 W.

ORDERED to be recorded.

(True Extract.)

Colonel, R.E.,
Secretary to Government, P.W.D.

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

Exd. E. C. Shunker.

Spare Copies

No. 36 W.

From

THE SUPERINTENDENT,

MADRAS HARBOUR WORKS.

To

Colonel E. A. Ford R. E.
Secretary to Government, P.W.D.
for Roads & Buildings.

MADRAS, 4th August 1877.

SIR,

I have the honor to report the following amount of progress on these works since the date of my last report.

1. I regret that no blocks have been set on the North breakwater, although on every day when the sea has been quiet the divers have been at work. My intention was to set the proper abutment of the block work in July, but the sand that accumulated at the end of the pier caused the waves to break at that spot nearly every day, although the sea was tolerably smooth in other places. Every day the divers were ready at 7.0 A.M. to start work but on no occasion could they work later than 11.0 A.M.

2. This constant delay is evidently most

most serious, but I see no way of avoiding it at the same time. I believe that in this month of August diving work can be carried on more constantly.

4. During the past month 14,500 tons of taterile stone have been tipped as a protective foreshore on the north side of the North Breakwater. On the top of this foreshore 35 blocks weighing 13½ tons each have been built & of these five have been undermined since July 20th. They have fallen down and made an excellent protection to the work of the pier itself.

Protective work

5. Block making has been carried on during July, except in the way of small blocks made by hand labour. The men employed formerly in block making by machinery are discharged. The reason for not carrying on the making of large blocks is only because there is no room for placing them except on the South block ground and there work must be stopped for a time to complete the block ground itself.

Block making

6. The platform for making blocks for the

Concrete block platform

the Southern pier has been extended as quickly as possible and during July 260 feet lineal have been added. The go downs of the P. & O. Company have been removed to make way for this platform.

Per works

7. The Southern groynes or surf bank has gone on in a most satisfactory way although the supply of stone has been rather hazardous because of the 15th mile quarry having failed. The stone work is well in advance of the sand as will be seen on the plan accompanying this report.

8. I cannot help regretting that the stone supply to the South groyne will have to be reduced to a minimum. But I think no serious evil will arise to the whole work of the Harbour unless a very large accumulation of sand should come up during this month which is a most unlikely occurrence.

9. The amount of stone tipped into the Southern Surf bank during July is 6272 tons, and the advance in length consequent on this is 150 lineal feet.

The

10. The Titan Crane is being built as quickly as can be managed. Much delay occurred through the difficulty of getting any good signing. All useful men being engaged at landing rice. - All other work on the Southern Pier has been carried on as quickly as possible and I hope the progress is considered satisfactory.

11. The soundings and sections referred to last month have not been carried out quite so well as might be wished owing to the illness of the Assistant Engineer and his surveyor. The visits to the crabs by Mr. Beadmore showed no difference at all since the last time that the divers saw them.

Mr. Beadmore visited all the crabs on the 16th & 17th of July.

12. A large tank 16.0 x 4.0 x 4.0 of will be towed out and sunk on the first opportunity but at present no day has been smooth enough for this experiment.

13. The crab of laterite mentioned in my last report was allowed to hang in the sea for one month, and was afterwards weighed.

General matters
connected with
works -

There

There was an increase of $\frac{1}{2}$ lb in weight which is accounted for by the accumulation of barnacles and shells on the block. These spoil the experiment.

14. The stores received during July from England were brought in the ships "Sea Queen" and "Aligate", both containing cement in casks. There appears to be only one more ship to arrive here with cement and then the first contract for English cement will be at an end.

I have the honor to be,

Sir,

Your most obedient servant,

J. N. Thoroughgood.

Superintendent
Mudra's Harbour Works

Roads & Buildings

From
The Superintendent
Atchafalpa River Works

A361r
 Dated 1st August 1877

- 1st of Enclosures 3.

Submits report of progress
of the works during July
1877

16th August 1847

7-8-22

P. W. DEPARTMENT

READ the following:—

Letter from the Superintendent, Madras
Marine Works, No. 368 of 4th August 1877.

FOR ORDERS.

Edw. M. L. R.
Secretary to Govt.
P. H. D.

7th August 1873
 7th August 1873

FOR ORDERS.

Handwritten text, mostly illegible due to fading and bleed-through.

Handwritten notes on the left side of the page.

Not under order
575 Wagon Aug 77
Recorded
eat up

Capt. M. S. Work 3
Secy Harbor Committee
Marine Dept
E. T. 11
Office 37
Aug - 18 - 8.77

Aug 7-8-77

1873
Cobt. of 1877; Indras.
PUBLIC WORKS.

To *The Sup^r Indras Harbour Works*

Dated

Issued

Recd.

Encl.

G. O. 11th August 1877, No. 5754

Nos. 117-118

*Indras Harbour Works
Report of the progress of the
- during Feb, 1877.
Recorded*

Cont in Sup^r