No 1520. 21.12.84.
3260. 12.12.84

Marine (1884) Department.

From

The Master Attendant,
Administrative Department,
Madras,

To

The Chief Secy. to Government,
Marine Department,
Fort St. George.

No. 686.

Forwarded

No. 2647

Dated 18 March 1884
Received

Subject

Recommending further operations in Mangalore harbour to be undertaken till nature has shown its effects during the next S.W. monsoon.

Forwarded
Chief Secretary

3/84
Fort St George

Communicated
to the S.E. IV circle for
information & guidance
with reference to his letters
nos 20 & 21 of 15th Jany & 6th of
7th Febr 1884

26-3-84

E.J.-3-84

S.E. IV circle

Administrative Department.

MADRAS,
Marine Office,
18th March 1884

No. 2647.

From

J. H. TAYLOR, Esq., LIEUT., R.N.R.,
Master Attendant,
Administrative Department,
Madras,

To

The Honorable E. Forster Webster,
Chief Secretary to Government,
Marine Department,
Fort Saint George.

SIR,

In returning the accompanying papers relating to the Mangalore Harbour mouth, forwarded with endorsements Nos. 190 and 323, dated 28th January and 18th February last, I have the honor respectfully to state that I would recommend the suspension of further operations, in order that it may be seen in which way nature asserts itself in the approaching monsoon.

I have the honor to be
Sir,
Your most Obedient Servant
J. H. Taylor
Master Attendant
Administrative Department.

19 FEB 84

1884.

Public Works Department

No. 325

Forwarded to the Master Attendant for information.

Chief Secretary.

18/2/84

No. 326 C
Dated 12th Feb'y/84
Despatched
Received 13

No. 105

Enclosure

SUBJECT.

Forwarding a further report from the Executive Engineer Coimbatore Dt. relating to the Mangalore Harbour

No: 326C d/ 12th Febry/84

From
The Supg. Engineer,
Fourth circle.

Dated 7th
Despd: 8th } February/84

Referred, through the Marine Deptt. for the opinion of the Master Attendant, Madras. Attention is invited to the previous report forwarded with endorsement No: 152 C dy 21st Jany/1884

Inc: 1
No: 67 E.W

Mangalore Harbour:—
Forwarding for information a further report from the Executive Engineer, Coimbatore Dn., giving the results of the recent inspection of the old & new moorings of the

Reference

V. MacMorgan
Col. R.E.
11-2-84 Secretary to Govt.
P.W.D.

To The Marine Deptt
an original to be
returned.

I have the honor to be,

Sir,

Your Most Obt. Servant.

Colonel R.E.

Supg. Engineer, 4th Circle

From
The Executive Engineer
Coimbatore

SUPG. ENGINEER'S OFFICE
No. 52 C.J.
2 FEB. 84
P. W. D.
FOURTH CIRCLE

No. 183.
Dated 31st January 1884.

Old and new Harbour mouths Mangalore

Reports regarding the ——— with certain observation

Supt. Engineer's Office 4th Circle,
Coimbatore, 7th Feby. 1884.

No. 67
Exp.

From,

The Superintending Engineer,
Fourth Circle.

To,

The Chief Engineer
P. W. D.

Sir,

Enclosures
1 Report.

In Continuation of my letter No. 20 of 15th Ultimo I have the honor to forward herewith for your information a further report from the Executive Engineer Coimbatore giving the results of his recent inspection of the old and new harbour mouths.

2. Mr. Davidson Considers that if the old mouth is to be closed, as proposed by the Port Officer Captain Wiehe, a definite decision to this effect should be given without delay and sanction to collect materials

× See para 8
○ See para 7

I have

to submit estimates of the cost of Constructing a bund across the backwaters or of fixing the Southern mouth, as the future position of this mouth should first be decided on; no harm will however result from delay in this matter, as (1) the result of the rivers discharging through their respective mouths during another monsoon will lead to a greater silting of the backwaters between them, and thus reduce the cost of the bund and (2) the working northwards into a suitable position of the Southern mouth will probably extend over some years.

I have the honor to be
Sir
Your most obedient Servant

R Knowles

Executive Engineer

was to separate the two rivers by means of a strong bund across the backwaters and allow them to discharge each at its own mouth.

Of this Course be adopted, it follows that all idea of closing the Gurpur mouth must be abandoned, but at the same time the fixing of the Southern mouth becomes a necessity.

---

17. There can be little doubt that in the long run the most satisfactory results would be obtained by adopting General Sankey's suggestion viz: separating the rivers and fixing the Southern mouth, and if the Port authorities are prepared to incur the expenditure it is the course to be adopted.

18. I am not at present prepared

6

10. Regarding the advisability or otherwise of closing the Northern mouth, I hardly like to give a definite opinion.

11. The only argument in favour of closing is the idea that the Gurpur having no outlet but the Southern mouth would keep open a deep channel for itself through the backwater.

12. Of this however there is no proof on the contrary the old charts taken under very similar circumstances shew the backwater full of shoals and the Gurpur finding its way out by means of several small channels; and this is exactly the result that a comparison of the breadth of the Gurpur as it enters the backwater with that of the backwater itself would lead one to expect.

13. The closing of the northern mouth therefore means incurring a heavy expenditure to secure a result which is at the best very doubtful

14. The non-closing of the Northern mouth will result in a silted backwater north of the Southern mouth, and the cutting off of all approach to the Custom House for large vessels till such time as the Southern mouth works northward into a suitable position; the closing of the Northern mouth on the other hand does not by any means ensure a different or better result.

15. General Sankey was of opinion that the proper course to pursue

of the Gurpur river down the backwaters will open a channel through the "longue of sand" mentioned in paras 2 and 3; I understand him at the same time however, to be somewhat averse to cutting off the only means of approach to the Custom House which vessels drawing any depth of water at present have.

---

9. Personally I am sceptical of the power of the Gurpur to break through the longue of sand, but I think assuming the northern mouth closed, that this longue of sand by forcing the Gurpur to escape to the southern mouth through a narrow channel running close along the bunder may assist very materially in forcing a deep water passage to the Custom House.

10. of a good bund being constructed across.

---

6. I am decidedly of opinion that if left alone this mouth will narrow considerably in the course of the next month or so, and that it will be more economical to commence actual operations at the beginning of March.

---

7. A definite decision regarding the closing or non closing of it should however be arrived at without delay, and orders issued to allow of materials being prepared.

---

8. Captain Wicks is in favour of closing the mouth at once, as he hopes that the forcing

of

of Pattimars at high water.

4. I am still of opinion that dredging would help us little or not at all, and that the southern mouth must be left to nature.

5. This I inspected in company with Captain Wicks on Monday Morning the 21st January; the mouth was on this day approximately 250 ft wide; (no actual measurement was taken as the state of the tide made this difficult and uncertain); soundings were however taken and from these I ascertained that there is a neck of sand stretching across this mouth with a depth of water on it varying from 9' to 13' at half tide (3 ft deduction will give low tide) and with a sufficiently broad base to allow of

Southern mouth. Concerning this I have little to add to what has already been said, the mouth is not satisfactory and though at high tide Pattimars can enter the Harbour through it, their progress towards the Custom House and beyond is barred by a tongue of sand which runs into the backwater from the south side of it (the mouth); pattimars entering by this mouth must therefore lie opposite the Salt Molaurs i.e. at the entrance south of the backwaters.

3. The "tongue of sand" mentioned in the preceding para is I understand rapidly growing and the dredging operations proposed by Lieut. West were undertaken not only to prevent this growth but to keep a passage open sufficiently deep to allow of the passage of

Mar. Cir. 583/83 Lodged.

No 686 of 1884.

MASTER ATTENDANT, MADRAS. 29 JAN 84 G.S.

1884.

Public Works Department.

No 190

Forwarded to the Master Attendant for Information.

28/1/84 Chief Secy

CORRESPONDENCE No. 50

No. 152 b.

Dated 21st January 1884

Despatched

Received

SUBJECT.

Forwarding Report on the old and new Harbour at Mangalore

No: 183 Executive Engineer's Office
Coimbatore 21st January 1884

From

The Executive Engineer
Coimbatore Division

To,

The Superintending Engineer
4th Circle.

Sir,

In continuation of this office letter No: 12 of 7th January 1884 forwarding South Canara Sub Divisional Officer's letter No: 779 of 20th December 1883 regarding the Mangalore Harbour, I have now the honor to submit a further report after personal inspection on the 20th instant of the Harbour in company with Captain Hicks the Port officer.

2. I arrived at Mangalore on the 20th January (Sunday) and landed by way of the new or Southern

Should not this be forwarded to Marine Deptt for remarks. 2
CJ
18-1-84.

From
The Supg. Engineer
4th Circle.

Dated 15th
Received 3 } January 1884.

No. 20
W.

Enclosures 3

Old and New Harbour mouths Mangalore—
Forwards Executive Engineer's report regarding the present condition of the— and suggests fixing the New Entrance

I have the honor to be
Sir
Your Most Obt. Servt.
R. Beatty Col. R.E.
Supg Engr 4th Circle

Encls
21st January 84

No 152 C

Forwarded to the
Marine Department, for
remarks, with
advertence to G.O.
No: 2658 W dated 21st
Septr 1883

Sec'y to Govt. of India

mouth called the Ullal) to about 300 feet wide and 22 feet deep.

3. The first question that needs settlement appears to be whether nature is to be left to its own unaided efforts in closing the old mouth.

It is evident that while the two mouths remain open the state of the boat harbour in the backwater must be bad, and that it is desirable the northern mouth should be closed as soon as possible with a view to the establishment and improvement of the Southern mouth.

If the attempt is to be made to close the old mouth a large supply of gunnies will be needed, and by throwing in sand bags at the centre of the narrowest part and gradually by reducing the section from the bottom upwards, it may be possible to effect the closure this year; unless it is doubtful if nature unaided would do.

4. The other matter that should be decided soon is where the Southern mouth is to be fixed. If left to itself it must, under the influence of the littoral current, travel Northwards.

The Executive Engineer has suggested waiting until its centre has moved nearly opposite the Kalsumtia channel, and possibly the Marine Department may be disposed to accept this.

5. I understand that the new Ullal mouth is eventually to be fixed, i.e. prevented travelling further north, by means of a strong stone revetment at the Northern side of the opening, similar to the one at Tegapatam; and materials for that revetment should be prepared beforehand, as their collection and transport to site will be necessarily a very considerable time.

SUPD. ENGINEER'S OFFICE 4TH CIRCLE,

Pudupadi 15th January 1884.

No. 20
W.

From,

The Superintending Engineer,

Fourth Circle.

To,

The Chief Engineer
P.W. Department

Sir,

I have the honor to forward herewith the report of the Sub Divisional officer on the present state of the harbour mouths at Mangalore, and the remarks of the Executive Engineer thereon.

2. Mr. Davidson has very fully stated how matters now stand, and the latest decisions come to. The old northern mouth of 1882, which was about 300 feet wide and 30 feet deep in 1882, has now been reduced owing to the Settravali having in 1883 opened itself a new Southern mouth

× Executive Engineer's letter No. 12 of 8th January 1884 accompanied by a report of tracing.

From
The Executive Engineer
Coimbatore Dn

12 C.J.

CHIEF ENGINEER'S OFFICE
RECEIVED
9 JAN 84
P.W.D.
FOURTH CIRCLE

No. 12
Dated 8th January 84

Enclosures 2.

Old and new harbour mouth Mangalore

Forwards copy of Lt. West's report and Tracing and suggests with regard to framing the Ward

made to fix it and (2) if such an attempt is to be made what is the most suitable position for the mouth.

(c) I would suggest that the mouth be fixed with its centre opposite the Kalasanka Mullah.

I have the honor to be
Sir
Your most obedient Servant
R Gordon
Executive Engineer

to reach the Custom House.

(d) The advantages to be gained would probably not be worth the expenditure, at any rate it is a question for the Master Attendant's Department to decide as I presume they would have to provide the funds.

Southern mouth (Ullal)

(3) (a) Little can I think be done artificially to improve this mouth and the most economical Course would be to leave nature to complete her work next monsoon, allowing boats during the present dry season to find out their way in and out of the harbour as they best can.

(b) This mouth will of Course begin to work northwards, and the important questions to be decided are.

(1) whether any attempt is to be made

(c) The silting of the beachvale between the mouths need not therefore be considered at any moment.

Recommendations

As regards Lieut: West's recommendations I am of opinion.

(1) that the closing of the old mouth is of very little importance, it will I think narrow considerably during the dry season and the question of closing it might then be considered, the closing of it would not however, I think prevent in any way the shoaling of the beachvale north of the Southern mouth.

(2) (a). Dredging the passage (k), this, as I understand Lieut: West is to be undertaken chiefly for the benefit of the larger craft such as pattimar, to enable these boats

to

not as deep as the old mouth used to be and consequently craft drawing any great depth of water can not get in at it; this inconvenience was to be expected but it is one which time will cure and after another a few soon I am of opinion that this Southern mouth will be navigable by all craft usually entering the Mangalore Harbour

Baikwale (3)

(a) this has silted up between the two mouths and boats find it difficult now to get to the bunder.

(b) This action is a natural consequence of the two rivers discharging each at its own mouth, and considering the limited discharge of the Gurpur as compared with the Netravati I do not think even if the Gurpur mouth be entirely closed, that the silting action

North

mouth of the Southern mouth would be appreciably diminished.

(c) As the old (Gurpur) mouth narrows and silts, all craft will have to enter by the Southern (Old) mouth and anchor opposite the Sall Colairs that is they will not be able to reach the Custom House.

(d) This would appear to be objectionable and it was to prevent such a contingency, that the attempt was made in 1882 to cut the Sandspit further north and more nearly opposite to the Custom House; during the visit however of the Chief Engineer and Master Attendant to Mangalore in February 1883, the Port officer explained that the inability of the pattimar Vce to reach the Custom House was of no importance.

(e)

No. 12 Executive Engineer's Office
Coimbatore 8th January 1884

From

The Executive Engineer
Coimbatore Division

To,

The Superintending Engineer
4th Circle

Sir,

I have the honor to forward the report and plan submitted by Lieut. West

Enclosures
1 Copy of report
1 Tracing

2. It would appear from the report that.

Old mouth (1) the old mouth (Gurpur gap) is steadily closing up and during the dry season it will probably narrow rapidly till it is some 60 ft wide, at which width judging from old plans it will remain stationary.

New mouth (2) this has established itself, but is necessarily at present

m. 6

In a letter from the Executive Engineer Coimbatore Div. No. 12 dated 8th January 1884

12 C. I. 61

Copy of report by Lieut. West on old and new Harbour mouth Mangalore

bent anticipating that it will close of itself, the Port officer was warned all large crafts to get out of the harbour, as soon as possible. There is now a sensible current from the Gurpur river, going down to the new mouth which may improve the passage at K, if it continues.

(Signed) W. C. S. West
Assistant Engineer
21-12-83.

(True Copy)

J Davidson

Executive Engineer

Coimbatore
8th January 1884

The delay in the submission of this report is due, to not being able to take soundings earlier in November during Low tides, and as my time was fully devoted in making over charge of the Sub Division, I could not go into the subject

I have &c.
(Signed) W. C. S. West Lieut
Sub Div officer D P W.

N.B. Since the above was penned a report was made that the old mouth was very bad, I was therefore induced to inspect it with the Port officer this morning, and found 9 ft depth of water at low tide, between the points of entrance, which has been reduced to about 170 ft, but the current out was very strong. It is difficult to say whether this will close now, or not

but

I am afraid this will cause the closing of the passage k if steps are not taken to keep it open by dredging; at present there is a pretty good draft through this passage. If this closes, all water communication from New or Ulal mouth to the Sea Custom House and public offices will be cut off; and if, as is possible, the old mouth gets very shoal, all craft will have to use the new mouth and anchor at Ulal or close by the southern sand-spit at L L L of the new mouth, where there is deep water

Backwater The shoals in the backwater between old and new mouths are in about the same position as in 1882, but the backwater is gradually silting up especially in the triangle formed by B. M. 6 - Lall Colours and Malasanka channel.

Recommendation. From what I have seen of the harbour, I would recommend that steps be taken to close the old mouth so as to cause a draft into the new mouth, via the small passage k connecting the new mouth and bunder, and that this passage be dredged and kept at least 6ft below spring low tide for 100 ft. I don't think any good can be done to the small passage between g. h, to northern entrance f of new bar or between island and the northern sandspit. We shall have very soon stormy northerly winds which will act upon this passage and probably the island and northern spit may be connected.

The

g in the basin, almost connecting the bar, and the waterway between it and the northern sandspit at h is too narrow to admit of any but cargo boats. The southern passage e though not so deep is good, but not fit for large draft; in consequence large pattimars or those from the mouth use the old bar at high tide. Even should pattimars get in safely by the new mouth, there is another obstacle in not being able to get into the backwater, to the Custom house; this is caused through the very small passage k between the northern spit and the Salt Cotaurs which is very shallow. I noticed a few Cargo boats and pattimars aground at this place at low tide. The whole breadth of the river from B.M. e to b to Salt Cotaurs has shoaled up considerably, and

mouth, but there is only passage now over bar. this is holed by a red line arrowed; it has however shoaled since soundings were taken. The larger pattimars use the old bar at high tide when coming in as the new mouth is not so convenient; one of the pattimars using the old mouth ran aground on the bar a few days ago. I am afraid the old bar will get worse and will not be fit for large craft in a couple of months.

New mouth The new mouth is broad, and sufficiently deep; and there is very good reason to believe that it will improve; but on the other hand there are faults which I think ought to be remidied. There are two good passages on bar e, b; but the northern passage f with the greater depth of water is dangerous to pattimars; as there is an island

which the sea throws in on the southern side of the old mouth. This width however may not keep stationary very long; as, when the rivers get low, it may get narrower and it is possible when the entrance at k (at new mouth) into the back water from the new mouth at Ullal closes which is going on rapidly - etcet;) the old mouth will get a little narrower and shallower, but I dont think it will close of itself. The tidal current is still pretty good at the old mouth and may help the heaping up of the sand at the mouth, in the basin; and close it if the passage k at the new mouth keepsopen. The extension which has been going on this season from the Southern Sand spit into old mouth was anticipated in 1882, when the experiment was made to close it

but through the great amount of rubbish (decayed leaves sticks &c) collected at that time along sea shore, at this place he bulwark ened the action of the sea and the extension did not take place; but as in the season there was very little of this rubbish the sand spit has extended nearly 780 ft. on both sides inwards. The old mouth as well as the bar and basin between bar and mouth are getting shallower as the recession goes on but in the back water at old mouth, the depths are about the same as before. The bar has changed considerably even after the survey was taken on the 16th and 17th of November last. It is rapidly working inwards and at present the island at c and northern spit at B.M. II are connected by a formidable shoal, there was a passage here before the 16th of last month

No 779. South Canara Sub Dn Office
Mangalore 20th Decr/83.

From.

The Assistant Engineer
South Canara Sub Dn

To.

The Executive Engineer
Combaconum Division

Sir,

With reference to your endorse-
Enclosures. ment No. 1656 dated 28th Ultimo on
Supg. Engineers No. 762/C.J dated 24th
idem I have the honor to submit
the following report on the Manga-
lore Harbour with a tracing of the
old and new mouths.

old mouth. The old mouth has
been considerably reduced since
August last; it is now about
220 ft in width but appears to
be stationary at present; this is
apparently due, to flood tide cut-
ting away the sand bank at a
which