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Public Works Dept

GoNo. 1432 Pwd. Press

Dated 26-5- 1887

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26th May 1887, No. 1432 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads
Civil Works.

Read—the following papers:—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 23rd March 1886, No. 100 E.W.

With reference to paragraph 2 of your memorandum No. 4880, of 5th ultimo, I have the honor to report on the present condition of the Mangalore Harbour, and the best means of improving it.

2. The new Gurupura mouth (at E, see plan), which opened in August last, closed in February; the old Gurupura mouth (marked M on the plan), and the Ullal mouth (marked L), which was formed by a high flood in the Netrávati in 1884, remaining open.

3. What happened in August, viz., the formation of a new mouth at E, seems to me to show conclusively the fallacy of supposing that all would be well if the Gurupura mouth closed. If the old Gurupura mouth closes this dry weather, as is not improbable, one or other of two things will happen next south-west monsoon. If the monsoon is a heavy one, probably both the Gurupura mouths at M and E will reopen; or if it is a light one, the Gurupura mouths may remain closed, the whole of the waters of both rivers escaping to the sea at the Ullal mouth. In that case the Ullal mouth would travel rapidly northwards until it reached the position of the old Gurupura mouth at M.

4. After consulting with the Executive Engineer and the Master Attendant, I am of opinion that the best way of permanently improving the harbour would be by means of a modification of General Sankey's suggestion to cut off all connection between the two rivers. Instead of one bund it would be best to make two, strongly revetted against the scour of the freshes, one at A B, the other at E F, with locks in each of them capable of passing the largest patamars.

5. Then with a deep channel cleared from C to D, and an anchorage formed at D H I K, patamars, boats, steam launches, &c., could enter either the northern or southern mouths, as found most convenient; pass into the enclosure A B E F, by the locks; and take up a position in the anchorage D H I K, after unloading at any of the landing places or alongside the wharf wall.

6. These improvements which commend themselves strongly to both the Port officer and the Collector, as interfering to the least possible extent with the present arrangements of public and private offices, stores, &c., could, it is believed, be carried out at a comparatively small cost,* and I request instructions to have detailed plans and estimates prepared.

7. The object of the bunds A B and E F would be, first, to exclude the river water in floods from, and at all times maintain water at high water level within the enclosure A B E F; and, secondly, to direct the freshes on two fixed mouths, thus gradually improving the bars to the greatest extent possible.

8. The mouth of the Netrávati river is now in the most convenient position and should be fixed at once by revetting the northern face of the opening with the largest stone procurable.

9. The sand spit, between B and E, should be strengthened by planting up with rabbit wort, screw pine, and prickly-pear, if the latter can be got to grow there; but not with casuarinas or other tall trees as they would exclude the view of the shipping from the Custom-house.

---

* See the Executive Engineer's approximate estimate.

10. If it should be found that keeping the locks C and G open for two or three hours about the time of each high tide is not sufficient to make good the loss by evaporation within the enclosure, then sluices may be built in the bunds B G and E G for admitting an additional supply.

11. I think it not improbable that the Gurupura river alone could not maintain its mouth in the dry season, and that it would therefore be closed by a bar like the Cooum and other rivers on the East Coast; in which case the river water would help to maintain the level required in the enclosure A B E F, and the lock at G might be kept open during the dry season, the river being shut out by means of the extra gates as soon as freshes begin to come down in May or June.

12. Another advantage of the scheme now proposed would be that the improvements could be carried out piece-meal as funds are available—

First, the northern face of the Ullal mouth at B should be revetted;
Secondly, build the lock C, and the bund A B;
Thirdly, clear the Custom-house channel C D;

the works at Sultan's battery being carried out afterwards when the success of the others had been ascertained.

13. I send, herewith, a report just received from Colonel Ross-Thompson to the same effect as I have written above, and accompanied by an approximate estimate.

From J. H. TAYLOR, Esq., Lieutenant, R.N.R., Port Officer, Madras, to the Chief Engineer, Public Works Department, dated Madras, 26th August 1886, No. 8306.

I have the honor to return the papers * and plan relating to the Mangalore improvements sent to me for remarks, and to explain that I have detained them, what seems an unreasonable time, for the purpose of gaining such additional information on the subject as the present freshes were likely to afford. The plan, as might be expected, develops the care and interest taken by Colonel Ross-Thompson, and seems to provide a very complete solution of the Mangalore difficulties, if only the intractable nature of these streams and the shifting propensities of the sea sand could be kept out of sight. Already, however, the northern mouth F has closed up, and thereby deprives the plan of one of its distinctive features, besides pointing out the unreliable nature of any artificial treatment of the mouths of these rivers. I cannot believe that any attempt to provide a harbour of the contemplated pattern would succeed, while the expense would be enormous. I would therefore respectfully draw the attention of Government to some of the features of the trade of the port which demand consideration, before any decision can be arrived at.

* Endorsement No. 1251 C., dated 26th March 1886.

2. It will be seen by the accompanying synopsis of the trade that the greater portion is conducted in the roads, and therefore great care will be required that injury will not be inflicted on the greater half, while endeavouring to assist the smaller portion. I have no doubt in my own mind that, if the dykes stood firm, the effect would be to push the bar further out, when the old action of the sand would be resumed, and it would be only a question of time when the two mouths joined again. The passage to the steamers and vessels outside would be rendered more difficult, owing to the greater distance to be travelled by boats, and during the period in which the two rivers kept distinct, much less water would be found on either bar. Then the almost certain demolition of the north dykes during some great fresh in the river, or attacks from the sea is to be calculated upon; such a result would be simply disastrous to the port. Water never pardons mistakes, as His Excellency the Governor remarks in his exhaustive minute on this Presidency; and fixing the mouths of large Indian rivers is an achievement never yet carried out, the proverbial uncertainty of building on sand being another disqualifying feature. Whenever an unusual flow or ebb, from either of the causes mentioned, occurred, the difficulty of

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shooting the mouth of the projected canal would be great, while the reach itself would be too exposed for native vessels to lie at anchor in.

3. There are several quiet places, not far from Mangalore, where vessels can lay up in the stormy seasons, if they are shut out from this particular one, while the influence on the trade does not seem to be injured as things are at present, the last season having been a very good one. As regards the protection to the outer sand banks offered by planting, the old plans of 1858, 1871, both show that it was to a considerable extent wooded, but no favorable result therefrom is shown now. Nature, when her forces are in action, easily defeats all our artificial arrangements.

4. But even if the ultimate prospect of success was far brighter than it really is, the question of funds places the scheme in a hopeless position from the experience of the Cocanada groynes; the estimate would require to be doubled for "sinkage," destruction of portions of the work in bad weather, &c. The north dyke could not possibly be constructed in one season, so that the river and the sea would both have opportunities of injuring it alternately, and after all the estimate does not provide for the very great cost of the canal, the locks and the dock, which latter would certainly be breached by the sea in any storm or heavy monsoon. Dredging is a costly, slow and dubious method of conducting such operations, as witness the work in Colombo Harbour. The Government would, I imagine, decline any pecuniary assistance to such a work, and the Port fund would not be justified in advancing any amount, where the return by interest and sinking fund would be hopeless. The dues under Act III of 1885 would cripple the trade of the port, if levied on all goods landed and shipped, and the benefit be only enjoyed by a small section of the trade. A work on this scale has never been proposed before. Mr. Robertson suggests (as a palliative to such evils as were represented to him) stopping the Gurupura mouth, but nature has openly declared her intention in the last two years of effecting openings whenever and wherever she thinks fit, and after much money and skill had been expended, it would probably be found that she had refused to fall into our plans, and defeated them. I beg respectfully to observe that I cannot consider that Mangalore has such claims as a port as would justify the contemplated work. Mr. Robertson speaks of it as the future terminus of a railway from Bangalore tapping all Mysore, but this has been supplanted by other operations.

Endorsement on the above.

No. 3637 C.

Before taking any action on the Superintending Engineer's proposals for the improvement of the Mangalore Harbour, the Chief Engineer desires to be furnished with a report on the effect of the past monsoon on the harbour.

(Signed) J. O. HASTED, Col., R.E.,
Chief Engineer, P.W.D.

18th October 1886.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 30th March 1887, No. 161 E.W.

With reference to your endorsement No. 3637 C., of 18th October 1886, I have now the honor to furnish you with a copy of the chart of the Mangalore Harbour, prepared by the Port officer from soundings taken in November and December 1886. From this, as compared with the chart of the previous * season, it appears that the harbour was improved by the floods of 1886.

* Submitted with this office letter, No. 26 E.W., of 29th January 1886.

2. There is more water at the Ullal mouth which has not altered its position; the old Gurupura mouth was closing, and will probably close this dry season; and there was a greater depth for boats in the backwater.

3. I anticipate that if the Gurupura mouth gets strongly closed this dry weather, the Ullal mouth will begin to move rapidly northwards. It will then be for the Marine Department to decide whether an attempt should be made to fix it, and if so in what position.

4. I send, herewith, copy of the letter of the Executive Engineer, No. 26 C., of 12th instant, making some remarks on the present state of the harbour. I think he is wrong in supposing that the old Gurupura mouth is not likely to close; for the action of closing appears to me to be now going on, and that before the next freshes we may have a report that the old Gurupura mouth has quite closed.

Enclosure.

From H. S. TAYLOR, Esq., Executive Engineer, West Coast Division, to the Superintending Engineer, IV Circle, dated Chetwye, 12th March 1887, No. 26 C.

I have the honor to forward, herewith, the chart of the Mangalore Harbour, drawn from soundings by the Port officer taken in December 1886 and January 1887.

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3. By comparison of the two charts the effects of the last monsoon have been as follows.

4. Commencing from the north end—the northern Gurupura mouth has been entirely shoaled up.

5. The southern* Gurupura mouth is deepening, but not widening; the gap itself keeps pretty much the same with an opening of about 200 feet wide and a deep channel on the inside. Outside the gap has deepened, as last year there was a shoal averaging 3 feet deep while now the shallowest water here is 6 feet. There must be a strong current running back and out at this gap.

6. On the inside here a shoal is marked as being dry at low water and close to it the soundings show 22 or 23 feet of water, so that this shoal is not likely to be permanent.

7. The diagonal of soundings from the Salt Cotaurs shows deepening.

8. The southern or Netrávati mouth has deepened considerably. There is now a deep channel near the right, or southern spit where there was shoal water last year. Round the left or northern spit there is now from 5 to 11 feet depth of water where there was only $1\frac{1}{2}$ and 2 feet last year.

9. Altogether this mouth appears to have been considerably improved by the last monsoon.

10. The inside of the harbour has also been improved; for it will be seen that with the exception of shoal water at the first diagonal of soundings, there is now sufficient depth of water to enable vessels of considerable draught to come into anchor opposite the Custom-house. A channel could be dredged to, say, 6 feet below low water level through this shoal at no great expense, and staked out, and as the results of the monsoon show no tendency to shoaling up inside the harbour, the channel could be maintained with but slight attention.

11. The datum of soundings is 9·27 below $\frac{\text{G.T.S.}}{\text{B.M.}}$ on the top door step of the Marine office, and is mean low water level of ordinary spring tides.

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(True Extract.)

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To the Superintending Engineer, IV Circle.
" Marine Department.

Exd. P. L. Pereira.
Spare Copies

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BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1887) Madras.

PUBLIC WORKS.

Dated May, 26th.

Recd. *Encl.*

G.O., 26th May 1887, No. 1432 W.

MAY.

with original

Mangalore Harbour

Orders on reports from the Superintending Engineer, IV Circle, and the Port Officer, Madras, on the present condition of the — and the best means of improving it.

PUBLIC WORKS SECRETARIAT MADRAS

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PUBLIC WORKS DEPARTMENT.

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Exd. P. L. Pereira.
Spare Copies

6 / 1432

BUILDINGS AND ROADS.
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Govt. of (1887) Madras.

PUBLIC WORKS.

Dated May, 26th.

Recd. *Encl.*

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MAY.

Mangalore Harbour

Orders on reports from the Superintending Engineer, IV Circle, and the Port Officer, Madras, on the present condition of the — and the best means of improving it.

Executive Engineer's
West Coast
Camp Palghat 12th March 8

From
The Executive Engineer
West Coast Divi

To
The Superintending Engine
IV Circle.

Sir,

I have the honor to subm a rough scheme for the improvement of the Mangalore Harbo

2. It appears to me that no goo can ever come of any attempt to for the Nautravatty and Gurpore Riv to flow into the sea through one a the same mouth a opening in the sand spit opposite the tow of Mangalore. The history of al attempts in this direction is simply a record of failures.

3. I would therefore propose to construct two bunds with a lock in each across the backwate on the general line or direction of the north bank of the Nautravatty, and the South bank of the Gurp

Rivers respectively. It would thus be compelled to flow out to sea in directions in harmony with their natural currents and alignments. They would keep their own mouths open and though it is possible, if not probable, that the Gurpur river mouth would close during the dry season I think it may be regarded as certain that the Naitravatty river mouth would always keep open and a practicable bar be maintained.

4. The advantage of this scheme would be that the back water between the two bunds would be always maintained at high tide level and the native craft would be able to approach the present bunder, sea Customs House and merchants' yards and premises.

5. I would propose a channel being dredged or dug along the line of bunder between the present custom house and the lock in the south or Naitravatty bund and the sand spit between the back water and the sea being planted with Rabbit wort and screwpine or anything else that would grow on it and which would not intercept a view of the shipping.

I have the honor to be
Sir
Your most obdt. Servt.
R W Thompson. Col. R.E.
Executive Engineer

B. The Channel proposed in para 5 above, is marked in thick dotted line along the "Bunder", between the Customs House and the Lock in the Naitravatty Bund near the Salt Golaws.

H

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W.R.
OURTH CIRC

From
The Executive Engineer
West Coast Divn.

To
The Superintending Engr.
4th Circle

[illegible]

Dated 12th } March 1886.
Received 22nd }

No. 1/p

Enclosures. ~~One~~ Two

[illegible]

Mangalore Harbour –
Submits a rough
Scheme for the improve-
ment of —

Ro[illegible]ate of a Sche[illegible] for
impro[illegible]g the harbour of Mangalore

[illegible] 11

Description of work	Amount
Southern or Netrava[illegible] bund see plan	30,000
Revetment to south face of bund	30,000
Lock at the point [illegible] Netravati bund	20,000
Northern or Gurpur bund see plan	20,000
Revetment to north face of bund	20,000
Lock at the point [illegible] in Gurpur bund	20,000
Plantations on sand spit see plan C, D, E.	10,000
Total of the Scheme Rupees	1,50,000

Rw Thompson
Col. R.E.
Executive Engineer
Camp Palghat
1[illegible].3.86

No 177
22 MAR

m:1

Mangalore Harbour -

Rough Estimate of a scheme for improv the —

Superintend'g Engineer's Office, 4th Circle.
Coimbatore, 23rd March 1886. 13

No 100
Irr.

p 1

10/1472

From

The Superintending Engineer,
Fourth Circle.

To

The Chief Engineer,
P. W. Department.

Sir,

Enclosures.
1 Cy letter from Ex. Engr. S.C.
Do.
2 Plans
1 Approximate Estimate.

With reference to para 2 of your Memo No 4880 of 5th ultimo, I have the honor to report on the present condition of the Mangalore harbour, and the best means of improving it.

2. The new Gurpur mouth (at E, see Plan), which opened in August last, closed in February; the old Gurpur mouth (marked M on the plan), and the Ullal mouth (marked L) which was formed by a high flood in the Netravati in 1884, remaining open.

3. What happened in August, viz,

the formation of a new mouth at E, seems to me to shew conclusively the fallacy of supposing that all would be well if the Gurpur mouth closed. If the old Gurpur mouth closes this dry weather, as is not improbable, one or other of two things will happen next south west monsoon. If the monsoon is a heavy one, probably both the Gurpur mouths at M & E will reopen; or if it is a light one, the Gurpur mouths may remain closed, the whole of the waters of both rivers escaping to the sea at the Ullal mouth! In that case the Ullal mouth would travel rapidly northwards until it reached the position of the old Gurpur mouth at M.

4. After consulting with the Executive Engineer and the Master Attendant, I am of opinion that the best way of permanently improving the harbour would be by means of a modification of General Sankey's suggestion to cut off all connection between the

two

two rivers. Instead of one bund it would be best to make two, strongly revetted against the scour of the freshes – one at AB the other at EF – with locks in each of them, capable of passing the largest patamars.

5. Then with a deep channel cleared from C to D, and an anchorage formed at DHIK, patamars, boats, steam launches &c. could enter either the northern or southern mouths, as found most convenient; pass into the enclosure ABEF, by the locks; and take up a position in the anchorage DHIK, after unloading at any of the landing places or alongside the warf wall.

6. These improvements which commend themselves strongly to both the Port Officer and the Collector, as interfering to the least possible extent with the present arrangements of public and private Offices, Stores, &c., could, it is believed, be carried out, at a comparatively small cost, and I request instructions

[illegible]

to have detailed plans and estimates prepared.

7. The object of the bunds AB and EF would be, first, to exclude the river water in floods from, and at all times maintain water at high water level within the enclosure ABEF; and, secondly, to direct the freshes on two fixed mouths, thus gradually improving the bars to the greatest extent possible.

8. The mouth of the Netravati River is now in the most convenient position and should be fixed at once, by revetting the northern face of the opening with the largest stone procurable.

9. The sand spit, between B and E, should be strengthened by planting up with rabbit wort, screw pine, and prickly pear, if the latter can be got to grow there; but not with casuarinas or other tall trees as they would exclude the view of the shipping from the Custom house.

10. If it should be found that keeping the locks C and G open for two or

three

three hours about the time of each high tide is not sufficient to make good the loss by evaporation within the enclosure; then sluices may be built in the bunds B.C and E.G for admitting an additional supply.

11. I think it not improbable that the Gurpur river alone could not maintain its mouth in the dry season, and that it would therefore be closed by a bar like the Cooum and other rivers on the east coast; in which case the river water would help to maintain the level required in the enclosure ABEF and the lock at G might be kept open during the dry season; the river being shut out by means of the extra gates as soon as freshes began to come down in May or June.

12. Another advantage of the scheme now proposed would be that the improvements could be carried out piece-meal as funds are available.

First the northern face of the Ullal

mouth

month at B should be receded.

Secondly, build the lock C and the bund A.B

Thirdly, clear the Custom House Channel C.D

The works at Sultan's Battery being carried out afterwards when the success of the others had been ascertained.

13. I send herewith a report just received from Colonel Ross Thompson to the same effect as I have written above, and accompanied by an approximate estimate.

I have the honor to be,
Sir,
Your most Obedient Servant

T. Beatty Col: R.E.,
Supg. Engineer, 4th Circle.

26 MAR 86

Despd
26th March/86

No. 1251 C

Forwarded to the Master Attendant, in continuation of this Office No. 488 C dated 5th February 1886 for favor of remarks

26.3.86
Col R.E.
Chief Engineer
– PWD

26/3/86

From

The Supdg. Engineer,
Fourth Circle.

To

The Chief Engineer,
P.W. Department.

Dated 23d }
Recd 24th } March 1886.

No. 100
PW
Enclos: 4

Mangalore Harbour:-
Reports on the present condition of the, and best means of improving it.

Forwarded

Administrative Department

Madras
Port Office
No. 306 28th August 1886

From

The Port Officer,
Madras.

To

The Chief Engineer,
Public Works Department.

Sir,

I have the honor to return the papers* and plan relating to the Mangalore improvements sent to me for remarks and to explain that I have detained them what seems an unreasonable time for the purpose of gaining such additional information on the subject as the present freshes were likely to afford. The plan, as might be expected, developes the care and interest taken by Colonel Ross Thompson, and seems to provide a very complete solution of the Mangalore difficulties, if only the intractable nature of these streams and the shifting propensities of the sea sand could be kept out of sight. Already, however, the Northern mouth E has closed up, and thereby deprives the plan of one of its dis-

* Endorsement No. 1251 C dated March 26th 1886

-tinctive features, besides pointing out the unreliable nature of any artificial treatment of the mouths of these rivers. I cannot believe that any attempt to provide a harbour of the contemplated pattern would succeed, while the expense would be enormous. I would therefore respectfully draw the attention of Government to some of the features of the trade of the port which demand consideration, before any decision can be arrived at.

2 It will be seen by the accompanying synopsis of the trade that the greater portion is conducted in the roads, and therefore great care will be required that injury will not be inflicted on the greater half, while endeavouring to assist the smaller portion. I have no doubt in my own mind that, if the dykes stood firm, the effect would be to push the bar further out, when the old action of the sand would be resumed, and it would be only a question of time when the two mouths joined again. The passage to the steamers and vessels outside would be rendered more difficult, owing to the greater distance to be travelled by boats, and

and during the period in which the two rivers kept distinctly much less water would be found on either bar. Then the almost certain demolition of the North dykes during some great fresh in the river, or attacks from the sea is to be calculated upon: such a result would be simply disastrous to the port. Water never pardons mistakes, as His Excellency the Governor remarks in his exhaustive minute on this Presidency; and fixing the mouths of large Indian rivers is an achievement never yet carried out, the proverbial uncertainty of building on sand being another disqualifying feature. Whenever, an unusual flood or ebb, from either of the rivers mentioned, occurred, the difficulty of shooting the mouth of the projected canal would be great, while the reach itself would be too exposed for native vessels to lie at anchor in.

3. There are several quiet places, not far from Mangalore, where vessels can lay up in the stormy seasons, if they are shut out from this particular one, While the influence on the trade does not seem to be injured as things are at present, the last season having

been a very good one. As regards the protection to the outer sand banks offered by planting, the old plans of 1858 & 1871, both show that it was to a considerable extent wooded, but no favourable result therefrom is shown now; Nature, when her forces are in action, easily defeats all our artificial arrangements.

But even if the ultimate prospect of success was far brighter than it really is, the question of funds places the scheme in a hopeless position from the experience of the Cocanada groynes; the estimate would require to be doubled for "sinkage", destruction of portions of the work in bad weather, &c. &c. The North dyke could not possibly be constructed in one season, so that the river and the sea would both have opportunities of injuring it alternately, and after all the estimate does not provide for the very great cost of the Canal, the Locks and the Dock, which latter would certainly be breached by the sea in any storm or heavy monsoon. Dredging is a costly, slow and dubious method of conducting such operations, as witness the

work

work in Colombo Harbour. The Government would I imagine, decline any pecuniary assistance to such a work, and the Port Fund would not be justified in advancing any amount where the return by interest and sinking fund would be hopeless. The dues under Act III of 1885 would cripple the trade of the port, if levied on all goods landed and shipped, and the benefit be only enjoyed by a small section of the trade. A work on this scale has never been proposed before. Mr Robertson suggests (as a palliative to such evils as were represented to him) stopping the Goorpoor mouth, but nature has openly declared her intention in the last two years of effecting openings whenever and wherever she thinks fit, and after much money and skill had been expended, it would probably be found that she had refused to fall into our plans, and defeated them. I beg respectfully to observe that I cannot consider that Mangalore has such claims as a Port as would justify the contemplated work. Mr Robertson speaks of it as the future terminus of a railway from Bangalore tapping all Mysore, but this has been supplanted by other operations.

I have the honor to be,
Sir,
Your most obedient servt
J H Taylor
Port Officer.

JHM

No 1251C. 12. 3. 86
" 482C. 5. 2. 86
" 484C. 10. 3. 85
G. No 2666W. 9. 11. 85
No 1687C. 23. 10. 85
" 1699C. 26. 10. 85
" 1457C 9. 9. 85
" 2098C. 17. 12. 84
G.O. 2366W. 24. 9. 84
" 1081W. 8. 5. 84
" 2658W. 21. 9. 83
" 241W. 20. 1. 83
" 2718W. 18. 10. 82
" 2257W. 2. 9. 82
" 1226W. 15. 5. 82
B. No 2719W. 2. 11. 81 Engg
G.O. 1845W. 3. 7. 83
" 501W. 24. 2. 81

p 8

C. 2352 - & C. 6685

Memo

Before taking any action on the Supg Engr's proposals for the improvement of the Mangalore Harbour, the Chief Engr desires to be furnished with a report on the effect of the last monsoon on the Harbour.

16/10/86
H.E. W.C.
The Port Officer, [illegible]
for information

19/10/86

From

The Port Officer
Madras

To

The Chief Engineer
P. W. Department
Madras

No 8306

Dated 26 } August, 1886
Recd 30 }

Vide G.O. No 448C 5-2-86

Submitting remarks with reference to the proposed improvements to Mangalore Harbour

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No. 26C

Executive Engineers' Office,
West Coast Division,
Camp Chetwye 12th March /87

18/1432

From

H. S. Taylor Esq,
Ex. Engineer
West Coast Division

To

The Supg Engineer,
Fourth Circle.

Sir,

Enclosures 2.
2 Charts.

I have the honor to forward herewith the Chart of the Mangalore Harbour, drawn from soundings by the Port Officer taken in December 1886, and January 1887.

2. Last year's Chart is also enclosed for reference.

3. By comparison of the two charts the effects of the last Monsoon have been as follows.

4. Commencing from the

north end. The northern Gurpur mouth has been entirely shoaled up.

5. The Southern× Gurpur mouth is deepening but not widening; the gap itself keeps pretty much the same with an opening of about 200 feet wide and a deep channel on the inside. Outside the gap has deepened, as last year there was a shoal averaging 3 feet deep while now the shallowest water here is 6 feet. There must be a strong current running back and out at this gap.

× usually called the Old Gurpur mouth
J. R.

6. On the inside here a shoal is marked as being dry at low water and close to it the soundings show 22 or 23 feet of water, so that this shoal is not likely to be permanent.

7. The diagonal of soundings from the salt Cotaurs shows deepening.

8. The

8. The southern or Ketravatti mouth has deepened considerably. There is now a deep channel near the right or southern spit where there was shoal water last year. Round the left or northern spit there is now from 5 to 11 feet depth of water where there was only 1½ and 2 feet last year.

9. Altogether this mouth appears to have been considerably improved by the last monsoon.

10. The inside of the harbour has also been improved; for it will be seen that with the exception of shoal water at the first diagonal of soundings, there is now sufficient depth of water to enable vessels of considerable draught to come into anchor opposite the custom House. A channel could be dredged to, say 6 feet below low water level through

this shoal at no great expense, and staked out, and, as the results of the monsoon show no tendency to shoaling up inside the harbour, the channel could be maintained with but slight attention.

11. The datum of soundings is 9.27 below G.T.S. B.M. on the top door step of the marine office, and is mean low water level of ordinary spring tides.

I have, &c.,
(signed) H. S. Taylor
Ex. Engineer.

[True copy]

J. Beatty - Col. R.E.,
Supg. Engineer, 4th Circle.

Superintending Engineer's Office 4th Circle.
Coimbatore 30th March 1887.

No. 161/E.W.

FROM,
COLONEL J. BEATTY R. E.,
SUPERINTENDING ENGINEER,
FOURTH CIRCLE.

TO,
The Chief Engineer,
P. W. Department.

SIR,

Enclo
1 chart
1 copy of letter

With reference to your endorsement No. 3637C of 18th October 1886, I have now the honor to furnish you with a copy of the Chart of the Mangalore Harbour, prepared by the Port Officer from soundings taken in November and December 1886. From this, as compared with the chart of the previous× season, it appears that the harbour was improved by the floods of 1886.

× submitted with this office letter No. 26 I.W. of 29th January/86

2. There is more water at the Ullal mouth which has

not altered its position; the old Gurpur mouth was closing, and will probably close this dry season; and there was a greater depth for boats in the backwater.

3. I anticipate that if the Gurpur mouth gets strongly closed this dry weather, the Ullal mouth will begin to move rapidly northwards. It will then be for the Marine Department to decide whether an attempt should be made to fix it, and if so in what position.

4. I send herewith copy of the letter of the Executive Engineer No. 26c of 12th instant making some remarks on the present state of the harbours. I think he is wrong in supposing that the old Gurpur mouth is not likely to close; for the action of closing appears to me to be now going on, and that before the next freshes we may have a report that the old Gurpur mouth has quite closed.

21/1.72

I have the honor to be,
Sir,
Your most obedt. servt.

L. Beatty. Col: R.E.
Supg. Engineer, 4th Circle

P.W.P. 2605

(38)

FROM

COLONEL J. BEATTY R. E.,
SUPERINTENDING ENGINEER,
FOURTH CIRCLE.

Dated. } 30th March 1887.
Recd : }

No. 161/EW

ENCLO: 2

No 1437 C of 1-9-85
" 1677 C " 26-10-85
" 1687 C " 23-10-85
" 2651 W " 7-12-85
" 477 C " 5-2-86
" 1251 C " 26-3-86
" 2637 C " 18-10-86

Mangalore Harbour

Forwarding a Chart of the ~~[illegible]~~ from which it appears that the harbour was improved by the floods of 1886.

22/1492

C 2604

20-5-87

37

Mangalore Harbour

As the greater portion of the trade is carried on from vessels in the roads; it would not be advisable to spend much money on "improvements" to the harbour, unless these "improvements" would admit of the trade in the roads, being transferred to the inside of the harbour – From the proposals submitted it would appear that even if successful, they would only benefit the smaller native craft which as matters stand can now enter the harbour and lie opposite the Custom house; if a channel be dredged as proposed by Mr Taylor in his No 26 C of 12 March 1887 to the S.E. IV. It would I think be advisable to carry out this work; the position of the channel being clearly marked out –

If it is found that the Ullal mouth moves northward; the question of endeavouring to fix it can again considered; but I think it is not quite clear

No 1037 C.A./1-7-85
" 1677 C - 26-10-85
" 1887 C - 23-10-85
" 2651 W - 7-11-85
" 400 C - 5-2-86
" 1251 C - 26-3-86
" 2827 C - 12-10-86

Put up 9-4-87
Resubmitted [illegible] 18

(38)

23/1892

35-131
39

~~that~~ this movement would be of any great disadvantage to the port so long as the deep water entrance is clearly marked from time to time.

WCB
7.4.87

There are key notes of [illegible] in Bengalee. I think it has been decided to do nothing at present. [illegible] to await orders on the notes.

[illegible]
12/4/87

Await receipt of orders in the Marine Depart on last recent note of instruction of lightships & coast points

WCB
15 4 87

Ch
13.4.87

No 1457 C of 1-7-85
" 1677 C " 26-10-85
" 1687 C " 23-10-85
" 2651 C " 7-12-85
" 407 C " 5-2-86
" 1251 C " 26-3-86
" 3637 C " 18-10-86

124/1432

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the S. E. IV Circle H. S. No 100 Irr. d 23. 3. 86.
" " Port Officer " " 8306 d 26. 8. 86.
Endorsement hereon No 3637 C d 18. 10. 86.
From the S. E. IV Circle H. S. No 161 Irr. d 30. 3. 87.

With advertence to the Port Officer's remarks on Mangalore, recorded in G.O. dated 14th April 1887, No 160, no action will be taken for the present on the proposals contained in this correspondence. Meanwhile the papers will be communicated to the Marine Dept.

2. The Supdg. Engineer IV Circle, will report annually on the state of the harbour.

Joll 20/5/87

S. E. IV Circle
Marine Dept.

25.5.87

II

plans 6
others 3
9

Note – The two plans connec
with C No. 2352 together wit
the estimate and letter
from the P.W.C. D
sent to Mr. W. Col
with Chief office lette
No. D of 18

9/132
Loc 6733 | 8

25/1432

43

40/

File No. 3

15-5-15 B.II

29/6/14

26-11-18 II

Govt. of [1887] Madras.

PUBLIC WORKS.

27/1/[illegible]

Dated

Encl.

G.O. 26 May 1887. No 1439

Mangalore Harbor

Orders on reports from the S.E. IV Circle & the Port Officer, Madras, on the present condition of the [illegible] & the best means of improving

60/5