

Gobt. of 1888 Madras.  
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Issued

Recd. 20-8-88 Encl.

G.O., 27th July 1888, No. 359.

JULY.

Negapatam Port.

Recording reports of the Port Officer, Madras, and Chief Engineer, Public Works Department, regarding the construction of a single southern breakwater at Negapatam for the improvement of the port.

with order

B 1655 Wd/25 August 1888

Communicated to  
the Suby Engineer VI  
Circle in continuation  
of G.O. no 937 Wd/21 March 88  
of G.O. 937 Wd/21 March 88

Dec 22/5/88

J. 23/8

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Let Circle ✓ 29/8  
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27TH JULY 1888, No. 359, MARINE.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

READ—the following paper :—

No. 399-D.

NOTE.

In paragraph 3 of G.O., No. 72, Marine, dated 6th March 1888, Mr. Marshall's suggestion for the construction of a single southern breakwater at Negapatam was referred to Captain Street and the Chief Engineer, Public Works Department, for consideration and joint report.

2. On my late visit to Madras, I had an opportunity of discussing the subject with Captain Street, who has lately visited Negapatam, and, at my request, he has drawn up the accompanying memorandum.

3. With all that Captain Street has said in paragraphs 2 to 4 I entirely agree; it is impossible to foresee what effect a single groyne run out from the shore would have, and it is quite possible the result might be the destruction of the jetty wall.

4. As regards paragraph 5, I am not aware that the nose of the sand spit has of late been eroded; if there is any tendency in that direction, it may be desirable to protect it with piling, otherwise I do not see much advantage in revetting it.

5. I agree with Captain Street that it is impossible to use the small dredger in deepening the bar, and I see no prospect of our ever being able to increase the depth of water on the bar, except at an expenditure which would be quite prohibitive.

6. With his views on Mr. Cockburn's proposal I also agree, and would await the communication expected from the Colombo firm.

OOTACAMUND,  
12th July 1888.

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

ENCLOSURES.

Memorandum.

I visited Negapatam on the 22nd April last, and inspected the entrance to the river.

2. The recommendation to run out a groyne from the southern bank of the river's mouth, as contained in paragraph 6 of letter, No. 10934, dated 30th November 1887, from the Acting Port Officer at Madras to the Chief Secretary to Government, would not be attended with any good results, in my opinion, as the probability is that the same action would take place in respect to the accumulation of sand on the south side of the groyne, and cutting away of the coast to the north, as has happened at Madras. The erosion on the north side of the river's mouth, which might be expected to take place, would probably seriously affect the foundations of the jetty wall, widen the mouth of the river, and expose it more than it is at present to the north-east winds and sea.

3. The depth of water over the bar might possibly be improved by running out a groyne; but I question whether it would be to an extent sufficient to justify the expense attending the same, as the groyne to be of any use would probably have to be carried out beyond the present surf line into 12 feet of water.

4. Mr. Manson's proposal to construct two groynes (*vide* his letter, No. 2964,\* dated 7th October 1887, to the Port Officer, Madras,) is

\* Recorded in G.O., Marine, No. 72, of 6th March 1888.

not one which commends itself to me, as, besides being very expensive, it would probably have the effect of driving the bar further out, as at Cocanada.

5. The Port Officer at Negapatam recommends that "instead of constructing a groyne, the southern sandy point should be permanently fixed by having it revetted with double rows of strong piles," as, in his opinion, "this would prevent the mouth of the river widening out unnecessarily during the rainy season, or contracting so much as to render the channel almost unmanageable during the dry. Any accumulation of sand outside of the piles could be dredged away from time to time." I am rather inclined to advocate this idea, as it struck me that it might possibly have the effect anticipated.

6. The only way of maintaining deep water over a bar is, apparently, by dredging, but at Negapatam and other ports on the coast, dredging operations in the vicinity of a bar could only be carried on when there is little or no surf, and as this is rarely the case, there could be no continuous work. It could not possibly be undertaken by the small dredger now at Negapatam, as the slightest bump on the bar would knock a hole in her bottom, and probably cause her to break up. The dredging work which has lately been carried on in the vicinity of the jetty and boat basin at Negapatam has, up to this, had no effect on the bar, and the Port Officer in his last report to me on the subject mentions that the bar is moving further to the north every day. The effect on the bar of the dredging in the river may be felt perhaps during the rainy season.

7. Mr. Cockburn, the Superintendent of Dredging Operations, has submitted to me a proposal, a copy of which I append, to have the dredging operations of the coast ports carried out by one dredger constructed on the lines of a seaworthy ship, so that she could steam from port to port as required, with three or four steam hopper barges to accompany her to dispose of the spoil. I cannot say that I am inclined to support Mr. Cockburn's proposal, as the expense attending the construction of dredger and punts would be great, and, besides, Government would be entirely dependent on one dredger, which might come to grief at any moment. I have reason to believe, however, that there is a firm at Colombo which contemplates taking up dredging operations on the lines, more or less, of Mr. Cockburn's proposal, and this firm, I have been informed, intend addressing Government on the subject. Should they do so, it might be worth while to entertain their proposal.

MADRAS,  
9th July 1888.

(Signed) H. A. STREET, Capt., H. M.'s I.M.,  
Port Officer.

*Mr. Cockburn's Proposal.*

In view to the increasing demand for dredging machinery at the coast ports, Tuticorin, Mangalore, Cuddalore, Masulipatam and Pamban, I would point out that the present system of supplying each port with its own dredging plant is extremely costly, quite unnecessary, and eminently unsatisfactory in results. The ports are furnished with dredgers capable of raising 500 to 800 tons a day, and only a fraction of this power utilized, either for want of punts or want of work; supplying sufficient punts to enable the dredgers to work to their full power is a very heavy item in addition to the first cost of the dredgers. After the material is raised, it is only got rid of at a still greater cost on account of cooly labor for emptying the punts and carrying the mud away; each dredger requires its establishment of superintendent, crew, lascars, &c., and each port has risk of breakdown, and its dredging plant and staff doing nothing for months.

2. In place of this, I would recommend obtaining one dredger for the whole Presidency—it would not be very large—with propelling machinery, the vessel constructed on the lines of a seaworthy ship, so that she could steam from port to port as required, and three or four steam hopper barges to accompany her to dispose of the spoil. During the north-east monsoon, she would work at the ports on the West coast, and during the south west monsoon on the East coast and clear Pamban out in passing. Taking Negapatam as an example: say, the dredger visited that port now, she would cut a good channel through the bar in a week, then remain for any time that could be afforded—three weeks or more—and improve the interior of the basin, then steam to the next port. The channel through the bar would remain open until the change of the monsoon, when it periodically moves during bad weather to the north of its present position, when it would again require the dredger for a week or ten days. All the other ports are more or less the same, except that the bars do not shift so much as at Negapatam. Probably, each port would require the dredger once a year, a few of them twice or even three times; but this appears to me to be a cheaper, quicker, and more effective way of dealing with the bars of these small ports than groins, locks, piers and other schemes, which cost great sums of money and hardly maintain the desired conditions of the port after all, or furnishing some ports with separate dredging machinery, punts and establishments that are never half utilized, and leaving other ports without any means of facilitating navigation over their bars.

3. If this suggestion meets your views, I should be glad to submit a full report on the matter and statistics comparing the cost of the different methods of dealing with the subject, and specifying the machinery suited for the work; but it would be necessary for me to visit all the ports first to enable me to estimate the quantity of material to be dealt with and to arrange machinery that will suit the combined requirements of all. If this system were adopted, more dredgers at Cocanada would not be wanted.

No. 400 D.

Transferred to the Marine Department, with reference to G.O., No. 72, Marine,  
dated 6th March 1888.

OOTACAMUND,  
12th July 1888.

(Signed) J. O. HASTED, Col., R.E.,  
Secretary to Government, P.W.D.

To the Chief Secretary to Government, Marine Department.

ORDER—dated 27th July 1888, No. 359, Marine.

Recorded.

(True Extract.)

J. F. PRICE,  
Ag. Chief Secretary.

To the Presidency Port Officer.  
" the Public Works Department.  
" Messrs. Adamson Macartagart and Co.  
" the Collector of Tanjore.  
" the Chairman, Municipal Council, Negapatam,  
through the Local and Municipal Department.

Exd. A. Raitt.

Gobt. of (1888) Madras.

MARINE.

*Order thereon No 2655*

*1/25 Aug 1888*

*Communicated*

*to the Superintending Engineer*

*in Circle in continuation*

*of G.O. No 9374 dated*

*2nd March 1888.*

*of J.O.H.*

Issued

Recd.

Encl.

G.O., 27th July 1888, No. 359.

JULY.

### Negapatam Port.

Recording reports of the Port Officer, Madras, and Chief Engineer, Public Works Department, regarding the construction of a single southern breakwater at Negapatam for the improvement of the port.

*to the Circle*

27TH JULY 1888, No. 359, MARINE.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

READ—the following paper :—

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NOTE.

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2. On my late visit to Madras, I had an opportunity of discussing the subject with Captain Street, who has lately visited Negapatam, and, at my request, he has drawn up the accompanying memorandum.

3. With all that Captain Street has said in paragraphs 2 to 4 I entirely agree; it is impossible to foresee what effect a single groyne run out from the shore would have, and it is quite possible the result might be the destruction of the jetty wall.

4. As regards paragraph 5, I am not aware that the nose of the sand spit has of late been eroded; if there is any tendency in that direction, it may be desirable to protect it with piling, otherwise I do not see much advantage in revetting it.

5. I agree with Captain Street that it is impossible to use the small dredger in deepening the bar, and I see no prospect of our ever being able to increase the depth of water on the bar, except at an expenditure which would be quite prohibitive.

6. With his views on Mr. Cockburn's proposal I also agree, and would await the communication expected from the Colombo firm.

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Memorandum.

I visited Negapatam on the 22nd April last, and inspected the entrance to the river.

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ORDER—dated 27th July 1888, No. 359, Marine.

Recorded.

(True Extract.)

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through the Local and Municipal Department.

Exd. A. Raitt.

Govt. of 1888 Madras.

MARINE.

Order theore. No 2655 W.D.

18 August 1888

Communicated

to the Superintending Engineer

III Circle in continuation

of G.O. No 937 W.D. dated

20th March 1888.

S.O. 2.04.

Issued

Recd.

Encl.

G.O., 27th July 1888, No. 359.

JULY.

### Negapatam Port.

Recording reports of the Port Officer, Madras, and Chief Engineer, Public Works Department, regarding the construction of a single southern breakwater at Negapatam for the improvement of the port.

S. & VI Circle

27th JULY 1888, No. 359, MARINE.

GOVERNMENT OF MADRAS.

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\* Recorded in G.O., Marine, No. 72, of 6th March 1888.

5. The Port Officer at Negapatam recommends that "instead of constructing a groyne, the southern sandy point should be permanently fixed by having it revetted with double rows of strong piles," as, in his opinion, "this would prevent the mouth of the river widening out unnecessarily during the rainy season, or contracting so much as to render the channel almost unmanageable during the dry. Any accumulation of sand outside of the piles could be dredged away from time to time." I am rather inclined to advocate this idea, as it struck me that it might possibly have the effect anticipated.

6. The only way of maintaining deep water over a bar is, apparently, by dredging, but at Negapatam and other ports on the coast, dredging operations in the vicinity of a bar could only be carried on when there is little or no surf, and as this is rarely the case, there could be no continuous work. It could not possibly be undertaken by the small dredger now at Negapatam, as the slightest bump on the bar would knock a hole in her bottom, and probably cause her to break up. The dredging work which has lately been carried on in the vicinity of the jetty and boat basin at Negapatam has, up to this, had no effect on the bar, and the Port Officer in his last report to me on the subject mentions that the bar is moving further to the north every day. The effect on the bar of the dredging in the river may be felt perhaps during the rainy season.

7. Mr. Cockburn, the Superintendent of Dredging Operations, has submitted to me a proposal, a copy of which I append, to have the dredging operations of the coast ports carried out by one dredger constructed on the lines of a seaworthy ship, so that she could steam from port to port as required, with three or four steam hopper barges to accompany her to dispose of the spoil.

I cannot say that I am inclined to support Mr. Cockburn's proposal, as the expense attending the construction of dredger and punts would be great, and, besides, Government would be entirely dependent on one dredger, which might come to grief at any moment. I have reason to believe, however, that there is a firm at Colombo which contemplates taking up dredging operations on the lines, more or less, of Mr. Cockburn's proposal, and this firm, I have been informed, intend addressing Government on the subject. Should they do so, it might be worth while to entertain their proposal.

MADRAS,  
9th July 1888.

(Signed) H. A. STREET, Capt., H. M.'s I.M.,  
Port Officer.

*Mr. Cockburn's Proposal.*

In view to the increasing demand for dredging machinery at the coast ports, Tuticorin, Mangalore, Cuddalore, Masulipatam and Pamban, I would point out that the present system of supplying each port with its own dredging plant is extremely costly, quite unnecessary, and eminently unsatisfactory in results. The ports are furnished with dredgers capable of raising 500 to 800 tons a day, and only a fraction of this power utilized, either for want of punts or want of work; supplying sufficient punts to enable the dredgers to work to their full power is a very heavy item in addition to the first cost of the dredgers. After the material is raised, it is only got rid of at a still greater cost on account of cooly labor for emptying the punts and carrying the mud away; each dredger requires its establishment of superintendent, crew, lascars, &c., and each port has risk of breakdown, and its dredging plant and staff doing nothing for months.

2. In place of this, I would recommend obtaining one dredger for the whole Presidency—it would not be very large—with propelling machinery, the vessel constructed on the lines of a seaworthy ship, so that she could steam from port to port as required, and three or four steam hopper barges to accompany her to dispose of the spoil. During the north-east monsoon, she would work at the ports on the West coast, and during the south west monsoon on the East coast and clear Pamban out in passing. Taking Negapatam as an example: say, the dredger visited that port now, she would cut a good channel through the bar in a week, then remain for any time that could be afforded—three weeks or more—and improve the interior of the basin, then steam to the next port. The channel through the bar would remain open until the change of the monsoon, when it periodically moves during bad weather to the north of its present position, when it would again require the dredger for a week or ten days. All the other ports are more or less the same, except that the bars do not shift so much as at Negapatam. Probably, each port would require the dredger once a year, a few of them twice or even three times; but this appears to me to be a cheaper, quicker, and more effective way of dealing with the bars of these small ports than groins, locks, piers and other schemes, which cost great sums of money and hardly maintain the desired conditions of the port after all, or furnishing some ports with separate dredging machinery, punts and establishments that are never half utilized, and leaving other ports without any means of facilitating navigation over their bars.

3. If this suggestion meets your views, I should be glad to submit a full report on the matter and statistics comparing the cost of the different methods of dealing with the subject, and specifying the machinery suited for the work; but it would be necessary for me to visit all the ports first to enable me to estimate the quantity of material to be dealt with and to arrange machinery that will suit the combined requirements of all. If this system were adopted, more dredgers at Cocanada would not be wanted.

No. 400 D.

Transferred to the Marine Department, with reference to G.O., No. 72, Marine,  
dated 6th March 1888.

OOTACAMUND,  
12th July 1888.

(Signed) J. O. HASTED, Col., R.E.,  
Secretary to Government, P.W.D.

To the Chief Secretary to Government, Marine Department.

ORDER—dated 27th July 1888, No. 359, Marine.

Recorded.  
(True Extract.)

*W. B. Boulton*  
for Ag. Chief Secretary.

To the Presidency Port Officer.  
" the Public Works Department.  
" Messrs. Adamson MacTaggart and Co.  
" the Collector of Tanjore.  
" the Chairman, Municipal Council, Negapatam,  
through the Local and Municipal Department.

Exd. A. Raitt.

# Megapalam Port

No. 399-400 D d/12. 7. 86  
 937 Hr. 21. 3. 86  
 1126 C. 16. 3. 88  
 93 Hr. 11. 1. 88  
 821 Hr. 12. 3. 88  
 454 2C. 20. 12. 86  
 2172 Hr. 27. 8. 86  
 Marine 454 10. 10. 87  
 2449 Hr. 12. 9. 87  
 2354 Hr. 2. 9. 87  
 4563 C. 9. 12. 87  
 810 Hr. 15. 5. 87  
 44 Hr. 7. 1. 87  
 83 C. 11. 1. 87  
 1356 Hr. 30. 5. 81  
 1695 Hr. 8. 7. 81  
 85 Hr. 11. 1. 82  
 1439 Hr. 9. 6. 84  
 1612 Hr. 14. 6. 86  
 2449 Hr. 12. 9. 87  
 2816 Hr. 21. 10. 87  
 534 D. 6. 9. 87  
 Marine 359 27. 7. 88

\* went to Madras on the  
 22/8/88 with Pr. order