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 (3) Initials of the Referencer larp ✓

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P. W. DEPARTMENT

G.O. No.	2426 W	Press.
B.P. No.		Mis.
Dated	3. 10. 1881	197.

Not to be folded or roughly handled

28

2426
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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

3rd October 1881, No. 2426 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 5. From F. N. THOROWGOOD, Esq., M. Inst., C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 21st September 1881, No. 46 W.

I have the honor to submit a further report in continuation of my letter No. 38 W., of August 25th, with reference to the difficulties met with in fixing the screw moorings.

2. I enclose a skeleton drawing showing the general features of the process of fixing the screws, which will make the matter more clear.

3. The two steamers, *Hobart* and *Salisbury*, are firmly connected together by teak timbers, as shown on the section, and from the starboard side of the *Hobart* there projects the collar or socket which serves as a guide to the screwing tube. The tube is of wrought iron, in pieces 18 feet long, which are firmly bolted together and accurately fitted. The screw-mooring is so attached to the tube that one cannot revolve without the other, yet the tube can be lifted vertically from the screw at pleasure. The mooring chain passes up through the tube and is held fast at the top by means of a pin. The tube and screw are made to revolve by means of a capstan, as shown in the drawing, the bars of which are of good English ash, seven inches square in section. The capstan is turned by a continuous rope, which is wound up on a bollard driven by a steam-engine on the *Salisbury* steamer, and when the screw has been twisted down to the required depth the tube is drawn up, leaving the chain free. These are the general features of the gearing, which is similar to what is frequently used elsewhere for the same purpose, but is entirely different from what I have seen used for the moorings on the River Tyne and Tynemouth Harbour.

4. It is intended, and we have always attempted, to screw the moorings down 20 feet below the surface of the sand. Therefore in water 27 feet deep it must be remembered that the distance from the screw to the capstan is 56 feet, allowing the tube to project 9 feet out of water. The two steamers then are able to act with great violence on a hollow iron tube 56 feet long and 10½ inches in diameter, when any swell moves them backwards and forwards.

5. As a matter of fact the bottom length of tube has twice been bent already, and once the bolts, by which one 18 feet length is connected to the other, have been sheared clean off. It was on account of this that I urgently recommended the procuring of two extra lengths from England.

6. The chain which passes up through the tube is so nearly the same size as the tube itself, that with the smallest irregularity on the inner surface the chain gets jammed. I find, however, that every case of jamming has occurred at either A or B, on the drawing, near the mouth of the tubes. To remedy this I have had the inner

surface chipped to give more clearance, but it would have been better if the tubes had either been made quarter of an inch larger, or else bored out inside. The jamming of the chain was so serious on one occasion that I was compelled to cut it in two. I can see no remedy for this difficulty, except by taking every possible precaution to avoid the least slackness in the chain. In the drawing I have shown 36 feet as the length of the pipe, but we are now working with 54 feet.

7. Another difficulty we meet with is in the capstan bars. The sea bottom is so terribly hard about 12 feet below the surface that we cannot get the gear to stand the heavy strain brought on it by the winding engine, and the ash capstan bars are breaking in a most troublesome way. I have asked Mr. Parkes to permit me to stop short of the proposed 20 feet of depth where the soil is so extremely hard, and at the same time I propose to make a slight alteration in the arrangement of the bars. I have also been looking out for some hard wood at the Gun Carriage Factory, and I am inclined to believe that Peddowk might be substituted for ash with advantage.

8. A constant and never ending source of delays and difficulty is the absence of *perfectly* smooth water, such as generally obtains in docks and rivers, for which this gear is well suited. But to diminish this nothing but a narrower entrance to the harbour will suffice. A very small amount of sway fore and aft is enough to upset, in a measure, the whole work of screwing.

No. 6. ORDER THEREON, 3rd October 1881, No. 2426 W.

Recorded.

(True Extract.)

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

To the Superintendent, Madras Harbour Works.
„ Marine Department.

Exd. S. T. Austin.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of (1881) Madras.
PUBLIC WORKS.

To

THE SUPERINTENDENT, MADRAS
HARBOUR WORKS,

&c., &c., &c.

Dated October, 3rd.

Issued

Recd.

Encl.

G. O., 3rd October 1881, No. 2426 W.

OCTOBER.

Nos. 5-6.

Madras Harbour Moorings.—Letter from
the Superintendent forwarding plan showing
the system adopted with respect to the
recorded.

No. 46 W

FROM

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS,

TO

Colonel R. H. Sankey C.B. & C.
Secretary to Government P.W.D.
Fort Saint George
MADRAS, 1st September 1881.

Sir, I have the honor to submit a
further report in continuation of my
letter No. 35 W of August 25th with
reference to the difficulties met with in
fixing the screw moorings.

2. I enclose a skeleton drawing
showing the general features of the
process of fixing the screws, which will
make the matter more clear.

3. The two strainers "Hobart" and
"Salisbury" are firmly connected together
by oak timbers as shown on the
section, and from the starboard
side.

side of the "Hobart" there projects
the collar or socket which serves as
a guide to the screwing tube. The
tube is of wrought iron, in pieces 18
feet long, which are firmly bolted
together and accurately fitted -
The screw-mooring is so attached
to the tube that one cannot revolve
without the other, yet the tube can
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at pleasure. The mooring chain
passes up through the tube and is
held fast at the top by means of
a pin. The tube and screw are
made to revolve by means of a
capstan, as shown in the drawing.

the

the bars of which are of good English
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The capstan is turned by a continuous
rope which is wound up on a bollard
driven by a steam engine on the
"Salisbury" steamer, and when the
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the required depth the tube is drawn
up, leaving the chain free. These
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for the same purpose, but is entirely
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used for the moorings on the River
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83 ²⁰²⁶/₅
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I urgently recommended the procuring
of two extra lengths from England.

b. The chain which passes up
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size as the tube itself that with the
smallest irregularity on the inner
surface the chain gets jammed.
I find, however, that every case
of jamming has occurred at
either A or B on the drawing, near
the mouth of the tubes. To remedy
this

This I have had the inner surface chipped
to give more clearance, but it would
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either been made $\frac{1}{4}$ inch larger,
or also bored out inside. The jamming
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to cut it in two. I can see no
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with 54 feet.

Another difficulty we
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meet with is in the capstan bars. The
sea bottom is so terribly hard about
12 feet below the surface that
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the winding engine, and the ash
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most troublesome way. I have asked
Mr. Parkes to permit me to stop
short of the proposed 20 feet of
depth where the soil is so extremely
hard, and at the same time I
propose to make a slight alteration
in the arrangement of the bars.
I have also been looking out for
some hard wood at the Fur
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be substituted for ash with advantage.

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absence of perfectly smooth water, such
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nothing but a narrower entrance
to the Harbour will suffice. A
very small amount of sway fore
and aft is enough to upset, in a
measure, the whole work of screwing.

I have the honor to be,
Sir,

Your most Obedt Servt

J. H. Horwood, M. A. & C.
Superintendent
M. H. Lamb.

G.O. No 2077 W, dt 20.8.87
D. No 2181 W, dt 3.9.87.

From. P. H. C. No 5245-9
The Superintendent
Madras Harbour Works

No. 46 W
Dated 21st September 1887

No of Enclosures one
& technical
section

WS

Madras Harbour Moorings
Forwards Plan showing
process of— and explains
system adopted in—

Ad. 31.9.87. H. 29.9.87.
Cm: 20.9.87. H. 29.9.87.

O. 23.9.87 H. 29.9.87.

Cin A

No. 2426 W PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the 3rd Octr 1887

Read the following:—

From,

The Superintendent } (H.E. No. 4649
Madras Harbour Works } 21st Sept/87)

MA

Recorded.

Att
26/9/87

S. M. H. Works. ✓
Marine Dept. ✓

R. S.

Desd
17/10/87.

5459

Gobt. of (1881) Madras.
PUBLIC WORKS.

To

Dated

Issued

Recd.

Encl.

G. O. 3 Oct. 1881, No. 2476 W

Nos. 5-6

Madras Harbour Improvements
Letter from the Supdt forming
plan showing ~~forward~~
the system adopted in respect
to the ~~same~~, regarded.

Encl. in Receipts Book.