Archives I—10,006—16-8-77.

(1) Number of pages 42
(2) Date of repair 27-1-87
(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Public Works DEPARTMENT

G.O. No. 1591-W Press.
B.P. No. Mis.

Dated 24-6-1881 ~~197~~.

Link

Not to be folded or roughly handled

1591—W
1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

24th June 1881, No. 1,591 W.

Buildings and Roads.
Civil Works.

Read again :—

No. 84-A. Proceedings of the Madras Government in the Public Works Department, dated 21st February 1881, No. 468 W.

From JULAND DANVERS, Esq., Secretary, Public Works Department, India Office, to the Secretary to Government, Public Works Department, Madras, dated London, 21st January 1881.

Herewith is forwarded for information copy of a communication with enclosure which has been addressed to this office by Colonel F. Beaumont, R.E., in respect to a system of blasting rocks in deep water in aid of dredging operations.

2. Further inquiries regarding the details and cost of the system can be made, should the matter be deemed of sufficient importance by the Government of Madras.

From Colonel F. BEAUMONT, R.E., to the Director-General of Stores, India Office, dated Westminster, 30th December 1880.

Pámban Channel.

I have the honor to enclose copy of a letter which I have received from Messrs. Simons, the makers of the dredger which is deepening the Pámban channel.

I have been informed by them that the dredger is now undergoing repairs necessitating a stoppage of the work in consequence of the abnormal strain put upon the machinery by rocks lying in the bed of the channel.

The case is similar to that of the Tees and again in the Clyde. In the former river the dredgers had no difficulty in lifting the rock after it had been blasted with dynamite by my system, some 1,200 to 1,500 tons per day having been removed by the dredger.

In the Clyde I am about commencing a similar operation.

My machinery and system enables the rocks to be efficiently bored and blasted in deep water without the use of divers, thus not only enabling work to be done which could not be effected by the dredger alone, but as apparently appears in the case of the Pámban channel it would permit of the dredger doing an increased amount of work with a great saving of wear and tear and that at a comparatively small cost.

My object in writing is respectfully to draw your attention to the above facts, and to say that, should you think the matter worthy of further consideration, I should be happy to furnish an estimate for the necessary plant.

From W. SIMONS and Co., to Colonel F. BEAUMONT, R.E., dated 23rd December 1880.

A few years ago we constructed for the Indian Government a first-class screw dredger named *Albuquerque.* We learn from the Dredge Master we sent out that she has been recently employed dredging (for eighteen months) the Pámban channel and that they meet projecting volcanic rock frequently against which the steel points or lips of the dredger buckets are severely torn and wrenched, and he remarks on the advantage to them it would be to have a proper staff of men for blasting such rocks when the dredger could easily raise the débris afterwards.

As you are blasting a rock here in the Clyde, we take the liberty of drawing your attention to the above in case the Indian Government might think proper to facilitate the dredging operations of the *Albuquerque* by adopting in connection therewith your blasting system.

ORDERED that the further information offered by Colonel Beaumont be asked for.

2. The foregoing papers will meanwhile be communicated to the Master Attendant.

(True Extract.)

(Signed) R. H. SANKEY, Col., R.E.,
Secretary to Govt., P.W.D.

From Colonel R. H. SANKEY, R.E., Secretary to Government, Public Works Department, Madras, to the Secretary, Public Works Department, India Office, dated Madras, 21st February 1881, No. 469 W.

WITH reference to your letter of the 21st January, I am directed to request that the further information offered by Colonel F. Beaumont, R.E., in respect to his system of blasting rocks in deep water, in aid of dredging operations, may be obtained and furnished to this Government.

No. 84-B. Proceedings of the Madras Government in the Public Works Department, dated 2nd June 1881, No. 1,381 W.

From JULAND DANVERS, Esq., Secretary, Public Works Department, India Office, to the Secretary to Government, Public Works Department, Madras, dated London, 5th May 1881, No. P.W. 261.

IN reply to your letter, No. 469 W., dated the 21st February last, herewith is forwarded a report and estimate by Colonel Beaumont, together with a sketch plan, explanatory of his system of removing rocks in deep water by means of blasting.

From Colonel F. BEAUMONT, R.E., to the Under Secretary of State for India, dated Westminster, 28th April 1881.

Sub-Aqueous Rock Boring Plant.

WITH reference to your letter of the 22nd March, I now have the honor to submit the following report and estimate, together with an explanatory sketch, showing my system of drill by which sub-aqueous boring and blasting can be carried on under water without the use of divers.

The system is in entirely successful operation on the Clyde for the removing of a large rock near Glasgow.

The machinery does not necessitate the use of any specially designed barge to carry it, and the drills are as efficacious in soft ground as in rock.

The arrangement is shortly as follows:—

A small engine which is capable of driving two drills, one on each side of the barge, is fixed centrally, the power being taken from it by means of a flexible shaft to the top of the boring bar, at the bottom of which is the diamond crown, whilst the other end supports a series of weights necessary to enable the diamond drill to cut the rock with sufficient rapidity, say from ½ inch to 2 inches per minute, depending on the hardness of the material.

Water is forced down the centre of the tube to wash up the débris and keep the diamonds cool.

The drill is supported and kept in position whilst working by means of a tube which is held vertical at the bottom of the river by a moveable support, and at the top by the adjustable sliding frame shown in the drawing.

The movement of the barge is so slight, if properly moored, as not to inconvenience the boring. If, however, from any cause, such as an unusually big swell or a large wave, a strain would appear likely to be thrown on the lining tube, the bolts as shown holding the frame can be slacked off and the barge is altogether free from the drill.

The dynamite is introduced through the lining tubes immediately on the withdrawal of the drill and fired after removal of the barge.

The number of holes fired at a time depends on the scale on which the operations are carried on and the number of drills employed. At the Tees as many as twenty-four were exploded at one time.

The effect of moderate charges of dynamite fired at the bottom of holes of suitable size and depth is to shatter the rock into pieces so small that the dredger can lift them without difficulty.

1591 W
2

If, however, owing to accidental beds or joints, a large piece is dislodged without being broken up, it is easy to put a hole into it and break it up with a separate charge.

The advantages which this system offers of enabling rocks under all circumstances to be blasted without the use of divers is very great, whether from the point of view of economy of time or money.

The apparatus can be simply worked, and the extended practice, both on the Tees for the Tees Commissioners, and, as before mentioned, on the Clyde, shows that no practical difficulties in its manipulation either from currents or the rise and fall of the tide, &c., need be anticipated.

I enclose an estimate of the cost of a complete set of tackle capable of boring two holes at the same time. Any number of sets could be supplied at similar prices.

P.S.—Skilled superintendence could, if required, be arranged for from this country.

Estimate for one Double Set of Boring Tackle as under.

Two flexible shafts with connections, &c., complete.

One double cylinder oscillating engine fitted with force pumps, stop valves, and all necessary for properly working the same.

Say 100 feet of boring bars, hollow steel.
,, 80 feet of lining tubes.

The necessary flexible bases.

Two drill heads with weights, water unions, and all gear necessary for working the same.

Two adjustable frames for steadying lining tubes at bottom of the river.

Two sets of wrought iron guides and segments for steadying lining tubes from barge.

Two sets of half ton western pulley blocks.

Two sets of one ton western pulley blocks.

The whole packed ready for delivery, *f.o.b.* trucks in makers' yard for £450.

This is exclusive of a boiler which we could quote for or not as required.

A 6 H. P. nominal is the proper size.

The cost of crowns is not included, as they form part of the working expenses.

The value of a crown suitably set with carbonate of good quality is about £28 depending on the amount of carbonate used.

In the first instance it would be well for each drill head to have, say three crowns.

I have reason to believe that boart, which can be used in place of carbonate, can be obtained in India. If not there is no difficulty in procuring from this country suitable carbonate in any quantities, at, say, *s.*25 to 30 per carat.

If purchases of carbonate were made in the open market, we should be willing to act as your agents on an ordinary business commission.

(Signed) BEAUMONT AND CO.

COMMUNICATED, and the enclosures forwarded to the Master Attendant, in continuation of G.O., No. 468 W., dated 21st February 1881, and with a request that he will submit any remarks he may desire to offer both on the previous and present papers.

(True Extract.)

(Signed) R. H. SANKEY, Col., R.E.,
Secretary to Govt., P.W.D.

Read also:—

No. 84-C. From J. H. TAYLOR, Esq., Lieutenant, R.N.R., Master Attendant, Madras, to the Secretary to Government, Public Works Department, dated Madras, 6th June 1881, No. 4,971.

I HAVE the honor to return the plan, sketch and estimate of Colonel Beaumont's method of blasting under water without divers, and to remark thereupon that valuable as this method seems to be when applied, as it has hitherto been, in rivers and quiet waters, it is in its present form entirely inapplicable for removing a rock like Santopilly in open ocean.

2. The description shows that smooth surface and level bottom are a necessity of success. Arrangements have to be made for disconnecting, whenever a wave such as is made by a passing steamer or other disturbing cause, approaches. Now the sea is never quiet even when exhibiting the smoothest apparent surface; a long swell obtains, which by its motion conveyed to the boat would entirely prevent any direct tooth wheel action; these swells, moreover, are at very short intervals, say ten seconds. This portion of the Bay of Bengal also is almost always visited by fresh breezes and quick seas; for instance during the finest month of the year the diver sent up to look for the wreck of the late barque *Lassa*, on this very rock, was unable to do any work on account of the sea.

3. The adjusting frame for steadying the tubes could never be expected to find a level base for operation. Then, even if some blasting was done, a dredge would still be required to work in the rough water and pick up the pieces under the same unfavorable condition of swell and movement; there would not be one week in the year in which the dredge could work. I am therefore compelled to pronounce the removal of Santopilly rock by this method impossible. These remarks refer to the sketch and plan; as regards the estimate it will be seen that it does not deal with the largest items of expense. The boat itself which in such a situation would require to be very large and provided with suitable accommodation, the cranes and the boilers. Each drill head to require three crowns at £28 each, and, though it is not stated what quantities of carbonate or boart is needed, yet the price *s*.30 per *carat* is suggestive. Then the cost and upkeep of a dredge has to be considered. It follows that the sum of £450 quoted as the estimate represents a very insignificant portion of the cost.

4. I may say, in conclusion, that the project of removing the Santopilly rocks by blasting is one that cannot be recommended on the grounds of necessity or as a benefit to navigation bearing any relation to the enormous expense which it would entail upon Government. It is only in the way of coasting vessels, and such vessels are always prepared to feel their way by sounding. It is true two vessels have been lost upon it both recently, the steam ship *Dacca* and the ship *Lassa*, but under circumstances exhibiting such a neglect of the most ordinary precautions of seamanship that they cannot be referred to as examples of the danger to navigation caused by the rock. The rock has never been properly surveyed, but it is supposed to be at least a quarter of a mile in length and considerable breadth, a most formidable undertaking to destroy. The removal of the Eddystone or the Bishop rocks would be nothing compared to it, yet the Trinity house prefers constructing most expensive lighthouses instead of attempting their destruction. The Whale rock and Gindurah rocks off Galle are pinnacles and should certainly be experimented upon first.

No. 84-D.

ORDER THEREON, 24th June 1881, No. 1,591 W.

THE Government accept the conclusions arrived at by the Master Attendant, which are entirely concurred in by the Chief Engineer.

2. These papers will be communicated to the Chief Engineer for Irrigation for circulation among Irrigation officers if he thinks it desirable.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Master Attendant, Madras
" Chief Engineer for Irrigation, with one enclosure.

Exd. E. C. Shunker.
SpareCopies

1591-W
3

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of 1881 Madras.

PUBLIC WORKS.

To

THE MASTER ATTENDANT,
MADRAS,
&c., &c., &c.

Dated June, 24th.

Issued

Recd. Encl.

G. O., 24th June 1881, No. 1,591 W.

JUNE.
Nos. 84-A—84-D.

Colonel Beaumont's system of blasting rocks in deep water.—Orders on papers relative to—

Y 1848. 2 rms.—11/80. 2609.

It is requested that any further communication on this subject may be addressed to
The Under Secretary of State for India,
India Office,
London,
S.W.

1591—W
LP

India Office, S.W.

London. 21st January 1881.

Public Works

Sir,

Herewith is forwarded for information copy of a communication, with enclosure which has been addressed to this Office by Col. F. Beaumont R.E., in respect to a system of blasting rocks in deep water in aid of dredging operations.

Further enquiries regarding the details and cost of the system can be made, should the matter be deemed of sufficient importance by the Government of Madras.

I have the honour to be,
Sir,
Your most obedient Servant.

Juland Danvers
Secretary,
Public Works Department.

The Secretary to Government,
in Public Works Department.
Madras.

J. W. C. No 885

M-1

Received 11 February 1881

1591-80
6

1 Victoria Street, Westminster
2nd December 1880

Sir,

Pamban Channel

I have the honour to enclose copy of a letter which I have received from Messrs. Simons, the Makers of the Dredger which is working the Pamban Channel.

I have been informed by them that the Dredger is now undergoing repairs necessitating a stoppage of the work in consequence of the enormous strain put upon the machinery by Rocks lying on the bed of the Channel.

The case is similar to that of the Tees, and again in the Clyde. In the former River the Dredgers had no difficulty in lifting the Rock after it had been blasted with Dynamite by my System, some 1400 to 1500 Tons per day having been removed by the Dredger.

In the Clyde I am about commencing a similar operation.

My Machinery and System enables the Rocks to be efficiently bored and blasted in deep water without the use of Divers, thus not only enabling work to be done which could not be effected by the Dredger alone, but as apparently happens in the case of the Pamban Channel, it would permit of the Dredger doing an increased amount of work, and a great saving of wear and tear, and that at comparatively small cost.

My object in writing is respectfully to draw your attention to the above facts and to say that should you think the matter worthy of further consideration I should be happy to furnish an estimate for the necessary plant.

I have &c
(Sd) Fredk. Beaumont

Director General of Stores
India Office.

5 SP 4

London Works, Renfrew
[illegible] Dec 1860

1591-W
7

Gentlemen,

About four years ago we constructed for the India Govt. a first Class Screw Dredger named [illegible]. We learn from the Dredge Master we sent out that she has been recently employed dredging (for 18 months) the Paumben Channel, and that they meet projecting hard rock frequently against which the steel points or lips of the dredger buckets are severely torn and wrenched. He remarks on the advantage to them it would be to have a proper staff of men for blasting such rocks when the Dredger could easily raise the stone afterwards.

As you are blasting a Rock here in the Clyde we take the liberty of drawing your attention to the above, as perhaps the India Govt. might think proper to facilitate the dredging operations of the [illegible] by adopting in connection therewith your blasting system.

We are &c
Wm Simons & Co

Col. [illegible] Esq

R/

No. 4688

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 21st Feby/81.

Read the following :—

1591 W / 8

From the Secy. P.W. Dept- India Office - H.S. No - of 21st Jany 1881.

Ordered that the further information offered by Col. Beaumont be asked for.

The foregoing papers will meanwhile be communicated to the Master Attendant.

H.S. No 4698 of 21st Feby/81

To The Master Attendant

Passed
21-2-81

To
The Secy. P.W. Dept
India Office

Sir
With reference to your letter of the 21st January, I am directed to request that

that the further information offered by Col. T. Beaumont R.E., in respect to his system of blasting rocks in deep water, in aid of dredging operations, may be obtained & furnished to this Govt.

S

CM

13/2

desp. 22/2

Br. 488-9W 3rd July/8

P.W.
I.P.
261/81.

P6

Y 1848. 2 rms.—14/80. I. 2609.

It is requested that any further communication on this subject may be addressed to
The Under Secretary of State for India,
India Office,
London,
S.W.

1591 W
9

India Office, S.W.

London 5th May 1881.

Public Works

B Encls.

Sir,

In reply to your Letter No. 469W, dated the 21st February last, herewith is forwarded a report and estimate by Colo. Beaumont together with a sketch plan explanatory of his system of removing rocks in deep water by means of blasting.

I have the honour to be,
Sir,
Your obedient Servant,

Juland Danvers

Secretary
Public Works Dept.

The Secretary
Public Works Dept.
Government of Madras.

1591-W
10

21-2-81 No. 4, 68 by W

P.W. C No. 3206

L-3 (1 plan)

Recd: 30 May '81

3 Victoria Street,
Westminster,
April 28th 1881

1391 W
11

Sir,

Sub Aqueous Rock
Boring Plant.

With reference to your letter of the 22nd March, I now have the honor to submit the following report and Estimate, together with an explanatory sketch shewing my system of Drill by which Sub aqueous Boring and Blasting can be carried on underwater without the use of Divers.

The system is in entirely successful operation on the Clyde for the removing of a large rock near Glasgow.

The Machinery does not necessitate the use of any specially designed barge to carry it, and the Drills are as efficacious in soft ground as in rock.

The arrangement is shortly as follows:-

A small engine which is capable of driving two Drills, one on each side of the barge, is fixed centrally, the power being taken from it by means of a flexible shaft to the top of the Boring Bar, at the bottom of

The
Under Secretary of State
for India
India Office
S.W.

of which is the diamond Crown, whilst the other end supports a series of weights necessary to enable the diamond drill to cut the rock with sufficient rapidity, say, from ½ in to 2 in. per minute, depending on the hardness of the material.

Water is forced down the centre of the tube to wash up the debris, and keep the diamonds cool.

The Drill is supported and kept in position whilst working by means of a tube which is held vertical at the bottom of the river by a moveable support, and at the top by the adjustable sliding frame shewn in the drawing.

The movement of the barge is so slight, if properly moored, as not to inconvenience the Boring. If, however, from any cause, such as an unusually big swell, or a large wave, a strain would appear likely to be thrown on the lining Tube, the bolts as shewn holding the frame can be slacked off. and the barge is altogether free from the Drill.

The Dynamite is introduced through the lining tubes immediately on the withdrawal of the Drill, and fired after removal of the barge.

The

The number of holes fired at a time depends on the scale on which the operations are carried on, and the number of Drills employed. At the Tees as many as 24 were exploded at one time.

The effect of moderate charges of Dynamite fired at the bottom of holes of suitable size and depth is to shatter the rock into pieces so small that the Dredger can lift them without difficulty. If, however, owing to accidental beds or joints, a large piece is dislodged without being broken up, it is easy to put a hole into it and break it up with a separate charge.

The advantages which this system offers of enabling rocks under all circumstances to be blasted without the use of Divers is very great, whether from the point of view of economy of time or money.

The apparatus can be simply worked, and the extended practice both on the Tees for the Tees Commissioners, and as before mentioned, on the Clyde shews that no practical difficulties in its manipulation either from currents or or the rise and fall of the tide &c need be anticipated.

I enclose an estimate of the cost of a complete set of tackle capable of boring two holes at the same time. Any number of sets could be supplied at similar prices.

I have &c

(sd) Fred. Beaumont

for Beaumont & Co

P.S. Skilled Superintendence could, if required, be arranged for from this country

The [illegible] Secy of the [illegible]

[illegible]

~~Pw 3306/81~~
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Pw 3593/81
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No 10

Estimate for One double set of Boring tackle as under.

1591 w
13

Two flexible Shafts with connections &c complete

One double Cylinder Oscillating Engine fitted with force pumps, stop valves, and all necessary for properly working the same.

Say 100 ft. of Boring Bars, hollow steel

" 80 ft. of Lining Tubes.

The necessary flexible hoses

Two Drill heads with weights, water Unions, and all Gear necessary for working the same.

Two adjustable frames for steadying Lining tubes at bottom of the river.

Two sets of Wrought iron guides and segments for steadying Lining tubes from barge.

Two sets of half ton Weston pulley blocks.

Two Sets of One Ton do do

The

The whole packed ready for delivery, f.o.b trucks in Makers Yard for Four hundred and fifty pounds ———— £450. 0. 0

This is exclusive of a Boiler which we could quote for or not as required.

A. 6 HP nominal is the proper size

The cost of Crowns is not included, as they form part of the working expenses.

The value of a Crown suitably set with Carbonate of good quality is about £28, depending on the amount of carbonate used.

In the first instance it would be well for each Drill head to have, say, three Crowns.

I have reason to believe that Boart, which can be used in place of Carbonate, can be obtained in India. If not there is no difficulty in procuring from this country suitable carbonate in any quantities, at, say, 25/- to 30/- per Carat.

If purchases of Carbonate were made in the open market we should be willing to act as your Agents on an ordinary business Commission.

(sd) Fred Beaumont
for Beaumont & Co.

1591 N
14

~~Pr 3006/81~~
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P.W. 3593/81
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812

No. 1381 W PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 2nd June/81

Read the following:—

From the Secy P. W. Dept - India Office H.E. No. 261 of 5 May 1881.

1391/W
15

Communicated & the enclos. forwarded to the Master Attendant, in continuation of G.O. No. 468 W of 21st February 1881, with a request that he will submit any remarks he may desire to offer both on the previous & present papers.

Ch

To The Master Attendant
with 3 enclos, requested to be returned

Despd

B.r. 1381 d/ 2d June/81

813

Read also

Administrative Department.

No. 4971.

Madras,
Marine Office,
6th June 1881.

1591
16

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

To
Colonel R. S. Sankey R.E. C.B.
~~Chief~~ Secretary to Government,
Public Works ~~*Marine*~~ *Department,*
Fort Saint George.

Sir,

I have the honor to return the plan, sketch and Estimate of Colonel Beaumont's method of blasting under water without divers, and to remark thereupon that valuable as this method seems to be when applied, as it has hitherto been, in rivers and quiet waters, it is in its present form entirely inapplicable for removing a rock like Santapilly in open Ocean.

2 The description shows that smooth surface and level bottom are a necessity of success. Arrangements have to be made for disconnecting, whenever a wave, such as is made by a passing steamer or other disturbing cause, approaches. Now the sea is never quiet, even when exhibiting

the

the smoothest apparent surface; a long swell
obtains, which by its motion conveyed to the
boat would entirely prevent any direct tooth
wheel action; these swells moreover are at very
short intervals, say ten seconds. This portion
of the Bay of Bengal also is almost always
visited by fresh breezes and quick seas, for
instance during the finest month of the year,
the Diver sent up to look for the wreck of
the late barque "Lassa", on this very rock, was
unable to do any work on account of the sea.

3 The adjusting frame for steadying
the tubes could never be expected to find a
level base for operation. Then, even if some
blasting was done, a dredge would still be ~
required to work in the rough water, and pick
up the pieces under the same unfavorable condition
of swell and movement, there would not be one
week in the year in which the dredge could
work. I am therefore compelled to pronounce the
removal of Santapilly rock by this method ~
impossible. These remarks refer to the sketch
and plan, as regards the Estimate it will be
seen that it does not deal with the largest
items

items of expense. The [illegible] itself, which in
such a situation would require to be very
large, and provided with suitable accommodation,
the cranes, and the boilers. Each drill head
to require three Crowns at 28 £ each, and ~
though it is not stated what quantities of
Carbonate or Boart is wanted, yet the price (30)
thirty shillings per Carat is suggestive. Then the
cost and upkeep of a dredge has to be considered.
It follows that the sum of £(450) four hundred
and fifty, quoted as the estimate, represents a
very insignificant portion of the cost.

4 I may say, in conclusion, that the
project of removing the Santapilly rocks by
blasting is one that cannot be recommended
on the grounds of necessity, or as a benefit to
navigation bearing any relation to the enormous ~
expense, which it would entail upon Government.
It is only in the way of Coasting vessels, and
such vessels are always prepared to feel their
way by sounding. It is true two vessels have been
lost upon it, both recently, the S.S. "Dacca"
and the ship "Lassa", but under circumstances
exhibiting such a neglect of the most ordinary
precautions

precautions of seamanship that they cannot be referred to as examples of the danger to navigation caused by the rock. The rock has never been properly surveyed, but it is supposed to be at least a quarter of a mile in length, and considerable breadth, a most formidable undertaking to destroy. The removal of the Eddystone or the Bishop rocks would be nothing compared to it, yet the Trinity house prefers constructing most expensive Lighthouses instead of attempting their destruction. The Whale rock and Gindurah rocks off Galle are pinnacles and should certainly be experimented upon first.

I have the honor to be
Sir
Your Most Obedt Servant
J H Taylor
Master Attendant
Administrative Department

P15
1591-W
18

B. M. 468 & 469 W 21/2/81
" 1381 W. d/ 2/6/81

P.W.C No 3593

(188) DEPARTMENT.

From

THE MASTER ATTENDANT,
ADMINISTRATIVE DEPARTMENT,
Madras.

To

THE ~~CHIEF~~ SECY. TO GOVERNMENT,
P.W. ~~MARINE~~ DEPARTMENT,
Fort Saint George.

No. 2971. Enclos: 3 (1 plan)

Dated 6
Despd 7
Received 7 June — 1881

No. 2971.

Subject.

Reporting on Colonel Beaumonts' plan of blasting under water without Divers

P.Gy. 12/6

PUBLIC WORKS DEPARTMENT.

From the Secretary, P. W. Dept., India Office,

No. — d/ 21st January 1881

1591 W / 19

FOR ORDERS.

Yes -
& commte. to
~~[illegible]~~

It would seem desirable that Col: Beamont should be asked to give the further information offered.

2. The statements contained in his letter are much too vague to be of any practical value.

From what is known of his inventions generally his system may be assumed to involve a considerable use of compressed air, the most uneconomical (in a

Hon W. Hudlest

FOR ORDERS.

mechanical point of view) of all forms of motive power, and there is nothing to show that it is in any way superior to numerous well known systems of blasting and excavating under water.

1591 W

Major R.E.
for Secy: to Govt. P.W.D.

C. 12-2. Rltd 17-2-81

A/
Circ

1591-W

176

No. 1591 W PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 24th June/81
again

Read the following :—

From the Secy P.W.D. India Office No. — d/21 Jany/81
Recorded in G.O. No. 468 W d/21 Feby/81

From the Same Officer No. 261 d/5th May 1881
Recorded in G.O. No. 1381 W d/2 June 1881.

Read also
From the Master Attendant No. 497/1 d/6th June/81.

The Government accept the conclusions arrived at by the Master Attendant, which are entirely concurred in by the Chief Engineer.

2. These papers will be communicated to the Chief Engineer for Irrigation, for circulation among Irrigation Officers

~~The Humble [illegible]~~

Officers if he thinks it desirable -

15.6.81

To
The Master Attendant
Chief Eng. for Dredgh
with 1 enclo

Desd
5.7-81

Cir 20/6 O.L.S. 23 Recd 22/6.

Marine Deptt 7/9/81.

1591-W
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Govt. of (1881) Madras.

PUBLIC WORKS.

To

Dated

Issued

Recd. Encl.

G. O., 24 June 1881, No. 1591 W

Nos. 84-A-84-D

Col Beaumont's system of blasting rocks in deep water

Orders on papers relative to —

no despatch in this Order