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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 2984 Press ~~Mis.~~

619-620

Dated 25. 9. 1867.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 25th September 1867.

No. 619. Read the following Proceedings of the Madras Government in the Revenue Department :—

Referring to the Board of Revenue a letter from the Superintending Engineer of the 4th Division regarding the necessity of providing a Salt platform at the Kotaurs near the Elephant Gate, Black Town. } (Here enter 20th September 1867, No. 2,208.)

No. 620. ORDER THEREON, 25th September 1867, No. 2,984.

ACCOUNT, No. 64.

Communicated to the Superintending Engineer of the 4th Division.

(True Extract.)

(Signed) J. H. M. SHAW STEWART, Major, R. E.,
Under Secretary to Government.

To the Superintending Engineer, 4th Division.

Exd. S. T. Augustin.

into Baskets which are placed upon a

Memorandum on a proposed mode of unloading the Salt Boats and storing the Salt at the Kotars:— by William Fraser C.E

Present System of unloading the Boats

The present system of unloading the Boats and storing the salt is thus:—

The Boats are brought close to the edge of the Canal, and Coolies go down into the water, with Baskets which hold from 80 to 90 lbs of Salt:

when filled, the baskets are lifted upon the Coolies' heads and carried up the slope to the Platform, where the Salt is thrown into a heap to dry:—

The Salt is allowed to dry for about 18 hours when it is filled again into Baskets which are placed upon a

weighing machine adjusted to weigh a certain quantity: when thus weighed the salt is carried to the place where it is to be stored and put into the well known heaps, each of which contain 20 garce ~~of salt~~, or 80 Tons of salt: This quantity I am told is adopted for the convenience of whole-sale purchasers.—

The cost of unloading this quantity is 12 Rupees, and of weighing it, 10-½ Rupees; being 1 Rupee 2 annas agaree for these two operations.—

2 The objections to this mode of working appear to me to be,— objections to the present system

I The very slow process of unloading; The Coolies having to toil up out of the water, and along a steep slippery path with very heavy loads upon their heads.—

II The second filling and shifting of the salt after it is dried and weighed.

III The time lost in weighing and the cost of that operation.

IV The waste of storage space by having the heaps so small as to hold only 20 garce.—

V The knocking about and injuring the salt by the double shifting and weighing.—

Proposed System

3 My attention was called to this subject about this time last year, and I suggested a mode of operation which, on further consideration, is still the simplest that I can devise.

4 On sketch No 1 the general arrangement is shown.—

Recesses — I The Boats to be unladen lie

in Recesses cut in the slope of the Platform: The faces of these Recesses must be nearly vertical, and must therefore be built up with either Brick or stone:— They must also be sufficiently long to allow the Boats to be shifted a few feet in the direction of their length.—

II The proposed Tramways are shown in Red: I would recommend these to consist of timber rails notched into cross sleepers, the Notches being intended partly to secure the rails and partly to keep them to guage which would be 2-6 2/8 feet:— Tramways

If the timber called Irrumbogham (a species of Iron wood) can be had in sufficient quantity, I would recommend its use, as it is affected but slightly by the friction of Truck wheels: but if this wood cannot be had Errool, Karramardu, or any of the hard durable Timbers of the western Coast, not touched by white ants, may be used, the more especially as the western coast timbers can now be had in Madras, through the Saw mill Company, at prices far below those of Teak: In the latter case however it may become necessary to screw down upon the top of the Rail a strip of flat bar Iron, to receive the action of the wheels—

In the case of the old or western Platform, the Tramways would run from the main and Back Canals up to the Railway; and in that of the new Platform from the main and Back Canals to the Road

along the Center: In the Case of the proposed extensions North and South, the Tramways would run right through, from the main Canal to the East side of the Platform.—

III The Trucks to consist of 2 pairs of wheels,— with a timber platform large enough to receive the Trays holding the vessels filled with salt:— When in position to be laden, the Trucks would stand upon the Tramways at B and C under the sweep of the Crane Jib.— Trucks

IV Opposite the Center of each Recess, and at the level of the salt-Platform, a Crane would be placed, the sweep of the Jib of which would pass over the middle of the Boats and over the two Trucks B and C.— Cranes

For the details of the proposed Crane, see the accompanying Plan, which I believe was laid before the Board of Revenue last year.

The Drawing shows that the Crane is to be worked with a crab winch;— but the results of Experiment might induce me to alter this to a Rope with Pails, — or to a Capston, or some other simple mechanical contrivance.

V From the Boat-end of the Fall chain or Rope, an open framed Tray or grating would be suspended, sufficiently large to receive the requisite number of vessels into which the salt would be filled:— These Trays are proposed to be open gratings so that when the vessels resting upon them are being filled, any extra Trays

salt. removed by the striker, shall fall back into the Boat: There must be 3 or 4 for each crane so that one shall always be ready to be hoisted on the return of an Empty Truck.—

Vessels

VI The size of the vessels which would rest upon the Trays, and into which the salt would be filled requires some consideration: my present idea is that they should have a capacity of 2 cubic feet, which would hold rather more than 100 lbs of salt: This, I think, is the greatest weight that we can expect Two ordinary Coolies to handle with ease and speed:—

The most economical number of vessels to use with each Crane must be decided by experiment;

but, it will be about Eighteen: as these vessels will be subject to very little rough usage They may be made with any light durable timber: They will be removed from the Trays only to be emptied at the heaps, for which purpose two short handles are attached to the sides of each:— Their dimensions will be about 14 × 14 inches square and 12 inches in height.—

Size of Heaps

3 I propose to make the Heaps larger than the present ones which are 40 feet long and 20 broad at the Base: The new Heaps would run right back from the Canal to the Railway in the case of the Old platform, and to the central road in the case of the new Platform:— They would probably

be 100 feet or more in length, and 30 feet in width at the Base.—

By this enlargement of the Heaps the storage space would be greatly economized, and the covering of them would cost less.—

In order to meet the objection that one of these heaps would be too large for one purchaser to buy at a time, I propose to divide them into sections, each to contain any required number of cubic feet or any number of maunds or garce, by placing Diaphragms across the Heaps at the proper distances:— These Diaphragms to be the shape of the cross section of the Heaps, and to consist of a rough timber framing, with Bamboo mats nailed on to prevent the salt falling through:— In this way any number of maunds or garce could be seperated from the rest:—

4 As regards the drying

Drying and weighing

and weighing of the salt,— it occurs to me that it is unnecessary, to incur any expense or loss of time in endeavouring to obtain minute accuracy in the vending of an article like salt: With all the present trouble and cost of weighing, I believe the result is not more accurate than it would be if the quantity were ascertained by measurement; which is a much simpler operation, as it can be performed on the salt when in Bulk; and as salt is retailed, every where, by measure, and not by weight, there seems to be no reason why all the previous transactions should not be by measure.—

5 For the purpose of settling with the manufacturers, I believe

it is necessary to ascertain the weight or Volume of each Boat-load of salt when it has been partially dried: This could be accomplished by throwing one or two Vessel-fulls of salt at some appointed place to dry; and, from the weight of this sample, could be calculated. The weight of the whole boat load, when the whole number of Vessels (of 2 cubic feet each) was known:- But the counting of the Vessels would involve the necessity of having some responsible person always present:—— and as 50 boats might be unloading at the same time, 50 such persons would be required which would be very expensive:—

6

I have often thought that the simplest way of ascertaining the contents of a Boat would be Boats, in fitting them for Salt Carriage- to fit the Boats for carrying salt, by boxing certain portions of them in with rough boards. The bottom being perforated to let the water pass through to the center of the Boat where it could be baled out:

The cubical capacity of each compartment, and thus of the whole boat load would be known - by nearly filling them Stroke full; and no further measurement would be required, except to measure out, dry, and weigh a certain number of Cubic feet as a sample:—

If this mode were adopted it is probable that the present Police guard now necessary during the transit from the Pans to the Kotars, would be no longer wanted; as the Superintendent at the Pans would simply have

to state; on a docket given to the Boatmen, that the compartments were filled up to the top, or to any known depth: The Boatmen being made directly responsible would probably prevent the salt being touched, especially as he would see that any pilfering could be at once detected.——

7 If merchants when purchasing the salt had any doubt as to the quantity contained in any heap or portion of a Heap, on account of previous now weighing, a few cubic feet could be weighed, as a sample, and the remainder measured; but as I stated before, I see no reason why all the transactions should not be by measure:—

8 The abandoning of the Weighing Cost of present system of weighing would cause a saving on the quantity of salt at present stored of nearly 10,500 Rupees; but on the quantity proposed to be manufactured next year (28 lacs of maunds) the saving would be 12,243 Rupees; which, at 6 per cent, represents a Capital of 204,050 Rupees; a sum probably more than sufficient to meet the cost of the proposed alterations.——

Proposed mode of unloading

9 I now proceed to describe the proposed mode of unloading the Boats:—

Referring to Plan No. 1 we will suppose that the two Trucks c and ć are standing upon the Tramways ready to be laden:

That three Trays, Nos 1, 2, & 3, with their proper number of entity vessels upon them, are ready; and that two coolies are at each Truck, — Four at the Capstan B, — and two in the Boat: —

Trays 1 and 2 are hooked on to the fall chain, and lowered into the Boat: —

No 2 is unhooked and hauled one side, and the vessels on No 1 are filled: when the extra filling is removed with the strike, the signal is given to hoist; The coolies at the Capstan run round 4 or 5 turns which will bring the Tray, with its load, a little above the level of the Truck C: The capstan coolies stop and hold on: —

One cooly, belonging to Truck C,

sweeps the crane round, by a lever attached to the Crane Post, until the Tray is suspended over C, when the Capstan coolies lower away until it rests upon the Truck:

The coolies unhook the Fall chain and run the Truck along the Tramway to the place where the salt is to be deposited in the Heap right or left: The four short handles enable them to lift the vessels off the Tray rapidly and throw the salt upon the heap: — when the empty vessels are replaced upon the Tray and the Truck is rolled back to its place near the Crane. —

when Truck C was rolled away the coolies of Truck C hauled the Crane back, hooked on Tray 3

which was immediately lowered into the Boat: The Boat Coolies unhook & and hook on Tray No. 2, now filled, which is hoisted and deposited upon Truck - C' in the manner before described:

By this time Truck C has returned; its coolies haul the Crane back, hook on their empty Tray No. 1, which is lowered into the Boat; where No. 2 is hooked on, hoisted, and laid upon Truck C, and so the process goes on, the Trucks being laden alternately, there being always one laden Tray ready when an empty Truck comes back. ——

11 It is evident that arrangements must be made so as to keep the Crane constantly busy; and to accomplish this, and at the same time to prevent the Truck

Coolies standing idle, the number of individuals employed on each part of the work will require to be occasionally altered or adjusted but this can be settled only by actual experiment. ——

12 I have already stated that the unloading of 20 garce costs at present 12 Rupees and requires 80 Coolies working for 6 hours. I believe that by the mode now proposed the unloading of this quantity would cost much less; and that by the employment of the same number of coolies the operation would be much quicker; but how much cheaper and quicker can be satisfactorily ascertained only by experiment: —

I would therefore recommend, should The Government look favourably on the proposed plan, that one Recess, with its attendant Crane, Tramways, Trucks &c., be constructed, so as to give the proposed system a fair trial: The necessary works would cost about Two thousand Rupees.—

13 If this experiment were made without delay, and if the result led to an approval of the system, a considerable number of Recesses &c could be ready for operation next season.—

14 In conclusion I have to remark that in Considering this matter my object has been to devise the simplest contrivances consistent with strength and durability:

I have examined other proposals which have been made from time to time for unloading and storing the salt: My objections to them are that they all contemplated the weighing of the salt, and because their arrangements are complicated:

For purposes of this kind it is useless to devise Machines so delicate and complex that they are certain to be put out of order by a little rough handling:—

I have no doubt that in what I have proposed many modifications will suggest themselves when it is tested by actual working, but I believe it, at all events, contains the elements of a

system which will be found
simple — cheap — and rapid —

E & C Canal Office
Church Park Mount Road
21st December 1866

William Shaw C.E.
Special Engineer

Ribbon Hotel
Bangalore
28 Dec 1861

Sydenham Esq

I suppose the
accompanying Medal
in Gold will come
to you in time
to present the usual
Chennel — but as I
understand the
Governor in Council
has something about the
Matter immediately I send
you this Copy — as I shall be

I came here on
Christmas day for the
Holidays — as I wanted a
change, even for a short
time, pretty. I do not
think that I should remain
until the holidays are over
as I must get back to the
Hills immediately when I
get to Leeds, and
Le later [illegible] as they
should be. — I had not
seen my assistant for
several years and I find
him much changed
since then. —
yours affectionately William Lees

Think Myers if you will
kindly read the letter
the Mayor (which will be
sent to you tomorrow) and
let me know whether
you think it better
that the Mayor should
write the letter
as suggested —
The suggestion has been
a good deal discussed —
lies as to the intention
to summon the manufac-
turers, next year. Some
decision should be come
to without delay —

Proceedings of the Madras Government, Revenue Department, 20th September 1867.

No. 343. Read the following letter from the Acting Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 17th September 1867, No. 2,943 :—

1 Letter from Collector of Madras, No. 235, dated 17th August 1867, with enclosure.
1 Do. do., No. 244, dated 21st do. do. do.

1. I have the honor to report, for the information of Government, that the Collector of Madras in letters as per margin has called my attention to the necessity of commencing at once a salt platform at Salt Kotaurs, Elephant Gate, Black Town, to store 1,125 garce of salt.

2. As the loss of Revenue to Government would be considerable if the work were not carried out at once, I submitted* plans and estimates for this platform, which also included a surrounding wall, guard-house, steps, and gate, amounting to Rupees 13,200, to the Board of Revenue, through the Collector, and requested that sanction might be obtained at once for the outlay on such work as was immediately necessary.

* No. 2,721, dated 4th September 1867.

3. The plans and estimates were prepared by Mr. Fraser, Executive Engineer, East Coast Canal, in communication with the Deputy Collector in charge of Salt Works, and he has been directed to carry out such extension of the platform as will secure the storage of salt as it comes in, and the work is in progress.

Referred to the Revenue Department, with the remark that no funds are available for the works from the Public Works assignment.

(Signed) J. H. M. SHAW STEWART, Major, R. E.,
Under Secretary to Government.

18th September 1867.

No. 344. ORDER THEREON, 20th September 1867, No. 2,208.

Separate Revenue, No. 20.
Salt.

1. Referred to the Board of Revenue.

2. No provision for this work appears to have been made in their revised Salt Works Budget, and it will be for them to consider what is the most advisable re-distribution of funds to meet this emergent charge.

(True Extract.)

Secretary to Government.

To the Board of Revenue.
„ the Department Public Works.

Ext. S. T. Augustin.

Lit 2484 Accounts

No 2984

Comm.d to the
Superintendent of
Works &c.

First Lt. Geo. Gibbon
25 Sept.r 1867

Geo. Gibbon

Dep.y 26/9/67

Pr 27 1867 Offd
Pro: of Goods for Septr
No 3598

Bo: of the Marine Board
Revenue Office

Dy 20
Rec 25th } September

No 2280.

No 2986 - 25 Septr 1867

Requesting the
Bd of Revenue to deliver from
the Safety Bags of the 4 Dys
regarding the necessity
of providing a Safe
Platform at the Holwart
near the Elephant Gate
Black Town -

William Noble

Le 619 - 620