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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 21328	Press ~~Mis.~~
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Dated 2 8	1867.

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*Proceedings of the Madras Government, Public Works Department,
2nd August 1867.*

No. 39. Read the following Proceedings of the Madras Government in the
Military Department:—

Passing orders on certain arrangements proposed
by the Commissariat authorities for the adop- } (Here enter 25th July 1867, No. 2,724.)
tion of steam power for driving the Govern-
ment flour mills at Bangalore.

No. 40. ORDER THEREON, 2dn August 1867, No. 2,328.

MILITARY WORKS, No. 5.

Communicated to the Superintend-
ing Engineer of the 5th Division.

(True Extract.)

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

To the Superintending Engineer, 5th Division.
Do. do. 4th Division, for information.

Exd. S. T. Augustin.

MILITARY DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following papers :—

From the Acting Commissary General..... Here enter 20th June 1867, No. 1983.

From the Controller of Mily. Accounts " 28th " " F

From do. do. " 6th July " E.

From the Acting Commissary General, Madras, 20th June 1867, No. 1983; to the Secretary to Government, Military Department, Fort Saint George.

I have the honor to forward, for the information of Government, a letter received from Captain Hawkes, Deputy Assistant Commissary General, treating No. 1901 of 18th June 1867.

further on the subject of adopting steam power for driving the Government flour mills.

2. Government were pleased in an Order No. 830, dated 8th March 1867, to sanction the use of steam in lieu of bullock power for working the mills erected at Madras.

3. Since that date this has been carried into effect, on a limited scale certainly, yet sufficient has been learned to show the great advantage to be derived from the change.

4. Thus a bag of wheat can be ground by steam for 7 Annas $1\frac{3}{4}$ Pies whereas by bullocks the cost is 10 Annas 11 Pies.

5. Again the cost of a steam engine is calculated to fall at about 1 Anna 3 Pies per bag, the cost of the bullocks at 3 Annas 1 Pie.

6. Then as regards the efficiency of the two, steam has the advantage both as regards regularity of working and the ease with which it is commanded.

7. Upon these grounds, Captain Hawkes recommends the substitution of steam for bullock power at Bangalore as well as at Madras, and as there cannot be a doubt as to the soundness of his recommendation, I solicit Government to accord their sanction to the change, and in anticipation of approval being passed, an indent for an Engine for Bangalore as well as for Madras has been sent in to the Store-keeper, Public Works Department, for report.

8. Mr. Powney's long illness was very unfortunate, and his subsequent death might have resulted, in the present unfinished state of the mills, in great inconvenience, but for the attention Captain Hawkes had given to the subject, and the experience gained by Staff Serjeant Weightman whilst assisting Mr. Powney to put up the first mills.

9. With Staff Serjeant Weightman's aid Captain Hawkes is erecting the flour mill here, and is prepared to superintend the erection of the mill at Bangalore, provided steam instead of bullock power is fixed upon. The difficulty of adjusting the bullock gear is so great that he doubts his ability to set it up in such a manner as to insure its working satisfactorily.

10. I would recommend, that to Captain Hawkes should be entrusted the superintendence of the erection of the mills here and at Bangalore, to which station he will shortly proceed as Executive Officer. That the services of Staff Serjeant Weightman be set aside entirely for the erection of the flour mills at Madras, that Gunner J. Powell should be appointed a probationer in the department to fill his present post, and that the pay and allowances of the latter be charged to the erection of the mills, for which funds are available from the provision made in the budget for the pay of the late Mr. Powney.

11. When the mills here are put up, Staff Serjeant Weightman will revert to his present duty, *viz.*, that of miller, and in that capacity Gunner Powell will then be transferred to Bangalore.

12. No provision has been made in the European branch of the department for these establishments, for each of which a miller and baker will be necessary, and as each of the establishments at Madras, Bangalore and Secunderabad is brought into working order, I would recommend the permanent addition of two Staff Serjeants to the department or six in all, and as their services are absolutely necessary, I trust they will be sanctioned.

13. The duty entrusted to Staff Serjeant Weightman is an important one, and when satisfactorily concluded, he will be fairly entitled to some extra remuneration, which I trust Government will be pleased to grant.

14. I take this opportunity of bringing to the favorable notice of Government the services of Captain Hawkes, in connection with these mills; he superintended their working by steam power himself at the first commencement, and but for the great amount of personal trouble he took with the mills and bakery, the establishment would not be in its present advanced state, indeed to him alone belongs the credit of having so far brought it into working order, that it is now supplying the Artillery at the Mount with very excellent bread.

From the Deputy Assistant Commissary General, Madras, 18th June 1867, No. 1901; to the Commissary General.

In continuation of my letter No. 1457, dated 30th May 1867, reporting the death of our Mechanical Engineer, I have the honor to propose certain arrangements for working the present machinery and for erecting the new mill.

2. The expectations formed of the advantage of working by steam have been fully realized. The small Engine of four horse power which was obtained from the Département Public Works stores has now been in operation for some time, and although not specially suited for this sort of work, it has given the greatest satisfaction.

3. It works one pair of the soojie stones and grinds one bag an hour or ten bags per day, with an expenditure of about 40 lbs. of coal per bag, which at 25 Rupees per ton comes to 7 Annas 12 Pies per bag.

4. To do the same ten hours' work would require three relays of six pairs of bullocks which however would work the two stones. Taking therefore half the above number, *viz.*, nine pairs of bullocks as an equivalent in power to the Engine, and calculating their monthly cost including Drivers, &c., at Rupees 19, and allowing twenty-five working days per month, we arrive at Annas 10 and Pies 11 per bag as the cost of grinding by bullock power, and this allows nothing for bullocks temporarily sick which by reducing the out-turn of the mill would increase the cost of grinding.

5. But to render the comparison complete, the deterioration of the steam engine and the cost of renewing the bullocks should also be contrasted. Supposing therefore that 20 horse power steam Engine costs Rupees 9,600 in the first instance and lasts ten years, we have (exclusive of repairs) a monthly sum of Rupees 80 to debit against the mill, or (at the rate of 40 bags per day for the four stones) Annas 1-3 per bag.

6. Bullocks large and heavy enough to work these mills could not be obtained under 350 or 400 Rupees a pair, and as mentioned above each mill requires three relays. This (at six pairs for the small and eight pairs for the large) would amount to 42 pairs of bullocks, costing (at an average of 375 per pair) Rupees 15,750, so that the prime cost of a set of bullocks for the Madras mills alone would be more than enough to cover the probable cost of the two Engines required for Madras and Bangalore.

7. But when the cost of renewal is taken into consideration the result is even more against bullocks. Mill work is so distressing that the bullocks could not be calculated on to last five years even if they worked so long which I very much doubt. At the end of that time they would perhaps

sell at 100 Rupees a pair, so that there would be a loss every five years of 275 Rupees on 42 pairs, or 11,550 Rupees, or a total loss on the ten years which the Engine is calculated to last of a sufficient sum to buy two more Engines. The above loss would be equivalent to 192½ Rupees per month or 3 Annas 1 Pie per bag.

8. In the above comparison the number of deaths among the bullocks has not been taken into consideration, but may be held to counterbalance the expenses for repairs of the Engine.

9. From the experience gained with the small portable Engine now at work at the bakery, I think that a 20 horse power Engine would be quite sufficient to work the machinery of the two mills (one soojie and one flour with one smut machine) now at Madras, and one of 12 or 15 would work the Bangalore mill, but as Mr Powney's protracted illness and subsequent death prevented my obtaining from him a definite opinion on this point, I would suggest that if the Engines are obtained from Messrs. Emerson and Murgatroyd, the makers of the mills, it be open to them to make such alterations in the size and pattern of the Engines suggested above as may seem necessary.

10. The bullock gearing is by far the most difficult part of the machinery to put up, if therefore the above recommendations are adopted and the machinery at Bangalore is worked by steam as well as that at Madras, no bullock gearing will need to be erected, and it will not be necessary to obtain a mill-wright from Europe to re-place Mr. Powney, nor will any one be required to erect the Engines when they arrive from England provided working drawings be sent with them, such assistance as we may absolutely require can be obtained locally.

11. As soon as the foundation stone of the second mill is laid, and I have put up the framing of the mill, I will forward a plan shewing how the two mills are situated with respect to each other to enable the contractors to make the connecting gearing, but as this is quite independent of the Engines, I trust the indents for these may be sent on at once, as we shall still have to grind most of our flour by hand until they arrive.

12. Staff Serjeant Weightman who assisted Mr. Powney during the whole time he was erecting the first mill and who is a thoroughly efficient and practical miller, is quite able to erect the new machinery, but he is at present occupied the whole day in working the mill now in operation, and it will be necessary to relieve him from this duty to enable him to devote his whole time to the second mill.

13. It is absolutely necessary that whoever is put in charge of these mills should be a thoroughly good miller, and one who has had practical experience in facing the French Burr stones which are the distinguishing feature of the English mills. No native can do it and very few ordinary English millers are capable of dressing millstones properly.

14. After many unsuccessful attempts, I have been fortunate in finding a competent man in Gunner John Powell, now attached to the B Battery, 23rd Brigade Royal Horse Artillery at the Mount, and trust that the necessary sanction may be obtained to his being transferred to this department as a probationary Staff Serjeant in the ordinary manner, as soon as possible, to enable me to set Serjeant Weightman to erect the second mill.

15. His pay and staff salary, *viz.*, Rupees 67-8 per month, must of course be debited to the cost of erecting the mill, but this will be a far more economical arrangement than the late one under which Mr. Powney received a salary of 360 Rupees per month, and will be much better than employing any of the candidates who have yet presented themselves, who ask high salaries and of whose characters and capabilities we know little or nothing.

From Major J. G. Touch, for Controller of Military Accounts, Fort Saint George, 28th June 1867, F; to the Secretary to Government, Military Department.

I have the honor to forward a letter from the Commissary General, dated 20th June 1867, No. 1982, with enclosure, requesting the sanction of Government to the substitution of steam for bullock power for driving the flour mills at Bangalore as well as at Madras, it having been found at Madras to be more efficient and economical.

Pro. of Govt., 8th March 1867, No. 830.

2. A bag of wheat, it appears, can be ground by steam for Annas 7 and Pies 1 $\frac{3}{4}$, while the cost by bullock power is Annas 10 and Pies 11; and a comparison of the cost of a steam Engine and bullocks gives a result very much in favor of the Engine.

3. The adoption of steam power, therefore, promises to be an economical measure.

4. Captain Hawkes will superintend the erection of the mills here, and at Bangalore to which station it is proposed to transfer him as Executive Officer.

5. It is also proposed that the services of Staff Serjeant Weightman should be set aside entirely for the erection of the flour mills at Madras—that Gunner J. Powell should be appointed a probationer in the department to fill Serjeant Weightman's present post of miller—and that the pay and allowances of the Gunner should be charged to the erection of the mills.

6. When the mills here are put up, Serjeant Weightman will revert to his present duty, and Gunner Powell will be transferred as miller to Bangalore.

7. These arrangements appear to be necessary and satisfactory.

8. The Commissary General represents that for each of the bakeries at Madras, Bangalore and Secunderabad, a miller and baker will be required, involving an addition of six Staff Serjeants to the permanent establishment, which seems to be unavoidable.

9. The claim of Staff Serjeant Weightman to some extra remuneration on the completion of the mills at Madras is brought to notice. The extent of the remuneration contemplated is not indicated, but the question can be disposed of on a definite proposal of the Commissary General after the completion of the duty.

From Major J. G. TOUCH, for Controller of Military Accounts, Fort Saint George, 6th July 1867, E; to the Secretary to Government, Military Department.

I have the honor to forward a letter from the Store-keeper of Machinery, dated 1st July 1867, with indent* (in triplicate) from the Commissary General, for

* No. 4, dated 26th June 1867.

two high pressure steam Engines, &c., required for working the mills at the Government Bakeries at Madras and Bangalore.

From the Store-keeper of Machinery, Chepauk, 1st July 1867, No. 8; to the Controller of Military Accounts, Fort Saint George.

I have the honor to forward, for submission to Government, the accompanying indent in duplicate from the Commissary General, Madras, for

Enclosure.
1 Indent in duplicate.

two high pressure steam Engines, &c., required for working the mills at the Government Bakeries at Madras and Bangalore, the machinery cannot be supplied from any of the departmental stores at the Presidency.

ORDER, No. 2724, 25th July 1867.

The Governor in Council observes that the same reasons obtain for the substitution of steam for other power to work the mill to be erected at Bangalore as in that at Madras, its introduction at Bangalore is therefore sanctioned accordingly.

2. The arrangements proposed regarding Staff Serjeant Weightman are approved, the subject of remuneration for his services will, however, be considered on the completion of the duty he is now employed on, when a tabular statement of the proposed additional mill establishment will be submitted for the sanction of the Government of India, meanwhile, application will be made to the Commander-in-Chief, in view to the services of Gunner Powell being temporarily placed at the disposal of the Commissary General.

For Madras and Bangalore.

3. The General Superintendent of Stores, Public Works Department, having reported that the steam Engines required are not available, the indent received with the second of the letters from the Controller of Military Accounts above recorded, will be forwarded to the Home Government for compliance.

4. The Commissary General will convey to Captain Hawkes the acknowledgments of Government for his efficient services, in carrying out the important duty connected with the erection and working of these mills.

Docket to the Offg. Secy. to the Govt. of India, M. D. | Here enter 25th July 1867, No. 2725.
(True Extract.)

Macmillan Colonel,
Deputy Secretary to Government.

To the Commissary General, with an enclosure.

- .. Controller of Military Accounts, with an enclosure.
- .. Adjutant General.
- .. Quarter Master General.
- .. Inspector General of Ordnance.
- .. Public Works Department. *With 20 spare copies*

Ed. J. E. Cashart.

Ed.

Wm. H. Wells

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Office of Executive
No. 2328 Broadway, N.Y.

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