(1) பக்கங்களின் எண்ணிக்கை 14

(2) புதுக்கித் திருப்பிய நாள் 3/90

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P. W. D. துறை

அரசாணை எண். மு. கோப்புத் தாள் எண்.	2885	அச்சகம் பலவகை
நாள் :	14-10-1889	~~198~~.

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

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ஆவண, கா-1—18,006—15-6-87.

(1) பக்கங்களின் எண்ணிக்கை 8
(2) புதுக்கித் திருப்பிய நாள் 3/90
(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

23

P. W. D துறை

அரசாணை எண். மு. கோப்புத் தாள் எண்.	2882	அச்சகம் பலவகை
நாள் :	14-10-1889	19 .

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

4 Sheets

ஆவண. கா-1—18,006—15-6-87.

2885

14th October 1889, No. 2885 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following paper :—

From the Inspector-General of Police, Madras, dated 18th September 1889, No. 4629.

I have the honor to submit, for sanction, Public Works Department revised estimate for Rs. 3,651 for the construction of ten Police huts at Puttur, South Canara district. The necessity for the revision is explained by the Superintending Engineer in his letter No. 248 W., dated 13th September 1889, herewith enclosed.

2. An appropriation of Rs. 3,067 is made for this work in the Public Works Department budget estimate for the current year.

Transferred to the Public Works Department.

(Signed) A. G. CARDEW,
Under-Secretary.

Madras,
2nd October 1889.

Order—dated 14th October 1889, No. 2885 W., Public Works.

The revised estimate, amounting to Rs. 3,651, for constructing ten Police huts at Puttur, in the South Canara district, is sanctioned in supersession of the estimate of Rs. 3,067 sanctioned in G.O., No. 85 W., dated 10th January 1888.

2. A sum of Rs. 3,067 has been provided for the work in the current year's Provincial budget.

3. This sanction has been registered as Provincial No. 72 W. of 1889-90, and classified as Civil Buildings, Original Works.

(True Extract.)

Captain, R.E.,
Under-Secy. to Govt., P.W.D.

To the Superintending Engineer, IV Circle,
with four enclosures.
" Examiner, Public Works Accounts,
with duplicate abstract estimate.
" Judicial Department.

2

Exd. J. Moses.
Spare Copies

2882

MILITARY DEPARTMENT, 30TH SEPTEMBER 1889, No. 6683.

GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

Artillery—Inspection Tours.

Read the following paper :—

No. 368. *From Brigadier-General E. COLLEN,* C.B., *Secretary to the Government of India, Military Department, to Brigdr.-Genl. A. KENNEY-HERBERT, Secretary to the Government of Madras, Military Department; dated Simla, the 18th September* 1889, *No.* 1841-C.

Artillery—Inspection Tours.

I am directed to forward, for the information of the Government of Madras, a copy of a report by the Inspector-General of Artillery in India on the batteries and forts inspected by that officer during the last cold season.

ANNUAL REPORT ON THE ARTILLERY IN INDIA.

During the drill season of 1888-89 I inspected batteries at the following stations :—

Quetta, Mooltan, Delhi, Agra, Allahabad, Dinapore, Calcutta, Rangoon, Mandalay, Bangalore, Kirkee, Poona, Bombay, Neemuch, Jubbulpore, Jhansi, Meerut, Umballa, Jullundur, Umritsur, Mean Meer, Ferozepore, Rawal Pindi, Campbellpore, Attock, and Peshawur.

I attended, and inspected batteries at, the following practice camps :—

Gurgaon	7 batteries.
Púr, near Roorkee	4 do.
Bangalore	3 do.
Neemuch	4 do.

and three batteries of Horse Artillery at the Cavalry Camp at Delhi.

The following forts were also inspected :—

Quetta, Mooltan, Delhi, Agra, Allahabad, Fort William and Hooghly Defences, Rangoon and River Defences, Fort St. George, Bombay Coast Defences, Neemuch, Jhansi, Govindghur, Ferozepore, Rawal Pindi, Attock, and Peshawur.

General remarks.

2. The Artillery in India, so far as lies in the power of its officers, is generally, with special exceptions noted below, in a very satisfactory condition. The majority of batteries are well turned out and correctly drilled, the officers are well supported by the non-commissioned officers and men, and all ranks take an interest and pride in their work.

Rearmament.

3. The general rearmament with B.L. guns has commenced, but very much remains to be done, and the delay in supply from England, specially as regards new guns for Coast and Frontier defence, is very serious.

Manufacture of gunpowder.

4. The manufacture in India of the newer gunpowders is not yet commenced, but in the interest of economy, as well as efficiency, is urgently necessary.

Manufacture of steel projectiles.

5. The necessary plant for the manufacture of steel projectiles should also be procured without further delay, if only because, in the event of war, supply from England would be very doubtful.

Establishment of horses.

6. The peace establishment of horses for all batteries of Horse and Field Artillery is very low; considering the relative number of carriages it is lower than in England, and cases have arisen of batteries, marching in relief or to camps of exercise, being compelled to leave carriages behind; this not only causes expense to Government, but is detrimental to efficiency and the proper training of batteries for war.

1

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1889} Madras.

PUBLIC WORKS.

Dated October, 14th.

Recd.

Encl.

G.O., 14th Oct. 1889, No. 2885 W.

OCTOBER.

Police Huts at Puttur, South Canara District

Revised estimate for —, sanctioned.

2885

10th January 1888, No. 85 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following letter from Colonel C. A. PORTEOUS, Acting Inspector-General of Police, to the Chief Secretary to Government, dated Madras, 28th November 1887, No. 5847:—

I have the honor to forward, for sanction and for early appropriation of funds, Public Works Department plans and estimates for Rs. 3,067 for the construction of ten police huts at Putur, South Canara district.

2. The Superintendent of Police reports that these huts are absolutely necessary, as the police party there have been unable to obtain suitable accommodation since the removal of the taluk head-quarters from Uppinangadi to Putur in 1883.

No. 940 R., Judicial.

Approved, and transferred to the Public Works Department.

(By Order.)

(Signed) A. G. CARDEW,
Acting Under Secretary.

8th December 1887.

Order—dated 10th January 1888, No. 85 W., Public Works.

The estimate, amounting to Rs. 3,067, for constructing ten police huts at Putur, in the South Canara district, is sanctioned for execution when funds are available.

2. This sanction has been registered as Provincial, No. 138 W. of 1887-88, and classified as Civil Buildings, Original Works.

(True Extract.)

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

To the Superintending Engineer, IV Circle, with six enclosures.
" Examiner, Public Works Accounts, with the duplicate abstract estimate.
" Judicial Department.

Exd. E. Fernandez.
Spare Copies

The war establishment of horses is also wholly inadequate, and is based on an English standard, which broke down on service, and was largely increased six years ago in consequence.

But, insufficient as these establishments are, they are not maintained, and batteries for six months or more in the year are kept about 10 per cent. below strength. This deficiency alone can barely be met by the Reserve Depôts.

This matter is now under consideration by the Government of India.

Clothing.

7. The sanction of Government has recently been accorded to all batteries making their own arrangements for the supply of helmets from England, in the same way as the Royal Horse Artillery have done for some years. The appearance of Field and Garrison Batteries will be much improved thereby. A new pattern serge Norfolk jacket for Field and Garrison Artillery is under consideration in England. The variable color of the serge supplied by the Clothing Department is much complained of, it ranges from black to a lightish blue. The field service forage cap has been taken into general use for all ranks.

In many batteries the knee boots made in England and issued to mounted men have the factory mark stamped with such force as to make a visible round mark outside the leg close to the V, which is very unsightly.

Horse and Field Artillery.

Royal Horse Artillery and Field Artillery.

8. All batteries of the 1st Army Corps are now armed with the 12-pr. B.L. gun. So far none of the defects reported in England have shown themselves in the carriages, but the twisting of two trials is reported, as having occurred and having been repaired at Kirkee.

Ammunition wagons.

9. At present the ammunition wagons are of wrought iron, converted from 9-pr. pattern, and are far too heavy for necessary mobility; but steel wagons have been ordered from England to replace them.

Ammunition.

10. The cast iron shells for practice, made in India, gave unsatisfactory results. Sufficient trial has not yet been made to arrive at the cause, but all shells made of cast iron necessarily have such thick walls that they contain far fewer bullets than steel shell; the erratic results last drill season are however believed to be

Powder.

greatly due to unreliable powder received from England. Application has been made to have this powder tested, and it may here be stated that a periodical examination of all English-made gunpowder is very necessary, as but little is known of the long continued effect of the Indian climate on the newer classes of powder.

The fuzes issued with the 12-pr. B.L. guns are defective, inasmuch as the percussion fuzes will not act with certainty on graze within 1,100 yards of the battery, and the time fuzes will not burn more than 3,200 yards.

Clinometers.

11. A clinometer for each gun of batteries armed with 9-pr. R.M.L. guns, the same as allowed to 12-pr. B.L. batteries, is much wanted. Application has been refused on the ground that only one per battery is allowed in England, but it is apparent that the circumstances are not the same. There will be 9-pr. batteries in India for some years to come, whereas in England the great majority of batteries are already armed with 12-prs., and six clinometers per battery are allowed for them, thus admitting the necessity of that number in order to carry out indirect fire, and fire at unseen objects—matters which until lately have not received much attention, but the utility of which is now fully recognized.

Range finders.

12. Officers have lately been trained in England in a course of range finding, and, having obtained certificates of competency, are about to be sent to examine and report on the range-finding instruments in possession of batteries. It is feared that, as in England in 1884-85, very many will be found to be badly out of adjustment.

At present, when these instruments get out of order, very great delay occurs before they are repaired and reissued by the Ordnance Department; it is very desirable that this time should be shortened if possible.

H.A. gun, F.S. howitzer.

13. A lighter gun for the Horse Artillery and a howitzer for field service are under consideration and trial in England. They are urgently needed, because the 12-pr. as at present issued is too heavy for Horse Artillery, and the heavier shell and curved fire of a howitzer are indispensable for certain conditions of service.

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Horses.

14. With the exception of a very few batteries, the horses of the Horse and Field Artillery are in good working order, well groomed, and well cared for.

The remounts of last year were, generally, of good stamp, but the system of sending them to batteries at the commencement or middle of the drill season is very unsatisfactory. They are hurriedly trained, and batteries are kept short of horses during the time that they most require their full number.

The proper time to train horses is in the hot weather, when other drills are for the most part suspended. Representations to this effect have been laid before Government.

The condition of Artillery horses in Northern India, both in the shed stables and in camp, is frequently impaired by insufficient clothing. As regards this insufficiency in stables, opinions both of experienced officers and of the Veterinary Department are unanimous; but Government have declined to grant the only remedy, viz., an extra blanket in the colder parts of India. At present the allowance is the same for hot and cold parts of India, but this cannot be correct. In camps extra clothing is allowed, but of late years is frequently not obtainable, owing to no stock being kept up by the Ordnance Department. Last winter the horses at Gurgaon camp were starved from the cold, not one battery out of 7 having succeeded in getting the extra blanket allowed. The horses fell off rapidly in condition, a state of things which was almost unknown a few years ago when batteries supplied themselves.

Equipment.

15. Some changes have been introduced during the last two years, all of which have proved satisfactory. Field Service Marching Order admits of one change of clothes and a bed-blanket for each man, one rug for each horse, one day's corn, and all necessary line gear, being carried with the battery, which can thus, on an emergency, move without any transport except for rations. G Battery, B Brigade, Royal Horse Artillery marched from Neemuch camp to Mhow, distance 167 miles, in 4 days 8 hours, including halts, taking no tents nor transport except for food and forage. Owing to want of horses, six carriages were left to march slowly with reduced teams, but the experiment showed that the Field Service Marching Order is a success.

Swords are now carried by mounted men attached to saddles, and the change, which facilitates the working of the guns, and the mounting and dismounting of the detachment, is universally approved.

Cruppers for riding horses, side and bearing reins, have been abolished, a small number being retained for such horses as require them; trial is now being made with a view to abolishing harness ruppers also.

In order to make batteries more self-reliant and less dependent on arsenals, all filling of shells and cartridges, rewigging of gun sponges and setting up of wheels, formerly done by the Ordnance Department, are now ordered to be carried out by batteries themselves.

Emergency ration.

16. A compressed ration, similar to the 12 ounce emergency ration of England, is much to be desired, and would be carried in the havresack.

Harness and saddlery.

17. Saddles with flat iron arches are still in use, and are unsuitable from their liability to open out and cause galled withers. Complaints against them are universal and just. Reference has been made to the Ordnance Department, but proper steel arches, or even those made of angle iron introduced in India List of Changes, 690 of 1886, are not yet available. If ordered on service with present saddles much damage would result.

Present system of replacing harness and saddlery.

18. The present system of condemning harness and saddlery only once a year is a bad one. Batteries have an accumulation of unserviceable equipment, to replace which on mobilization would tax the powers of the Ordnance Department to the utmost. Great delays would certainly occur, if not an absolute breakdown. The proper person to decide as to what should be cast is the Commanding Officer, who, being responsible and on the spot, should submit his indents to replace, not less than four times a year. This system works well in England, and would appear likely to be less costly and more efficient than that now in vogue in India. Ordnance officers are removed from their legitimate work for a considerable time, at considerable cost for travelling expenses, extra men have to do their work for them while they are doing that, only annually, which should be as effectively done by Battery officers as often as is necessary.

Supply of ammunition.

19. The reserve ammunition units maintained for batteries of the 1st Army Corps consist of three wagons per battery. This only amounts to thirty-six rounds a gun; and as only 108 rounds are carried in limbers and wagon, the total taken into the field drawn by horses, including the reserve, is only 144 rounds a gun. This is quite inadequate. Moreover the units themselves are not complete inasmuch as the forge and store wagons and spare gun carriages are not issued, nor are the horses and drivers

2

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1888) Madras.

PUBLIC WORKS.

Dated January, 10th.

Recd. *Encl.*

G.O., 10th Jan. 1888, No. 85 W.

JANUARY.

Police Huts at Putur, South Canara District
Estimate for —, sanctioned.

Public Works Department.

Current No. 9342
Letter No. 1086
Dated 2nd October /89
From the Judl. Deptt.

NOTE OF REMARKS.

The revised estimate under review amounting to Rs 3651 provides for constructing 10 Police huts in 5 blocks at Puttur in the South Canara Distt.

The original estimate of Rs 3067 sanctioned in G.O. No. 85 W. d/ 10th January/88 was prepared in April/86 & the present rates are stated to be some what higher than those ruling at that time.

The excess now requiring sanction is Rs 584.

Comparative Statement and Report are submitted. No. 5

The rates are fair.

Provision is made for Rs 100 for compensation for land & Rs 40 for removal

of

for these spare carriages supplied. An experiment is being carried out at Mean Meer in the substitution of mule for horse draught for the reserve ammunition units.

MOUNTAIN BATTERIES.

20. The Mountain Artillery is in a high state of efficiency, and this it should be, considering that its officers are all selected men.

The 2·5' R.M.L. jointed gun still gives satisfaction, but signs of wear at the joints are becoming apparent, and the gas rings have given some trouble. Four Native batteries are still armed with the 7-pr. of 200 lb., pending the introduction of a 4-inch B.L. howitzer now under trial in England, the powerful shell and curved fire of which ary much wanted in hill warfare.

Fuzes.

21. The arrangements about fuzes in the Mountain Artillery are not satisfactory. The proper fuze is "Royal Laboratory time and percussion Mark II," but this is not to be issued until the stock of Mark I* is exhausted, while Mark I* is only to be used on service, and not for practice, for which Armstrong time and concussion fuzes are to be used until stock is exhausted. These fuzes all differ in the length of time they will burn, and in other points each is an improvement on its predecessor; we therefore have the palpable drawback of batteries using a different fuze at instruction practice to what they would use on service, while all the time that we are using up old stocks, the new fuzes are wearing out, as the climate renders all fuzes unserviceable in four years. A representation is about to be made to Government of India on this point.

Range finder.

22. A suitable range finder for Mountain Batteries has not yet been introduced, but the Ordnance Committee have recently recommended that two instruments, which are said to be promising in England, shall be sent out to India for trial. The Watkin instrument of field pattern, which was originally issued, requires a level base of 60 to 120 yards, which can seldom be obtained in the hills.

Mules.

23. The mules, as a rule, are of a good stamp, and well fitted for the work required of them, and are usually in very good condition.

A reserve of 200 mules, to be kept at Hissar, has been asked for; they could not be purchased in sufficient numbers to replace casters and maintain the batteries, if we went to war.

Reserve ammunition mules.

24. The 20 mules for the carriage of reserve ammunition are ordered to be of a class which, admittedly, cannot carry the load. Hitherto, on service, extra mules have been supplied by the Transport Department, but now that mules for the purpose form part of the establishment of batteries, one of three alternatives is unavoidable; either the proper class of mule must be supplied, or the number increased above 20, each load being diminished, or ammunition will have to be left on the ground. It is surely undesirable to make these batteries as complete as they are, and to leave one weak link in the chain—an important point so easily remedied. As yet Government have not been induced to see it in this light.

HEAVY FIELD BATTERIES.

25. The Heavy Batteries are in an efficient state, except as noted below. The 6·3" R.M.L. howitzer is an inaccurate piece. Its use has been abandoned in England, where a 6" B.L. howitzer is under trial, which, it is hoped, will be introduced to replace the useless R.M.L. piece.

Drivers.

The bullock drivers universally complain of being treated as followers only, and of being debarred from the privileges of fighting men. Whether they are treated as fighting men or not, they have to take their guns into action under fire; and if they are expected to do this duty and accept the resulting liability, their claims to the advantages accorded to fighting men seem indisputable. Government so far have declined to improve their condition, and it seems more than probable it will shortly be found difficult to enlist men of this class. I need not do more than allude to possible awkward complications in action, should the batteries go on service with the drivers in their present dissatisfied condition.

Bullocks.

26. The bullocks are of a good class though latterly many objections have been made that they are not so good as they formerly were. They are mostly in poor condition, owing to an order recently given to feed them on whole gram. Careful experiments carried out, both by batteries under the order of His Excellency the Commander-in-Chief and also independently by the Commissariat Department

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at the instance of Government, have confirmed the well-known rule that feeding on crushed gram is more economical than whole grain, even when the latter is soaked and mixed with bhoosa. The matter is still pending a decision of Government of India.

A great number of bullocks in the Heavy Batteries are too old.

Trial will be made in the ensuing march in relief of two Heavy Batteries, of a proposed Field Service Marching Order based on that recently introduced for Horse and Field Batteries.

GARRISON BATTERIES.

27. It has been commonly accepted in England that Garrison Batteries in India are placed in bad stations, are much isolated, and have insufficient occupation. This has recently in a great measure been mitigated by batteries being stationed, two or three together, as at Bombay, Roorkee and Aden, and this principle will be extended to Rangoon and Quetta as soon as barracks are ready; also a larger amount of skidding, tackles, and stores for repository exercises has been allowed, and practice from rifled guns only has superseded the former allowance from smooth-bored ordnance. The result, as might be expected, is improvement in zeal and efficiency.

In the hope of gradually forming a school both for seige operations and for the better instruction in the general duties of Garrison Artillery, it is very desirable that four batteries, now temporarily placed at Roorkee, should remain there permanently.

The hearty co-operation of the Sappers and Miners, which has been much appreciated by the artillery, has enabled much valuable work to be done, which, without it, would have been impracticable.

NATIVE ARTILLERY.

28. The five batteries of the Punjab Frontier Force, the two Bengal Mountain Batteries and the two Bombay Mountain Batteries are in a high state of efficiency. They also have the advantage of being officered exclusively by picked men.

The four batteries of the Hyderabad Contingent are not in so satisfactory a state, chiefly owing to their being armed with obsolete smooth-bore guns mounted on wooden carriages which are completely worn out and unserviceable and reported as not worth repair.

If these batteries are maintained at all, surely they should be properly armed. 9-pr. R.M.L. wrought iron equipments available from the rearmed batteries of the 1st Army Corps should be issued forthwith.

VOLUNTEER ARTILLERY.

29. The Volunteer Artillery in Bengal is gaining ground in a very satisfactory manner. The material encouragement recently given by the Government of India, in extra guns and stores for training and in improved scales of ammunition for practice, has had the desired beneficial effect.

The one battery of Cossipore Artillery has recently been raised into two batteries, under a Lieutenant-Colonel, with 12 field guns. They now number 210, and, being composed chiefly of [illegible] Scotch artizans from the various adjacent mills, are a valuable addition to our defensive forces. They have [illegible] recently been granted some heavy guns for drill purposes. The Calcutta Naval Artillery Volunteers also are [illegible] maintaining their efficiency and increasing their numbers—during last two years from 91 to 150—and are now above their establishment.

Not so much is known as to the condition of the volunteers in the other Presidencies. An Artillery Volunteer Battery has recently been formed at Kurrachee. There is reason to doubt whether the physique of the Madras Artillery Volunteers is equal to the working of heavy guns. The volunteers at Rangoon are flourishing and are largely composed of mechanics; but we want more of them.

SIEGE TRAINS.

Siege trains.

30. The siege trains of India as at present constituted are hardly worthy of the name. The 64-pr. R.M.L. guns have been withdrawn, and nothing has been substituted. The 40-pr. R.M.L. is a good gun of its class, but the 25-pr. R.M.L. and the 6·3" howitzer are both weak, and the latter very inaccurate—5 and 4 inch B.L. guns should be demanded from England, as they are already in the service, and are provided with suitable siege carriages. The 6-inch B.L. howitzer required to replace the 6·3" R.M.L. howitzer has not yet passed out of the experimental stage in England, but its introduction into India, both for siege trains and heavy field batteries, is so urgent, that steps ought to be taken to ensure the India Office placing their orders directly the howitzer is finally approved.

Bullocks.

31. Two thousand four hundred and forty-two bullocks, ostensibly for siege train requirements, are kept up in Commissariat charge, but Government of India in May 1888 sanctioned the utilising of 1,670 of them for the ammunition wagons of the 2nd Artillery Reserve and for the carts of the Field Parks of the

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of a shop standing on site are made in the estimate.

Contingencies & Superintendence each charged at 2½ per cent.

The estimate has been countersigned by the Ag. Asst. Inspector General of Police & transferred by the Judl. Depr. to the P.W. Dept.

8.10.89.

G.O. 2nd Oct. 89 No. 1086 Judl

2865

~~Department.~~

~~Reference No. 188.~~

~~In replying the above should be quoted.~~

CHIEF SECRETARIAT MADRAS

110

READ the following letter from the Inspector General of Police, Madras, dated 18th September 1889 No. 4629

I have the honor to submit for sanction P.W.D. revised Estimate for Rs. 3651, for the Construction of 10 Police huts at Puthur, South Canara District. The necessity for the revision is explained by the Superintending Engineer in his letter No. 248/W dated 13 September 1889 herewith enclosed.

2. An appropriation of Rs. 3067 is made for this work in the P.W.D. Budget Estimate for the current year.

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1st and 2nd Army Corps. This leaves only 770 bullocks for siege train purposes, of which a considerable number would be unfit to go on active service.

By the latest tables, one siege train of four units with only 100 rounds a gun will require 1,005 bullocks. Very large purchases will have therefore to be made in the event of war; and if the subject has not already received attention, information should be obtained as to the number of bullocks that are available in the best districts of India, such as Mysore, the Berars, or Hissar, suitable for draft purposes for heavy artillery.

FORTS, COAST BATTERIES, AND FRONTIER AND INLAND DEFENCES.

Forts, Coast Batteries, Inland Defences.

32. Rapid progress has been made during the last year in Coast Batteries and North-West Frontier Defences, notably at Bombay, Kurrachee, Rangoon and Quetta. Emplacements for eventual armaments have been commenced, some are completed, but where are the guns? The insufficiency of the Royal Artillery, even aided by the British Infantry and Volunteers, to man the eventual armament, is a matter of grave moment, and is under consideration by the Government of India. The redoubts round Quetta are practically finished, and the provisional armament is already there, but the 40-pr. carriages are unserviceable, having been converted from those of 24-pr. smooth-bores.

The 4 and 5 inch B.L. guns of the eventual armament ought to be ordered at once.

At Madras it is believed that nothing has yet been done as to the eventual armament; and the Hooghly defences, owing to various circumstances, are still only in the early stage of construction.

Observing stations.

33. The erection of observing stations, and the provision of position and range finders of the most modern types, also of electric search lights, and more important still, of telegraphic or other communication between the Commanding Officer and his guns, for the batteries at the coast stations, have not yet been commenced. The aid of experts from England may be necessary for the observing stations and position finders, because, owing to the details of Major Watkin's inventions having been kept secret, even from officers of the Royal Artillery and Engineers, there is insufficient knowledge available in India. These instruments economize skilled labor so greatly that they appear to be specially necessary for India, where our artillery gunners will not suffice to man half of the guns that will be mounted in coast batteries.

Inland forts.

34. The inland forts are for the most part in good order. Their armaments are generally of the S B. type, but are suitable enough for the purposes for which they are likely to be required.

Charges for 9" and 10" R.M.L.

35. It is very desirable that the maintenance of both full and reduced charges for 9" and 10" R.M.L. guns when mounted should be discontinued, and full charges only should be issued. The two charges require different range tables and fuze scales, and are certain to cause confusion in the heat of action, all the more so because the ammunition carrying numbers are likely to be supplied by Native auxiliaries. Moreover, a reduced charge does not give the full recoil, and the gun has to be run back by hand before it can be loaded — a laborious operation which causes delay quite inadmissible when fighting enemy's ships on the move.

Shooting of the Artillery in India.

36. Prizes for skill-at-arms having, during last year, been separated into prizes for "Shooting" and "Theory," respectively, the consequence is that shooting prizes are now competed for by the 10 best "layers" in each battery. This has resulted in a decided improvement in the competitive practice in most batteries in India. But more than this is necessary; the general shooting must be more accurate, handling and preparing ammunition must be more expeditiously carried out, and the control of the fire of massed batteries by the senior officers, still in its infancy, must be perfected, before we can be satisfied that we are equal to the best continental armies in the most important duties of artillery men.

For the first two of the above requisites, the publishing, this year for the first time, of the figure of merit of each battery, the prizes about to be given by their Excellencies the Commanders-in-Chief and by the Inspector-General of Artillery, added to the prize which has for some years been given by Major-General Sir G. Greaves, will no doubt stimulate batteries to increased exertion, will create healthy emulation, and will improve the shooting, which, at present, is at a somewhat lower standard than that of the Royal Artillery in England.

2882

Practice camps.

37. The control of fire, and fire tactics and discipline generally, have been practised with promising results at the various practice camps held during the last two years. The assembling of batteries for this purpose at Gurgaon, (7 batteries), Bangalore (3 batteries), and Neemuch (4 batteries), together with siege operations near Roorkee (4 batteries), and at Kirkee (2 batteries), have been attended with the best possible results.

In addition to improved shooting caused by batteries observing each other's shortcomings, opportunity has been taken for instruction in fire tactics and discipline, supply and replacement of ammunition, the best formation for "rendezvous" from the line of march, advancing to the attack, disposition of wagons and limbers, picking up ranges and observation of fire, and various drills and exercises which are possible only when several batteries are massed together.

The camp at Gurgaon was instructive and a decided advance on that held the previous year near Lucknow, but still more progress might have been expected on the part of 3 out of the 7 battery commanders. The Bangalore camp was not so good, the orders on the subject not being followed. The camp at Neemuch was, however, a great advance on any we have yet held. Not only did 3 out of the 4 batteries shoot well above the average, but their Commanding Officers had mastered the rules, aided no doubt by the Camp Commandant, who had the advantage of previous experience in command of one of the Brigade Divisions at Gurgaon. They were also quicker in serving the guns than at any other camp.

Siege operations.

The siege operations near Roorkee made a beginning of what may be hoped to become a valuable school for garrison artillery. They were fairly successful, and marked improvement may be anticipated next season.

The work done at New Jhansi near Kirkee was more instructive, the camp being better supplied with material for instruction in accordance with the wishes of its Camp Commandant. Indeed the authorities in Bombay were blamed for having gone beyond the equipment tables, but there is no doubt that such latitude is very beneficial, the value of siege work being influenced by the variety of training, which, in its turn, is considerably dependent on the individual judgment of the Commanding Officer.

(Signed) C. E. NAIRNE, Brigdr.-Genl.,
Inspector-General of Artillery in India.

Simla,
15th August 1889.

Order thereon, 30th September 1889, No. 6683.

No. 369. Communicated for the information of His Excellency the Commander-in-Chief and Departments concerned.

(True Extract.)

Colonel,
for *Secretary to Government.*

To the Adjutant-General.
" Quarter Master General.
" Inspector-General of Ordnance.
" Commissary-General.
" Superintendent, Army Clothing.
" Superintendent, Reserve Remount Depôt, Hosúr.
" Public Works Department.
"

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Exd. J. Henricus.

[19]

Reference on No. 2539 of 1889.

In replying the above should be quoted.

Judicial 2885 DEPARTMENT.

CHIEF SECRETARIAT, MADRAS.

READ the following Letter from the Inspector General of Police, Madras, dated

× Copy attached 18th September 1889 No. 4629.

Go of 2d October /89 No. 1086

2/10

Transferred to the Public Works Department.

Madras
2d October /89

A. G. Cardew.
Under Secretary

SECRETARY TO GOVERNMENT
5 OCT 89
P.W. DEPARTMENT, MADRAS.

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To The Public Works Department with papers.
" Inspector General of Police

PW No 9562 A

Govt. of {1889} Madras.

MILITARY.

To
THE ADJUTANT-GENERAL,
&c., &c., &c.

Dated September, 30th. 558

Issued

Recd. 11. 10. 89 Encl.

G.O., 30th September 1889, No. 6683.

SEPTEMBER.
Nos. 368-369.

Artillery—Inspection Tours.

Inspector-General of Artillery in India.—Report by the — on the batteries and forts inspected by that officer during the last cold season, communicated for information to His Excellency the Commander-in-Chief and Departments concerned.

No. 2882 W d/ October 16, 89

15/

Communicated to
the Supdg Engr V Circle
for information.

12.10.89

12.10.89

S.E. V Circle

18/10.

despd
14-10-89

P.W. Cn. No. 9342

G.O. 85 W d/10.1.88

Enclos. 6

Recd 5.10.89

No. 2885 W

2885 B.R. & Civil Works

PUBLIC WORKS DEPARTMENT

PROCEEDINGS OF THE MADRAS GOVERNMENT

October 14, 1889

READ the following

From the Inspector General of Jails — No. 4629 d/18th September 1889.

Endorsement thereon in the Judicial Dept. — No. –, d/12th October 1889.

E.P.

The revised estimate amounting to Rs 3,651, for constructing ten police huts at Puttur in the South Canara District, is sanctioned in supersession of the estimate of Rs 3,067 sanctioned in G. O. No. 85 W dated 10th January 1888.

2. — A sum of Rs 3,067 has been provided for the work in the current year's Provincial budget.

3. — This sanction has been registered as Provincial No. 72 W of 1889-90 and classified as Civil Buildings, Original Works.

Wlp 13 Oct

To
The Supdg Engr IV Circle, with 4 enclosures.
" Examr P. W. Accounts, with duplicate abst. estimate.
" Judicial Department.

10.10.89

10.10.89

(1) பக்கங்களின் எண்ணிக்கை 8

(2) புதுக்கித் திருப்பிய நாள் 3/90

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

(25)

P. W. D. துறை

அரசாணை எண். மு. கோப்புத் தாள் எண்.	2886	அச்சகம் பலவகை
நாள் :	14-10-1889 ~~19~~.	

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

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Govt. of 18 ; Madras.

PUBLIC WORKS,

15/10

Dated

Recd.

Encl.

G.O. 14 Oct 18/9 No. 2885 W

Police huts at Puttur,

S. Canara Dt.

Revised est: for —,
sanctioned.

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