Public Works (1897) Department.

G.O., No. 22265

DATED 16 August 1897

[Despatch Abstract.]

Famine Relief Estimates, Famine Tools Vca.

Rod: Revenue Dept. passing orders on the final report submitted by the Bd. members of the Board of Revenue and the Chief Engineer and Secretary to Govt. P.W.D. regarding — Purchase & Issues of the P.W.D. with remarks

D.E. 18/8

[V.W. 25. 5,000—30-11-96.]

Indexed. 17/8

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Ch 8/97

No. 2226W, dated 16th August 1897

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

G.O. No. 604 Revenue dated 21st July 1897.

Communicated to the officers of the Public Works Department.

2. The Chief Engineer will submit the information called for by Govt., and take action on para 6 in regard to the men whom he proposes to withdraw from the affected districts.

& Action already taken. (Memo 954 D 28.7.97)

11/8/97

W.

To

Suptg. Engineers.
the Chief Engineer, P.W.D.

C. Eforms 18/8/97

(40—4,000—2-11-95.)

Cur. 8165

Re

Panel of P.O.
No 2226 W of 16.8.97
has apparently
been disposed of
by Mem No 9548
of 28.7.97. If so,
this current can
either be attached
to the memo, or
recorded with ref.
to it. If the
former course is
followed, please
send advice for
the records here.

Avail the P.O. subject
on the general subject
of famine tanks, which
is being printed.

Submitted to Cur
accordingly Regd
3/9/7

Note and Dispatch

Current No: 8071

Government { 1897 } of Madras.

REVENUE.

The original has been received & returned as per copy; vide this attached with a docket sheet quoting a current No: as asked for by the Returns Office.

Reed. { 13 - 8 } 1897.
Regd.

Enclosures -

Spare copies 12

(13.8.97)

G.O., No. 604, 21st July 1897.

JULY.

Passing orders on the final report submitted by the Third Member, Board of Revenue and the Chief Engineer and Secretary to Government, Public Works Department, regarding Famine Relief works, estimates and Famine tools, &c.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—letter from the Hon'ble Colonel D. McNEIL CAMPBELL, R.E., Chief Engineer and Secretary to Government, Public Works Department, and H. M. WINTERBOTHAM, Esq., I.C S., 3rd Member, Board of Revenue, to the Secretary to Government, Revenue Department, dated Madras, 5th July 1897, No. K.

In continuation of our letter I, dated June 24th, 1897, we have the honor to submit herewith a separate note by each of us, embodying the general remarks which each wishes to make in connection with the eight joint reports which we have already submitted.

On the completion of our tour to the eight districts, arrears of work urgently required our immediate return to our respective head-quarters, and we thought it unnecessary to spend the time and incur the delay which the composition of a joint report would have involved.

Note by H. M. WINTERBOTHAM, Esq., I.C.S., *Third Member of the Board of Revenue, dated 3rd July* 1897.

With reference to the eight reports which we have submitted on the districts of Coimbatore, Salem, North Arcot, Nellore, Kistna, Chingleput, South Arcot and Trichinopoly, the following points seem to call for further remark or explanation.

1. *Establishments.*—For Coimbatore (the first District we visited) we recommended the immediate entertainment of 8 temporary Surveyors with 3 lascars each, for the preparation of estimates (suitable for the employment of relief workers) for the repair of tanks and channels in charge of the Department of Public Works.

We have not made a similar recommendation for the other Districts, though the transfer of hands for famine duty has seriously weakened the ordinary Staff in all of them, and though the Public Works Department contributions to the Famine Programmes are everywhere less than they should be. This inconsistency is due to our sense *first* of the impossibility of finding the requisite number of qualified temporary hands, and *second* of the waste of money which will result, should elaborate preparations for an extended drought happily prove unnecessary.

When the famine ceases, retrenchment is likely to be the order of the day. The works would not generally be such as could be classed as emergent, and the estimates would not keep serviceable for an indefinite time.

2. When, however, part (often the greater part) of the ordinary staff in a District has been moved away for famine duty, I cannot see any justification for not filling up the vacancies with temporary hands, short of the all sufficient one that no qualified men can be got. I am not satisfied that enquiry for competent hands has been exhaustive, and I think that orders should issue to all Executive Engineers to bring their District Staff up to the sanctioned strength so far as fit temporary hands can be found. Even if the temporary hands were not at first qualified, they would at least be in training, and on the way to become so. The difficulty of obtaining qualified extra hands is, of course, due to the fact that the demand for them only occurs at long intervals for short periods.

Men were advertised for but only 23 suitable candidates could be got and they have been appointed temporarily to take place of subordinates transferred to famine work. D.C.

Considering what an enormous demand for extra hands might arise in the near feature, it would seem good policy to let the existing demand make itself fully known. So far as the demand operated to induce students to set to work to qualify as Overseers, its effect must be to that extent beneficial, and if no fit hands are forthcoming, Government will at least learn the true extent of its weakness.

3. The weakness, chiefly numerical, of our District organization in all Departments, its inability to meet any sudden extraordinary strain, and the difficulty of rapidly strengthening it, are the most discomforting features of the situation. As soon as the village officers are set to work to prepare against future contingencies under Chapter VI of the Famine Code, their other duties are perforce let slide, and it is useless to ask concerning the crops and cultivation. There is a similar dislocation of ordinary work in every grade, up to the sorely pressed Collector, who is too often the solitary European Revenue Official in the District, on whose narrow shoulders rests the weight of the whole machine. I have no remedy to suggest. Financial exigencies compel us to keep our establishments down at a strength which is just sufficient in times of prosperity, and in times of adversity we cannot escape the penalty.

The same remarks apply to the P.W.D. D.C.

4. *Famine tools.*—Messrs. Oakes & Co. have about 950 mamooties and 1,000 large hammers in stock. They cannot, they say, make hammers, because no suitable steel can be procured in the local market. Messrs. Massey & Co. have about 3,000 mamooties in stock, at prices varying from Rs. 13 to Rs. 30 per dozen, and 900 pickaxes at Rs. 20 to Rs. 21-8 per dozen. They could turn out steel hammers weighing 2 lbs. and 3 lbs. at the rate of 100 per day, price Rs. 650 per 1,000 for 2 lb. hammers, and Rs. 950 for 3 lbs. There do not appear to be any other local Firms, who deal in tools, and who could be entrusted with a large contract. The Agent of the Madras Railway expressed himself able and willing to manufacture hammers in large numbers at the Railway Workshops. I have asked him and the Chief Engineer of the South Indian Railway, to state what number they could turn out per diem, and at what price. Colonel Campbell has particulars of the stock, and the productive capacity of the Public Works Department Workshops. The Superintendent is put to his wits'end to meet the enormous demand. Some of the hammers now being supplied are mere lengths of bar-iron with a hole in the middle. They are fit for children's use, but the iron is so soft that they will rapidly become unserviceable. Some hammers of chilled cast-iron, which he has made as an experiment, are admirably hard and cheap, but are brittle and liable to fracture if used sideways with great force. It is expedient that these should be subjected to a fair trial on a sufficiently large scale. When once a sufficient number of moulds are constructed, these hammers could be turned out rapidly at a small fraction of the cost of steel hammers. The danger of famine will be ever with us; and the population to be dealt with tends rapidly to increase. Government is bound to maintain a large stock of tools, and in the end I believe, it will be cheapest to provide steel hammers. The comparatively large reserves, which, we have advised, should be provided for the eight Districts, would after all not suffice for more than three per cent. of the population. I certainly think that 50,000 2 lb. hammers, and 50,000 3 lb. hammers of steel, should be obtained from England at once.

Information is given in my note. D.C.

5. A report should be called for as to the patterns of tools, which have been found in actual use most serviceable for famine labour. We were informed at Guntakal that even the women preferred heavy 4 lb. hammers. I think a 2 lb. hammer most suitable for women and children, and a 3 lb. hammer for men; but where hard rock, in large fragments, has to be broken, a proportion of 4 lb. and 8 lb. hammers would be required.

I have already called for this report. D.C.

6. Nearly all the mamooties in stock are of the Madras pattern, intended for a short handle parallel to the blade. The Wudders prefer this muster, but for relief workers not accustomed to their use, I should think the English form of hoe (which is the West Coast and the Bengal pattern) much better. I think the weight should not exceed 5 and 6 lbs.

7. *Instruments for clearing prickly pear.*—I do not know that there is any accepted pattern. From personal experience I advocate the following:—

(1) A combined prong and hook, with a four-foot handle of male bamboo.

(2) A double prong something like an English pitch-fork, but with the prongs closer together.

(3) A rake with eight teeth two inches apart. Invaluable for raking up young plants by the roots.

I agree. D.C.

8. *Relief works*—It is difficult to make any useful fresh remarks under this head. The subject is discussed in paras. 45—54 of Mr. Clogstoun's Report on the Famine of 1891-92. The removal of prickly pear, which forms so large a part of the Famine Programme in some districts, cannot be conveniently performed under the rules of Chapter VII of the Famine Code. If undertaken it should be on the contract system. The same remark applies to the

repair of small scattered tanks. Petty estimates for clearing out drinking-water ponds are very numerous, but where the ponds contained water, it would generally be too precious to be spared and the work could not be undertaken even on the contract system.

The clearance of silt from tank-beds is (I know not why) an operation which the Public Works Department contemns. In some of our great tanks large bodies of relief-workers might be employed upon it; but the work would be liable to awkward interruption by a sudden fall of rain.

In Zemindaris there is really no work but road-work available. One seems driven to Mr. Clogstoun's conclusion that "Work on roads will have to be more and more resorted to to give employment to famine labor, even if the work should only be useful as forming a test of the necessity of relief."

9. So far as anxious recent study of the Famine Code can acquaint a man with the proper methods of relief administration, I think we may say that we found officers of all ranks well prepared. Some of the Deputy Collectors had continued their studies far into the night prior to our arrival, and appeared, Code in hand, prepared at all points for examination.

In some places the District Revenue staff had been diligently employed, in literal obedience to the order of Government, in drawing up Village lists showing the name, caste, sex and age of the halt, the blind, the deformed, the imbecile, the insane, the deaf-mutes, and of all others who would, in the event of famine, be likely to require gratuitous relief. It may be hoped that the labor will prove to have been thrown away.

10. Since writing the above I have read Colonel Campbell's note. I agree with what he has written on the subject of tools paras. 18 to 24. I would call on all Collectors to report what supply of handles for pick-axes, mamooties and hammers, each is in a position to obtain (*a*) from his Forest Officer, (*b*) from Contractors: at what rate per thousand; and what is the shortest period within which the number quoted (whatever it is) could be made available.

Note by the Hon'ble Colonel D. McNeil Campbell, R.E., *Chief Engineer and Secretary to Government, Public Works Department.*

After careful inquiry regarding rainfall, prices and general condition of the Districts, I agree with the opinions of the Collectors and the other local officials consulted that in the event of a failure of the South-West moonsoon, there will be no distress requiring the assistance of Government except perhaps in some parts of the Nellore, North Arcot and Kistna Districts. The parts that may be affected but in which it is not anticipated there will be any acute distress are the Darsi and Podili Divisions in Nellore District, the Punganuru Zemindary and parts of the Chendragiri taluk in the North Arcot District and the upland taluks of the Kistna; the area and population of these tracts are small and no great strain will be thrown on the resources of Government should it be found necessary to adopt measures of relief. The conclusions arrived at are based mainly on the present conditions of the Districts, but all the Collectors point out that it is impossible to foretell what may be the effect of a considerable rise in prices.

2. The subject of prices is a very difficult one to deal with, and it is almost impossible to account for the great variations in different places. It seems not unlikely that if the South-West monsoon fails and it becomes generally known that Government are preparing for a famine, the prices now high will rise higher and a fictitious famine be caused in districts in which there is no scarcity of food, and I am of opinion that it is a matter for careful consideration whether Government intervention is necessary in such cases.

3. By a rise in prices caused by exportation or holding up in districts where there is plenty of stock, the producers make large profits and consequently are in a better position to support their dependents, chiefly the Agricultural labourers, than they are in ordinary seasons, but if Government start relief works, it is then the object of these producers and grain merchants to make as many as possible of these dependants (whom in ordinary years they support) go to these works, the result being that they save themselves considerable expense while at the same time nearly all the Government money spent on famine relief goes into their pockets.

4. The people most likely to suffer in the case of a fictitious famine caused by high prices are not of the agricultural classes but professional labourers and those engaged in technical trades, and the result of restricting expenditure on ordinary works is that great distress may be caused amongst these classes. This has been pointed out to me by several of the local Engineers who owing to reduction of establishment caused by men withdrawn for famine have been obliged to stop works, the result being that the labourers employed are now without means of support, and the prices being high, they must necessarily suffer considerably. I therefore think that, before starting famine relief, it should be carefully ascertained

whether the high prices are caused by actual want of food supplies or by exportation and holding up. In the former case, the intervention of Government is necessary, but in the latter case, all that seems advisable is to increase the ordinary Public Works of the District, the rates being raised in proportion to the price of food grain.

5. This subject requires the most careful consideration, for with the present facilities for exporting, it is very probable that an actual failure of crops in one district will be followed by a rise in prices in many others, and if on this occurring Government has to start famine works in each district where the prices are above the scarcity rate, the expense to the State will be very great.

6. I have stated that even should there be a failure of the South-West monsoon, the distress will not be severe, only affecting parts of three districts; but the Engineering establishments of these districts have been so reduced by withdrawals for famine in the I and III Circles that it will be impossible to find the establishment necessary to carry out relief works without stopping nearly all ordinary works which, as I have already pointed out, will cause considerable distress. I would therefore suggest that, as soon as the services of men from the Sappers and Miners, the Salt and other Departments have been obtained, 20 of the Public Works Subordinates now on famine works in the Ceded Districts should be posted to the Districts in which it may perhaps be necessary to start relief works. I think that 10 to the Kistna and 5 to each of the other two Districts Nellore and North Arcot will suffice with the help of the Local Fund establishment to carry on all relief works that may be required.

I concur.
H.W.

7. The works in the programmes are ample to meet all distress that may arise before next November: by far the greater portion of the estimates are for road repairs and I would point out that all these estimates include a large sum for cartage which is not suitable for famine relief unless the lead is under a mile in which case the metal can be carried by coolies. It may be said roughly that $\frac{1}{3}$ of the estimates are for cartage and I think this item should be separated in future estimates, otherwise a wrong impression is given of the sum available for famine relief purposes.

I think their first task should be to prepare a number of estimates.
H.W.

Very desirable. In most districts a lump rate, including cartage, is quoted for stacking metal on each mile of road.
H.W.

8. The tools, more especially stone breaking hammers, are insufficient, as will be shown further on.

9. Though there is no reason to apprehend such a calamity as a failure of the North-East monsoon, still should there be no South-West rains considerable anxiety will be felt, and it will be necessary to be prepared for the worst.

10. In the case of a wide-spread famine, that is, supposing the distress in the I and III Circles to continue and also spread to the eight Districts visited the great difficulties to contend with will be, 1st, the provision of the necessary Engineering Establishment, 2nd, the finding of suitable and useful work on which to employ famine labour. Both these difficulties can be partly met by concentrating labour on a few large works forcing the distressed persons to migrate if necessary. I cannot too strongly urge the necessity of this concentration of labour feeling assured that it will be absolutely impossible, if the famine becomes widespread, to carry on relief works on the system adopted in the Ceded Districts.

11. From the latest information received the number of coolies employed on relief works in the Ceded Districts was 305,189, and the number of works 117, giving an average of 2,600 coolies on each work. Now supposing 20 per cent. of the population of the Districts now affected and also of the eight visited to require relief, the number to be provided for would be 43,50,000 in round figures and if only 2,600 coolies were employed on each work the total number of works would be 1,679 requiring at least 14 Executive Engineers, 43 Assistant Engineers, and 1,679 Upper Subordinates, and the question is where are these to be got from?

12. It is not at all likely that the large proportion of 20 per cent. of the population will ever be employed on relief works at the same time, though it is quite possible that that proportion will be reached if the present system of opening works at the doors of the distressed villages is continued as many not in actual want will resort to them. In the great famine of 1876-77 the maximum proportion of the population relieved was as follows:—

Bellary	...	...	...	50·99 per cent.
Kurnool	...	...	...	31·24 ,,
Cuddapah	...	...	...	21·86 ,,
Anantapur	...	...	...	22·70 ,,

In most of the other districts it was below 10 per cent. If it should happen that 20 per cent. of the population has to be employed on relief works for any length of time it will be simply impossible to find any useful work for such a large number of persons and the expenditure on famine will then be practically gratuitous relief, work whether useful or not being exacted as a test of distress.

13. I have strongly advocated the concentration of labour on large works and it remains for me to show how this can be done as far as regards the eight districts visited.

14. The Madras Railway runs through the Chingleput, North Arcot, Salem and Coimbatore Districts. The masonry works have all been built to take a double line and I believe the necessary land has been taken up for the purpose, and I would suggest that in the event of a wide-spread famine the line be doubled from Arkonam to Mettupalayam (Madras to Arkonam already doubled). The earthwork for this and the preparation of ballast would occupy a very large number of persons for a considerable period, and as there is no doubt that this line will have to be doubled eventually though it may not be required for some years to come the money would not be wasted.

15. This work would afford relief to three districts, *viz.*, North Arcot, Salem and Coimbatore and might be supplemented by the following works :—

North Arcot.

1. Clearing silt from Kaveripakkam tank bed.
2. Clearing Kaveripakkam tank supply channel.
3. Some of the largest road works.

Salem.

Some of the largest road works.

Coimbatore.

1. Bhavani Reservoir Project.
2. Extension Kalingarayan Channel.
3. Some of the largest road works.

16. In the remaining districts the following are the only works of any magnitude I can suggest :—

Kistna District.

1. Kistna River embankments.
2. Some of the larger roads.

Nellore District.

1. Supply channel from the Pennair River above Sangam to Nellore.
2. Moldevi drain.
3. Clearing silt from the Nellore tank.
4. Some of the larger roads.

Chingleput District.

1. Widening railway lines from Madras to Chingleput.
2. Some of the larger roads.

South Arcot District.

1. Extension of the Buckingham Canal.
2. Coleroon flood banks
3. Some of the largest roads.

Trichinopoly District.

1. Some of the largest roads.
2. Breaking metal at Central quarry. But the works mentioned though sufficient to give employment to all who will require relief for many months even in the event of a failure of the North-East monsoon following that of the South-West will not be enough to supply 20 per cent. of the population for any considerable period, and the only other work that I can suggest is the preparation of enormous quantities of road metal at a few central quarries near railway lines in each District. Since writing the above I have had a conversation with the Chief Engineer, South Indian Railway, and he says a large amount of famine labour might be usefully employed in breaking metal for ballast along all the South Indian lines and that it would be paid for at the rates now in force.

17. If the works could be concentrated as suggested the amount of supervision required would not be very great, and probably 8 Executive Engineers, 16 Assistant Engineers and 100 Upper Subordinates would suffice for the 8 Districts visited; but the numbers now employed on supervising works in the I and III Circles will have to be increased as the system of small works in force there cannot well be altered now, so that the total Engineering Establishment necessary to cope with a wide-spread famine would approximately be—

14 Executive Engineers.
36 Assistant Engineers.
250 Upper Subordinates.

18. The necessity, therefore, of having a list submitted of officers and subordinates in other Departments and also of Military men available is apparent as the Public Works Department cannot provide such a large amount of supervision.

Tools.

19. The famine tools now in the Presidency are altogether inadequate in the event of a severe and wide-spread famine; these numbers were laid down by the Board of Revenue in its Resolution No. 6144-M., dated 25th October 1893 andembodied in G. O. No. 3116-W., dated 2nd December 1893.

20. The number, it is suggested should be maintained and which is based on the moderate computation that if 10 per cent. of the population are employed on relief works, 1 person out of every 3 will require a tool, is as follows .—

Districts.	Stone breaking hammers.	Mamooties.	Pick axes.	Rammers.	Crowbars.	Sledge hammers.	Hand axes.	Bill hooks.	Tools for prickly pear.
Coimbatore	40,000	9,000	5,000	1,000	9,000	500	500	500	500
Salem	44,000	9,000	5,000	1,000	9,000	500	500	500	500
South Arcot	44,000	9,000	5,000	1,000	9,000	500	500	500	500
North Arcot	44,000	9,000	5,000	1,000	9,000	500	500	500	500
Kistna	22,000	4,500	2,500	500	4,500	250	250	250	250
Nellore	33,000	6,900	3,750	750	6,900	375	375	375	375
Chingleput	22,000	4,500	2,500	500	4,500	250	250	250	250
Trichinopoly	22,000	4,500	2,500	500	4,500	250	250	250	250
Total...	2,71,000	56,400	31,250	6,250	56,400	3,125	3,125	3,125	3,125

21. For Ganjam and Vizagapatam the number of tools required might be calculated in the same manner as in the case of the Districts visited, but in the case of Bellary, Anantapur, Kurnool and Cuddapah, I think the proportion should be *trebled. As regards the remaining districts no action need be taken at present. The following, therefore, represents the number of tools that I consider necessary enough to maintain in the affected Districts.

* This would give total tools in round figures,

Bellary	...	88,000
Kurnool	—	81,000
Anantapur	—	72,000
Cuddapah	—	1,27,000

In most of the other districts it was below 10 per cent. If it should happen that 20 per cent. of the population has to be employed on relief works for any length of time it will be simply impossible to find any useful work for such a large number of persons and the expenditure on famine will then be practically gratuitous relief, work whether useful or not being exacted as a test of distress.

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20. The number, it is suggested should be maintained and which is based on the moderate computation that if 10 per cent. of the population are employed on relief works, 1 person out of every 3 will require a tool, is as follows .—

Districts.	Stone breaking hammers.	Mamooties.	Pick axes.	Rammers.	Crowbars.	Sledge hammers.	Hand axes.	Bill hooks.	Tools for pricking.
Coimbatore	40,000	9,000	5,000	1,000	9,000	500	500	500	500
Salem	44,000	9,000	5,000	1,000	9,000	500	500	500	500
South Arcot	44,000	9,000	5,000	1,000	9,000	500	500	500	500
North Arcot	44,000	9,000	5,000	1,000	9,000	500	500	500	500
Kistna	22,000	4,500	2,500	500	4,500	250	250	250	250
Nellore	33,000	6,900	3,750	750	6,900	375	375	375	375
Chingleput	22,000	4,500	2,500	500	4,500	250	250	250	250
Trichinopoly	22,000	4,500	2,500	500	4,500	250	250	250	250
Total...	2,71,000	56,400	31,250	6,250	56,400	3,125	3,125	3,125	3,125

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Districts.	Stone breaking hammers.	Mamooties.	Pick axes.	Rammers.	Crowbars.	Sledge hammers.	Hand axes.	Bill hooks.	Prickly pear tools.
Bellary	55,000	10,000	6,000	5,000	10,000	500	500	500	500
Kurnool	50,000	10,000	5,000	5,000	9,500	500	500	500	500
Anantapur	45,000	8,000	5,000	4,000	8,000	500	500	500	500
Cuddapah	80,000	15,000	5,000	10,000	15,000	500	500	500	500
Ganjam	35,000	8,000	3,000	7,000	8,000	500	500	500	500
Vizagapatam	55,000	15,000	5,000	6,000	10,000	500	500	500	500
Total...	3,20,000	66,000	29,000	37,000	60,500	3,000	3,000	3,000	3,000

22. In addition I would propose that the following stock of tools of various descriptions be kept in the Public Works Stores to provide for wear and tear and losses:—

Stone breaking hammers ...	1,00,000	Hand axes	1,000
Mamooties	50,000	Bill hooks	1,000
Pickaxes	30,000	Prickly pear tools	1,000
Rammers	30,000	Galvanised iron chains	28
Crowbars	50,000	Jumpers	1,000
Sledge hammers	5,000	Wooden cash chests ...	300

23. The following shows the total number of tools I consider necessary :—

Hammers	6,91,000	Handaxes	7,125
Mamooties	1,72,400	Bill hooks	7,125
Pickaxes	90,250	Prickly pear tools	7,125
Rammers	73,250	Iron chanis	28
Crowbars	1,66,900	Wooden cash chests	300
Sledge hammers	11,125	Jumpers	1,000

24. The exact number of serviceable tools now in stock cannot be ascertained till the special returns called for from the Executive-Engineers have been received, but there is no doubt that a very large number will be required to be made or purchased.

25. The numbers given as necessary seem large, but when it is considered that in the 8 districts visited it only allows one tool to 1/3 of 10 per cent. of the population and to 1/3 of 30 per cent. in the Ceded Districts and makes no allowance for the remaining districts it cannot be considered excessive. The demand for stone breaking hammers is very great about 3,00,000 are now in use in the I and III Circles and indents are constantly being received for more. The division of the different description of tools required is of course somewhat arbitrary, as it is impossible to tell exactly how many of each sort will be required till the nature of the work to be done is known: but there is no doubt that a large number of stone breaking hammers will be required, and I recommend that an urgent indent for 1,00,000 be at once sent to the Secretary of State. It will perhaps be time enough to get the other tools when the result of the South-West monsoon is known.

I concur. H.W.

26. There is considerable difficulty in fixing the most suitable weight and description of each sort of tool. The indents from the famine officers vary considerably, for instance, one officer states that he does not want hammers weighing over 1½ lbs. another that he wants 3 lb. hammers and so on. In the case of mamooties the same difficulty is felt. There are some in the Public Works Stores weighing from 5 to 14 lbs. which latter are far too heavy and most officers say that the weight should not exceed 5 lbs. The description of mamooty has also to be decided. I would recommend that the indent on the Secretary of State for hammers should state that they are to be of steel weighing from 1½ to 3 lbs. Further inquiries will be made from the famine Officers as to the best form and weight of mamooty.

½	weighing 1½	...
½	weighing 2	...
½	weighing 3	...

Handles.

27. Hearing rumours that delay had been caused by the tools being supplied without handles, I wired to the Superintending Engineer to know what were the real facts, and

he answered that some slight delay had been caused by tools having to be provided with handles and that he would like handles to be provided in future. I think that issuing tools provided with handles would be a mistake; in the first place the difficulty of carriage would be much increased, and in the next the provision of handles is in itself a relief work. My own experience is that there is no difficulty in making handles for tools and the opinion of most Engineers I have consulted agrees with mine: of course if a famine Officer indents for a large quantity of tools, say 20,000 hammers and waits till he receives them to supply handles there must be delay, but I consider with proper management all delay may be avoided. Frequent complaints are made about delay in the supply of baskets which wear out very quickly; baskets cannot be stored for any length of time as they get destroyed by insects very soon, and as their manufacture gives employment to local labour, I do not think it advisable that they should be supplied from outside.

28. The famine tools in the Public Works Workshops, Madras, were inspected by Mr. Winterbotham and myself on the 18th Instant in the presence of Mr. Moss the General Superintendent.

29. The number of tools now in store is as per margin. This is altogether insufficient and the Superintending Engineer is preparing an indent for more. Very large quantities of tools have been issued to the famine districts, the number of stone breaking hammers and rammers alone amounting to 2,09,239 and 23,561 respectively. Indents for hammers were received faster than they could be complied with, and the General Superintendent had to have recourse to the local bazaars, and purchased some wrought iron ones at 2 annas 6 pies per lb. These are of most inferior quality and are simply formed by cutting around bar of iron into small lengths, flattening out their lengths and drilling a hole through the middle. I am of opinion these hammers will not last more than a few weeks. Hammers are also being made in the Workshops both of wrought iron and chilled cast iron, and they can be turned out at the rate of about 2,000 a day. The former are not tipped with steel and are somewhat poor though far superior to those bought in the bazaar; the cost annas 2 and pies 3 per lb.

Pick axes	...	4,055
Felling axes	...	4,368
Crow bars	...	245
Hand hammers	...	958
Bill hooks	...	3,073
Mamooties	...	16,239
Iron rammers	...	322
Quarry picks	...	3,768

30. The chilled cast iron hammers cost 1 anna per lb. and seem excellent and can be turned out faster than any of the other descriptions. The Famine Officers have been asked by wire to report on these hammers but no answer has been received. The number of hammers required in the famine districts is so great that the Workshops cannot keep pace with the demands. Enquiries have therefore been made from Messrs. Oakes & Co. and Messrs. Massey & Co. Mr. Winterbotham has received an answer from the latter firm but not from the former. Enquiry is also being made as to whether the Railway Workshops at Perambur and Negapatam will undertake to turn out hammers, and if so, how many.

31. The mamooties in store were of various weights, many of them being as much as 14 lbs. which I consider useless for famine purposes, five or six lbs. seem as heavy as desirable.

Note by the same Officer, dated 7th July 1897.

Since the despatch of my note dated 29th June 1897, intimation has been received by Mr. Winterbotham from the Agent and Manager of the Madras Railway Company that stone breaking hammers can be made at the Railway Workshops, Perambore, for the purpose of famine relief and that they can be turned out at the rate of from 600 to 800 a day at a cost of Rs. 35 per 100. I have seen a sample hammer and it weighs 2½ lbs. and is I consider suitable for relief purposes.

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No. 742—D, dated 7th July 1897.

Forwarded to the Revenue Department in continuation of letter No.K, dated 5th July 1897.

(Signed) D. McNEIL CAMPBELL, Colonel, R.E.,
Secretary to Government.

Districts.	Stone breaking hammers.	Mamooties.	Pick axes.	Rammers.	Crowbars.	Sledge hammers.	Hand axes.	Bill hooks.	Prickly pear tools.
Bellary	55,000	10,000	6,000	5,000	10,000	500	500	500	500
Kurnool	50,000	10,000	5,000	5,000	9,500	500	500	500	500
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No. 742—D, dated 7th July 1897.

Forwarded to the Revenue Department in continuation of letter No.K, dated 5th July 1897.

(Signed) D. McNEIL CAMPBELL, Colonel, R.E.,
Secretary to Government.

Order—No. 604, dated 21st July 1897.

The Government will await the reports called for by the Chief Engineer as to the patterns of tools which have been found in actual use most serviceable for famine labourer and as to the exact number of serviceable tools now in stock, before passing orders on the proposals in the notes read above for the supply of famine tools to the 14 districts dealt with therein and for the maintenance of a reserve stock. As, however, the need for stone breaking hammers is urgent, the Consulting Engineer for Railways will be requested to arrange immediately with the Madras Railway Company for the manufacture of 50,000 hammers of the pattern supplied, on the terms specified in the letter of the Agent and Manager to Mr. Winterbotham. An urgent indent will also be made by telegram on the Right Hon'ble the Secretary of State for 90,000 steel hammers:—30,000 of 1½ lbs. weight, 30,000 of 2 lbs. and 30,000 of 2½ lbs. as recommended by the Chief Engineer. The Board of Revenue will be requested to submit at once a formal indent in quadruplicate for transmission to the Secretary of State.

2. As regards the chilled iron hammers now turned out by the Public Works Workshops the Government is of opinion that they should be subjected to trial on a sufficiently large scale before the present method of manufacture can be finally approved. The Chief Engineer should take immediate steps to have the trials carried out.

3. The Government concurs in the remarks in paragraph 26 of the Chief Engineer's note in regard to baskets and handles for tools. Collectors will accordingly be called upon to report as early as practicable what supply of handles each is in a position to obtain and at what cost. (Paragraph 10 of Mr. Winterbotham's note.)

4. The attention of the Board of Revenue will be drawn to the remarks in paragraph 7 of the Chief Engineer's note as to the cost of cartage included in the estimates for road repairs. Collectors should be instructed to separate the amounts provided for cartage in the estimates of works and to show in their programmes in future only the amounts available for expenditure on famine labour.

5. The Government has already accepted the proposal referred to in paragraph 13 of the Chief Engineer's note to concentrate famine labour on large works, and has called upon the Board of Revenue to report the extent to which this can be done and to direct Collectors to have estimates for such works prepared immediately. (*Vide* G.O., No. 314, dated 11th May 1897.) In regard to paragraph 16 of the Chief Engineer's note, the Government does not understand why it is considered that this concentration cannot be given effect to in the districts already affected; the Famine Commissioner will be requested to state his views in the matter and to report what steps have been taken to give effect to the order of the 11th May. The Consulting Engineer for Railways will be requested to ascertain whether the doubling of the Madras Railway referred to in paragraph 14 is likely to be available for famine relief this year and, if not, whether the preparations for the work could be pushed forward so as to make it available for the purpose in the near future.

6. Orders have already been issued in the sense suggested in paragraph 17 of the Chief Engineer's note. The Government approves the suggestion in paragraph 6 that twenty of the Public Works subordinates now on famine works in the Ceded districts be posted to the districts in which it may become necessary to start relief works, but is not prepared to give effect to the suggestion at once. Meanwhile the Chief Engineer may warn the men whom he proposes to withdraw from the affected districts to be ready for duty elsewhere.

7. With reference to the Chief Engineer's remarks in paragraphs 2—5 of his note the Government while admitting that the knowledge that preparations are being made to meet a famine may cause a panic and a further rise of prices, does not consider that it would be practicable to ascertain with any degree of accuracy to which of the causes enumerated the rise of prices in any district is due. Further a rise to the scarcity rates is only one of the indications of distress, and in their recommendations for the opening of relief works, District officers are also guided by the consideration whether employment is still available in the fields and elsewhere or not. The number of permanent farm labourers whom the producers are bound to support all the year round is small in comparison with the number of labourers engaged monthly or daily for the season; and a rise to the scarcity rates, whatever the cause may be, combined with a failure of the sources of employment ordinarily available, must produce distress among the latter who form the vast majority of labourers.

8. The Government fully concurs in the remarks in paragraphs 1—3 of Mr. Winterbotham's note as to the insufficiency of the present scale of district establishments in all departments of the administration to meet any sudden extraordinary strain. The question is however, too large a one to be dealt with on the present occasion; the subject will be fully considered when the Government comes to review the relief operations of the year on the cessation of distress.

9. In conclusion, the Government desires to thank Mr. Winterbotham and Colonel Campbell for the efficient and satisfactory manner in which they have discharged the duties entrusted to them; the reports of these officers on the eight districts visited by them have been full and exhaustive and the results of their tour most informing and useful. The tour has also had the effect of putting on their guard, the officers of all the districts likely to be affected in case of the eventual failure of the monsoon.

(True Extract.)

(Signed) G. STOKES,
Ag. Secretary to Government.

To

The Famine Commissioner.
" Public Works Department, (W.)
" " " (I.)
" " " (R.)
" Financial Department.
" Public Department.
" Local and Municipal Department.
" Board of Revenue, Revenue Settlement.
" " Land Revenue.
" Collector of Coimbatore.
" " Salem.
" " Chingleput.
" " North Arcot.
" " Nellore.
" " Kistna.
" " South Arcot.
" " Trichinopoly.
" Collectors of affected Districts.
The Hon. Col. D. McNeil Campbell, R.E.
H. M. Winterbotham, Esq., I.C.S.

250 Copies.

Public works (1897) department.

Current-Number: 8093

Government { 1897 } of Madras.

REVENUE.

Recd. 14-8 } 1897.
Regd. 14-8.

Enclosures -

Spare copies 10.

G.O., No. 604, 21st July 1897.

JULY.

Recorded

Passing orders on the final report submitted by the Third Member, Board of Revenue and the Chief Engineer and Secretary to Government, Public Works Department, regarding Famine Relief works, estimates and Famine tools, &c.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—letter from the Hon'ble Colonel D. McNEIL CAMPBELL, R.E., Chief Engineer and Secretary to Government, Public Works Department, and H. M. WINTERBOTHAM, Esq., I.C.S., 3rd Member, Board of Revenue, to the Secretary to Government, Revenue Department, dated Madras, 5th July 1897, No. K.

In continuation of our letter I, dated June 24th, 1897, we have the honor to submit herewith a separate note by each of us, embodying the general remarks which each wishes to make in connection with the eight joint reports which we have already submitted.

On the completion of our tour to the eight districts, arrears of work urgently required our immediate return to our respective head-quarters, and we thought it unnecessary to spend the time and incur the delay which the composition of a joint report would have involved.

Note by H. M. WINTERBOTHAM, Esq., I.C.S., *Third Member of the Board of Revenue, dated 3rd July* 1897.

With reference to the eight reports which we have submitted on the districts of Coimbatore, Salem, North Arcot, Nellore, Kistna, Chingleput, South Arcot and Trichinopoly, the following points seem to call for further remark or explanation.

1. *Establishments.*—For Coimbatore (the first District we visited) we recommended the immediate entertainment of 8 temporary Surveyors with 3 lascars each, for the preparation of estimates (suitable for the employment of relief workers) for the repair of tanks and channels in charge of the Department of Public Works.

We have not made a similar recommendation for the other Districts, though the transfer of hands for famine duty has seriously weakened the ordinary Staff in all of them, and though the Public Works Department contributions to the Famine Programmes are everywhere less than they should be. This inconsistency is due to our sense *first* of the impossibility of finding the requisite number of qualified temporary hands, and *second* of the waste of money which will result, should elaborate preparations for an extended drought happily prove unnecessary.

When the famine ceases, retrenchment is likely to be the order of the day. The works would not generally be such as could be classed as emergent, and the estimates would not keep serviceable for an indefinite time.

2. When, however, part (often the greater part) of the ordinary staff in a District has been moved away for famine duty, I cannot see any justification for not filling up the vacancies with temporary hands, short of the all sufficient one that no qualified men can be got. I am not satisfied that enquiry for competent hands has been exhaustive, and I think that orders should issue to all Executive Engineers to bring their District Staff up to the sanctioned strength so far as fit temporary hands can be found. Even if the temporary hands were not at first qualified, they would at least be in training, and on the way to become so. The difficulty of obtaining qualified extra hands is, of course, due to the fact that the demand for them only occurs at long intervals for short periods.

Men were advertised for but only 23 suitable candidates could be got and they have been appointed temporarily to take place of subordinates transferred to famine work.
D.C.

Considering what an enormous demand for extra hands might arise in the near feature, it would seem good policy to let the existing demand make itself fully known. So far as the demand operated to induce students to set to work to qualify as Overseers, its effect must be to that extent beneficial, and if no fit hands are forthcoming, Government will at least learn the true extent of its weakness.

3. The weakness, chiefly numerical, of our District organization in all Departments, its inability to meet any sudden extraordinary strain, and the difficulty of rapidly strengthening it, are the most discomforting features of the situation. As soon as the village officers are set to work to prepare against future contingencies under Chapter VI of the Famine Code, their other duties are perforce let slide, and it is useless to ask concerning the crops and cultivation. There is a similar dislocation of ordinary work in every grade, up to the sorely pressed Collector, who is too often the solitary European Revenue Official in the District, on whose narrow shoulders rests the weight of the whole machine. I have no remedy to suggest. Financial exigencies compel us to keep our establishments down at a strength which is just sufficient in times of prosperity, and in times of adversity we cannot escape the penalty.

The same remark to the P.W.D.

4. *Famine tools.*—Messrs. Oakes & Co. have about 950 mamooties and 1,000 large hammers in stock. They cannot, they say, make hammers, because no suitable steel can be procured in the local market. Messrs. Massey & Co. have about 3,000 mamooties in stock, at prices varying from Rs. 13 to Rs. 30 per dozen, and 900 pickaxes at Rs. 20 to Rs. 21-8 per dozen. They could turn out steel hammers weighing 2 lbs. and 3 lbs. at the rate of 100 per day, price Rs. 650 per 1,000 for 2 lb. hammers, and Rs. 950 for 3 lbs. There do not appear to be any other local Firms, who deal in tools, and who could be entrusted with a large contract. The Agent of the Madras Railway expressed himself able and willing to manufacture hammers in large numbers at the Railway Workshops. I have asked him and the Chief Engineer of the South Indian Railway, to state what number they could turn out per diem, and at what price. Colonel Campbell has particulars of the stock, and the productive capacity of the Public Works Department Workshops. The Superintendent is put to his wits'end to meet the enormous demand. Some of the hammers now being supplied are mere lengths of bar-iron with a hole in the middle. They are fit for children's use, but the iron is so soft that they will rapidly become unserviceable. Some hammers of chilled cast-iron, which he has made as an experiment, are admirably hard and cheap, but are brittle and liable to fracture if used sideways with great force. It is expedient that these should be subjected to a fair trial on a sufficiently large scale. When once a sufficient number of moulds are constructed, these hammers could be turned out rapidly at a small fraction of the cost of steel hammers. The danger of famine will be ever with us; and the population to be dealt with tends rapidly to increase. Government is bound to maintain a large stock of tools, and in the end I believe, it will be cheapest to provide steel hammers. The comparatively large reserves, which, we have advised, should be provided for the eight Districts, would after all not suffice for more than three per cent. of the population. I certainly think that 50,000 2 lb. hammers, and 50,000 3 lb. hammers of steel, should be obtained from England at once.

Information is in my note.

5. A report should be called for as to the patterns of tools, which have been found in actual use most serviceable for famine labour. We were informed at Guntakal that even the women preferred heavy 4 lb. hammers. I think a 2 lb. hammer most suitable for women and children, and a 3 lb. hammer for men; but where hard rock, in large fragments, has to be broken, a proportion of 4 lb. and 8 lb. hammers would be required.

I have already ca this report.

6. Nearly all the mamooties in stock are of the Madras pattern, intended for a short handle parallel to the blade. The Wudders prefer this muster, but for relief workers not accustomed to their use, I should think the English form of hoe (which is the West Coast and the Bengal pattern) much better. I think the weight should not exceed 5 and 6 lbs.

7. *Instruments for clearing prickly pear.*—I do not know that there is any accepted pattern. From personal experience I advocate the following:—

(1) A combined prong and hook, with a four-foot handle of male bamboo.

(2) A double prong something like an English pitch-fork, but with the prongs closer together.

I agree.
D.C.

(3) A rake with eight teeth two inches apart. Invaluable for raking up young plants by the roots.

8. *Relief works*—It is difficult to make any useful fresh remarks under this head. The subject is discussed in paras. 45—54 of Mr. Clogstoun's Report on the Famine of 1891-92. The removal of prickly pear, which forms so large a part of the Famine Programme in some districts, cannot be conveniently performed under the rules of Chapter VII of the Famine Code. If undertaken it should be on the contract system. The same remark applies to the

repair of small scattered tanks. Petty estimates for clearing out drinking-water ponds are very numerous, but where the ponds contained water, it would generally be too precious to be spared and the work could not be undertaken even on the contract system.

The clearance of silt from tank-beds is (I know not why) an operation which the Public Works Department contemns. In some of our great tanks large bodies of relief-workers might be employed upon it; but the work would be liable to awkward interruption by a sudden fall of rain.

In Zemindaris there is really no work but road-work available. One seems driven to Mr. Clogstoun's conclusion that "Work on roads will have to be more and more resorted to to give employment to famine labor, even if the work should only be useful as forming a test of the necessity of relief."

9. So far as anxious recent study of the Famine Code can acquaint a man with the proper methods of relief administration, I think we may say that we found officers of all ranks well prepared. Some of the Deputy Collectors had continued their studies far into the night prior to our arrival, and appeared, Code in hand, prepared at all points for examination.

In some places the District Revenue staff had been diligently employed, in literal obedience to the order of Government, in drawing up Village lists showing the name, caste, sex and age of the halt, the blind, the deformed, the imbecile, the insane, the deaf-mutes, and of all others who would, in the event of famine, be likely to require gratuitous relief. It may be hoped that the labor will prove to have been thrown away.

10. Since writing the above I have read Colonel Campbell's note. I agree with what he has written on the subject of tools paras. 18 to 24. I would call on all Collectors to report what supply of handles for pick-axes, mamooties and hammers, each is in a position to obtain (*a*) from his Forest Officer, (*b*) from Contractors: at what rate per thousand; and what is the shortest period within which the number quoted (whatever it is) could be made available.

Note by the Hon'ble Colonel D. McNeil Campbell, R.E., *Chief Engineer and Secretary to Government, Public Works Department.*

After careful inquiry regarding rainfall, prices and general condition of the Districts, I agree with the opinions of the Collectors and the other local officials consulted that in the event of a failure of the South-West moonsoon, there will be no distress requiring the assistance of Government except perhaps in some parts of the Nellore, North Arcot and Kistna Districts. The parts that may be affected but in which it is not anticipated there will be any acute distress are the Darsi and Podili Divisions in Nellore District, the Punganuru Zemindary and parts of the Chendragiri taluk in the North Arcot District and the upland taluks of the Kistna; the area and population of these tracts are small and no great strain will be thrown on the resources of Government should it be found necessary to adopt measures of relief. The conclusions arrived at are based mainly on the present conditions of the Districts, but all the Collectors point out that it is impossible to foretell what may be the effect of a considerable rise in prices.

2. The subject of prices is a very difficult one to deal with, and it is almost impossible to account for the great variations in different places. It seems not unlikely that if the South-West monsoon fails and it becomes generally known that Government are preparing for a famine, the prices now high will rise higher and a fictitious famine be caused in districts in which there is no scarcity of food, and I am of opinion that it is a matter for careful consideration whether Government intervention is necessary in such cases.

3. By a rise in prices caused by exportation or holding up in districts where there is plenty of stock, the producers make large profits and consequently are in a better position to support their dependents, chiefly the Agricultural labourers, than they are in ordinary seasons, but if Government start relief works, it is then the object of these producers and grain merchants to make as many as possible of these dependants (whom in ordinary years they support) go to these works, the result being that they save themselves considerable expense while at the same time nearly all the Government money spent on famine relief goes into their pockets.

4. The people most likely to suffer in the case of a fictitious famine caused by high prices are not of the agricultural classes but professional labourers and those engaged in technical trades, and the result of restricting expenditure on ordinary works is that great distress may be caused amongst these classes. This has been pointed out to me by several of the local Engineers who owing to reduction of establishment caused by men withdrawn for famine have been obliged to stop works, the result being that the labourers employed are now without means of support, and the prices being high, they must necessarily suffer considerably. I therefore think that, before starting famine relief, it should be carefully ascertained

whether the high prices are caused by actual want of food supplies or by exportation and holding up. In the former case, the intervention of Government is necessary, but in the latter case, all that seems advisable is to increase the ordinary Public Works of the District, the rates being raised in proportion to the price of food grain.

5. This subject requires the most careful consideration, for with the present facilities for exporting, it is very probable that an actual failure of crops in one district will be followed by a rise in prices in many others, and if on this occurring Government has to start famine works in each district where the prices are above the scarcity rate, the expense to the State will be very great.

6. I have stated that even should there be a failure of the South-West monsoon, the distress will not be severe, only affecting parts of three districts; but the Engineering establishments of these districts have been so reduced by withdrawals for famine in the I and III Circles that it will be impossible to find the establishment necessary to carry out relief works without stopping nearly all ordinary works which, as I have already pointed out, will cause considerable distress. I would therefore suggest that, as soon as the services of men from the Sappers and Miners, the Salt and other Departments have been obtained, 20 of the Public Works Subordinates now on famine works in the Ceded Districts should be posted to the Districts in which it may perhaps be necessary to start relief works. I think that 10 to the Kistna and 5 to each of the other two Districts Nellore and North Arcot will suffice with the help of the Local Fund establishment to carry on all relief works that may be required.

I concur.
H.W.

7. The works in the programmes are ample to meet all distress that may arise before next November: by far the greater portion of the estimates are for road repairs and I would point out that all these estimates include a large sum for cartage which is not suitable for famine relief unless the lead is under a mile in which case the metal can be carried by coolies. It may be said roughly that $\frac{1}{3}$ of the estimates are for cartage and I think this item should be separated in future estimates, otherwise a wrong impression is given of the sum available for famine relief purposes.

I think their first task should be to prepare a number of estimates.
H.W.

8. The tools, more especially stone breaking hammers, are insufficient, as will be shown further on.

9. Though there is no reason to apprehend such a calamity as a failure of the North-East monsoon, still should there be no South-West rains considerable anxiety will be felt, and it will be necessary to be prepared for the worst.

10. In the case of a wide-spread famine, that is, supposing the distress in the I and III Circles to continue and also spread to the eight Districts visited the great difficulties to contend with will be, 1st, the provision of the necessary Engineering Establishment, 2nd, the finding of suitable and useful work on which to employ famine labour. Both these difficulties can be partly met by concentrating labour on a few large works forcing the distressed persons to migrate if necessary. I cannot too strongly urge the necessity of this concentration of labour feeling assured that it will be absolutely impossible, if the famine becomes widespread, to carry on relief works on the system adopted in the Ceded Districts.

11. From the latest information received the number of coolies employed on relief works in the Ceded Districts was 305,189, and the number of works 117, giving an average of 2,600 coolies on each work. Now supposing 20 per cent. of the population of the Districts now affected and also of the eight visited to require relief, the number to be provided for would be 43,50,000 in round figures and if only 2,600 coolies were employed on each work the total number of works would be 1,679 requiring at least 14 Executive Engineers, 43 Assistant Engineers, and 1,679 Upper Subordinates, and the question is where are these to be got from?

Very desirable. In most districts a lump rate, including cartage, is quoted for stacking metal on each mile of road.
H.W.

12. It is not at all likely that the large proportion of 20 per cent. of the population will ever be employed on relief works at the same time, though it is quite possible that that proportion will be reached if the present system of opening works at the doors of the distressed villages is continued as many not in actual want will resort to them. In the great famine of 1876-77 the maximum proportion of the population relieved was as follows:—

Bellary	...	...	...	50·99 per cent.
Kurnool	...	...	...	31·24 „
Cuddapah	...	...	...	21·86 „
Anantapur	...	...	...	22·70 „

In most of the other districts it was below 10 per cent. If it should happen that 20 per cent. of the population has to be employed on relief works for any length of time it will be simply impossible to find any useful work for such a large number of persons and the expenditure on famine will then be practically gratuitous relief, work whether useful or not being exacted as a test of distress.

13. I have strongly advocated the concentration of labour on large works and it remains for me to show how this can be done as far as regards the eight districts visited.

14. The Madras Railway runs through the Chingleput, North Arcot, Salem and Coimbatore Districts. The masonry works have all been built to take a double line and I believe the necessary land has been taken up for the purpose, and I would suggest that in the event of a wide-spread famine the line be doubled from Arkonam to Mettupalayam (Madras to Arkonam already doubled). The earthwork for this and the preparation of ballast would occupy a very large number of persons for a considerable period, and as there is no doubt that this line will have to be doubled eventually though it may not be required for some years to come the money would not be wasted.

15. This work would afford relief to three districts, *viz.*, North Arcot, Salem and Coimbatore and might be supplemented by the following works :—

North Arcot.

1. Clearing silt from Kaveripakkam tank bed.
2. Clearing Kaveripakkam tank supply channel.
3. Some of the largest road works.

Salem.

Some of the largest road works.

Coimbatore.

1. Bhavani Reservoir Project.
2. Extension Kalingarayan Channel.
3. Some of the largest road works.

16. In the remaining districts the following are the only works of any magnitude I can suggest :—

Kistna District.

1. Kistna River embankments.
2. Some of the larger roads.

Nellore District.

1. Supply channel from the Pennair River above Sangam to Nellore.
2. Moldevi drain.
3. Clearing silt from the Nellore tank.
4. Some of the larger roads.

Chingleput District.

1. Widening railway lines from Madras to Chingleput.
2. Some of the larger roads.

South Arcot District.

1. Extension of the Buckingham Canal.
2. Coleroon flood banks
3. Some of the largest roads.

Trichinopoly District.

1. Some of the largest roads.
2. Breaking metal at Central quarry. But the works mentioned though sufficient to give employment to all who will require relief for many months even in the event of a failure of the North-East monsoon following that of the South-West will not be enough to supply 20 per cent. of the population for any considerable period, and the only other work that I can suggest is the preparation of enormous quantities of road metal at a few central quarries near railway lines in each District. Since writing the above I have had a conversation with the Chief Engineer, South Indian Railway, and he says a large amount of famine labour might be usefully employed in breaking metal for ballast along all the South Indian lines and that it would be paid for at the rates now in force.

17. If the works could be concentrated as suggested the amount of supervision required would not be very great, and probably 8 Executive Engineers, 16 Assistant Engineers and 100 Upper Subordinates would suffice for the 8 Districts visited; but the numbers now employed on supervising works in the I and III Circles will have to be increased as the system of small works in force there cannot well be altered now, so that the total Engineering Establishment necessary to cope with a wide-spread famine would approximately be—

14 Executive Engineers.
36 Assistant Engineers.
250 Upper Subordinates.

18. The necessity, therefore, of having a list submitted of officers and subordinates in other Departments and also of Military men available is apparent as the Public Works Department cannot provide such a large amount of supervision.

Tools.

19. The famine tools now in the Presidency are altogether inadequate in the event of a severe and wide-spread famine; these numbers were laid down by the Board of Revenue in its Resolution No. 6144-M., dated 25th October 1893 andembodied in G. O. No. 3116-W., dated 2nd December 1893.

20. The number, it is suggested should be maintained and which is based on the moderate computation that if 10 per cent. of the population are employed on relief works, 1 person out of every 3 will require a tool, is as follows :—

Districts.	Stone breaking hammers.	Mamooties.	Pick axes.	Rammers.	Crowbars.	Sledge hammers.	Hand axes.	Bill hooks.	Tools for prickly pear.
Coimbatore	40,000	9,000	5,000	1,000	9,000	500	500	500	500
Salem	44,000	9,000	5,000	1,000	9,000	500	500	500	500
South Arcot	44,000	9,000	5,000	1,000	9,000	500	500	500	500
North Arcot	44,000	9,000	5,000	1,000	9,000	500	500	500	500
Kistna	22,000	4,500	2,500	500	4,500	250	250	250	250
Nellore	33,000	6,900	3,750	750	6,900	375	375	375	375
Chingleput	22,000	4,500	2,500	500	4,500	250	250	250	250
Trichinopoly	22,000	4,500	2,500	500	4,500	250	250	250	250
Total...	2,71,000	56,400	31,250	6,250	56,400	3,125	3,125	3,125	3,125

21. For Ganjam and Vizagapatam the number of tools required might be calculated in the same manner as in the case of the Districts visited, but in the case of Bellary, Anantapur, Kurnool and Cuddapah, I think the proportion should be *trebled. As regards the remaining districts no action need be taken at present. The following, therefore, represents the number of tools that I consider necessary enough to maintain in the affected Districts.

* This would give total tools in round figures,	88,000
Bellary ...	81,000
Kurnool ...	72,000
Anantapur ...	1,27,000
Cuddapah ...	

Districts.	Stone breaking hammers.	Mamooties.	Pick axes.	Rammers.	Crowbars.	Sledge hammers.	Hand axes.	Bill hooks.	Prickly pear tools.
Bellary	55,000	10,000	6,000	5,000	10,000	500	500	500	500
Kurnool	50,000	10,000	5,000	5,000	9,500	500	500	500	500
Anantapur	45,000	8,000	5,000	4,000	8,000	500	500	500	500
Cuddapah	80,000	15,000	5,000	10,000	15,000	500	500	500	500
Ganjam	35,000	8,000	3,000	7,000	8,000	500	500	500	500
Vizagapatam	55,000	15,000	5,000	6,000	10,000	500	500	500	500
Total...	3,20,000	66,000	29,000	37,000	60,500	3,000	3,000	3,000	3,000

22. In addition I would propose that the following stock of tools of various descriptions be kept in the Public Works Stores to provide for wear and tear and losses:—

Stone breaking hammers ...	1,00,000	Hand axes	1,000
Mamooties	50,000	Bill hooks	1,000
Pickaxes	30,000	Prickly pear tools	1,000
Rammers	30,000	Galvanised iron chains	1,000
Crowbars	50,000	Jumpers	28
Sledge hammers	5,000	Wooden cash chests	1,000

23. The following shows the total number of tools I consider necessary :—

Hammers	6,91,000	Handaxes	7,125
Mamooties	1,72,400	Bill hooks	7,125
Pickaxes	90,250	Prickly pear tools	7,125
Rammers	73,250	Iron chanis	28
Crowbars	1,66,900	Wooden cash chests	300
Sledge hammers	11,125	Jumpers	1,000

24. The exact number of serviceable tools now in stock cannot be ascertained till the special returns called for from the Executive-Engineers have been received, but there is no doubt that a very large number will be required to be made or purchased.

25. The numbers given as necessary seem large, but when it is considered that in the 8 districts visited it only allows one tool to 1/3 of 10 per cent. of the population and to 1/3 of 30 per cent. in the Ceded Districts and makes no allowance for the remaining districts it cannot be considered excessive. The demand for stone breaking hammers is very great about 3,00,000 are now in use in the I and III Circles and indents are constantly being received for more. The division of the different description of tools required is of course somewhat arbitrary, as it is impossible to tell exactly how many of each sort will be required till the nature of the work to be done is known: but there is no doubt that a large number of stone breaking hammers will be required, and I recommend that an urgent indent for 1,00,000 be at once sent to the Secretary of State. It will perhaps be time enough to get the other tools when the result of the South-West monsoon is known.

I concur.
H.W.

26. There is considerable difficulty in fixing the most suitable weight and description of each sort of tool. The indents from the famine officers vary considerably, for instance, one officer states that he does not want hammers weighing over 1½ lbs. another that he wants 3 lb. hammers and so on. In the case of mamooties the same difficulty is felt. There are some in the Public Works Stores weighing from 5 to 14 lbs. which latter are far too heavy and most officers say that the weight should not exceed 5 lbs. The description of mamooty has also to be decided. I would recommend that the indent on the Secretary of State for hammers should state that they are to be of steel weighing from 1½ to 3 lbs. Further inquiries will be made from the famine Officers as to the best form and weight of mamooty.

½ weighing 1½	...
½ weighing 2	...
½ weighing 3	...

Handles.

27. Hearing rumours that delay had been caused by the tools being supplied without handles, I wired to the Superintending Engineer to know what were the real facts, and

he answered that some slight delay had been caused by tools having to be provided with handles and that he would like handles to be provided in future. I think that issuing tools provided with handles would be a mistake; in the first place the difficulty of carriage would be much increased, and in the next the provision of haudles is in itself a relief work. My own experience is that there is no difficulty in making handles for tools and the opinion of most Engineers I have consulted agrees with mine: of course if a famine Officer indents for a large quantity of tools, say 20,000 hammers and waits till he receives them to supply handles there must be delay, but I consider with proper management all delay may be avoided. Frequent complaints are made about delay in the supply of baskests which wear out very quickly; baskets cannot be stored for any length of time as they get destroyed by insects very soon, and as their manufacture gives employment to local labour, I do not think it advisable that they should be supplied from outside.

28. The famine tools in the Public Works Workshops, Madras, were inspected by Mr. Winterbotham and myself on the 18th Instant in the presence of Mr. Moss the General Superintendent.

29. The number of tools now in store is as per margin. This is altogether insufficient and the Superintending Engineer is preparing an indent for more. Very large quantities of tools have been issued to the famine districts, the number of stone breaking hammers and rammers alone amounting to 2,09,239 and 23,561 respectively. Indents for hammers were received faster than they could be complied with, and the General Superintendent had to have recourse to the local bazaars, and purchased some wrought iron ones at 2 annas 6 pies per lb. These are of most inferior quality and are simply formed by cutting around bar of iron into small lengths, flattening out their lengths and drilling a hole through the middle. I am of opinion these hammers will not last more than a few weeks. Hammers are also being made in the Workshops both of wrought iron and chilled cast iron, and they can be turned out at the rate of about 2,000 a day. The former are not tipped with steel and are somewhat poor though far superior to those bought in the bazaar; the cost annas 2 and pies 3 per lb.

Pick axes ...	4,055	Felling axes ...	4,368
Crow bars ...	245	Hand hammers ...	958
Bill hooks ...	3,073	Mamooties ...	16,239
Iron rammers ...	322	Quarry picks ...	3,768

30. The chilled cast iron hammers cost 1 anna per lb. and seem excellent and can be turned out faster than any of the other descriptions. The Famine Officers have been asked by wire to report on these hammers but no answer has been received. The number of hammers required in the famine districts is so great that the Workshops cannot keep pace with the demands. Enquiries have therefore been made from Messrs. Oakes & Co. and Messrs. Massey & Co. Mr. Winterbotham has received an answer from the latter firm but not from the former. Enquiry is also being made as to whether the Railway Workshops at Perambur and Negapatam will undertake to turn out hammers, and if so, how many.

31. The mamooties in store were of various weights, many of them being as much as 14 lbs. which I consider useless for famine purposes, five or six lbs. seem as heavy as desirable.

Note by the same Officer, dated 7th July 1897.

Since the despatch of my note dated 29th June 1897, intimation has been received by Mr. Winterbotham from the Agent and Manager of the Madras Railway Company that stone breaking hammers can be made at the Railway Workshops, Perambore, for the purpose of famine relief and that they can be turned out at the rate of from 600 to 800 a day at a cost of Rs. 35 per 100. I have seen a sample hammer and it weighs 2½ lbs. and is I consider suitable for relief purposes.

2. As the Public Works Workshops are at present unable to meet the demand for hammers and consequently have to purchase inferior articles in the bazaar, I think it would be well if the Railway Branch be directed to thank the Madras Railway Company for their offer and ask them to manufacture 50,000 hammers weighing 2½ lbs. of the pattern supplied to Mr. Winterbotham as soon as possible. The cost will be Rs. 17,500.

No. 742—D, dated 7th July 1897.

Forwarded to the Revenue Department in continuation of letter No. K, dated 5th July 1897.

(Signed) D. McNEIL CAMPBELL, Colonel, R.E.,
Secretary to Government.

Order—No. 604, dated 21st July 1897.

The Government will await the reports called for by the Chief Engineer as to the patterns of tools which have been found in actual use most serviceable for famine labourer and as to the exact number of serviceable tools now in stock, before passing orders on the proposals in the notes read above for the supply of famine tools to the 14 districts dealt with therein and for the maintenance of a reserve stock. As, however, the need for stone breaking hammers is urgent, the Consulting Engineer for Railways will be requested to arrange immediately with the Madras Railway Company for the manufacture of 50,000 hammers of the pattern supplied, on the terms specified in the letter of the Agent and Manager to Mr. Winterbotham. An urgent indent will also be made by telegram on the Right Hon'ble the Secretary of State for 90,000 steel hammers:—30,000 of 1½ lbs. weight, 30,000 of 2 lbs. and 30,000 of 2½ lbs. as recommended by the Chief Engineer. The Board of Revenue will be requested to submit at once a formal indent in quadruplicate for transmission to the Secretary of State.

2. As regards the chilled iron hammers now turned out by the Public Works Workshops the Government is of opinion that they should be subjected to trial on a sufficiently large scale before the present method of manufacture can be finally approved. The Chief Engineer should take immediate steps to have the trials carried out.

3. The Government concurs in the remarks in paragraph 26 of the Chief Engineer's note in regard to baskets and handles for tools. Collectors will accordingly be called upon to report as early as practicable what supply of handles each is in a position to obtain and at what cost. (Paragraph 10 of Mr. Winterbotham's note.)

4. The attention of the Board of Revenue will be drawn to the remarks in paragraph 7 of the Chief Engineer's note as to the cost of cartage included in the estimates for road repairs. Collectors should be instructed to separate the amounts provided for cartage in the estimates of works and to show in their programmes in future only the amounts available for expenditure on famine labour.

5. The Government has already accepted the proposal referred to in paragraph 13 of the Chief Engineer's note to concentrate famine labour on large works, and has called upon the Board of Revenue to report the extent to which this can be done and to direct Collectors to have estimates for such works prepared immediately. (*Vide* G.O., No. 314, dated 11th May 1897.) In regard to paragraph 16 of the Chief Engineer's note, the Government does not understand why it is considered that this concentration cannot be given effect to in the districts already affected; the Famine Commissioner will be requested to state his views in the matter and to report what steps have been taken to give effect to the order of the 11th May. The Consulting Engineer for Railways will be requested to ascertain whether the doubling of the Madras Railway referred to in paragraph 14 is likely to be available for famine relief this year and, if not, whether the preparations for the work could be pushed forward so as to make it available for the purpose in the near future.

6. Orders have already been issued in the sense suggested in paragraph 17 of the Chief Engineer's note. The Government approves the suggestion in paragraph 6 that twenty of the Public Works subordinates now on famine works in Ceded districts be posted to the districts in which it may become necessary to start relief works, but is not prepared to give effect to the suggestion at once. Meanwhile the Chief Engineer may warn the men whom he proposes to withdraw from the affected districts to be ready for duty elsewhere.

7. With reference to the Chief Engineer's remarks in paragraphs 2—5 of his note the Government while admitting that the knowledge that preparations are being made to meet a famine may cause a panic and a further rise of prices, does not consider that it would be practicable to ascertain with any degree of accuracy to which of the causes enumerated the rise of prices in any district is due. Further a rise to the scarcity rates is only one of the indications of distress, and in their recommendations for the opening of relief works, District officers are also guided by the consideration whether employment is still available in the fields and elsewhere or not. The number of permanent farm labourers whom the producers are bound to support all the year round is small in comparison with the number of labourers engaged monthly or daily for the season; and a rise to the scarcity rates, whatever the cause may be, combined with a failure of the sources of employment ordinarily available, must produce distress among the latter who form the vast majority of labourers.

8. The Government fully concurs in the remarks in paragraphs 1—3 of Mr. Winterbotham's note as to the insufficiency of the present scale of district establishments in all departments of the administration to meet any sudden extraordinary strain. The question is however, too large a one to be dealt with on the present occasion; the subject will be fully considered when the Government comes to review the relief operations of the year on the cessation of distress.

9. In conclusion, the Government desires to thank Mr. Winterbotham and Colonel Campbell for the efficient and satisfactory manner in which they have discharged the duties entrusted to them; the reports of these officers on the eight districts visited by them have been full and exhaustive and the results of their tour most informing and useful. The tour has also had the effect of putting on their guard, the officers of all the districts likely to be affected in case of the eventual failure of the monsoon.

(True Extract.)

Ag. Secretary to Government.

To

The Famine Commissioner.
,, Public Works Department, (W.)
,, ,, ,, (I.)
,, ,, ,, (R.)
,, Financial Department.
,, Public Department.
,, Local and Municipal Department.
,, Board of Revenue, Revenue Settlement.
,, ,, Land Revenue.
,, Collector of Coimbatore.
,, ,, Salem.
,, ,, Chingleput.
,, ,, North Arcot.
,, ,, Nellore.
,, ,, Kistna.
,, ,, South Arcot.
,, ,, Trichinopoly.
Collectors of affected Districts.
The Hon. Col. D. McNeil Campbell, R.E.
H. M. Winterbotham, Esq., I.C.S.

250 Copies.

H.W.

[1,000—27-4-97.]