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# APPENDICES

TO THE

## RESOLUTION

*(No. 2469, dated 23rd November 1897)*

ON THE

# ADMINISTRATION OF FAMINE RELIEF

IN THE

NORTH-WESTERN PROVINCES AND OUDH

*DURING THE YEARS 1896 AND 1897.*

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VOL. III.

DEPARTMENT PUBLIC WORKS.



ALLAHABAD:

North-Western Provinces and Oudh Government Press.

1897.

Appendices to the Resolution No. 2469, dated 23rd November 1897,  
on the relief of famine in the North-Western Provinces and Oudh  
during the year 1896 and 1897.

VOLUME III.

DEPARTMENT PUBLIC WORKS.

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*Instructions and correspondence in regard to works undertaken by the  
Department of Public Works.*

No. 7322W.A., dated Naini Tal, the 1st October 1896.

From—C. W. ODLING, Esq., *Chief Engineer, N.-W. P.*

*and Oudh, P. W. Dept.,*

To—*Superintending Engineers, 1st, 2nd, and 3rd Circles,*

*Provincial Works.*

SIR,—In continuation of this Department Endorsement Nos. 7132—34W.A., dated 23rd September 1896, and of Chief Engineer's Circular No. 14P.W. of 1896, I have the honor to forward herewith for your information a copy of a letter No.  $\frac{34888}{I-78}$ , dated the 21st September 1896, which has been addressed by this Government, Revenue (Scarcity) Department, to the Commissioners of all divisions (except Kumaun). Printed copies of the lists of large and small famine works will be forwarded to you and to all Divisional Engineers so soon as they are printed.

2. It will be seen that distress is regarded as not improbable in most, and severe scarcity in many districts. Should the Lieutenant-Governor, under paragraph 31 of the Famine Code, decide that relief works shall be undertaken, it will be my duty to forthwith furnish (I) a list of works which can be immediately put in hand and (II) a list of works which will be sufficient to employ persons requiring relief until the necessity ceases. These works come under two categories—large works and small works—and under recent orders the Lieutenant-Governor has decided that small works classed under paragraph 65(a), Famine Relief Code, are not to be brought on any Public Works list: works under paragraph 65(b) will be included in Public Works lists and will ordinarily be carried out by the Department.

3. The matter of most immediate importance is list I (works which can be at once put in hand), and you and the Divisional Engineers should, in communication with the civil officers, draw up the list in question, having regard to the districts or parts of districts in which relief is likely to be required at an early date.

4. In regard to list II, the works mentioned in the printed lists

Muttra ...	I Circle.	referred to in paragraph 1 of this letter require expansion in the case of the districts the names of which are marginally noted. In some cases much progress has, since the 1st of April, been made in this direction, but the matter should now receive your special attention. In regard to the numbers of people to be provided for, the Collectors of districts should be referred to; but, as a general rule, some allowance being made in the case of irrigated districts, provision should be made to employ 10 per cent. of the population for four months. It may be assumed that each person will during this time cost Rs. 6, and that the works will cost double ordinary rates.
Farukhabad ...	"	
Etawah ...	"	
Etah ...	"	
Bareilly ...	"	
Bijnor ...	"	
Budaun ...	"	
Moradabad ...	"	
Pilibhit ...	"	
Lucknow ...	II Circle.	
Hardoi ...	"	
Kheri ...	"	
Sultanpur ...	"	
Bara Banki ...	"	
Allahabad ...	III Circle.	
Cawnpore ...	"	
Jaunpur ...	"	
Gorakhpur ...	"	
Basti ...	"	
Azamgarh ...	"	

5. Not only must suitable works be provided, but supervision and all other matters connected with their proper execution, as well as payment, food and shelter for the persons employed. In these respects full arrangements must be made in advance. Your attention is invited to Chapter III, especially paragraphs 34, 35, 36, 37, 38, 39 and 40, and Chapters VI and VII of the Famine Code. You should be prepared with plans for opening the works enumerated in list I at very short notice.

6. The scarcity, I may add, is approximately equally distributed over all three circles, and transfers of officers or subordinates will not be practicable, so that you must be prepared to supplement your existing staff by men temporarily employed. On each work one or more officers of some standing (náib tahsildárs or cashiers), to distribute wages and to attend to the wants of the relief workers, will be necessary, as well as sub-overseers, permanent or temporary, to supervise the execution of the works.

7. I request that you will, at the earliest possible date, submit list I of works ready to be taken in hand with the arrangements you propose to make for carrying them out.

8. The accompanying extracts from orders recently issued by the Superintending Engineer, 3rd Circle, and which are the results of experience gained during the recent famine in Bundelkhand, may be found useful.

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No. 7419W.A., dated Naini Tal, the 7th October 1896.

From—C. W. ODLING, Esq., *Chief Engineer, N.-W. P.*

*and Oudh, P. W. Dept.,*

To—*Superintending Engineers, 1st, 2nd, and 3rd Circles,*

*Provincial Works.*

SIR,—I forward herewith, for your information, guidance and distribution to Divisional and District <sup>Engineers</sup> <sub>Surveyors</sub> in your circle, copies of two minutes, dated the 2nd October 1896, by the Lieutenant-Governor and Chief Commissioner (I) on the action to be at once taken to provide tools and plant in view of relief works on an extensive scale becoming necessary, (II) on the steps to be taken to obtain the services of the establishment required.

2. The sum of Rs. 5,000 for each circle (for which an estimate is required, but which may be expended in anticipation of sanction) should be spent on *kodallis* and small tools required for coolies to be employed on earthwork. In this respect your attention is invited to paragraphs 6 and 7 of the enclosure of Chief Engineer's letter No. 7322W.A. of the 1st October 1896, to your address. The expenditure incurred will be debited to famine relief. It is important that tools and baskets should first be provided in those districts where it is likely relief work will first be required.

3. Special orders will subsequently issue in regard to the special duties to be undertaken by Mr. C. G. Palmer; but it may here be stated that it is not intended that he shall be vested with any executive authority, but that he shall visit famine works, copies of his inspection notes being sent to Commissioners and Superintending Engineers for such action as may be necessary.

4. You should report the names of any persons known to you who can, if necessity arises, be employed as cashiers or work agents. The salaries given will, unless with special sanction, not exceed Rs. 65, including travelling allowance. Work agents (sub-overseers) are mainly required, it being found that náib tahsildárs or men of that class were the most efficient officers in charge (Article 77, Famine Code) and preferable to cashiers.

5. A collection of papers detailing the experience acquired in the Bundelkhand famine of the current year will be forwarded to you so soon as printed: in the meantime it may be useful to state that an officer in charge (cashier or náib tahsildár) and a sub-overseer or work agent will be required for each separate work, and for about every 2,000 persons. Task work is absolutely necessary and should be allotted, not to each individual worker, but to gangs of from 60 to 80 persons. The wages to be paid are regulated by Articles 101 to 109 of the Famine Code, and will be fixed by the Collector. It is important that the minimum wage should be rigidly calculated, so that there should be inducements to execute full tasks. The greatest difficulty in Bundelkhand was the excessive proportion of women and children, there being (exclusive of dependants) three women and children to each man. Works involving long leads are, therefore, specially useful. Dependants should include all children under 7 years of age. There was in Bundelkhand a tendency to class very young children as workers, to avoid the explanation required under Article 100, Famine Code.

6. Provision is required against fraud. A nominal roll was in Bundelkhand found preferable to tickets. A mate should be appointed to each gang and given a distinguishing number, and all payments must refer to the gang. Relief workers must be kept in the gang to which they have been posted. Task work must be insisted on, and Form No. III, Famine Code, posted daily. Frequent check measurements must be made. If many works are in progress in a district, an officer of the standing of an upper subordinate is required to assist the District Engineer in checking and supervising the work.

7. Special sanitary arrangements must be made and careful attention paid to the water-supply. Information on these points is contained in the printed papers which will follow.

8. Large quantities of copper coin will be required, which will be supplied by Collectors, who in Bundelkhand arranged for its transport and safe custody.

9. Your attention has already, in paragraph 3 of Chief Engineer's letter No. 7322W.A. of the 1st of October 1896, been drawn to the necessity of being provided with works which can be put in hand at once, if required. Not only must the works be fixed on, but you must have all arrangements made to admit of the establishment required being collected and their being put in hand so soon as orders are received.

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#### MINUTE.

THE organization of the Department of Public Works (Buildings and Roads) consists, under the Chief Engineer, of (a) the Superintending Engineer, of whom there are three, one for a circle; (b) the Divisional Engineer of whom there is one for each Commissionership except Allahabad, for which Commissionership there are two; and (c) the District Engineer or District Surveyor.

The Superintending Engineer is a controlling officer, pure and simple. The District Engineers are sub-divisional officers under the Divisional Engineer, who keeps the accounts and submits them to the Examiner.

Under the District Engineer are one or more subordinates, who may be overseers or sub-overseers.

2. In Bundelkhand we found it desirable to appoint an assistant to the Divisional Engineer ; to attach an upper subordinate to each district, so that he might take charge of the district on an emergency, and otherwise assist the District Engineers ; and to appoint a large number of temporary sub-overseers to control and supervise work.

We also found it necessary, in addition to the sub-overseer or sub-overseers on large works, to appoint an officer of the grade of náib tahsildár to work under the District Engineer in paying wages, seeing that food supplies were procurable; and generally administering gratuitous relief to dependants under Article 99 of the Famine Code.

For the largest works, or for a group of smaller works, medical comforts and a temporary hospital under an hospital assistant were provided.

3. Should relief operations on a large scale become necessary, it will be desirable to follow the plan indicated in the preceding paragraph, which was found to work well. To that end it is now necessary to bring upon a list the names of competent men willing to accept employment as sub-overseers or work agents. With this object the chief Engineer is requested to cause the men formerly employed in Bundelkhand to be addressed and their wishes as to re-employment ascertained. The Principal, Thomason College, should also be called on to furnish the names of such men as he can supply : and in other ways the Chief Engineer will endeavour to bespeak the services of as many men as can be found of a suitable class. Of course they will only be employed as the necessity for them arises, but a certain number will probably be required from the 1st November.

4. The Department of Public Works will make all possible arrangements for competent and trustworthy cashiers, and these men's names should be brought on a list in Department Public Works Secretary's office as soon as possible. But they may not be able to secure the services of as many men as may be wanted : and they will be glad to get the help of naib tahsildárs, as in Bundelkhand. With a view to the employment of naib tahsildárs and officers of that class, the Board of Revenue will now be addressed and requested to furnish a list of available men already in Government service who can be spared for relief work, and also a list of all approved candidates for tahsildárships and náib tahsildárships. If men of the stamp of the náib tahsildár class are not available in sufficient numbers, kanúngos and candidates for kanúngoships should be indented on. The list should contain the names of at least 200 men.

The pay will be the pay of grade, unless the Board suggest, or circumstances dictate, an increase.

5. The Inspector-General of Civil Hospitals will be requested to state how many men of the hospital assistant class can be made available for employment on famine duty, and how far he can strengthen the staff by entertaining pensioners or qualified men not now in Government service, and he will proceed without further orders to secure the services of such men, stipulating that their pay will run only from time of actual employment. Pay will assimilate to pay of similar officers in Government service, unless Inspector-General of Civil Hospitals advises an increase in the circumstances of the time.

6. For this control of the smaller works under the Collectors it is hoped that the local agency of zamíndárs will largely suffice, as in Bundelkhand : but if such control cannot be secured, the number of tahsildárs and náib tahsildárs or men of that stamp, at the Collector's disposal, will be increased up to the number necessary.

7. It may be necessary for me to apply to the Government of India for the services of European officers from other Provinces or from the Army. But that matter is not now ripe for orders.

The Secretary, Public Works Department, will take the action necessary in his Department on this Minute : and the Chief Secretary will make the necessary communication to the Board and the Inspector-General of Civil Hospitals.

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MINUTE.

I THINK that the probabilities of relief works on an extensive scale becoming necessary are now so strong that Superintending Engineers should at once make (if they have not already done this) effective provision for tools and plant ; so that there may be no delay in meeting a demand for work when it arises. With this object a first allotment of Rs. 5,000 (five thousand), debitable to famine, is made to each of the three circles for purchase of tools, plant, baskets, and other petty stores required. Financial Department should see, and intimation may then be at once conveyed to Superintending Engineers. They should wire their requirements if this provision is insufficient to start with.

2. In like manner Commissioners of Divisions, who are to control the "small" works specified in Article 65 (a) of the Code, should also make similar provision for tools and plant, and for this purpose the sum of Rs. 500 per district in the Agra, Allahabad (except Bundelkhand districts), Benares, Gorakhpur, Fyzabad, Lucknow, and Rohilkhand Divisions is placed at the Commissioner's disposal. The money will not of course be expended if it is believed that the labourers will bring their own tools and baskets, or if tools and baskets are in stock.

3. It is essential that a general system of control and working should be maintained throughout the various divisions, both in works under the Commissioner and under the Superintending Engineer. With this object in view I have decided to appoint Mr. C. G. Palmer on special duty to advise, in pursuance of the instructions of Government, Commissioners and Superintending Engineers, as to the system Government desires to be followed. His deputation will begin from date of his relief by Mr. Heinig. His position will, with the sanction of the Government of India, be Temporary Superintending Engineer.

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COPY of this Minute should be forwarded to the Secretary, Financial Department, for information and necessary action: Copy should also be sent to the Chief Secretary (Scarcity Department).

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No. 7564WA, dated Naini Tal, the 10th October 1896.

From—C. W. ODLING, Esq., *Chief Engineer,*  
*Buildings and Roads Branch, N.-W. P. and Oudh,*

To—*The Superintending Engineers, 1st, 2nd, and 3rd Circles,*  
*Provincial Works, N.-W. P. and Oudh.*

SIR,—It is noticed that in only five districts has provision been made in the programme of relief works for the current year for the collec-

tion of road metal on 1st class roads. This is a work of considerable utility, and I have to ask that, in framing estimates for famine relief, you will consider the propriety of providing for the collection of a reserve of kankar or stone road metal, along the roadsides if at all possible, or, if this is not in all cases practicable, at the quarries. The quantity collected on the roadside may be sufficient for a full renewal coat of metal-ling (ordinarily 4½ inches) and need not be confined to these miles which are in immediate need of repair.

2. The expenditure on the collection of metal in these provinces in one year is approximately Rs. 6,60,000, and the creation of a reserve where practicable would reduce the expenditure on this head for some years to come. Further, it is desirable that employment should be found for cattle which would otherwise be a burden on their owners, and the carting of road metal appears to be a suitable form in which such employment might be provided.

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No. 8166W.A., dated Allahabad, the 6th November 1896.

From—J. R. C. NICOLLS, Esq., *Under Secretary*

*to Government, N.-W. P. and Oudh, P. W. Dept.,  
Buildings and Roads Branch.*

To—*The Superintending Engineers, 1st, 2nd and*

*3rd Circles, Provincial Works, N.-W. P. and Oudh.*

IN view of the necessity for utilizing, as far as possible, for relief purposes, those works for which budget provision exists during the current year, I am to ask that such works as are likely to be so utilized may not, for the present, be given out under contract, or, at any rate, under such contracts as would prevent their being available later in the year as famine relief works. Whenever you consider that the funds provided in the budget for a work or any portion of it may be withdrawn, the work being one that can with advantage be carried out as a relief work, you should report to Government the amount that can be relinquished.

2. In the case of local works, the withdrawal of funds provided in the budget will require the approval of the Commissioner and of the District Board. District Boards must clearly understand that they will not be entitled to a reallocation during the ensuing year of funds withdrawn under these orders. They will be taken into the Government reserve and utilized for other purposes, or credited to Government at the close of the financial year. District Boards will receive more than an adequate return for funds so relinquished in improvements carried out by Government as part of the famine relief programme.

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ORDERED that copy of the foregoing be forwarded to the Secretary to this Government in the Financial Department for information, and to Commissioners of Divisions, North-Western Provinces and Oudh, for information and communication to Chairmen of District Boards.

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Circular No. 16P.W., dated Allahabad, the 21st November 1896.

*The submission of preliminary proposals for administrative, and of fair projects for final, sanction.*

1. PRELIMINARY PROPOSALS FOR ADMINISTRATIVE SANCTION—

In all instances the amounts mentioned as those obtained by calculation at *ordinary, not famine, rates*—



(a) For works estimated to cost, at ordinary rates, under Rs. 1,000:

The District Engineer will prepare the estimate and forward it to the Collector, who will submit it to the Commissioner of the division for administrative sanction. The latter officer, after according sanction, will return it, through the Collector, to the District Engineer for preparation of the fair project.

(b) For works estimated to cost, at ordinary rates, between Rs. 1,000 and Rs. 2,000:

The District Engineer will prepare the estimate and send it to the Collector, for countersignature. On return, the District Engineer will forward it to the Divisional Engineer, who will submit it to the Commissioner of the division for administrative sanction. The latter officer, after according sanction, will return it, through the Collector, to the District Engineer for preparation of the fair project.

(c) For works estimated to cost, at ordinary rates, above Rs. 2,000, but less than Rs. 10,000:

The District Engineer will prepare the estimate and send it to the Collector for approval and countersignature. On return, the District Engineer will forward it to the Divisional Engineer, who will submit it to the Superintending Engineer. The latter officer will forward it to the Commissioner of the division, who will transmit it to the Secretary to Government in the Public Works Department, Buildings and Roads Branch, who will obtain the administrative sanction of Government in the Revenue (Scarcity) Department. After sanction the estimate will be returned through the Superintending Engineer for preparation of the fair project.

(d) For works estimated to cost, at ordinary rates, over Rs. 10,000.

The District Engineer will, under the direction of the Executive Engineer, prepare the estimate and send it to the Collector for countersignature. On return, the District Engineer will forward it to the Divisional Engineer, who will submit it to the Superintending Engineer for his professional approval. The latter officer will forward it to the Commissioner of the division for countersignature, and on return will submit it to the Chief Engineer. The Chief Engineer, after giving his professional approval to the project, will obtain the sanction of Government in the Revenue (Scarcity) Department. After sanction the estimate will be returned through the Superintending Engineer for the preparation of the fair project.

## 2. FAIR PROJECTS FOR FINAL SANCTION—

(a) For works costing under Rs. 1,000.

(b) For works costing between Rs. 1,000 and Rs. 2,000.

The same course will be followed as for preparation of preliminary proposals given under 1 (a) and (b). The final sanction in both cases will be accorded by the Commissioner of the division to the estimates.

(c) For works costing over Rs. 2,000, but less than Rs. 10,000.

The fair project will be prepared by the District Engineer or the Executive Engineer as may be directed by the Superintending Engineer.

It will be forwarded to the Collector and to the Commissioner for counter-signature, and then submitted to the Superintending Engineer for final sanction. The Superintending Engineer will return the sanctioned project through the Executive Engineer for custody in the District Engineer's office until necessity arises for the execution of the work.

(d) For works costing over Rs. 10,000.

The project will follow the same course as that prescribed for the preliminary proposals under 1 (d), the final sanction being, however, accorded by Government in the Public Works Department.

3. The Commissioner of the division being the administrative head for famine relief works, the preparation of projects for relief works will be taken up under either a special or a general requisition made by that officer to the Executive Engineer.

4. Fair estimates for works of a simple character may, however, be submitted for both administrative and final sanction, the preliminary project being dispensed with. The fair estimate will in this case follow the course laid down for preliminary proposals in paragraph 1.

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No.  $\frac{249}{S-8}$ , dated the 26th November 1896.

*From—Chief Secretary to Government, N.-W. Provinces and Oudh,*

*To—Commissioners of Divisions, N.-W. Provinces and Oudh.*

SIR,—I am directed to reproduce below for information and guidance the following extract from paragraph 28 of Resolution No.  $\frac{30458}{I-58}$ , dated 20th October 1896, on scarcity and relief operations in the North-Western Provinces and Oudh during the spring and summer of 1896, and to request that the points (i) to (xvi) noted may be regarded as instructions and carried into effect so far as practicable.

2. In regard to Article 91 of the Famine Code, I am to say that practical experience has shown that demoralizing consequences flow from the payment of a wage to capable workers for which no labour is rendered. It would seem that the Article was introduced into the Code to prevent the establishments being called on to measure up work or make payments on Sunday, not because it was considered right to prevent Hindus or Muhammadans from working on a day which for them is not sacred. But there should be no difficulty in so arranging that work done on a Sunday should be laid out on the preceding Saturday and not measured or paid for before Monday. The Lieutenant-Governor therefore desires that no wage shall be paid for Sunday to any one, not being a "dependant," who does not earn it by doing the prescribed task. For prescribed work done on Sunday the labourer will be paid on the next pay day. It shall be in the discretion of the gangs to suspend work on Sunday if they wish forfeiting their wage for that day if they do.

3. The following instructions will be observed by all officers engaged in relief operations :—

(i.) Test works fail to fulfil their object if full tasks are not exacted and if wages are not regulated with reference to the provisions of Chapter VII of the Famine Code. Close supervision is therefore essential.

- (ii.) Where test works show the necessity of relief works, the management of the latter, not being of the kind specified in Article 65(a), Famine Code, should be entrusted from the outset to the Public Works Department.
- (iii.) Relief works of the kind specified in Article 65(a), Famine Code, (i.e. "works specially intended for the relief of the agricultural population in the vicinity of their villages") are best carried out through the agency of the village landlords and headmen. The quantity of work to be done can usually be accurately calculated beforehand : and the cost fixed with reference to a fair task and the price of food. Advances can then be made and the account cleared up on completion of the work.
- (iv.) Article 77 of the Famine Code provides that over each separate work managed by the Public Works Department shall be placed an "officer in charge." The number of labourers under an "officer in charge" should ordinarily not exceed 5,000 : and if there are more than 3,000, there should also ordinarily be two sub-overseers or work agents. In every case each sub-overseer or work agent should have an intelligent assistant or "mate" to help him to lay out the work. For every five or six "charges" an inspecting officer of the standing of a Public Works upper subordinate is required.
- (v.) Officers of the naib tahsildár class or of similar standing on the regular establishment of Government should, whenever possible, be employed as "officers in charge." They should be placed at the disposal of the Public Works Department and employed where required, postings being made by the Superintending Engineer.
- (vi.) Reserves of tools and baskets should be established at convenient centres, whence they can quickly be sent where wanted ; and as baskets wear out quickly and take time to procure, arrangements should be made in advance for their supply.
- (vii.) On relief works the "gang system" should be rigidly enforced from the very outset and gang registers kept up. A gang register is a card or piece of stout paper containing the names and classification of all persons in the gang. Any gang can thus at any time be checked independently of other gangs and by "sampling" a few gangs the whole work may be effectively checked. These great advantages do not attach to the alternative "ticket system," under which vouchers are delivered to individuals in the morning, to be exchanged for money in the evening. Under the "ticket system" it is obligatory to count and classify at a particular time in the afternoon the whole of the persons present on a work, in order to obtain a satisfactory check ; and this has been found to be not only extremely laborious, but usually impracticable.
- (viii.) Wells likely to be used for drinking water by labourers on relief works should be examined and, if found pure, should be guarded from contamination for a week before required,

and the water-supply arrangements perfected before the labourers arrive. Foul wells should be absolutely closed. Should cholera break out, the wells should be disinfected at intervals of two or three days with permanganate of potash, until the labourers are split up and drafted off to other works.

- (ix.) From the labourers Brahmans should be selected to draw water from the wells for Hindus, and Kahárs to distribute it. The vessels employed in drawing and distributing the water should be ordinarily of metal and scrupulously clean. Kerosine tins have been found to be most useful and acceptable.
- (x.) A superior medical officer should inspect periodically (1) the relief labourers on relief works not of the Article 65(a) class, (2) the sanitary and medical arrangements in connection with such works, and (3) poor houses and hospitals.
- (xi.) The Famine Code (section 85) provides for the erection of latrines. These should usually be on the trench system and provided with grass screens. A line of flags and posts should be placed all round each relief work, and 300 yards from the same, and great care should be taken that no nuisances are committed within the area enclosed by such flags and posts.
- (xii.) Medical officers in charge of hospitals on relief works should very carefully watch for the occurrence of any cases of relapsing or famine fever, and immediately isolate any such cases. Provision for the immediate isolation of cases of cholera, small-pox, or other epidemic disease should be made at each work. Grass huts, which can be subsequently burnt, will usually be the best form of isolation hospital.
- (xiii.) Article 87 of the Code provides for daily, bi-weekly, or tri-weekly payments (with certain exceptions). Wages should ordinarily be paid twice a week. Bi-weekly payments save the labourers a daily wait until a late hour on the works. They also reduce the difficulty of providing a sufficient supply of copper coin, as small silver coin can then be used also. But bi-weekly payments can only be introduced if "gang registers" are maintained in perfect order. (The difficulty, which is sometimes serious, of providing large quantities of copper coin can be reduced by arranging with the gram-sellers on the works to exchange copper for silver daily).
- (xiv.) No change in wages should be made if prices vary by less than 10 per cent., and ordinarily no change should be made unless with the previous sanction of the Commissioner of the Division (or Famine Commissioner if one is appointed).
- (xv.) When a variation in prices of food-grain necessitates an alteration in wages, notice of the new rate of wages should be sent to the District Engineer and not to the "officers in charge."
- (xvi.) No incomplete work should be closed by the controlling authorities, except on account of sickness, unless seven days' notice be previously given to the Divisional (Executive) Engineer to break up the staff and close the work.

No. 18P. W. of 1896.

GOVT., N.-W. P. AND OUDH, P. W. DEPT., BUILDINGS AND  
ROADS BRANCH.

Resolution by His Honor the Lieutenant-Governor, North-Western  
Provinces, and Chief Commissioner of Oudh, dated Allahabad,  
the 5th December 1896.

READ—

Report by C. G. Palmer, Esq., Superintending Engineer, 3rd Circle, on Famine Relief  
Operations in the Bundelkhand districts, dated 23rd September 1896.

Note by the Hon'ble Mr. C. W. Odling, Chief Engineer, Buildings and Roads Branch,  
dated 6th October 1896.

Resolution No.  $\frac{89458}{1-58}$ , Revenues (Scarcity) Department, dated 20th October 1896.

OBSERVATIONS.—During the late famine in Bundelkhand extensive relief works were for some months in operation; and during their progress much experience was gained regarding the organization of relief labour; the control of relief works; the fixation of wages; the provision of food; and, generally, the sanitary management called for by the concentration of large bodies of people on public works. As a fresh failure in the crops has again made relief works necessary, the Lieutenant-Governor and Chief Commissioner thinks that the lessons learnt in Bundelkhand cannot fail to be useful to those who will now have to administer relief on public works; and accordingly His Honor has caused the rules which accompany this Resolution to be drawn up on the basis of the system which was eventually found in Bundelkhand to be most effectual for the purposes mentioned above.

2. These rules deal with subjects for various degrees of importance; but, perhaps, the points which require the greatest attention are those connected with the classification of workers (paragraph 35), classification of children (paragraph 36), scale of wages (paragraph 59), manner of payment (paragraph 60), and variations in wages (paragraph 61) of the Resolution. While reasonable discretion is allowed to executive officers on the spot in adapting the rules on other matters to particular or local requirements, no departure should be made without the sanction of Government from the orders contained in the paragraphs of the rules now mentioned.

The other rules are, in the main, directions as to the detailed management of relief works. The principles underlying them or expressly stated in connection with them must be observed; but discretion as to the application of the principles and rules is, with the exceptions stated above, allowed to the District <sup>Engineer</sup> Surveyor, Divisional Engineer, Collector, and other responsible officers. Any material departure, however from the instructions now given should be reported for the orders of Government.

ORDER.—I.—Ordered that a copy of this Resolution, and of the rules referred to therein, be forwarded to all Commissioners of Divisions, Collectors of Districts, Superintending and Divisional Engineers, and District <sup>Engineers</sup> Surveyors, for information and guidance; also to the Scarcity Department of this Government and to the Examiner, Public Works Accounts, for information.

II.—Ordered also that a copy of the Resolution, together with a copy of the rules, be forwarded to the Government of India, Revenue and Agricultural Department (Scarcity), for information.

GOVT., N.-W. P. AND OUDH, P. W. DEPT.

*Dated Allahabad, the 1st December 1896.*

#### Famine Relief Works.

THE following rules and orders are issued for the guidance of officers employed on relief works conducted under the provisions of the Famine Code, and carried out by the Department of Public Works:—

These instructions are for guidance in conducting in the field relief works under the Famine Code, in tracts officially recognised as distressed. They are not applicable to works conducted by the Public Works Department as ordinary works, under Article 60, Famine Code, or as test works, undertaken in districts or tracts under observation, but not officially recognised as distressed.

2. The backbone of all large relief works must be earthworks, and in their selection certain points call for special attention. An ever present difficulty is to find work enough for the undue proportion of carriers that crowd on to a relief work in the shape of weakly men, women, and children; so that the longer the 'lead' of earthwork is, the less ineffective are the results and the more economically is the work done. It is often most difficult for the organization to control the labour, especially when one of the unexpected rushes occur of which we have had such frequent examples; so that the more the work is concentrated, the better it can be looked after.

3. It is thus of the highest practical importance to select simple earthworks which do not require very much laying out, which afford work in large quantities, and which have a good length of "lead." The selection of relief works is not, except in the case of village works, always determined by considerations connected with the effectiveness of the labour; but when these considerations predominate, then it should be remembered that deepening of a tank is about the most effective relief work which can be carried out. Next to that is the excavation of a canal or any wide ditch where there is a great deal of work per foot run and the earth has to be carried well away. Close behind it is a heavy railway embankment formed from deep borrow pits well away from the embankment. Last of all earthworks is the ordinary raising of an unmetalled road; and in this case it is far more effective to raise the road by a foot than to raise it only half that amount. A masonry work is of little practical use for famine relief. Stone-breaking is at time very useful.

4. But in every case, for a work to be truly economical it must be reproductive when done, either directly reproductive or indirectly so by being of practical use to the public. It may often occur that a work which can be very effectively constructed will be of so little use that it will be more economical to take up some other less effectively constructed work. For instance, in a very wet district it will be more economical to embank a moderately useful road than to deepen a tank that is of no use. There is thus room for the exercise of considerable thought and judgment in the selection of famine relief works, and it will be amply repaid by the results.

5. The recent relief operations in the Bundelkhand districts of these Provinces taught many useful lessons, the more general of which are set forth in G. O. No. 249 of 26th November 1896. This order is reprinted as Appendix I to these orders and should be carefully studied.

6. The work which has to be done in the field may be conveniently considered under the several following headings, which are placed more or less in the order in which they will call for attention :—

- I.—Establishment.
- II.—Tools and baskets.
- III.—Funds and supply of coin.
- IV.—Drinking water.
- V.—Food.
- VI.—Field hospitals.
- VII.—Hutting.
- VIII.—Conservancy.
- IX.—Organizing relief labour. The gang.
- X.—The task. Setting out work, and getting it done.
- XI.—Wages.
- XII.—Reports and accounts in the field.
- XIII.—Checking work, numbers, and payments.

I.—ESTABLISHMENT.

7. Clause iv, paragraph 23, of the above-quoted Resolution describes the higher officials required on a relief work. Any number of workers, up to 5,000, or at the outside 6,000, will form a 'charge' and will require an 'officer in charge' whose duties are described in Article 77 of the Famine Code. If the numbers on a work exceed 6,000 an additional work should be commenced without delay; another part of the same road may suffice, but it *must be* a separate "charge." If the "charge" contains less than about 3,000 workers, it will be sufficient to give him one sub-overseer, or work-agent, to help; but if there are more than that number, he must have two such men. The "officer in charge" will most conveniently, and ordinarily, be a náib tahsildár placed at the disposal of the Public Works Department and posted by the Superintending Engineer on the indents of the Divisional Engineer. He will be the cashier and general supervisor on the spot, and one of his duties is to see that work is really done, or else proper fines actually recovered for short work.

8. It is the duty of the sub-overseers or work agents to lay out work in advance, to have profiles ready where necessary, to measure up the work done by each gang of workers, and to assess the requisite fines for short work in the manner explained further on. Where there are two or more such men, one of them has to look to the setting-out of work ahead, and the other to the proper finishing up of it behind the gangs. One of them is put in charge of all tools on the work. The men will be posted by the Superintending Engineer on indents from the Divisional Engineer, whose duty it is to regulate his indents in accordance with the probable number of workers, and to apply a fortnight in advance of requirements wherever that is possible, so as to have the officials on the spot in time to prevent the organization being overpowered by a rush of relief workers. When no more Public Works sub-overseers are available

suitable men of the class of overseer, or sub-overseer, are temporarily engaged by the Superintending Engineer on a salary of Rs. 50 to Rs. 65 per month on the terms stated in the form of appointment put in as Appendix VII, and are called work-agents. The Divisional Engineer should keep a list of any suitable local men he can hear of, and appoint them as occasion arises; reporting each such appointment to the Superintending Engineer, with the information required for the purpose of filling in the appointment form in the Superintending Engineer's office.

9. As long as there are only three or four separate charges going on in a district, the District <sup>Engineer</sup> Surveyor can look after them himself; but when there are more than that number, he will require the assistance of an inspecting officer of the standing of a Public Works Upper Subordinate, whose services will be obtained by an indent from the Divisional Engineer on the Superintending Engineer. The inspecting officer will act under the orders of the Subdivisional Officer, and it will be his duty to go round his parties in succession, spending three days with each when possible, to correct all faults in organization, to check the numbers and payments, check the quantity of work and look into its quality, and also assist in aligning new work, or anything else the Subdivisional Officer may require help in. When it is impracticable to depute a Public Works subordinate for these duties, a temporary Inspecting Officer will be appointed by the Superintending Engineer, ordinarily on a consolidated salary (including travelling allowance) of Rs. 150.

10. These principal officials require the Superintending Engineer's or higher authority for their appointment. The minor ones who will now be mentioned belong to class IV, paragraph 619 of the Public Works Department Manual of Orders, and as such may be appointed by the District <sup>Engineer</sup> Surveyor, under paragraph 621; he should therefore make his own arrangements for them. He should keep a list of candidates and may have two or three men more on his works than is absolutely necessary, with the twofold object of getting them into training and having them at hand when wanted. Every 'charge' requires the following minor establishment:—

One vernacular clerk of the *tahsildár* class, that is, a man qualified to act as sub-cashier under the officer in charge. He will ordinarily be appointed by the officer in charge, who is responsible for him. Salary, Rs. 15 to Rs. 20.

One clerk who can keep accounts in English. May best be appointed by the officer in charge, whose assistant he will be. Salary Rs. 15 to Rs. 20.

One disbursing vernacular clerk (called gang *muharrir*) for about every 1,000 relief workers. These should be reputable men known to the *tahsildár* or other responsible official. When wages are paid bi-weekly a *muharrir* can register and pay 1,400 persons. Salary, Rs. 10 to Rs. 15.

One tools *muharrir*. Salary, Rs. 8 to Rs. 12.

The duties of the first two are obvious, and they work as assistants to the officer in charge. The gang *muharrirs* calculate the wages and do the greater part of the actual counting out and disbursing of wages, each



for his own gangs. The tools *muharrir*, or storekeeper, has immediate charge of the tools under one of the sub-overseers, who is responsible for him and should make the appointment.

In addition to these there has to be a foreman of the water arrangements. Salary, Rs. 12 to Rs. 18 per month. Two or more 'mates,' on daily wages under him. An experienced 'mate' or '*tindal*' for nicking out the work set out by the sub-overseer or work agent. His gang of 10 to 20 men should all be intelligent professional labourers, accustomed to that sort of work and paid as Class B. There must also be a *jamadar* of sweepers in charge of the sweeper gang.

## II.—TOOLS AND BASKETS.

11. For every 1,000 attendants on a relief work, including both workers and their dependants, a supply of 120 digging tools and a first outfit of 600 baskets will be required. The digging tools will ordinarily consist of 10 to 20 per cent. of pickaxes or *kodals*, and the rest *phaorahs*. The proportions of these tools will vary greatly with the nature of the soil to be dug, and sometimes heavy *phaorahs* will be required, and in other places the lighter kinds. It is impossible to give any general directions on this point, and the Divisional Engineer must see to the right kind of tools being provided for the work that has to be done. Ample provision requires to be made for keeping up the supply of baskets. The village supplies soon run out, and this year there will be difficulty in getting the material to make baskets from. An order for a million baskets has been given to the jails of these Provinces, and a two months' supply should be secured at once, according to the numbers expected on the works by the end of December.

12. It sometimes happens that the people rush on a relief work in the most unexpected manner, and 9,000 or more people may be present on a work four days after it is opened and before there is time to start another one, or get out tools. This actually occurred in the present year. To provide against such accidents, every new work should have a supply of tools for 10,000 persons when it opens. If a rush occurs, it can be met and there will be time to draft off the surplus number with a supply of tools, &c., on to a new work opened for the purpose with the Collector's sanction and assistance. If there is no such rush during the first ten days or so, tools for 6,500 persons should be kept on the work and the balance sent to any new work about to open, or any other work which may be in want of them at the time. In every case a newly opened work must open with tools enough to give employment to 10,000 persons (including dependants) in case there is a rush. This is never to be omitted.

13. In all road and embankment work large numbers of wooden *thappies* for breaking up clods will be required: a supply of 4,000 *thappies* should be ready to start with. These will require to be of the pattern in local use, but rather light, and should be made up in advance on the spot or wherever most convenient to start with. A small gang of carpenters should be employed on every work to keep up the supply of these and of tool handles. Famine coolies seem to break more handles than the ordinary digger at first: a supply of 3,000 should be at hand.

## III.—FUNDS AND SUPPLY OF COIN.

14. The credit order is obtained in the usual way, and the problem is to keep the different relief works in funds on the spot without a very large floating balance in process of transit; and much time and labour wasted in the process. An imprest of over Rs. 1,000 is forbidden; it is therefore of no use to give the officer in charge an imprest on any large work. He must keep a cash-book, but he may not have a separate credit in the treasury. The following method of keeping the relief works in funds has proved very successful and economical.

15. The District Engineer in consultation and with the help of the Collector should select two or more sub-treasuries as paying centres, and arrange that the tahsildár in charge shall cash cheques sent him in his name, but for certain prearranged officers-in-charge of relief works. He should himself start each work and keep the officer-in-charge in funds while there. A few days of open work will show how things are going. When leaving the work, the probable expenditure for the next week should be computed and the officer-in-charge given enough money to keep him going for that time. After that a watch on his daily reports should be kept, and before he is out of funds, his expenditure for the next week should be calculated and a cheque for the amount sent to the tahsildár, in the name of the tahsildár, but endorsed "for" the officer-in-charge to whom the money is to go. The tahsildár cashes the cheque and sends the money under guard to the officer-in-charge, who enters it in his cash-book in the usual way.

16. Each "charge" will require one iron safe; the Roorkee pattern of safe does very well, it is about  $2\frac{1}{2}' \times 1\frac{1}{2}' \times 1\frac{1}{2}'$  high. There must also be two wooden chests, iron bound and tin lined, with two hasps and padlocks. Size of chest,  $2\frac{1}{2}' \times 2' \times 2'$  high. One of them remains on the work and holds the pice, the other is used in transporting money from the treasury. If the chest is not tin lined, the pice fall through the cracks which occur in green wood.

17. At least three weeks' supply of copper coin should be available in local treasuries to begin with. At first it will mostly soak into circulation and disappear, but after a short time it will begin to flow back in exchange for silver; and after the works have been going for six or eight weeks, the rupee will be at a premium, and *bantias* will give something more than 16 annas in copper for the silver rupee.

## IV.—DRINKING WATER.

18. To keep this pure it is necessary to guard the wells from contamination for some days before a work is started. Select some respectable, cleanly man of good caste who can be trusted to attend to the business, and make him foreman of the water arrangements. He must have four or five Bráhmañ mates, a Kahár mate, about twenty Kahár carriers, and the same number of Bráhmañ drawers and distributors under him. He will require about 10 iron buckets (*dols*) of the country shape (with a round bottom) for drawing water, and about 60 kerosine tins for carrying water. This will probably be enough to commence with, but the proportions will of course differ with the distance of the wells from the work; and in any case the staff and plant will probably have to be increased at one time or another.

19. The kerosine tins require to be strengthened with an iron strap under them and a handle for carrying about. Half of the top should be cut away and hinged on again to prevent water splashing out. The water foremen should take possession of all wells close to the future work a week or so ahead of the workers, and at once put each in charge of a Bráhmañ with one or more assistants, and arrange so that these men shall draw water for any one who requires it; but they must *allow no one else to do so*, or even to come on the well platform. From that time till the workers leave the locality each such well should remain in charge of the same set of men, and they should never allow any other person to dip a *lota* into it, or to stand on the platform. The rigid preservation of the purity of their water-supply is one of the very few sanitary measures which the people will heartily approve of, and in which they will assist so far as they can do it without taking trouble.

20. The actual distribution is most readily effected by utilizing the old-established method of setting up *piaos*, or drinking places, at short distances apart. A large earthen jar, called a *gol*, is purchased for three to four annas and set up, a little aslant, on a low mud platform. By the side of it a narrow trough some five feet long is set up on two stakes, with a slight slope through it and the further end about two feet above the ground. It is important to take care that this trough shall always be of iron, never of wood.

21. The jar is filled from the kerosine tins (earthen *gharas* must never be used for carrying water in) by the water Kahárs, and by them alone; no one else may touch it. By the side of it sits the distributing Bráhmañ, and when anyone comes for water, he fills his brass pot, or *lota*, and pours water into the man's jar, or pot, by means of the trough. He must never pour directly into any man's pot or jar, but always into the trough and thence into the jar, placed below the trough and filled from it. It is important to have the trough well above the ground, so that it may not be touched by the jars or splashed from them. It is important to have the trough of iron, because if it does happen to get infected, it will what with rust and heating in the sun when dry, almost certainly disinfect itself very soon after. The great jars, *gols*, should never be carried on to a fresh place, but should be broken up, and new ones used at each new *piao*. One such *piao* should be set up at every second furlong stone along a relief work.

22. If there are more wells than need be used, the unused ones should be guarded to keep off the workers, and so also with doubtful or tainted wells. If wells are miles apart and a doubtful one has to be used, it should be disinfected with permanganate of potassium according to Professor Hankin's instructions reprinted as Appendix II. So also if cholera should break out. If water has to be carried a long distance, it will be found best to carry it in casks fitted with brass cocks and loaded two in a cart. Wells should always be drawn on in preference to tanks, if within a practicable distance. All this organization about the water-supply may seem to involve a great deal of trouble over a small matter, but a neglect of it will have sure consequences where large bodies of people are collected together, and especially when they are famine-stricken people. These precautions are of vital importance to the public health.

#### V.—FOOD.

23. So far as present experience has shown, there is no reason to expect any deficiency in the actual supply of food; but it is desirable that the quality should be looked into very frequently, and immediate

action taken against any one found selling unsound food. The food trade on a full sized famine relief charge is greater than that in any ordinary small Indian town, and if special facilities are given to respectable local traders, they will be careful not to lose them by selling unsound food, or worrying the people with needlessly frequent changes in their prices. Following the principles of Article 95, Famine Code, the under-mentioned advantages can be offered, among others, in exchange for fair trading:—a small grass hut for a shop situated near a *piao*, and within the range of the treasure or other guards; free carriage of grain from the nearest mart, if the trader is willing to sell at the current rates of that mart; prompt and free exchange of all his copper into silver paid into the local treasury to his credit. It is usually quite easy to find several respectable men who can understand the value of such advantages to their trade, and are willing to give honest goods and reasonably steady prices in exchange for them, so long as they are pretty closely looked after.

But it may occasionally occur that a relief work is situated in such a remote locality that private traders are unwilling to go there without other inducements than those noted above. In that case, or in similar exceptional cases requiring exceptional treatment, the Collector of the district would be justified in contracting with a grain-dealer for the supply of grain on the works for a stated period and on terms to be mutually agreed upon.

#### VI.—FIELD HOSPITALS.

24. Assistant Surgeons or Hospital Assistants are deputed to these works by the Inspector-General of Hospitals, and their arrangements are looked after by the Civil Surgeon of the district. It is the business of the Public Works to construct field hospitals at sites selected by the Civil Surgeon, and on a plan approved by him. The plan must be as simple as possible, and so arranged that the whole can be burnt down when the structure is abandoned for a fresh one; while at the same time there must be provision for the patients to get quickly out of the enclosure if it catches fire while in use. This will be secured by forming one side of the enclosure of a mud, or clod, wall with a gateway in the middle, and kept quite clear of hutting. The other three sides may consist of hutting; but if the enclosure is entirely surrounded by hutting, the occurrence of a fire will lead to many patients being burnt to death. All the grass hutting should be white washed with a thin mixture of lime and clay.

25. There must always be a spare hospital ahead of the one in use, so as to be ready for an epidemic. An abandoned hospital must be immediately burned to the ground. If it has held patients suffering from any epidemic disease, the site of the burnt hospital should be sprinkled over with about 6 cubic feet of quicklime sifted evenly over it, and the whole then well sprinkled over with water enough to wet the lime thoroughly.

26. Sufficient attendants, carriers and others, should be supplied to the hospital assistant, or other officer in medical charge, according to the scale laid down by the Civil Surgeon in each case. Relatives of patients should not be allowed to swarm round them, and only so many admitted as the Civil Surgeon directs. No other relatives than those admitted under the Civil Surgeon's regulations should be given even a famine minimum wage so long as they idle at the hospital in pretended attendance on a patient. The hospital water-supply should be worked by its own staff and not in conjunction with the general supply for the relief workers. This is an important point and it will require some insistence to keep the two quite separate.

## VII.—HUTTING.

27. The workers will ordinarily require the shelter excepting in the event of winter rain or, many months hence, when the hot winds become dangerous in some districts. The problem will be one of difficulty if the most practicable materials—thatching grass and *sirkhi*—become scarce. The difficulty will of course not arise if it is found possible to carry out the policy of contracting large relief works and withdrawing the people to their villages for employment on village works on the advent of the hot weather. But if impediments to this policy occur, the first practical point is to arrange, with the Collector's assistance and under the Commissioner's sanction, the order of works, so that as many as possible of them will be near villages from the middle of December till the end of January, and again near villages, or in wooded country, after the latter part of April. This will very materially reduce the number of workers to be huttet. For the rest there seems to be nothing better on a large scale than screens about 6' long by 4½' wide, made of very open bamboo trellis work, strongly tied and thatched with about 1½" thickness of any thatching grass available. These screens, either in the open or on the side parts of a road under construction, make suitable shelters.

28. The people are very ingenious in improving shelter with such screens, and two screens will shelter six to eight persons, counting in little and big. *Sirkhi* screens may be more readily obtainable than grass in some places and will do as a substitute. Every work will have a number of men who can be profitably employed in making the screens. The question should be well considered and all due arrangements made: but the actual provision of shelter should be carefully kept down to the lowest requirements, as it is very easy to waste a great deal of money in providing an unnecessary amount of shelter, which the people will absorb and waste to any extent so long as they have not to pay for it. When shelter becomes necessary the screens must be given out to mates of gangs.

29. Every effort will be made to procure tents enough to shelter the officials connected with the works, but there will be many left unprovided for. These should be huttet in small grass huts with the walls plastered with mud on the inside, and all other surfaces white-washed, both inside and out with a thin wash of clay and lime, in about equal proportions, as a protection against fire. An experiment with a bundle of coarse thatching grass washed in this way will show the men what an effective protection it is. The huts should be 9' x 6' with the ordinary pent roof, and made in sections so that they can be readily dismantled and re-erected, and easily carried in an ordinary cart, or by coolies. The whitewash, and the mud plaster, should be renewed at intervals. The sides need only to be 4' high; any extra height wished for can be got by digging out the floor. The local staff of each 'charge' should be generally huttet in this way.

## VIII.—CONSERVANCY.

30. The conservancy of every hospital should be carried out by its own staff of sweepers under the directions of the Officer in Medical charge. For the staff there should be the usual screen and ditch, and the officer in charge should be instructed to have it well looked after for his own sake. It has not been found practicable to make any latrine arrangements which the workers can be induced to use. The most that can be done is to post a few stalwart men, of some rather domineering class, such as the Thakur under a competent mate of their own class, to insist on the workers going at least 300 yards off the work in their morning walks. They should generally go to the east of the work, but if there is a village near on that

side they should be made to go in the other direction. The police cannot be spared for this work or advantageously employed on it. It is of great importance to the health of the workers, and if worried into it for a short time they at last accept it as an admitted custom (*dastur*), and give very little more trouble about it. Any officer-in-charge who will take the trouble can enforce the system and keep it going.

31. There must always be deaths on these works; if unhappily an epidemic should burst out there will be numerous deaths, and the disposal of the dead is a matter that must be attended to. The workers will not attend to it properly: in general they have not the means, and many of them do not seem to care much more in the matter than to get rid of the body in some moderately respectable manner. They will bury a body just under the surface, or they will just singe it and throw it into any accessible running water. At every three or four miles of a relief work there should be a burying place for Hindus, and another for Muhammadans. The two places should, if possible, be on some locally accustomed spot, they should be far apart, and neither should be near a village, nor within half a mile of the work. Each should have a very small appropriate staff.

32. In an epidemic it is difficult to find wood enough to burn bodies. Professor Hankin's researches show the water of the Ganges and the Jamna rivers has an extraordinary power of destroying cholera germs, which is wanting in other river waters. If then either of these rivers is close at hand there seems to be no objection to friends disposing of the corpses in that river; but in any other case the body must be buried. At the police guard, or other convenient place, there should be arrangements for the burial, free of charge, of every Hindu body which friends do not bind themselves to burn, or to carry to the Jumna or the Ganges. For the Muhammadan cemetery there should be one or two grave diggers, preferably of the *Gorakhpur* class, who would keep a certain number of graves ready dug. The graves should be not less than 5' deep, and the dead should be completely and decently covered in. Unclaimed bodies should be taken charge of by the police and buried.

33. If this organization is got into train from the first, it will be ready against the occurrence of an epidemic, and it can then be extended to any required extent. But if a skeleton organization is not ready, then it cannot be improvised in the rush of an epidemic, and corpses will be thrown into every adjacent stream or *nullah*, or left lying about in the fields.

#### IX.—ORGANIZATION OF RELIEF LABOUR. THE GANG.

34. The Code classification of workers is given in article 66, and may be paraphrased as follows:—

A.—Able-bodied professional labourers accustomed to the kind of work they are engaged on.

B.—Able-bodied labourers, but not accustomed to that kind of work.

C.—Able-bodied persons who are not labourers.

D.—Persons who are weakly, but still fit for light employment.

All the officials in charge of relief work are working under pressure; any unnecessary addition to their work reduces the stock of time and energy available for useful work. If he does his duty the most harassed man of all is the officer-in-charge, and every complexity of classification is a continual burden to him, and in a less degree to every other official connected with the work. As a matter of fact, niceties of classification cannot be

attended to, and they furnish constant inducements to petty fraud. It is most desirable to reduce refinements of classification as much as possible.

It is found in practice that the number of workers under class A is inconsiderable, and for that and other reasons alluded to above the class need not be considered further. The vast majority of the workers are agricultural or other labourers and peasant farmers, and they rightly fall into class B. There is a sprinkling of class C. These persons are very largely utilized in the miscellaneous employments in connection with relief work, where they rightly receive the wage of class B, or in some cases a small addition to it: and the remainder is too small to classify separately. There is a larger proportion of class D (weakly persons), many of whom can work up into class B after a fortnight or so of fair feeding.

35. Having regard to the facts of the case as noticed above, it is better to omit classes A and C altogether, and to reduce the classification to the following terms:—

Workers.—Class B	...	...	Men,* women, children.
Ditto	D	...	Ditto ditto.
Dependants (gratuitous)...		...	Ditto ditto.

It will be seen from paragraph 59 below that the scale of wages errs, if at all, on the side of excessive liberality.

36. The children have to be divided into four grades for the purpose of giving them fairly proportioned wages. The best grading is in the following terms:—

I.—Worker—age apparently between 12 and 16 years. Above 16 years counted in as an adult.

II.—Worker—age apparently between 7 (completed) years and 12.

III.—Gratuitous—not in arms and age apparently under 7 years.

IV.—Gratuitous—children in arms.

All children over seven years of age are to be counted as workers, unless so crippled that there is no likelihood of their filling out and working. All children under 7 completed years of age are to be counted as “dependants on gratuitous relief.”

37. The manner of starting a relief work is as follows. The officer-in-charge and the principal men of his staff are on the spot. The work is ready marked out and all points of organization have been gone through with the officer-in-charge, who has himself spent a few days on a relief work unless this is the first opened in the district. There should be a police guard for the money chest, and to give assistance in other ways. The tools are kept in an enclosure near the work, a sort of ‘zareeba’ with a thorny wall or fence round it, and the storekeeper is huddled in it, with his note-book of issues and receipts ready by him. Somewhere close to the tools depôt is a large red flag on a tall bamboo, and that is the place to which new-comers are told to gather together as they arrive, and here the gangs are made up. The morning is full of work and gangs are best made up in the forenoon, commencing at about 10 o’clock, and the men started on the work in the afternoon. While the gangs are being made up the future gang *muharrirs* must be present, and also any gang *muharrir* whose numbers are very short on that day.

\* This is for classification only; for wages see paragraph 59 below.

38. First select 15 able-bodied men fit to dig, and fellow-villagers if possible, and stand them apart; then tell their women and children to stand with them; these will probably number about 50. There may, perhaps, be also one or two old men too feeble to work, who are dependant on some of the workers and must be let into that gang. There will then probably be about 67 *persons* in the gang altogether. Count out all the children under 7 (completed) years of age as non-workers, or 'dependants,' who will receive gratuitous relief, and also the one or two very feeble old men or women who belong to some one and are too weak to work. There will then probably be about 50 *workers* of sorts in the gang. Select weakly single men (still fit to work), women, or other strays (fellow-villagers if possible), till the gang is made up to about 60 workers, in addition to the dependants who are unfit for work.

39. Next, select a 'mate' for that gang, from among the relief workers present, and a fellow-villager if possible, and make the gang *muharrir* fill up the "mate's list" on the back of the 'gang register' at once, as see paragraphs 62 and 63. It must be filled up at once by, or under the eye of, the officer-in-charge: the gang must be given a distinguishing number at once: and the gang number, mate's name, and *muharrir* to whom consigned, should be recorded in the note-book of the officer in charge and of the gang *muharrir* at the same time. The gang *muharrir* sends on the gang, under charge of his man, with a slip to the storekeeper to deliver certain numbers of tolls, baskets, and *thappis* to the mate of the gang: these he also enters in his note-book.

40. Arrivals in the afternoon will be given food in accordance with Famine Code, Article 79, and will be made up into next day's gangs.

41. People once formed into a gang must not be allowed to stray into others without special permission. Mates should be chosen with an eye to position among labourers, intelligence, and at least the appearance of being able to exercise some sort of authority among their people. During the selection of gangs it is necessary to keep in mind and provide for the requirements of the hour in the way of filling up depleted gangs, and of special labour, such as water-drawers and carriers, water distributors, conservancy patrols, sweepers, &c. The latter must be drafted into the special gangs formed for those purposes.

42. As regards 'dependants' attention is invited to article 100 of the Famine Code. The proportion of little children and other dependants will often rise above 10 per cent. where whole families come on relief together. As regards the persons who may be admitted on to these works, see Articles 79 and 80. These works are not intended for persons unable to do any work and not dependant on a worker; for such there are the poor-houses. But if any such starving persons apply at one of the works, they should be fed for a day or two until an opportunity occurs of sending them on to a poorhouse.

43. The gang is the basis of all organization, and it must be kept as permanent as possible. No mate should be allowed to admit any new persons into his gang of his own authority. As soon as a gang has received its tools it must be marched on to a previously marked out piece of work, and it will thereafter be always treated as a unit. It will be drafted from one work to another, or from one part to another (as when workers are progressing along a road), as a unit, and in accordance with the procedure laid down in Article 83 of the Famine Code, and with the gang registers written up to date.



**X.—THE TASK. SETTING OUT WORK, AND GETTING IT DONE.**

44. The special gangs of water-carriers, hospital attendants, conservancy men, and so forth, have their own special duties, and the practical mode of getting value from them is to take care there are no more of them than the work requires, and that they perform their duties efficiently. But the great mass of the workers are on a different footing. If the arrangements are complete, there is any quantity of work for them to do. They are by no means inclined to do a stroke more for their daily wage than can be helped. The problem in working under the Famine Code is to find how much work they should do without being overworked, and to get them to do it.

45. Section 72 of the Code refers to its Appendix D on the question of quantity, and the appendix contains rules for modifying tasks in accordance with the 'lift' and the length of 'lead.' Experience has shown us this is quite unnecessary. The people must be taken as they come, and the diggers must be distributed in the proportion they happen to bear to the fillers and carriers. It has always hitherto happened that the fillers and carriers were far too numerous for the diggers, and, instead of reducing the task because the fillers and carriers might be overworked, it has been found that it was only with a high lift and long lead that the diggers could do enough work to give them a proper amount of work. Under the system of wages laid down by the Code—and no better seems to be practicable—a man's income is very greatly increased by bringing all his women and children on to the works. The Indian peasantry are very much alive to their own direct interests, and there is no reason to suppose that there will ever be much difference in the proportion of men to women and children. As a rule, then, it is safe to omit all calculations as to lift and lead in any work done by famine labour under this system of wages.

46. The problem is thus very much simplified. The task depends entirely on what the digger can excavate; whatever that quantity may be there will always be enough fillers and carriers to dispose of it. From this it follows that the effectiveness of the whole gang as an instrument of labour depends entirely on the effectiveness of the digger, and on him alone. If the digger gives a good day's work the gang has to do the same; and if he idles, no possible industry on the part of the remainder can make up for it. It is therefore only necessary to consider the quantity of work which a digger may be fairly called on to do, namely, the 'task,' and how to get him to do it.

47. Table A of Appendix D, Famine Code, gives very fair task for men and women of classes A and B, and for men of class C. But with our soils and under the system of classification now adopted, these tasks require some rearrangement, and the following table is accordingly prescribed:—

**TABLE I—TASK WORK.**

*Excavation only. For diggers, men of class B.*

Soil.	Daily task in cubic feet.		Remarks.
	Full.	Low.	
Soft earth, such as sandy loam,	130	100	In the rare cases when a woman works as digger she should have a $\frac{2}{3}$ task.
Medium earth ...	110	80	
Hard earth and clay ...	85	70	
Stony soil, and black cotton soil when dry.	85	50	

48. These are the tasks to be exacted. The task is in each case to be fixed by the <sup>District Engineer</sup><sub>District Surveyor</sub> under the instructions of the Divisional Engineer. When a gang is first started on work the low task for that kind of work is to be taken from the diggers, and it is to be gradually raised in a fortnight or so to a suitable task according to the soil and the strength of the workers. The full task is the ordinary one to be adopted. More may be obtained under favourable conditions, but these figures have been adopted as a safe limit which it would not be harsh to enforce by fines. The low task may be adopted under unfavourable conditions, climatic or otherwise. It is by no means intended that only the low task shall be adopted, or that it shall be the prevailing standard. If less than the low task is ever allowed, the fact must be reported by the Divisional Engineer to the Superintending Engineer, with full reasons for permitting the low task to be reduced. If the Collector of the district considers the task unsuitable, the <sup>District Engineer</sup><sub>District Surveyor</sub> will alter it on receipt of written orders to that effect from the Collector, but he will at once report the alteration to the Divisional Engineer and forward the Collector's order to that officer in original. The Divisional Engineer will forward the report to the Superintending Engineer for communication to the Chief Engineer.

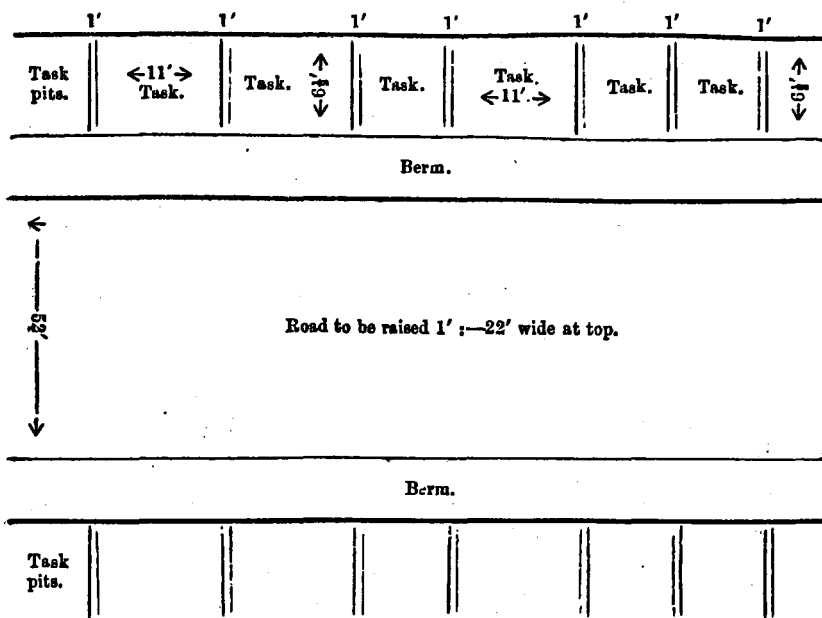
49. It is constantly asserted in some districts that such and such tasks cannot be got from the men, while in other districts very large tasks are completed without difficulty. The method on which the tasks are worked is the secret of success. Every task should be marked out separately, and the gang mate made to give one out to each digger overnight. The digger may then commence work at any hour he likes, and *must be at liberty to go off work as soon as his task is finished*. He must not be kept working at a portion of a general task, or at finishing up another man's. He then feels himself responsible for a certain piece of work, and knows that he may go, certain of his wage, as soon as it is done. A gang task marked out *en bloc* will never be done. The idlers have no individual responsibility brought home to them; and those who would work are demoralized by their example, and disheartened by having to do other man's work. It is the old disease of every form of communism that has yet been tried. Give every man his task, and his wage for doing it. Fine him for default if necessary, according to the fine scale of paragraph 60 below.

50. All laying out of work should be planned with two objects as regards the workers: (I) to give every man an individual task; and (II) to give every worker at least three days' work in one place before having to march on to another reach. This also prevents overcrowding the workers. To take an example. Suppose a road 22 feet top-width, to be embanked 1' in light sandy earth, by gangs with an average number of 15 diggers each, and doing a task of 130 cubic feet. Then 83 lineal feet of road embanking will give a gang one day's work, and a gang to every half furlong, or 330 feet, will give them nearly four days' work before they need shift on. Taking a gang as about 80 persons, all sorts, this will spread a 'charge' of 5,000 persons over a length of nearly four miles. One gang to every half furlong is a very good general rule to follow.

51. Laying out work on a road is simple enough and should be done well in advance of the workers. The setting out consists of two parallel lines for the embankment, and outside these two more such lines on each side to mark the pits. The distance apart of these last lines is of considerable practical importance, and should be such that pits of either 1' or 2' depth shall give a little more earth than is required for the road. The individual tasks are marked out by cross cuts between the pit lines, an

interval of 1' being left between every two tasks. The example of road given in the preceding paragraph would be marked out in the way sketched below, which will give just enough earth from task pits 2' deep and, allowing for the slopes in pit-sides, the tasks will be 130 cubic feet each:—

*Lining out a road into tasks.*



52. With work laid out in this way there is no necessity for measuring up to know whether the tasks are done or not; a glance at the pits tells that. If nearly all the pits are completed, the mate and every man in the gang knows who the defaulters are, and it is best to fine only the men who have incomplete tasks, and to fine them only one to two pice each for the first week or so of a gang's existence. A few days later the mate should be fined as well; and if the deficiency still goes on, the whole of the diggers in that gang should be fined. It will be found that the idlers either reform themselves, or leave the gang of their own accord. If the majority of the diggers have been slack in their work, they should all be fined for it, and the mate as well. If the deficiency in their work has amounted to over 20 per cent. of the whole gang's tasks, all the adults and the mate should be fined. If individual tasks have been marked out, this will soon bring about a reformation, for nearly all the women are relations of one or other of the diggers.

53. In embanking roads with dry earth it is very necessary to have the earth broken up very small, and there are plenty of people to do it. The made road should be constantly dug up and examined; if the earth has been left in clods, it is always the fault of the mate and the adult carriers and breakers. In that case these only (namely, all the working adults of a gang other than the diggers who have done their allotted tasks) should be fined, and not the diggers. A very few days of persistent, but not too severe, discipline of this kind will put almost any gang into shape; if it does not, the mate is of no use and should be turned off. But the discipline cannot be fairly applied unless *individual tasks* are marked out.

54. At the rear of every relief 'charge' there should be a finishing gang, one that has shown it has learned its work well and is under an intelligent mate. It will be the duty of this gang to properly finish up all irregularities left by the less skilful gangs in front. No particular task can be set for them, and the work very largely depends on the mate in

charge, who should be a professional *tindal* on a monthly wage. The whole appearance of the work when finished depends on this part of it being properly attended to.

#### XI.—WAGES.

55. Under ordinary conditions the income of a working family consists of the wages of its workers, and nothing more; the wage earner is the sole natural channel of wages. But one of the effects of a severe scarcity is to decrease ordinary employments, and also to destroy the usual proportion between the ordinary wages of a worker and the average wants of the family group he supports. When this becomes very marked, the State and private charity step in to save human life by giving extraordinary employment, and also by making up the wages of a family to something like its absolute necessities. The purpose in view is, not to increase any man's wage *per se*, but to increase the incomings of the family group in proportion to its actual necessities. The absolute necessities are closely proportional to the numbers and classification of the persons composing the group, and it thus becomes necessary to prescribe a separate wage for each member of the group. The family cannot be treated as a whole, but each unit of it must be given a proportionate wage.

56. This is the system on which the Famine Code regulates wages, and it is unavoidable. The wages prescribed after long experience and careful observation are laid down in Articles 101 to 108, and the last of those sections prescribes a scale of wages based on 'grain equivalents' which is to govern the cash wages paid on these works. There are different scales of wages, and in making a selection several points have to be considered. Special care must be taken that the joint wages of a family, while sufficient for subsistence, shall not be greater than unskilled labourers can earn elsewhere. Otherwise all labour will be attracted from other work on to the relief works. This result would be undesirable.

57. Each unit should have enough to live on without more than the unavoidable margin caused by making the standard for each class high enough for nearly every person in that class. The *minima* wages of Article 108 provide this, erring, perhaps, on the side of liberality. But the work must be done, and its being executed depends entirely on the digger. The diggers are in such a small minority that to keep the others in work they must work fairly hard, and they will not do this without reward. Experience has shown that if the digger gets only the *minimum* wage he reflects he could get as much in any case, and he ceases to work. If he is paid only a very little above the *minimum*, he does not think the difference worth working for. Experience shows that for a difference of something over two pice he is willing to work fairly, and also that the hard worker requires that much more than the others, for additional food to keep up his strength.

58. On these considerations all ordinary workers should be paid the subsistence wage; diggers and those employed in special gangs may get the *maximum* wage of class B; and mates of gangs, with such other men in responsible work whom the <sup>District Engineer</sup>/<sub>District Surveyor</sub> considers require it, are to be paid two pice more than the diggers. The wages of the workers are to be regulated by the scale of grain equivalents prescribed in section 108 of the Famine Code. These equivalents are to be converted into money on the basis of the current retail price of the staple grain in ordinary local consumption by the labouring classes and in the state, husked or unhusked, in which that grain is ordinarily sold by retail for consumption.

59. The following scale will therefore be used:—

Mates of gangs and other persons in responsible posts ...	... Six pice more than a digger.
Adult males, workers. Diggers, and men in special gangs ...	... Nineteen <i>chhataks</i> of grain.
Adult males. Other workers, all classes... ..	... Fourteen <i>chhataks</i> of grain.
Women * diggers ...	... Sixteen <i>chhataks</i>
Adult females not diggers, all classes... ..	... Thirteen <i>chhataks</i> .
Male adult dependants ...	... Twelve <i>chhataks</i> .
Female dependants ...	... Ten <i>chhataks</i> .
Working children, grade I. Over twelve and under sixteen years ...	... Ten <i>chhataks</i> .
Working children, grade II. Over seven and under twelve ...	... Six <i>chhataks</i> .
Non-working children, grade III. Not in arms and under seven years, ... ..	... Three <i>chhataks</i> .
Non-working children, grade IV. Infants in arms ...	... One pice extra to the mother.

If the exact money equivalent of the preceding grain wages exceeds the nearest pice below by two pice or more, the next highest pice will be given. If the exact sum exceeds the nearest pice below by less than two pice, the next lowest pice will be given.

60. Workers who fail to perform the allotted task may be punished as follows:—

- (a) by fine, provided that the grain ration (or its money equivalent) paid as wages shall not be less than the penal ration prescribed in Article 103, Famine Code; or
- (b) by payment as wages of the penal ration in cooked food at a State kitchen established on the work; or
- (c) by removal from the work and sending them to the nearest poorhouse.

61. Wages are to be fixed by the <sup>District Engineer in</sup> <sub>District Surveyor</sub> consultation with the Collector. They are not to be altered for variations of less than 10 per cent. in the price of food grains. Excepting in case of urgent necessity, which should be immediately reported, they are not to be altered without previous reference to the Commissioner. For the first week of a gang's existence it may, if necessary, be paid up daily. By that time the gang will have established an account and credit with some *bania*, and the wages may thereafter be paid bi-weekly with advantage to every one. A table or ready-reckoner showing the wages to be paid in accordance with the varying price of grain is given as Appendix VIII.

#### XII.—REPORTS AND ACCOUNTS IN THE FIELD.

62. The basis of all accounts is the 'gang register,' or it should be. The most convenient form for it is given as Appendix III. This should be printed in vernacular on a sheet of ordinary country paper rather larger than the pattern, and with columns for seventeen days. The paper should be mounted on cheap muslin, and on about half of the other side of the muslin should be pasted another piece of paper printed as shown on back of the example. This back part is called the 'mate's list.' Two such registers are kept going for each gang, not in duplicate but in alternate use. Together they last for well over a month.

\* Classed as B, but not given quite the maximum wage.

63. When a gang is first formed (paragraph 39), the 'mate's list' is written up at once, and that copy of the 'gang register' handed to the mate, who should be warned to take great care of it as his wages depend on it. The heading gives the mate's name and distinguishing number, and the name of the *muharrir* to whom consigned. Beneath is a nominal-roll of the diggers, followed by one of the other adults of the gang, then a numerical list of the children of each grade. Lastly, a list of the tools to be supplied by the storekeeper. A separate slip containing an order for tools is sent with the mate, to be retained by the storekeeper as a voucher. The 'mate's list' is not to be kept up as a regular nominal-roll, but is merely corrected from time to time as changes occur in the gang. The mate should not be permitted to have any persons in his gang who are not entered on the list by his *muharrir*. The officer-in-charge should check a few lists nearly every day. Every officer inspecting the gangs should check a few. The list gives very little trouble and is of constant use in examining gangs, and the entries in the register itself.

64. The first afternoon a gang is on the works its register is written up by the gang *muharrir* in whose charge it may be. There is no question of fines. He compares the persons present with the entries, enquires into any differences, and makes any necessary alterations. He pays a day's wages, writes up the second copy of register, and exchanges it for the first. He tells them about tasks and fines, and goes on. The sub-overseer has meanwhile pointed out the next day's tasks and told the mate what his duties are, including a word about distributing the tasks for next day overnight, conservancy, drinking water, tool repairs, and *baniyas'* shops.

65. After the first day the gang *muharrir* checks attendance in the morning, and fills in the attendance entries down to the second set of totals. He calculates and enters wages on the register, tells the mate what they come to, and signs on the line left for the purpose. Some time in the afternoon the sub-overseer, or work agent, in charge of that portion of the work examines the work done (if properly set out, the tasks seldom require actual measurement) and enters the quantity due, and that done, on the appropriate line. If there has been scamping or short work, he assesses fines as instructed in paragraphs 52 and 53 above explains to the mate exactly what they are and why inflicted, and enters the fines and his signature below. He makes a note of all such entries in his own note-book. Later on that day the *muharrir* comes round again and pays up the gang individually (the payment may become bi-weekly), deducting the amount of fine, if any. He enters the net amount paid, or to be paid, and signs the register. On each day that he pays the gang's wages the *muharrir* takes the copy on which he has paid and gives the other to the mate. The mate always has one copy of the register, and does not give it up excepting on the gang's wages being paid in full, less fines. The *muharrir* is obliged to recover the fines as assessed by the sub-overseer or work agent, and has no power to remit them. Only a written order of the officer-in-charge can remit the fines, and that order must be written on the register itself—this is necessary to prevent fraud. The copy taken away by the *muharrir* is submitted by him as his voucher for payments. Every such voucher requires to be examined by the officer-in-charge.

66. For purposes of classification and daily report the *muharrir* must keep a day-book in the form given as Appendix IV. It is a mere daily abstract from the gang registers for each day. He starts in the afternoon

with a certain amount of cash, for which he leaves a receipt. At every gang he writes up his day-book ; at some of them he makes payments, and in each such case he takes the gang register held by the mate and gives him the other copy in exchange. He enters all payments in his note-book of the day. On returning to the staff quarters he pays in the unpaid balance of money left in his hands and puts in the gang registers as vouchers for payments. The officer-in-charge and his sub-cashier make all necessary comparisons and entries, and return him the gang registers, signed against the last day they are paid to. Every head of a special branch should keep up these day-books if he is to pay his men himself, as perhaps the water foreman should, and also the officer-in-charge of the hospital.

67. The officer-in-charge abstracts all the day-books into his own day-book for purposes of classification and account. His book is the same as the *muharrir's* except that, instead of the first two columns for the gang and mate, it has one column containing the *muharrir's* name ; and the entries are copies of the, duly examined, *muharrir's* day-book totals. From this the officer-in-charge writes up Famine Code, Form III. This must be written up daily without fail and despatched to the District <sup>Engineer</sup> Surveyor on Monday morning. With regard to work on Sunday, and the payment of wages therefor, special attention is called to paragraph 2 of G. O. No. 249 of 26th November 1896, reprinted as Appendix I to these rules. The weekly returns will therefore be for the week ending with Saturday.

68. The officer-in-charge will despatch a daily report post-card to the <sup>District Engineer</sup> District Surveyor and also to the Collector and the Divisional Engineer if required. The form for this is given in Appendix V, and the cards should be supplied ready printed. He has also to submit to the Collector the reports described in articles 37 and 39 of the Code. Every additional account or report thrown on the " officer-in-charge " is a distinct hindrance to his work, and it is the duty of the Divisional Engineer to see that no clerical work not absolutely necessary is thrown on him, either by the demands of the divisional or the sub-divisional offices, the members of which have no judgment in such matters if not kept in check.

69. From the District <sup>Engineer</sup> Surveyor, the Chief Engineer requires a weekly report in a form already issued, and the Superintending Engineer requires one in the form which is given as Appendix VI. Both these forms are supplied ready printed and should be submitted with unfailing punctuality and in accordance with the instructions on them, from the time that relief works are opened under the Public Works Department. All famine relief forms should be locally printed under the orders of the Superintending Engineer and charged to famine relief contingencies.

### XIII.—CHECKING WORK, NUMBERS, AND PAYMENTS.

70. It is as a safeguard against fraud, and an instrument of detection, that the gang register system of keeping the initial accounts first shows its full value. It is of course of no use without the personal element of a man who insists on its being kept up properly, and who will utilize it fully. Every petty official whose end would be served by confusion will try to spoil the registers and exaggerate the difficulty of keeping them up. This is so marked that an inability to keep the registers straight may be almost regarded as the sign of a rogue. At least the man is incompetent and therefore should go. If it is the officer-in-charge himself who fails to enforce method and a checkable system of records and accounts, there is the more reason why he should be replaced by a competent man.

71. The Progress shown should be checked by test measurements extending over the whole work in some reach, the recorded progress of which can be disentangled from the remainder. For this purpose it is well to have all the accounts of a road, or other long work, closed up at every four miles or so, and a new start made.

72. The Numbers are checked by counting the number of gangs at work along a road, &c., and sampling the entire entries in the *muharrir's* day-book by careful comparison of about 20 per cent. of the gang registers with the entries, and also with the numbers actually found present. Look through the gang register, and see whether there have been any recent curious fluctuations. If so, they require explanation, and the mate's list on the back will throw some light on the subject. The general accuracy of each of the day-books is thus checked in turn. If not satisfied over a *muharrir's* day-book, it is best to stay there and obtain some tangible results before going further.

73. Supposing the day-books have been found fairly correct, after checking a certain number of totals and the detailed calculations, the totals are then compared with the entries made in the day-book kept by the officer-in-charge. The totals of this latter day-book are again checked and compared with the entries in Form III, and those again with the payments recorded in the cash-book. The cash-book itself is then carefully gone through as usual.

74. An examination should be thorough, but mostly in the way of sampling unless something is lighted on, and in that case it should become very thorough indeed. The way in which the accounts and records are kept is often a very good guide to what one may expect to meet with. If they are kept in such a manner as to facilitate check, rigid sample checking will probably be found to be sufficient. If on the other hand, the books are in confusion and practically useless for checking purposes, it will be well to have a very complete examination; for there is either carelessness which many will have taken advantage of, or there is worse. Every examination must be conducted with the greatest patience and consideration of the difficulties and pressure under which all are working. Unavoidable error is, however, quite a different thing from actual fraud or criminal carelessness, and the former at least can never be passed over. If inquiries establish a substantial presumption of fraud, the officer-in-charge must be at once removed by the <sup>District Engineer</sup> District Surveyor; in case of carelessness the orders of the Divisional Engineer should be awaited, unless immediate removal is necessary in the interests of Government, or the workers. In either case the <sup>District Engineer</sup> District Surveyor will forward a full report to the Divisional Engineer and also inform the Collector of the action taken and the reasons for it. The Divisional Engineer will report the matter to the Superintending Engineer for such further action as may seem to be desirable.



## LIST OF APPENDICES.

- I.—G. O., Scarcity Department, No. 249, dated the 26th November. 1896—*Vide* page 8.
- II.—Professor Hankin's instructions for the disinfection of wells.
- III.—The Gang Register and Mate's List.
- IV.—The *Muharrir's* day-book.
- V.—Daily Report Post-Card.
- VI.—Weekly Report for Superintending Engineer.
- VII.—Form of Appointment for Work Agent.
- VIII.—Wages Ready Reckoner.

## APPENDIX II.

*Directions for treatment of wells with permanganate of potassium, as a means of checking epidemics of cholera.*

PERMANGANATE of potassium is a crystalline salt-like substance, of a purple colour, in whose preparation only mineral substances are employed. Hence its use in wells need not be objected to by the strictest Hindu.

Put one or two ounces of the solid substance into a *dol* or bucket that has been filled with water drawn from the well about to be treated. Stir it up, and pour the red solution thus produced into the well leaving the portion of permanganate that is not yet dissolved at the bottom of the *dol*. Lower the *dol* into the well, fill it with water, draw it up, pour back the water as before. Repeat the process till all the permanganate has been dissolved. After half an hour draw up some of the water and examine it. If a red colour is still present, enough has been added. If the red colour has disappeared, then more permanganate should be added to the water in the well. In all cases enough permanganate should be added to produce a faint red colour lasting for 24 hours.

If the water in the well is bad, more permanganate will be necessary. In such a case it will be found that the strong red colour at first produced quickly changes to brown, and then fades away. This is because the permanganate destroys dirt and is destroyed by it. Therefore if the water in the well is clean, a smaller quantity of permanganate will be necessary. From one to four ounces of permanganate will be found to be enough for ordinary wells. If more permanganate is added than is enough to produce a faint permanent red colour, it is likely that frogs that may be in the well will be killed. This will in a few days give the water a putrid taste. If the quantity of permanganate is not enough to produce a faint permanent red colour, it is not likely to do any good. If possible, the permanganate should be added at night in order to leave the wells undisturbed as long as possible. The water will be fit to drink on the following morning. If on the following morning a red colour is still present, the water may have an unpleasant taste, but it is perfectly harmless. If the inhabitants do not like the taste, they should be instructed to pump out the water until the colour vanishes. Always care should be taken to treat with permanganate all the wells in the place, not only those used for drinking, but also those used for washing purposes. Care should be taken to explain to the inhabitants the reason of using permanganate, and they should be warned against using water from other sources that have not been treated. If one well is required for immediate use, perhaps it would be advisable to add to it a quantity of permanganate,

and to employ *bhishtis* to draw out the water until the colour has disappeared, but this well should again be treated with permanganate on the following day when the other treated wells are brought into use.

Usually water is kept stored in the houses for washing or other purposes in *gharás*, &c. This should be poured away, and, if possible, the inhabitants should be persuaded to wash out their *lotas* and other vessels with water containing permanganate. Unless this is done, isolated cases of cholera are likely to occur even four or five days after the treatment of the wells. I have had experience of a case in which a woman was attacked with cholera after treatment of wells, because she was frightened of touching the red water in the well, and drank water that had been stored in the house and that had been taken from the well before the addition of the permanganate.

A pamphlet explaining the use of permanganate, entitled "The Prevention and Cause of Cholera," may be obtained from Mr. Hankin Chemical Examiner and Bacteriologist, North-Western Provinces and Oudh, in Urdu, Hindi, and English. It is being translated by various Local Governments into Burmese, Tamil, Telegu, Malayalam, Uriya, Maráthi, Gujrati, Kanarese, and Sindhi.

Items.	Day and date.																			
		Wage in pice.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
WORKERS.	Men, B, diggers and special.																			
	Do., B, others ...																			
	Do., D, ...																			
	Women, B, diggers ...																			
	Do., B, others ...																			
	Do., D ...																			
	Children, I (12 to 16), Do., II (7 to 12) ... Totals ...																			
GRATUITOUS.	Men ...																			
	Women ...																			
	Children, III* ...																			
	Do., IV, (Infants) ...																			
	Total ...																			
Signature of gang <i>Muharrir</i> ...																				
Task in cubic feet ...	Due	Done.																		
Fine inflicted ...	No.	Amount.																		
Number of persons and amount ...																				
Signature of Sub-Overseer ...																				
Amount paid ...																				
Signature of gang <i>Muharrir</i> ...																				

NOTE.—Officer-in-charge, or his sub-cashier, to sign against the last payment recouped to the gang *Muharrir*.

\* Grades III and IV of the children not to be separately entered so long as they get the same wage.

NOTE.—Continue the form to hold 17 days.

( 34 )

MATE'S LIST.

(To be pasted on the back of the Gang Register.)

Gang No. \_\_\_\_\_ Mate's name \_\_\_\_\_

Name of Gang Muharrir \_\_\_\_\_

--	--	--	--	--

Muharrir to sign and date entries and alterations on each occasion.



APPENDIX V.

*Famine Relief Daily Report Post-Card.*

(Forwarded daily to District Engineer, and to Divisional Engineer and Collector if required.)

Famine Relief * * * * District		
Daily Report for _____ 1896.		
Work _____		
_____		
Items.	Workers.	Gratuitous.
Men, No.		
Women, No.		
Children, No.		
Total, No.		
Total Wages } Rs.		
Quantity of work done, cubic feet, Remarks.		
Posted on date _____ 1896.		

\*\*\* The name of the district is to be ready printed on each post-card.

The address is ready printed on the front of each post-card and also a place for signature of the sender, in most cases the Officer-in-charge.

*Notes for preparation of the form.*

- 1.—The District <sup>Engineer</sup><sub>Surveyor</sub> will fill up the form on reverse and forward it on Saturday night to his Head Clerk for completion as within from office records.
- 2.—The return will be completed by Head Clerk and despatched direct to Superintending Engineer by Wednesday at latest.
- 3.—The serial order of works, column 1, should be kept the same, each new work starting with a new serial number and keeping it till closed.
- 4.—If wages are given for Sunday, the attendance for Sunday must be counted in as well (*vide* paragraph 67 of rules).
- 5.—All entries in columns 12 to 15 must be to the nearest rupee, omitting fractions of a rupee.
- 6.—The abstract on front page will be filled in by Superintending Engineer's Office.

APPENDIX VI.

FAMINE RELIEF.

*Week ending Saturday.*

The \_\_\_\_\_ 189 .  
 \_\_\_\_\_ District.  
 \_\_\_\_\_ Division.

No. \_\_\_\_\_ dated \_\_\_\_\_ 189 .

FORWARDED to the Superintending Engineer, Circle, Provincial Works, N.-W. P. and Oudh.

ABSTRACT.

Week's wages to workers only (total at foot of column 12) ...Rs. \_\_\_\_\_

Quantity of work done (total at foot of column 11) ...Cubic ft. \_\_\_\_\_

Rate per 1,000 cubic feet ...Rs. \_\_\_\_\_

Number of units relieved (total at foot of column 9.) ...No. \_\_\_\_\_

Wages and gratuitous relief for week (totals of columns 12 and 13 added together) ...Rs. \_\_\_\_\_

Rate per unit ...pies \_\_\_\_\_





WEEKLY REPORT BY S. D. O. FOR PERIOD ENDING  
SATURDAY,

\_\_\_\_\_189 .

Condition of the relief workers.

2. Outburst of disease.

3. Efficacy of food and water supply arrangements. Grain used as basis of wages, and its price in seers per rupee.

4. Sufficiency of staff and organization of gangs.

5. Succinct notes on work personally inspected, and anything which should be brought to notice on the F. R. Works.

Dated at \_\_\_\_\_ }  
The \_\_\_\_\_ 189 . }

*District Engineer.*  
*District Surveyor.*

APPENDIX VII.

NORTH-WESTERN PROVINCES AND OUDH, PUBLIC WORKS DEPARTMENT.

Form of Appointment of a member of the Work Establishment.

[MANUAL, CHAPTER 1, PARAGRAPHS 615 TO 624.]

(To be prepared and signed in triplicate, one copy to be given to the person appointed, one copy to be transmitted to the Examiner, P. W. Accounts, and one copy to be recorded in the office of the authority making the appointment.)

FROM  
THE SUPERINTENDING ENGINEER,  
P. W. Department,  
To

No \_\_\_\_\_  
Dated at \_\_\_\_\_ the \_\_\_\_\_ of \_\_\_\_\_ 189 .

Under sanction conveyed in G. O. No. \_\_\_\_\_ dated \_\_\_\_\_, you are hereby appointed a member of the Work establishment of the \_\_\_\_\_ Division, Public Works Department, in the North-Western Provinces and Oudh as a \_\_\_\_\_ under class \_\_\_\_\_ of paragraph 619 of the Manual of Orders in the Buildings and Roads Branch of the Public Works Department, on a consolidated salary of Rupees( \_\_\_\_\_ ) \_\_\_\_\_ per month, with effect from the morning of the day you enter upon your duties under the District <sup>Engineer</sup>/<sub>Surveyor</sub> of \_\_\_\_\_ to whom you should report yourself without delay.

2. Your appointment will cease on receipt of a written notice from the District <sup>Engineer</sup>/<sub>Surveyor</sub>. If he considers your conduct and work have been satisfactory, he is empowered to then pay you a sum equivalent to your salary for ten to fourteen days in lieu of travelling allowance to enable you to return home. This cannot be claimed as a right.

3. You are liable to summary dismissal at any time without notice for serious misconduct or incompetence proved to the satisfaction of the District <sup>Engineer</sup>/<sub>Surveyor</sub>.

4. Should it be desirable to retain your services after the cessation of the work or works on which you were engaged, you will be placed in charge of such works by the District <sup>Engineer</sup>/<sub>Surveyor</sub>.

5. While in Government employ you will be subject to and governed by the rules for the time being in force in the Public Works Department supplemented by such other orders as you may from time to time receive from the officer under whom you are serving.

6. Your salary is consolidated and includes all charges, and you will not be entitled to any travelling or other allowances.

7. This appointment is cancelled should you fail to join by \_\_\_\_\_

\_\_\_\_\_  
*Superintending Engineer.*

(Declaration by person appointed.)

I hereby accept the appointment conferred on me in the above order, the terms of which I clearly understand and agree to; and I hereby bind myself to observe and abide by the rules referred to in paragraph 5 of the said order.

(Signature) \_\_\_\_\_

Dated at \_\_\_\_\_ the \_\_\_\_\_ of \_\_\_\_\_ 189 .

WAGES READY RECKONER.

Table showing the wages to be paid to the various classes of persons on Famine Relief Works (paragraphs 59 and 60), being the money equivalents payable on the basis of the current retail price of the staple grain in ordinary local consumption by the labouring classes, and in the state, husked or unhusked, in which that grain is ordinarily sold by retail of consumption (paragraph 58).

Description of persons in receipt of relief.	Basis of the wage.	Retail price of the ordinary grain as above.												
		12 sérs per Re.	11 sérs per Re.	10 sérs per Re.	9½ sérs per Re.	9 sérs per Re.	8½ sérs per Re.	8 sérs per Re.	7½ sérs per Re.	7 sérs per Re.	6½ sérs per Re.	6 sérs per Re.	5½ sérs per Re.	5 sérs per Re.
		The wages to be paid.												
		A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.
<b>Workers.</b>														
Mates of gangs and other workers in responsible posts.	Six pice more than a digger...	2 0	2 3	2 3	2 6	2 6	2 9	2 9	3 0	3 3	3 6	3 9	4 0	4 3
Adult males. Diggers and men in special gangs ...	19 chataks of grain ...	1 6	1 9	1 9	2 0	2 0	2 3	2 3	2 6	2 9	3 0	3 3	3 6	3 9
Adult males. All other workers ...	14 chataks of grain ...	1 3	1 3	1 3	1 6	1 6	1 6	1 9	1 9	2 0	2 0	2 3	2 6	2 9
Adult females. Diggers ...	16 chataks of grain ...	1 3	1 6	1 6	1 9	1 9	1 9	2 0	2 0	2 3	2 6	2 9	2 9	3 3
Adult females. All other workers ...	13 chataks of grain ...	1 0	1 3	1 3	1 3	1 6	1 6	1 6	1 9	1 9	2 0	2 3	2 3	2 6
Children. Grade I (over 12 and under 16 years) ...	10 chataks of grain ...	0 9	0 9	1 0	1 0	1 0	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0
Children. Grade II (over 7 and under 12 years) ...	6 chataks of grain ...	0 6	0 6	0 6	0 6	0 9	0 9	0 9	0 9	0 9	1 0	1 0	1 0	1 3
<b>DEPENDANTS.</b>														
Adult males ...	2 chataks of grain ...	1 0	1 0	1 3	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0	2 3	2 3
Adult females ...	10 chataks of grain ...	0 9	0 9	1 0	1 0	1 0	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0
Children. Grade III (not in arms under 7 years) ...	3 chataks of grain ...	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 6	0 6	0 6	0 6	0 6
Children. Grade IV (infants in arms)...	One pice extra to the mother, ...	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3

APPENDIX VII.

NORTH-WESTERN PROVINCES AND OUDH, PUBLIC WORKS DEPARTMENT.

Form of Appointment of a member of the Work Establishment.

[MANUAL, CHAPTER 1, PARAGRAPHS 615 TO 624.]

(To be prepared and signed in triplicate, one copy to be given to the person appointed, one copy to be transmitted to the Examiner, P. W. Accounts, and one copy to be recorded in the office of the authority making the appointment.)

FROM  
THE SUPERINTENDING ENGINEER,  
P. W. Department,  
To

No \_\_\_\_\_  
Dated at \_\_\_\_\_ the \_\_\_\_\_ of \_\_\_\_\_ 189 .

Under sanction conveyed in G. O. No. \_\_\_\_\_ dated \_\_\_\_\_, you are hereby appointed a member of the Work establishment of the \_\_\_\_\_ Division, Public Works Department, in the North-Western Provinces and Oudh as a \_\_\_\_\_ under class \_\_\_\_\_ of paragraph 619 of the Manual of Orders in the Buildings and Roads Branch of the Public Works Department, on a consolidated salary of Rupees( \_\_\_\_\_ ) \_\_\_\_\_ per month, with effect from the morning of the day you enter upon your duties under the District <sup>Engineer</sup>/<sub>Surveyor</sub> of \_\_\_\_\_ to whom you should report yourself without delay.

2. Your appointment will cease on receipt of a written notice from the District <sup>Engineer</sup>/<sub>Surveyor</sub>. If he considers your conduct and work have been satisfactory, he is empowered to then pay you a sum equivalent to your salary for ten to fourteen days in lieu of travelling allowance to enable you to return home. This cannot be claimed as a right.

3. You are liable to summary dismissal at any time without notice for serious misconduct or incompetence proved to the satisfaction of the District <sup>Engineer</sup>/<sub>Surveyor</sub>.

4. Should it be desirable to retain your services after the cessation of the work or works on which you were engaged, you will be placed in charge of such works by the District <sup>Engineer</sup>/<sub>Surveyor</sub>.

5. While in Government employ you will be subject to and governed by the rules for the time being in force in the Public Works Department supplemented by such other orders as you may from time to time receive from the officer under whom you are serving.

6. Your salary is consolidated and includes all charges, and you will not be entitled to any travelling or other allowances.

7. This appointment is cancelled should you fail to join by \_\_\_\_\_

\_\_\_\_\_  
*Superintending Engineer.*

(Declaration by person appointed.)

I hereby accept the appointment conferred on me in the above order, the terms of which I clearly understand and agree to; and I hereby bind myself to observe and abide by the rules referred to in paragraph 5 of the said order.

(Signature) \_\_\_\_\_

Dated at \_\_\_\_\_ the \_\_\_\_\_ of \_\_\_\_\_ 189 .

WAGES READY RECKONER.

Table showing the wages to be paid to the various classes of persons on Famine Relief Works (paragraphs 59 and 60), being the money equivalents payable on the basis of the current retail price of the staple grain in ordinary local consumption by the labouring classes, and in the state, husked or unhusked, in which that grain is ordinarily sold by retail of consumption (paragraph 58).

Description of persons in receipt of relief.	Basis of the wage.	Retail price of the ordinary grain as above.												
		12 sérs per Re.	11 sérs per Re.	10 sérs per Re.	9½ sérs. per Re.	9 sérs per Re.	8½ sérs per Re.	8 sérs per Re.	7½ sérs per Re.	7 sérs per Re.	6½ sérs per Re.	6 sérs per Re.	5½ sérs per Re.	5 sérs per Re.
		The wages to be paid.												
Workers.		A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.
Mates of gangs and other workers in responsible posts.	Six pice more than a digger...	2 0	2 8	2 8	2 6	2 6	2 9	2 9	3 0	3 3	3 6	3 9	4 0	4 3
Adult males. Diggers and men in special gangs ...	19 chataks of grain ...	1 6	1 9	1 9	2 0	2 0	2 3	2 3	2 6	2 9	3 0	3 3	3 6	3 9
Adult males. All other workers ...	14 chataks of grain ...	1 3	1 3	1 3	1 6	1 6	1 6	1 9	1 9	2 0	2 0	2 3	2 6	2 9
Adult females. Diggers ...	16 chataks of grain ...	1 3	1 6	1 6	1 9	1 9	1 9	2 0	2 0	2 3	2 6	2 9	2 9	3 3
Adult females. All other workers ...	13 chataks of grain ...	1 0	1 3	1 3	1 3	1 6	1 6	1 6	1 9	1 9	2 0	2 3	2 3	2 6
Children. Grade I (over 12 and under 16 years) ...	10 chataks of grain ...	0 9	0 9	1 0	1 0	1 0	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0
Children. Grade II (over 7 and under 12 years) ...	6 chataks of grain ...	0 6	0 6	0 6	0 6	0 9	0 9	0 9	0 9	0 9	1 0	1 0	1 0	1 3
DEPENDANTS.														
Adult males ...	2 chataks of grain ...	1 0	1 0	1 3	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0	2 3	2 3
Adult females ...	10 chataks of grain ...	0 9	0 9	1 0	1 0	1 0	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0
Children. Grade III (not in arms under 7 years) ...	3 chataks of grain ...	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 6	0 6	0 6	0 6	0 6
Children. Grade IV (infants in arms)...	One pice extra to the mother,	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3

No.  $\frac{357}{S-73}$ , dated Allahabad, the 5th December 1896.

*From—The Secretary to Government, N.-W. Provinces and Oudh,*

*To—All Commissioners of Divisions, N.-W. Provinces and Oudh.*

I AM directed to address you on the subject of the employment of the Public Works Department in managing and carrying out famine relief works. At the present time distress is officially recognised as existing in the districts marginally noted, and the Public Works Department has already commenced relief operations in these districts. Any relief work not being of the article 65(a) class opened in the marginally noted districts for the future must be treated as relief works under the Code and managed from the outset by the Public Works Department.

Allahabad.	Jalann.
Hamirpur.	Jaunpur.
Banda.	Rae Bareli.
Jhansi.	Sitapur.
	Hardoi.

2. Article 60 of the Famine Code provides that where distress is commencing ordinary works may be expanded as a temporary measure to meet the demand for employment. In these districts, that is districts not officially declared to be distressed, it is open to you to commence test works in order to gauge the necessity for relief works. But experience has shown that test relief works managed by non-professional agency do not always gauge the existence of distress so well as works conducted under the strict safeguards and tests which are necessarily applied by the Public Works Department. I am therefore to request that when the necessity contemplated by article 60 arises, you will ordinarily employ the Public Works Department in controlling test works, or, when ordinary works are exhausted, in affording the employment necessary on a suitable work included in the relief programme, piece-work at rates suitable for the object in view being substituted for contracts. When the pressure of distress becomes such as to render the enforcement of piece-work as abovementioned unsuitable, these works can be readily converted into relief works under articles 70 and 74 of the Famine Code. The existence of a work in progress, with establishments on the spot, will place you in a far better position to meet any sudden pressure or rush of labourers than if the work had to be opened to meet a sudden and particular demand. Moreover, the existence of a work managed by the Public Works Department on the piece-work system as sketched above may satisfy all the requirements of a tract of country not acutely distressed, while the cost to Government will be much less than would be the case if regular relief works under the provisions of the Famine Code had to be established. You will not fail to observe that this system of works, which are intermediate between "ordinary" and "Code relief works," will be peculiarly useful as a reserve and supplement to the system of village works [article 65(a)] managed by the District Officers directly or by local zamindars.

3. Further orders dealing with the manner in which these orders are to be given effect to in detail will issue from the Public Works Department to Superintending Engineers, copies of which will be forwarded to you for information and guidance.

COPY forwarded to the Secretary to this Government in the Public Works Department, Buildings and Roads Branch, for necessary action with reference to paragraph 3.

No. 9099W.A., dated Allahabad, the 5th December 1896.

From—C. W. ODLING, Esq., *Secretary to Government,*  
*N.-W. P. and Oudh, P. W. Dept., B. and R. Branch.*

To—All *Superintending Engineers, Provincial Works.*

THE Lieutenant-Governor and Chief Commissioner has had under consideration the best method of testing the probability or existence of distress, and of affording employment in districts which are under observation, that is, districts in which famine threatens, but in which the existence of famine has not been officially recognised. His Honor is of opinion that the needful test will be best effected and the necessary employment afforded by work carried out on a system intermediate between "ordinary" and "Famine Code works," and this view is expressed in the orders issued in the Scarcity Department, of which a copy will be separately forwarded for your information and guidance.

2. In relief works under the Famine Code (Articles 70 and 74) the enforcement of the "gang" and task systems is imperative. The works proposed in the preceding paragraph may be regarded as preliminary to regular relief works under the Code. Should distress supervene, it will be very easy to convert these works from the piece-work to the task and gang system, and to expand the establishments.

3. But while the works remain outside the strict letter of Code rules, it is proposed that the rates given shall, in view of the high price of food, be enhanced by 25 to, in particular cases, 50 per cent., *i.e.*, from Rs. 2 per 1,000 cubic feet of earthwork to Rs. 2-8-0 or Rs. 3. It is not intended that these works shall be given out on contract, but rather to piece-workers or gangers employing not more than 200 persons. Men of the *chaprasi* class, relatives of petty officials, should on no account be employed. Village *pattidars* are very suitable men, but in any case the piece-worker must actually reside on the work, and deal directly with the workers, who will then, with the class of men employed, be in a position to insist on a fixed proportion of the rate being paid to them. In giving out the work the wages to be paid to the workers would be specified; and it is considered that ordinarily 20 per cent. of the rate would be a sufficient remuneration to the piece worker for his own labour, interest on capital, and incidental expenses, such as baskets and perishable stores. It would be necessary to pay the piece worker weekly, or at most fortnightly, as he would generally be a man of very small capital. The workers would usually bring their own *phaoras*; but at times it might be necessary to issue such tools to the piece-worker. In order that the piece-workers employed may comply with the conditions laid down in this letter it may be necessary to impose the condition that a piece-worker who cannot carry out work to the value of Rs. 150 in a month will be discharged, whilst no piece-worker will be allowed to execute work to the value of more than Rs. 1,000 in one month.

4. Works on the lines mentioned will also serve as test works, the number and class of labourers resorting to the work being indicative of the sufficiency of the work to meet the degree of pressure, or the necessity for relief works under the Code. But they will not prevent test works under Code rules and on subsistence wages being also established, provided that they are some distance (five miles or more) apart. It will not, however, be possible to carry out works on the plan sketched above in a tract

declared to be distressed such as the districts mentioned in the margin.\* In these districts, and in any other district recognised as distressed, the Code rules must be strictly followed. A manual of these rules is under issue for your guidance.

* Banda.		Allahabad.
Hamirpur.		Jaunpur.
Jhansi.		Rae Bareli.
Jalaun.		Sitapur.
		Hardoi.

5. The works to be carried out under the terms mentioned in paragraph 3 above will be confined to those for which detailed estimates have been sanctioned, and you should at once place yourself in communication with Commissioners of divisions in your circle with the view of putting one or more works in hand in those districts where they consider them to be required. The work put in hand must, unless with the express sanction of Government, be limited to what can be carried out by famine labour. Subject to the restrictions mentioned above, the works should be selected by Commissioners and may (provided there is an allotment for famine relief works for the district in which the work is situated, *but not otherwise*) be commenced under your orders in anticipation of the approval of Government. An immediate report giving the name of the work, the amount of the estimate, and date of commencement should, however, be made. The rate it is proposed to pay for earthwork should be mentioned.

6. Works carried out under the orders contained in this letter will be charged to the head "Famine Relief" and provided for from the allotment made, under that head, for such works in the district concerned. The usual weekly famine reports to the Chief Engineer will be required, and arrangements must be made to keep a record of the number of men employed.



Note referred to in Government Order No. 9099W.A. of the 5th  
December 1896.

FAMINE RELIEF WORKS.

—————DISTRICT.

*Note for the information of the Chief Engineer, P. W. D.,  
N.-W. P. and Oudh, B. & R. Branch.*

(To be posted weekly direct to the Chief Engineer, Naini Tal, com-  
encing with the week ending Saturday, April 4th, 1896.)

Despatched on Monday or Tuesday, the ————— of —————

*Number.*

The number of persons employ-  
ed on Famine Relief Works, for the  
week ending Saturday, the —————  
of ————— has an average of  
————— (approximate) daily.

*Approximate Expenditure.*

The approximate expenditure on  
Famine Relief Works has been  
Rs. ————— /

*Increase or Decrease.*

Persons are  $\frac{\text{still coming in}}{\text{not coming in}}$

*Condition.*

The condition and health of  
persons employed is  $\frac{\text{good}}{\text{not good}}$

The new arrivals are—

- (a) fairly healthy.
- (b) weakly.
- (c) emaciated.

*Ordinary Works.*

The approximate number of per-  
sons on ordinary works (give name)  
and the payments made by me (or  
bills issued) amount to Rs.

*Prices of Food.*

The price of common grain  
(viz. —————)

is Rs.            per seer. Supplies are

$\frac{\text{sufficient}}{\text{insufficient}}$

The following works have been started :—

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

The following works have been visited by me :—

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

I find  $\frac{\text{difficulty}}{\text{no difficulty}}$  in providing work for all persons coming in.

---

*District Engineer  
Surveyor*

( 43 )

**FAMINER ELIEF WORKS.**

---

**DISTRICT ENGINEER'S SURVEYOR'S OFFICE.**

*No.* \_\_\_\_\_

*Dated* \_\_\_\_\_ 189 .

Submitted to the Chief Engineer,  
P. W. D., N.-W. P. and Oudh, B.  
and R. Branch, in accordance with  
para. 2 of his No. C.38W.A., dated  
14th March 1896.

*District Engineer*  
*Surveyor*

\_\_\_\_\_  
*District.*

No. 417, dated Allahabad, the 14th December 1896.

*From—The Secretary to Government, N.-W. Provinces and Oudh,*

*To—Secretary to the Government of India, Revenue  
and Agricultural Department.*

IN his demi-official letter of the 29th November, the Chief Secretary to this Government enclosed, for the information of the Government of India, copy of a letter addressed to officers, asking them to report what effect had been produced by the late rainfall on the prospects of their respective districts. The Government is still awaiting these replies, but provisional information has been received from Commissioners of divisions, from which it appears that they are of the opinion that prospects have been so far improved as to justify the expectation that with fair winter rains the numbers who may come on relief will be less by about 25 per cent. than the number of 100,000,000 units for one day, stated in the third column of Statement B, paragraph 10 of this office letter No. 196, dated the 23rd November 1896. In this opinion the Lieutenant-Governor generally concurs, and he now sees reason to hope that it will not be necessary in several districts to undertake relief operations to the extent which seemed probable before the late rain had fallen. In view of the altered condition of things, and with the object of avoiding unnecessary expenditure, the Lieutenant-Governor has reconsidered the programme of public works referred to in paragraphs 19 and 20 of the letter mentioned above, and has consulted Commissioners of divisions on the following point: whether it would be desirable to pursue the policy indicated in paragraph 20 of the letter noticed above, and postpone village works till the hot weather had set in; or whether, in view of the probability that in certain districts the necessity for extensive relief would disappear when the *rabí* had been harvested, it would be better to meet the demand for employment which may arise between now and the harvesting of the *rabí* by a more general use of village works now than had been intended. The Commissioners' official replies are awaited, but from the communications unofficially made by them to His Honor, it seems certain that they will ask for permission to begin some village works at once, and also to maintain a backbone of some large works managed by the Department of Public Works in the various districts. These works are now in operation in many districts.

2. The question also presented itself whether, in districts in which prospects have improved, it was desirable, where village works were not found to afford suitable employment, to open relief works under strict Code rules. Under the Code three classes of work are recognised :—

- (1) Ordinary works (article 60) debitable to Provincial or District Funds.
- (2) Test relief works debitable to Famine Relief, and carried out in the general spirit of the Famine Code Rules.
- (3) Regular relief works under Chapter VI of the Code, on which the "gang" and "task" work system is rigidly enforced.

In almost all districts funds, either provincial or district, for ordinary works have been exhausted: while, at the same time, test works have shown the necessity for some employment, though not on the expensive or extensive system prescribed by the Famine Code. The problem, then, was to provide such employment as would be suitable for districts under observation, but in which distress had not fully declared itself. Such employment is offered, for example, in the Cawnpore district by the Lower

Ganges Extension canal project, and in the Azamgarh district, to some extent, by the extensions of the Bengal and North-Western Railway.

3. These facts have suggested to His Honor the adoption in such localities of a modified system of famine relief works which would be intermediate between works carried out on the ordinary and on the Famine Code systems. Such works, while conducted on principles involving much less expenditure than would be incurred were the system of the Code followed, will serve as test works on a large scale. Their existence, with the establishment thereon, will also enable the Government to at once convert them into Famine Code works without a day's delay should famine supervene. It need hardly be observed that no advantage will be taken of this arrangement to carry through works in the interest of district or provincial funds: and that no work will be begun which is not absolutely essential with the object of preventing suffering from want of food.

I am to add that this plan has been forced on His Honor for two reasons: first, economy, and second, the extreme difficulty of obtaining the large numbers of subordinate officers necessary for Famine Code works.

4. I am to forward a copy of the instructions\* which have issued on the subject, which will explain more fully the action which the Lieutenant-Governor has decided to take.

\* G. O. No. <sup>357</sup>S.-73, dated 5th December 1896.

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No. <sup>428</sup>S.-73, dated Allahabad, the 16th December 1896.

*From—The Secretary to Government, N.-W. Provinces and Oudh,  
To—All Commissioners of Divisions, N.-W. Provinces and Oudh.*

WITH reference to Government letter No. <sup>357</sup>S.-73, dated the 5th December 1896, regarding the introduction of an "intermediate" or "piece work" system of relief works in districts in which distress has not been formally recognised, and which are still under observation, I am directed to add a further instruction on the subject. These intermediate works are, as the circular explains, intended as test works on a large scale. Persons coming on these works may at the beginning be expected to be persons who are able to work, and who are not debilitated by want or famine-stricken; and the wages they will earn will supplement the family resources, so far, at all events, as to keep the weaker members at home. But if distress exists in the district, weaker people and persons of the "dependant" class will come on these works in numbers and ask for employment. It will be the duty of the Public Works officers in charge of the works to immediately bring to the notice of the District Officer the fact of persons of weakly physique or of the "dependant" class coming notably in large numbers on the works. It will then rest with the District Officer to determine without loss of time whether the relief work on the intermediate system should be converted into a relief work under the strict lines of the Code or not. The responsibility of directing its conversion in due time and without unnecessary delay will rest upon the District Officer and yourself, and the Public Works Officer in charge of the work will be held responsible for promptly giving effect to the decision arrived at and communicated to him by the Collector.

2. Whenever an intermediate work is converted into a regular relief work, the district will then become recognised as officially distressed, and

Famine Statements A and B will be submitted monthly, and Progress Statements fortnightly.

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No.  $\frac{429}{8-73}$ .

COPY forwarded to the Secretary to this Government in the Public Works Department, Buildings and Roads Branch, for information and for communication to Superintending Engineers.

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No.  $\frac{149}{8-73}$ , dated Allahabad, the 14th January 1897.

*From—The Secretary to Government, N.-W. Provinces and Oudh,*  
*To—All Commissioners and District Officers, N.-W. P. and Oudh,*  
*(except Kumaun).*

SIR,—I am directed to forward, for information and guidance, copies of a minute recorded by His Honor the Lieutenant-Governor and Chief Commissioner in the matter of changing intermediate and district board test works into Famine Code works.

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No.  $\frac{150}{8-73}$ .

COPY, with copies of minute, forwarded to the Secretary to this Government, in the Public Works Department, for communication to officers of the Public Works Department.

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*MINUTE.*

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IN changing intermediate and district board test works in any district into Famine Code works, no such work is to be closed until the people on that particular work can be drafted on to some other work; where this has been arranged for, the work from which they are drafted may then be closed. For example, in Bara Banki there are, say, ten intermediate and district board test works when the order to change to the Famine Code system is passed. These ten works will become Famine Code works; but if the Collector thinks only five are necessary under the Famine Code, the labourers on the five works deemed unnecessary should be at once drafted to the five works deemed by the Collector to be necessary, and the five unnecessary works should be closed. The process of drafting of the labourers from the five works deemed unnecessary to the five works deemed necessary should be commenced immediately after the transfer of the system from the test to the Famine Code. But to prevent any person being thrown out of employ during the process of transfer, the work from which they are being transferred should not be closed until the labourers are all provided with work on the works which are to be kept open. The transfer should in all cases be carried out under the Code rules, which provide for a subsistence allowance being given to men thus drafted until their arrival on the work to which they are transferred.

No.  $\frac{C1237}{48F}$ , dated Lucknow, the 13th February 1897.

From—C. W. ODLING, Esq., *Secretary to Government,*  
*N.-W. Provinces and Oudh,*

To—*All Superintending Engineers, and Divisional Engineers,*  
*N.-W. Provinces and Oudh (except Meerut and Kumaun).*

SIR,—The Lieutenant-Governor and Chief Commissioner has approved of the following addition to Famine Rule 60, and I am to request that you will issue the necessary instructions to District Engineers and Surveyors :—

“In cases where work is stopped by rain, the famine workers will receive pay according to the class to which they belong.”

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No.  $\frac{688}{S-73}$ , dated Allahabad, the 8th March 1897.

From—T. STOKER, Esq., *Secretary to Government, North-Western*  
*Provinces and Oudh,*

To—*Commissioners of Divisions (except Meerut and Kumaun).*

SIR,—The commencement of the *rabi* harvest has already produced some effect on the price of food-grain. It is, indeed, true that the apprehensions caused by the high and dry west winds that have prevailed have to a certain extent counteracted the fall in price that had been expected. Still, the price of some grains in most districts not most severely distressed now touches 12 *seers* for the rupee. The prices of the other items of the ration prescribed in the Famine Code are now moderate.

2. The commencement of the harvest has also given rise to a demand for field labour, and this affords an additional reason for so regulating the rate of wages on famine relief works that they may not attract away labour which is required and which can find employment in the fields.

3. In a large number of districts the scale of wages based on the staple grain price of 12 *seers* per rupee has already been introduced. The Lieutenant-Governor and Chief Commissioner desires that it may be applied in all other districts where works under full Famine Code rules are in progress, with the following exceptions :—

Bánda,		Hamírpur,
Jalaun,		Jhánsi,

Mirzapur,

and so much of the Allahabad district as lies south of the Jumna.

In the preceding districts the 10 *ser* basis will continue for the present. In the portion of the Allahabad district north of the Ganges and in the Doab tahsils the 12 *ser* basis should be introduced.

4. The Commissioner of Allahabad should report whether the 12 *ser* basis should not be introduced into Jhánsi, and the Commissioner of Benares should submit a similar report with regard to Mirzapur.

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No.  $\frac{689}{S-73}$ .

COPY forwarded to the Secretary to this Government in the Public Works Department, Buildings and Roads Branch, for necessary action, and with the request that immediate orders may be issued.

No. C1965-67F., dated Lucknow, the 9th March 1897.

From—C. W. ODLING, Esq., *Secretary to Government, North-Western Provinces and Oudh, P. W. D.,*

To—*All Superintending Engineers.*

SIR,—I am directed to invite your attention to paragraphs 59 and 60 of the Rules of the 1st December which prescribe the rates of wages to be paid in these Provinces and the punishment to be inflicted for short work. Some inconvenience has been caused by referring to Chapter VII of the Famine Code, with reference to the determination of the wages to be paid to relief workers, and as the Rules laid down in paragraphs 59 and 60 of the Rules of December 1st have been framed by the Lieutenant-Governor with due advertence to the provisions of the Code, I am to remind you that you are to be guided by these Rules alone, and that you are not to refer for any guidance on the subject to Chapter VII of the Code, except on the one point mentioned in the next following paragraph relating to fines.

2. In regard to fines the Lieutenant-Governor has passed the following order:—

Fines for short work should be enforced in accordance with instructions, but (except in extreme cases) the wages are not to be reduced below the sums payable to dependants according to the scale of the Ready Reckoner attached to the rules of December 1st, 1896. In extreme cases of recusancy the penal ration (103, Famine Code) may be enforced.

No. 1969F., dated Allahabad, the 9th March 1897.

ORDERED that copy be forwarded to the Secretary to Government, North-Western Provinces and Oudh, in the Scarcity Department, for information.

No.  $\frac{751}{S.-96}$ , dated Allahabad, the 16th March 1897.

From—T. STOKER, Esq., *Secretary to Government, North-Western Provinces and Oudh,*

To—*All Commissioners of Divisions (except Kumaun Division); all Collectors of districts (except in the Kumaun and Meerut Divisions); and to the Superintendent, Dehra Dún, and Superintending Engineers, N.-W. Provinces and Oudh.*

SIR,—The Lieutenant-Governor and Chief Commissioner has had for some time under consideration the question of Sunday labour on relief works. The rules at present in force on the subject are contained in G. O. No. 249, dated 26th November 1896, and under them it is left optional to the labourers to work or not to work on Sunday. The work, if any is to be done, is to be laid out on the preceding Saturday and measured and paid for on Monday.

2. It has been ascertained in practice that the labourers, or the bulk of them, invariably do work on Sunday, and that it is impossible to absolve the staff from the usual work of supervising and directing them. The necessity for enforcing sanitary arrangements, preserving discipline, and securing a reasonable outturn of work, necessitate the presence of the whole staff upon the works on Sundays to the same extent as on week days.

It does not appear that the Sunday labour has been attended by any evil effects to the work-people, who are accustomed to continuous work from week to week. But it has been represented that the pressure on the staff is severely felt, and that as the heat of the season increases, the officers employed on relief cannot continue at work without intermission and



without a regular off-day for clearing accounts and resting from constant exposure to sun and wind. It is possible, too, that as the heat increases, the work-people also may require intermission of labour if they are to yield a proper outturn of work and keep their health. The present system has worked without bad consequences through the cold weather, and the constant retention of labourers on the works has been attended with the advantages which were anticipated. But the Lieutenant-Governor and Chief Commissioner thinks that the season has now sufficiently advanced to render a change desirable, and he is accordingly pleased to direct that from the 20th instant, or as soon after as possible, Sunday labour on all relief works shall be discontinued.

On works under the intermediate system the rates and maximum tasks will be so adjusted as to permit the labourers to earn during the six days sufficient to support themselves and their dependants for seven days.

On works under the Famine Code rules subsistence wages, meaning thereby wages on the scale provided for dependants, will be paid on Saturday to all labourers who have been present since the preceding Thursday. Labourers coming on works for the first time after Thursday in any week will be dealt with in accordance with article 40 of the rules of 1st December.

No.  $\frac{752}{S.-95}$ .

COPY forwarded to the Secretary to this Government, in the Public Works Department, for information.

No.  $\frac{753}{S.-73}$ , dated Allahabad, the 16th March 1897.

### RESOLUTION.

#### SCARCITY DEPARTMENT.

READ—

G. O. No. 357 of 5th December 1896, to all Commissioners of Divisions, North-Western Provinces and Oudh.

G. O. No. 9099W.A., of 5th December 1896, to all Superintending Engineers, Provincial Works, North-Western Provinces and Oudh.

G. O. No. 428, of 16th December 1896, to all Commissioners of Divisions, North-Western Provinces and Oudh.

Government of India Circular No. 3F., of 24th December 1896, on the exaction of full task in famine relief operations.

G. O. No. 464, of 13th February 1897, to all Commissioners of Divisions and Collectors of Districts, North-Western Provinces and Oudh (except Meerut and Kumaun).

Government of India Circular No. 16F., of 13th February 1897 on principles for regulating expenditure upon public works in time of famine.

The advent of the *rabi* harvest and the further experience gained in the conduct of relief works under the Famine Code rules have led the Lieutenant-Governor and Chief Commissioner to consider whether, in the districts where distress is less acute, some modification is not required in the arrangements now in force on relief works, and in the method of fixing and paying wages. The commencement of the harvest has renewed the demand for field labour, which ceased when the winter rains put an end to the irrigation of the advanced crops. In some districts a fresh demand has sprung up for more irrigation to counteract the mischief caused by the high winds which prevailed a short time ago. It is unnecessary to say that it is of the highest importance to so regulate the relief works that they may not attract away labour which is required to get in or safeguard the harvest on which the food supply of the country will now largely depend. It is for every reason no less important to arrange tasks and wages with a view to limit the admission to relief works

strictly to those persons who cannot find private employment and have no other means of subsistence.

At the same time it may be anticipated that the harvest work will not absorb the usual amount of labour, as the area sown is below normal, and the pressure on all classes will lead tenants and small proprietors to do more field work than usual themselves, and thereby dispense with the services of day labourers.

It is therefore necessary in most districts to maintain for the present relief works in some form, though employment will have to be found only for diminished numbers.

2. Relief works under the Famine Code rules, not only provide employment for all working members of a family, no matter how ineffective, but supply a gratuitous dole to all members who are unable to work. It therefore unavoidably happens that the members of a large family coming all together on the works are able to earn or receive collectively more than the effective working members alone could gain from a private employer and frequently more than suffices for their subsistence only. The presence of large crowds, including very numerous ineffective workers and dependants, renders it very difficult to enforce a full task or, without reducing the wage below subsistence level, to impose fines which will correctly represent short work. A fresh inducement is thereby offered to labourers to remain on relief works after private employment has re-opened.

The problem is to introduce a system which will retain the principle that relief work affording subsistence for the labourers and their dependants shall be provided where it is required, and at the same time to divest the work system of the features which may place it in competition with ordinary labourer where this is available.

3. The Lieutenant-Governor and Chief Commissioner believes that such a system may be found in a modification of the scheme of intermediate works sketched in the correspondence noted at the head of this resolution.

That scheme as originally framed required the interposition of petty contractors or middlemen between the Government and the actual labourers. The contractors derived a profit which was set off against the cost of establishment which Government would have had to provide. But it gave contractors an inducement to employ only the more able-bodied and to exclude the weakly who stood most in need of support, and constant supervision, involving expense, was required to counteract this tendency. The system is suited to less considerable works where distress is not very general, but it is less suited to large undertakings designed to afford relief to great numbers of unskilled labourers. A modification of it has recently been tried with success, and the Lieutenant-Governor and Chief Commissioner would like to see it generally applied, not merely to intermediate works on the old system, which it has now quite supplanted, but to many works now carried out under Famine Code rules where there is a fair *rabi* area and where the distress is not acute. Under this modified system no contractor or middleman is employed. The work is laid out, supervised, and measured, and payments are made by Government officials; and tools, where necessary, are supplied by Government. But the work will continue to be treated and paid as piece work, not as task work under the Famine Code. No dependants will be recognized, and the payments will be in accordance with the amount of work actually done.

The rates and tasks will be so graduated as to enable an ordinary labourer or family of labourers to earn what the average family now earns

in the shape of both wages and gratuitous doles (to dependants) combined. The discontinuance of Sunday labour makes it necessary to arrange for labourers earning on week days enough to provide for themselves and their dependants on Sundays also.

4. The table which accompanies this resolution shows the rates, tasks, and wages which it is proposed to adopt as a standard, and an endeavour has been made to render them suitable for adoption in all parts of the provinces. But in view of the very varying conditions which exist in different districts, some local modifications may be found necessary, and these should be determined in each case by the Commissioner, Collector, and Superintending Engineer.

The point to be borne in mind is to fix rates and tasks which will not render the relief works unduly attractive, and, while securing a fair outturn of work, will not permit labourers to earn more than a reasonable subsistence wage for themselves and their dependants. A maximum task has been fixed, representing the greatest amount of daily work which a labour party can be permitted to perform and the highest daily wage they can be permitted to earn.

The table is framed primarily to meet the case of a labour party (or family) consisting of a digger and two adult carriers; the number of carriers would in practice vary with the employment of minors. The standard task in ordinary soil is taken to be 100 cubic feet, and the rate fixed is Rs. 2-3-0 per 1,000 cubic feet. The party would earn daily for this work 14 pice, which would represent 6 pice for the digger and 8 pice for carriers, being 4 pice each if two adults were actually employed, and proportionally less per carrier if there were two or more minors in place of an adult.

It would be the business of the charge officer or work agent and staff to form the parties and distribute the work.

If the full tale of 100 cubic feet were not executed, there would be a proportional abatement made in the total payment, and if the tale were exceeded, the payment would be proportionately raised up to the full or maximum task or wage, but not beyond that.

If the full or maximum task of 125 cubic feet were performed the total earnings of the party would be 17 pice, representing 7 pice to the digger and 10 pice to the carriers, which, reduced to two adults, would give 5 pice to each. The exact apportionment of the total earnings of the gang or party could be varied as circumstances required. The above distribution is suggested as one generally suitable.

5. The ordinary task, if executed, would enable the average family to earn what it now receives in the shape of wages and doles, and by a little extra diligence on week days, the full task would make provision for the Sunday wage without requiring labour on that day. At the same time a fair outturn of work would be ensured and proportional deductions made for short work. There would be some reduction in the crowds of dependants and ineffective labourers, who throng the works and become a source of danger in the season when cholera is usually prevalent.

The foregoing rates are put forward tentatively as those at which the experiment can be commenced subject to any local variations which may be decided as above explained. Experience may show them liable to alteration.

6. Under instructions already issued this system will be introduced in the current month into the districts of the Agra Division, the *Holi* festival being taken as a suitable point of departure. It should also be introduced at the same time into any parts of the Rohilkhand Division.

where it may not be at present in force. In the Fyzabad Division it should be applied to any works which remain open, and in all cases where it may hereafter be found necessary to re-open works.

In the Gorakhpur Division such a system is practically in force in half the district. In the other part of the district and in Azamgarh, it can be introduced at once as the Commissioner finds it possible to do so. It is believed that all necessity for relief works in Basti has now ceased or will shortly cease. Should any be retained or re-opened, the system now indicated should be adopted.

It will be necessary to retain the works under the Famine Code system in the Hardoi district; but the Commissioner of Lucknow is at liberty to introduce the system above described into the whole or part of any other district in his division, and should take early steps to effect the change where it seems possible.

In the Allahabad Division the system should be introduced into the Cawnpore and Fatehpur districts, and into the north part of the Allahabad district, consisting of the Doab portion, and the three tahsils (Phulpur, Handia, and Soraon) across the Ganges.

The Commissioner of Benares should consider and report whether the system should be introduced into the Jaunpur district.

It is not proposed to make any change at present in the system of relief works under full Famine Code rules in those districts where the distress is very acute, and the contracted area of the *rabi* crop and its defective condition do not hold out any prospect of considerable occupation for labour in harvesting it. In this category come the Bundelkhand district, South Allahabad, Mirzapur, and Hardoi. No attempt will therefore be made to introduce the intermediate system into these parts.

Where action is to be taken under these orders, it should be taken promptly as the harvest season has already begun.

ORDER.—Ordered that copies be forwarded to all Commissioners of Divisions and District Officers, North-Western Provinces and Oudh (except those of the Meerut and Kumaun Divisions), for information and necessary action.

Ordered also that copies be forwarded to the Secretary to this Government in the Public Works Department, Buildings and Roads Branch, for information and necessary action.

Table showing rates to be paid for earthwork—intermediate system

Kind of soil.	Ordinary task.					Full task (provides for dependants).		
	Task adapted to ordinary work.	Rate per 1000 cubic feet.	Rate per 100 cubic feet.	Wages earned by performing task.	Remarks.	Task which can be performed by hard work.	Wages earned by performing task.	Remarks.
	C. ft.	Rs. a. p.	Rs. a. p.	Rs. a. p.		C. ft.	Rs. a. p.	
I.—Soft ...	120	1 14 0	0 3 0	0 3 6	Re. 0-3-7, but taken as Re. 0-3-6.	141	0 4 3	...
II.—Ordinary standard rate.	100	2 3 0	0 3 6	0 3 6	...	125	0 4 3	Re. 0-4-4, but taken as Re. 0-4-3.

- N.B.—(a) The rate No. II is the standard. The 14 pice earned would be distributed between the digger and carrier or carriers in proportions varying with the locality: in the 2nd Circle the digger would receive six pice and two carriers four pice each for an ordinary task, and the digger seven pice and two carriers five pice each for a full task.
- (b) The rate No. II would be followed in the absence of special orders by the District Engineer, to be reported to the Divisional and Superintending Engineer.
- (c) These rates are adapted for roads where the lead is not materially in excess of 50 feet or the depth of excavation much in excess of 5 feet. ♦
- (d) In the case of tanks where greater lifts and leads would be met with special rates providing for the extra lift and leads would be sanctioned by Superintending Engineers, following generally Appendix D, Famine Code.
- (e) The above rates are for earthwork only thrown up to section. Dressing and finishing would usually be separately paid for at a rate not exceeding for roads eight annas per 1,000 cubic feet of earthwork, to be fixed by the Superintending Engineer. Where the dressing could be done by the same gang, the earthwork rates would be increased by five annas per 1,000 cubic feet.

### FAMINE RELIEF.

*Note on the distribution of cooked food to children workers on Public Works Department relief works in the Fatehpur district by A. R. SUTHERLAND, Esq., Executive Engineer, 1st Allahabad Division.*

UNDER the advice of Assistant Surgeon G. Hynes in Medical charge of Fatehpur it was decided that the food should be a *khichri* of rice and *dal* (*mung*) in the proportion of one chittack of rice to half chittack of *mung dal* making three chittacks of cooked food, or sufficient for a meal for one child; one such meal being given in the morning and another in the evening. To this should be added one chittack of ghee to every seer of raw material, melted and mixed in with the *khichri* after it is cooked. A small quantity of salt is also added.

2. The cooking vessels are simple and consist of (a) an iron *karahi* 2½ feet in diameter at top and about 7½ inches deep, which will cook a sufficient quantity for 100 children; (b) an iron ladle six inches in diameter at top and 1½ inches deep fixed into a wooden handle, this size of ladle will hold as nearly as possible three chittacks of cooked food; (c) a wooden spatula, for stirring, preferably made of mangoe wood; (d) the usual iron *dols* and kerosine tins for carrying and storing water as used in all relief works.

3. The cooking is done on an ordinary "*chula*," or field oven dug into the ground and situated in a cleared space about 30 feet × 30 feet with a grass screen round it to keep off the wind and dust.

4. The establishment consists of one Brahman cook and two water kahars for every hundred children.

The above note is circulated for information, and for guidance in other localities where the distribution of cooked food may be ordered. In the absence of special orders it will only be given to children under seven years of age and not in arms, *i.e.* children of grade III of the Public Works Department, relief work Rules, paragraph 36 and the number of children so fed must be given in Code Form III as usual.

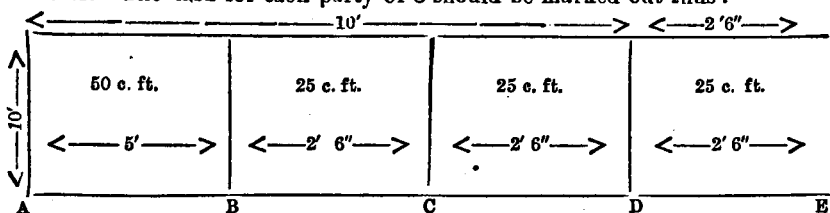
2. The children should be seated in squares of about 50, facing inwards, each child with a plate in front of him, and the food distributed with some regard to the sizes of the children; a very full ladle to a larger child and less full to a very small one. Earthenware plates should be supplied, and if these run short plates can be made up of *dhak* or of *mahua* leaves, as usual in wedding feasts, &c. Children bringing their own plates should be served in them, and the practice encouraged.

3. The pulse used must always be "*mung-ki-dal*." Mr. Hynes and several native gentlemen of experience strongly advise the food being varied by the substitution of barley *sattu* on two days in the week. *Sattu* is prepared in the following manner very well known in India. The barley

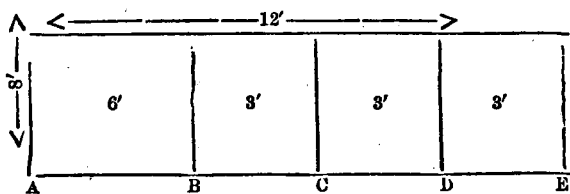
is wetted over night and dried in the morning. It is then parched, and coarse ground, and the husks sifted out. The meal is then wetted as desired and eaten with a little "gur" (unrefined sugar) or some salt.

*Instructions by COLONEL R. R. PULFORD, R. E., Superintending Engineer, 2nd Circle, Provincial Works, on the Intermediate system of relief works without contractors or middlemen.*

IN ordinary cases a task of 100 cubic feet is to be done by one digger and two carriers at six pice for the digger and 4 pice for each carrier. The task for each party of 3 should be marked out thus :—



The above wages of six pice for a digger and four pice for a carrier should be paid if the party executes the full task of 100 cubic feet up to the point D (commencing from A). If the party does work up to C, i.e. 75 cubic feet a day, they will receive five pice for the digger and three pice for each carrier. If up to B, i.e. 50 cubic feet in a day they will get three pice for the digger and two pice for each carrier. If the party can do an additional task 25 cubic feet i.e. up to E, they will get seven pice for the digger and five pice for each carrier. This is the limit of what can be earned by a party of three during any one day. If the side ditches are 8 feet in width the corresponding dimensions may be as follows :—



It will be advisable to keep the depth of the ditches a whole number of feet, either 1, 2 or 3, the section of the road bank being modified accordingly.

2. It must be distinctly understood that the work to be done by a party of three workers is not merely the digging and carrying of a certain number of cubic feet of earthwork, but includes proper breaking and rough dressing of the earth thrown up. The above rates and scale of work and workers are for the ordinary lead of 50' and under. For every 100 feet extra lead, an additional carrier on four pice may be given. The actual amount to be paid to this additional carrier will vary according to the amount of earthwork out and carried as in the case of the regular gang.

3. If children above seven years of age come to work, they may be given suitable employment as carriers, two of them being taken in place of one adult, their wages would be two pice each. Ordinarily it will be found that the proportion of diggers and carriers above prescribed will be sufficient to meet the numbers seeking employment on this class of work. Where, however, more women and children come for work than can be employed in the sanctioned proportions, one extra carrier to each digger may be allotted at the usual rate. No one asking for work and willing to earn a day's wage should be refused employment.

4. A special gang under a jamadár will lay out in advance the side widths and main lines of the road embankment to be made up.

The mates will set out each day's work. They will also make the evening measurements and enter them in a note book. After the measurements have been checked by the work agent, the amount in pice to be paid to the coolies next day will be at once entered in ink in the muster rolls. The hours for measuring should in future be from 5 P. M. to 6 P. M. and the coolies may work up to 5 P.M. Payment should for the future be made at six o'clock in the evening.

5. As regards dressing, it is to be done at an average rate of seven annas per thousand distributed approximately as follows:—

				Rs. s. p.
Two men at six pice a day	...	...	...	0 3 0
Two women at four pice a day	...	...	...	0 2 0
Four children at two pice a day	...	...	...	0 2 0
			Total	0 7 0

6. As the ordinary day's work of a gang of 10 diggers will be about 1,000 cubic feet a dressing party as above detailed will be required for each gang with which it should be regularly incorporated.

7. As regards tools and plant they will be supplied by Government.

8. The usual muster-rolls, goshwaras, daily and weekly reports should be kept up as on the ordinary famine works. The muster of the digging gangs need only be taken at once at five o'clock when the work will be measured up and the amount due to each person will be entered in its proper column in the muster-roll. Men coming on to the work at any time before 10 o'clock will have a task set out for them and will be paid according to the quantity of work done during the day.

9. There will be no Sunday work.

10. In regard to dependants, children under seven years of age may be given cooked food under the ordinary rules regarding the amount of ration. Children at the breast may be given one pice. Should old men and women dependants come to a work, they should be sent to the nearest poorhouse or village relief centre. They should be given the necessary relief for the day they arrive and for their journey.

11. The organization of a charge will continue exactly the same as formerly, *i.e.*, the gangs, mates, jamadars, work agents, and naib tabsildars will be retained and will draw the same pay as at present. The muster-rolls, goshwaras, bags, system of mustering and payment will be the same. The only differences will be—1st, that each gang will ordinarily consist of 10 beldars, 20 carriers and the dressing party; 2nd, there will be only children dependants to whom cooked food will be issued; and 3rd, workers will be paid and the amount will be entered in the muster-roll, exactly for what they have done, calculated as set forth above. This arrangement will allow of the full famine organization being resumed at any moment, should the Civil Officers of the district consider it necessary to revert to the full Famine Code Rules. Advantage should be taken of the present diminution in numbers to discharge all inefficient work agents, jamadars, and mates. Of these last, none except those who can read and write and take measurements, should be retained.

No. 1130, dated Allahabad, the 14th May 1897.

From—Secretary to Government, N.-W. P. and Oudh,

To—All Commissioners of Divisions and District Officers,

N.-W. P. and Oudh, (except Meerut and Kumaun Divisions).

SIR,—It has been brought to the notice of the Lieutenant-Governor and Chief Commissioner that in some exceptional instances and localities a proportion of labourers seeking employment on intermediate works

are from poor physique and reduced condition unable to execute the full standard task, or so much of it as will suffice at the prescribed rates to procure for them an adequate subsistence wage. His Honor has accordingly considered the best method of meeting these exceptional cases without making any general reduction of the ordinary rates which are found to make sufficient provision for the general body of labourers.

2. The method which commends itself to Government is the formation of the weaklings into separate gangs, and the prescription for these infirm gangs of a reduced task which may be on a sliding scale, the minimum being fixed at 60 cubic feet in ordinary soil, instead of the 100 cubic feet laid down as the standard in G. O. No 753, dated the 16th March 1897. The weakly gang would receive the full wage prescribed in ordinary gangs for 100 cubic feet on executing the reduced task if fully accomplished. The gang would further have permission to execute work and earn wages to the extent of 25 per cent. in excess of the reduced standard in order to provide for Sunday wages.

3. The Lieutenant-Governor and Chief Commissioner accordingly gives discretion to District Officers to sanction this special arrangement in any intermediate work where, owing to the generally reduced or feeble condition of the people, the necessity is shown to exist. It should not be introduced merely on account of the occurrence of occasional cases of emaciation, for which provision can otherwise be made. The annexed table shows the tasks and rates for weakly gangs. These instructions are to be read in continuation of G. O. No. 753 of 16th March 1897.

## No. 1131.

Copy forwarded to the Secretary to this Government in the Public Works Department, for information and communication to Public Works Officers.

*Table showing special rates to be paid for earthwork in the case of weakly gangs on the intermediate system.*

Kind of soil.	Task.	Rate per	Rate per	Wages	Maxi-	Maximum wages.
		1,000 cubic feet.	100 cubic feet.	earned by performance of task.	mum task allowed to be executed.	
	C. ft.	Rs. a. p.	Rs. a. p.	Rs. a. p.	C. ft.	Rs. a. p.
I.—Soft ...	100	2 3 0	0 3 6	0 3 6	125	0 4 3
II(a).—Ordinary,	60	3 12 0	0 6 0	0 3 6	71	0 4 3
II(b).—Ordinary,	70	3 2 0	0 5 0	0 3 6	85	0 4 3
II(c).—Ordinary,	80	2 13 0	0 4 6	0 3 6	95	0 4 3
II(d).—Ordinary,	90	2 8 0	0 4 0	0 3 6	100	0 4 3
III.—Hard ...	50	4 3 6	0 6 9	0 3 6	63	0 4 3

No. 1199, dated Naini Tal, the 26th May 1897.

*From—Secretary to Government, N.-W. P. and Oudh,*

*To—All Commissioners of Divisions and District Officers,  
N.-W. P. and Oudh, (except Meerut and Kumaun Divisions).*

SIR,—The Lieutenant-Governor and Chief Commissioner has lately had before him for sanction various projects for relief works of an extensive character, providing for the employment of several thousand labourers for three months or more.



So far as such projects are matured in order to complete the programme of works which will hereafter be available for relief purposes, there is nothing to be said against them. It is right and necessary that there shall always be in reserve a sufficient number of large as well as small projects to meet all contingencies.

2. The Lieutenant-Governor and Chief Commissioner, however, desires all officers to remember that this is not a suitable season for commencing large projects which cannot be completed within a short time and which will be of no value or of much diminished value unless completed. It may be expected that throughout the provinces generally the labourers will at once begin to leave the works as soon as the rains set in, an event which may be expected any time after the 15th June. It is important, therefore, that if labourers are to be employed on new works, those selected at this season should be such works as would ordinarily be completed before the 15th June next. In making the selection attention should be paid to the nature of the work, projects which cannot be divided into portions practically complete in themselves being avoided, unless of a character where any substantial progress is sufficient, as in the case of deepening an existing tank, to render the work useful.

3. Experience has also shown that if a free choice of works is open, it is expedient to avoid the concentration of very large numbers of men on a circumscribed space, especially if the water-supply is defective. The soil and surroundings become contaminated and an outbreak of disease becomes probable.

In many instances it is found necessary at this season to select for relief works projects such as tanks which are of immediate benefit to a small number of local residents or proprietors and are in a minor degree only useful to the general public. By selecting, where control renders this possible, several smaller projects rather than one very large project, the advantage of the outlay of public money is more generally diffused. Wherever large projects are at present in progress arrangements should be made to complete them so far as possible, to the 15th June rather than divert the labour available for them to new works.

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No. 1200.

COPY forwarded to the Secretary, Public Works Department, North-Western Provinces and Oudh, for issue of instructions in that department.

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No. 1525, dated Naini Tal, the 10th July 1897.

*From—Secretary to Government, N.-W. Provinces and Oudh,*

*To—Secretary to the Government of India, Revenue  
and Agricultural Department (Famine).*

SIR,—I am now directed to reply to your No.  $\frac{1071}{19-3F}$ , dated 19th April 1897, and No.  $\frac{2106}{11-4}$ , dated 21st May 1897. The delay which has occurred was due to the difficulty in collecting materials where the staff has everywhere been overwhelmed with more urgent work. It was, moreover, impossible to attempt any survey of the results of the intermediate system till at least a month's experience had been gained. As it is, the conclusions will probably be found liable to modification when the system has been worked for a longer period and its details more fully elaborated.

2. To explain clearly the objects and the effects of the system, it is necessary first to make a brief survey of the circumstances, places, and time of its introduction.

In the shape originally adopted,\* work under the intermediate system was distributed among piece-workers or gangers who were, in effect, petty contractors paying the labourers fixed wages and themselves remunerated by rates which allowed sufficient margin for their own labour and expenses. The works were, in fact, conducted on the ordinary system of public works with the large contractor eliminated and provision made for securing the employment and fair remuneration for labourers requiring relief. The plan was suggested by the circumstance that in certain less distressed districts where large railway and canal works were in progress, the people were for a time able to find support on them without the necessity arising for special relief works under the Famine Code system. Though possessing certain advantages, this early system was found to fail in one particular. The ganger or middleman had a direct object in employing only the most efficient labour, and in practice it was found impossible to always prevent the exclusion of weakly or inefficient workers who could not render a reasonably full task. The persons excluded were generally those who stood most in need of relief. Those who least needed assistance were able to earn much more than a subsistence wage, while those who most required it were sometimes unable to earn anything.

3. A modification was therefore introduced, at first in a tentative form in certain localities, by which the middleman was excluded and the work given out direct to the labourers by the official staff, who also measured up the work done and distributed the payment. This arrangement put an end to the complaints which existed against the system in its first form.

4. At the end of February, when field work was in abeyance, the relief works were thronged by great multitudes. Many of them could possibly have subsisted without this resource, but the Famine Code system offered no effective means or test which would exclude them. The number of dependants was also very great, and in the less distressed districts there was some reason to fear that the system was abused by the introduction of inefficient labourers and hangers on whom the relatives that might have supported them found it convenient to throw on State support. The season was approaching when outbreaks of epidemic cholera might be expected. The collection of larger numbers in relief camps was therefore a source of danger which it became necessary to minimize. The presence of numerous idlers was also calculated to demoralize the working body. Moreover, the period of spring harvest was approaching, when it was most essential that the labour required for gathering the crops should not be diverted to relief works. In the public interest it was most necessary that all available labour should be devoted to the harvest work, and that the State should be relieved of the cost of supporting those who could find employment when it commenced. The relaxation of prices and the addition to the food supply consequent on the harvest afforded other reasons for contracting the area of relief. Other measures—which need not be here narrated—were adopted to secure these ends. The success of the modified system of intermediate works indicated it as a useful auxiliary measure, capable of wide expansion. It was accordingly determined to introduce that system into all districts where distress was not acute in substitution of the full Famine Code system then in force. The period selected for commencing the change was the Holi festival (20th March),

which marks the beginning of the harvest in these provinces, and when the works would be, and as a matter of fact practically were, deserted by all those not actually dependant on them for subsistence.

Instructions were accordingly promulgated in Resolution No. 753 of 16th March, which resumed and repeated orders which had already been given at conferences and otherwise to the various officers engaged in relief operations, and the conversion commencing from the Holi was generally completed in all the selected districts by the beginning of April. Early in March considerable numbers had begun to leave the works to assist in getting in the spring harvest. The introduction of the intermediate system coincided with, or was followed by a further fall.

5. The objects aimed at in the modified form of intermediate works were—

- (1) to remove and exclude from relief works those who could find employment elsewhere or were not dependant on such works for their subsistence ;
- (2) to get rid of such portion of the large number of dependants and useless workers as were a source of danger and demoralization, and whose friends, included in the preceding category (1), were able to support them ;
- (3) to secure a better outturn of work for the money expended.

The first object would be gained by the imposition of a more stringent labour test and by the principle of payment by results. The intermediate system, though imposing a maximum wage limit, does not include any provision for the payment of a minimum wage irrespective of task, this minimum wage on full Code works being the most potent enemy of economy and discipline.

The second object would be furthered by permitting the able-bodied members of a family to earn enough to support their dependants as well as themselves, while the limitation on possible earnings would prevent competition with private employment or ordinary public works.

The various reports received from District and Divisional Officers, and the papers which accompany this letter, show that, in the main, the system has proved capable of securing these results. The numbers have been kept down ; the dependants and useless labourers have either disappeared or been limited to children whose emaciated condition required special aid ; the outturn of work has been increased and the cost of it lowered ; while sufficient relief has been afforded to the population of those tracts where the system has been enforced.

6. It was recognised that system would not be suitable for districts where the distress was acute and widespread. In such tracts it was necessary to arrange works which would provide a moderate fixed task and a bare subsistence wage for each applicant. The piece-work system was therefore unsuited for such conditions. The intermediate system was accordingly restricted to those districts where distress was less severe and less extended. These comprised all districts, except Bundelkhand, South Allahabad, and Hardoi. In only one small and doubtful case it was found desirable to revert again to the Code system.

7. But experience of its working led to two modifications of the scheme as defined in Resolution No. 753. Families coming on the works brought young children who were unfit for labour, but could not be separated from their relatives. It was observed in some localities that the condition of such children was bad, owing to neglect or indifference on

the part of their parents. This phenomenon was not confined to intermediate works or due to any defect of the system. It was first observed on the Famine Code works, where the children received a dole sufficient for their support. It has even been noticed in the case of persons gratuitously relieved at their own homes. One of the unhappy effects of protracted scarcity has been to weaken the ties of domestic duty and parental affection, and to lead parents to divert to their own uses or to savings the relief provided for their children who were not required to work. Where this state of affairs has existed, the plan has been adopted on Code works of supplying young children with cooked food instead of a money

dole. On intermediate works, where the necessity \* G. O. No. 937, of 6th May 1897. arose, discretion was given \* to Divisional Officers to authorize the distribution of cooked food to young children and to add one pice to supplement the diet of nursing mothers. This was no doubt, as has been pointed out, a departure from the original principle, but as these children could not be removed from their parents and placed in poorhouses or on village lists, there was no alternative but to either acquiesce in their maltreatment or to provide them with a daily meal.

8. It was further discovered that the standard task laid down in Resolution No. 753, though suited for persons of ordinary physique, pressed hardly on persons who were infirm or in reduced condition. When such persons were employed to any substantial extent with effective workers, the outturn of work and the earnings of the whole party were reduced—a result which pressed unfairly on those who had themselves

rendered a full task. Permission was consequently † G. O. No. 1130, of 13th May 1897. given † in exceptional instances and localities to form these weaklings into separate gangs and prescribe a reduced task for them. A separate table of tasks and rates was drawn up for these gangs and will be found annexed to the Government Order last quoted. No other change in the system has been found necessary, though occasionally the proportion of carriers to diggers has been exceeded where it became necessary to find employment for a disproportionate number of applicants of the former class.

9. Turning now to the specific questions in the letter under reply, it must first be observed that, though the intermediate system has undoubtedly been effectual in keeping down the numbers on relief works, yet it is not possible to formulate the exact reduction attributable to that cause alone. The reopening of field labour had caused many to leave the works before the intermediate system was introduced, and the same cause continued operative after its introduction. At the same time there are instances of works being abandoned and not resumed as soon as the system of payment by results was enforced. The information before Government shows that numbers left to seek other employment who would have remained under the Code system, and that many more were deterred by the same consideration from returning after the completion of the harvest. Persons, for instance, who were content to resort to works in the neighbourhood of their homes and earn a subsistence wage by a few hours' labour would not undertake piece-work, which required a fair day's work for a fair wage.

Where different agencies were at work, it is impossible to separate the results due to one agency only. Nevertheless, conclusions of reasonable accuracy may be drawn from the existing returns. On the 27th February, when the numbers on work reached their maximum, the number of workers and dependants in those districts where the intermediate system was subsequently introduced amounted to 552,917. After the conclusion of harvest operations, when field work had again ceased to afford

employment, the numbers began to rise again and had reached their maximum on the 29th May. Some no doubt were placed by the *rabi* harvest in a position which rendered them independent of relief, and some were employed in tending the hot weather crops. But the great bulk would have returned to the works in the slack season if they had found the conditions still existing which attracted them before. Yet on the 29th May the numbers in these districts were only 162,755—a fall of over 70 per cent., that is to say, less than 30 per cent. of those on the Code works in February returned to the intermediate works in May. In the districts under observation the fall was even more marked. Of the workers present on the 27th February, 78 per cent. had disappeared on the 29th May, leaving only 22 per cent. of the original number. On the other hand, in the six districts where the Code system has been in force all through, the numbers rose between 27th February and 29th May, by over 47 per cent. These of course were the most distressed districts, where the spring harvest was poorest and the resources of the people most exhausted, and much allowance must be made for this circumstance. Still it may be safely inferred that the reduction effected by the intermediate system was not less, but considerably greater, than two-fifths.

10. The question of wages and outturn of work is dealt with in the papers which accompany this letter. The figures are not so complete or accurate as a more prolonged experience and a more accurate scrutiny may be expected to afford; but they may be taken as showing that the average earnings have been higher and the average outturn of work considerably greater per head than under the Code system, while the cost of the work has been substantially reduced. In considering these figures it must be remembered that under the Code system the workers and dependants receive a Sunday wage though no work is done. On intermediate works the Sunday holiday is observed and no wages are paid, but the rates are adjusted to enable the workers to earn enough by six days' work to support themselves and their dependants for seven days.

It would be difficult to reduce to arithmetical terms the margin of earning left to support the inefficient dependants of the workers under the intermediate system. But it can be safely affirmed that, with the modifications now adopted, the system does in practice afford sufficient maintenance for both, and there has been no deterioration in the condition of the people where the system is in force: in fact, they would compare favourably with the workpeople under the other system, though here, again, the relative intensity of general distress would have to be taken into account.

It may be observed that districts under the intermediate system have kept wonderfully free from cholera during the summer. The outbreaks have been few and mild. Among the larger numbers on Code works in the very distressed districts the cases of epidemic cholera have been more numerous, persistent, and fatal.

11. The intermediate system undoubtedly requires very close supervision and control to secure successful results, and it necessitates the employment of a larger staff than the Code system. Even with this additional charge it has the advantage in economy of working. But these conditions also tend to render it unsuited for the very extensive works that must be maintained and the large masses of people who must be handled in the acutely distressed districts where the Code system is in force. But in the localities suitable for its operation it has proved adequate as a means of relief, efficient as a test, and effective and economical in securing a fair outturn of work at reasonable rates.

*Correspondence on the subject of relief works attracting labour from railways.*

No.  $\frac{2027F.}{7-16}$ , dated Simla, the 8th May 1897.

*From—T. W. HOLDERNESS, Esq., Deputy Secretary to the Government of India, Rev. and Agri. Dept. (Famine),*

*To—The Secretary to Government, N.-W. Provinces and Oudh.*

Paragraph 18 of letter No. 912F.G., dated the 7th April 1897, from the Officiating Commissioner of the Patna Division, to the Government of Bengal. Paragraph 6 of letter No.  $\frac{1191}{7-14F.}$ , dated 4th May 1897, to the Government of Bengal.

SIR,—I am directed to forward, for the information of His Honor the Lieutenant-Governor, the accompanying extracts from the correspondence cited in the margin relative to a complaint made by the East Indian Railway authorities that they cannot obtain labour for the construction of the Moghul Sarai-Gaya line on account of the labouring classes preferring the relief works.

*Extract, paragraph 6, from a letter No.  $\frac{1191}{7-14F.}$ , dated Simla, the 4th May 1897, from T. W. HOLDERNESS, Esq., Deputy Secretary to the Government of India, Department of Revenue and Agriculture, to the Secretary to the Government of Bengal.*

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6. With reference to the complaint of the East Indian Railway authorities that they cannot obtain labour for the construction of the Moghul Sarai-Gaya line on account of the labouring classes preferring the relief works, and to the action taken by the Commissioner and the Collector thereupon, I am to say that similar complaints have been preferred elsewhere in other provinces, and that the Government of India consider that every such complaint should be made the subject of searching investigation. If inquiry shows that a relief work is attracting numbers of persons who in other years would resort to the railway to support themselves, steps should obviously be taken to present such undesirable competition. If the inquiry, on the other hand, shows that the complaint is not well founded, it is desirable for the good credit of the famine policy of the Government that it should be clearly and openly refuted. In connection with the subject of the alleged attractiveness of relief works I am to ask what decision has been arrived at regarding the introduction of petty piece-work in certain cases and in certain localities, which was stated in paragraph 2 of your letter No. 778 of the 18th March to be under consideration.

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*Extract, paragraph 18, from a letter No. 912F.G., dated Bankipore, the 7th April 1897, from J. A. BOURDILLON, Esq., Officiating Commissioner of the Patna Division, to the Secretary to the Government of Bengal, Revenue Department.*

\* \* \* \* \*

18. Mr. Winder reports, the East Indian Railway authorities complain that they cannot get labour for the construction of the Moghul Sarai-Gaya line, and I have had a separate communication from the Agent to the same effect. It is urged that the rates given on our works are so liberal

that labour will not go to the East Indian Railway works, but the argument is hardly a fair one. The above table shows that our rate comes to Rs. 2-10-11 per 1,000 cubic feet, while the railway offers Rs. 2 per 1,000 cubic feet for cutting, carrying and dressing. Our figures, however, include many payments for labour which is not fully remunerative, and if only the adult males are taken into consideration, who would be the chief components of the piece-work gangs in the railway embankments, and who earn about two annas a day on our works for 130 cubic feet, it is clear that they would earn more on the railways than on our works. I cannot admit that we are outbidding the Railway authorities, and the disinclination of the people to go to the railway work must be due to some other cause. However, subject to the approval of Government, I have arranged with the Collector, who has been with me this morning, that he should close the Hata-Durgaoti road and take up the railway embankment from the Karamnasa to Mohania as a relief work, opening none others within four miles on each side of the centre line. The Railway authorities offer to provide the professional staff for supervision, and to refund to Government whatever may be decided to be a fair share of the expenditure. If this expedient does not succeed, I should be prepared to try to modify piece-work on this section of the line.

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No. 1314, dated Naini Tal, the 12th June 1897.

From—T. STOKER, Esq., *Secretary to Government,*

*N.-W. P. and Oudh,*

To—*The Secretary to the Government of India, Rev. and Agri. Dept.*

SIR,—In reply to your No.  $\frac{2027F}{7-16}$  dated 8th May, I am directed to submit, for the information of His Excellency in Council, the accompanying report from the Commissioner of Gorakhpur, with its enclosures.

2. In the Lieutenant-Governor's opinion Mr. Alexander's report gives a very correct view of the circumstances of the case. It is quite obvious that the relief works in the eastern districts have not in any way interfered with the supply of labour to the Bengal and North-Western Railway and its branches. Railway works are reported to have been in progress in the Gonda, Bahraich, Gorakhpur, Azamgarh, Ballia, Benares, and Gházipur districts.

No relief works of any sort have been opened in the Bahraich, Ballia, Benares, and Gházipur districts—these being outside the zone of distress. In Gonda the numbers on relief at the highest only reached about 8,000, and for the past three months have never exceeded 2,000 men, women, and children out of a total population of 1,459,229, and in this as in the other districts the works have been conducted on the intermediate system, which was specially designed in order not to attract persons who could exist without Government relief, or who could find profitable employment elsewhere than on Government relief works. In Azamgarh the papers which accompany this letter contain definite proof that the relief works have not interfered with the railway works. In Gorakhpur the number of labourers—men, women, and children—have never reached 33,000, and have usually been very much below that figure. Out of a population of 2,994,057, this employment could not have affected the total labour supply. Moreover, the relief works have not been situated in that part of the district where railway construction was in progress. It will further be observed that the labourers on these works were persons who would not seek or accept work at a distance from their homes and would not have sought employment on railways.

3. Railway construction is generally carried out by professional labourers; and this class was not to be found on relief works, because the earnings there were strictly limited to a subsistence wage. Under the rules contained in G. O. No. 753 of 15th March 1897, the earnings of a digger were restricted to a maximum of six pice a day (including Sunday) representing, at the 12-*seer* scale, 18 *chhataks* of grain for the support of himself and the non-working members of his family. It is impossible to believe that such wages would attract away professional navvies from works where they could earn as much as they were able by piece-work.

The Collector of Gorakhpur has overlooked these facts in his report, which is not an accurate or well-considered statement of the case. He has ignored the existence of a maximum wage of six pice imposed by the rules, and his view of village works carried out by zamindárs needs correction. Experience of these works in different districts has shown that the zamindár who has undertaken them is too often bent merely on securing economy of working, and refuses to employ the weakly and inefficient labourers who stand most in need of assistance. Village works controlled by local unofficial agency doubtless serve a very useful purpose as an adjunct to large relief works; but the Collector of Gorakhpur is altogether mistaken in saying that by such village works controlled by the zamindárs who could "reach the people who really need help more fully than we have been able to do under the system which has obtained."

4. Mr. Izat's difficulty in obtaining labour appears to be sufficiently and correctly explained in Mr. Alexander's report. A rate (Re. 1-4-0 per 1,000 cubic feet) which might be adequate in ordinary years is inadequate when grain is selling at more than twice its ordinary price. In districts where distress is very acute, private employers have been able to obtain labour on their own terms, because the labourers had no alternative but to accept them or seek a mere subsistence on relief works. But in these eastern districts, where distress was less acute and field labour never generally failed, the same pressure did not exist, and people would not leave their homes in any numbers to work for a subsistence on railways any more than on relief works. It is significant that Mr. Izat found his work deserted when the *rabi* harvest gave fresh employment for field labour, and finds them again attract workers when the harvest operations have ceased and the labourers are sitting idle.

5. A copy of this correspondence has been forwarded to Mr. Higham, C.I.E., on special duty, now in these provinces.

No.  $\frac{1315}{S-145}$ .

COPY forwarded to Mr. Higham, C.I.E., on special duty, for information.

No.  $\frac{1316}{S-145}$ .

Copy also forwarded to the Commissioner, Gorakhpur Division, for information.

No.  $\frac{1870C.}{XXIII-61-Sc}$ , dated the 2nd June 1897.

From—E. B. ALEXANDER, ESQ., Commissioner, Gorakhpur  
Division,

To—The Secretary to Government, N.-W. Provinces and Oudh.

SIR,—In reply to your No. 39C., dated 13th May, I have the honor to say that I do not think that famine relief works have attracted any appreciable number of labourers who would otherwise have found employment on railways or other large works.



2. The opinion of the Collector of Gorakhpur is against mine, and Mr. Izat, without distinctly saying that famine relief works are responsible, says that there has been a great scarcity of labour on all the extensions in progress during 1897 in this division and in Bahraich and Gonda.

3. The Collector of Azamgarh agrees with me, and I think he has a much closer personal knowledge of the facts than the Collector of Gorakhpur, whose heavy work prevents his being able to move about as much, whilst his district is much larger.

4. I concede the Collector of Gorakhpur's theory that able-bodied, but not highly skilled professional labourers will go in preference to a work near their homes, and that therefore, if a famine work is opened close by, they will go on it rather than to a railway several miles off.

5. But we have carefully avoided opening famine relief works in the immediate vicinity of railway lines on which earthwork was actually in progress, and though I asked Mr. Izat especially to give me detailed instances of railway labour being taken away by our works, he does not do so.

6. Further, the largest number of workers we have had on relief works on one day has been about 35,000 in Gorakhpur and about 9,000 in Azamgarh; and with populations of 3,000,000 and 1,700,000 these districts must surely have ten times this number of labourers (including women and children, who form the bulk of our workers).

There must, therefore, have been about nine times the number we employ available for other work, and I do not suppose the railway even really wanted much more than about one-ninth of them at one time.

7. If it is said that the railways only want able-bodied men, and more especially men who are professional diggers, then still less have our works interfered with them. The average wage since the commencement of famine relief has been only one anna two pies. It has been a trifle less in Gorakhpur; but, taking it at one anna two pies, no one can believe that we have attracted any large number of professional *beldárs* for a wage of this amount.

8. Mr. Izat mentions in his letter that the difficulty has intensified since the beginning of March, and this coincides with the commencement of *rabi* harvest.

9. Obviously, therefore, to my mind, the real reason why the railway company has found a difficulty in getting labour is that the very low rates it pays do not induce the professional *beldár* to come from any distance and do not induce the ordinary unprofessional labourer to leave field work.

I believe the rate paid by the railway was only Re. 1-4-0 per thousand cubic feet; and this often with a lead of 30 or 40 feet, and a rise of 3 to 5 feet up which the earth had to be carried. The ordinary professional labourer found probably that he could not live on this, and the professional *beldár* that by going elsewhere he could do better.

10. I believe a large number of these *beldárs* went down this year to Calcutta, and some even to Rangoon. I am quite sure that many of them did not come on our famine works, as the wages paid were insufficient to induce them to do so; and the Divisional Engineer, Mr. Holme, who knows much better what the facts are than the Collector of Gorakhpur, says distinctly that they have not done so; and, moreover, it is certain that the great bulk of our workers came, and still come, from the immediate vicinity of the works, and that women and children make up about two-thirds of them.

11. One of our great difficulties has been the impossibility of inducing the people to come any distance to work or to stay out on works. Up to four miles they will come freely, but once the work gets further away they throw it up.

To some extent this shows, of course, that distress has not been intense, but it would be a great mistake to suppose that the people who act in this way were well off. They were, in many cases, decidedly pulled down, and their alternative to coming on the works has, in many cases, been the gleaning of an insufficient substance from the fields or from berries or fruits. And we have had to open more charges than I would otherwise have approved of, in order, in some cases, to bring relief within the distance to which they will go; because there seemed distinct ground for apprehending that if we did not, there would be actual cases of starvation.

12. I feel confident in saying that our works have not attracted the professional *beldár* (who is quite ready to move about the country if he can get a good job), because our wages have been too low for him, and also that hardly any of the people who have come on our works would have gone to the railway if we had not employed them.

13. I believe there are no famine relief works in Bahraich, yet the same difficulty seems to be met there; and it is, in my opinion, solely due to the fact that the railway company has been trying to get its work done at an excessively cheap rate which does not adequately remunerate the labourers, and on which they cannot live when prices are very high.

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No. 107C., dated Gorakhpur, the 26th May 1897.

From—ALEXANDER IZAT, Esq., *Agent and Chief Engineer,*  
*Bengal and North-Western Railway Company (Limited),*

To—*The Commissioner, Gorakhpur Division.*

SIR,—With reference to G. O. No. 90C., dated 13th May 1897, from the Scarcity Department to your address, forwarded with your letter No. <sup>1675C.</sup> ~~XXIII—61-Sa.~~, dated 15th May 1897, I have the honor to state that this company in the North-Western Provinces and Oudh, has had earthworks in progress in the Gorakhpur district, on the lines from Bhatni to Turtipur and Salempur to Barbaj; in the Azamgarh, Ballia, Gházipur, and Benares districts on the doáb railways; in the Gonda district, on the line from Gonda to Tulsipur; in the Bahraich district, on the line from Nánpara to Kataniaghát; and on all of them there has been a great scarcity of labour.

At no time during the past dry season has labour been abundant, but from the beginning of March till recently the works were practically deserted. Recently a good many people who live in the neighbourhood have returned to the works, but many more could be profitably employed.

Under ordinary conditions no difficulty would have been anticipated in completing the earthwork on the lines above mentioned before this time, but at this date a good deal of work still remains to be done on them.

Labour which would have otherwise travelled to the railway works said to be absorbed by the works opened by Government in the neighbourhood of the people's houses.

No.  $\frac{2718}{VII-29-IV}$ , dated the 20th May 1897.

From—DR. W. HOEY, Collector of Gorakhpur,

To—The Commissioner, Gorakhpur Division.

SIR,—With reference to your No.  $\frac{1678C}{XXIII-61-Sc.}$ , dated 15th instant, covering G. O. No. 90C., dated 13th idem, I have the honor to state that it has been mentioned to me that the Bengal and North-Western Railway Company find it to be now difficult to obtain labourers for railway construction. At any rate, from my own observations on the Sumer-sagar tank and on the Gorakhpur-Ghutnighát road near Deoria, I can say that the majority of labourers on intermediate works seem to be Lonias, Kewats, and other professional diggers and excavators. These are able, by co-operative labour on the piecework system, to earn more than an ordinary daily wage, or at any rate to earn what they please within a time of their own choosing. They can begin work when they like, stop when they like, and when they choose they can suspend work for a day or more. Unless I am greatly mistaken, the contract rate for piecework now allowed by Government on our local famine works is as high as Rs. 1-14-0 per 1,000 cubic feet, and there is no middleman.

2. As far as I understand the railway system, earthwork is given out to petty contractors or middlemen at Re. 1-7-0 or Re. 1-9-0 per 1,000 cubic feet, and the contract fixes the time within which sections of work given out must be completed. In this way the labourer not only earns a lower wage, but has to work against time to earn that wage. I believe that in saying this I am correct. If I am wrong, it does not matter for the reason which now follows.

3. I have ascertained that in this district the ordinary rural rates for tank excavation and road making are Re. 1-8-0 per 1,000 cubic feet, and the system of working is so arranged as always to keep within this rate:—

- (a) digging and carrying earth on any marginal lead, Re. 1-8-0 per 1,000 cubic feet ;
- (b) digging and filling baskets for carriers for short leads, Re. 0-12-0 per 1,000 cubic feet ;
- (c) digging alone while carriers fill the baskets for themselves for longer leads, Re. 0-8-0 per 1,000 cubic feet ;
- (d) In cases (b) and (c) the carriers are paid by *kauri*.

From this it will be seen that our rates are higher than those recognised by the people.

At this rate a man can easily earn two annas a day by digging, and his children and wife can supplement that by *kauri* labour.

If we had been in a position to induce zamíndárs to take money for village works or the portion of roads within their villages as village works, and had they worked them on this system, we should have managed our relief cheaper and reached the people who really need help more fully than we have been able to do under the systems which have obtained. It has always been a regret to me that I have been unable to push village works in this district. It seems that the people are far too much in the habit in this district of looking to Government to do everything for them ; and it is precisely because village works involve a certain amount of self-help that they have not become popular. Whatever money has been taken for village works has been taken almost wholly by European zamíndárs.

4. There is one consideration which I think should not be lost sight of. Ordinary agricultural labourers cannot compete with professional diggers; the latter are accustomed to work in gangs, and the former do not readily find a place among gang labourers. They are, to use a slang expression, "out of it" even at ordinary times, and where the agricultural labourer has fallen off in physique, as he must do in a year of distress, he has even less chance of making his way against or among professional diggers and excavators. If we had been able to arrange that the professional earthworker should be kept off our relief works, the railway company would have had them as usual on works, and the agricultural labourer would have alone been a State charge.

5. Now let us look at the matter in another light. The professional labourer will go anywhere that works on a large scale to suit him are in progress; but naturally he will select the nearest work that gives him scope for employment. When a famine occurs once in, say, 20 years, we open works on a scale not 20 times, but 100 times, more extensive than they are to be had locally in any average year in the other 19. The natural result is that the professional labourer, who prefers, like the agricultural labourer, to remain near his home if he can, takes the work which he finds provided at his door for general relief, and is possibly better off than in an ordinary year. The kernel of the matter lies in this nut-shell.

No.  $\frac{2305}{XIII-8}$ , dated the 25th May 1897.

From—H. V. LOVETT, Esq., *Collector of Azamgarh,*  
To—*The Commissioner, Gorakhpur Division.*

SIR,—In reply to your No.  $\frac{1674C}{XXIII-61-Sc.}$  of the 15th instant, enclosing a copy of G. O. No. 90C. of the 13th instant, I have the honor to report as follows.

2. On receipt of your letter I at once addressed the Resident Engineer in charge of the railway works in this district, and requested the favour of his views on the subject.

3. I annex a copy of his reply. I anticipated its tenor. The fact is that, although I have been in constant communication with him, I have particularly aimed at avoiding competition with his works. Twice I have had complaints from Mr. LeMesurier, Assistant Engineer, resident at Muhammadabad. On one occasion the complaint was, as Mr. LeMesurier admitted, not founded on fact, but on hearsay information, which was utterly incorrect. On the second occasion the complaint related to *kankar* collection rates, and to the fact that one contractor had been attracted from the railway to the roads *kankar* collection. Mr. LeMesurier's complaint was founded on facts, and the matter was at once rectified by the District Engineer in consultation with him.

4. My experience is that, working with and constantly seeing the Railway authorities, it is perfectly easy to avoid any clashing whatever; and I have no hesitation in saying that exceedingly few labourers have been attracted from the railway works to relief works in this district, and these only for a week or two.

No. 1187, dated the 20th May 1897.

From—*The Resident Engineer, Mau,*  
To—*The Collector of Azamgarh.*

SIR,—With reference to your memorandum No.  $\frac{2220}{XIII-8}$ , dated the 17th instant, I have the honor to reply that no labourers have been as far as I know, attracted away from the railway by relief works in the

Azamgarh district. For a short time this occurred amongst the labourers at work near Azamgarh; but the matter was adjusted by communicating with the District Engineer, and no complaints have reached me since.

No.  $\frac{2333}{XIII-8}$ , dated the 27th May 1897.

From—H. V. LOVETT, Esq., Collector of Azamgarh,

To—The Commissioner, Gorakhpur Division.

SIR,—In continuation of my No.  $\frac{2305}{XIII-8}$ , dated the 25th instant, I have the honor to report that another reason for the absence of any clashing between railway and relief works in this district has possibly been that no relief works were started in the vicinity of the railway as long as railway earthwork was in progress.

*Extract from notes of an inspection of Famine Relief Works in the North-Western Provinces and Oudh by MR. T. HIGHAM, C.I.E.*

29. As regards the extent to which famine relief works have interfered with the supply of labour for private enterprise I had an opportunity of discussing the subject at Gorakhpur with Mr. Neville, and Mr. Edwards, the Assistant Agent and District Engineer of the Bengal and North-Western Railway Company. Mr. Izat, the Agent, was not at Gorakhpur at the time of my visit; but Mr. Neville has stated the difficulties which the Company has experienced in procuring labour since relief works have been in progress in two demi-official letters from which I make the following extracts—

“As regards railway work in the Gorakhpur district, the average rate paid under ordinary conditions for earthwork in banks does not exceed Rs. 1-12-0 per 1,000 cubic feet for banks up to 5 feet in height, and above that an additional rate of one anna per foot is fixed. These rates cover lead, as the side widths are laid out in a fixed relation to the heights.

“In sandy soil we have been able to get low banks thrown up at Re. 1-8-0 per thousand.

“Last year the Bhatni-Turtipur Branch was done at the above rates; and the works on the Salimpur-Burhaj Branch were started on them, and progressed fairly well till March, when labour deserted. The cause of this desertion has been attributed to certain famine works which were started a few miles to the west. The work was left standing till the end of May, nor has it been possible to resume it with a lower initial rate than two rupees, and at that rate labour is scarce. Difficulty has also been experienced as regards labour for the open line in the district.

“The contractors are petty contractors or local zamindárs.

“Mr. Edwards, from whom I have the above information, also tells me that during the *rabi* harvest labour difficulties only last as a rule about ten days.

“There has also been difficulty in obtaining skilled labour this year, specially bricklayers.

“I understand that in Chapra there is plenty of labour to be obtained this year, although there are heavy famine relief works in the district; but the contractors require an initial rate of Rs. 1-14-0, which is slightly higher than usual. Labour has, I understand, been imported on a considerable scale from the Chapra district for the Ganges-Gogra-Doab and Hájipur-Katihar lines.

"As regards the former, the schedule rates on which earthwork was started were Rs. 1-8-0 per thousand in ordinary soil for banks up to four feet in height, and one anna extra for banks over four feet. These rates had to be increased last March, when it was found that sufficient labour was not attracted by them : and the present rates are Rs. 2 per 1,000 in the Ballia district, and Rs. 1-12-0 in the Azamgarh district, where local labour is more plentiful. The enhanced rates have, as a rule, proved sufficient to attract labour ; but for more heavy banking in Turtipur station yard coolies had to be imported from Chapra. These for the most part deserted after a few days : and generally throughout the line there has been considerable difficulty in keeping labour on the works. The difficulties experienced this season are attributed chiefly to the unusually large emigration of professional diggers (Lunias and Chamars) from the districts, which took place last October and November as soon as the distress began. Large numbers are said to have been recruited by agents for the Assam-Bengal Railway. Emigration to a considerable extent takes place in ordinary seasons after the rains ; but owing to the distress this season this was more than usually the case. The nearest relief works north of the Gogra were at Sháhganj in the Jaunpur district ; but it is uncertain to what extent they draw labour from Ballia and Azamgarh districts.

"On the Hájipur-Katihar line the schedule rates were not increased, but very great difficulty was experienced in obtaining labour, and practically a working season was lost to the railway on this account. The cause of this difficulty is due to the famine with its high prices, and to the existence of famine relief works which afforded a more attractive field for labour than that offered on the railway. Efforts have been made to import labour from Chapra, Darbhanga, and Mozaffarpur districts, but with little or no effect. There has been incessant desertion of coolies after receiving advances, and contractors have had a bad time of it in consequence.

"Mr. Izat writes me that what appears to him to be required about relief works is that there should be a rule that no able-bodied person, man or woman, should be employed on relief works or receive relief within 20 or 30 miles of their homes. Big works like railways or canals should be provided to give work to the able-bodied, and they should be drafted off to them away from their homes. People who are starving or in distress for food, he adds, will not think twice about going 20 miles to get work and food. This was the rule in the Bombay famine in 1875, and worked well, and it is necessary to prevent the people being pauperised and the public funds wasted."

30. In considering this statement of the difficulties which the Bengal and North-Western Railway Company has experienced, it is hardly necessary to include among them the necessity for increasing their rates, which has been a consequence of the prevalence of high prices. It is possible that if no relief works had been started, the Company's earthwork might have been carried out by labourers of the professional class at ordinary rates ; but, as stated in paragraph 12 of my notes on the Central Provinces, the District Engineer on the Saugor-Katni Railway admitted that ordinary labourers, of whom there is usually a large proportion on all earthworks, could not get a subsistence on the works at the normal contract rates, though the Lunias could, "at extra good lift and lead rates." If no relief works had been started at all, the Company would therefore have had to raise the rates, unless it was able to obtain an adequate supply of purely professional

labourers. It is admitted, however, that there was an unusually large emigration of labourers of this class in October and November, long before relief works were started.

The competition which the railway had to face was, therefore, not that of the relief works, but of the Assam-Bengal Railway. It is not known whether special inducements or high rates were offered by the Assam-Bengal Railway; but even if they were not, the Luniabs naturally preferred to transfer their services to districts in which prices of grain ruled lower, so that an increase in the contract rates in the distressed districts was an inevitable consequence of the ordinary laws of supply and demand, wholly uninfluenced by the relief works subsequently started. And for this reason it is unnecessary to consider here the case of the Hájipur-Katihar line, where the difficulties experienced were apparently due to the fact that the schedule rates were not increased. Moreover, this line lies outside the North-Western Provinces.

In the case of the Salimpur-Burhaj Branch the complaint is that it was impossible to complete it at the rates given on the Bhatni-Turtipur Branch in the previous year; viz. an initial rate of Rs. 1-12-0, or in the case of sandy soil with a low bank, only Rs. 1-8-0. Even at these rates, however, work progressed fairly well until March, when the harvest operations were in progress, after which the works were deserted until the end of May, and it was not possible to resume them with an initial rate of less than Rs. 2, and at that rate labour was scarce.

It has, however, been shown that at the end of March piecework was introduced on all relief works in the Gorakhpur district at an initial rate of three annas per hundred or Rs. 1-14-0 per thousand cubic feet, and that this was subject to a limit of 125 cubic feet as the daily task for a working party of two or three individuals, who could thus earn no more than Re. 0-3-9 between them as a maximum, the average earning being considerably below this, and amounting only to Re. 0-1-4 per worker. It must also be remembered that after the introduction of piecework no dependants received relief in Gorakhpur. It is true that the rate of Rs. 1-14-0 per thousand on the relief works all went to the worker; whereas some portion of the rates offered by the Railway were intercepted by the petty contractors; but under all the circumstances I do not think that the Railway Company could reasonably object to a contract rate of Rs. 2, and at that rate the competition of the relief works would certainly not have been very severe. That the relief works have to some extent affected the supply of labour to the Railway is probably true. It has been mentioned in paragraph 26 of the notes that at the end of May nearly one-sixth of the diggers on the relief works in the Gorakhpur district were of the Luniab class. Probably some of these would have gone to the railway if the relief works had not been open; but it can hardly be said that they were prevented from doing so by the higher rates offered on the latter. If the Railway contract rate were Rs. 2, the attractions of the railway and relief works would have been about equal, and a number of professionals would still have gone to the latter, not because they could earn more money on them, but because they happened to be nearer their homes or for some other private reason, more convenient. If there were any difference in favour of the relief works, it must have been small, and a difference of some kind is almost inevitable as long as the object of a relief work is to give a living wage to all who resort to it: while that of the Railway Company is to get a given quantity of work done at a minimum cost.

As regards the Ganges-Gogra-Doab Railway it appears that a slight enhancement of the contract rates has sufficed to attract labour. There have been no relief works in the Ballia district, and in Azamgarh local labour is said to be plentiful even with a rate of only Rs. 1-12-0, and in spite of the existence of relief works.

The suggestion made by Mr. Izat as to the policy that should be followed in opening relief works will be more conveniently considered in my final report, and I will only remark here that the great difficulty in most provinces is to find big works like railways and canals for the employment at long distances from their homes of all able-bodied men and women, and that if they were all drafted to these works, it would either be necessary to pay them at rates sufficient for the support of themselves and those left at home, or to bring the latter on to gratuitous relief: for it would be impossible to get any work out of them when separated from the able-bodied men and women of their families.



*Note by the HON'BLE MR. C. W. ODLING, M. E., Chief Engineer, to Government, North-Western Provinces and Oudh, Public Works Department, Buildings and Roads Branch, on the Famine Relief Works, carried out in Bundelkhand—February to August 1896.*  
 —Dated 6th October 1896.

On the 11th January 1896 orders were issued by the Lieutenant-Governor to place the services of District Engineers and District Surveyors of districts in Bundelkhand at the disposal of Collectors for the purpose of carrying out famine relief works. On the 17th January telegrams carrying out this order were issued to the various officers concerned. For Public Works purposes Bundelkhand forms what is known as the 2nd Allahabad Division under an Executive (Divisional) Engineer, to whom are subordinate five District Engineers and Surveyors, Lalitpur, a civil sub-division of Jhānsi having a separate District Engineer. It may here be stated that up to the 1st April funds were provided by the civil officers, and that the duties of Public Works officers were limited to supervising and managing the works, payments being made by civil officers subordinate to Collectors. After the 1st of April the works were transferred to the Public Works Department, funds being obtained by credit orders issued by the Examiner, Public Works Accounts, and accounts rendered in accordance with Public Works rules. The works to be carried out were, however, always selected by the Commissioner, and the rate of wages to be paid determined by Collectors in accordance with Chapter VII, Famine Code, North-Western Provinces and Oudh,

2. No alteration was made in the jurisdiction of the Public Works officers; the unit remained at the civil district (Public Works sub-division) but arrangements were at once made for attaching an extra officer, to the division as assistant to the Executive Engineer, and an officer or upper subordinate of some experience to each district as assistant to the District Engineer and Surveyor. For each separate work or group of works employing about 2,000 workers, a naib tahsildār (wherever possible) was appointed officer in charge, Famine Code, paragraph 77, (after the 1st of April he was subordinate to the District Engineer) and one or more sub-overseers; those temporarily employed were called work agents. The staff in Bundelkhand was eventually strengthened by four engineers, six upper subordinates, and twenty sub-overseers, transferred from elsewhere, besides which 68 work agents on pay ranging from Rs. 30 to Rs. 65 per month (mostly on Rs. 50 and Rs. 65—one man received Rs. 100) were employed; only 12 of these men joined before the 1st of April. The ordinary Public Works work was reduced to a minimum, but whatever remained was carried out by the District Engineer in addition to the famine works. The number of naib tahsildārs or officers temporarily holding that rank employed under the Public Works Department was 63. Their salaries were disbursed by the Collectors of the districts in which they were employed.

3. On the 25th of January 1896 a meeting of Civil and Public Works officers was held near the Jakhlaun railway station to determine the system to be followed in managing relief works. On the 11th and 12th March the Lieutenant-Governor held a conference at Jhānsi, when the works to be put in hand were determined on; and His Honor decided that from the 1st of April the direct management of all but small works

[Famine Code, 65(a)] should be transferred to the Public Works Department. The orders passed by the Lieutenant-Governor are detailed in Revenue (Scarcity) Department Resolution No. 788S. of the 17th March 1896. The main points contained in this Resolution had been dealt with in orders issued at Jhānsi, but on the 28th March all details remaining to admit of the orders issued by Government being fully complied with were settled at a meeting between the Chief and Superintending Engineers at Cawnpore. On the 2nd of May the Lieutenant-Governor held a conference at Naini Tal, at which the Superintending Engineer was present, and various orders relating to the wages to be paid, and the manner in which, at the commencement of the rains, the works were to be closed, were passed. On the 25th July a final famine conference was held by the Lieutenant-Governor at Allahabad. The works were closed on the dates mentioned—Jhānsi, 30th June 1896; Lalitpur, 30th June 1896; Jalaun, 30th June 1896; Hamírpur, 15th July 1896; Bánda, 29th August 1896.

4. The system followed in carrying out relief works was much the same before and after the 1st of April, except that previous to that date all payments were made by an agent of the Collector, to whom the accounts were furnished. It is detailed in a memorandum dated the 20th March 1896, reprinted as an appendix to this note. The cardinal points were (I) the division of the workers into gangs; (II) the exaction of task work; (III) the employment of subordinate Public Works officers in sufficient numbers to set out and supervise the work; and (IV) the employment of men of some standing (naib tahsildárs), who had a character to lose, as officers in charge (paragraph 77, Famine Code). In regard to the gangs, the ticket system was used for a time, but it was found to give facilities for fraud, and eventually nominal rolls or gang registers were generally substituted. A mate was appointed for each gang. The rates of wages, Chapter VII, Famine Code, were determined weekly by the Collector, and the works to be put in hand selected by the Commissioner. Special care was also taken in regard to—

- (I) *Hours of work*.—In this respect local custom was followed;
- (II) *Shelter*.—Strong bamboo frames 6' X 4', covered with 1½" thickness of thatching grass, were used and found to give sufficient shelter from wind and sun;
- (III) *Drinking water*.—Wells containing water of good quality (later on they were treated with permanganate of potash) only were used, and the water carried by *kahárs* in kerosine tins: *masaks* were not allowed; or
- (IV) *Sickness*.—Temporary hospitals were erected, to which patients were sent, and in the case of infectious diseases, those suffering isolated until medical aid could be procured.

The Superintending Engineer makes the following observations on the system followed:—"Speaking generally, large famine relief works of short duration it is only possible to carry them through without disastrous delays when every officer engaged on them is willing, on the one hand, to take any responsibility he may find facing him for immediate settlement, and, on the other hand, to do any subordinate work that he can find time to assist in. The whole of the civil and engineering officers worked together in this spirit in perfect harmony and made all necessary references afterwards. The principle on which the works were carried on was that

the Collector best knew where relief labour could be most advantageously concentrated, and must therefore select, under the authority of the Commissioner, the works to be started; and that they (*the Collectors*) must be the final local authority as to the scale of wages, but the actual execution of the works should be carried out by the Public Works officers, who, however, depended on the Collectors for paying arrangements so far as the provision, transport, and safeguarding of the enormous sums of copper coins that were required for the purpose. Many subsidiary questions, such as sanitation, water supply, &c., formed neutral ground, on which all officers worked; in some the civil officers could do best, in others the Public Works officers were more at home."

5. A statement showing the numbers of relief workers employed week by week is appended to this note. On Numbers employed and wages paid. the 1st of April, when the Public Works Department assumed formal responsibility for the relief works, the numbers were as follows, dependants receiving gratuitous relief being included:—

Bánda	...	...	...	...	...	55,136
Hamirpur	...	...	...	...	...	36,914
Jhánsi (including Lalitpur)	...	...	...	...	...	25,343
Jalaun	...	...	...	...	...	22,058
Total						139,456

The numbers were greatest during the last three weeks of May, and the following table gives details regarding that period:—

Week ending—	Number of workers in hand.	Average daily attendance.			Average daily wage payments.	Average wage per head.
		Workers of all classes.	Dependants gratuitously relieved.	Total number.		
16th May	31	140,371	27,986	168,357	Rs. 8,573	Pis. 9.75
23rd "	30	162,394	34,001	197,395	10,500	10.21
30th "	38	142,590	32,055	174,645	8,246	9.06

The Superintending Engineer makes the following remarks on the subject:—"Thus for a short time the attendance on the departmental relief works touched 200,000 persons, of whom 17.22 per cent. were in receipt of gratuitous relief. The highest wage reached was that of the week ending 23rd May, when it was nearly 10½ pies per head. This was due to a temporary rise of prices. The workers in these three weeks were respectively 83.39 per cent., 82.78 per cent., and 81.65 per cent. of the total numbers attending." The classification of workers and dependants was vitiated by endeavours on the part of the subordinates in immediate charge of relief works to satisfy their view of the requirements of paragraph 100, Famine Code, limiting the proportion of dependants to 10 per cent. Children of very tender ages were returned as workers. Eventually orders were issued that children under 7 years of age were to be returned as dependants and not as workers. The Superintending Engineer gives the following table as showing the numbers of workers and dependants

abstracted from all the daily reports received after the classification had been rectified as stated above :—

Class.						Workers.	Dependants gratuitously relieved.
Men	...	...	...	...	...	100-00	4-15
Women	...	...	...	...	...	165-46	54-84
Children	...	...	...	...	...	140-84	112-13
Total						406-30	171-12
GRAND TOTAL						577-42	

He observes :—“Thus we get that 100 men, a considerable proportion of whom were unfit for hard digging, had to find earth for 306 women and children, and the products of their labour had to bear the wages of 171 dependants gratuitously relieved. The work of the actual diggers was thus quite overrun by the fillers, and its cost greatly increased by the wages of dependants. As one result of the excess of women and children, there was vastly less loss of efficiency in digging tanks than in raising roads, because tank earth is damp and soft just below the surface, and diggers can excavate a larger quantity of it : while the length must be carried is so great that the excessive number of carriers can be fairly well utilized.” The workers were of all classes and castes and were employed according to their abilities; for instance, small landowners were employed as mates, shopkeepers in helping to lay out and measure works, and Brahmans and Kahars on the water supply. The number of persons reduced to relief for one day, including dependants, was, previous to the 1st of April, 2,303,100; average wages, 7-99 pies, after the 1st of April 12,843,200; average wages, 8-69 pies. The cost to Government, including all incidental charges (tools, hutting, temporary establishment), of persons relieved after the 1st of April was 10-69 pies per person.

6. Shortly after the works started small-pox appeared; it was however, not of a severe type, and native Sickness. generally do not fear it. On the 28th April cholera appeared in Banda; on the 2nd May it appeared in Hamirpur; and in June in Jhansi. There had previously been an outbreak in Lalitpur on the 4th April. Jalaun was remarkably free from disease. The sanitary precautions taken have already been mentioned.

7. There were three main classes of work :—

I.—Roads embanked and otherwise repaired.

II.—Small roadside tanks deepened 4 to 8 feet, the work being done along with the roads.

III.—Large tanks deepened.

In regard to I and II, it was found, when distress appeared, that in places there was a deficiency of suitable work. It was then decided, as the roads in Bundelkhand had mostly been much worn, to cover such roads with 12 inches of earth and to deepen all tanks within a furlong of roads, the Collector's approval as to the tank to be dealt with being first obtained. The effect of these measures was to double the mass of work without requiring any larger organization for supervision, and they were approved of by the Lieutenant-Governor on the 14th April 1896. The works to be carried out had already been selected by His Honor at Jhansi

on the 11th and 12th March. In Banda a little quarry work was carried out after the rains had commenced. The large tanks (III), it has already been stated, were found very suitable inasmuch as a large number of women and children could be used to a few diggers.

The works under (I) were largely, if not mainly, feeder roads to the Indian Midland Railway.

8. Very early in the famine it became apparent that, in view of the Control exercised by Chief and Super-intending Engineers and Collector, provision of funds and supervision, the Chief Engineer should be promptly informed as to the numbers of famine works, the expenditure incurred, the price of grain, the average wages, and other particulars. Accordingly, on the 14th March, orders were issued for the submission direct by District <sup>Engineers</sup> <sub>Surveyors</sub>, commencing with the first Saturday in April, of a form giving this information. This return was found to be so useful (and, being submitted direct by the District Engineers, received comparatively so early) that it was regularly submitted for the information of the Lieutenant-Governor, and was found useful in very many respects. It enabled enquiries to be at once instituted in regard to seeming irregularities, any departure from standard wages being at once apparent as well as any differences, compared with previous returns, in the numbers of workers. From every famine relief work a daily postcard was sent to the Superintending, Divisional, and District Engineers, and the former also received a weekly form corresponding to Famine Code Form No. III. The Collector depended on Famine Code Form No. III, of which the District and Divisional Engineers received copies. The Superintending and Divisional Engineers made separate tours, so that all works might be visited as frequently as possible and any irregularities corrected.

9. The statement below shows the expenditure incurred on roads, small tanks being included therein; Material results. works executed before the 1st of April are not shown :—

District.	Length of roads operated on.	Cubic feet of earth-work done.	Approximate wages (exclusive of gratuitous relief).	Rate per 1,000 cubic feet.	Rate per mile.
			Rs.	Rs.	Rs.
Banda ... ..	Miles. 116-00	15,354,870	2,50,575	18-32	2,160
Hamirpur ... ..	104-87	9,710,577	68,346	7-00	655
Jhansi ... ..	63-00	8,847,479	95,937	10-84	1,523
Jalaun ... ..	62-21	8,010,129	46,050	5-75	740
Total ... ..	345-58	41,923,055	4,60,908	10-99	1,333

It will be seen that 346 miles of road were repaired at an average cost of Rs. 1,333 per mile. The rate for earthwork averaged very nearly Rs. 11 per 1,000 cubic feet. In regard to this very high rate, the following explanation is offered by the Superintending Engineer :—“Three-fourths of the work done was on roads in black cotton soil in the height of the hot weather. This kind of soil is so extraordinarily hard when stone dry that it cuts with the greatest difficulty, and is never worked under that condition. In the hardest stratum every stroke left a glazed tool mark, the glitter of which along the borrow pits was a most striking sight to see, and for these we had to get picks and specially narrow *phauras* (hoes). The quantity of work could not have been done at all at that season under any ordinary conditions of labour supply; but if that

quantity had been done at a suitable season, the cost would have been certainly not under Rs. 4 per 1,000 cubic feet." The Superintending Engineer has omitted to state the increase in rate due to the large number of carriers compared with diggers (306 to 100). That this excessive proportion of carriers unfavourably affected the cost of road work where the borrow pits were shallow and the earth had to be carried but a very short distance is obvious from the statement following giving particulars regarding work executed on large tanks :—

District.	Cubic feet of earthwork done.	Approximate wages (exclusive of gratuitous relief).	Rate per 1,000 cubic feet of earthwork.	Number of tanks.	Cost per tank.
		Rs.	Rs.		Rs.
Bánda ... ..	2,148,638	25,866	12.04	10	2,586
Hamírpur ... ..	8,106,098	19,962	6.43	9	2,218
Jhánsi ... ..	923,861	5,138	5.56	3	1,712
Jalaun ... ..	7,805,507	25,734	8.30	25	1,029
Total ... ..	13,984,102	76,700	5.48	47	1,677

It will be seen that the rate was Rs. 5.46 per 1,000 cubic feet only against Rs. 11 per 1,000 cubic feet for roads, though both lift and lead were greater. No useful comparison can be instituted between the rates on these works and those carried out by zamíndárs on which selected labour only was employed.

The higher rate per 1,000 cubic feet of earthwork executed both for roads and tanks in Bánda compared to the other three districts was due to two causes : (I) the unexpected and excessive numbers who crowded on to the works when they were first opened, overpowering the supervision then provided—more than half the relief given was in Bánda ; and (II) some tenderness in the early days of the famine in recovering fines inflicted for short work.

10. The expenditure incurred on works accounted for in the Public Works Department, *i.e.*, carried out after the 1st April, is shown in the statement below :—

District	Expenditure by districts.				Remarks.
	In wages of relief works.	In gratuitous relief.	In all other payments, as tools, hutting, in temporary establishment.	Total.	
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	
Bánda ... ..	2,76,441	21,841	54,244	3,52,526	
Hamírpur ... ..	88,308	12,097	29,804	1,30,209	
Jhánsi and Lalitpur ... ..	1,01,075	7,199	22,206	1,30,480	
Jalaun ... ..	71,784	2,621	27,468	1,01,873	
Total ... ..	5,37,608	43,758	1,33,722	7,15,088	

Of the expenditure, it may be taken that rather more than two-fifths represent the value of the work done if carried out at the most suitable time of the year with labour appropriate to the work, and also assuming that there was no loss by sickness or other causes. If carried out, more especially the road work, in the months when the work was actually executed, it could not have cost less than two-thirds of the amount spent. Taking, however, the former assumption, relief has been afforded at a cost, exclusive of the value of the work done, of about 5½ pies per person per diem.

11. The statement following shows the works carried out under the supervision of Public Works officers previous to the 1st of April, together with the quantity of earthwork executed and the approximate expenditure incurred exclusive of gratuitous relief and some classes of miscellaneous expenditure. This expenditure was accounted for by Collectors to the Accountant-General.

District.	Length of road operated on.	Cubic feet of earthwork executed.	Approximate expenditure, exclusive of gratuitous relief.	Remarks.
			Rs.	
Bānda ... ..	38½	4,051,838	28,477	One tank also deepened.
Hamīrpur. ... ..	55	3,778,309	36,610	
Jhānsi, including Lalitpur,	19	2,283,382	17,907	
Jalaun ... ..	20	1,763,937	17,726	
Total ... ..	132½	11,877,486	1,00,720	

12. The officers and subordinates of the Public Works Department employed on the works, of which an account has been given in the previous paragraphs, carried out their duties in a manner which, I think, justifies me in saying that they deserve credit for their labours, which were throughout onerous and trying. I beg to bring specially to the notice of Government the services of Mr. C. G. Palmer, Superintending Engineer (temporary rank), on whom the responsibility of carrying out the works satisfactorily, both as regards their execution as works of public utility and as relief works, chiefly rested. Mr. R. C. Battie, the Executive Engineer of the 2nd Allahabad Division, in which all the works were situated and by whom all the accounts were compiled, is, in my opinion, also deserving of much credit. The Superintending Engineer specially names Mr. R. M. Thompson, District Surveyor of Bānda, Bābu Kula Nand, District Surveyor of Jalaun, and Mr. A. Cuerden, District Surveyor of Hamīrpur, as deserving of special mention amongst the District Engineers and Surveyors. He also commends the work done by Bābus Nathu Mal, Jugal Kishore, and Sergeant Wallace, Overseers, and nine naib tahsildārs and seven sub-overseers. I regret to say that of the naib tahsildārs, Munshi Muhammad Ali, Bābu Joti Parshad, died on the works, also Sub-Overseer Mr. J. C. Rose.

**FINAL REPORT ON FAMINE RELIEF OPERATIONS IN THE  
1st CIRCLE, NORTH-WESTERN PROVINCES AND OUDH,  
PROVINCIAL WORKS, BY Mr. J. W. ALEXANDER,  
SUPERINTENDING ENGINEER, DATED 28TH AUGUST  
1897.**

THE attention of officers of the Public Works Department to possible measures to be adopted for the relief of famine was first directed by the Commissioner of Rohilkhand as early as in February 1896. Scarcity had already shown itself in Pilibhít, and was anticipated to a greater extent still in the other districts of Rohilkhand, especially in Sháhjahánpur. From that time the Public Works establishments in all the districts were employed in the preparation of projects for relief works, generally in the form of estimates for raising the surface of unmetalled roads. This is, in fact, almost the only suitable work that can be devised for any large numbers of people in this tract of country. A similar note of warning having been raised in the Agra Division, similar measures were at once adopted for the preparation of projects. Having thus received fair and timely warning from the civil officers, the Public Works Department was enabled to be ready, by the commencement of the cold season, with a complete set of projects for relief in all parts of every district, calculated to give employment to about 10 per cent. of the total population for a period of four months.

2. Projects then being in readiness, attention was next directed to the supply of establishment and tools and plant. This circle was very badly off for establishment, as all that could possibly be spared had, naturally, been drafted to the relief works already started in the Allahabad Division. Three upper subordinates had thus been sent off, leaving the ordinary establishment of the Rohilkhand and Agra Divisions short by four upper subordinates. The sanctioned scale being thirteen, only nine were present, of whom six were in charge of districts, leaving only three in two divisions available for famine duty. Applications, however, from persons seeking employment came pouring in. It was very remarkable what an immense number of applicants based their claims to employment upon some sort of engineering knowledge. Many had actually been employed in the Public Works Department (who avoided mention of the terms under which they had left it), some were pensioned subordinates, and a large number were men with certificates of having passed through the lower course at the Thomason College. Most of them could, at any rate, prepare the simple projects required for the estimates, and many of them did very well afterwards as work agents. At any rate such as they were, they were all we could get.



This preparation of projects was also carried out through the districts of the Meerut Division.

3. The large staff of Náib Tahsildárs who were to act as "Officers in Charge" of the works were supplied generally by the Board of Revenue, and the number of them obtainable was always adequate to our needs.

4. The tools and plant required were, of course, of the simplest description, *phaorahs* and baskets. Under orders of Government every jail in the Provinces began to turn out baskets by the thousand, and afforded welcome relief to our anxiety on this account. But our chief care was for *phaorahs*. We were the last circle (I think) to start works, and large quantities must have already found their way to Allahabad and Oudh. Our desire was of course to obtain them, as far as possible, locally, in order that the money might be kept in the place. We obtained a great many in this way. For instance, in Bareilly we got 9,000 *phaorahs* in a fortnight, and Mr. Bird, Executive Engineer, thinks that twice the number could have been obtained. But the local supply did not suffice, especially in Agra, and we were glad to find that all our indents upon Indian tradespeople were duly complied with, enormous numbers having evidently been imported by them from England.

5. Preliminaries being thus arranged we were ready to commence work wherever called upon by the Civil Officers. At first operations were carried out strictly under the regulations of the Famine Code. It is not necessary to specify these regulations further than to say that, under them, all sorts of people with their "dependants" were taken on to the works. All received payment of at least the rate of the "Famine Wage," that is, the smallest amount calculated to preserve life in a human being, such "task" as was possible being exacted from all who could work. It being found that works carried out under this system were somewhat of an encouragement to the idle on account of the great difficulty of exacting a full task; that they were expensive and troublesome on account of the large number of children and "dependants;" and that they were unsuited to the conditions that prevailed in Agra and Rohilkhand; what was known as the "Intermediate" system was introduced in the beginning of 1897. The object of this new system was to serve as a "test" by excluding dependants and persons unable to work. Instead of payments being made individually to the workers (as under the Famine Code), the work was to be carried out under an intermediary person, a sort of contractor, whom it was hoped to procure from the class of village "pattidars" or other people of local influence. To this intermediary agent would be paid a rate for work, ranging from 20 per cent. upwards, in excess of the ordinary rate. He was expected to employ all persons who came to him for work, able-bodied or

otherwise recouping his losses on weakly workers from the excess rate allowed him. This system was not found to work well. The class from whom the intermediary agent was expected to come forward held aloof. The work fell into the hands of ordinary contractors, or other persons whose only idea was to make money from the Government. They refused to employ any but able-bodied workers, and the system was not successful either as a "test" or for "relief" purposes.

6. Finally, in March 1897, orders were issued for the introduction of a new system, which might be described as the "Intermediate" system without an "intermediary." All applicants for work, who were able-bodied and above seven years of age, were employed. No "dependants" were entertained. A full task of work was exacted from each individual worker, varying in amount according to local conditions of amount of distress, nature of soil, length of lead, &c. To this prescribed task (of cubic feet of earthwork) a prescribed rate was attached, rateable fines being deducted for the non-performance of it. Taking, for instance, the ordinary task of earthwork at 125 cubic feet, the rate of grain being high, and the distress acute, the *maximum* wage to be earned would be, for a man eight pice, for a woman seven pice, and for a working child five pice, or altogether five annas for the party. At this rate earthwork would be paid for at the rate of Rs. 2-8-0 per thousand cubic feet, *which is the maximum*. The ordinary wage with grain at 12 seers to the rupee is six pice, five pice, and four pice for a man, woman, and child, respectively, giving a rate of Re. 1-14-0 per thousand cubic feet of earthwork. And, perhaps most important of all, no "minimum wage" was given as had previously been the case under the regulations of the Code. This solved the great difficulty experienced in dealing with the large numbers who were content to spend their days in idleness (as far as they were allowed to do so), and earn daily the certain wage which was at any rate enough to supply them with food. Now each received payment for exactly what he performed. If he did nothing, he got nothing.

7. The advantages and disadvantages of the several systems may perhaps be summed up as follows:—

- (i) The Famine Code Regulations are applicable where "tests" have shown that distress is acute. In this case enormous numbers of people may be expected on the works, with such a totally disproportionate quantity of weakly persons, dependants, and children, that it is impossible to exact from any but the minority, who are able-bodied (more or less), a task, the payment for which would amount to, or even approach, the scale of the wage of bare subsistence.

- (ii) The "Intermediate" system applies where distress is not so acute, as was the case in Rohilkhand. The class of "village pattidars" held aloof, as has been said, and the works were taken up by ordinary contractors. No other work being then available, they entertained all the ordinary population of skilled *beldars*—and a certain number of unskilled and weakly persons, the effect of whose inaptitude would be well covered by the higher rates allowed. But they naturally took as few as they could.
- (iii) The third system worked well in Agra where the distress was greater than in Rohilkhand, but not so distinctly acute perhaps as in other divisions. The people did not come in unmanageable crowds; the number of weak persons, children, and dependants was not so disproportionately great but that the ordinary able-bodied workers of the community could support them all, as well as themselves, by the liberal rate of wages for work.

8. In the organization of relief works, every effort was made to impose individual tasks upon the workers, so that each person might be actually dependent solely on his own exertions for his subsistence. But it is very difficult to work in practice. To locate each worker in a separate pit,  $12\frac{1}{2}$  feet by 10 feet (as illustrated in Mr. Sheridan's report), entails, first of all, a considerable amount of labour in originally "laying out." Then insuperable difficulty was found where, as on the sides of the old Moghul road in Etawah, almost the whole of the available side-widths of land were filled with the remains of old excavations, and impeded with trees and *thaonlas*. On the Raya and Saidabad road again, in the Muttra district, the cultivated land came so close to the road in places that deep excavations only three or four feet wide (just as wide as a man could work in) were only possible. In such cases it is not possible to lay out individual tasks, and the system of gangs had to be introduced. Such gangs would generally consist of eight diggers and 16 carriers, or 24 workers in all, under the charge of a mate, selected, if possible, from amongst the workers themselves. This forms the unit of the working body. The details of the rest of the establishment forming "a charge" are given in Mr. Sheridan's report.

9. It was found, at first, that the people were not satisfied unless they received payment each day for the day's work. This necessitates, more or less, a stoppage of the work early in the afternoon to enable measurements and calculations of wages to be made. Afterwards, when they got used to the system, they were quite content to receive payment the next morning—thus allowing the establishment the whole of

each evening clear making up their accounts. Payments, after a little practice, were made with great rapidity, each disbursing officer coming on to the work in the early morning with the exact pay of each gang separately made up. Each gang mustered and sat down under its own distinguishing number-board, and each worker received in his own hand the wage which he had earned.

10. No difficulty was experienced in the supply of food, *baniyas* with well-stocked shops being always on the ground.

No "gradual reduction in rates" took place after the standard basis of food at 12 seers for the rupee had been fixed; but pressure was put upon the people by trying to exact heavier tasks. In some cases of course where the work was easy, tasks of as much as 200 cubic feet were obtained, but in general it was found that 125 or 130 cubic feet was as much as could fairly be expected. Statements showing the whole expenditure under all heads, the amount of work done, and the rates paid, will be found in the reports by Messrs. Sheridan and Bird. And the graphic diagrams that accompany the reports show clearly, and at a glance, the fluctuations in the numbers applying for relief.

11. The greater part of the works, in fact the whole of them, except in the Agra district, consisted in raising the surface of unmetalled roads. In Agra itself for the relief mainly of the indigent population of the city, excellent work was afforded by levelling the ravines that exist between the Fort and the Táj. Here as many as 17,000 people were usefully employed in converting a net-work of unsightly and useless ravines into what it is hoped may eventually become an ornamental park. Unfortunately the work was interrupted by the occurrence of an outbreak of cholera which necessitated the breaking up of the relief works. The work, though not completed, is still a most useful one, and, if funds are forthcoming, will prove to be the foundation of a most pleasing accessory to the surroundings of Agra.

12. A great deal of useful work has also been done in cutting down the berms, opening out the side-drains, and generally rectifying the contours of metalled roads about Agra. Such work will not give employment to large numbers, but it was found very useful for drafts from the large work at Agra, and it will be a lasting benefit to the roads.

13. In the Etáwah district all the relief work was concentrated on raising what is known as the old "Moghul road," the old line of communication leading from Delhi through Agra and Etáwah to Kálpi, and proceeding on to Cawnpore and eventually to Calcutta. To this day travellers are seen and droves of cattle, from the rich breeding districts about Kosi (in Muttra) and Gurgaon, on their way to market in Calcutta by this route. The road is a very fine one, well provided with avenues, groves of trees, *pakka* wells, and camping-

grounds, but so worn away by time and traffic that it required much raising all through, as much as four and five feet in places. Eventually it is proposed to metal it. This raising of 26 miles in the Etawah district has provided a steady occupation all this time for some 15,000 people.

14. Allusion has been made to the outbreak of cholera at Agra. This might have been a most serious matter if once the disease had established itself amongst the 15,000 people at work within a stone's throw of the Fort, inside the limits of the Agra Cantonment, and close to the Táj and town of Tájganj. Great credit is due for the promptitude and rapidity with which the people were drafted away to other works by Mr. Sheridan, aided by Rai Sohan Lal Sahib. In the course of 12 hours every man, woman, and child was removed, and the imminent probability of a severe catastrophe was averted. When once the crowd was broken up and dispersed, the disease rapidly disappeared. Mr. Sheridan, in his report, relates that the cause of cholera seems to have been the consumption by Chamárs of unwholesome meat in the Agra city, to which the workmen returned each evening, where, of course, no supervision could be exercised over their food.

15. The only case of competition with private employers that came to notice occurred in the Etawah district. No complaint was made to the officers in charge of the work; but a series of letters appeared in the *Pioneer*, accusing the Public Works Department of pampering the relief-workers, of general incompetency in the management of the works, and of spoiling the labour market for private employers. The writer's facts and premises, being inaccurate, his deductions were worthless—and his complaints resolved themselves into a general sort of ill-natured abuse of "the Government" all round. One Executive Engineer of the Irrigation Branch, it may be mentioned, finding difficulty in getting a few labourers to repair a *rájbaħa* (or similar work), wrote, requesting the Superintending Engineer to "take steps" that the working of the 15,000 famine coolies, hard by, did not in future affect his rates for earthwork. Beyond these cases no complaints were made.

16. The people on the whole seemed happy and contented on the work. Except at Agra, where they returned each night to their homes in the city, they lived generally on the works with all their belongings. There the ordinary percentage died, and there some of a new generation were born. The only complaint they ever made was a stereotyped whine that "their stomachs were not full." If a good-humoured suggestion was made to them that it was open to them to go back to their villages, they generally returned to their work with a laugh. It became in fact the normal sort of greeting to the "Sahib" when he appeared, and was not to be taken seriously.

17. Once in Rohilkhand, as Mr. Bird reports, some mischievous persons spread about a rumour that the names of the people were being taken down with the object of drafting them to the depopulated city of Bombay. They left *en masse*, but returned in a day or two. In Agra once, when free gifts of clothing were being offered to the women on the part of the Indian Famine Fund, they shouted out "Murish, Murish" and ran away incontinently. Their minds were evidently filled with some tradition of their women being enticed to the Mauritius by the gift of clothes. But if the people who were relieved were inspired with any feeling of gratitude to the Government who did so much for them, they certainly repressed any exhibition of it.

18. I would, in conclusion, bring to the notice of Government the services of the following officers :—

*Mr. C. J. Sheridan, Executive Engineer, Agra Division*, deserves special recognition for his services. He has displayed great ability and untiring energy both in organization and in the execution of works. His intimate knowledge of the country and the people, and his personal influence with his subordinates, have gone far towards carrying the works through to a successful issue.

*Mr. G. B. Bird, Executive Engineer, Rohilkhand Division*, has done excellent work. He was always thoroughly prepared for any emergency that might arise, and his organization and supervision of the works themselves was admirable.

*Rai Sohan Lal Sahib, Executive Engineer, District Engineer, Agra*, was indefatigable in his exertions. On him fell the brunt of the actual executive work in the many charges of the Agra district. Every call made upon him was met with cheerful alacrity. He has previously shown himself a capable officer, and I would now beg leave specially to recommend his services for recognition by the Government.

*Mr. W. H. Clifford, Assistant Engineer, District Engineer, Moradabad*, had charge of the first considerable relief works in the Moradabad district. He showed excellent powers of administration, and carried out his work very satisfactorily.

*Mr. T. S. Fitzpatrick, Assistant Engineer, District Engineer, Etawah*.—This young officer has been in charge of the extensive relief works in the Etawah district from the very beginning. Though inexperienced, and at first somewhat insensible to the responsibilities of his position, he has latterly shown exemplary zeal and energy, to which the Collector of Etawah has drawn special attention.

*Captain Ashworth, B.E.*, was attached for famine duty, and rendered excellent service in the supervision of famine works in the Muttra district.

19. In conclusion I would ask to be permitted to express to Mr. E. Rose, Commissioner of the Agra Division, on behalf of myself and of my establishment, our grateful sense of the

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kindness and consideration which he has shown to us. Acting throughout entirely under his orders, we are sensible of the skill with which he has directed operations, of his forbearance from any but the most necessary criticisms of our errors, and of his ready help in every difficulty.

We are also sensible of the cordial assistance extended to our establishment everywhere by the District Officers.

MEERUT:                    }           J. W. ALEXANDER,  
*The 28th August 1897.*    }           *Superintending Engineer.*

A Report on the Famine Relief Operations in the Agra Division, 1896-97 and 1897-98, by Mr. C. J. Sheridan, Executive Engineer, Provincial Division, Agra, dated 25th August 1897.

LITTLE or no information is forthcoming regarding the famines that took place in these Provinces before the occupation of the British. Previous famines in the North-Western Provinces noticed. In fact, very little information is available about the famines that prevailed at the end of the last century.

2. In 1803 there was a failure of rain in the North-Western Provinces, which led to a widely-extended famine in 1804. The central part of the present North-Western Provinces and Oudh was the severely afflicted tract. The year 1837 witnessed the first very severe famine of the century. Among other tracts, what is now called the Agra Division, felt its intensity. The cause of the famine was the almost total failure of rains in 1836. Deficiency of the monsoon in 1860 resulted in another famine in the North-Western Provinces. The drought of 1868 again caused a severe famine in the Province. Another famine was caused by the failure of rains in 1873. The severe distress of 1877 would have probably developed into a famine but for the timely rainfall in winter.

3. This part of the country suffered most from droughts, and had been subject to severe scarcity. The tracts between the Ganges and Jumna, comprising the districts of Mainpuri, Etawah, Etah, and Farukhabad, are now almost entirely protected by the Ganges Canal. A large portion of the Muttra district west of the Jumna, and a portion of the Agra district south-west of the Jumna, are also protected by the Dehli-Agra Canal. But the tracts south of the Jumna below Agra, and the portion of the Muttra district east of the Jumna, are poor in soil, having no facility for canal irrigation, and are severely afflicted whenever drought visits the Province.

4. Scanty rainfall during 1895-96 and the early cessation of rains in 1896-97 made it apparent that there would probably be a scarcity in at least some of the districts of the Agra Division, and if the winter rains failed or were insufficient, this scarcity would probably intensify into famine. Scanty rainfall in the last year and threatening of famine.

5. The culturable area in this division may thus be described: first, tracts protected by canals; secondly, tracts protected by wells and tanks; and, lastly, tracts which have to depend entirely upon the rainfall. General description of the division.

*Muttra district.*—Taking the districts *seriatim* and commencing with Muttra, western portions of which are irrigated by the Ganges Canal, has a culturable area of 208,787 acres,



of which 143,818 acres are irrigated by canals, *viz.* for *khariḥ* 54,661 and *rabi* 89,157 acres. The area irrigated by wells and tanks is 133,024 acres, of which 14,341 acres are for *khariḥ* and 118,683 for *rabi* crops.

*Agra district.*—The total culturable area of the Agra district is 68,311 acres, portions of which are irrigated by the Delhi-Agra Canal, irrigated area being 19,522 and 46,966 acres for *khariḥ* and *rabi* crops, respectively; 204,842 acres are irrigated from wells and tanks. In the tahsils of Bah, Itmádpur, and Fatehabad, the water-level is some 80 feet below the surface, so that irrigation from wells is very limited.

*Etáwah district.*—The south-western part of the Etáwah district is analogous to the pargana of the Agra district above referred to, water-level being 80 to 100 feet below the surface of the soil. But the district is traversed throughout its length by the two main branches of the Ganges Canal, and the irrigated area from this source for *khariḥ* and *rabi* amounts to 281,290 acres. The area irrigated from wells is limited to 81,742 acres. The total culturable area amounts to 382,033 acres.

*Mainpuri district.*—The district of Mainpuri is traversed by four main branches of the Ganges Canal, the whole of the district being practically irrigated by canals, such irrigated area is 190,406 acres for *khariḥ* and *rabi*.

*Etah district.*—The condition of the Etah district is similar to that of Mainpuri, the entire district is practically protected by canals, the irrigated area from this source being 91,907 acres.

*Farukhabad district.*—A large portion of the Farukhabad district, amounting to 110,722 acres, is irrigated from wells and tanks. Two branches of the Ganges Canal traverse through it, irrigating an area of 38,572 acres only.

*In the Agra Division.*

	Acres.
The total culturable area ... ..	1,365,333
Area irrigated from canals ... ..	521,357
Ditto wells and tanks ... ..	815,297

6. As August and September passed away without any rain, it soon became evident that the *rabi*

The first conference and arrangements made for the threatened distress.

would be a poor crop, and in some districts it would be a total failure. With a view of concerting measures to meet the threatened distress, His Honor the Lieutenant-Governor and Chief Commissioner decided to hold a conference with the officials of the Agra Division on the 9th November 1896. The conference duly assembled on the date fixed. The condition of each district was carefully gone into by His Honor; the area to which the drought extended, and the probable outturn of the crops was considered. The approximate number of people for whom relief would at once be required was ascertained, and also the probable number who were to resort to works if

the winter rains failed. Appendix A shows these approximate numbers and the actual number that has been relieved. Prior to His Honor's visit a programme of suitable famine works (Appendix B) had been prepared by the district officials; this was carefully gone into and scrutinized by His Honor. The result of the conference was that relief measures were sanctioned for the districts of Muttra, Agra, and Etawah, and discretionary power was given to the Commissioner to start works in other districts of the division as necessity arose.

7. Before commencing to enumerate the different relief works which were started in this division, it is well to have a review of the various systems under which the works were carried out. They are as follows:—

The various systems under which the relief works were carried out.

- (1) Test works.
- (2) Regular relief works under the Code.
- (3) Intermediate system (A, B, and C).

Nos. 1 and 2 were carried out under the rules of the Famine Code, the details regarding organization, establishment, &c., being regulated by the instructions laid down in the memorandum attached to Resolution No. 18P.W. of 1896, which needs no further comment.

*Intermediate system (A).*—This may be described as a system of test-work introduced in a district threatened by famine, but in which distress had not officially been recognised; as it occupied a position between the systems of ordinary works and those conducted under the strict conditions of the Famine Code, it was named "intermediate." It was practically on the system of petty contract. The contractor or middleman was, as far as possible, a petty zamindár and not a regular contractor. He was to pay his workers a fixed wage, the rate paid to him being 20 per cent. in excess to that paid to the workpeople by way of remuneration, which was a set off against the cost of establishment which Government would have had to provide.

*Intermediate system (B).*—It was soon found that under the above system the contractor was induced to employ only the more able-bodied and to exclude the weakly, who stood most in need of support. Hence a modification in the system was introduced, by which the contractor or middleman was eliminated. The work was laid out, supervised, measured and payments made by Government officials. The work was continued to be treated as piece-work and not as task-work under the Famine Code. The payments were made in accordance with the amount of work actually done. The maximum wages that could be earned were fixed; also the minimum.

*Intermediate system (C).*—Experience soon proved that more stringent labour test was required. The Intermediate system (B), though imposing a maximum wage limit, also included a provision for payment of a minimum wage: the result

was that the lazy and the idle were content to get the latter, practically doing little or nothing. Under the Intermediate system (C), this minimum rate of wage was abolished, each worker receiving payment for the exact quantity of work done.

8. Under all the Intermediate systems the wages paid were supposed to be sufficiently liberal to enable the workers to support, not only themselves, but their dependants. No works were allowed on Sundays: the worker could earn sufficient during the six working days to keep them for the entire week.

Non-payment to dependants: wages sufficient for dependants and Sundays.

9. *Famine relief works.*—The following is a description in detail of the different works which were carried out in this division:—

*Muttra district.*

*Baldeo and Itmadpur, IIB class road.*—The first relief work in this district was started on the Baldeo-Itmadpur road on the 2nd December 1896, as a test-work under the Code system, and consisted of raising and improving the embankment of this unmetalled road. The number of people on the work on the first day was 244, which went on steadily increasing and reached a maximum of 6,000 on the 25th January 1897. The work was practically completed by this time, and the workers were drafted to another work. The total cost of the work was Rs. 13,988, of which Rs. 13,225 were actually paid to workers.

*Raya and Sadabad road.*—This work was started on January 27th, with drafts from the Baldeo-Itmadpur road. The number of labourers rapidly increasing, two charges were formed, one at each end of the road. The number on these works reached 26,658 towards the end of February. In the third week of February a new charge was started at the centre of the road, and labourers drafted to it from the end charges. The work on this road consisted of constructing a new V class road between the towns of Raya and Sadabad *via* Anaura, a distance of 18 miles. Owing to the suspension of gratuitous relief, the number began to decline after the 26th; but the work was nearing completion by this time. The total cost of the work has been Rs. 60,908. The total number of people relieved was 799,520.

10. As it was evident that the work on the Raya-Sadabad road would not employ the numbers present for more than a few days, a new work was opened on the 10th March 1897, under the Intermediate system. The labourers of the Sadabad section of the Raya-Sadabad road were drafted on the 13th, as well as from the remaining two charges. But very few of the workers went to the new work, so much so, that out of the 10,000 people present on the old charges on the 13th, only 244 presented themselves on the 15th at the

Improving the berms and opening side drains of the Agra-Aligarh road.

new work. The ripening of the *rabi* harvest and approach of the Holi festival were the chief causes of general decrease. On the 19th March 1897 there were only 22 workers in all. The labourers began to increase again after the Holi festival, but they never approached the original maximum. The work was closed on the 19th July 1897. The total expenditure incurred on this work is Rs. 5,871. There has been no outbreak of any disease.

11. Relief work on this road was opened under the Intermediate system (C) on the 15th March 1897. The total expenditure has been Rs. 3,337, the amount paid directly to workers being Rs. 1,882.

Improving the berms and opening side drains of the Agra-Muttra road.

12. This work was started on the 7th June 1897. Total expenditure has been Rs. 5,327, of which the workers received Rs. 3,674.

Improving the berms and side drains of the Muttra, Kásganj, and Bareilly road.

13. There has been no outbreak of any disease in the district. The rainfall caused a great diminution of numbers on the works, and it was found advisable to close the works, which was done on the 19th July 1897.

General remarks, Muttra district.

14. The total number of units employed in this district from the commencement to the close is 1,146,117. The work consisted practically of earthwork, and was completed at a cost of Rs. 3-2-7 per 1,000 cubic feet. The total expenditure incurred is Rs. 76,608. Not a single death occurred on the works from epidemic diseases. The average task done by the generality of workers is 16·17.

*Agra district.*—Test relief works were first started on this road on the 14th December 1896, under two officers in charge—one located at Bah and the other at Fatehabad. The district was subsequently formally declared distressed, and the work was then brought under Code rules. It was again converted into Intermediate system (C) on the 25th March 1897. The road is an important one, and will on completion afford a direct metalled communication from Agra to Etáwah. The total number of units relieved is 291,881 at a cost of Rs. 22,690, of which Rs. 15,659 was paid to workers. Earthwork of 25 miles has been completed.

Raising and metalling the Fatehabad to Kachora Ghát IIB class road.

15. In order to provide for the people seeking employment in the vicinity of the Agra city, this work was selected with two-fold objects first, as a most suitable relief work which could employ a large number of persons; and, secondly, with a view to converting the present unsightly ravines and mounds into a handsome park. The work was started on the 26th December 1896 as an Intermediate (A) work under the petty contractors; but on the Agra district being subsequently recognised distressed, regular Code system was introduced on

Levelling the ravines and mounds between the Fort and Táj.

the 21st January 1897. People began to flock rapidly to this work, which had to be divided into separate charges, as the number increased. On the 28th February 1897 the work consisted of four distinct charges, the numbers then present being 17,622. The work was again brought under the modified Intermediate system (C) on the 25th March 1897. The progress, water, and sanitary arrangements had so far been satisfactory; but cholera making its appearance in the beginning of May, the labourers had to be transferred to other works from 8 to 12 miles outside of Agra, and it was thought desirable to close the work. The work of levelling has been partially carried out, and the main roads laid out. The total expenditure, exclusive of tools and plant and establishment, has been Rs. 95,060. The amount paid directly to workers was Rs. 79,637.

16. The work was again resumed on 2nd August 1897, and is still in progress. On the work being re-opened there was a great rush of labourers, which amounted to 10,000; but once they realized that the Intermediate system (C) was to be strictly enforced, and that there was to be no minimum wage, and that a worker was paid in proportion to the actual work done, however small, the numbers rapidly diminished and fell to 1,600.

17. This work was also taken in hand with the object of affording relief to the surplus poorer population of the city. It was opened on the 26th December 1896, and was carried out entirely under the Intermediate system (A.) The largest number of workers that were present at this charge was 2,878 on the 2nd January 1897. The work has been completed at a cost of Rs. 3,602. The carrying out of the work has greatly improved the surroundings of the hospital.

Levelling the ravines behind the Maternity and Lady Lyall Hospital.

18. The number of workers on the Fort-Táj works increasing (in February), necessity arose to open another work where the surplus workers could be drafted. Opportunity was taken to improve the gradients of miles 3rd and 4th of the Agra, Mainpuri, and Bhongaon road, which were very steep and a source of great inconvenience to traffic. Relief work was opened here on the 5th February 1897, under the Famine Code system. The work consisted of—

Improving the gradients of the Agra and Mainpuri road.

- (i) earthwork in raising;
- (ii) collection of kankar;
- (iii) consolidation of kankar; and
- (iv) training and improving the Choya nála bed.

This has now been practically completed, and the road has been materially improved. The number of labourers reached its maximum on the 12th July 1897, when there were 3,968 present, and the total expenditure has been Rs. 22,892, of which Rs. 18,834 was paid to workers.

19. An estimate, amounting to Rs. 22,379, was sanctioned in August 1896, for the conversion of this unmetalled road into a first class, to serve as a feeder to the Saiyan railway station; Indian Midland Railway. The work was taken in hand as a famine project on the 10th January 1897. The earthwork of the entire length (seven miles) has been completed, also the collection and consolidation for one coat, and metal for the second coat for two miles has also been collected. Among other advantages the metalling of this road will greatly facilitate the traffic in stone from the famous quarries of Tantpur. The work is still in progress. The total expenditure up to the 15th July 1897 has been Rs. 21,010, the amount directly paid to workers being Rs. 16,920. Prior to the introduction of the modified Intermediate system (C) the work was carried out under the Code Rules. The work is about to be closed.

Converting the Saiyan to Khairagarh IIA class road into first class.

20. This work consisted of earthwork only and in improving the embankment. It was taken in hand on the 7th February 1897. The greatest number of workers present was 2,703 on the 15th June 1897; a few cases of cholera have occurred on this work; 21 miles of earthwork have been completed at a cost of Rs. 20,238, of which Rs. 18,451 were paid to workers.

Raising and improving the Agra to Khairagarh road.

21. Relief work on this road was started on the 26th February 1897; earthwork of 11 out of 18 miles has been completed at a cost of Rs. 7,812. Total number relieved is 101,329. Two cases of cholera were reported from this work.

Improving the Farah and Kagarole road.

It was proposed to bring up and improve the surface of this road, which is 26 miles in length. Work was accordingly started under the Intermediate system (C) on the 14th May 1897. There was a rush of labourers in the beginning, but good rains having fallen since 15th June 1897, they have returned to field labour, and the work was consequently closed. Only five miles have been completed: an expenditure of Rs. 7,420 has been incurred. Three fatal cases of cholera were reported from this work. The infected gangs were at once segregated, and after the charge was moved on from the vicinity of the villages in which the disease prevailed, no further case occurred.

Raising and improving the Kagarole and Tantpur road.

22. This is an unmetalled road, 23 miles in length. The earthwork of the Fatehabad and Kachora Ghát (near Fatehabad) nearing completion, a charge was opened on this road on the 10th May 1897 by drafts from the former; six miles only have been completed, as timely setting in of the rains led workers to return home. There was no outbreak of any kind of epidemic diseases. The work was carried out entirely under

Improving the Fatehabad and Syau IIB class road.

the Intermediate system (C). The total outlay has been Rs. 5,888, the amount expended on earthwork being Rs. 5,650.

23. In the beginning of May last, cholera spreading amongst the workers on the Fort-Tāj works, the immediate transfer of workers to distant places was a necessity. Improvement of the berms and side drains of the metalled roads was considered to be most suitable, and the labourers were accordingly drafted to the following roads:—

Improving the berms and side drains of metalled road.

1. Agra-Aligarh road.
2. Agra-Bombay road (mile 12, Khari nadi bridge).
3. Agra-Muttra road.

But cholera cases continuing to occur on the latter two works, the infected gangs were segregated, and the workers from the Muttra road were transferred to the Bharatpur road and from the Bombay road, mile 12th to the 20th mile on the same road.

24. The total number of units employed in this district from the commencement to the close (14th December to 31st July) is 3,712,472. The total expenditure incurred amounts to Rs. 3,10,000, viz. in the following way:—

General remarks, Agra district.

- Rs. 2,72,395 in wages of relief workers.  
 „ 8,898 in gratuitous relief.  
 „ 28,707 for establishment, &c.

The work consisted principally of earthwork, metal collection, and consolidation, the rates being—

		Rs.	a.	p.	
Earthwork	...	2	14	0	per 1,000 cubic feet.
Metal collection	...	2	2	5	ditto.
Consolidation	...	1	1	8	ditto.

The average daily wage earned was from 10·7 to 17 pies per head.

25. There were altogether 56 deaths due to epidemic diseases, of which 51 were due to cholera. The total number of deaths per cent. with reference to the number of workers is 2.

*Farukhabad district.*—The first relief work started in this district was on the Farukhabad and Aliganj road. The work was opened on the 15th January 1897. The maximum daily number of workers was 500 on the 13th March 1897. The total number of units relieved was 17,478. The labourers gradually diminished, and the work closed of itself. The total expenditure incurred on this work is Rs. 2,680. The workers received Rs. 2,518.

Special repairs to Farukhabad-Aliganj road.

26. The work on this unmetalled road was commenced on the 20th January 1897. It would appear that this work was hardly necessary; it never attracted more than 382 labourers, and was finally closed on the 8th March 1897. The total number relieved was 4,998, getting a sum of Rs. 428; only

Special repairs to Bela and Khudaganj road.

One and-a-half miles of the work have been completed. The total expenditure incurred is Rs. 663.

27. This work was started on the 28th January 1897. It was similar to the last work, and attracted but a few labourers, the maximum number being 81 individuals. This work was closed in the beginning of March. The total expenditure incurred is Rs. 574.

Special repairs to Farukhabad and Chhibramau IIB road.

28. The relief works in this district were carried out under the Intermediate systems (A) and (B). There was no outbreak of any kind of epidemic disease. The total number of units employed in this district from the date of commencement to the close is 24,677 only. The works consisted practically of earthwork, and were completed at an expenditure of Rs. 2,684, at a cost of Rs. 2-10-8 per 1,000 cubic feet. The total expenditure incurred is Rs. 3,918. The average task done by the generality of workers is 40.78 cubic feet of earthwork. Not a single death has been reported from works through epidemic diseases.

General remarks, Farukhabad district.

*Mainpuri district.*—This was the only famine work opened in this district. This unmetalled road is very important, and leads to Batesar, where one of the largest fairs in the Province is held annually. The work was commenced on the 9th December 1896 under the Famine Code system. But the workers gradually decreased. The maximum daily number reached is 109. The Commissioner decided that it should be closed, which was done accordingly on the 25th March 1897. The first half of the road has been completed. The total number of workers relieved is 13,983. The grand total of expenditure is Rs. 2,840. The cost of earthwork was Rs. 2-15-11 per 1,000 cubic feet. Average task done by the generality of workers is 5-9-90 cubic feet. There was no outbreak of any kind of disease. No death occurred.

Raising and improving the Shikohabad and Batesar road.

*Etawah district.*—Among the famine relief projects proposed from this district, this work was considered as the most important by the Collector with regard to the interests of the traffic of the district. Accordingly it was taken in hand as a test relief work. The total length of this road in this district is 42½ miles, of which five miles are *pakka* and the rest 37½ miles *kachcha*. The famine relief work on this road was first started on the 9th November 1896 as a test work under the rules of the Famine Code. The district was officially declared to be distressed on the 13th December, and the works were reorganized in accordance with Resolution No. 18P.W., dated the 1st December 1896. As the time for cutting the *rabt* harvest approached, the people began to decrease. About 26 miles of this road have been raised at a cost of Rs. 88,265

Raising and metalling of the Etawah and Kálpí road.



including earthwork and other items, chargeable to the work. The total number of persons of all classes who worked on this work is 1,260,216. The maximum number of labourers on the 21st February 1897 was 17,886, and 811, the minimum, on the 28th March. The average rate of wages of workers of all classes comes to 16·68 pies per head, and the rate per 1,000 cubic feet to Rs. 4-7-1. Since the rainfall in the district from about 15th June, the number of labourers began to decrease, specially in the last week, and the work has been closed. The total expenditure has been Rs. 99,883, of which Rs. 74,873 have been paid to workers. Four cases of small-pox occurred on the works, but prompt action was taken to prevent its further spread.

29. The average task done by the generality of workers is 18·19.

*Etah district.*—The following two works were undertaken by famine labour in this district under the Intermediate (A) or petty contract system, as a test of the amount of distress. But they attracted a limited number of persons, who began to leave the works after a short time. The works were closed on the 25th March 1897.

The work was commenced on the 27th December 1896.

Raising and improving  
the Etah-Aliganj road.

The maximum number of workers reached is 496 on the 8th January 1897. The workers received a total amount of Rs. 3,994.

This was started on the same date as the other work. The

Raising and improving  
Agra and Jalesar road.

total number of units relieved is 26,350, getting a sum of Rs. 3,018. The maximum number of workers reached is 642.

The total number of units employed in this district from the commencement to the close is 52,050. The cost of earthwork is Rs. 7,012, at the rate of Rs. 2-8-0 per 1,000 cubic feet.

30. From the description and progress given of the different works, it will be seen that starting from the months of November and December, the number of workers gradually increased till the approach of the Holi in March, when the numbers suddenly diminished.

The Holi festival and  
its results.

The Holi festival marks the first day of the new agricultural year. The Hindu husbandman, bound by ancient religious rites, and knowing how unlawful it is to reap his crop till the first fruits have been offered up to the goddess of the festival, awaits with anxiety the arrival of the Holi. His offerings made, he is at liberty to reap his crop.

31. The immense decrease of numbers on relief works may no doubt to some extent be attributed to the fact that the workers could find more remunerative employment in the fields after this festival—a change of system by which dependants were ceased to be paid, and the elimination of the

minimum wage, too, had a great deal to do in the reduction of numbers. Prior to the Holi the number of workers amounted up to 14,300, and immediately after the festival they fell to 1,200. Although they subsequently increased, they never approached to what they were before the festival.

32. The details show that famine works carried out in this division consisted principally in new unmetalled roads or village lines of communication, or in improving existing embankments on approaches to rivers. Opportunity was also taken to improve the drainage on metalled roads, and the berms and side slopes were also brought up to the full section. The formation of a Park between the Fort and Táj also gave suitable employment to a large portion of a surplus poor population of the city of Agra.

33. In the distressed districts of the division there are practically two large cities, *viz.*, Agra and Muttra. The opening of the Park works has been found sufficient to give employment to the surplus poor of Agra. With regard to the Muttra city, such relief works have not been needed. The charitable and religious endowments are large and numerous, and the poor are well cared for.

34. After the Holi festival all the works were practically carried out under the Intermediate system (C). The general organization of the works was as follows.

35. Relief works were organized into what is called a "charge," consisting of 3,500 or a maximum of 4,000 work-people as a unit. It was found that the following requirements were necessary, which were more or less adopted:—

*Establishment.*

Officer in charge	...	...	...	1
Tahvildár	...	...	...	1
English writer	...	...	...	1
Gang muharrir	...	...	...	12
Work agents	...	...	...	2
Tools muharrir	...	...	...	2
Chaprásis ...	...	...	...	3
Mates	...	...	...	35
Police guard (consisting of one constable and four chauthidárs):—				
Carpenters	...	...	...	4
Blacksmiths	...	...	...	4
For field hospital:—				
Hospital assistant	...	...	...	1
Kahár boy for carrying medicine	...	...	...	1
Brahmin cook	...	...	...	1
Doliwálas ...	...	...	...	4
Kahár	...	...	...	1
Sweeper	...	...	...	1

## Water arrangements:—

Foreman ... ..	...	...	...	1
Brahmin mate	...	...	...	1
Kahár do.	...	...	...	1
Do. carriers	...	...	...	20
Brahmin drawers	...	...	...	20
Do. for <i>piaos</i>	...	...	...	16

## Conservancy:—

Sweepers ... ..	...	...	...	10
Mates ... ..	...	...	...	10

## Kitchen:—

Brahmin cook	...	...	...	1
Kahár assistant	...	...	...	1

The work agents, in addition to the establishment given for them in the above list, had—

- (1) five mates with two *beldárs* each as forward gangs for nicking out work.
- (2) a mate with a finishing gang (20 *beldárs*, 30 coolies) for completing the work.

## Shelter—

## For workers:—

Grass huts made up of two screens 6' x 4½'	...	...	...	70
Hut for officer in charge	...	...	...	1
Do. work agents	...	...	...	2
Do. muharrirs	...	...	...	8 to 10
Do. office	...	...	...	1
Do. field treasury	...	...	...	1
Do. tools, godown with enclosure	...	...	...	1
Do. <i>piaos</i>	...	...	...	16
Do. carpenter's shop	...	...	...	1
Do. blacksmith's shop	...	...	...	1
Do. <i>bania's</i> shop	...	...	...	4 to 8
Do. kitchen	...	...	...	1

## Huts for hospital:—

General Hospital	...	...	...	4
Segregation	...	...	...	2
Spare for general	...	...	...	4
Ditto segregation	...	...	...	2

*Tools and plant.*—In accordance with Government orders the following tools, &c., were to be arranged for before a work was taken in hand:—

<i>Phaorahs</i>	...	...	...	1,200
Baskets	...	...	...	4,000
Extra wooden handles	...	...	...	2,000
<i>Thapis</i>	...	...	...	1,000
Pegs	...	...	...	1,000
String for dagbaling two maunds: five feet bamboo rods	...	...	...	100
Fifty feet tapes (measuring)	...	...	...	4
Iron treasure chests	...	...	...	1
Wooden boxes	...	...	...	2
Padlocks	...	...	...	3

## For Hospital:—

Beds	...	...	...	14
Blankets	...	...	...	12
Gamlas	...	...	...	50
Dolies	...	...	...	2
Earthen dishes	...	...	...	100
Gharraas	...	...	...	20

## For water arrangements:—

Kerosine tins	...	...	...	60
Iron <i>dols</i>	...	...	...	10
<i>Gols</i>	...	...	...	25
Iron troughs...	...	...	...	16
Brass <i>lotas</i>	...	...	...	16

## For kitchen:—

<i>Deghis</i>	...	...	...	2
<i>Tawas</i>	...	...	...	2
<i>Gharraas</i>	...	...	...	4
Iron or wooden tray	...	...	...	1
Iron spoon (large)	...	...	...	1

The *naib tahsildar* with his two assistants, the work agents, was located at the centre of the "charge," also the treasury, the hospital, the huts for office, and quarters for *muharrirs*, with the tools godown adjoining their quarters, and a hut for the tool *muharrir*. In the vicinity of the godown were located the blacksmith's and carpenter's shops.

36. The relief workers were divided into groups of one digger and two carriers, and as far as possible consisted of members of the same family or friends or residents of the same village. Thirty-two of such groups formed one gang under one mate. Three gangs fell in charge of one *muharrir*, and 72 gangs formed a charge under one officer in charge.

38. The wage was fixed on a sliding scale and such that the workers on performing the prescribed task were able to purchase a specific quantity of food irrespective of its price. Thus with grain selling at 12 seers per rupee, a group of workers performing its full task, *via.* digging and carrying 125 cubic feet of earthwork, received four annas three pies, thus—

				Rs. a. p.
Man digger	...	...	...	0 1 9
Woman carrier	...	...	...	0 1 6
Child	...	...	...	0 1 0
Total	...	...	...	<u>0 4 3</u>

39. The task of 125 cubic feet was adhered to till the hot weather set in, when it became advisable to reduce it to 100 cubic feet. Again, when the rains set in and earth was moistened the task was increased.

40. The payments were invariably made daily and were usually made to individuals, but in the case of a family were made in a lump sum

to the digger. If the work was stopped by rain any day, the workers received the wages earned by them on the previous day. This arrangement held good till the rains. Once the monsoon set in and field labour was available, workers were only paid on days they actually worked.

41. It was essential to guard the wells supplying drinking water from contamination. These were first thoroughly cleansed and disinfected with permanganate of potash.

42. The vessels in which it was stored and in which it was drawn were, as far as possible, kept scrupulously clean. The establishment which was required is noted above. Orthodox Hindu *piaos* were situated in the vicinity of gang at convenient places. The labourers were not allowed to draw water from the wells, and at *piaos* water was poured into their vessels only through the water trough.

43. Small huts were erected in the vicinity of a work, and the local traders were invited to open shops for such food, &c., as the workers would probably require. The food supply was occasionally inspected by the officer in charge to see that it is good and wholesome. As dependent children above two years of age and up to seven were to be supplied with cooked food, the officers in charge were asked to arrange for a small kitchen where nutritious food for them was prepared. The establishment and utensils were supplied. An additional pice was given to mothers with children below two years of age. This cooked food and dole to mothers were given on specific cases sanctioned by the Commissioner.

44. A field hospital of the simplest kind was erected on a site selected by the Civil Surgeon, in the vicinity of the work. The number of huts, &c., which were required has been noted above, as also the tools and plant and "accommodation." It was managed by its own staff. Medicines were supplied by the Civil Surgeon.

45. The number of huts for the accommodation of officer in charge, work agents, &c., has been noted above. Workers were ordinarily encamped in *bāghs* and required no kind of shelter, except the weak, infirm, and children. It was considered sufficient to provide huts for 10 per cent. of workers.

46. For every 600 workers, two sweepers and two Thákur mates were required to see to the conservancy. No latrine accommodation was as a rule provided. Conspicuous flags demarcating the prohibited area (about 300 yards off the work) were always put up, and workers warned that they must go beyond them during their morning walks. In the vicinity of towns

and large villages, some latrines were required, and special arrangements were made to keep them clean.

47. The deaths among the workers were very few. The

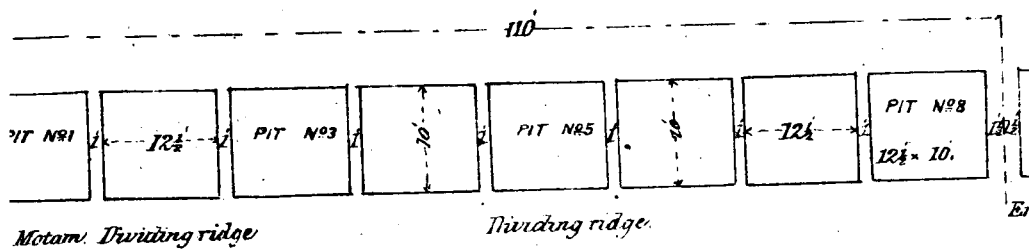
Disposal of the dead. officer in charge was required to see to the respectable manner of the disposal of the dead, having regard for the Hindu and Muhammadan practices. But as a rule, the friends and fellow-castemen of the deceased arranged for the disposal of the dead body.

48. The people resorting to the relief works were principally Chamárs, Koris, with a sprinkling of Káchhis, Ahírs, and Játs. The small number of Muhammadans was very marked. It was found possible to provide for a certain number of higher castes and literate men as mates, muharrirs, &c.

49. The *sine quâ non* in laying out relief works is that the measurement should be easily and rapidly made, and should be susceptible of ready check by the supervising officer. Keeping these ends in view, the following was the system adopted.

50. It was found very desirable that all pits should be of the same length and breadth, and with a view to their ready identification, they were arranged in certain order. With this object the miles and furlongs were marked out first. The latter was then divided into six equal parts of 110 feet. This length was laid out in pits  $12\frac{1}{2}' + 10'$  with a *motam* or dividing ridge, one foot in width between each pit, and a three-foot *motam* at each end (see the diagram below). Every foot of excavation afforded work for one day for each digger, and it was only necessary to measure the depth to obtain the contents. This

*Mile & Fur 2 Motam N<sup>o</sup> 1*



arrangement regarding the size and order of the pits was not essential in every case, but it was essential that they should be arranged so as to be easily identified and readily measured. Each gang was distinguished by its specific number. A board bearing the serial number of the gang and fixed to a bamboo upright thus—

51. Each digger was supplied with a card showing the mile, furlong, *motam*, and number of pits on which he is working.

52. The miles and furlongs were readily recognised, and there being three feet end *motams* left at every eight pits, the particular pit required could also be readily identified. In addition to the above the card showed the quantity of work done and the wages earned daily. It also showed the total quantity excavated from the pit and the total amount paid. The workers were also supplied with a measure showing to what depths the day's excavation was to be carried out. This enabled him to judge for himself of the task performed, the wages due, thus preventing false measurement.



53. The methods of keeping famine accounts in this division are as follows:—

As already explained, each family or group of workers is supplied with a card showing the quantity of work done and the wages earned day by day. This information is abstracted daily by the gang muharrir into what is known as the "gang muharrir's register" or day-book, which is considered the initial document of the account. The total of this day-book is entered in the cash-book as a payment to labourers under the muharrir concerned. These day-books are numbered consecutively and fresh serial numbers are given each month. The amounts of day-books are entered in the body of the cash-book and their total entered in the cash "column," the other petty payments, &c., for the day forming a separate entry below the total of the day-book. From this the weekly Famine Form III is checked. Items which do not appear in this form are shown in detail in the cash-book. Among the vouchers Form III is included, and is sent to the Examiner for audit.

54. Work abstracts are prepared from the cash-book; these are abstracted for posting up the register of works as per sanctioned estimates. The sub-heads are chiefly those noted below:—

- (1) Earthwork.
- (2) Work establishment.
- (3) Contingencies.

Item 2 of the above was only separately shown from the accounts for April 1897, after Mr. A. G. Harrison, the Examiner's visits to this office. The cost of perishable articles, e.g. handles of *phaoras*, *thapis*, empty tins for water, iron *dols*, buckets, padlocks, country lanterns, &c., are all charged to work contingencies.

55. The copies of the cash-books with vouchers above Rs. 10, excluding day-books, are submitted to the Divisional Engineer's office through the District Engineer's office.

56. The payments to the náib tahsildárs, hospital assistants, and compounders are made in one acquittance-roll, while the work establishment, i.e. work agent, clerk, tahsildár, water-foreman, and muharrirs, are made on another acquittance-roll. The conservancy and water establishment, &c., are paid daily and entered in day-book and not on acquittance-rolls, as the latter form was found impracticable. Each muharrir is supplied with a measurement-book, in which the measurements made under the supervision of the work agent are entered day by day.

57. It is to be regretted that no specific instructions were issued by the Examiner in spite of the application made; and the works have been opened for some time. Objection was taken to the allocation of charges, and alteration required by the Examiner in accounts already prepared threw a great deal of work on an already overworked establishment. The Examiner has at his disposal a large trained establishment of accountants, &c., and the divisional accountants are appointed by him. It appears not unreasonable that when work multiplies, aid should be sought from him. In the preparation of these famine accounts no aid was offered, and the Executive Engineer was left to shift for himself, obtaining men as best he could.

58. It is a recognised rule that in times of scarcity it is the Price of food grain and fodder during the time of scarcity. coarsest and poorest kinds of grains that show the greatest rise in prices. During the present distress it was the autumn crops, in which the poorer kinds of grains were produced, that failed so disastrously. The result was that prices were intensified; and as they continued to be used by the poor classes, there was practically nothing to replace them, except carrots; they rose in prices till equalled to that of higher grains: as a matter of fact *juár* and *bájra* have not only reached the price of wheat, but during the past two months, owing to the demand for food grain, have exceeded it; wheat selling at from eight to nine seers; *juár* and *bájra* from four and-a-half to five, and Indian-corn cobs at four seers per rupee.

59. There is something in the old adage which says: "Its an ill wind that blows nobody any good;" and amid all the hardships and trials of the year 1897, the *raiyyat* can look back to this period as the year in which he could indulge in wheat and bread.

60. Not only did the people suffer by the failure of autumn crops, but practically there was no fodder left for the cattle. The stalks of *juár* and *bájra* being usually the only fodder available for many months of the year, and with the failure of these crops it was not forthcoming. *Bhusa*, which usually sells at four maunds per rupee, was sold at 30 seers: and *karbi*, which is usually procurable at Rs. 3 per 100 bundles,



has risen to Rs. 12. The cattle suffered greatly from want of food, mainly depending for fodder on trees with edible leaves.

61. The result of the drought has been such that a pair of plough-bullocks, which would have cost from Rs. 30 to Rs. 35 prior to October or November 1896, were selling in May and June 1897 for Rs. 15 or Rs. 16. They cannot be now had for less than Rs. 45 to Rs. 50.

62. More than five lakhs of rupees have been expended by Government from November 1896 to August on the famine relief works in this division. The total number of units that have been relieved from the commencement amounts to 6,209,599. It has been found that about 1½ per cent. of the population of the division resorted to relief works. It was the Agra district in which there were by far the larger number of relief works.

63. The sudden decrease of numbers in the last week of March and in April was due to the Holi festival and the harvest. The decrease of numbers in the Agra district on the Fort-Tāj work in May was due to the breaking out of cholera. The rainfall in the last week of June diminished the number of workers, who found more remunerative employment in the fields. The rise of numbers in the early part of July was owing to the break in the rains. On the introduction of the Intermediate system (C) there was an universal decrease of numbers on the works.

64. There was no gradual reduction of wages in this division; the fluctuation never exceeded one pice; and this small rise and fall did not affect the numbers coming on the works.

65. In test works and works under the Famine Code governed by Resolution No. 18P.W. of 1896, the workers were grouped in large gangs from 50 to 60 promiscuously put together, the work is measured and paid for as a whole, and there was no individual responsibility for short work. Moreover, it is hardly just and equitable that the diligent and the industrious should be made reliable for the shortcomings of the lazy and the idle. In the Intermediate system the workers were divided into family groups, and the head of the household was able to exercise a certain amount of control, and more readily realized that a short task brought a small wage, and that a full task brought a full wage. In fact, under the Intermediate system the family groups were kept intact, and the members could mutually assist one another in many a small way, more particularly in the case of sickness. Another great disadvantage of the old system was that it necessitated bringing on the works very young children and feeble old persons, practically doing nothing, and often during very

unfavourable weather without sufficient shelter, while the Intermediate system entirely did away with this custom, as there could be no inducement to bring such persons on the works. Again, under the larger groups of the Code system there was a much greater liability for the development of epidemic diseases than under the Intermediate system. Sanitation and supervision were also more difficult; the cost of work, too, was greater in the one than in the other system.

66. Speaking generally the following was the task prescribed by the Intermediate system :—

Excavation in sandy soil	150 to 200	cubic feet.
Ditto ordinary soil	... 125	ditto.
Ditto medium and hard soil	... 100	ditto.
Ditto hard clay and gravel	... 80	ditto.
Quarrying kankar	... 20	ditto.
Consolidating ditto	... 30	ditto.
Spreading ditto 4½" coat	... 40	ditto.
(Carriage extra.)		
Dressing	... 250	superficial feet.
Turfing	... 500	ditto.

(For family of three workers.)

67. Moderate-sized works (3,000 to 5,000 labourers) possess advantages over large works (more than 5,000 working men) on the one hand and small scattered works on the other. On very large works spread over a large area, supervision tends to become lax, the establishment is overworked, and punctual payment becomes difficult, having to travel over long distances to measure and check works. If the workers are grouped together over a small area, the difficulty of procuring food often arises, and there is a great liability to the development of epidemic diseases; while on small scattered works supervision is practically impossible, as the establishment is small and poorly paid. In moderately large works an establishment of well-paid and qualified officials can be afforded. Satisfactory arrangements for wholesome food, drinking water, disinfection of wells, supervision can be properly made. A sufficient staff of sweepers and Thákur mates can be employed to see to the conservancy. In short, moderate-sized works can be perfectly organized and efficiently carried out. As far as my experience goes, it shows that the system of Intermediate works is alike suitable for moderately large works.

68. A "distance test," too, is often desirable, as labourers would frequently resort to works if they are in immediate vicinity, but will not come on to them if they are situated at some distance away from their homes. This is a fairly strong indication that distress is not very acute. One great objection to the removing of labourers a long distance is the difficulty often felt in providing adequate shelter, more particularly for the old and feeble women and children. A difficulty may also arise regarding

the care of the village cattle when the people leave their homes.

69. Relief works should certainly not be attractive and should in no way compete with the labour market. They should only provide a subsistence allowance, and they should only be the resort of people when other means of livelihood fail. A full task should invariably be exacted on all relief works, according to the capability of the worker. In fact, he should be made to feel that times are hard, and that additional exertions on his part are necessary. It is extremely desirable that habits of thrift and economy should be engendered; it being dangerous to create a pauper population inclined to rely solely upon State aid. It would appear that there is very little doubt that, but for the strict enforcement of the rules and payment of wages by results, there would have been a much larger number of labourers.

70. Relief works in this division were undertaken during the early stages of distress and before the pinch of famine was keenly felt. Once the labourers were on the works, a reasonable task was exacted; the wage that could be earned was adequate to purchase a sufficient quantity of food. The water-supply and sanitation were carefully seen to; the result was that there was practically little or no mortality, except a few cases of cholera, which have already been referred to. It may be safely asserted that the people now leaving the works and retiring to their homes are in a good, if not in a better, condition than what they were when they joined the works in November last. The absence of such a large portion of the community from their villages for so many months has no doubt improved the sanitary condition of the villages.

71. The works in the other districts of the division, with the exception of the district Agra, were practically free from epidemic diseases. In the Agra district the diseases were cholera, sunstroke, and small-pox. Cholera was introduced on the Fort-Táj work by a family from Fatehabad. The disease soon spread among the workers, and an immediate arrangement was made to close the work within twelve hours, and the 15,000 people were drafted to other works. Cases of cholera still continued to occur among these workers; a careful inquiry was made. It became apparent that the disease was principally confined to the workers of the Chamár caste and inhabitants of the Agra city, and it was found that beef, which was at that time selling a pice a seer, formed the principal food of these people. There is also evident reason to believe that the beef in question was the flesh of diseased animals. It also transpired that many of the workers from the city were in the

habit of getting out two or three days' supplies at a time, so that portions of the meat were often tainted, if not putrid, when it came to be used. Under the circumstances one can quite understand its breeding disease. The sale or use of this meat was at once intradicted, and cholera at once ceased to occur on the works.

72. During the intensely hot weather, in May and June, a few cases of sunstroke occurred, and it was considered desirable to restrict the working hours to the comparatively cool mornings and evenings so long as this unfavourable weather lasted.

73. Although there were a good many cases of small-pox in the surrounding villages, there were very few on the works. Patients were segregated and the huts occupied by them destroyed and the disease disappeared.

74. After the first fall of rain on the day of Her Majesty's Jubilee, expectation ran high, and early monsoon was expected, and in anticipation of it a very large *kharif* area was sown. These expectations were doomed to disappointment, as a long break after the first downpour in June occurred. Numbers began to flock to the works, more particularly in the Agra district, when the numbers went up to 31,000.

75. Timely rains in the second week of July removed further all apprehension regarding the *kharif* crop for the time being, and it was found that a large sowing made in June had germinated, although the growth had been retarded by the drought, little or no mischief had been done. People at this time began to leave the works in large numbers, and the greater number of works were closed by the end of July. Since the setting in of the monsoon the falls have been so heavy and constant that the fields were too wet to prevent hoeing; and as field labour was not generally available, some people still continued to remain on the works. As the weather is favourable it has been decided to close the remaining works by the end of this month.

#### APPENDICES.

*Appendix (a).*—The area of the pargana or parganas through which the relief works passed, and their population. It also shows the percentage of population for which provision was originally made in the programmes and the percentage which has actually been relieved.

*Appendix (b).*—The programmes of relief projects.

*Appendix (c)*—

I.—Diagram showing graphically the average number of relief workers week by week in the division.

II.—Diagram showing graphically the average number of relief workers week by week in the division for the Muttra district (each work shown separately).

III.—Diagram showing graphically the average number of relief workers week by week in the Agra district.

IV.—Diagram showing graphically the average number of relief workers week by week in the Etáwah district.

[The above appendices have not been printed.]

76. On the whole, I think I may venture to say that officers and subordinates employed on relief works in this division tried to do their duty, while stimulated by a loyal desire to carry out the orders of Government avoiding wasteful expenditure. They fully sympathised with the trial the people were going through, and did their best to minimize their sufferings.

77. It should not be forgotten that the famine relief works threw a great deal of extra work on the Public Works Department establishment. In addition there was a large amount of exposure, worry, and trouble connected with them.

78. The names of the officers whose services I beg to bring to your notice are as follows:—

Rai Sohan Lal Sahib.

Captain P. Ashworth, R.E.

Mr. T. S. Fitzpatrick.

79. By far the larger number of the relief works in this division devolved upon Rai Sohan Lal Sahib. I had repeated opportunities of inspecting these works, and always found them well and efficiently supervised. In addition to the relief works he holds charge of a large and important district. Mr. Sohan Lal already possesses the title of Rai Sahib, and I would beg to recommend that the title of Rai Bahadur be bestowed upon him.

80. Captain Ashworth was Superintendent of Relief Works in the Muttra district. He has taken a great personal interest in the organization and carrying out of the works.

Mr. T. S. Fitzpatrick.—This young officer, in addition to his duties as District Engineer of Etáwah, had the supervision of a fairly large number of works. After gaining a little experience, Mr. Fitzpatrick did well, the organization was good, and the works were efficiently carried out. The Collector endorses my opinion, that a great deal of credit is due to Mr. Fitzpatrick for the personal interest taken in the matter.

Bábu Baldeo Parshad.—The zeal of this District Surveyor sometimes overran his discretion; but he has worked hard, and on the whole done well.

81. There were no náib tahsildárs belonging to the regular establishment deputed to famine relief works in this division. The náibs appointed were recruited from men holding subordinate positions in the tahsili or Collector's establishment, supplemented by graduates and students from the Indian colleges. They were also representatives of the degree only known to the Indian students, *viz.* "Entrance-failed." The permanent employé had the experience on the other side, and as a whole did well.

82. The officer in charge has a number of multifarious duties in the way of organization, supervision, and accounts,

and it appears hardly an altogether desirable arrangement to place a student or graduate, raw from school or college, in this position. There is, however, a very great advantage in having educated men with respectable antecedents at the head of a disbursing establishment, and a number of our young men, after gaining experience, did well. There is little doubt that relief works are excellent schools for the budding tahsildár. It could be always arranged that a náib, before getting charge, went through a probationary course as a subordinate under the officer-in-charge and as an assistant to the work agent, he would be a far more useful and competent man to take charge of the works later on.

83. The work agents may generally be described as waifs and strays of society, and it is astonishing to see the amount of good work that has been got out from these men employed on relief works. It occasionally happened that they were "round men put into a square hole" and *vice versâ*; but once a number of these employés gained experience a number of them did very well, both among the natives and Europeans and Eurasians. There appears to be some "grit" yet left in the poor white and despised Eurasians. The prestige of Western blood still asserts itself, and I think they are often more capable of controlling large gangs of workmen than an ordinary native. Among the work agents employed were two soldiers, Sergeants Hamilton and Roates, V.C., the latter an old mutiny veteran, was unable to stand the hardships and exposure on the works and resigned. Sergeant Hamilton has done excellent service. On the cholera epidemic breaking out he was one of the victims, but managed to pull through, and was soon on the works as active as ever.

84. The accounts and clerical establishments both in the district and divisional offices have had a hard time of it, and have worked early and late. A list is appended showing the names of subordinates, náib tahsildárs, work agents, and members of the accounts and clerical establishment who have worked well and are worthy of mention.

85. In conclusion I would beg to record with thanks the cordial help I received on all occasions from Mr. Rose, the Commissioner of the Division.

C. J. SHERIDAN,  
*Executive Engineer,*  
*Provincial Division, Agra.*

*The 25th August 1897.*

AGRA PROVINCIAL DIVISION.

Statement of expenditure incurred on famine relief works from commencement to end of July 1897.

District.	Name of work.	Earthwork.			Collection of kanhar.			Remodelling culvert.
		Quantity.	Rate per 1,000.	Amount.	Quantity.	Rate per 100.	Amount.	
		C. ft.	Rs. a. p.	Rs. a. p.	C. ft.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Muttra	Improving berms and opening side drains on Agra-Aligarh road	1,597,292	2 14 0	4,593 8 6	...	...	...	...
	Ditto ditto Agra-Muttra road	851,195	2 10 3	2,252 12 1	...	...	...	...
	Ditto ditto Muttra-Jalesar road	33,724	2 14 0	96 10 3	...	...	...	...
	Ditto ditto Bareilly to Kásganj-Muttra road	1,538,213	2 14 0	4,300 15 6	...	...	...	...
	Raising and improving Baldeo to Itmádpur road	2,451,260	5 8 6	13,570 9 10	...	...	...	...
	Constructing a new road from Raya to Sadabad	12,766,406	4 0 10	51,780 3 11	...	...	...	...
	Raising and improving Farah-Kagarole road	...	...	...	...	...	...	...
	Total	19,238,090	3 15 8	76,594 12 1	...	...	...	...
Agra	Converting 2nd class road from Syan to Kheragarh into 1st class	3,722,703	2 11 10	10,208 4 6	148,494	6 13 9	10,169 1 1	1,042 3 2
	Improving gradients on Agra-Mainpuri road	7,693,867	2 14 8	22,452 5 1	88,915	1 6 8	550 13 11	...
	Improving berms on Agra-Muttra road	2,757,958	3 13 6	10,604 4 0	...	...	...	...
	Ditto Agra-Bhartpur road	2,374,986	3 2 0	7,429 10 6	...	...	...	...
	Ditto Agra-Aligarh road	6,728,067	2 12 6	18,721 12 8	...	...	...	...
	Ditto and clearing beds of Khari and Jajau nadis on Agra-Bombay road	11,883,752	2 9 0	30,498 1 11	...	...	...	...
	Ditto Agra-Kheragarh 2nd class road	6,904,417	2 13 4	19,566 6 9	...	...	...	...
	Raising and metalling Fatehabad-Kachorahát road	6,118,059	3 2 9	19,412 3 7	...	...	...	...
	Ditto Fatehabad-Irádatnagar road	2,294,088	3 5 3	7,642 14 4	...	...	...	...
	Constructing an irrigation channel to the Lunatic Asylum at Agra	...	...	...	...	...	...	...
	Levelling ravines, Lady Lyal's Hospital, Agra	1,023,330	3 7 1	3,544 3 11	...	...	...	...
	Ditto between Fort and Táj	33,314,242	2 10 8	88,712 6 10	...	...	...	...
Improving Farah-Kagarole road	3,023,626	2 10 10	8,107 12 5	...	...	...	...	
Ditto Kagarole-Mantpur road	3,128,757	2 5 8	7,372 6 9	...	...	...	...	
	Total	90,972,912	2 12 9	2,54,272 13 3	187,409	5 11 6	10,719 15 0	1,042 3 2
Farukhabad	Special repairs to Farukhabad-Aliganj road	740,897	2 9 8	1,929 4 9	...	...	...	...
	Ditto Bela-Khudaganj road	130,408	3 2 3	409 2 11	...	...	...	...
	Ditto Farukhabad-Chhibramau road	135,158	2 8 11	346 0 3	...	...	...	...
	Total	1,006,463	2 10 8	2,684 7 11	...	...	...	...
Mainpuri	Raising and improving Shikohabad-Batesar road	714,135	3 8 1	2,504 1 9	...	...	...	...
Etawah	Raising and metalling Etawah-Káipi road, sixth mile	163,711	5 10 0	920 2 11	35,640	2 10 6	946 3 2	...
	Ditto ditto ditto	18,103,031	4 6 0	79,446 10 1	...	...	...	...
	Total	18,272,742	4 7 0	80,366 13 0	35,640	2 10 6	946 3 2	...
Etah	Raising and improving Etah-Aliganj road	1,569,821	2 10 6	* 4,155 10 10	...	...	...	...
	Ditto ditto the Jalesar-Agra road	1,207,253	3 8 0	3,018 2 2	...	...	...	...
	Total	2,777,076	2 9 3	7,173 13 0	...	...	...	...
GRAND TOTAL FOR THE DIVISION		132,981,458	3 3 0	4,23,598 13 0	223,049	5 3 9	11,666 2 2	1,042 3 2

\* Includes Rs. 161-6-6 for jungle clearance.

District.	Name of work.	Works estab- lishment.	Gul for Lunatic Asylum, Agra.	Contingencies.	Total cost of work.	Establish- ment.	Tools and plant.	Total expendi- ture in each district.		
									Rs. a. p.	Rs. a. p.
Muttra	Improving berms and opening side drains on Agra-Aligarh road ...	...	...	...	...	...	...	...		
	Ditto ditto Agra-Muttra road ...	...	...	...	...	...	...	...		
	Ditto ditto Muttra-Jalesar road ...	...	...	...	...	...	...	...		
	Ditto ditto Bareilly to Kásganj-Katra road ...	...	...	...	...	...	...	...		
	Raising and improving Baldeo to Itmádpur road ...	...	...	(a)2,622 6 1	16,192 15 11	...	...	...		
	Constructing a new road from Raya to Sadabad ...	...	...	(b)9,012 8 9	61,246 0 5	...	...	...		
	Raising and improving Farah-Kagarole road ...	...	...	...	...	...	...	...		
	<b>Total</b> ...	2,841 14 5	...	14,057 6 10	98,494 1 4	2700 0	10,564 10 0	1,06,765 11 4		
Agra	Converting 2nd class road from Syan to Kheragarh into 1st class ...	...	...	...	2,606 10 6	22,984 0 1	...	...		
	Improving gradients on Agra-Mainpuri road ...	...	...	...	1,512 12 1	25,558 2 8	...	...		
	Ditto berms on Agra-Muttra road ...	...	...	...	1,026 7 6	11,630 11 6	...	...		
	Ditto Agra-Bhartpur road ...	...	...	...	457 0 9	7,886 11 8	...	...		
	Ditto Agra-Aligarh road ...	...	...	...	803 15 10	19,525 12 6	...	...		
	Ditto and clearing beds of Kheri and Jajau nadis on Agra-Bombay road ...	...	...	...	1,628 12 8	32,126 14 2	...	...		
	Ditto Agra-Kheragarh 2nd class road ...	...	...	...	1,386 15 8	20,903 6 5	...	...		
	Raising and metalling Fatehabad-Kachoraghát road ...	...	...	...	1,980 12 9	21,393 0 4	...	...		
	Ditto Fatehabad-Irádatnagar road ...	...	...	...	385 7 9	8,023 6 1	...	...		
	Constructing an irrigation channel to the Lunatic Asylum at Agra ...	...	1,524 3 3	...	1,524 3 3	...	...	...		
	Levelling ravines, Lady Lyal's Hospital, Agra ...	...	...	...	57 10 2	3,601 14 1	...	...		
Ditto between Fort and Táj ...	...	...	...	5,753 5 6	94,465 12 4	...	...			
Improving Farah-Kagarole road ...	...	...	...	813 14 9	8,921 11 2	...	...			
Ditto Kagarole-Tantpur road ...	...	...	...	438 5 6	7,810 12 3	...	...			
	<b>Total</b> ...	...	1,524 3 3	18,802 3 0	2,86,361 5 8	{(e)6,953 15 8 4,582 7 0}	{176 8 0 12,759 5 9}	3,10,833 10 1		
Farukhabad	Special repairs to Farukhabad-Aliganj road ...	...	...	...	241 14 11	492 11 3	2,663 14 11	...		
	Ditto Bela-Khudaganj road ...	...	...	...	73 8 9	180 14 5	663 10 1	...		
	Ditto Farukhabad Chhibramau road ...	...	...	...	...	228 5 10	574 6 1	...		
	<b>Total</b> ...	815 7 8	...	901 15 6	3,901 15 1	277 3 8	4,254 3 10	8,433 6 7		
Mainpuri	Raising and improving Shikohabad-Batesar road ...	...	...	...	242 14 3	92 8 4	2,839 8 4	96 1 6	298 0 0	8,233 9 10
Etáwáh	Raising and metalling Etáwáh-Kálpí road, sixth mile ...	...	...	...	...	...	(e)1,866 6 1	...	...	
	Ditto ditto ditto ...	...	...	...	1,630 14 6	9,124 11 11	(d)90,202 4 6	...	...	
	<b>Total</b> ...	1,630 14 6	...	9,124 11 11	92,068 10 7	2,174 11 8	5,544 13 7	99,788 3 10		
Etah	Raising and improving Etah-Aliganj road ...	...	...	...	...	...	...	...	...	
	Ditto ditto Jalesar-Agra road ...	...	...	...	...	...	...	...	...	
	<b>Total</b> ...	...	...	...	1,040 9 6	8,214 6 6	4 13 0	1,918 14 3	10,138 0 9	
<b>GRAND TOTAL FOR THE DIVISION</b> ...		5,031 2 10	1,524 3 3	44,019 7 1	4,86,879 15 6	16,796 3 6	35,516 7 6	5,39,193 10 5		

(a) Includes mile posts, Rs. 80 8 0 Land compensation, Rs. 836 3 4  
(b) Ditto " 12 0 0 Ditto " 1,866 14 0

(c) Excludes Rs. 54 due to contribution.

(d) Divisional office.  
(e) Excludes Rs 123 due to contribution.

C. J. SHERIDAN,  
Executive Engineer, Provincial Division, Agra.



APPENDIX A.

Statement showing the population, percentage of relief works, &c., in the Agra Division.

District.	Population of district.	Area in acres of the pargana or parganas through which relief works passed.	Population of the pargana or parganas through which relief works passed.	Percentage of pargana population resorting to works.	Percentage of population of district for which provision was originally made in the programme.	Total number of units relieved.	Percentage of population of districts resorting to works.	Remarks.
1	2	3	4	5	6	7	8	9
Muttra ... ..	713,421	526,720	470,505	1.01	7.26	1,146,117	.66	
Agra ... ..	1,003,796	1,181,092	1,003,796	1.28	7.8	3,712,472	1.4	
Farukhabad ... ..	858,687	277,120	189,464	0.14	6.14	24,677	0.02	
Mainpuri ... ..	762,163	187,843	140,093	9.99	4.45	13,983	1.83	
Etawah ... ..	727,629	538,790	368,002	5.15	4.77	1,260,300	4.77	
Etah ... ..	702,063	473,830	366,619	0.16	8.0	52,050	0.09	

Report on Famine Relief operations in the Rohilkhand Provincial Division during the years 1896-97 and 1897-98, by Mr. G. R. Bird, Executive Engineer, Rohilkhand Provincial Division, dated 26th August 1897.

THE winter rains of 1896-97 arrived late, the fall in December 1896 being only 0·16" in the district of the division—Budaun—and this following a *khariif* harvest that was below the average, caused Mr. R. G. Hardy, then Collector of Moradabad, to sound the first note of warning of the probable approach of a period of scarcity and distress. Responding to this, Sub-Divisional Officers were directed, on the 2nd January 1896, to examine their lists of famine relief works, and to revise and expand them in consultation with the Collectors of their districts. They were at the same time requested to ascertain the tracts likely to be affected and the number of people for whom work would probably have to be provided and, having obtained this information, to commence the surveys for, and preparation of, regular projects for the works selected, taking them up in their order of urgency. By the 15th January 1896 lists of works began to be received, and survey operations were in active progress with funds granted for the purpose by District Boards.

2. The rain which fell in January 1896—0·01" to 0·74" in Pilibhít, Bareilly, Moradabad, and Bijnor, and again in February—0·01" to 0·73" in all six districts of the division, improved the crops, and, together with the great demand for labour for irrigation from wells, kept prices fairly low, and caused the people to be hopeful and disinclined to work for a famine wage. The opening of relief works was therefore not found necessary anywhere in the division up to the middle of March 1896, or to the time of the cutting of *rabi* harvest.

3. The outturn of the spring crop, though below the average, was on the whole better than had been anticipated in five of the districts of the division, *viz.* Sháhjahánpur, Bareilly, Budaun, Moradabad, and Bijnor, and the Collectors of these districts did not consider it necessary to start relief operations during the summer of 1896. In Pilibhít, however, which is largely a rice-growing district, by the middle of March, the Collector, Mr. W. R. Partridge, judged the condition of the people to be such that the commencement of relief works could no longer be postponed, and he opened two in that month, *viz.* at Puranpur, on the Puranpur and Ghungchai road, on the 16th March 1896, and at Shahgarh station of the Lucknow, Sitapur, and Bareilly Railway, on a feeder road to the railway station from the Pilibhít and Puranpur road on the 26th March 1896.

4. These two works were started by the Collector, and for a short time were managed by him through his ordinary district staff, assisted professionally by the District Surveyor, Mr. W. A. Marshall, and his subordinates. But as the

number of labourers applying for employment continued to increase, the operations were, under the orders of Government, made over to the Public Works Department in the month of April 1896, the work at Shahgarh being taken over on the 4th and that at Puranpur on the 5th. Subsequently, on the approaching completion of the former, eventually finished on the 3rd June 1896, a third, the Shahgarh and Kalinagar road was begun on the 4th May 1896. Thus three works in all were in operation in the Pilibhít district during the summer of 1896, of which one was finished, and the other two remained incomplete when closed, the Puranpur and Ghungchai road on the 25th June 1896, and the Shahgarh and Kalinagar road on the 30th June 1896, during the rains of 1896.

5. After being made over to the Public Works Department, the works were carried out according to the rules of the Famine Code. To each, a náib tahsildár was deputed by the Collector as "Officer-in-charge;" and to assist him in technical and professional details and arrangements, a permanent Sub-Overseer of the department was appointed, with a work agent to help in measuring and laying out work, keeping the accounts, and mustering and supervising the workpeople. The workpeople were divided into gangs, each under a mate, of from 30 to 40 labourers, classified according to their physical condition and working capacity. These gangs were mustered every morning, and the name, residence, &c., of each individual were recorded in muster-rolls, the places of absentees being filled up from new arrivals, and the surplus of these being divided into new gangs. Of each such gang one-third were usually male diggers and the remaining two-thirds were women and children, who were employed in carrying the earth dug by the men. As the respective works progressed, the weakly gangs, together with a few skilled labourers, were engaged in dressing the embankments. The work of each gang was measured up in the evening, and each labourer was paid the full wage or less as the outturn of work compared with the task set, but no worker received less than the minimum wage fixed by the Famine Code.

6. The people were occupied only on earthwork, the raising of road embankments, as the most suitable work for unskilled labourers. The lead was generally short, under 100'; but the quality of the soil varied between light sandy loam and fairly stiff clay: the task was therefore fixed at 100 cubic feet to 150 cubic feet, according to circumstances, and was generally executed in full, and fines had seldom to be imposed.

7. During the period that these relief works were in operation the price of coarse grain varied between 12 and 13 seers, and the wages paid were those prescribed in the Famine Code for these rates, taking the nearest full pice below, ranging from Re. 0-1-6 for class A to Re. 0-1-0 for class D males,

Re. 0-1-3 for class A to Re. 0-1-0 for class D females, and Re. 0-1-0 to Re. 0-0-9 for working children. The people of course complained that their "stomachs did not fill;" but as they did not fall off in flesh, and it was found that families of four or five members earned from Re. 0-4-0 to Re. 0-5-9 a day, equivalent to about Rs. 8 and Rs. 11-8-0 per mensem, the wages were deemed sufficient. The wages were distributed every evening by the náib tahsildár himself, assisted, when the numbers increased to more than 1,000, by the Public Works subordinate and work agents. There were no complaints of non-payment.

8. Gratuitous relief on the minimum scale of the Famine Code was given to the aged and infirm relatives and non-working children of workers, and in the earlier stages of the operations these formed from 10 to 20 per cent. of the total number relieved. Later on, however, especially towards the end, they equalled and in some weeks exceeded the number of workers, and it is beyond doubt that old and helpless people were encouraged to come to the works, and children were borrowed by labourers in order to increase the daily income.

9. The works were carried out during the hottest and driest season of the year, when the people themselves live day and night much in the open air. Moreover, all who could—and they formed the majority—returned daily to their villages. Only a few huts in excess of those needed for the staff and for godowns were therefore erected. Sanitary precautions were taken by cleaning and guarding the drinking wells, and by compelling the people to go beyond a certain distance from the camp headquarters or depôt into the fields. The site of the depôt was also changed every few days as the works advanced, and the pollution of the vicinity was thus reduced to a minimum. The health of the people on the whole was excellent. One fatal case of what was pronounced to be cholera by the Hospital Assistant of Puranpur did occur on the 11th May 1896 at Shahgarh ; but the people were promptly moved to the opposite side of the railway on the Kalinagar road, and the disease did not spread. Supplies were furnished by *banias*, who came daily from the nearest large village if it was not too far away, or resided at the depôt if it was. The quantity was sufficient, and the officer-in-charge saw that the quality was good and the rates fair.

10. The people who resorted to the works were almost entirely field labourers residing within a radius of five miles of each work. As the work advanced those who lived near its commencement dropped off and were replaced by others from the direction in which it was proceeding. As, at the season when the operations were in progress, there was but little employment in the fields, this indicated pretty distinctly that the people were not famine-stricken, but were of course quite

prepared to take the opportunity of earning something during slack time if the effort did not involve too great an exertion.

11. The results of the season's operations may be summed up as follows:—

I.	Number of works opened	...	...	3										
II.	Date first work was opened	...	...	16th March 1896.										
III.	Do. last work was closed	...	...	30th June 1896.										
IV.	Number relieved on 16th March 1896	...	...	527										
V.	Ditto	29th June 1896	...	1,337										
VI.	Maximum number relieved on any one day—on 9th April 1896	...	...	2,965										
VII.	Total number of workers relieved—146,814	<table border="0"> <tr> <td rowspan="3" style="font-size: 2em; vertical-align: middle;">}</td> <td>Men</td> <td>...</td> <td>56,031</td> </tr> <tr> <td>Women</td> <td>...</td> <td>67,902</td> </tr> <tr> <td>Children</td> <td>...</td> <td>22,881</td> </tr> </table>			}	Men	...	56,031	Women	...	67,902	Children	...	22,881
}	Men	...	56,031											
	Women	...	67,902											
	Children	...	22,881											
VIII.	Ditto ditto gratuitously relieved,	...	...	35,993										
IX.	Grand total units relieved	...	...	182,807										
X.	Expenditure on wages,	<table border="0"> <tr> <td rowspan="2" style="font-size: 2em; vertical-align: middle;">{</td> <td>Workers</td> <td>...</td> <td>Rs. 10,425</td> </tr> <tr> <td>Dependants</td> <td>..</td> <td>1,153</td> </tr> </table>			{	Workers	...	Rs. 10,425	Dependants	..	1,153			
{	Workers	...	Rs. 10,425											
	Dependants	..	1,153											
XI.	Ditto other items	<table border="0"> <tr> <td rowspan="3" style="font-size: 2em; vertical-align: middle;">{</td> <td>Contingencies</td> <td>..</td> <td>969</td> </tr> <tr> <td>Tools and plant</td> <td>..</td> <td>1,196</td> </tr> <tr> <td>Establishment</td> <td>...</td> <td>Nil.</td> </tr> </table>			{	Contingencies	..	969	Tools and plant	..	1,196	Establishment	...	Nil.
{	Contingencies	..	969											
	Tools and plant	..	1,196											
	Establishment	...	Nil.											
XII.	Total expenditure on work	...	Rs.	13,743										
XIII.	Quantity of earthwork executed	...	...	2,992,249 cubic feet.										
XIV.	Average wage per unit	...	<table border="0"> <tr> <td rowspan="2" style="font-size: 2em; vertical-align: middle;">{</td> <td>Worker</td> <td>...</td> <td>13.63</td> <td>pies.</td> </tr> <tr> <td>Dependant,</td> <td>..</td> <td>6.15</td> <td>..</td> </tr> </table>		{	Worker	...	13.63	pies.	Dependant,	..	6.15	..	
{	Worker	...	13.63	pies.										
	Dependant,	..	6.15	..										
XV.	Average outlay per unit relieved	...	...	14.43 ..										
XVI.	Rate of earthwork per thousand cubic feet	...	<table border="0"> <tr> <td rowspan="2" style="font-size: 2em; vertical-align: middle;">{</td> <td>For workers,</td> <td>Rs. 3-7-9</td> </tr> <tr> <td>Total cost</td> <td>.. 4-8-0</td> </tr> </table>		{	For workers,	Rs. 3-7-9	Total cost	.. 4-8-0					
{	For workers,	Rs. 3-7-9												
	Total cost	.. 4-8-0												
XVII.	Average task per worker	...	...	20.38 cubic feet.										

12. The monsoon rainfall of 1896, though frequently interrupted and somewhat below the average, was sufficient for the crops, and to the end of August a *kharif* outturn, not much under that of an ordinary season, was confidently anticipated. In the first fortnight of September, however, monsoon conditions gave place to those usually prevailing at the end of May, and a fiery west wind soon parched the soil and shrivelled the standing crops, then approaching maturity. Between the 15th and 24th there was rain in 27 out of the 34 reporting stations in the division; but in 22 of these the amount was one inch or less, and the last six days of the month were rainless. October brought no relief, for only six stations reported rain, and of these four had under 0.25", one just over that amount, and one a little above 0.75". The winter of 1896 therefore opened with the very gloomy prospect of the *kharif* crop all but destroyed, the soil with scarcely sufficient moisture in it to germinate the seed for the *rabi* crop, prices rising, and the all but certainty of relief works being necessary on a large scale in the near future. The cultivators nevertheless did not lose heart, but sowed their fields whenever the land retained moisture, and assisted by the general rain of the 21st to 23rd November, when every reporting station in the Division out one received a fall varying in amount from 0.10" in Dhampur, Bijnor, to 0.80" at Oganpur, Bareilly, succeeded in putting down about 70 per

cent. of the area ordinarily under crop in the winter. This gave the people plenty to do in the fields for a time, and when the sowings were ended, irrigation began on a more than usually extensive scale from tanks, streams, and wells, and kept the people fully employed till the last week of December, when the winter rains commenced on the 25th of that month. During Christmas week every reporting station had from one to three days of rain, amounting to between 0.30" and 1.62", which was most beneficial to the crops, and followed by further falls of 0.03" to 0.86" between the 15th and 25th January 1897, and 0.03" to 1.56" on the 11th to 13th February, assured a good *rabi* outturn; but by making irrigation no longer generally necessary deprived the labourers of employment and necessitated the opening of relief works for them at different times in every district of the Division.

13. On the 30th and 31st October 1896 His Honor the Lieutenant-Governor held a conference with the Divisional and District Officers at Bareilly, to concert measures for meeting the crisis that was plainly approaching. At this meeting, in the opinion of District Officers, if the winter rains failed, there would be about 10,500 people daily on the works in the division in December, when the necessity for supplying the people with employment might be expected to commence, the number would thereafter gradually increase till it attained its maximum of about 236,000 a day in May 1897, and there would still be some 54,500 daily on the works in July 1897. The aggregate number of units to be provided for in this period of eight months was estimated as 23,580,000, and the probable expenditure at Rs. 15,72,000, *viz.* Rs. 11,79,000 on works, Rs. 3,93,000 on establishment and tools and plant, &c. If the winter rains arrived in due time and were of normal intensity, it was forecast that works would still have to be opened early in December; that some 10,500 people might be expected to resort daily to them in that month; that the numbers would increase to 48,500 a day in March, fall slightly during the cutting of the *rabi* crop in April, but only to rise to a daily average of 59,000 in May, and that even in July there would be a remnant of 24,500 to be supplied with work. Even under the favourable conditions of sufficient and timely rain, it was estimated that from 1st December 1896 to 31st July 1897 it would be necessary to provide employment for 8,595,000 units at a probable cost of Rs. 5,73,000, or Rs. 4,29,750 on works and Rs. 1,43,250 on establishment, &c.

14. To meet this demand a programme of relief works for the Division had been prepared, including 120 projects for the construction or improvement of district roads of all classes. These projects provided work suitable for relief purposes for 27,478,710 units at an estimated cost of Rs. 18,31,912, *i.e.* Rs. 13,73,934 for works and Rs. 4,57,978 for establishment and other miscellaneous charges.

15. During the months of November and December 1896, District Engineers and Surveyors were busily engaged in completing the details of the projects included in the programme of relief works: inquiries in regard to the capacity of each locality to supply tools and baskets were instituted; lists were opened for candidates for employment as work agents, muhar-rirs, &c., and every preparation was made for starting works whenever and wherever the District Officers might consider them to be necessary.

16. As mentioned in paragraph 12, the rain which fell in Christmas week deprived the field labourers of employment, and gave the signal for the commencement of relief operations. The Bijnor district was the first to start work, the Nagina and Dhampur section of the Moradabad and Hardwar pilgrim road being put in hand on the 22nd December 1896 to supply work for the labourers of the town of Nagina. Subsequently one more work—Haldaur and Nehtor road—was taken up in this district on 9th February 1897. The next district to open work was Moradabad, where the Sambhal and Hasanpur road was started on the 3rd January 1897, and the Moradabad and Kanth road on the 4th of the same month. A third work—the Amroha and Kanth road—was commenced on the 10th February 1897. Pilibhit reopened the unfinished Shahgarh and Kalinagar road on the 7th January 1897, and followed with the Pilibhit and Madho Tanda road, at the Pilibhit end, on the 14th January 1897, and at the Madho Tanda end on the 20th January; the Deoria and Bisalpur road on the 29th January, and, lastly, recommenced the incomplete Puranpur and Ghungchai road on the 23rd February 1897. Bareilly began work on the Aonla and Bhamora road on the 9th January 1897, and this was succeeded by the Bareilly and Bisalpur road on the 12th January; the Faridpur and Khudaganj road on the 15th January; the Bhojipura and Shahi road on the 31st January, and the Aonla and Serauli road on the 24th February 1897. Budaun and Shahjahanpur did not commence operations till February, the former starting its one work, the special repairs of the Budaun and Shahjahanpur road on the 1st, and the latter began six works in rapid succession, *viz.* the Tilhar and Nigohi road on the 8th; the Azizganj and Nibiaghát road on the 16th; the Pawayan and Khutar road on the 17th; Rafiaband and Zarimpur road on the 18th; and the Jallalabad and Kundaria, and Katra and Khudaganj roads on the 22nd February 1897. There were thus 21 works in progress in the division, of which one was started in December 1896, nine in January 1897, and 11 in February. Of these 21 works two were completed, *viz.* the Shahgarh and Kalinagar road in the Pilibhit district, and the Azizganj and Nibiaghát road in the Shahjahanpur district, and of the other 19, 18 remained unfinished when closed on different dates between the 22nd March and 3rd April 1897, owing to the departure of the

labourers to cut the *rabi* crop, and one—the Pilibhít and Mádho Tándá road in the Pilibhít district—remained open through the summer. A map of the Rohilkhand Division is attached to this report, showing the location of the works mentioned above, for easy reference.

17. A chart of the daily average number of people relieved in each district and the division accompanies this narrative. It will be seen that the number nowhere reached those anticipated by the District Officers. In December 1896 the daily average was only 146, the maximum was reached in week ending the 20th February 1897, and amounted to 26,054, and by the first week in April the people had all disappeared. Those who resorted to the works, moreover, did not come from long distances, but, in all but a few cases, were the residents of the towns and villages situated within a radius of about five miles of the place where work at the time happened to be in progress, as previously mentioned in paragraph 10. There was no great or universal rush, though at the beginning the surplus and floating population of the areas indicated did crowd on to see what things were like, and numbers consequently rose rapidly. Tasks, however, were rigidly enforced and wages were not excessive, so once operations were in full swing in every district, and the maximum had been attained, the numbers did not increase, but after a week began to drop quite as fast as they had risen. The physical condition of the people remained good throughout. There were, of course, some emaciated individuals; but over the whole division only on one work—the Pawáyan and Khutar road in the Sháhjahánpur district—did the labourers look otherwise than generally well nourished and, for their class, well clothed. It would appear from this that, though prices were high, and employment not as easy to obtain as in more prosperous times, and though there was scarcity and doubtless a considerable amount of distress, yet there was no famine, and the bulk of the people were not by any means at the end of their resources. These resources, owing to the preceding prosperous years and the better prices obtained for produce due to the increased facilities for export, were greater, and were better husbanded than twenty years previously, when, in the famine of 1877-78, the people were in great straits before prices reached the height they did on this occasion. The cultivators suffered but little, and were practically unrepresented on the works, and even the labourers were not at all keen to accept the famine wage when it was accompanied by a strict requirement of a full tale of work. As a case in point it may be mentioned that, on completion of the Azizganj and Nibiaghát road in the Sháhjahánpur district, arrangements were made for starting work on the Sháhjahánpur and Shahabad road, and the staff and accessories were sent to the Shahabad end; but though the opening of the



work was amply notified to the surrounding villages not a single labourer of any kind applied for employment.

18. When work was begun in each district the Famine Code system was at first followed, as had been done previously in the summer of 1896 in the Pilibhít district; paragraph 5. This was subsequently changed, as the districts were under observation and not officially proclaimed as distressed, between the 27th January and 10th February 1897 to the Intermediate system with contractors or middlemen. Under this arrangement, each work was in charge of a náib tah-síldár, who performed all the duties of an "Officer-in-charge", except the payment of wages, and was laid out and supervised by permanent Public Works subordinates and temporary work agents, the tasks and wages being fixed by the Sub-Divisional Officer in consultation with the Collector; but the division of the labourers into gangs, the distribution of the work to the gangs, and the daily payment of wages was entrusted to a middleman or petty contractor, who was under agreement to receive and employ all people fit to work made over to him each day by the Officer-in-charge, to task and pay them according to the quantities, and full and minimum wages fixed by the Sub-Divisional Officers, and to himself receive payment for dressed and finished work at a stipulated rate per one thousand cubic feet of earthwork, which varied principally according to the quality of the soil, on different works, between Rs. 2-8-0 and Rs. 3. The system did not work badly, for everything was in its favour in this division; the numbers to be employed were not large, the labourers were not in bad condition, there were but few ordinary works in progress, and contractors were therefore only too glad to get something to do that was certain to yield a reasonable profit, and it certainly reduced the expenditure on subordinate supervision and clerical establishment, and saved the executive staff a lot of trouble. The middlemen treated the labourers on the whole fairly well, and better than was perhaps expected when the system was introduced. Complaints of non-payment were exceedingly few, and of non-employment were generally found to be preferred by those who were too lazy to arrive early on the works. The employment of middlemen was, however, not approved by Government, and the system of working underwent another change to the "modified Intermediate," which was brought into operation in the division between the 25th February and 16th March 1897, and remained in force until the relief operations were finally closed in August 1897. Under this the middleman or petty contractor was excluded from the detail management, which was again carried out by Government officials, as under the Famine Code system. But each gang or sub-section of a gang had two alternative tasks allotted to it, the ordinary or smaller and the full or larger, which at the rate fixed by the Sub-Divisional Officer, according

to the condition of the soil, &c., gave its members the option of earning by extra exertion somewhat more than the famine wage for themselves and their dependants. At the same time, however, the minimum wage was abolished, and gangs were paid strictly according to the quantity of work turned out. The rates allowed to the workers varied according to the soil and length of lead between Re. 1-8-0 and Rs. 2-8-0 per one thousand cubic feet, exclusive of dressing, which was done by special gangs.

19. The opening of works in every district of the division naturally brought a greater variety of soils, from very hard clay to almost pure sand, into use, and the necessity of avoiding injury to standing crops caused the lead often to be increased much beyond the ordinary 50 feet to 100 feet. The task during this period therefore shows a far greater range of variation than on the preceding occasion. The limits were 80 cubic feet to 200 cubic feet, and the average outturn per digger was in different districts from 103 cubic feet to 138 cubic feet. The labourers generally performed their tasks, but fines had occasionally to be imposed where indications of slackness were observed. The soil of Rohilkhand is generally a light sandy loam, which, together with the good working condition of the people and the strict enforcement of the task system, accounts for the high average outturn of work, and the consequent low rate of earthwork executed.

20. Before operations were begun in December 1896 the elaborate classification of the people on relief works prescribed by the Famine Code had been much simplified by reducing the number of classes to two only, *viz.* B, able-bodied and D, weakly. The latter were employed on dressing and such light work, and the former were sub-divided, both men and women, into two classes, *viz.* diggers and others, and the working children also into two, according to age, *i.e.* whether under or over 12 years. In only one or two cases did women consent to perform the work of diggers in this division: in other instances, when, owing to the paucity of male diggers, they were asked to dig, and were offered a higher wage than they received for working as carriers, they absolutely refused. The price of coarse grain was about 10 seers per rupee all over the division in December 1896 and January and February 1897, and this was taken as the standard for fixing the wages paid to the different classes of people. Prices were easier in March, and between the 15th and 20th of that month wages were reduced to the 12-seer standard. According to the above classification and based on these two standard prices, the wages paid were those prescribed in Appendix VIII, Wages, Ready Reckoner of the Rules and Orders of the 1st December 1896 relating to Famine Relief Works. The people, of course, complained of the low wages; but there was no visible sign that these were insufficient; nor, on the

other hand, except from the railway officials, who did not pay daily or at very short intervals, was there any complaint from private employers that the relief works were competing with them.

21. Gratuitous relief was given on rather an extensive scale in the Pilibhit district, and to a few persons in Moradabad up to the time of the introduction of the "modified Intermediate" system, when the payment of dependants was discontinued under the orders of Government, and the non-workers were either maintained by the workers of each family or found refuge in the poorhouses. It was not found necessary to distribute cooked food to young children.

22. The second series of operations was carried out during the winter, when also a moderate amount of rain fell. Huts of grass and bamboo materials, that are both plentiful and cheap in Rohilkhand, had therefore to be constructed for those labourers who preferred to reside near the works rather than return to their villages daily. The numbers were not large, and consequently the accommodation required not extensive. The huts were located in the grove occupied by the depôt, and were moved forward by the people themselves from time to time as the work advanced. Only one accident occurred, and that was on the 4th March 1897, when some huts on the Bareilly and Bisalpur road, in the Bareilly district, took fire, and unfortunately a young child was burnt to death. No public latrines were constructed, but the people were required to go into the fields, as mentioned in paragraph 9, and a few sweepers were engaged to keep the precincts of each depôt and camp clean. The water-supply was carefully attended to. The wells were fenced and sometimes disinfected with permanganate of potash, and water was supplied to the labourers by men of suitable caste especially employed for the purpose. No hospitals were needed, for there was no serious sickness, nor any fatality other than that mentioned in this paragraph. When a work happened to be near the headquarters of a district or a dispensary, the Civil Surgeon in the former case occasionally inspected the people, and in the latter the Hospital Assistant visited them frequently and prescribed for those who were ill. Supplies were everywhere sufficient and of good quality, and at only one work did the people complain that they were being cheated by the *bania*.

23. It may be of interest to describe here briefly one day's proceedings. The people congregated in the morning at the depôt, the workers of the previous day in their respective gangs with their mates, and the new-comers by themselves. The old gangs were then checked, and, if necessary, the places of absentees filled up from the new-comers; the fresh arrivals were then formed into gangs, tools were served out, and the gangs, both old and new, were sent off to the work. There they were received by the work agents, who allotted a marked

out task to each gang and set them to work. The laying out of the centre pegs and lock-spitting was done by the Public Works subordinate, and was kept well ahead of the ordinary work. The quantity of earth needed having been previously worked out in a field-book from the section, the laying out of the borrow pits was easily done by the work agent, and was also kept in advance of the work. A slice of this, according to the task fixed and the number of diggers, the width being a multiple of 10 feet, was given to each gang, and a glance or simple measurement in the evening informed the work agent what proportion of the full task had been done. After the labourers had been set to work, the muharrirs went round with the registers, checked off those of the previous day who were present, and entered the particulars relating to those who had just been admitted. In the evening the people returned to the depôt and each individual received his wage from the náib tahsildár and his assistants, who then made up their books for the day; this was the system followed, and it answered fairly well with the comparatively small numbers that had to be dealt with in this division; the highest number attained in one day on any one work was just over 3,000. In the short winter days payments had often to be made after dark; but the people preferred to be paid for the day's work in the day, and it, moreover, left no inducement to those dissatisfied with the famine wage to return on the morrow. Payment under the immediate supervision of, or personally by, a responsible official, such as the náib tahsildár, with a reputation to lose, reduced the chance of fraud to a minimum, and no cases of this kind occurred, or were reported on any of the regular relief works of the division. The gang of between 30 and 40 persons was taken as the working unit, as it helped to keep the people together and maintain discipline, and was not found to interfere with the tale of work, for the idle members were soon stirred up by the others, and either did their fair share of work or stayed at home. The people were very docile and by no means difficult to manage, but very easily scared, as on one occasion when some mischievous individual spread the report on one of the works that the names were being registered to enable their owners to be found and deported to the deserted city of Bombay. The staff had leisure for a day or two in consequence.

24. The operations in this division were on a comparatively small scale, and lasted but a short time: hence no extensive or satisfactory test of the most economical proportion of each class of establishment to workers was made. The scale employed was about that prescribed in Mr. J. W. Alexander, Superintending Engineer's note regarding the introduction of the Intermediate system of relief works, and was found to work well. Náib tahsildárs were in some cases

deputed to the charge of works by Collectors, but the majority were obtained from the Board of Revenue. Some of the latter were already Government servants and had some experience of official duties, but the remainder were unexperienced young men with no knowledge of work at all. All those who had been previously in Government employ did well, and some exceedingly well; but there were, as was to be expected, distinct failures among the others. A sufficiency of work agents was obtained, but with difficulty, for this class needs to possess technical knowledge and experience, and there was a large demand at the time for such men. Only one visiting officer was employed in the Sháhjahánpur district for a short time. There was no lack of candidates for clerks' and muharrirs' appointments: but they were all raw lads, not over-intelligent, rather averse to hard work and exposure, and required a lot of drilling to put into shape. Good mates were difficult to get in sufficient numbers, and the works did not last long enough to train men properly.

25. No great difficulty was experienced in procuring tools and plant, as, the work being of a simple character, no elaborate appliances were needed, and *phaorahs*, baskets and buckets for the water-supply could be, and were, cheaply and expeditiously manufactured. The Roorkee Workshops were applied to for *phaorahs*, but the demand from other parts of the Province being great, only a few, some 1,375, were obtained from that establishment. Failing this source of supply, endeavours were made, and successfully, to procure them locally in order to put as much money into the hands of the people residing in the division as possible. Each Sub-Divisional Officer purchased a certain number for his own district, and 9,000 were obtained at Bareilly in a fortnight for a divisional reserve, but double that number could have been procured in the same time without difficulty had it been necessary. Baskets were received from the jails, and the open market was resorted to only before the manufacture was started in the jails, and when these were unable temporarily to meet the demand. The jail baskets were of inferior quality to those purchased in the market, and as they were not their own property, the coolies were not careful in using them and soon knocked them to pieces. It is not with any desire to reflect on the Jail authorities that this is mentioned, for it could not naturally be otherwise, the labour employed in making them being both unskilled and compulsory. Water buckets were made from empty kerosine tins and were obtained locally in each district. The total number of *phaorahs* from all sources and baskets from jails purchased for the works was 23,476 and 86,000 respectively. The *phaorahs* were thus sufficient to keep about 70,000 people employed, though the daily average did not rise much above 26,000.

26. Copper coin was at first received from the *sadr* and *tahsil* treasuries, but after a time a quantity of it was received back from the *bantias* in exchange for silver and only the balance was obtained from the treasuries. It was stored in iron or stout iron-bound wooden chests, and a guard of a constable and *chaukidars* was supplied for its protection at each work.

27. The following is an abstract of the season's operations—1st October 1896 to 31st March 1897—in the *Rchilkhand* Division :—

I.	Number of works open ...	...	21	
II.	Date first work was open ...	...	22nd December 1896	
III.	Date last work was closed, excluding one work in <i>Pilibhit</i> which remained in operation ...	...	8th April 1897.	
IV.	Maximum daily average relieved on any one week, ending 20th February 1897,	...	26,054	
V.	Total number of workers relieved.	{ 1,005,867	{ Men ... 401,308 Women ... 405,080 Children... 199,479	
VI.	Total number gratuitously relieved ...	...	69,735	
VII.	Grand total of units relieved ...	...	1,075,602	
				Rs.
VIII.	Expenditure on wages ...	{ Workers... 90,964 Dependants 1,105	92,069	
				Rs.
IX.	Expenditure on other items.	{ Contingen- cies ... 15,364 Tools and plant ... 20,673 Establish- ment ... 5,873	41,910	
X.	Total expenditure on work ...	...	1,33,979	
				C. ft.
XI.	Quantity of earthwork executed ...	...	33,515,052	
				Pies.
XII.	Average wage per unit ...	{ Worker ... 17-36 Dependant ... 3-04		
XIII.	Average outlay per unit relieved ...	...	23-92	
				Rs. a. p.
XIV.	Rate of earthwork per thou- sand cubic feet. }	... { For workers, 2 11 5 Total, cost ... 3 15 11		
				C. ft.
XV.	Average task per worker...	...	33-32	

28. The third stage of the operations comprises the period included between the 1st April 1897 and the final closing of the last work on the 17th August 1897, when the monsoon rains of 1897 were well established, and the weeding of a more than usually extensive *kharif* crop provided ample field employment for the people. Immediately after the earthquake shock of the 12th June 1897 good rain fell in the division on from two to eight days, and in amount varying from 0·67" at *Bijnor* to 10·59" at *Thákurdwára* in the *Moradabad* district. This started agricultural operations and caused the closing of some few works. It was followed by a break which extended to the 12th July when the rains really set in, and some of

the closed works were reopened, but without drawing any labourers to them. When the works were temporarily closed in March and April for the *rabi* harvest it was known that prices would remain high owing to the scarcity and distress prevailing more or less in all parts of India, and that some works would have to be reopened during the hot weather. The establishment was therefore reduced to the strength considered necessary by the District Officers by dismissing some members of the staff who had not shown themselves competent or whose services were not needed, and by the transfer of others to districts where works had still to be maintained.

29. One work, the Pilibhít and Mádho Tándá road, in the Pilibhít district, had not, as mentioned in paragraph 16, been closed. Between the 1st and 26th May 1897, 14 works were reopened, and two new ones were started. During May and June there were thus 17 works in progress in the division, of which one was in the Bijnor district, three in Moradabad, one in Budaun, six in Bareilly, four in Pilibhít, and two in Sháhjahánpur. The work in Bijnor continued in progress through May and June, and was closed on the 19th July 1897. In Moradabad the people did not resort to one work—the Amroha and Kanth road—so it was closed on the 20th May 1897; but the other two remained open till the 22nd July 1897. The single work in Budaun was closed on the 19th June 1897. In Bareilly the numbers were so small on two works that they were evidently not needed and were closed on 4th June, the remaining four being continued to 31st July 1897. In Pilibhít the work that had remained open continuously through the *rabi* period was completed on the 22nd May: two others were closed on the 29th and 30th July, and the last on the 17th August 1897. No labourers came to one of the works in Sháhjahánpur—the Katra and Khudaganj road—and the other was closed on the 21st June. Both were, however, reopened on the 10th July, but no one resorted to either of them.

30. The works were carried out on the Intermediate system, as described, for the period from 1st October 1896 to 31st March 1897, of which this was merely a continuation. The only two points that need remark are the facts that two works were opened when agricultural work was slackest on which no labourers appeared, and that the highest daily average in the division was only 4,397 during the week ending 10th July 1897. These indicated that, though prices were high, the people generally were not in such straits as to be willing to do a famine task for a famine wage based on a 12-seer standard.

31. The following is the abstract of the operations of the third, and, it is to be hoped, the final, stage of the famine of 1896-98 as it affected the Rohilkhand Division:—

- I. Number of works in progress, excluding those to which labourers did not come... 15

II.	Date when first work was recommenced in Sháhjahánpur after the <i>rabi</i> ...	1st May 1897.						
III.	Date the last work was closed in the Pilibhít district ...	17th August 1897.						
IV.	Maximum daily average relieved in any one week—10th July 1897 ...	4,397						
V.	Total number of workers relieved ... 207,007	<table border="0"> <tr> <td>{ Men</td> <td>69,715</td> </tr> <tr> <td>{ Women</td> <td>94,030</td> </tr> <tr> <td>{ Children</td> <td>43,262</td> </tr> </table>	{ Men	69,715	{ Women	94,030	{ Children	43,262
{ Men	69,715							
{ Women	94,030							
{ Children	43,262							
VI.	Total number gratuitously relieved ...	1,195						
VII.	Grand total of units relieved ...	208,202						
Rs.								
VIII.	Expenditure on wages...	<table border="0"> <tr> <td>{ Workers</td> <td>14,839</td> </tr> <tr> <td>{ Dependants</td> <td>19</td> </tr> </table>	{ Workers	14,839	{ Dependants	19		
{ Workers	14,839							
{ Dependants	19							
IX.	Expenditure on other items ...	<table border="0"> <tr> <td>{ Contingencies,</td> <td>9,595</td> </tr> <tr> <td>{ Tools and plant,</td> <td>212</td> </tr> <tr> <td>{ Establishment,</td> <td>3,736</td> </tr> </table>	{ Contingencies,	9,595	{ Tools and plant,	212	{ Establishment,	3,736
{ Contingencies,	9,595							
{ Tools and plant,	212							
{ Establishment,	3,736							
X.	Total expenditure on works ...	23,401						
C. ft.								
XI.	Quantity of earthwork executed ...	6,024,090						
Pies.								
XII.	Average wage per unit ...	<table border="0"> <tr> <td>{ Worker</td> <td>13-76</td> </tr> <tr> <td>{ Dependant</td> <td>3-02</td> </tr> </table>	{ Worker	13-76	{ Dependant	3-02		
{ Worker	13-76							
{ Dependant	3-02							
XIII.	Average outlay per unit relieved ...	26-14						
Rs. a. p.								
XIV.	Rate of earthwork per thou- sand cubic feet. }	<table border="0"> <tr> <td>{ For workers,</td> <td>2 7 5</td> </tr> <tr> <td>{ Total cost,</td> <td>4 11 5</td> </tr> </table>	{ For workers,	2 7 5	{ Total cost,	4 11 5		
{ For workers,	2 7 5							
{ Total cost,	4 11 5							
C. ft.								
XV.	Average task per worker ...	29-10						

32. In the latter half of paragraph 13 is given the forecast made by the District Officers at the Conference in October 1896 of the probable number of people that would have to be provided for, &c., if timely and sufficient rain fell in the winter, and it may be of interest to compare that forecast with actual results:—

	Forecast.	Actual.
I. Date of commencement ...	Early in December.	22nd December 1896.
II. Daily average for December ...	10,500	146
III. Maximum daily average...	March—43,500	20th February 1897—26,054
IV. Result of <i>rabi</i> harvest ...	Slight fall in numbers.	All but one work closed.
V. Maximum daily average after <i>rabi</i> ...	May—59,000	10th July 1897 4,397
VI. Daily average in July ...	24,500	4,397
VII. Grand total of units ...	8,595,000	1,283,804
VIII. Total Expenditure ...	Rs. 5,73,000	Rs. 1,62,380

33. The whole of the members of the permanent Public Works establishment of the division, with but few exceptions, worked with energy and zeal during these relief operations, which were carried out in addition to the ordinary work of the year and without any increase to the executive staff; but the exceptional and meritorious services of the following officers



and subordinates are specially recommended to the notice and consideration of Government for the assiduous, intelligent, and painstaking interest with which they entered into every detail of the work, and for the praiseworthy manner in which they thoroughly identified themselves with their duties:—

*Sub-Divisional Officers—*

Mr. W. H. Clifford, Assistant Engineer	...	Moradabad.
Mr. W. A. Marshall, Supervisor	...	{ Pilibhít. Budaun.
Bábu Ganesh Rai, Supervisor	...	... Pilibhít.

*Subordinates—*

Dharnidhar Das, Supervisor	...	... Bareilly.
Narain Sarup, Overseer	...	... Sháhjahánpur.
Ghasi Ram, Sub-Overseer	...	... Bijnor.
Nasir-ud-din, ditto	...	... Bareilly.
Kundan Lal, ditto	...	... Moradabad.
Banwari Das, ditto	...	{ Pilibhít. Moradabad.

A special statement and report regarding the work and merits of the máib tahsildárs, who acted as "Officers-in-charge," has been called for by Government and will be submitted in due course. Their names have therefore not been included in this report.

BAREILLY: }  
The 26th August 1897. }

GEORGE B. BIRD,  
*Executive Engineer,*  
*Rohilkhand Provincial Division.*

**FINAL REPORT ON FAMINE RELIEF OPERATIONS IN THE 2ND  
CIRCLE, NORTH-WESTERN PROVINCES AND OUDH, PROVINCIAL  
WORKS BY Mr. G. R. McDOWELL, OFFICIATING SUPERINTEND-  
ING ENGINEER, DATED THE 15TH SEPTEMBER 1897.**

[THIS report, submitted by Mr. McDowell in the absence of the Superintending Engineer on deputation, is supplemented by a note by Colonel Pulford, C.I.E., R.E., which is printed in the sequel.]

*Index of papers sent with the Annual Famine Report.*

No.	Name of paper.	Particulars.
1	Appendix A ...	Superintending Engineer's instructions regarding famine organization, with the forms of daily report (post-card), muster-roll, goshwara, Form No. III and weekly abstract.
2	Appendix B ...	Superintending Engineer's instructions regarding the Intermediate system of relief works with petty contractors.
3	Appendix C ...	Superintending Engineer's instructions regarding the payment and distribution of wages with its vernacular translation.
4	Appendix D ...	Superintending Engineer's instructions regarding full exaction of task.
5	Appendix E ...	Superintending Engineer's instructions regarding Military Inspecting Officers.
6	Appendix F ...	Superintending Engineer's inspection report form for the Military Inspecting Officers.
7	Appendix G ...	Superintending Engineer's instructions regarding Intermediate system of famine relief works without contractors, with forms of dependants fed in kitchens.
8	Appendix H ...	Superintending Engineer's Allocation Statement.
9	Appendix I ...	Superintending Engineer's instruction regarding the collection of kankar.
10	Appendix J ...	Superintending Engineer's Note on Hardoi Famine Works.
11	Statement I ...	List of Military Inspecting Officers.
12	Statement II ...	Do. Civil ditto.
13	Statement III ...	List of roads.
14	Statement IV ...	List of tanks.
15	Statement V ...	Statement of persons relieved and expenditure.
16	Statement D ...	Superintending Engineer's Inspection Note of Machibhawan Relief Works.

*Final Report on the Famine Relief Operations under Public Works Department  
in the 2nd Circle, Provincial Works, during the years 1896-97 and 1897-98.*

CONSIDERABLE anxiety having been caused by a failure of the monsoon of 1896, the Government at once instituted inquiries regarding the distress that was likely to fall upon the people in case of a failure of crops. Failure of rains. For this purpose a conference was held at Lucknow on the 2nd November 1896, with His Honor the Lieutenant-Governor, North-Western Provinces and Chief Commissioner of Oudh as President, to discuss such measures as should be undertaken for the relief of the distressed people. The decisions arrived at were embodied in Revenue (Scarcity) Department G. O. No.  $\frac{1098.}{1-61}$ , dated 11th November 1896, and were that relief works should be started at once in all parts of the Lucknow Division, except the Kheri district: the larger relief works should be undertaken by the Public Works Department, and the smaller village works by the District Officers. Test works were accordingly at once undertaken in all parts of the Division by the District Officers, which were afterwards converted into regular famine relief works under the control of Public Works Department as the number of labourers began to increase.

The Rae Bareli district was the first in which sensible distress was noticed, and it was here that the first famine works was started. Relief works in the Lucknow Division. on the 30th October 1896. This consisted in raising and resectioning the Hydergarh and Fatehpur *kachcha* road. The next work undertaken in that district was of a similar nature to the above on the Rae Bareli

and Unao road, which was commenced on the 2nd of November 1896. Simultaneously *i.e.* by the end of October 1896, relief works were undertaken in the Hardoi district. The raising and resectioning of the Hardoi and Piháni road was the first to be started. The next district in which regular relief works were opened was Sitapur. The works taken up originally were (1) on the Moholi-Laharpur road, started on 11th November 1896, and (2) on the Chandra-Bari road, started on 16th November 1896, and were similar in nature to those mentioned above in Rae Bareilly and Hardoi. The Lucknow district was taken up next, and here the first relief work was started on the 4th of December 1896, and consisted of levelling the Machibhawan site and in digging out bricks from the high mound. This work, it should be mentioned, is situated close to and adjoins the city of Lucknow. By the middle of December 1896 relief works were also undertaken in the Unao district. Thus by the middle of December 1896 relief was being afforded to all needing the same in the five districts of the Lucknow Division recognised by Government as distressed. The works mentioned above were undertaken on the regular Famine Code rules. Relief works in the Kheri district were started by the end of February 1897 on the Intermediate system without contractors. The attendance of workers in this district was very small, as the people did not like the Intermediate system.

In November 1896 detailed instructions\* were drawn up by Colonel R. I. Pulford, R.E., Superintending Engineer for famine organization, and issued to the Sub-Divisional Officers of the Lucknow Division for guidance. These instructions, with the forms of daily reports, (post-card) muster-rolls, daily abstract of payments (goshwáras) and Form No. III (weekly abstract) are embodied in Appendix A.

4. In the beginning of December 1896 instructions were received from Government to open relief works in the Fyzabad Division in consultation with the District Officers, on the Intermediate system with petty contractors as laid down in G. O. No. 9099W. dated the 5th December 1896. Orders were accordingly issued to the Executive Engineer, Fyzabad Division, to make all arrangements and to be ready to start relief works as necessity should arise. Durga Singh, an experienced and trustworthy contractor of this department, was engaged to supply petty contractors for each of the districts. A set of instructions † were drawn up by Colonel R. R. Pulford, R.E., Superintending Engineer, for guidance for carrying out the works on this system. The charges were ordered to be opened in each of the districts except Bahraich. Works were started on the following dates in the several districts:—

Partálgarh	...	...	...	...	...	...	21st December 1896
Sultánpur	...	...	...	...	...	...	22nd ditto.
Bara Banki	...	...	...	...	...	...	23rd ditto.
Fyzabad	...	...	...	...	...	...	23rd ditto.
Gonda	...	...	...	...	...	...	24th ditto.

In the Bara Banki district, where the distress was more severe than in the other districts of the Fyzabad Division, workers began to pour in from all sides, so that in January 1897 it was decided to convert the works in that district into regular relief works under the Famine Code system. A conference was held at Bara Banki on the 12th January 1897 by Colonel R. R. Pulford, R.E., Superintending Engineer, a Mr. F. B. Mulock, Commissioner and Mr. Hope, Deputy Commissioner, at which the works to be undertaken to meet the localities most distressed were settled. His Honor also visited the district and held a conference on the 18th January 1897, at which the district was finally declared to be distressed. The Sultánpur and Partálgarh districts were also visited by His Honor and regular relief works were afterwards ordered to be started. Muhammad Husain, Overseer, who had received a training at Lucknow in the management of famine relief works, was deputed to the several districts of the Fyzabad Division to instruct the District Surveyors in the system. A circular was issued in the Lucknow Division as per instructions, &c., issued by Colonel R. R. Pulford, R.E. In the five districts of the Fyzabad Division there were various systems

of famine works adopted to meet existing conditions. These are detailed below and were undertaken in the following order :—

*Bara Banki district.*—Intermediate petty contract system, afterwards converted into regular Famine Code system with dependants.

*Partábgarh district.*—(1) Intermediate petty contract system, (2) regular Famine Code system without dependants, and (3) regular Famine Code system with dependants.

*Sultánpur district.*—(1) Intermediate petty contract system, and (2) regular Famine Code system without dependants.

*Gonda.*—Intermediate petty contract system.

*Fyzabad.*—Intermediate petty contract system.

5. In December 1896 detailed printed instructions\* were issued by Superintending Engineer regarding payment and distribution of wages on famine relief works, and these were at once adopted in all the districts in which they were applicable.

6. The number of people on the regular relief works began to increase rapidly, and it at last became necessary to issue orders for the strict execution of a full task as prescribed in Appendix A and for infliction of fines for short work. This was with the view to discourage all but those who were really in distress rushing to the works, as every member of the family got something which collectively came to fairly decent sum. A set of instructions† was accordingly drawn up on the subject and printed copies of them were distributed to the Sub-Divisional Officers for guidance.

7. Up to January 1897 the relief works were supervised by the Sub-Divisional Officers assisted by the ordinary Public Works staff of Sub-Overseers and Overseers. Sanction of Government was accorded in January 1897 to the senior Sub-Overseer of each of the districts being promoted temporarily to the Overseer grade with a view of employing them solely to assist the District <sup>Engineers</sup> <sub>Surveyors</sub> in the supervision and management of the famine relief works. Early in February 1897 military officers from regiments and Royal Engineer officers from the Military Works Department were deputed by Government as Inspecting Officers for Famine Relief Works. A list‡ of these officers deputed to this circle, showing the dates of their arrival and departure and the districts to which they were posted, is appended herewith. A set of instructions§ were drawn up by Colonel R. R. Pulford, R.E., for their guidance. A form of Inspection Report|| for these officers was also drawn up and after approval by Chief Engineer was printed. These officers were a great help to the Superintending Engineer and also to the Sub-Divisional Officers, to whom they rendered valuable assistance. Their frequent inspections kept all the staff engaged in every famine charge up to their work, prevented the possibility of serious speculation, and carefully looked to all sanitary arrangements, resulting in the health and well-being of the large accumulations of workpeople and their dependants, &c. They also saw that all orders issued by the Superintending Engineer and all instructions issued by this office for the management and control of relief works were carefully carried out.

8. In the Fyzabad Division, where the works were undertaken on the Intermediate petty contract system, the workers brought their own tools for digging earth. In the Famine Code system works, *phaorahs* were supplied by Government. In January 1897 orders

were given to keep a reserve stock of 46,000 *phaoraks* in the godown of the Superintending Engineer's office ready for issue to any works where necessity should arise 5,000 picks and 5,000 hammers were also purchased subsequently in July and August 1897 for kankar collection by famine labour.

9. By the end of March 1897 the labourers began to leave the relief works and return to their fields to reap the *rabi* harvest, so that numbers decreased considerably, and in some of the districts, *viz.* Fyzabad and Sitapur, all famine works had to be closed. It was now deemed advisable by Government owing to this large diminution of numbers to convert all the relief works except in Hardoi from the full Famine Code to

Cutting of *rabi* harvest.

Intermediate system of relief works without petty contractors.

the Intermediate system without petty contractors. In this system the labourers were paid according to the amount of work done. The number of carriers was fixed at two to each digger for a lead up to 100 feet. Additional carriers were entertained above 100 feet lead. A set of instructions\* was drawn up by Colonel R. R. Pulford, R.E., Superintending Engineer, and printed copies of these were issued to the Sub-Divisional Officers for guidance. No dependants were allowed under this system with the exception of children under seven years of age, who were supplied with cooked food from the charge kitchens. In the Hardoi district the works were continued on the Famine Code system up to the middle of July 1897, when they were also converted into the Intermediate system.

\* Appendix G.

10. The scale of wages on the regular Famine Code works was regulated according to the current rate of grain and was calculated according to the Wages Ready Reckoner attached to Chief Engineer's circular of the 1st December 1896. Wages were at first fixed on the 10-seer basis and were gradually decreased by adopting the 11 and 12-seer basis, as owing to the cutting of the *rabi* harvest prices of grain fell. On the Intermediate system the wages were paid according to the amount of work done.

Scale of wages  
Appendix G.

11. The detailed instructions regarding organization are laid down in the Appendix A attached to this report. Men of the class of *náib tahsildárs* were appointed by the Board of Revenue and placed at the disposal of the Public Works Department. They were put in independent charge of relief camps with two work agents and the requisite number of clerks, *jamadárs*, and mates under them as laid down in the detailed instructions.

Organization and staff.

12. In the beginning of the famine operations the payments to relief workers were made twice or thrice a week, but afterwards the arrangement was altered to daily payments, in accordance with Superintending Engineer's instructions detailed in Appendix C. The system of daily payments necessitated a sufficient quantity of copper coin being always in the cash chest of Famine *náib tahsildár* or Officer-in-charge, and this was a serious difficulty, as often daily payments amounted to Rs. 400 per charge, and it took often five days to get the coin out and Rs. 1,000 was not sufficient to meet requirements, so the imprest system of payments, which previously prevailed and was limited by Government of India orders to Rs. 1,000, was altered to Rs. 2,000 or over, according to requirements of each charge and the cash-book system was adopted. The Treasury could not supply over a limited amount in copper; the rest had to be procured from the local *bantias* who sold food to the relief workers. The difficulty of getting pice compelled some of the Sub-Divisional Officers to offer commission to the

Copper coin.

Commission for pice.

local *bantias* who could supply pice in large quantities. On the matter having been represented to the Superintending Engineer a commission of  $\frac{1}{2}$  per cent. was sanctioned and allowed to contractors to induce them to procure pice from the various bazárs. In the Hardoi district the difficulty was severely felt for some time, and when it was

found that the civil officers were unable to make any arrangements to meet the difficulty, Durga Singh, contractor, was engaged by the Superintending Engineer to collect pice at Lucknow and other places and send them on by rail to the different famine relief camps in the Hardoi district. He was offered a commission of one-half per cent. and the actual expenses for collection and conveyance of pice. In this manner this contractor supplied Rs. 40,000 worth of copper coin.

13. In the winter season Government had sanctioned a sum of Rs. 100 for each charge for supplying blankets to the destitute women and children. Besides this a sum of Rs. 17,000 was afterwards placed by the Indian Charitable Famine Relief Fund Committee at the disposal of Colonel R. R. Pulford, R.E., for distribution of clothing to destitute women and children. Out of this sum allotments were at once placed by Superintending Engineer at the disposal of the Sub-Divisional Officers according to requirements. *Dhotis, chadars, saris, lahengas, dopattas, pyjamas, kurtas, &c.*, were freely distributed to the wretched coolies, who were badly in need of clothing. The following list shows the expenditure incurred in the several districts under this head :—

Districts.	...	...	...	...	...	Rs.	s.	p.
Lucknow	...	...	...	...	...	1,582	4	6
Unao	...	...	...	...	...	1,150	13	3
Rae Bareilly	...	...	...	...	...	2,150	0	0
Hardoi	...	...	...	...	...	4,869	5	0
Sitapur	...	...	...	...	...	399	5	6
Bara Banki	...	...	...	...	...	76	6	6
Total						...	10 228	2 9

14. Lists of road and tanks which were improved by famine relief work are appended herewith, showing the dates on which the works were opened and closed and the quantity of earthwork executed. A complete list of *náib tahsildárs* and work agents for each district is also enclosed.

15. At first the *imprest* system was adopted in keeping the account of several charges, but afterwards the introduction of regular cash-books was ordered. The Officer-in-charge sent a copy of his cash-book every week to the Sub-Divisional Officer. The papers connected with the accounts of an Officer-in-charge consisted of (1) the muster-roll, (2) the *goshwára* or the daily abstract of payments, (3) the general register, (4) the No. III statement, and (5) bills and receipts for miscellaneous payments. At first there was no system laying down the sub-heads under which the different items of expenditure were to be classified. It was observed that the allocation of the charges differed in the several districts according to the lights of the Officer-in-charge.

Inspector of Accounts. Subsequently the Superintending Engineer appointed an Inspector of Famine Accounts on a consolidated salary of Rs. 150 per mensem whose duties were to go round all the charges and teach the Officers-in-charge as to the proper way of keeping the accounts under several sub-heads. A proper allocation\* sheet was drawn up by the Superintending Engineer in which the charges were to be allocated under five sub-heads

Allocation of Charges.

\* Appendix H.

detailed below :—

- (1) Earthwork.
- (2) Work establishment.
- (3) Famine establishment.
- (4) Work contingencies.
- (5) Tools and plant.

This allocation statement was forwarded to Chief Engineer, North-Western Provinces and Oudh, Public Works Department, for approval of the Examiner and afterwards printed and issued to the several Sub-Divisional Officers for the guidance of the Officers-in-charge.

16. By the end of July 1897 a conference was held at Lucknow with His Honor the Lieutenant-Governor as President, at which it was decided that as the rainfall had been normal throughout the province the relief charges should be concentrated into

Concentration of charges.

a limited number of centres and the surplus staff of nâib tahsildârs and work agents should be discharged after keeping a sufficient staff for the supervision of the proposed centres. The centres which were opened were—

Lucknow	..	..	..	..	..	4 centres.
Unao	..	..	..	..	..	2 ditto
Rae Bareli	..	..	..	..	..	2 ditto
Hardoi	..	..	..	..	..	5 ditto
Sitapur	..	..	..	..	..	1 ditto (if necessary)
Kheri	..	..	..	..	..	1 ditto (ditto).

17. The works ordered to be carried out in these centres were mainly kankar

Kankar collection.

\* Appendix I.

workers, whose number began to decrease rapidly in these centres, and the works were finally ordered to be closed by 31st August 1897, with the

Closing of famine relief works.

exception of one charge in the Lucknow city in the grounds of the Colvin School. Orders have since been received from Government to close this charge also by the 15th September 1897. The Military Inspecting Officers have all been ordered to revert to the Military Department with the exception of Captain H. Merewether of the 7th Bengal Cavalry whose services have been retained at present for the inspection of village relief in the Rae Bareli district.

18. When the famine works were first started the general condition of the

Condition and health of the relief workers.

workers was not good. The new arrivals, especially the children, were generally in an emaciated state. But when they had been on the works for some time their condition greatly improved. It was noticed that often parents did not give sufficient food to their children who should have been stout, but were instead emaciated. But on the introduction of the Intermediate system cooked food was ordered to be given to children dependants, whose condition was thereby much improved, and all generally grew fat and strong. The general health of the workers was good throughout. During the winter months there was very little sickness among the workers. In the summer

Cholera.

cholera appeared in some of the charges of the Hardoi district, where the number of workers was still very large owing to the full Famine Code system having continued in force there. But by timely precautions and the adoption of preventive measures, such as disinfection of all wells by permanganate of potash and segregation of the infected charges, the disease was not allowed to spread and was stamped out of the district in a few weeks. Credit is due to the exertions of the Military Inspecting Officers—Lieutenant H. D. Pearson, R.E., and Major F. Pollock and Surgeon-Lieutenant Browne, Inspecting Medical Officer. The number of deaths from cholera was not very large. There were also a few cases of cholera in some of the charges of the Lucknow district in and around the Lucknow city towards the latter part of the famine season.

† Actual number was 275.

19. From the commencement of relief works up to the middle of December

Sunday allowance.

1896 no work was done on Sundays, but an allowance was given to the workers and dependants at the rates of dependants. The system of Sunday work was then introduced as optional with the workers and continued up to the middle of March 1897. The Government in their Resolution No.  $\frac{751}{S-95}$ , dated 16th March 1897, directed that Sunday labour should be discontinued on all relief works from the 20th March 1897, and that the labourers should be paid at subsistence wages on the scale of dependants on all works under the Famine Code system. The subsistence wages for Sundays were paid on Saturdays. This procedure was continued till the introduction of the

Intermediate system, in which there was no allowance for Sundays. The Government considered that the rates allowed on this system were such as to permit the labourers earning during the six working days sufficient to support themselves and their dependants for seven days.

20. Orders were received with G. O. No. <sup>1305</sup><sub>8-141</sub>, dated the 11th June 1897, that the famine works were to remain closed on the 21st and 22nd June 1897 in honour of the Empress' Jubilee holidays. Diamond Jubilee, and that the workers were to get subsistence wages on the scale of dependants on the Famine Code works and full wages on 12-seer basis on all Intermediate works. Instructions were at once issued accordingly to the Sub-Divisional Officers to carry the orders into effect, and this was done on all the famine charges in every district.

21. There were no relief works undertaken in this circle in September 1896, and hence the statement called for in Chief Engineer's No. 4435F. of 24th August 1897 is blank.

22. A statement showing the particulars required by Chief Engineer's No. 4379F., dated 18th August 1897, is enclosed for information.

The following is a summary of persons relieved, number of miles of road improved, and expenditure incurred on famine operations up to the middle of August 1897 in the 2nd Circle, Provincial Works :—

(1) Total number of workers relieved, reduced to units of one day	...	...	35,723,550
(The maximum number present on one day on the 16th February 1897 was 450,993 relieved workers and dependants.)			
(2) Number of dependants who received gratuitous relief reduced to units of one day	...	...	8,133,357
(3) Number of children who received cooked food, reduced to units of one day	...	...	1,394,060
Rs.			
(4) Expenditure on works	...	...	25,77,104
(5) Ditto gratuitous relief	...	...	1,87,133
(6) Ditto tools and plant	...	...	1,58,160
(7) Ditto famine establishment	...	...	2,32,846
(8) Total expenditure	...	...	31,55,243
(9) Number of miles of roads improved	...	...	1,197
(10) Cubic feet of earthwork on the roads	...	...	410,283,143
(11) Ditto tanks	...	...	57,043,612
(12) Cubic feet of bricks obtained by digging	...	...	729,307

The majority of the roads were formerly low and were impassable for traffic during the rains. They have now been raised and improved by famine labour, and will prove to be of lasting benefit to the public. Some of the roads improved by famine labour have since been cut up and damaged by rains. His Honor the Lieutenant-Governor, North-Western Provinces, and Chief Commissioner of Oudh, has called for special estimates for the repairs of these roads which, when carried out, will make them A, 2nd class roads raised throughout with drivable berm for light traffic and will be a great improvement to the communications of the country at large. The people are very thankful to Government for the relief afforded them in their distressed condition and are loud in expressing the conviction that were it not for this timely help their bones would have been bleaching in the ditches and ravines. The present famine was a very serious one and tens of thousands of people would have died of starvation had not Government thus timely undertaken to help them and engaged

Agency for carrying out famine works. in an extensive programme of famine relief operations. It should be mentioned that the Divisional Divisional and District Engineers and Surveyors. Engineers of the Lucknow and Fyzabad Divisions were in immediate charge of all famine operations; but Superintending Engineer in urgent matters communicated directly with Sub-Divisional Officers, sending copies of such orders and instructions to Divisional Engineers.

LUCKNOW :  
The 15th September 1897.

G. R. McDOWELL,  
Offg. Superintending Engineer, 2nd Circle,  
Provincial Works, N. W. P. and Oudh.



## APPENDIX A.

*Instructions regarding famine organization.*

THE following organization is to be adhered to in carrying out work by  
General organization. famine coolies :—

The famine workers will be divided into "charges," each consisting of 5,000 workpeople. A charge will be divided into 10 "parties," each under a "jamadár." A "party" will be divided into 10 gangs, each under a "mate." There will be 50 people in each gang. Each charge will be under an "Officer-in-charge," who will be directly under the Public Works Department, and will ordinarily, and whilst carrying out famine work, take his orders from the District Engineer. He and his charge will be at the disposal of the Divisional Engineer, who will issue all orders regarding transfer of the charge from one work to another. The Divisional Engineer in all such matters will act in consultation with the Civil Officer of the district.

The "Officer-in-charge" will have charge of all arrangements for distributing wages to the famine workers. Separate instructions in regard to this special point will be issued.  
Officer-in-charge.

Each "Officer-in-charge" will have two work agents under him for the carrying out of instructions, and to assist in distributing wages. The pay of the work agent will vary from Rs. 25 pay and Rs. 15 horse allowance to Rs. 50 pay and Rs. 15 horse allowance per mensem according to qualifications. The lower rate may be increased up to the latter limit in cases where the work done merits the increase. On this view except for men of really good qualifications, the full rate should not be given at first. Each work agent will have charge of half the charge, *i.e.* of five parties constituted as under.  
Work agent.

The unit of the charge will be a gang of 50 coolies, men, women, and children. The proportion should be so arranged that as far as possible there are four carriers to one digger.  
Constitution of gang unit under a "mate." Each coolie should on arrival be given a card-board ticket, the size of a railway ticket, on which is to be written his number in the gang and his class. This ticket is to be retained by him so long as he remains with his gang. The task which such a gang can be expected to do in a day is for ordinary soil 1,000 cubic feet over a lead of from 50 feet to 100 feet. The wages which the gang will earn would at an average of one anna a day come to Rs. 3-2-0, and this for the earlier period of famine work may be kept as the approximate standard of wage for this class of work. The average wage at famine rates for the grain equivalent is for some time to come not likely to work out to a less average than 1½ annas for all classes of workers. This wage would give a rate of Rs. 4-11-0 per 1,000 cubic feet, and a rate of Rs. 5 per 1,000 cubic feet has therefore been taken for earthwork in the famine road estimates. The question of raising or lowering the rate will always be decided by the Civil Officer.

Each gang of 50 will be in the charge of a "mate," who should, if possible, be chosen from the famine workers; but if this is not feasible, any man of intelligence may be selected for the post. His pay should be fixed at 2½ annas a day. He will have nothing to do with accounts; but he should be in general charge of the gang, and should be able to give information regarding the various members of it; he should keep a muster, roll by name, if possible; but if he cannot do this, then he should keep a register of the numbers of men, women, and children and their classification under the various heads A, B, C, D. Under recent orders there are only two classes of workers, *viz.* B and D.  
Duties of "mate."

The mate will have a small flag of white linen on a pole six to seven feet long. The number of the gang should be sewn in red on the flag. The gangs will be numbered from 1 to 100, and the mate should have a badge fastened to his arm with the number of his gang upon it. Such badges can be made up of brass at a cost of about two annas each.

Ten mates will form a "party." The "party" will be under a jamadár, who should be chosen as a rule from the permanent road maintenance establishment of the district or division. His pay will be Rs. 10 per mensem. The jamadárs will be numbered from I to X, and each man will have his number on a badge which he should always have with him. He will have a good sized red flag with his number on it in white for marking his charge. He will be responsible for the management and movement of his 10 gangs, aggregating 500 people. He will help to set out their tasks and will be responsible for their proper numbering and for the correctness of the muster-rolls prepared by the mates, and he may be employed to aid in distributing wages.

The above deals with the general constitution of a famine charge. In addition to the staff above indicated, there will be a man of the Sub-Overseer class who will be responsible for the engineering details of the work to be carried out by the charge. He will of course have the assistance of the other charge officials within their several limits. The Sub-Overseer will when possible be a permanent member of the Public Works Department; if not a permanent member, he should be a temporary member with a chance of permanent employment should he do exceptionally good work. His pay will be ordinarily that of a 1st grade Sub-Overseer with the usual horse allowance. Where the Work Agents of a charge are fully qualified, it will not be necessary to employ a Sub-Overseer. The Divisional Engineer is authorized to use his discretion on this point.

Petty establishment.

The following additional members will be attached to the staff of a charge:—

	Es.	s.	p.	
1 Store-keeper, on ... ..	15	0	0	per mensem.
2 Chaukidárs for stores, each ... ..	6	0	0	ditto.
1 Clerk, able to read and write English and Persian for the Officer-in-charge ... ..	20	0	0	ditto.
2 Peons, for ditto, each ... ..	5	0	0	ditto.
1 Peon for the Sub-Overseer ... ..	5	0	0	ditto.
4 Sweepers, each at ... ..	0	2	0	per diem.

The following will be the distribution of the "charge" when employed on a famine work. Each gang can do 1,000 cubic feet in one day and 10,000 cubic feet in 10 days, exclusive of Sundays. The 10 days' task should be taken as the unit. This will work out as follows:—It will be assumed that 50 feet is the section per running foot of the road work to be made up, and for this section each gang will take up a frontage of 200 feet, and will be able to excavate during 10 days a borrow pit 200' × 25' × 1' on each side of the road. Each party will be able to do this amount multiplied by 10 and will occupy a frontage of 2,000 feet. The entire "charge" will excavate in the 10 days 10 times this amount, viz. 10 × 10 × 10,000 = 100,000 cubic feet, and will occupy a frontage of 20,000 feet, or say four miles.

This distance is not too large to be supervised by the staff provided, and hence it should be adopted as the unit of work and length of road which can be ordinarily excavated by a famine "charge" of 5,000 workers during a period of 10 days, exclusive of Sundays. To give work for 5,000 coolies for a month, therefore, it would be necessary to provide a length of 12 miles of road; and if a body of 5,000 famine relief workers has to be provided with work for three months, it would be advisable to arrange that they are put on to a stretch of road 36 miles long, with a section of work to be done on it of 50 feet per running foot.

The complete staff for a charge will be as follows :—

Officials.	Pay.	Total.
	Rs.	Rs.
1 Officer-in-charge, pay settled by Civil Department ... ..	...	...
2 Work Agents ... ..	40 to 65	80 to 130
1 Sub-Overseer, not obligatory ... ..	...	...
10 Jamadárs ... ..	10	100
100 Mates, 2½ annas a day ... ..	...	...
1 Store-keeper ... ..	15	15
1 Clerk ... ..	20	20
2 Chaukidárs for the stores ... ..	6	12
Ditto treasure chest ... ..	6	12
3 Peons ... ..	5	15
1 Muharrir ... ..	15	15
4 Sweepers, two annas a day ... ..	...	...

The muster-rolls are to be written up daily by the mates and are to be made over to the jamadárs, who, after verification, will take them to the Officer-in-charge. From the muster-rolls the wages for the day will be made out. During the evening the amount of each gang will be calculated and placed in a small bag marked with a corresponding number. Ten of these will be placed inside a corresponding large bag and the entire wages of the charge having thus been allocated, the bags with the money will remain overnight in the care of the Officer-in-charge and his chaukidárs. The wages will be distributed along the line of work next day, under the direction of the Officer-in-charge, at any time he may select. Special rules for the method of distributing wages have been drawn up. The Officer-in-charge should arrange for his own chaukidárs; if possible a small police guard should be obtained. The Civil Officer of the district will arrange the necessary supply of copper coin and small silver coin. Early information regarding probable requirements should be given him by the Officer-in-charge.

Payments should be made daily as a rule.

The coolies should begin work at 8 A.M. during the cold weather months and should close work at 5 P.M. Two hours should be allowed them in the middle of the day for cooking their food, &c.

The Executive Engineer should arrange that the staff of a charge and its full equipment are on the site of any new work which it is proposed to open, at least two days before the date of opening; and the work should at once be set out over a length of four miles. The limits of each gang should be marked out and indicated by a white flag. The necessary lock-spitting can be done by the famine workers on arrival.

Regarding classification, it should be remembered that all famine relief workers should be excluded from the A class. They will usually be B or D class. The Officer-in-charge must give special attention to the posting of the coolies as they arrive to their several gangs, and to their proper registry and classification in the muster-rolls.

Inspecting officers should examine and compare as many of the muster-rolls as possible, with a view to checking the numbers present with each gang, their classification, and the amount and cost of work done by them. A discrepancy should be enquired into on the spot, and the necessary orders given at once to the Officer-in-charge.

When the land bordering the road is valuable, it may be necessary to reduce the width of the side cuttings. In such cases the excavation should be correspondingly deepened, the prescribed frontage being always adhered to. With this view the side ditches may be given any depth up to four feet. This would allow of a width of about eight feet for the side cuttings. Waste land near the road should be utilized for spoil where possible. When compensation has to be paid for land taken up for cuttings, the necessary arrangements should be made as usual by the District Engineer with the Civil Officer of the district. The best and simplest plan is to arrange, if possible, for a small direct payment being made to the owner of the land in consideration of his registering a *rāzināma* giving permission to take possession of the land in question

In addition to the petty establishment above authorized, one blacksmith and one carpenter should be provided for each charge, for the repair of tools, &c., at ordinary rates of pay.

LUCKNOW :  
The 20th November 1896. }

R. R. PULFORD, COL., R. E.,  
Superintending Engineer, 2nd Circle, P. W.

**EQUIPMENT.**

The following will be the equipment, tools and plant, &c., required for each charge.

Number required.	Name of article.	Rate.	Amount.		Remarks.
			Rs.	a. p.	
1,000	Phaorahs ... ..	@ 0-12-0 each ...	750	0 0	
100	Picks ... ..	@ 1 8-0 each ...	150	0 0	
10	Axes ... ..	@ 0-8-0 each ...	5	0 0	
5,000	Baskets ... ..	@ 4-0-0 per 100 ...	200	0 0	
100	Flags, white ... ..	@ 0-2-0 each ...	12	8 0	
10	Do., red ... ..	@ 0-8-0 each ...	5	0 0	
1 Maund	Munj string for setting out work ...	@ 10-0-0 a md. ...	10	0 0	
3	50' Tapes ... ..	@ 4-0-0 each ...	12	0 0	
10	10' Rods ... ..	@ 1-0-0 each ...	10	0 0	
3	8' x 10' Páls ... ..	@ 35-0-0 each ...	105	0 0	
1	Treasure Chest ... ..	@ 50-0-0 each ...	50	0 0	
10	Bags, large, of canvas, numbered I to X for wages.	@ 1-0-0 each ...	10	0 0	
100	Bags, small, of <i>kharsa</i> cloth, numbered I to 100, for distribution of wages.	@ 1-0-0 for ten ...	10	0 0	
1 Seer	Twine for above ... ..	@ 1-0-0 a seer ...	1	0 0	
200	Kerosine oil tins, two per gang ...	@ 0 4-0 each ...	50	0 0	
10	Iron Buckets for drawing water ...	@ 1-0-0 each ...	10	0 0	
400	Shelter frames 6' x 4', $\frac{1}{2}$ " thick, four per gang.	@ 0-4-0 each ...	100	0 0	
10	Badges, large ... ..	@ 0-8-0 each ...	5	0 0	
100	Do., small ... ..	@ 0-2-0 each ...	12	8 0	
100	Muster Roll Tins ... ..	@ 0 4-0 each ...	25	0 0	
	Permanganate of potash ... ..	Lump sum.	5	0 0	
1	Timepiece ... ..	@ 5 each ...	5	0 0	
5,000	Cardboard Tickets... ..	...	...	...	
	Stationary, to include pens, ink, note-books, &c., for jamadárs, mates, &c.	...	10	0 0	
	<b>Total</b> ... ..	...	<b>1,548</b>	<b>0 0</b>	

*Directions for treatment of wells with permanganate of potassium as a means of checking epidemics of cholera.*

PERMANGANATE of potassium is a crystalline salt-like substance of a purple colour, in the preparation of which only mineral substances are employed. Hence its use in wells need not be objected to by the strictest Hindu.

Put one or two ounces of the solid substance into a *dol* or bucket that has been filled with water drawn from the well about to be treated. Stir it up, and pour the red solution thus produced into the well, leaving the portion of permanganate that is not yet dissolved at the bottom of the *dol*. Lower the *dol* into the well, fill it with water, draw it up, pour back the water as before. Repeat the process till all the permanganate has been dissolved. After half an hour draw up some of the water and examine it. If a red colour is still present, enough has been added. If the red colour has disappeared, then more permanganate should be added to the water in the well. In all cases enough permanganate should be added to produce a faint red colour lasting for 24 hours.

If the water in the well is bad more permanganate will be necessary. In such a case it will be found that the strong red colour at first produced quickly changes to brown, and then fades away. This is because the permanganate destroys dirt and is destroyed by it. Therefore if the water in the well is clean a smaller quantity of permanganate will be necessary. From one to four ounces of permanganate will be found to be enough for ordinary wells. If more permanganate is added than is enough to produce a faint permanent red colour, it is likely that frogs that may be in the well will be killed. This will in a few days give the water a putrid taste. If the

quantity of permanganate is not enough to produce a faint permanent red colour, it is not likely to do any good. If possible the permanganate should be added at night in order to leave the wells undisturbed as long as possible. The water will be fit to drink on the following morning. If on the following morning a red colour is still present, the water may have an unpleasant taste, but it is perfectly harmless. If the inhabitants do not like the taste, they should be instructed to pump out the water until the colour vanishes. Always care should be taken to treat with permanganate all the wells in the place, not only those used for drinking, but also those used for washing purposes. Care should be taken to explain to the inhabitants the reason of using permanganate, and they should be warned against using water from other sources that have not been treated. If one well is required for immediate use, perhaps it would be advisable to add to it a quantity of permanganate, and to employ *bhisties* to draw out the water until the colour has disappeared, but this well should again be treated with permanganate on the following day when the other treated wells are brought into use.

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DAILY REPORT FORM.

CHARGE No.

1. *District* \_\_\_\_\_
2. *Date* \_\_\_\_\_
3. *Road* \_\_\_\_\_  
\_\_\_\_\_
4. *Number for the day* \_\_\_\_\_
5. *Increase* \_\_\_\_\_ *Decrease* \_\_\_\_\_
6. *Expenditure* \_\_\_\_\_
7. *Condition of Workers* \_\_\_\_\_
8. *Work done* \_\_\_\_\_
9. *Kind of food* \_\_\_\_\_
10. *Prices of food* \_\_\_\_\_

*Officer-in-charge.*

GANG No.

نمبر گزرو

Month.....189 , District

سنہ ۱۸۹ ع ضلع ماہ

NAME OF MATE

نام میت

Name of Work

Tahsil

تحصیل

نام کام

Name of Work Agent

نام ورک ایجنٹ

Name of Jamadar

نام جمعدار

## PROGRESS OF WORK AND PAYMENTS

کیفیت طیارے کام و درانگی زر

Date. تاریخ	Measurements. پیمائش				Rate. فرض	Actual payments. درانگی واقعی			Initial or signature of Mate. دستخط میت	REMARKS. کیفیت
	L. طول	B. عرض	H. بلندی	Contents. میزان		Rs. روپیہ	A. آنہ	P. پائی		
1 ۱										
2 ۲										
3 ۳										
4 ۴										
5 ۵										
6 ۶										
7 ۷										
8 ۸										
9 ۹										
10 ۱۰										
11 ۱۱										
12 ۱۲										
13 ۱۳										
14 ۱۴										
15 ۱۵										
16 ۱۶										
17 ۱۷										
18 ۱۸										
19 ۱۹										
20 ۲۰										
21 ۲۱										
22 ۲۲										
23 ۲۳										
24 ۲۴										
25 ۲۵										
26 ۲۶										
27 ۲۷										
28 ۲۸										
29 ۲۹										
30 ۳۰										
31 ۳۱										

Certified that the work has been measured by me and payments made in my presence.

میں تصدیق کرتا ہوں کہ کام کی میں نے پیمائش کر لی ہے اور روپیہ میزے موجودگی میں تقسیم ہوا ہے

Work Agent دستخط ورک ایجنٹ

Date تاریخ

سنہ ۱۸۹ میسری

Officer in Charge of Work.

دستخط افسر انچارج

DISTRICT

MUSTER ROLL OF FAMINE WORK

GANG No.

DIVISION

ضلع

قریون

ROAD.

Class. درجہ	Distinguishing No. of each coolie	Village. نام موضع	Name. نام						
				1	2	3	4	5	6
19 chittacks. مردہ	1			1	2	3	4	5	6
	2			1	2	3	4	5	6
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Males. B.	11								
	12								
	13								
	14								
	15								
	16								
	17								
	18								
	19								
	20								
14 chittacks. دوسرے مرد ہ	21	Total } ... میزان							
	22								
	23								
	24								
	25								
	26								
	27								
	28								
	29								
	30								
	31								
	32								
	33								
	34								
	35								
		Total } ... میزان							



7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
V	A	9	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII		
																									1	
																										2
																										3
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																										34
																										35

13 chittacks. ۱۳ چٹاکی

Women Class D. ۵ درجہ کے عورتوں کا

			1	2	3	4	5
			۱	۲	۳	۴	۵
36							
37							
38							
39							
40							
41							
42							
43							
44							
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60							
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							
		Total } میزان } ...					

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
V	A	9	I	II	IV	III	II	I	VI	V	IV	III	II	I	VII	VI	V	IV	III	II	I	VIII	VII	VI	V
																									36
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																									69
																									70

Children from 12 to 16 years at 10 chittacks (I)

۱۲ برس سے ۱۶ برس تک کے لڑکوں کو ۱۰ چھٹا تک

		1	2	3	4	5
		۱	۲	۳	۴	۵
71						
72						
73						
74						
75						
76						
77						
78						
79						
80						
81						
82						
83						
84						
85						

Total }  
میزان } ...

Children from 7 to 12 years at 6 chittacks (II)

۷ برس سے ۱۲ برس تک کے لڑکوں کو ۶ چھٹا تک

86						
87						
88						
89						
90						
91						
92						
93						
94						
95						
96						
97						
98						
99						
100						

Total }  
میزان } ...

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
V	A	9	I	II	IV	IP	IP	IO	IV	IA	IP	P	PI	PI	PI	PI	PO	PI	PI	PI	PI	PI	PI	PI	PI		
																										71	
																											72
																											73
																											74
																											75
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																											100

D E P E N D A N T S.

		1	2	3	4	5
		۱	۲	۳	۴	۵
I.—Men 12 ch.						
	101					
	102					
	103					
	104					
	105					
	Total } ...					
II.—Women 10 ch.						
	106					
	107					
	108					
	109					
	110					
	Total } ...					
III.—Children 3 ch, under 7 years.						
	111					
	112					
	113					
	114					
	115					
	116					
	117					
	118					
	119					
	120					
	121					
	122					
	123					
	Total } ...					
IV.—Children in arms 1 picò.						
	124					
	125					
	126					
	127					
	128					
	129					
	130					
	131					
	132					
	133					
	Total } ...					

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
V	A	9	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	
																								101	
																									102
																									103
																									104
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																									133







ABSTRACT OF PAYMENTS.

میزان خرچہ

Males. مرد		Females. عورت		Children. بچے				Dependants. خرد مختار								Total. میزان		Date. تاریخ	
B. ب 19 ch. ۱۹ چھٹانک		D. د 14 ch. ۱۴ چھٹانک		D. د 13 ch. ۱۳ چھٹانک		I ۱ 10 ch. ۱۰ چھٹانک		II ۲ 6 ch. ۶ چھٹانک		Male. مرد 12 ch. ۱۲ چھٹانک		Female. عورت 10 ch. ۱۰ چھٹانک		Children. بچے					Ra. A. P.
III ۳ 3 ch. ۳ چھٹانک		IV ۴ 1 pice. ۱ پیسہ		No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.			
No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	No. Cost.	پائی آنہ روپیہ		
																		1 ۱	
																		2 ۲	
																		3 ۳	
																		4 ۴	
																		5 ۵	
																		6 ۶	
																		7 ۷	
																		8 ۸	
																		9 ۹	
																		10 ۱۰	
																		11 ۱۱	
																		12 ۱۲	
																		13 ۱۳	
																		14 ۱۴	
																		15 ۱۵	
																		16 ۱۶	
																		17 ۱۷	
																		18 ۱۸	
																		19 ۱۹	
																		20 ۲۰	
																		21 ۲۱	
																		22 ۲۲	
																		23 ۲۳	
																		24 ۲۴	
																		25 ۲۵	
																		26 ۲۶	
																		27 ۲۷	
																		28 ۲۸	
																		29 ۲۹	
																		30 ۳۰	
																		31 ۳۱	
																	Total	میزان	



FORM III.

(Vide FAMINE CODE SECTION 38, CHAPTER III, AND SECTION 177, CHAPTER XV.)

DISTRICT PROGRESS RETURN for the week ending on the night of Saturday, the \_\_\_\_\_ of \_\_\_\_\_ 189 of the following

RELIEF WORK in charge of

NAME OF WORK \_\_\_\_\_

Day of month.	Day of week.	NUMBER OF RELIEF WORKERS.							DEPENDANTS GRATUITOUSLY RELIEVED ON THE WORK.					Grand Total No. of persons on the work.	Quantity or portion of work done during the week.	
		A.		B.	D.			Total of workers.	Men 12 chit.	Women 10 chit.	Children.		Total of dependants.		Nature of work.	Quantity.
		Mates.	Men 19 chit.	Men 14 chit.	Women 13 chit.	Children.					III 3 ch.	IV 1 pic.				
						I 10 ch.	II 6 ch.									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Sunday ...															
	Monday ...															
	Tuesday ...															
	Wednesday ...															
	Thursday ...															
	Friday ...															
	Saturday ...															
	Total of week...															

Day of month.	Day of week.	AMOUNT DISBURSED AS WAGES (INCLUDING GRATUITOUS RELIEF.)				Total of other items of charge.*	Grand Total paid.	Remarks.—This work is likely to give employment to _____ relief workers for _____ days longer
		Men.	Women.	Children.	Total.			
18	19	20	21	22	23	24	25	
	Sunday ...							Signature _____
	Monday ...							Rank _____
	Tuesday ...							Dated _____
	Wednesday ...							The _____ of _____ 189 .
	Thursday ...							Officer-in-charge of the work.
	Friday ...							
	Saturday ...							
	Total ...							

NOTE.—For the week in which the month changes two sheets must be prepared, one for each period, the heading being corrected according.  
 \* Where daily expenditure on "other items" shown in column 24 exceeds Rs. 10 on any one day, it must be supported by separate sub-vouchers.

*Notes for preparation of form.*

- 1.—The Sub-Divisional Officer will fill up the form on reverse forward it on Saturday night to his Head Clerk for completion as within from office records.
- 2.—The return will be completed by Head Clerk and despatched direct to Superintending Engineer by Wednesday at latest.
- 3.—The serial order of works, column 1, should be kept the same, each new work starting with a new serial number and keeping it till closed.
- 4.—If wages are given for Sunday, the attendance for Sunday must be counted in as well.
- 5.—All entries in columns 14 to 17 must be to the nearest rupee, omitting fractions of a rupee.
- 6.—The abstract on front page will be filled in by Superintending Engineer's Office.

**FAMINE RELIEF.**

*Week ending Saturday.*

The \_\_\_\_\_ 189 .

\_\_\_\_\_ District.

\_\_\_\_\_ Division.

No. \_\_\_\_\_ dated \_\_\_\_\_ 189 .

Forwarded to the Superintending Engineer,  
2nd Circle, Provincial Works, N.-W. P & Oudh.

**ABSTRACT.**

Week's wages to workers only (total at foot of column 12) ... .. Rs. \_\_\_\_\_

Quantity of work done (total at foot of column 11) Cubic feet... .. \_\_\_\_\_

Rate per 1,000 cubic feet ... .. Rs. \_\_\_\_\_

Number of units relieved (total at foot of column 9) ... .. No. \_\_\_\_\_

Wages and gratuitous relief for week (totals of columns 14 and 15 added together) ... .. Rs. \_\_\_\_\_

Rate per unit ... .. pies \_\_\_\_\_









## احکام مجبوریہ کرنل آر آر پلفرق صاحب بہادر آر ای سپرٹنڈنٹنگ انجنیئر حلقہ دوم پبلک ورکس ڈپارٹمنٹ - واسطے ادائے و تقسیم مزدوری مزدوران فیمن رلیف ورکس

مطابق قاعدے کے مزدوری ہر روز کی بارہ بجے دو پہر کو موافق مسٹر رول روز اول کے جسمیں  
حاضری درمیان ۲ بجے و ۴ بجے کی درج کی جاتی ہے دوسرے روز ملنا چاہیئے - افسر انچارج  
تو کوئی ضرورت نہیں ہے کہ ہر جماعت کی تھیلی میں روپیہ تقسیم کا رکھنے کا کل انتظام خود  
کے - چند افسروں کو میں نے دیکھا ہے کہ روپیہ شمار کرنے اور تھیلی میں رکھنے کے واسطے بعد  
شام کے تھہرے رہتے ہیں - یہ فضول محنت ہے - عام قاعدہ روپیہ بھونچنے کا خزانہ سے یہہ ہے  
کہ یا صندوقوں میں آٹھ آٹھ آنے جدا جدا رکھے ہوتے ہیں یا تھیلوں میں ریزگاری اور پیسے تعدادی  
مبلغ سے روپیہ کے ہوتے ہیں اگر کسی خانت میں ایسا نہ ہو تو اول فرض افسر انچارج کا یہہ ہے  
کہ ہر وقت روپیہ پہنچنے کے اُسکے خدمت میں اپنے سامنے شمار کرائے اور پچاس پچاس روپیہ کی  
تھیلی بنالے - دوسرا فرض یہہ ہے کہ جمعداروں اور منشیوں کو اور ( دو ورک ایجنٹ کو جسمیں  
سے ہر ایک پانچ جمعداروں کا جنکی ماتحتی میں دس گروہ ہیں ) بلائے - یہہ کام جس روز  
مزدوری تقسیم ہونے والی ہو اُس روز ۹ بجے کرنا چاہیئے - ہر ایک جمعدار کو اپنا گوشوارہ  
روز اول کے مسٹر رول سے شمار کرنا چاہیئے - عموماً مزدوری ایک گروہ کی پانچ روپیہ سے  
زیادہ نہوگی اور کل مزدوری جمعدار کی دس ماتحت جماعتوں کی سے روپیہ سے زیادہ نہوگی -  
لہذا ایک تھیلی سے روپیہ کی جسکے تیار کرنیکا حکم آرڈر دیا گیا ہے ایک جمعدار کے واسطے  
کافی ہوگی پس ہر ایک جمعدار کو ایک تھیلی سے روپیہ کی دینا چاہیئے - اور حکم دینا چاہیئے  
کہ مبلغان مذکور موافق گوشوارہ کے اپنے گروہوں میں تقسیم کرے - جب ہر ایک جمعدار یہہ کام  
ختم کرچکے تو اُسکو واجب ہے کہ بقیہ مبلغ سے روپیہ کا بعد تقسیم دس گروہوں کے اپنے قبضے  
میں رکھے - اگر ایسا ہو تو افسر انچارج کا فرض ہے کہ ہر ایک جمعدار کے بقیہ کی جانچ کرے -  
اور جمعدار سے زر تقسیم کی رسید لیکر گوشوارہ کے پیچھے چسپان کرے - دس چھوٹی تھیلیاں دس  
گروہوں کے جمعدار کے بڑے تھیلے میں رکھکر باندھ دینا چاہیئے - اگر تقسیم دوسرے روز ہرنیوالی ہے تو  
چاہیئے کہ تھیلیوں پر مہر کر کے مہتمم خزانہ کے قبضہ میں رکھیں - موافق دستور جس روز مزدوری  
تقسیم ہونے والی ہو اُس روز علی الصبح روپیہ کی تھیلی تقسیم کرنا لازم ہے - یہہ دوسرا فرض  
ہے فرض سرم یہہ ہے کہ روپیہ کی تھیلی میٹوں کو تقسیم کیجائے - جمعدار کو چاہیئے کہ اپنا  
بڑا تھیلہ جسمیں دس چھوٹی تھیلیاں ہیں لیکر اپنے دس میٹوں کو ایک درمیانی جگہ پر  
مجتمع کرے اور انہیں سے ہر ایک کو ایک ایک تھیلی دے گوشوارہ سے وہ جان سکتا ہے کہ ہر  
ایک میٹ کی تھیلی میں کسقدر روپیہ ہونا چاہیئے - جمعدار کو لازم ہے کہ بروقت دینے کے  
میٹوں کو آگاہ کر دے کہ کسقدر روپیہ اُنکی تھیلی میں ہے اور تھیلی کھولواکر گنوا دے اور اگر تھیک  
ہو تو اُسکے گروہ کے گوشوارہ کے مقابل میں دستخط کرائے \*

جب جمعدار اپنے ماتحت گروہوں کی پوری مزدوری کی بابت اقرار اور دستخط کرچکے اور  
میت بھی دستخط و اقرار و شمار کرچکے اپنے گروہ کی پوری مزدوری کی بابت تب روپیہ تقسیم  
ہونے کے لیئے جانا چاہیئے \*

بعد اُسکے میٹوں کو اپنے اپنے گروہ کے جہتدے کے پاس جانا چاہیئے اور وہاں پہنچکر اپنے گروہ  
کو جمع کرنا چاہیئے اور بٹھلا کر فوراً مزدوری مطابق مسٹر رول روز اول کے تقسیم کرنا چاہیئے \*



APPENDIX B.

*Instructions, dated the 13th December 1896, by COLONEL R. R. PULFORD, R.E.,  
Superintending Engineer, 2nd Circle, Provincial Works, on the Intermediate  
system of Famine Relief Works with petty contractors.*

MY DEAR SLATEE,—

I have just returned from Allahabad, where I had a long interview with the Chief Engineer (and the Lieutenant-Governor) regarding the method which I propose to employ in giving effect to the new scheme for carrying out intermediate works of relief between "ordinary" and "Famine" rules.

I have arranged with Durga Singh an old contractor, who has been in these parts for many years, and in whom I have great confidence, to supply as many of his mates for employment as petty contractors, as we may require. The rates at which they will carry out their contracts will be Rs. 3 per 1,000 cubic feet, and out of this they will undertake to disburse Rs. 2-8-0 to the workers at the following rates, viz. three annas six pies per 100 cubic feet for digging and carrying, and 6 pies per 100 cubic feet for dressing; this will come to 4×10 annas for 1,000 cubic feet=Rs. 2-8-0. The balance will be the petty contractor's profit. Durga Singh will be responsible that the petty contractors fulfil their contracts. The usual petty contract bond at schedule rates should be entered into with each petty contractor, the obligation regarding the payment to the workpeople being one of the conditions of contract. You can make what arrangements you like about helping with tools, they will probably not be much wanted, as the coolies will have their own.

The rules laid down in the Government Order of the 5th December 1896 should be followed regarding the payments, &c., to the contractors. I think it will be advisable to employ only Durga's men on any one road; and if he wishes any of them to be dismissed, it should be done. You will of course deal direct with the contractors through the District Surveyor of course, as in the case of ordinary works in the district. I am writing to Mulock to say that you can commence work at once on any road that he may wish. The question of its having being administratively sanctioned is of no consequence. I shall come over on the 16th December 1896 if possible, but shall certainly come for the conference on the 17th December 1896.

Yours sincerely,

R. R. PULFORD.

P.S.—I am sending this by Durga Singh, with whom please arrange at once for opening out work on whatever roads the Commissioner wishes. Please keep this letter and let me have a copy of it when I come over as I am writing in great hurry.

R. R. PULFORD, COL., R.E.,  
*Superintending Engineer.*

## APPENDIX C.

*Instructions by COLONEL R. R. PULFORD, R.E., Superintending Engineer, 2nd 2nd Circle, Provincial Works, regarding payment and distribution of wages on Famine Relief Works.*

As a rule wages should be paid daily at 12 o'clock noon according to muster-rolls taken between two o'clock and four o'clock on the previous day.

There is no necessity for the Officer-in-charge to carry out with his own hands each and every one of the operations connected with the distribution of money into the bags belonging to the several gangs. Some officers whom I have seen have sat up till a late hour counting the money and placing it in the bags. This is waste of power. The ordinary practice is for money to be sent out from the Civil Treasury either in boxes containing pice done up in bundles containing 32 pice each, or in bags containing Rs. 50 worth of silver and copper. In any case if this is not so, the first thing for the officer in charge to do is to have the money, on arrival in his camp, counted out before him and made up into bags of Rs. 50 each. The next step is for him to call up the Jamadar Munshis of his charge and the two work-agents, each of whom is responsible for and has charge of five jamadar parties containing 10 gangs each. This should be done at nine o'clock of the day on which the wages are to be distributed. Each jamadar should have his *goshwara* or abstract of the money due to each of his gangs calculated from the muster-roll of the day before. Ordinarily the wages due to a gang will not be more than Rs. 5, and the total wages due to a jamadar's party of 10 gangs will not be more than Rs. 50. One bag, therefore, of Rs. 50, already prepared as above, will ordinarily suffice for one jamadar. Each jamadar should therefore be given one of these bags of Rs. 50, and he should be told to distribute it into his gang bags according to the amounts set forth in the *goshwara* or abstract of the day. When he has done this each jamadar should have in his hands a balance equal to the difference between the Rs. 50 and the total of his 10 gangs. If this is so, all the Officer-in-charge has to do is to check the balance and take the receipt of the jamadar, which should be entered at the foot of the abstract itself. The 10 small gang bags should now be put into the large jamadar bag which should be tied up. If the distribution is to be made next day, the bag should be sealed and placed in the charge of the Treasury Guard. As a rule, however, the distribution of the money into the bags should be done on the morning of the day on which the wages are to be paid out. This is the second step. The third step is the distribution of the money in the bags to the mates. The jamadar should take his big bag containing the 10 small ones to some central point of his party, and should there assemble his 10 mates. To each of them he will then give his corresponding bag of money. From the *goshwara* he can see how much each mate ought to have in his bag, and he should therefore, when giving each bag to each mate, tell him what ought to be in the bag, then make him open the bag, count the contents, and, if correct, make him sign for the amount opposite the number of his gang in the *goshwara* abstract. The money is now ready for distribution, the jamadar has acknowledged and signed for the wages of his party, and the mates have counted, acknowledged and signed for the wages of their gangs. This being done, the mates should be sent to their respective gangs where their flags are; and on arrival there, should collect their gangs, make them sit down and at once distribute the wages in accordance with the muster roll of the day before. On works in which there is an interval for rest from 12 to 2, it should be a standing order that the gangs assemble on their respective flags at 12 o'clock, and there await the arrival of their mates. In any case the time fixed for the distribution of the wages amongst them should be 12 o'clock. The hours for beginning and stopping work should be intimated by some form of drum, gong, or bugle. The money having been distributed, the mate should remain at his flag until the jamadar in charge of the party comes round. At each gang he will check the distribution which has just been

carried out, should ask if there are any complaints of non-payment or short payment to any of the coolies present. He should then check the balance, if any, which remains over after the distribution. The reasons for a balance should be enquired into and noted. If the balance is due to absence of any coolie, his name should be taken down with the amount due to him, and should be entered on the back of the *goshwara*. All such balances should be collected at once by the jamadar, and after he has visited and verified the distribution of wages amongst his 10 gangs, he should proceed to the head-quarters of the Officer-in-charge, whose coming he should await. The Officer-in-charge will, on arrival from the work where he has been supervising the distribution of wages, take each jamadar's account, place any balances in his treasure chest, and enter in a book kept for the purpose the details of the coolies who have not been paid. The money thus put aside should be kept as a separate account from which he will pay any of the absentees who may come to claim their wages. Under ordinary circumstances it will be easily possible, if the above system is carried out, to pay wages to all the coolies of a charge every day before two o'clock. Finally, the wages having been distributed, the mate should take the muster of the people present, and should then communicate the abstract to his jamadar for entry in the daily *goshwara* form. These abstracts are then made up by the jamadar by the end of the day and everything is ready for the work of distributing the wages into the bags, as above explained, next morning. The muster-rolls should always remain in the custody of the mates. In cases where a mate is unable to read and write, he must be assisted in the work of registering, and distribution by his jamadar.

LUCKNOW:	}	R. R. PULFORD, Col., R.E.,
The 24th December 1896.		Superintending Engineer, 2nd Circle, P. W.

## APPENDIX D.

*Instructions by COLONEL R. R. PULFORD, R.E., Superintending Engineer, 2nd Circle, Provincial Works, regarding the full exaction of task on relief works.*

As the number of people who are coming on to famine works has become very large and is increasing rapidly, it has become absolutely necessary to enforce the strictest execution of a full task, and the infliction of fines in every case where a task is not fully carried out during the day's work. A task of 120 cubic feet for each *beldár* has already been prescribed, and this amount of work should be rigorously exacted. The full task of 120 cubic feet includes the digging, carrying, and dressing of that amount of earthwork by one *beldár* and four carriers, generally women. If this amount of work is not fully and satisfactorily executed, it is the duty of the mate to report the case to his jamadar, and if the work-agent when measuring up the work finds that the amount done is short of the proper task, a fine of two pice for the digger, and one pice for each of the carriers, should be inflicted on the gang of five concerned. The amount at which the wages of the five coolies will then remain must be entered in the muster-roll when taking the muster at the end of the day, in place of the full amount of wage in pice which would ordinarily be entered. Payments will thus coincide with the actual entries in the muster-rolls. If a gang of five which has been fined wishes to complain, they should do so next day at the time of payment. The Officer-in-charge should himself investigate every such case. If he decides to remit the fine, he should himself issue the amount remitted, and charge it in the day's accounts under the head of "Fines remitted."

In order to carry out fully the above instructions, it is absolutely necessary that the muster should be taken not earlier than four o'clock. With this view the midday cessation of work will be in future from 12 o'clock to one o'clock, instead of from 12 o'clock to two o'clock, the hours hitherto in force. Work will be stopped at four o'clock, and the mustering and measuring up will be carried out from four o'clock to five o'clock. The payment of wages must be commenced at 12 o'clock. It has been objected to this arrangement that the coolies after receiving their pay leave the work and do not return. If the final mustering is properly carried out, as it should be, from four o'clock to five o'clock, and if every one who is not then present is entered as absent, and no pay allotted to him for that day, the practice of leaving after the 12 o'clock issue of pay will at once cease.

It should be remembered that the digger is the main factor in the amount of work done and if he does a proper task, the rate will be kept at its proper value.

LUCKNOW: } R. R. PULFORD, COL., R.E.,  
The 2nd February 1897. } Superintending Engineer, 2nd Circle, P. W.

*Note by the Superintending Engineer, 2nd Circle, Provincial Works, of an inspection of the Famine Relief Works at Machibhawan, Lucknow, on 14th December 1896.*

THE following rules should be strictly observed regarding issuing of tickets:—

Each man (or woman or child) is to be given a ticket when he is taken into a gang. On the ticket is to be written the coolie's name, his number and that of the gang, the rate of pay he is to get entered in pice.

In mustering coolies for the day the presence of a man should be indicated by the figure representing the number of the pice on his ticket. This has been laid down in my instructions, but has not been observed on the work as far as I have seen.

The latrine space is to be indicated by yellow flags.

An enclosure should be set apart to which any person found suffering from a contagious disease should be at once removed, pending his transfer to the poorhouse.

Any relative or dependant who may be with the case should be paid a day's wage for subsistence until the case is received into the poorhouse.

A special gang is required for the charge of the water arrangements, and a mate should be appointed in charge of the gang.

Each flag should have its number stitched on to it, in red or black saloo, red on white flags, black on red.

The payments must be made during the day for the day previous.

If extra muharrirs of a good class are required to assist in distributing, they may be entertained.

I have arranged with Mr. Porter, C.S., the City Magistrate, that the case of any mate or jamadar who may be found defrauding the coolies by holding back pice from their proper wages, will if sent at once to him at the city Magistrate's Court, be duly attended to forthwith.

Such cases should be sent in charge of a police sepoy with properly supported statement, witnesses, &c. The Officer-in-charge is held responsible that cases of alleged keeping back of wages are at once investigated and properly disposed of, as above ordered.

The work-agents must understand that they are the deputies of the Officer-in-charge for the sub-division under them, and they must supervise all arrangements, not only of work, but of pay, mustering, &c.

A book and proper writing materials should be kept at the store-room for the entry of notes by inspecting officers. So long as a senior officer is inspecting a work, junior officers should not leave it without his permission.

Each officer must have a proper sized pocket book, in which all main rules and information regarding the charge are entered for ready reference.

Instructions given during inspection by an inspecting officer should be at once entered in the note-book.

R. R. PULFORD, COL., R.E.,  
*Superintending Engineer,*  
2nd Circle, P. W., N.-W. P. and Oudh.



APPENDIX E.

*Instructions for the guidance of Military Officers temporarily employed on Famine duty.*

A MILITARY officer temporarily deputed on famine duty in the 2nd Circle, Provincial Works, will ordinarily be employed as an Inspecting Officer of famine charges. The number of charges in any one Circle of inspection will not as a rule exceed 10. It will be the duty of the Inspecting Officers to see that the famine charges are being carried on in strict accordance with the general rules prescribed by Government and the special instructions issued by the Superintending Engineer. Their attention should be especially directed to the points set forth in the printed Inspection Form, and the result of their inspections should be entered in the reports under those heads. Where a charge is badly managed, the inspecting officer should himself give the necessary instructions and explanations to the officer in charge, and should enter in the report any special orders which he may have deemed it necessary to issue.

In cases where a new charge is in process of being formed, the Inspecting Officer should remain with it for a day or two until he considers it is in good working order. He should report by wire at once to the Superintending Engineer anything which in his opinion requires immediate action. Under this head would come an outbreak of cholera, large defalcations, insufficiency of arrangements for meeting a rush of workers, &c. In cases of emergency the Inspecting Officer may be called upon by the Superintending Engineer to hold temporary charge of famine works.

Military officers, temporarily employed on famine duty, will be immediately under the orders of the Superintending Engineer of the Circle to which they are posted; they will correspond direct with him, and will submit all reports to him. Copies of all reports dealing with the inspection of a charge should be at once sent to the District <sup>Engineer</sup> <sub>Surveyor</sub> of the district in which the charge is situated. That officer should immediately take steps to remedy any defects which the report may bring to notice; he should not wait for the orders of the Superintending Engineer.

Inspecting Military officers should keep themselves in touch with the Executive Engineer of the Division in which their works lie, and they should keep him acquainted with their proposed movements so as to avoid their tours of inspection clashing with his.

LUCKNOW : } R. R. PULFORD, COL., R.E.,  
The 5th February 1897. } Superintending Engineer, 2nd Circle, P. W.

## APPENDIX F.

*Notes of an Inspection made by**on—1897 of Charge No.—**Road**District**Division**Officer in-charge**General Remarks*

Points of inspection.	Remarks by Inspecting Officer.	Orders by Superintending Engineer.
I.—Hospital arrangements.		
II.—Hospital arrangements for contagious diseases.		
III.—Latrines and conservancy arrangement, fixing of boundary flags, &c.		
IV.—General condition and health of the coolies.		
V.—Arrangements for sending sick people found on the work to the hospitals and their disposal and care on first arrival there.		
VI.—Water arrangements for drinking purposes.		
VII.—Arrangements for receiving coolies when first arriving.		
VIII.—Hutting arrangement and shelter against rain.		
IX.—Classification if properly carried out.		
X.—Method of mustering.		
XI.—Method of paying wages.		
XII.—Result of scrutiny and check of muster-rolls by actual mustering of one or more gangs and examining tickets.		
XIII.—Complaints by work people.		
XIV.—Method in which work is being executed.		
XV.—Task exacted from the workers.		
XVI.—Arrangements for safe custody of cash.		
XVII.—Orders regarding lighting of fires and their prohibition near grass shelter huts, especially the hospital.		
XVIII.—Checking the stock of equipment and comparing it with the Store-keeper's Register.		

<p>XIX.—Checking the entries in the cash-book by comparing them with the goshwaras, or daily abstracts, from which Form III the supporting voucher is compiled. This is the most important point connected with the accounts of a charge, and should be carefully looked into by an inspecting officer.</p>		
<p>XX.—Is every coolie, whether man, woman, or child, and whether worker or dependant, in possession of a ticket? And has every ticket inscribed upon it the following details: I.—Serial number of the coolie in the muster-roll. II.—Number of the gang. III.—Wages in pice which the coolie is entitled to receive. IV.—Name of coolie?</p>		

FORWARDED to *Superintending Engineer, 2nd Circle, Provincial Works, Lucknow.*

*Inspecting Officer.*

*Superinten*

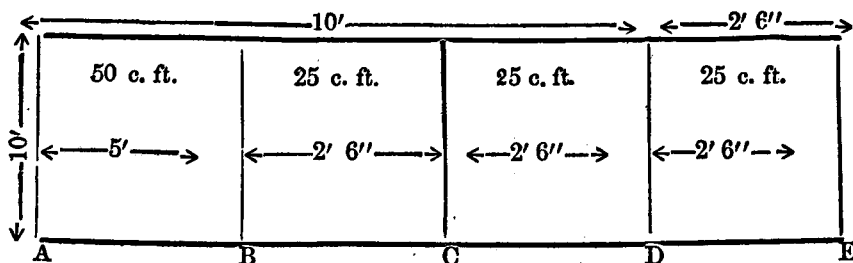
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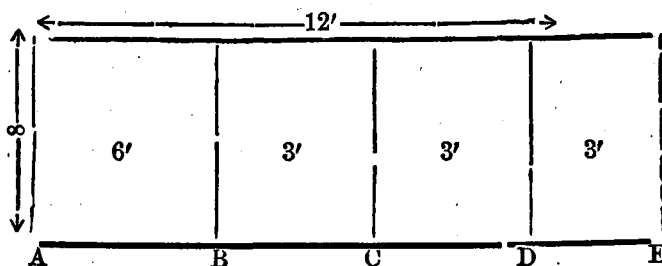
## APPENDIX G.

*Instructions by COLONEL R. R. PULFORD, B.E., Superintending Engineer, 2nd Circle, Provincial Works, on the Intermediate system of relief works without contractors or middlemen.*

IN ordinary cases a task of 100 cubic feet is to be done by one digger and two carriers at six pice for the digger and four pice for each carrier. The task for each party of three should be marked out thus :—



The above wages of six pice for a digger and four pice for a carrier should be paid if the party executes the full task of 100 cubic feet up to the point D. (commencing from A). If the party does work up to C, *i.e.* 75 cubic feet in a day they will receive five pice for the digger and three pice for each carrier. If up to B, *i.e.* 50 cubic feet in a day they will get three pice for the digger and two pice for each carrier. If the party can do an additional task of 25 cubic feet, *i.e.* up to E, they will get seven pice for the digger and five pice for each carrier. This is the limit of what can be earned by a party of three during any one day. If the side ditches are 8 feet in width the corresponding dimensions may be as follows :—



It will be advisable to keep the depth of the ditches a whole number of feet, either 1, 2 or 3, the section of the road bank being modified accordingly.

2. It must be distinctly understood that the work to be done by a party of three workers is not merely the digging and carrying of a certain number of cubic feet of earthwork, but includes proper breaking and rough dressing of the earth thrown up. The above rates and scale of work and workers are for the ordinary lead of 50' and under. For every 100 feet extra lead, an additional carrier on four pice may be given. The actual amount to be paid to this additional carrier will vary according to the amount of earthwork cut and carried as in the case of the regular gang.

3. If children above seven years of age come to work, they may be given suitable employment as carriers, two of them being taken in place of one adult, their wages would be two pice each. Ordinarily it will be found that the proportion of diggers and carriers above prescribed will be sufficient to meet the numbers seeking employment on this class of work. Where, however, more women and children come for work than can be employed in the sanctioned proportions, one extra carrier to each digger may be allotted at the usual rate. No one asking for work and willing to earn a day's wage should be refused employment.

4. A special gang under a jamadár will lay out in advance the side widths and main lines of the road embankment to be made up. The mates will set out

each day's work. They will also make the evening measurements and enter them in a note-book. After the measurements have been checked by the work agent, the amount in pice to be paid to the coolies next day will be at once entered in ink in the muster-rolls. The hours for measuring should in future be from five to six and the coolies may work up to 5 P.M. Payment should for the future be made at six o'clock in the evening.

5. As regards dressing it is to be done at an average rate of seven annas per % distributed approximately as follows :—

			Rs. a. p.
2 Men at six pice a day	...	...	0 3 0
2 Women at four pice a day	...	...	0 2 0
4 Children at two pice a day	...	...	0 2 0
		Total	0 7 0

As the ordinary day's work of a gang of 10 diggers will be about 1,000 cubic feet, a dressing party as above detailed will be required for each gang with which it should be regularly incorporated.

6. As regards tools and plant they will be supplied by Government.

7. The usual muster-rolls, *goshwaras*, daily and weekly reports should be kept up as on the ordinary famine works. The muster of the digging gangs need only be taken once at five o'clock when the work will be measured up and the amount due to each person will be entered in its proper column in the muster-roll. Men coming on to the work at any time before 10 o'clock will have a task set out for them and will be paid according to the quantity of work done during the day.

8. There will be no Sunday work.

9. In regard to dependants, children under seven years of age may be given cooked food under the ordinary rules regarding the amount of ration. Children at the breast may be given one pice. Should old men and women dependants come to a work, they should be sent to the nearest poorhouse or village relief centre. They should be given the necessary food relief for the day they arrive and for their journey.

10. The organization of a charge will continue exactly the same as formerly, i.e. the gangs, mates, jamadars, work agents, and naib tahsildars will be retained and will draw the same pay as at present. The muster-rolls, *goshwaras*, bags, system of mustering and payment will be the same. The only differences will be—1st, that each gang will ordinarily consist of 10 beldars, 20 carriers, and the dressing party; 2nd, there will be only children dependants to whom cooked food will be issued; and 3rd, workers will be paid and the amount will be entered in the muster-roll, exactly for what they have done, calculated as set forth above. This arrangement will allow of the full famine organization being resumed at any moment, should the Civil Officers of the district consider it necessary to revert to the full Famine Code rules. Advantage should be taken of the present diminution in numbers to discharge all inefficient work agents, jamadars, and mates. Of these last, none except those who can read and write and take measurements, should be retained.

R. R. PULFORD, COL., R.E.,  
*Superintending Engineer, 2nd Circle, P. W.*

LUCKNOW :  
*The 23rd April 1897.* }

## APPENDIX H.

Statement showing the allocation of charges incurred on famine relief works.

Earthwork.	Works establishment.	Work contingencies.	Famine establishment.	Tools and plant.
1	2	3	4	5
<p>(a) All money paid on muster-rolls to workers.</p> <p>(b) All money paid to dependants.</p> <p>(c) All money paid for Sundays, holidays, and ineffective days such as marching, wet days, &amp;c.,</p> <p><i>N.B.</i>—Each of the above items should be shown separately in the body of the cash book.</p>	<p>(a) Work agents.</p> <p>(b) Store-keepers, sub-cashiers and clerks employed at site of works.</p> <p>(c) Jemadars.</p> <p>(d) Mates.</p> <p>(e) Chaukidars.</p> <p>(f) Chaprasis.</p> <p>(g) Water-carriers.</p> <p>(h) Sweepers.</p> <p>(i) All staff not especially sanctioned for famine establishment.</p> <p>(j) Muharrirs.</p> <p>(k) Clerks employed on works accounts.</p>	<p>(a) Shelter huts and hutting of all sorts.</p> <p>(b) Strings.</p> <p>(c) Baskets.</p> <p>(d) Flags.</p> <p>(e) Bags.</p> <p>(f) Permanganate of potash.</p> <p>(g) Tickets.</p> <p>(h) Kerosine oil tins.</p> <p>(i) Muster-roll tins.</p> <p>(j) Stationery.</p> <p>(k) Carriage of shelter huts.</p> <p>(l) All hospital charges.</p> <p>(m) Hospital menials.</p> <p>(n) Percentage paid for copper coin.</p> <p>(o) Carriage of coin.</p> <p>(p) Treasure guard.</p> <p>(q) Cash found short in counting.</p> <p>(r) Clothing issued under authority of G. O. No. C.348F., dated 15th January 1897. (Does not include the clothing supplied from the Central Famine Fund.)</p> <p>(s) Rations issued to new arrivals.</p> <p>(t) All other petty items not otherwise provided for.</p>	<p>(a) Inspecting Officers (Military and Civil) and their travelling allowance.</p> <p>(b) Clerks and menials of Military Officers if specially sanctioned.</p> <p>(c) Naib tahsilgars,</p> <p>(d) Hospital assistants or compounders.</p> <p>(e) Temporary Surveyors.</p> <p>(f) Temporary Office Establishment of Public Works Department offices specially entertained.</p> <p>(g) Permanent sub-overseers temporarily promoted to overseers whilst serving in distressed districts.</p> <p><b>NOTE.</b>—Regular Public Work Department establishments employed on famine works should be charged to 45, Civil Works, Provincial, and not to 33, Famine Relief.</p>	<p>(a) Phaorahs.</p> <p>(b) Picks.</p> <p>(c) Axes.</p> <p>(d) Measuring-tapes.</p> <p>(e) Measuring-rods, 10.</p> <p>(f) Pals or Tents.</p> <p>(g) Treasure chests.</p> <p>(h) Badges.</p> <p>(i) Timepieces.</p> <p>(j) Lanterns.</p> <p>(k) Tables.</p> <p>(l) Chairs.</p> <p>(m) Iron buckets.</p> <p>(n) Wooden cash-chests.</p> <p>(o) Surveying instruments.</p> <p>(p) Carriage of surveying instruments and of all classes of tools and plant.</p> <p>(q) Blacksmiths.</p> <p>(r) Carpenters.</p> <p><b>NOTE.</b>—Blacksmiths and carpenters should be charged against repairs of Tools and Plant.</p>

Lucknow: }  
The 27th April 1897. }

R. R. PULFORD, Col., R.E.,  
Superintending Engineer, 2nd Circle P. W.

## APPENDIX I.

Copy of a letter No.  $\frac{3804-7}{1-M-4121}$ , dated the 12th July 1897, from the Superintending Engineer, 2nd Circle, Provincial Works, to the District  $\frac{\text{Engineers}}{\text{Surveyors}}$  Lucknow, Unao, Rae Bareli, and Hardoi.

*Collection of kankar by famine labour.*

WITH reference to the proposal to undertake collection of *kankar* by famine labour during the rains, the following rates and tasks are proposed by Superintending Engineer:—

Women.	Men.	Task.	C.ft.
4 pice	6 pice	... 12 c. ft. of <i>kankar</i>	120 of earth cutting.
3 do.	5 do.	... 10 ditto	100 ditto.
2 do.	4 do.	... 8 ditto	80 ditto.
1 do.	3 do.	... 6 ditto	60 ditto.
1 do.	2 do.	... 4 ditto	40 ditto.

A gang composed of one digger and two carriers is ordinarily expected to dig, break, clean, and stack 10 cubic feet *kankar* in a day. The rate of *kankar* accordingly comes to be  $5+2 \times 3 = 11$  pice for 10 cubic feet or Rs. 1-11-6 for 100 cubic feet.

To this must be added the cost of digging the upper stratum of earth before reaching the *kankar* layer. Taking the earth to be two feet deep over a layer of one foot of *kankar*, the cost of excavating the earth comes to be  $2 \times 11$  pice = Rs. 0-5-6.

The total cost of digging and stacking 100 cubic feet of *kankar* therefore comes to Rs. 1-11-6 + 0-5-6 = Rs. 2-1-0 per hundred cubic feet.

In calculating the quantity of *kankar* stacked 13 inches must be taken as one foot. All stacks should be 13 inches high and two feet broad.

The District  $\frac{\text{Engineer}}{\text{Surveyor}}$  is requested to try the above rates in one or two places with gangs of 30 workers composed as above, and to report the result for Superintending Engineer's information.

R. R. PULFORD, COL., R.E.,  
Superintending Engineer, 2nd Circle, P. W.

## APPENDIX J.

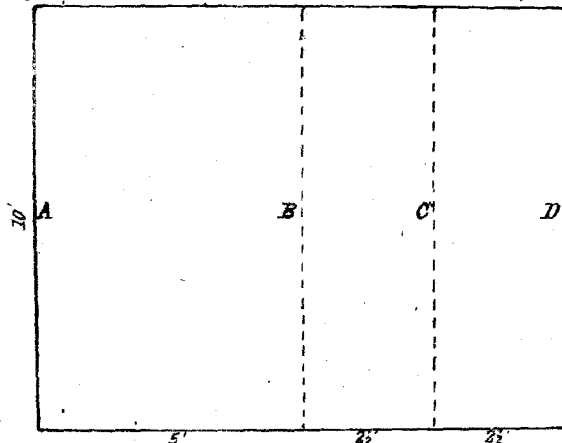
*Note by COLONEL R. R. PULFORD, R.E., Superintending Engineer, 2nd Circle, Provincial Works, on famine relief works, Hardoi district.*

THE grain rate for wages on famine works in the Hardoi district having now been fixed at 12 seers for the rupee, the various wages in pice will be as follows:—

	Chhattaks.	Pice.
Man digger ... ..	19	6
Man carrier ... ..	14	5
Woman carrier ... ..	13	4
Children carriers ... ..	10	3
Children carriers ... ..	6	2
Men dependants ... ..	12	4
Women dependants ... ..	10	3
Children dependants ... ..		1

The following method of setting out tasks and allotting wages should be adopted on all works:—

One hundred cubic feet may be taken as the full task; and this should be set out thus: viz. 10' by 10' →



and one foot deep. The dividing lines B and C should be nicked out so as to mark plainly the distribution of the task into half and three-fourths of the full day's work.

If a full task of 100 cubic feet, *i.e.* up to D is dug and carried, the full wages will be given to all the workers. If the excavation is between 75 cubic feet and 100 cubic feet, *i.e.* if the work is over C, but not up to D, the digger will be fined one pice, the rest of the gang will get full wages. If the work is not up to 75 cubic feet, but up to or over 50 cubic feet, that is to say, if it is up to or over B, but not up to C, the digger will be fined two pice and the carriers one pice each.

The case of 50 cubic feet not being done need not be considered. At the present stage of relief the diggers will be strong enough to do at least 50 cubic feet of digging. If in any case it is not done the officer in charge must himself personally investigate the reason and act accordingly, taking into account all the facts of the case before inflicting any special sanctioned penalty. It may be assumed that contumacy will be of rare occurrence.

The tasks should be set out overnight by one or more gangs, under special jamadárs. The mates must measure up and enter the various amounts done in a separate note-book, and after check by the work agent, the pice due to the workers should be entered in the muster-rolls. The jamadárs will superintend the measurements and entries of their 10 gangs. The depth of the roadside pits should be kept as a rule a whole number of feet, *i.e.* 1, 2 or 3, the section of the road being modified accordingly.



To ensure the full working of the above system, it is of the first importance that the lines marking the distribution of the day's task should be clearly indicated, and that the object with which they are put down is explained to all the workers. The best way of bringing home to them the real meaning of the divisions is to fully impress on them the amount of pice which can be earned by doing the minimum task of 50 cubic feet and by pointing out that this means the working up to the centre line at B. It should then be explained that by working up to the next division at C, they will get each one pice more, and that by doing a full task of 100 cubic feet, *i.e.* up to D, the digger gets one pice more, and that the whole gang will receive their full wages.

R. R. PULFORD, Col., R.E.,  
*Superintending Engineer, 2nd Circle, P. W.*

## STATEMENT No. I.

*List of Military Inspecting Officers deputed to famine relief works in the 2nd Circle, Provincial Works.*

Name and regiment.	District to which attached.	Date of joining.	Date of departure.	Remarks.
Captain D. F. Stuart, 11th Bengal Infantry.	Bara Banki ...	3rd February 1897.	17th March 1897.	Transferred to Cawnpore.
Captain H. Merewether, 7th Bengal Cavalry.	Rae Bareilly ...	4th February 1897.	31st August 1897.	Transferred to village relief works.
Major F. Pollock, 7th Bengal Cavalry.	Hardoi ...	6th February 1897.	Ditto ...	Reverted to regimental duty.
Lieutenant H. D. Pearson, R.E. ...	Ditto ...	Ditto ...	Ditto ...	Retransferred to Military Department.
Captain J. Evatt, 89th Garhwál Rifles.	Sitapur ..	5th February 1897.	9th April 1897.	Reverted to regimental duty.
	Lucknow ...	10th April 1897.	6th August 1897.	
Captain J. P. Brewin, R.E. ...	Unao ...	7th February 1897.	Ditto ...	Retransferred to Military Department.
	Lucknow ...	7th August 1897.	6th September 1897.	
Lieutenant C. E. Greenstreet, R.E.	Ditto ...	8th February 1897.	3rd April 1897.	Transferred to Orá.
Captain A. Giles, 13th Bengal Infantry.	Ditto ...	10th February 1897.	16th February 1897.	Transferred to Mirzapur.

## STATEMENT No. II.

*List of Civil Inspecting Officers and Visiting Inspectors employed on famine relief works in the 2nd Circle, Provincial Works.*

Name.	Permanent appointment.	Pay as Inspecting officer.	District to which attached.	Date of joining the district for famine works.	Date of termination of service on famine works.
Mr. H. Rigg ...	Assistant Engineer, 3rd grade.	Rs. 350	Lucknow ...	11th February 1897.	15th September 1897.
Mr. M. N. Mukerjee ...	Supervisor, 1st grade (temporary).	200	Ditto ...	30th December 1896.	13th April 1897.
Munshi Muhammad Husain.	Overseer, 1st grade ...	100	Ditto ...	5th December 1896.	25th August 1897.
Bábu Bahal Singh ...	Sub-Overseer, 1st grade.	60	Ditto ...	18th January 1897.	30th June 1897.
„ Rakhál Das Banerjee.	Computer, Executive Engineer's Office, Lucknow.	150	Hardoi ...	5th March 1897.	7th May 1897.
„ Ditto ...	Ditto ...	150	Lucknow ...	8th May 1897.	23rd August 1897.
„ Mahadeo Parshad ...	Civil Department ...	150	Fyzabad Division.	24th February 1897.	22nd June 1897.
„ Ditto ...	Ditto ...	150	Hardoi district...	23rd June 1897.	18th August 1897.
„ Ditto ...	Ditto ...	150	2nd Circle office,	19th August 1897.	15th September 1897.
„ Gokul Singh ...	Sub-Overseer, 2nd grade,	60	Unao district ...	18th January 1897.	30th June 1897 (afternoon).
„ Kundan Lal ...	Ditto ...	60	Sitapur district,	Ditto ...	30th June 1897.
Munshi Qadir Baksh ...	Ditto ...	60	Hardoi district,	Ditto ...	Ditto.
Bábu Parshadi Lal ...	Overseer, 1st grade ...	100	Ditto ...	17th January 1897.	31st August 1897.
„ Kesra Singh ...	Overseer, 2nd grade ...	80	Ditto ...	2nd March 1897.	August 1897.
Munshi Abdul Shakur ...	Supervisor, 2nd grade,	150	Rae Bareilly district.	26th February.	9th September 1897.
Babu Sri Gobind ...	Sub-Overseer, 1st grade,	80	Ditto ...	18th January 1897.	30th June 1897.
Munshi Zahir Ahmad ...	Ditto ...	70	Fyzabad district,	Ditto ...	1st April 1897.
Bábu Amrit Lal ...	Sub-Overseer, 2nd grade,	60	Sultánpur district.	1st March 1897.	Ditto.
Munshi Ghulam Nabi ...	Sub-Overseer, 3rd grade,	75	Bara Banki district.	28th January 1897 (afternoon).	1st July 1897.
„ Muhammad Munir Khan.	Sub-Overseer, 2nd grade,	60	Gonda district...	18th January 1897.	1st April 1897.

Lucknow:  
The 15th September 1897.

G. B. McDOWELL,  
Offg. Superintending Engineer, 2nd Circle, Provincial Works.

STATEMENT III.—SECOND CIRCLE, PROVINCIAL WORKS.

List of roads constructed or specially repaired as famine relief works under Public Works control.

District.	Names of roads specially repaired or constructed.	Length of roads operated on.	Cubic feet of earthwork done.	Approximate total cost (inclusive of gratuitous relief.)	Approximate total cost (exclusive of gratuitous relief.)	Date of commencement.	Date of completion.	Remarks.
1	2	3	4	5	6	7	8	9
		Miles.		Rs.	Rs.			
Lucknow.	Raising road from Mal to Kursi ...	21	9,175,050	49,734	47,478	10th December 1896 ...	27th February 1897.	
	Ditto Nigohan to Salempur ...	17	4,027,054	28,741	27,568	11th ditto ...	8th March 1897.	
	Ditto Lucknow to Sissendi ...	13	6,402,428	45,086	43,497	22nd ditto ...	31st July 1897.	
	Ditto Bunni to Mohan ...	9	4,328,206	21,876	19,975	15th January 1897 ...	15th March 1897.	
	Ditto Hatachak to Pipargaon ...	20	6,030,934	33,776	32,831	22nd ditto ...	31st July 1897.	
	Ditto Lucknow to Nigraon ...	16	8,808,736	35,800	34,618	23rd ditto ...	30th January 1897.	
	Ditto Chinhat to Zaidpur ...	4½	4,543,327	20,641	19,862	5th February 1897 ...	31st March 1897.	
	Ditto Lucknow to Hardoi ...	11	3,768,930	25,721	24,777	10th ditto ...	21st August 1897.	
	Ditto ditto Mohna ...	10	3,832,552	23,079	22,234	11th ditto ...	31st May 1897.	
	Ditto Sissendi to Nigohan ...	9	6,556,455	11,401	10,885	23rd ditto ...	ditto.	
	Ditto Malihabad to Pipargaon ...	13	3,318,128	22,069	21,215	1st March 1897 ...	31st July 1897.	
	Ditto Bunni to Gohainganj ...	9	2,419,739	11,963	11,464	7th ditto ...	31st May 1897.	
	Ditto Malihabad to Mohna ...	5	1,864,889	7,450	7,181	16th ditto ...	16th July 1897.	
	Ditto Bijnor to Baulhera ...	5	1,495,047	6,740	6,585	27th April 1897 ...	31st ditto.	
	Ditto Kakori to Fatehganj ...	3½	1,459,533	7,326	6,956	1st June 1897 ...	16th ditto.	
	Ditto Mohanlalganj to Jehrila ...	7	30,69,795	10,837	10,650	1st ditto ...	12th ditto.	
	Ditto Mohna to Amaniganj ...	4	733,235	6,066	5,746	23rd ditto ...	23th ditto.	
	Total	...	70,329,038	3,67,866	3,53,522			
Rae Bareilly.	<i>Ordinary earthwork.</i>							
	Improving the Hydergarh and Fatehpur road ...	38	8,011,784	55,163	49,479	30th October 1896 ...	17th July 1897.	
	Ditto Rae Bareilly and Unao road ...	9	3,338,147	28,855	27,210	2nd November 1896 ...	29th March 1897.	
	Completing the Rae Bareilly and Lalganj road ...	15½	5,317,794	30,454	28,563	10th January 1897 ...	30th ditto.	
	Improving the Inbauna and Gutnighat road ...	16	12,786,786	63,056	59,226	18th ditto 1897 ...	17th April 1897.	
	Ditto Salan and Bebar road ...	11	4,089,138	22,623	20,979	5th February 1897 ...	12th June 1897.	
	Ditto Maharajganj and Inbauna road ...	7	3,345,104	17,121	15,673	7th ditto 1897 ...	3rd April 1897.	
	Ditto Bachhrawan and Nigohan road ...	12	2,727,232	12,817	11,701	19th ditto 1897 ...	24th May 1897.	
Ditto Rae Bareilly and Fyzabad road ...	7½	1,864,407	8,143	7,208	23rd May 1897 ...	17th July 1897.		
	<i>Claying.</i>							
Rae Bareilly and Unao road ...	12½	3,877,450	61,330	55,256				
	Total	...	41,857,812	2,99,561	2,75,295			

Unao.	Raising and improving	Pariar and Hassanganj road	...	23	5,223,406	25,486	24,373	15th December 1896 ...	18th February 1897.	
	Ditto ditto	Behar, Purwa and Nawabganj road	...	20 1/2	8,262,059	42,517	40,546	25th ditto 1896 ...	7th August 1897.	
	Ditto ditto	Morawan and Mohanlalganj road	...	8	5,408,737	25,794	24,492	17th January 1897 ...	26th May 1897.	
	Draising the Unao Jail	...	...	5 1/2	8,389,668	44,765	42,894	1st ditto 1897 ...	24th July 1897.	
	Raising and improving	Bangermow and Mohan road	...	20	6,882,109	31,250	29,826	18th ditto 1897 ...	31st May 1897.	
	Ditto ditto	Unao Behar road beginning at Achelganj,	...	21	6,638,078	31,790	29,920	1st February 1897 ...	17th July 1897.	
	Ditto ditto	Morawan and Gurbuzganj road	...	6	2,588,287	14,650	13,879	7th ditto 1897 ...	10th April 1897.	
	Ditto ditto	Auras and Mohan road	...	16	5,762,686	35,207	31,108	22nd ditto 1897 ...	31st July 1897.	
	Ditto ditto	Maushiganj road	...	2	3,07,537	2,955	2,870	19th ditto 1897 ...	28th February 1897.	
	Ditto ditto	Purwa and Achelganj road	...	13	2,769,767	15,312	14,541	14th April 1897 ...	24th July 1897.	
	Ditto ditto	Pariar and Sikandarpur road	...	4	217,463	270	248	21st March 1897 ...	28th March 1897.	
	Ditto ditto	Achelganj and Gangaghat road	...	4	6,000	52	48	10th ditto 1897 ...	20th ditto	
	Ditto ditto	Purwa and Morawan road	...	7	2,747,411	11,319	10,868	27th June 1897 ...	7th August 1897.	
	Ditto ditto	Safpur and Bangermow road	...	5	1,464,066	9,155	8,639	1st May 1897 ...	31st July 1897.	
			Total	...	56,667,274	2,90,522	2,74,292			
Sitapur.	Bari and Chandra road	...	...	33	12,497,826	64,056	60,952	16th November 1896 ..	5th June 1897	The amounts in columns 5 and 6 are exclusive of establishment charges.
	Moholi and Loharpur road	...	...	30	9,714,168	60,715	57,916	11th ditto 1896...	30th April 1897.	
	Sitapur and Bahramghat road	...	...	8	4,634,154	30,961	29,486	29th December 1896 ...	5th June 1897.	
	Khairabad and Loharpur road	...	...	4	1,759,594	8,781	8,441	21st February 1897 ...	26th June 1897.	
	Munwa and Sandila road	...	...	4	1,287,196	4,544	4,458	29th January 1897 ...	26th February 1897.	
	Altaria and Magrora road	...	...	6	1,438,155	6,797	6,696	21st February 1897 ...	26th June 1897.	
	Sitapur and Lakhimpur road	...	...	4	2,864,746	13,218	11,919	14th ditto 1897 ...	16th do. 1897.	
	Sitapur and Hardoi road	...	...	16	3,499,640	14,688	14,051	23rd January 1897 ...	26th do. 1897.	
	Misrikh and Rajghat road	...	...	5	1,022,837	10,477	9,993	8th February 1897 ...	31st May 1897.	
	Chandra and Shahabad road...	...	...	2	179,385	1,114	1,062	14th March 1897 ...	27th March 1897.	
Khairabad and Bargadiaghat road	...	...	14	2,812,960	16,331	15,062	17th January 1897 ...	26th June 1897.		
		Total	...	41,710,661	2,32,682	2,19,936				
Kheri.	Mohumdi, and Aurangabad road	...	...	2	1,994,432	427	407	22nd February 1897 ...	28th March 1897.	This work was closed on 3rd April and reopened on 3rd May and was closed on 16th July 1897.
	Lakhimpur and Shajahapur road	...	...	5	5,914,659	5,575	5,416	22nd ditto 1897 ...	16th July 1897	
	Gola and Kukra road	...	...	4	47,520	501	477	10th August 1897 ...	23rd August 1897.	
		Total	...	7,956,611	6,503	6,300				
Fyzabad.	Raising Fyzabad and Jaunpur road	...	...	8 1/2	2,118,152	9,429	9,429	25th December 1896...	10th March 1897	In this district the work was executed by contract (intermediate system).
	Ditto Fyzabad Maya and Azamgarh road	...	...	6 1/2	1,364,811	6,024	6,024	23rd ditto 1896 ...	13th ditto.	
	Ditto Dowlatpur and Sahawal road	...	...	8 1/2	1,440,753	7,739	7,739	23rd ditto 1896 ...	11th ditto.	
	Ditto Fyzabad, Shabganj, and Essawli road	...	...	2	836,630	4,546	4,546	20th January 1897 ...	12th ditto.	
		Total	...	5,760,346	27,738	27,738				
Gonda.	Constructing Itiathoke and Khargupur road	...	...	7	1,603,793	6,368	6,336	26th December 1896 ...	23rd June 1897	
	Raising Muskinwa and Chunderdip road	...	...	6	1,651,439	5,478	5,478	24th ditto ...	14th March 1897	
	Ditto Rehra and Gumright road	...	...	5	1,410,073	4,504	4,504	29th ditto ...	2nd ditto.	
	Ditto Durzi-ka-Qus-Manawar road	...	...	2	1,239,179	4,153	4,153	2nd February 1897 ...	15th ditto.	
	Ditto Maharajganj Koari portion of Colonelganj and Maharajganj road.	...	...	1	70,390	267	267	25th ditto ...	14th ditto.	
	Ditto Nawabganj, and Utraula road	...	...	3	667,673	2,780	2,736	1st March 1897 ...	23rd June 1897.	
		Total	...	6,642,547	23,550	23,474				

STATEMENT No. III.—SECOND CIRCLE, PROVINCIAL WORKS.

List of roads constructed or specially repaired as famine relief works under Public Works control—(continued).

District.	Name of roads specially repaired or constructed.	Length of roads operated on.	Cubic feet of earthwork done.	Approximate total cost (inclusive of gratuitous relief).	Approximate total cost (exclusive of gratuitous relief).	Date of commencement.	Date of completion.	Remarks.
1	2	3	4	5	6	7	8	9
Bara Banki.	Lucknow and Sultanpur road ... ..	17	4,554,081	27,001	26,167	23rd December 1896 ...	19th March 1897 ...	In 1897-98 only 15,087 cubic feet earthwork was done against a total expenditure of Rs. 3,018, which is due to the fact that five charges remained open and labourers worked for a few days in one charge only, expenditure on earthwork proper being Rs 42 only.
	Ditto Mahmudabad road ... ..	6	1,542,183	7,717	7,419	24th ditto 1896 ...	25th June 1897.	
	Bara-Banki and Debiganj road ... ..	7	2,413,043	14,277	13,819	4th January 1897 ...	6th ditto 1897.	
	Diwa and Kursi road ... ..	6	1,358,463	7,639	7,423	6th ditto 1897 ...	11th March 1897.	
	Badoserai and Fatehpur road ... ..	1	374,288	1,378	1,325	24th ditto 1897 ...	18th February 1897.	
	Dariabad and Hydergarh road ... ..	1,880 ft.	59,099	1,366	1,364	19th February 1897 ...	27th June 1897.	
	Bara Banki and Hydergarh road ... ..	800 "	56,377	1,155	1,082	26th ditto 1897 .	6th ditto 1897.	
	Badoseria and Buduli road ... ..	*8	2,570,411	11,452	11,249	22nd January 1897 ...	24th ditto 1897.	
	Total ... ..		12,927,945	71,985	69,842			
	<i>Roads.</i>							
Sultanpur.	Raising Katka and Akbarpur road ... ..	5½	1,064,140	4,776	4,776	8th January 1897 ...	28th February 1897 ...	† completed.
	Ditto Lucknow and Jaunpur road ... ..	6	2,085,879	6,404	6,404	26th December 1896 ...	8th March 1897 ...	† ditto.
	Improving Rae Bareilly and Sultanpur road ... ..	7½	1,252,965	7,296	7,287	22nd ditto 1896 ...	24th June 1897 ...	† ditto.
	Ditto ditto Fyzabad road ... ..	8½	1,426,069	4,165	4,165	29th ditto 1896 ...	28th February 1897 ...	† ditto.
	Raising Fyzabad and Jaunpur road ... ..	4½	1,146,530	5,118	5,118	31st ditto 1896 ...	8th March 1897 ...	† ditto.
	<i>Drainage Works.</i>							
	Remodelling Lyall Park drain ... ..	1,500 rft.	1,403,269	5,677	5,677	17th January 1897 ...	31st August 1897.	
	Ditto Ganda Nala Ground ... ..	600 "	720,683	1,658	1,658	17th ditto 1897 ...	18th March 1897.	
Ditto Karaundia Nala drain ... ..	1,800 "	1,138,670	3,888	3,888	27th ditto 1897 ...	18th ditto 1897.		
Ditto Hattua Nala drain ... ..	1,800 "	1,407,668	5,888	5,717	7th February 1897 ...	16th July 1897.		
Excavating new boundary drain and filling up old holes and drains along the Allahabad-Sultanpur and Fyzabad road.	400 "	82,083	399	378	12th July 1897 ...	26th ditto 1897 ...	Only a portion completed.	
	Total ... ..		11,727,966	45,267	45,093			
Partabgarh.	Partabgarh and Sirathu road ... ..	7½	2,159,304	11,634	11,176	21st December 1896 ...	20th June 1897.	
	Patti Saifabad road ... ..	5	1,623,165	7,457	7,062	27th ditto 1896 ...	25th March 1897.	
	Patti Raniganj road ... ..	8½	1,866,194	6,510	6,295	Litto ditto ...	23rd June 1897.	
	Partabgarh and Rae Bareilly road ... ..	4½	2,861,249	9,771	9,141	Litto ditto ...	25th March 1897.	
	Total ... ..		8,503,912	35,372	33,674			

\* Including four miles left unfinished.

List of roads specially repaired as Famine Relief Works under control of the Public Works Department.

District.	Name of roads specially repaired or constructed.	Length of road operated on.	Cubic feet of earth-work done.	Approximate total cost (inclusive of gratuitous relief).	Approximate total cost (exclusive of gratuitous relief).	Date of commencement.	Date of completion.	Remarks.	
1	2	3	4	5	6	7	8	9	
				Rs.	Rs.				
HARDOL.	Raising Sandila and Bangerman road ... ..	12½	4,557,797	29,309	26,887	22nd February 1897 ...	30th June 1897.		
	Raising Beniganj and Budaman road ... ..	10	3,408,210	13,732	12,703	1st May 1897 ...	21st ditto.		
	Ditto and Hardoi road ... ..	2½	1,361,260	8,568	7,894	22nd March 1897 ...	30th April 1897.		
	Raising Chandpur Station road ... ..	2½	448,800	2,692	2,477	...	...		
	Raising Chandri and Shahabad road ... ..	22	3,913,668	16,548	15,225	19th March 1897 ...	19th April 1897.		
	Raising Chaperthala and Pihani road ... ..	8½	4,104,166	39,423	32,115	21st February 1897 ...	30th June 1897.		
	Farukhabad and Sháhahád vid Pali ... ..	19½	8,497,621	81,415	28,894	22nd ditto ...	4th May 1897.		
	Hardoi and Sitapur vid Dadnamanghát... ..	12½	4,942,528	33,394	30,652	1st ditto ...	14th June 1897.		
	Raising Beniganj and Pipargaon road ... ..	16	3,541,173	29,721	27,298	1st December 1896 ...	23rd July 1897.		
	Raising Sandila Manwa vid Batpurghát ... ..	16½	1,387,259	15,987	14,373	11th June 1897 ...	26th ditto.		
	Raising Sitapur and Mauhdighát road ... ..	8½	1,191,226	11,982	11,135	1st July 1897 ...	22nd ditto.		
	Raising Tandiaon and Pihani road ... ..	15	6,100,360	85,159	28,950	15th March 1897 ...	30th June 1897.		
	Raising Shahabad and Unao road ... ..	24½	1,782,327	9,213	8,324	8th ditto ...	22nd July 1897.		
	Raising Hardoi and Saighát road vid Naktora ... ..	17½	1,684,173	23,621	21,732	10th January 1897 ...	31st ditto.		
	CLEARED ONLY.								
		Repairing Shahabad and Jagdispur road ... ..	17	3,944,519	34,791	36,615	30th June 1897 ...	31st July 1897.	
		Constructing a road from Masit to Nimkhar ... ..	10	797,268	14,824	13,338	11th ditto ...	22nd ditto.	
		Ditto Sandi to Baghauli ... ..	22	6,084,929	43,400	40,928	10th January 1897 ...	12th June 1897.	
		Repairing Pihani and Mohamdi road ... ..	11	2,835,451	22,922	19,695	1st July 1897 ...	20th August 1897.	
		Ditto Anjhi and Alamnagar road ... ..	8	16,438	1,747	147	25th ditto ...	10th ditto.	
		Ditto Masit and Bhainsari road ... ..	2	51,518	114	105	20th March 1897 ...	31st March 1897.	
		Pihani and Sháhjahánpur road ... ..	1	8,666	882	352	20th August 1897 ...	29th August 1897.	
		Improving Lucknow and Sháhjahánpur road ... ..	53	19,231,999	1,23,060	1,14,019	1st December 1896 ...	30th June 1897.	
		Raising and metalling Lucknow and Sháhjahánpur road, Shahabad border.	2	2,094,061	16,232	14,934	8th February 1897 ...	25th February 1897.	
		Raising Sandila and Sitapur road ... ..	20	4,442,578	17,642	16,781	15th ditto ...	12th June 1897.	
		Raising railway station Diversion road ... ..	3½	628,320	3,141	2,890	4th ditto ...	20th March 1897.	
		Raising Chandpur and Pehani road ... ..	8½	1,852,178	14,970	13,711	7th ditto ...	31st May 1897.	

List of roads specially repaired as famine relief works under control of the Public Works Department—(concluded).

District.	Name of roads especially repaired or constructed.	Length of road operated on.	Cubic feet of earth work done.	Approximate total cost (Inclusive of gratuitous relief).	Approximate total cost (exclusive of gratuitous relief).	Date of commencement.	Date of completion.	Remarks.	
1	2	3	4	5	6	7	8	9	
				Rs.	Rs.				
Hardoi.	Raising Hardoi and Kanauj road <i>vid</i> Belgram ... ..	4½	2,119,604	17,098	15,560	10th January 1897 ...	30th March 1897.		
	Raising Hardoi and Saighat road <i>vid</i> Bawan ... ..	7½	2,900,600	18,426	16,953	20th January 1897 ...	30th March 1897.		
	Raising Shaabad and Unao road between Sandi and Belgram ...	10	5,29,876	3,451	3,175	15th June 1897 ...	31st August 1897.		
	UNMETALLED ROAD B, PARTIALLY BRIDGED AND DRAINED.								
	Raising Hardoi and Farrukhabad road ... ..	10	4,422,178	32,465	29,868	1st April 1897 ...	25th June 1897.		
	BANKED BUT NOT SURFACED PARTIALLY BRIDGED AND DRAINED.								
	Raising Shaabad and Allahganj ... ..	14½	3,021,615	16,488	15,176	1st December 1896 ...	7th February 1897.		
	METALLED ROAD A, BRIDGED AND DRAINED THROUGHOUT.								
	Collection of metal on Hardoi and Kanauj road ... ..	...	Kunker. 5,000	100	100	5th May 1897 ...	20th May 1897.		
	Collection of metal on Hardoi and Farrukhabad road ... ..	...	Kunker. 86,292	1,163	1,110	5th May 1897 ...	16th July 1897.		
	UNMETALLED ROAD A, BRIDGED AND DRAINED THROUGHOUT.								
	Raising and metalling Hardoi and Pihani road ... ..	16½	7,552,350	78,525	71,087	27th October 1896 ...	14th March 1897.		
	Raising and metalling Hardoi and Sitapur road <i>vid</i> Bargadiaghat,	19 {	Kunker. 86,807	1,736	1,736	5th August 1897 ...	30th May 1897.		
			7,610,313	99,569	32,839	6th November 1896 ...	31st March 1897.		
	Raising and metalling Sandila and Mallawan, Madhoganj and Bilgram road ... ..	21 {	Kunker. 44,827	1,312	1,195	5th May 1897 ...	} 1st July 1897.		
Raising Sandila and Mallawan road ... ..	15	8,429,907	52,809	48,611	1st December 1896 ...				
		7,040,704	42,822	39,397	1st December 1896 ...	31st March 1897.			
	Total ...	464	132,706,566	8,99,888	8,18,981				

LUCKNOW: }  
The 18th September 1897.

R. R. PULFORD, COL., B.E.,  
Superintending Engineer, 2nd Circle, P. W. N.-W. P. and Oudh.

**STATEMENT NO. IV.—2ND CIRCLE, PROVINCIAL WORKS.**  
*List of tanks deepened or otherwise improved as Famine Relief Works under Public Works control.*

District.	Pargana.	Village.	Cubic feet of earthwork done.	Approximate total cost (inclusive of gratuitous relief).	Approximate total cost (exclusive of gratuitous relief).	Date of commencement.	Date of completion.	Remarks.
1	2	3	4	5	6	7	8	9
Lucknow ... ..	Lucknow ... ..	Chinhat ... ..	12,652,441	66,652	64,250	15th February 1897.	7th August 1897.	
Rae Bareli ... ..	Rae Bareli ... ..	Jatwa ... ..	3,067,189	44,514	41,177	7th February 1897.	2nd May 1897.	
Ditto ... ..	Ditto ... ..	Dedaur ... ..	3,605,899	20,009	18,245	16th February 1897.	16th July 1897.	
Ditto ... ..	Ditto ... ..	Sarayan ... ..	6,369,478	19,287	18,052	24th January 1897.	7th July 1897.	
Ditto ... ..	Ditto ... ..	Somtha ... ..	8,371,501	13,637	12,675	20th February 1897.	9th June 1897.	
		Total ... ..	16,414,067	97,447	90,149			
Kheri ... ..	...	Barina ... ..	449,740	4,118	4,027	22nd May 1897	18th July 1897.	
Bara Banki ... ..	...	...	Nil.	...	...	...	...	The work of deepening or improving tanks has not been exclusively done in the district. But such of the tanks as were at roadside were deepened as far as found practicable for road work, the quantity of earth dug being measured and taken to roads is included and shown under them in the list of roads.

LUCKNOW: }  
 The 14th September 1897. }

G. R. McDOWELL,  
 Offg. Supdg. Engineer, 2nd Circle, Provincial Works, N.-W. P. and Oudh.



*List of tanks deepened or improved as Famine Relief Works under the control of the Public Works Department.*

District.	Pargana.	Village.	Cubic feet of earthwork done.	Approximate total cost (inclusive of gratuitous relief).	Approximate total cost (exclusive of gratuitous relief).	Date of commencement.	Date of completion.	Remarks.	
1	2	3	4	5	6	7	8	9	
				Rs.	Rs.				
HARDOL.	1	Balamau ... ..	Kachara ... ..	3,249,824	15,340	14,113	16th March 1897 ...	26th May 1897.	
	2	Do. ... ..	Kanpur ... ..	240,000	1,439	1,324	Ditto ...	3rd May 1897.	
	3	Bangar ... ..	Karahi ... ..	120,000	729	671	20th January 1897...	18th February 1897.	
	4	Do. ... ..	Do. ... ..	80,000	490	451	Ditto ...	8th February 1897.	
	5	Do. ... ..	Lalpore ... ..	240,212	1,506	1,386	3rd February 1897...	30th March 1897.	
	6	Do. ... ..	Jhola ... ..	160,016	1,400	368	3rd March 1897 ...	31st March 1897.	
	7	Do. ... ..	Behta Chand ... ..	603,327	2,756	2,506	4th March 1897 ...	6th May 1897.	
	8	Do. ... ..	Do. ... ..	1,649,000	6,500	5,980	Ditto ...	17th May 1897.	
	9	Do. ... ..	Behta Gokul ... ..	2,619,873	10,190	9,375	16th March 1897 ...	30th June 1897.	
	10	Sandila ... ..	Jarha ... ..	360,120	2,161	1,989	2nd January 1897 ...	26th February 1897.	
	11	Do. ... ..	Khajania ... ..	20,115	101	93	2nd February 1897...	20th February 1897.	
	12	Mallawan ... ..	Jendua ... ..	21,213	127	117	1st April 1897 ...	15th April 1897.	
	13	Do. ... ..	Do. ... ..	24,012	145	133	Ditto ...	16th April 1897.	
	14	Bilgram ... ..	Chandpur ... ..	1,839,989	24,389	22,438	4th March 1897 ...	30th June 1897.	
	15	Sandila ... ..	Atwa ... ..	750,715	4,505	4,125	1st May 1897 ...	6th June 1897.	
	16	Do. ... ..	Tikrari ... ..	300,000	1,806	1,662	Ditto ...	4th June 1897.	
	17	Do. ... ..	Do. ... ..	37,500	225	207	Ditto ...	3rd June 1897.	
	18	Gopamau ... ..	Imampur ... ..	603,327	2,756	2,536	4th April 1897 ...	20th May 1897.	

List of tanks deepened or improved as Famine Relief Works under the control of the Public Works Department—(continued).

District.	Fargana.	Village.	Cubic feet of earthwork done.	Approximate total cost (inclusive of gratuitous relief).	Approximate total cost (exclusive of gratuitous relief).	Date of commencement.	Date of completion.	Remarks.
1	2	3	4	5	6	7	8	9
				Rs.	Rs.			
HAARDWAR (continued).	19	Gopaman ... ..	Muhammadpur ... ..	415,360	1,615	1,486	9th April 1897 ...	Ditto.
	20	Do. ... ..	Tandison ... ..	620,212	3,722	3,425	10th March 1897 ...	26th March 1897.
	21	Do. ... ..	Burhagaon ... ..	180,000	1,080	994	20th March 1897 ...	25th April 1897.
	22	Do. ... ..	Manjhia ... ..	240,690	1,444	1,329	1st May 1897 ...	14th June 1897.
	23	Do. ... ..	Do. ... ..	210,660	1,264	1,163	Ditto ...	15th January 1897.
	24	Do. ... ..	Do. ... ..	223,020	1,338	1,231	4th May 1897 ...	12th June 1897.
	25	Do. ... ..	Raniamau ... ..	360,120	2,161	1,989	Ditto ...	Ditto.
	26	Do. ... ..	Do. ... ..	213,201	1,280	1,178	Ditto ...	Ditto.
	27	Pali ... ..	Sawagpur ... ..	2,046,856	16,041	14,758	20th March 1897 ...	16th June 1897.
	28	Barmau ... ..	Naktora ... ..	370,600	1,980	1,822	20th January 1897...	21st February 1897.
	29	Bangar ... ..	Tatoria ... ..	62,050	301	277	26th January 1897...	20th February 1897.
	30	Sara ... ..	Khirya ... ..	1,675,500	10,053	9,249	25th April 1897 ...	15th June 1897.
	31	Do. ... ..	Biggaon ... ..	75,784	455	417	Do. ...	Do.
	32	Do. ... ..	Do. ... ..	76,600	459	421	Do. ...	Do.
	33	Mansurnagar ... ..	Sandhiyan ... ..	238,800	1,626	1,496	Do. ...	Do.
	34	Do. ... ..	Auchal ... ..	92,400	554	510	20th March 1897 ...	20th April 1897.

List of tanks deepened or improved as Famine Relief Works under the control of the Public Works Department—(concluded).

District.	Pargana.	Village.	Cubic feet of earthwork done.	Approximate total cost (inclusive of gratuitous relief.)	Approximate total cost (exclusive of gratuitous relief.)	Date of commencement.	Date of completion.	Remarks.
1	2	3	4	5	6	7	8	9
				Rs.	Rs.			
HARDOI—(concluded).	35	Masurnagar ... ..	Sandhya ... ..	260,600	1,564	1,439	20th March 1897 ...	20th April 1897.
	36	Do. ... ..	Pora ... ..	157,500	945	870	Ditto ...	Ditto.
	37	Do. ... ..	Masurnagar ... ..	48,600	292	268	Ditto ...	Ditto.
	38	Sara ... ..	Maida ... ..	1,660,600	8,763	8,062	Ditto ...	Ditto.
	39	Gopamow ... ..	Likrari ... ..	276,900	2,661	2,449	2nd February 1897 ...	6th March 1897.
	40	Do. ... ..	Sansari ... ..	974,500	2,447	2,252	1st February 1897 ...	26th February 1897.
	41	Do. ... ..	Niyagaon ... ..	926,858	5,212	4,796	16th March 1897 ...	13th April 1897.
	42	Pehani ... ..	Shahpur ... ..	367,500	2,605	2,397	...	...
	43	Do. ... ..	Bazidnagar ... ..	289,600	1,837	1,691	25th May 1897 ...	20th June 1897.
	44	Do. ... ..	Sadatnagar ... ..	120,200	920	847	...	...
	45	Do. ... ..	Salempur ... ..	90,510	643	592	...	...
	46	Sandila ... ..	Rasulpur ... ..	2,198,600	13,191	12,136	10th March 1897 ...	11th May 1897.
	47	Do. ... ..	Benhdor ... ..	212,300	1,273	1,172	10th June 1897 ...	28th June 1897.
	48	Do. ... ..	Do. ... ..	210,100	1,280	1,178	Ditto ...	Ditto.
	49	Do. ... ..	Beniganj ... ..	170,600	1,024	943	20th April 1897 ...	15th May 1897.
50	Kalyanmal ... ..	Goglapur ... ..	91,300	648	597	20th May 1897 ...	1st June 1897.	
		Total ...	27,527,364	1,67,243	1,62,908			

LUCKNOW:

The 18th September 1897.

R. B. PULFORD, Col., R.E.,

Superintending Engineer, 2nd Circle, P. W. N.-W. P. and Oudh.

STATEMENT No. V.

Statement showing number of persons employed and expenditure incurred on Famine Relief Works, 2nd Circle, Provincial Works, during 1896-97 and 1897-98.

District.	Number relieved.					Total number of children who received cooked food as dependants.	Expenditure incurred on—					Remarks.	
	Men.	Women.	Children.	Dependants.	Total number relieved.		Works.	Gratuitous relief.		Tools and plant.	Establishment, all charge-able to Famine Relief.		Total expenditure.
								Depen-dants.	Hospital, &c.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14
							Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Lucknow ...	2,136,247	2,349,500	1,502,236	1,389,366	7,377,349	251,598	5,56,800	22,477	1,144	19,659	14,295	6,14,375	
Unao ...	1,248,037	1,389,745	644,927	870,209	4,152,918	811,986	2,74,005	16,817	743	3,299	12,141	3,07,005	
Rae Bareilly ...	1,995,173	2,384,417	1,957,549	1,490,790	7,227,929	254,381	4,80,170	32,406		5,635	16,949	5,35,160	
Sitapur ...	1,231,132	662,961	658,784	488,998	3,041,875	4,723	2,05,534	1,2243		11,229	33,847	2,62,853	
Hardoi ...	4,494,014	5,673,539	5,751,805	3,665,704	19,585,062	57,400	8,48,675	74,343	22,296	7,992	1,48,334	11,01,690	
Kheri ...	29,256	41,072	15,645	...	85,973	5,284	13,712	...	...	41	1,196	14,949	
Fyzabad ...	79,983	30,650	15,586	...	126,219	...	27,507	...	...	266	672	28,445	
Gonda ...	143,761	60,000	80,000	...	233,761	...	23,495	54		1,995	1,013	26,557	
Sultánpur ...	123,423	243,968	137,386	8,688	513,465	8,688	45,103	191	...	1,434	976	47,704	
Partábgarh ...	142,635	211,444	120,533	85,866	560,478	...	38,874	1,698		2,325	1,233	43,648	
Bara Banki ...	338,885	242,422	236,835	133,736	951,873	...	63,229	2,373	848	2,913	3,122	71,985	
Lucknow Divisional Office ...	...	...	...	...	...	...	...	...	...	57,937	...	57,937	
Fyzabad ditto ...	...	...	...	...	...	...	...	...	...	42,935	...	42,935	
<b>Total ...</b>	<b>11,962,546</b>	<b>13,289,718</b>	<b>10,471,236</b>	<b>8,133,357</b>	<b>43,856,907</b>	<b>1,394,060</b>	<b>25,77,104</b>	<b>1,87,133</b>	<b>1,58,160</b>	<b>2,33,828</b>	<b>31,56,225</b>		

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LUCKNOW :  
The 25th September 1897.

E. B. PULFORD, COL., R.E.,  
Superintending Engineer, 2nd Circle, P. W., N. W. P. and Oudh.

**NOTE BY COLONEL R. E. PULFORD, R.E., SUPERINTENDING ENGINEER, 2nd CIRCLE, PROVINCIAL WORKS, ON THE FAMINE OPERATIONS IN OUDH, DURING THE YEARS 1896-97.**

THE Oudh Famine of 1896-97 was chiefly confined to the districts of the Lucknow Division. Those of the Fyzabad Division, with the exception of Bara Banki, were not so severely stricken, nor was the distress ever so acute or so widespread as was the case in the Lucknow Division. The plan to be followed in dealing with the famine in Oudh was clearly laid down at the Conference of District and Public Works Officers which was held by the Lieutenant-Governor of the North-Western Provinces and Oudh at Lucknow on the 2nd November 1896. It was there decided to open large public works in all the affected districts, and to provide employment for all who were willing to work. The majority of the works opened were simple digging operations connected with the raising, widening, and general improvement of the many unmetalled district roads which were largely in a bad state of repair. This class of work was very suitable from every point of view. It offered a wide frontage for the conduct of operations, enabled careful supervision to be exercised, and permitted large numbers of people to be assembled together under the most favourable sanitary conditions.

The selection of the localities in which such relief works were to be opened was left in the hands of the District Officer. On his requisition, the Local Public Works Officer had to at once arrange to open a work sufficient to give employment to all who applied for it.

In view of the very large number of famine workers who were certain to resort to the road works, it became of the utmost urgency to draw up a simple and effective organization which should permit of bodies of people at least 5,000 in number being properly managed and controlled. And it was of the first importance that the organization should be ready and complete before the people flocked to the relief centres. The Government Conference at Lucknow was sufficiently early in the course of the famine to permit of this being done; and by the third week in November 1896 the organization of the works and charges had been placed upon a basis which lasted in practical working order from that time till the close of the Public Works Department operations on the 15th September 1897.

The details of the organization are fully set forth in the preliminary famine report, already submitted, of the operations in this circle. There are, however, some special points in it which it will be well to notice. The first point which seemed necessary to insist upon was that famine workers of every sort should be paid every day in the day time for the work they had done the day before; the next point was that a record should be kept of every payment thus made, so that a proper check could be exercised over the subordinates who had the paying out of the daily wages. The muster-rolls used in this organization furnish a complete record of all payments which are carried out each day in connection with the work people and other members of a famine charge, and they have been constantly used as conclusive evidence in cases where subordinates have been charged with misappropriation of famine funds. The muster-rolls are prepared afresh at the beginning of a new month, and the workers had come to place the greatest confidence in the accuracy of the entries made in them. Complementary to the daily muster-roll in which every man, woman, and child are entered by name for the days they are present, the work they do, and the wages they earn, the daily distribution of the wage is absolutely necessary. The system by which this is rapidly and accurately done is fully explained in the appendices of the preliminary famine report. The system has worked daily without a mistake for nearly a year, and it has proved itself a practical success.

At the end of November 1896 there were 13,500 workers on the relief works in Rae Bareli; 4,000 in Sitapur, and 9,000 in Hardoi. These numbers had nearly doubled themselves by the end of December 1896, and the sufferings from cold and hunger of the poor people gathered on the works were very severe. The cold at night and in the early morning was especially cruel and cutting, and the coolies often burnt the shelter huts in which they slept in order to procure fire and warmth in the grey hours before the sun rose. It is noticeable that no mention is made in the Famine Code of warm clothing for the starving people or of protection from cold. This is possibly due to the fact that the rules of the Code were drawn up chiefly with reference to the Madras Famine of 1877, and hence only provided for the Madras climate. In January 1897, the Government of the North-Western Provinces authorized the expenditure of Rs. 100 monthly per charge in buying warm clothing for the children in want of it. The most suitable form was found to be a sort of hooded capes made of rough grey serge in three sizes: these were largely distributed and were much prized by the poor children. In addition some Rs. 12,000 worth of clothing were distributed to destitute women and children from funds placed at my disposal for this purpose by the Committee of the Famine Charitable Fund.

From the commencement of the new year 1897 the numbers began to increase all over the relief works in the Lucknow Division. The numbers on works in Hardoi rose during January 1897 from 21,000 to 83,000; in Rae Bareli from 22,000 to 70,000; in the Fyzabad Division the numbers rose from 2,500 to 41,500, the chief increase being in Bara Banki, where at the end of January 1897 there were 24,000 famine workers.

These increasing numbers threw a heavy strain on the staff and on the organization generally; but all without exception worked with zeal and energy, and the exertion of all ranks of officials at this period and during the following months were most praiseworthy.

New charges were opened out daily to receive the constantly increasing numbers of starving men, women, and children who flocked to the relief works for employment by which to earn a livelihood. And every new charge meant the provision of all the numberless details of an organization only just started, and the intricacies of which the officers had but little time to master. I think the work done by every rank of the famine staff has been beyond all praise. And it is, indeed, wonderful that so much has been accomplished with the humble means available. The position of an Officer-in-charge was a most onerous and responsible one, and required a special combination of executive and administrative qualities. The numbers in a charge often ran up rapidly to 8,000 or 9,000 people, and the entire management of these was in the hands of the Officer-in-charge. He was responsible that no delay occurred in posting new arrivals to their gangs, feeding them, and putting them to work. A good officer in charge required to have the qualifications of a military commander. He had to move, muster, pay, feed, shelter, and see to the sanitation of every one in the charge. He was responsible for the regular payment of the daily wages of many thousands of people. He had charge of large quantities of stores and plant, and he had to be ready to deal promptly and bravely with outbreaks of cholera and other epidemic disease. These duties were for the most part admirably carried out by the men who were deputed by the Board of Revenue to act as naib tahsildars in charge of famine works. I have been well satisfied with the way in which these men have as a rule carried out their onerous duties, and I trust that those whose services I have especially brought to the notice of the Government may reap some substantial reward for the zealous way in which they have discharged their duties during an important crisis.

The most trying time for all ranks of the famine staff was during the month of February 1897, and it was in the third week of that month that the famine num-

bers reached their highest. On the 17th February 1897 there were 394,000 famine coolies on the works in the Lucknow Division, and 57,000 in the Fyzabad Division, giving a grand total of 451,000 people on the Oudh relief works, all of whom were regularly each day put to work, mustered, paid, and properly cared for.

From that date, under the influence of the approaching harvesting of the *rahi* crop, the numbers on the works began to fall away; at the end of February 1897 they had come down to a total of 396,000 people in both Divisions, and on the 31st March 1897 this was still further reduced to 116,000, all in the Lucknow Division.

The rapidity with which the famine works in the Fyzabad Division were deserted by the coolies was specially marked in the Bara Banki district, where it was necessary to put on specially engaged gangs to finish off the work on the abandoned roads, and render them passable for traffic.

During the first week in April 1897 the numbers just touched 100,000; but from that time they steadily increased until the advent of a good rainy season allowed the works to be gradually contracted, and eventually closed altogether.

The accompanying tables A and B show the number of relief works which were open in the different districts of Oudh during the various stages of the famine, and also the total numbers on works in the different districts. It is also to be remarked that even in the districts in which there was no longer any ostensible demand for famine relief, the necessary complement of staff and plant for two charges was kept ready and open to receive applicants for work up to the very last.

*Military Inspecting Officers.*—When in January 1897 it became evident that the numbers on the relief works would very shortly amount to several hundreds of thousands, the necessity for additional reliable supervision became very apparent, and with this view the services of Royal Engineer Officers and of European Regimental Officers of the Indian Army were obtained from the Government of India. Two of these officers were posted to the Hardoi district, and one to each of the other affected districts. The work done by these officers was of great value, and the constant inspections which it was thus possible to make of the large number of scattered famine charges added greatly to the efficient working of their organization. The duties of these officers, as laid down in their instructions, were entirely those of inspection; but they were able to give much assistance to the District Public Works officers, who were in actual charge of the famine operations. In combating the severe outbreaks of cholera which occurred during the months of June and July 1897, in the Hardoi district, the military inspecting officers rendered most efficient aid. The details of the successful operations carried out by Lieutenant Pearson, R.E., in conjunction with Surgeon-Lieutenant Browne, I.M.D., when stamping out the series of cholera attacks, which happened in the neighbourhood of Sandila, have been furnished to Government in separate reports, and should form valuable practical references.

*Total numbers and cost of relief.*—Full information regarding cost of relief, &c., has been given in the preliminary report already submitted. The total amount spent on Public Works relief has been, according to the latest accounts available, Rs. 31,55,239, including all charges of wages, gratuitous relief, tools and plant, establishment, and all miscellaneous charges. The total number of men, women, and children of all classes relieved by the Public Works Department organization was 45,250,967 for one day. These may be divided as follows:—

Men	...	...	...	...	...	11,962,546
Women	...	...	...	...	...	13,289,718
Children	...	...	...	...	...	10,471,286
				Total	...	35,723,550
				Dependants	...	9,527,417
				GRAND TOTAL	...	45,250,967

Approximately the Department Public Works organization in Oudh has relieved 45½ million people of all classes at a total expenditure of Rs. 32,00,000, or per head 13·5 pies.

The accompanying four statements, C, D, E, and F, show the actual working staff present, with four separate charges in different districts under the famine organization.

*Supply of food-grains.*—No difficulty was experienced throughout the famine operations in providing a full supply of food-grain for the people on the works. In every headquarter camp a large number of *banias* took up their stations and accompanied the charges as it moved from place to place. A certain number of *banias* posted themselves at the actual site of the work; but there was always some risk of a misunderstanding arising and a scuffle taking place when the grain dealers were alone in the midst of a large number of work people. As a matter of fact very few cases occurred of the *banias* being maltreated or robbed, and there was no really serious case of the kind throughout the operations. The rates which prevailed varied very slightly, and for all classes of meal or flour, whether coarse or fine, the ruling actual market rate may be taken to have been 7½ to 8 seers for the rupee, whilst even the coarsest and least nourishing never fell below 11 seers.

*Health of the famine charges.*—The general health of the famine charges was extraordinarily good throughout, and the mortality surprisingly low. During the winter season there was practically no illness except small-pox, which was chiefly confined to the children in a charge, and was not generally fatal in its effects.

In June and July 1897 some outbreaks of cholera occurred in the Hardoi district, but vigorous measures were promptly taken to stamp out the disease, and with such successful results that the spread was definitely stopped, and the epidemic completely checked with a total loss of only 257 deaths. This out of a total famine population of 45 millions must be held to be a remarkably low percentage.

*Sanitation.*—The question of proper sanitation on works received great attention in all Department Public Works famine camps. Special instructions were issued regarding the purification and protection of the wells in use by the relief workers, and conservancy arrangements were carefully supervised. In addition to a general hospital, which was provided in each camp, special hospitals for contagious diseases were erected in separate enclosures at some distance from the camp.

The practical working of these hospitals was in the hands of Hospital Assistants and medical subordinates, one to each charge. Their general management and administration were under the Civil Surgeon of the districts.

The working of these camp hospitals was highly satisfactory, and reflects much credit on the medical officers in charge of them.

*Administration of public funds by the charge officials.*—The question has been widely discussed as to whether there has been misappropriation of famine funds by the subordinates employed on the famine charges, and to what extent? There can be no doubt, I think, that there has been a certain amount of pilfering of small sums by the mates and jamadars of gangs; but I am strongly of opinion that, so far as the Oudh operations are concerned, there has been no serious malversation by the Officers-in-charge, of the sums entrusted to them for distribution to the famine coolies. The system of mustering and recording the daily payments employed throughout rendered it easy for the inspecting officers to detect any attempt at fraud and to bring the offenders to justice. I append a list of cases (G) in which conviction was obtained and punishment awarded.

Whatever pilfering there may have been was, I am sure, not directed against the famine coolies, who regularly received their full wages, but against the Government funds allotted for the maintenance of the famine charges. The most ordinary



method of fraud was to continue to draw wages for a coolie who had left the charge. Another method was to draw for more coolies than were actually present, without either entering fictitious names or using those of coolies who had quitted the work. This method was, however, very dangerous, as the courts often convicted on the evidence of the muster rolls, in these cases long after the frauds had been committed.

I think it would be of great advantage if in future famines the Inspecting Officers were given some kind of magisterial powers which would enable them to try cases of fraud on the spot. At present the offenders have to be taken for trial to a regular court, often at a very long distance from the place where the fraud has been committed; and in cases where the evidence rests upon the statements of the coolies of a gang, it is very difficult to ensure their presence at the court, or that their evidence will be as full and convincing as if taken on the spot directly the fraud is discovered.

*Work done by famine labour.*—The greater part of the work carried out by famine labour was the construction and repair of unmetalled roads. The question of carrying out a complete scheme on these lines for the whole Province was brought forward some twelve years ago, when Colonel Mayne, R.E., was Chief Engineer. Full returns of the roads to be improved or constructed, in order to provide a complete system of intra-district communications, were drawn up, together with the cost of carrying out the scheme. It was found, however, that the expenditure would be so large as to be practically prohibitive, and the project was abandoned. The extended system of road works which has been now carried out by famine agency has practically followed the lines which were contemplated by the scheme referred to above; and of the material benefit which must accrue to the districts in which the road improvements have been executed, there can be no doubt. A certain amount of extra expenditure will be necessary to complete the usefulness of the work done, by the provision of culverts, bridges, and drainage channels; and for the execution of careful repairs to the earthen embankments which have been injured by the heavy rains of 1897, estimates and plans have been called for, and the repairs of the earthen banks have been already put in hand.

For the Hardoi and Rae Bareli districts the road works were largely supplemented by work on the improvement and enlargement of roadside tanks. This class of work, though not of such general and widespread utility as the road work, will confer considerable benefits upon a large section of the village community. The rates of the various classes of earthwork have been given in detail in the report already submitted.

*Provision of shelter.*—The shelter provided for the people who came to the famine works consisted of a shelter hut formed by two strong bamboo hurdles  $6' \times 4\frac{1}{2}'$  covered with two to three inches of straw thatching. The lean-to hut formed by these two hurdles was closed at one end by a triangular piece of thatched framing, similar to the other two which formed the roof of the hut.

As a rule, shelter huts were only used by the famine coolies during the winter months, when the nights and early mornings were so bitterly cold that the people often burnt their huts and their grass bedding in order to get some kind of warmth, before going on to the works.

Shelter was not provided for the whole of a charge, as a large proportion of the people preferred spending the night in the villages adjoining the work. They would, as a rule, take shelter in a village, so long as it was within a distance of three or four miles from the work.

During the summer months shelter huts were provided in order to protect the work people from the hot winds during the midday rest. But as a rule the huts were but little used, the coolies preferring to rest under the shade of any trees which might be near the work. On the whole, I think, the special provision of regular

shelter huts during the hot weather months is not, as a rule, necessary, and it would be sufficient if the Officers-in-charge were authorized to make their own arrangements for shelter when necessary.

*Kankar digging.*—On the commencement of the rains in July 1897, any extensive work in the roads or tanks became impossible, and kankar digging operations were commenced. The following was the organization adopted. The gangs were ordinarily formed of ten diggers and twenty carriers.

A party composed of one digger and two carriers was expected, as an ordinary daily task, to dig, break, clean, and stack ten cubic feet, and as a maximum task twelve cubic feet. The wages for the work were as follows:—

Men.	Women.	Task.	
		Kankar, C. ft.	Earth, C. ft.
6 pice	4 pice	12	120
5 "	3 "	10	100
4 "	2 "	8	80
3 "	1 "	6	60
2 "	1 "	4	40

The number of cubic feet under the head of earthwork refers to the upper stratum of earth, which has to be removed in order to reach the layer of kankar beneath. The cost of digging the kankar under the above rates would come to Re. 1-11-6 per 100 cubic feet. To this must be added the cost of excavating the surface stratum of earth, usually about two feet deep. The cost of this for each 100 cubic feet of kankar may be taken as annas 5-6, which would bring the total cost per 100 cubic feet of kankar dug and stacked to Rs. 2-1-0.

In addition, all children dependants unable to work were fed gratuitously in the kitchens attached to the works.

As a matter of fact it was found that the tasks prescribed were more than the ordinary worker could perform. The average amount of kankar excavated in a day was only about  $6\frac{1}{2}$  cubic feet; and hence when the work people realized the difficulty of completing even the ordinary task of ten cubic feet, many of them left the work, and as a rule only professional Lunyas and men with a number of children, who could receive gratuitous relief at the kitchens, remained at the kankar quarries.

In the Rae Bareli district the total amount of kankar dug was 29,000 cubic feet, at an average rate, including the earth digging, of Rs. 3-8-0 per 100 cubic feet. Kankar digging will never be a popular form of famine relief work, and as a matter of fact would never be a suitable form unless a proper amount of strong diggers can be provided.

*Accounts.*—The accounts of the several charges were wonderfully well kept, considering the untrained clerks in whose hands most of the accounting work was necessarily placed, and the compilation of the charge accounts in the district offices was, as a rule, carried out without undue delay. It is to be regretted, however, that the detailed allocation under main heads of the various items of expenditure was not settled before the commencement of the famine operations, so that the necessary instructions could have been issued to the Officers-in-charge earlier than they were. As a matter of fact it was not until April 1897 that the detailed allocation under the heads of earthwork, work establishment, work contingencies, famine establishment and tools and plant was finally settled, and the orders on the subject circulated for guidance. I would strongly recommend that in future famines a travelling Accountant be attached to each Inspecting Officer, whose duty it would be to examine and check the entries in the charge cash book, the vouchers, and the allocation of charges. The accounts of a famine work are simple, and it would not be necessary to employ a highly trained man: an ordinarily intelligent office clerk would be sufficient for the purpose. Form III should, I think, be remodelled

so as to form (1) a complete record of the numbers and classes of famine coolies employed on a work, week by week; (2) a correct voucher for all sums expended during the week, distributed under their proper heads.

*Condition of the people as compared with former famines.*—The Government of India has asked for information as to whether the people of the famine districts have shown increased resources or more resisting powers than in previous famines of like severity. The only famine of like nature of which I have experience was that of 1877-78 in the North-Western Provinces. I was then in the Agra district, and from July 1877 until March 1878 I had constant opportunities of closely noticing the condition of the people affected by the famine. I can distinctly state that on no single occasion have I seen during the recent famine the gruesome and heart-rending sights which were of constant occurrence all over the Agra district in 1877-78. In August 1877 I made a tour through the district marching across country. Even at that early period of the famine the people were already deserting their villages and marching with their dependants and household goods along the village tracks, were joining the crowds which in one continuous stream were hurrying down the Bombay road *en route* for Malwa, where, report had it, grazing for their cattle and relief for themselves could be had for the asking. The promised land when reached proved, alas! to be even worse off than the country they had left; and for many weeks the pathetic sight was seen of two distinct streams of miserable famine-stricken creatures proceeding in opposite directions along the Bombay road, the one with all their old and young people and with their cattle carrying their household goods, making for Malwa; the other returning from Malwa, with few, if any, old people, and with children and cattle terribly diminished in numbers. Asked what place they were now going to, they generally answered: "To beyond the Ganges," where they had heard there was grazing for their cattle. It was a sight and an experience never to be forgotten. None of these unfortunate wanderers had heard of works where they could get relief, for the simple reason that no such works existed; and the result was a terrible mortality of the old and weak, and a fatal lowering of the vital powers of the strong, which, when later on relief operations were commenced, rendered the people unable to take full advantage of them. The state of those who came to the poorhouses was deplorable, and on the works the majority of the famine coolies were suffering from blue gum, indicating continual starvation; whilst large numbers were dying of famine fever. In spite of the fact that prices of food grains were cheaper at this time than they were in the beginning of the recent famine of 1896-97, no such symptoms of poverty and despair occurred at any period of the recent famine, and hence in view of the fact that the extensive abandonment of villages and the widespread migration and wanderings were going on as early as July and August in 1877, whilst dead bodies were to be constantly met with on the public roads in the same months, I think that even taking into account the earlier provision of relief which was made in the recent famine, it must be concluded that the general condition of the people at the commencement of the famine of 1896-97 was better, and they showed increased resources and power of resistance against scarcity and famine than was the case in 1877-78. Further, there can be no doubt that the liberal daily wage allowed by the Famine Code and put in force in all those districts of these Provinces which, after careful observations, were declared to be suffering from famine, had the happiest effect in enabling the people to regain their proper strength, and by giving them after a time the power to do a fair day's work, permitted the Government to remove them from the operation of the Famine Code. That the liberal wage at the commencement of famine relief operations is, in the long run, a distinct measure of economy, cannot I think be doubted.

*Services rendered by certain officers.*—In conclusion I desire to bring to the favourable notice of the Lieutenant-Governor the services of the following officers:—

Mr. G. R. McDowell, Executive Engineer of the Lucknow Division, was of the greatest service to me throughout the famine operations. He displayed considerable powers of administration, whilst his fluent knowledge of the vernacular and his intimate acquaintance with the ways and customs of the people, enabled him to give me valuable advice and assistance on many occasions. He held charge of the Circle for the last six weeks of the famine operations, and discharged the duties of the post satisfactorily.

Mr. H. W. Gilbert, Honorary Assistant Engineer, 2nd grade, District Engineer of Sitapur, displayed much zeal and administrative skill in his management of the famine operations. His arrangements were good, and the organization of his charges very satisfactory.

Rai Sahib Bipin Behari Lal, Assistant Engineer, 2nd grade, District Engineer of Rae Bareilly, displayed great zeal and energy throughout, and his management of the many large charges in his district was very complete and effective. He has submitted an interesting report on the famine operations in the Rae Bareilly district.

Pandit Hari Kishen Pant, Supervisor, 1st grade, District Surveyor of Unao, rendered very efficient service by his intelligent and careful management of the arrangements on the famine works in his district. He has great strength of character and showed much tact and influence in dealing with the people who came to the works. His advice was of great use to me on several occasions.

Babu Debi Sahai, Supervisor, 2nd grade, District Surveyor of Bara Banki, managed his famine operations exceedingly well, and his arrangements were intelligently carried out.

Babu Jugal Kishore, Overseer, 1st grade, District Surveyor of Hardoi, had the heaviest and most prolonged famine charge of all those in the Oudh Circle. His arrangements throughout were excellent. He exercised efficient control over the numerous charges which were formed in every quarter of the Hardoi district, and displayed in their administration a thorough knowledge of the details of famine organization.

The services of the naib tahsildars and the way they carried out the duties of Officers-in-charge have been recorded in a special list which has been separately submitted.

The names of certain of the Work Agents who did good work will be separately submitted.

I have further to bring to the notice of Government the valuable assistance afforded by the Military Inspecting Officers attached to my Circle. Where all have done well, it may seem invidious to mention any one officer as having specially distinguished himself above the others: but I desire especially to record the highly satisfactory way in which Captain Merewether, 7th Bengal Cavalry, and Lieutenant H. Pearson, R. E., have carried out their duties. I wish also to bring to the favorable notice of Government the valuable services rendered by Surgeon-Lieutenant Browne, I. M. D., Inspecting Medical Officer, who was indefatigable in carrying out his arduous and important duties.

I have to add that the reports by the District Engineers and Surveyors will be forwarded under a separate cover.

NAINI TAL;

The 13th October 1897. }

R. R. PULFORD, COL., R.E.,

Superintending Engineer, 2nd Circle,  
Provincial Works, N.-W. P. and Oudh.

[No. A.—STATEMENT OF NUMBERS ON RELIEF WORKS AT THE END OF EACH FORTNIGHT FROM NOVEMBER 1896 TO SEPTEMBER 1897.]

*Comparative statement of numbers on famine relief works in the Lucknow and Fyzabad Divisions.*

Month.	Lucknow.	Unao.	Rae Bareli.	Sitapur.	Hardoi.	Kheri.	Total, Lucknow Division.	Fyzabad.	Gonda.	Sultanpur	Partab- garh.	Bara Banki.	Total Fyzabad Division.	GRAND TOTAL
29th November 1896.	...	...	13,598	4,192	9,158	...	26,948	...	...	...	...	...	...	...
<i>December 1896.</i>														
2nd week (12th) ...	6,422	3,253	18,642	7,772	18,618	...	54,707	...	...	...	...	...	...	...
4th ,, (26th) ...	11,170	6,247	22,490	9,029	21,628	...	70,564	404	1,247	205	285	609	2,750	...
<i>January 1897.</i>														
2nd week (16th) ...	31,476	18,424	37,385	31,474	53,427	...	172,186	1,170	4,479	1,844	447	5,641	13,581	...
4th ,, (30th) ...	51,908	34,773	70,439	37,386	83,101	...	277,607	3,021	2,973	8,994	2,521	24,009	41,518	...
<i>February 1897.</i>														
1st week (6th) ...	61,666	34,325	66,190	41,680	108,180	...	312,041	3,047	2,788	12,509	8,504	28,605	55,453	...
3rd ,, (20th) ...	78,103	46,677	76,847	49,207	116,280	...	367,114	1,905	1,948	11,883	15,476	20,888	52,100	...
<i>March 1897.</i>														
1st week (6th) ...	74,612	40,942	70,269	40,963	99,033	1,253	327,072	589	1,016	2,420	9,616	7,254	20,894	...
3rd ,, (20th) ...	28,876	12,703	31,798	8,432	56,210	923	148,942	...	250	649	2,073	...	2,972	...
<i>April 1897.</i>														
1st week (3rd) ...	23,230	5,956	15,098	...	58,229	168	102,687	...	...	...	...	...	...	...
3rd ,, (17th) ...	16,606	3,860	9,467	38	89,089	...	119,060	...	...	263	...	...	263	...
<i>May 1897.</i>														
1st week (1st) ...	24,661	7,892	15,500	119	103,686	...	151,758	...	185	796	367	85	1,383	...
3rd ,, (15th) ...	23,289	16,215	18,592	484	103,426	256	162,262	...	1,000	1,408	1,433	...	3,841	...
5th ,, (29th) ...	25,264	20,086	17,904	426	108,059	728	167,467	...	1,368	1,837	1,426	...	4,631	...
<i>June 1897.</i>														
2nd week (12th) ...	18,928	21,651	20,824	191	95,498	1,263	158,355	...	746	1,324	1,360	...	3,430	...
4th ,, (26th) ...	22,174	13,129	10,454	318	69,224	427	115,726	...	...	275	...	...	275	...
<i>July 1897.</i>														
2nd week (10th) ...	25,077	14,341	15,437	...	66,775	2,009	123,639	...	...	657	...	...	657	...
4th ,, (24th) ...	18,207	1,986	1,903	...	12,169	...	34,265	...	...	285	...	...	285	...
<i>August 1897.</i>														
1st week (7th) ...	2,172	97	1,298	...	3,288	...	6,855	...	...	...	...	...	...	...
3rd ,, (21st) ...	731	...	1,065	...	2,445	372	4,613	...	...	...	...	...	...	...
<i>September 1897.</i>														
1st week (4th) ...	688	...	...	...	...	...	688	...	...	...	...	...	...	...

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R. R. PULFORD, COLONEL, R.E.,  
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Provincial Works, N. W. P. and Oudh.

[No. B.—STATEMENT OF NUMBERS OF RELIEF CHARGES AT THE END OF EACH FORTNIGHT BETWEEN NOVEMBER 1896 AND SEPTEMBER 1897.]

*Comparative statement of famine relief charges in the Lucknow and Fyzabad Divisions.*

Month.	Lucknow.	Unso.	Rae Bareli.	Sitapur.	Hardoi.	Kheri.	Fyzabad.	Gonda.	Sultānpur.	Partābgarh.	Bara Banki.
29th November 1896	...	...	2	...	4	...	...	...	...	...	...
<i>December 1896.</i>											
2nd week	3	2	4	2	6	...	...	...	...	...	...
4th "	4	3	4	2	6	...	3	...	2	2	2
<i>January 1897.</i>											
2nd week	5	4	5	6	7	...	3	3	5	4	4
4th "	8	6	7	7	10	...	6	4	6	4	5
<i>February 1897.</i>											
1st week	11	8	8	9	15	...	6	4	6	4	7
3rd "	14	9	11	10	18	...	6	4	6	4	8
<i>March 1897.</i>											
1st week	14	9	11	11	19	2	6	5	6	4	7
3rd "	16	10	11	11	20	2	...	1	1	4	3
<i>April 1897.</i>											
1st week	16	8	11	1	15	1	...	...	...	...	...
3rd "	14	5	10	3	13	...	...	...	1	...	...
<i>May 1897.</i>											
1st week	15	6	6	3	15	...	...	2	2	2	2
3rd "	14	7	6	6	19	1	...	2	2	2	1
5th "	14	7	6	6	20	1	...	2	2	2	...
<i>June 1897.</i>											
2nd week	14	7	6	4	17	2	...	2	2	2	...
4th "	14	7	4	3	17	2	...	1	2	2	...
<i>July 1897.</i>											
2nd week	13	6	3	...	5 <sup>o</sup>	2	...	...	1	...	...
4th "	14	5 <sup>o</sup>	2 <sup>o</sup>	...	5	...	...	...	1	...	...
<i>August 1897.</i>											
1st week	6	3	2	...	2	...	...	...	...	...	...
3rd "	4	...	2	...	2	1	...	...	...	...	...
September 1897 ...	1	...	...	...	...	...	...	...	...	...	...

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R. R. PULFORD, COLONEL, R.E.,  
*Superintending Engineer, 2nd Circle,  
 Provincial Works, N.W. P. and Oudh.*

[C.—STATEMENT OF ESTABLISHMENT ACTUALLY EMPLOYED ON A CHARGE.]

Statement of establishment actually employed on Famine Charge No. XIV, Lucknow-Sháhjahánpur road, on 20th May 1897.

Rank,	Establishment.			Workers.					Dependants.				REMARKS.	
	Pay.	No.	Total amount per month.	Men.	Women.	Children.		Total.	Men.	Women.	Children.	Total.		Grand Total.
						A.	B.							
<i>I.—Regular Establishment.</i>														
	Rs. a. p.		Ra. a. p.	1,578	2,672	1,076	1,108	6,434	53	100	1,668	1,821	8,255	
Officer-in-Charge, per mensem ...	50 0 0	2	100 0 0											
Three Work Agents, ditto ...	40 0 0	4	185 0 0											
One ditto, ditto ...	65 0 0													
Jamadars, ditto ...	10 0 0			150 0 0										
102 Mates, per diem ...	0 2 8		15	561 9 0										
28 ditto, ditto ...	0 2 6	7	35 0 0											
Peons, per mensem ...	5 0 0			15 0 0										
Storekeeper, ditto ...	15 0 0	1	20 0 0											
Mistri ditto ...	10 0 0	2												
			1,066 9 0											
<i>II.—Hospital Establishment.</i>														
Native Doctor, per mensem ...	25 0 0	1	30 0 0											
Allowance, ditto ...	5 0 0			9 6 0										
Cook, per diem ...	0 2 8	2	12 10 6											
Kahar, ditto ...	0 2 8	3	12 10 6											
Chaukidar, ditto ...	0 2 8	3	7 8 0											
Sweepers, ditto ...	0 2 0	2	5 10 0											
Peon, ditto ...	0 8 0	1												
			77 13 0											
<i>III.—Conservancy Establishment.</i>														
Sweeper, per diem ...	0 2 8	19	80 2 6											

[C.—STATEMENT OF ESTABLISHMENT ACTUALLY EMPLOYED ON A CHARGE—(concluded.)]

Statement of Establishment actually employed on Famine Charge No. XIV, Lucknow-Sháhjahánpur road, on 20th May 1897.

Rank.	Establishment.			Workers.					Dependants.				REMARKS.	
	Pay.	No.	Total amount. per month.	Men.	Women.	Children.		Total.	Men.	Women.	Children.	Total.		Grand Total.
						A.	B.							
<i>IV.—Water-supply Establishment.</i>														
	Rs. a. p.		Rs. a. p.											
Jamadars, per mensem	7 0 0	1	7 0 0											
Kahars, per diem	0 2 3	84	354 6 0											
Brahmans, ditto	0 2 3	19	80 2 6											
			441 8 6											
<i>V.—Treasury Chaukidars.</i>														
Chaukidars,	0 2 3	4	16 14 0											
Ditto for store	0 2 3	6	25 5 0											
Ditto for camp	0 2 3													
			42 3 0											
<i>VI.—Office Establishment.</i>														
Clerk, per mensem	20 0 0	1	20 0 0											
Cashier muharrir, ditto	10 0 0	1	10 0 0											
Dák-runner, ditto	5 0 0	2	10 0 0											
			40 0 0											
<i>VII.—Carpenter and Blacksmith Establishment.</i>														
Carpenter per diem	0 3 0	5	23 2 0											
Blacksmith, ditto	0 3 0	9	50 10 0											
			78 12 0											
GRAND TOTAL			1,827 0 0											

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R. R. PULFORD, COLONEL, R.E.,

Superintending Engineer, 2nd Circle, Provincial Works, N.-W. P. and Oudh.



[D.—STATEMENT OF ESTABLISHMENT ACTUALLY EMPLOYED ON CHARGES.]

Statement of establishment actually employed on Famine Charge No. X, Auras-Mohan Road, on 2nd June 1897.

Rank.	Establishment.			Workers.					Dependants.					REMARKS.
	Pay.	No.	Total amount per month.	Men.	Women.	Children.		Total.	Men.	Women.	Children.	Total.	Grand Total.	
						A.	B.							
<i>I.—Regular Establishment.</i>														
Officer-in-Charge, per mensem	Rs. a. p.		Rs. a. p.	1,673	2,008	359	656	4,696	7	7	1,400	1,414	6,110	
Allowance	50 0 0	1	72 8 0											
Work Agents, per mensem	22 8 0	8	120 0 0											
Two jamadars, ditto	40 0 0													
Four ditto, ditto	12 0 0	12	112 0 0											
Six ditto, ditto	10 0 0													
Checking Muharrir, per mensem	8 0 0	1	15 0 0											
Mates, per diem	15 0 0	137	642 3 0											
Peon, per mensem	0 2 0	1	5 0 0											
Do., ditto	5 0 0	1	5 0 0											
Storekeeper, per mensem	3 0 0	1	6 0 0											
Store Chaudidar, per mensem	15 0 0	1	15 0 0											
Dak-runner, ditto	5 0 0	2	10 0 0											
Ditto, ditto	6 0 0	1	6 0 0											
Ditto, ditto	5 0 0	1	5 0 0											
Chaudidars for watching tools, &c., on work, per diem	0 2 0	8	30 0 0											
			1,038 11 0											
<i>II.—Hospital Establishment.</i>														
Compounder, per mensem	10 0 0	1	10 0 0											
Hospital peon, ditto	5 0 0	1	5 0 0											
Cook, ditto	4 0 0	1	4 0 0											
Kahar, ditto	4 0 0	1	4 0 0											
Sanitary officer, ditto	12 0 0	1	12 0 0											
			35 0 0											
<i>III.—Conservancy Establishment.</i>														
Jamadars, per mensem	8 0 0	1	8 0 0											
Kahars, per diem	0 2 6	12	56 4 0											
Sweeper	0 2 6	12	56 4 0											
			120 8 0											

[D.—STATEMENT OF ESTABLISHMENT ACTUALLY EMPLOYED ON CHARGES—(concluded).]

Statement of establishment actually employed on Famine Charge No. X, Auras-Mohan Road, on 2nd June 1897.

Bank.	Establishment.			Workers.					Dependants.					REMARKS.
	Pay.	No.	Total amount per month.	Men.	Women.	Children.		Total.	Men.	Women.	Children.	Total.	Grand Total.	
						A.	B.							
<i>IV.—Water-supply Gangs.</i>														
	Rs. a. p.		Rs. a. p.											
Water Foreman, per mensem ... ..	15 0 0	1	15 0 0											
Brahmans, per diem ... ..	0 2 0	25	93 12 0											
Kabars, ditto ... ..	0 2 6	50	234 6 0											
			343 2 0											
<i>V.—Treasury Guard.</i>														
Police Constables, per mensem ... ..	6 0 0	1	6 0 0											
Chaukidars, per diem ... ..	0 2 0	4	15 0 0											
			21 0 0											
<i>VI.—Office Establishment.</i>														
Clerk, per mensem ... ..	20 0 0	1	20 0 0											
Sub-Cashier, per mensem ... ..	15 0 0	1	15 0 0											
			35 0 0											
<i>VII.—Carpenter and Blacksmith Establishment.</i>														
Carpenter, per diem ... ..	0 3 0	8	45 0 0											
Blacksmith, ditto ... ..	0 3 0	1	5 10 0											
Assistant to the above, ditto ... ..	0 2 0	1	3 12 0											
			54 6 0											
GRAND TOTAL ... ..			1,647 11 0											

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R. B. PULFORD, COLONEL, R.E.,  
 Superintending Engineer, 2nd Circle, Provincial Works, N. W. P. and Outh.

[E.—STATEMENT OF ESTABLISHMENT ACTUALLY EMPLOYED ON A CHARGE.]

Statement of establishment actually employed on Famine Charge No. IV, improving the Rae Bareli-Fyzabad Road, on the 29th May 1897.

Rank.	Establishment.			Workers.					Dependants.			REMARKS.				
	Pay.	Number.	Total amount per month.	Men.	Women.	Children.		Total.	Men.	Women.	Children.		Total.	Grand Total.		
						A.	B.									
<i>I.—Regular Establishment.</i>																
Officer-in-Charge ... ..	Rs. 72	a. 8	p. 0	2												
Naib Tahsilidar ... ..	50	0	0													
Work Agent ... ..	65	0	0	2												
Ditto, ... ..	50	0	0													
Jamadars, Re. 0-3-0 per diem ... ..	0	3	0	9												
Mates, " 0-2-6 ditto ... ..	0	2	6	44												
Ditto, " 0-2-0 ditto ... ..	0	2	0	102												
Peons, " 0-2-0 ditto ... ..	0	2	0	7												
Storekeeper ... ..	20	0	0	1												
<b>Total</b> ... ..					1,150	1,122	222	270	2,764	..	..	661	661	3,425		
<i>II.—Hospital Establishment.</i>																
Native Doctor ... ..	25	0	0	1												
Allowance ... ..	5	0	0	1												
Cook ... ..	0	2	6	1												
Kahars ... ..	0	2	0	2												
Chaukidars ... ..	0	2	6	5												
Sweepers ... ..	0	2	0	7												
Peons ... ..	0	2	6	1												
Chaukidars ... ..	0	5	0	1												
<b>Total</b> ... ..														50	8	0
<i>III.—Conservancy Establishment.</i>																
Sweepers ... ..	0	2	6	43												
<b>Total</b> ... ..														210	4	6

[E.—STATEMENT OF ESTABLISHMENT ACTUALLY EMPLOYED ON A CHARGE.—(concluded).]

Statement of establishment actually employed on Famine Charge No. IV, improving the Rae Bareli-Fyzabad Road, on the 29th May 1897.

Bsnk.	Establishment.			Workers.					Dependants.			REMARKS.		
	Pay.	Number.	Total amount per month.	Men.	Women.	Children.		Total.	Men.	Women.	Children.		Total.	Grand Total.
	Rs. a. p.		Rs. a. p.			A.	B.							
<i>IV.—Water-supply Establishment.</i>														
Jamadars	...	...	...	...	1									
Kabars, &c.	...	...	...	...	26									
Brahmans	...	...	...	...										
Total	...	...	...	...										
<i>V.—Chaukidars of Treasury.</i>														
Chaukidars	...	...	...	...	4									
Ditto for store	...	...	...	...	54									
Ditto for camp	...	...	...	...										
Total	...	...	...	...										
<i>VI.—Office Establishment.</i>														
Clerk	...	...	...	...	1									
Cashiers	...	...	...	...	1									
Dak-bearer	...	...	...	...	2									
Total	...	...	...	...										
<i>VII.—Carpenter and Blacksmith Establishment.</i>														
Carpenter	...	...	...	...	3									
Blacksmith	...	...	...	...	2									
Total	...	...	...	...										
GRAND TOTAL	...	...	...	...										

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[F.—STATEMENT OF ESTABLISHMENT ACTUALLY EMPLOYED ON A CHARGE.]

Statement of establishment actually employed on Famine Charge No. XVII, raising road from Beni-Goshainganj, on 1st June 1837.

Rank.	Establishment.			Workers.			Dependants.			REMARKS.				
	Pay.	Number.	Total amount per month.	Men.	Women.	Children.		Men.	Women.		Children.			
						A.	B.					Total.	Total.	Total.
				647	259	81	44	1,331	...	...	317	317	1,648	
<i>I.—Regular Establishment.</i>														
Officer-in-Charge including 20 per cent. allowance, conveyance allowance.	50 0 0	1	50 0 0											
One Work Agent	40 0 0	2	80 0 0											
One ditto	25 0 0	2	50 0 0											
Jamadar, per mensem	10 0 0	6	60 0 0											
Mates, per diem	0 2 6	86	168 12 0											
Peons, per mensem	5 0 0	3	15 0 0											
Storekeeper	30 0 0	1	30 0 0											
One Mistri, per mensem	...	...	...											
Two Mistris, ditto	...	...	...											
Drummer, per diem	...	...	...											
<b>Total</b>			<b>411 4 0</b>											
<i>II.—Hospital Establishment.</i>														
Hospital Assistant, 3rd grade, per mensem	30 0 0	1	30 0 0											
Brahman Cook, per diem	0 8 0	1	8 0 0											
Kabars do.	0 1 9	2	18 0 0											
Chaukidars do.	0 2 3	8	36 12 6											
Sweeper, males do.	0 1 10	10	34 8 0											
Do., females do.	0 1 3	1	3 6 6											
Burrier, do.	...	...	...											
Peon do.	...	...	...											
<b>Total</b>			<b>112 11 0</b>											

[F.—STATEMENT OF ESTABLISHMENT ACTUALLY EMPLOYED ON A CHARGE—(concluded).]

Statement of establishment actually employed on Famine Charge No. XVII, raising road from Beni-Goshainganj, on 1st June 1897—(concluded).

Rank.	Establishment.			Workers.					Dependants.				REMARKS.	
	Pay.	Number.	Total amount per month.	Men.	Women.	Children.		Total.	Men.	Women.	Children.	Total.		GRAND TOTAL.
						A.	B.							
<i>III.—Conservancy Establishment.</i>														
Sweepers, per diem	0 1 0	2	3 12 0											
Chamars, ditto	0 2 6	2	9 6 0											
<i>IV.—Water Supply Establishment.</i>														
Jamadar or water-foreman, per mensem	10 0 0	1	10 0 0											
Brahman, per diem	0 2 4	13	56 14 0											
Kahars, ditto	0 2 4	13	56 14 0											
Mate, ditto	0 3 0	1	5 10 0											
<i>V.—Chaukidar for Treasury.</i>														
Chaukidar, per mensem	6 0 0	2	12 0 0											
Ditto for store	6 0 0	2	12 0 0											
<i>VI.—Office Establishment.</i>														
Clerk	30 0 0	1	30 0 0											
Mubarrir or Cashier	15 0 0	1	15 0 0											
<i>VII.—Carpenter and Blacksmith Establishment.</i>														
Carpenter, per mensem	12 0 0	1	12 0 0											
Blacksmith, ditto	12 0 0	1	12 0 0											
<i>VIII.—Cooking Establishment.</i>														
Jamadar	10 0 0	1	10 0 0											
Cook	6 0 0	2	12 0 0											
Kabar	0 2 3	1	4 3 6											
			26 3 6											
GRAND TOTAL			785 10 6	647	559	81	44	1,331	...	...	317	317	1,648	

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Superintending Engineer, 2nd Circle, Provincial Works, N.-W. P. and Oudh.

## G.—LIST OF CONVICTIONS AND PUNISHMENTS.

Statement showing the cases of fraud or other irregularities discovered in Famine Relief Works, and action taken thereon.

District.	Name of accused.	Designation.	Nature of fraud, &c.	Punishment.
<b>LUCKNOW.</b>				
Lucknow ...	Jafar Hussain ...	Mate ...	Cheating ...	25 stripes.
Machhi Bhawan ...	Challo Kawa ...	Beldar ...	Do. ...	Ditto
CHARGE No. 1. Lucknow Bessendi ...	Ram Charan Lal ...	Mate ...	False entry ...	Four months' imprisonment.
CHARGE No. 4 ...	Ragbhar Dyal ...	Do. ...	Ditto ...	Three months' imprisonment
Colvin School ...	Gomti Parshad ...	Do. ...	Misappropriation of Government money.	Two years' imprisonment.
CHARGE No. 7. ...	Dwarka ...	Kahar ...	Stealing flour and dāl ...	Three months' imprisonment.
	Ram Bharose ...	Mate ...	Not returning the unpaid wages.	Dismissed and fined one rupee.
	Tulsi Ram ...	Jamadar ...	Concealing bread under <i>chatai</i> .	Dismissed.
	Babu Ram and Lalta,	Ration Jamadar,	Reporting less than actual balance.	Ditto
Lucknow Nigram ...	Khursbed Hussain ...	Mate ...	Stealing Government money.	15 stripes.
CHARGE No. 9 ...	Bhagwandin ...	Do. ...	Defrauding coolies of their wages.	Dismissed.
	Muhammad Ata Husain.	Jamadar ...	Ditto ...	Ditto
	Sajjad Ala Khan ...	Do. ...	Ditto ...	Ditto
	Mir Muhammad Jan,	Mate ...	Misappropriation of Government money.	Case pending in Court.
Malkursi Mohan ...	Kamta Parshad ...	Jamadar ...	Entering as present workers,	Dismissed.
CHARGE No. 10. Lucknow Mohan ...	Muhammad Yar ...	Compounder ...	Misappropriating diet-money,	Case pending in Court.
CHARGE No. 13. Chinhut Lake.	Mahbub Ali ...	Mate ...	Stealing a spade ...	20 stripes.
CHARGE No. 14 ...		A mate ...	Entering fictitious names in muster-roll.	Fined one day's pay.
		One mate ...	Noting incorrect measurement.	Fined Re. 0-1-3.
	Lachmi Parshad ...	Mate ...	Making entries in pencil.	Dismissed.
Chinhut Lake ...	Ram Narain ...	Do. ...	Erasing muster-roll ...	Ditto.
CHARGE No. 14 ...	Nazul Hussain ...	Do. ...	Ditto ...	Ditto.
	Ashik Hussain ...	Jamadar ...	Increase of pice in a bag ...	Ditto.
	Sita Ram ...	Mate ...	Not returning absentee wages,	Ditto.
	Ragbhar Dayal ...	Do. ...	Short payment to labourers,	Case pending in Court.
Beni Goshanganj ...	Kamal-ud-din ...	Do. ...	Stealing Government money,	15 stripes.
CHARGE No. 17				
<b>BARA BANKI.</b>				
	Raj Bahadur ...	Jamadar ...	Misappropriation of Government money.	Six months' rigorous imprisonment.
	Muhammad Omar ...	Mate ...	Ditto ...	Three months' rigorous imprisonment.
<b>RAE BAREILLY.</b>				
	Brij Bahadur ...	Jamadar ...	Ditto ...	Nine months' rigorous imprisonment and fine of Ra. 25, or in default of fine three months' more.
CHARGE No. 3 ...	Ram Sarup ...	Naib Tahsildar,	Substantial ground of fraud in the amount of gratuitous relief paid to new arrivals.	Deputy Commissioner considered it difficult to secure conviction, and advised to warn the officer. The Naib Tahsildar was removed from famine duty.
	Sukhdeo Rai ...	Ditto ...	Substantial ground for implicity in the fraud committed by Jamadar Brij Bahadur.	Suspended: case under trial.
	Sheo Sahai	Clerk ...	Ditto ...	Ditto
	Durga Parshad ...	Jamadar ...	Writing fictitious names and misappropriating their wages.	Dismissed: sufficient proofs for conviction in Court not forthcoming.
	Har Gobind	Ditto ...	Ditto.	Removed from service.
	Abdul Gani	Ditto ...	Ditto	Ditto.
	Hafiz Ali	Ditto ...	Ditto	Ditto.
	Hamid Hussain	Ditto ...	Ditto.	Ditto.

## G.—LIST OF CONVICTIONS AND PUNISHMENTS—(concluded.)

Statement showing the cases of fraud or other irregularities discovered in Famine Relief Works, and action taken thereon.

District.	Name of accused.	Designation.	Nature of fraud, &c.	Punishments.	
BAE BAREILY—(concluded.)	Din Muhammad ...	Jamadar ...	Falsifying goshwaras ...	Dismissed with forfeiture of pay due to him. Fined Rs. 1 and dismissed.	
		One mate under Din Muhammad, Jamadar.	Ditto ...		
	CHARGE NO. 3A ...	Muhammad Khaliq...	Jamadar ...	Serious irregularities in muster roll.	Dismissed.
		Kunj Behari Lal ...	Ditto ...	Ditto ...	Dismissed with forfeiture of pay.
		Sheo Parshad ...	Muharrir ...	Implicity with Sheo Sahai, Clerk.	Ditto.
		Shambhu Dayal ...	Head Jamadar,	Misappropriation ...	Ditto.
		Swami Dayal ...	} Jamadar ...	Falsifying muster-rolls with intention of fraud.	Ditto.
		Yad Elahi ...			
		Yar Muhammad ...			
		Gaya Parshad ...	Ditto ...	Ditto ...	Ditto.
		Ram Sahai ...	Ditto ...	Ditto ...	The amount alleged to have been misappropriated was realized and the Jamadar dismissed.
		Suraj Parshad ...	} Jamadar ...	Falsifying muster-rolls ...	Dismissed with forfeiture of pay.
		Maharaj Bahadur ...			
		Abdul Rahman ...			
		Rah Chanora ...			
	Har Parshad ...				
	Ramzan Ali ...	} Mate ...	Ditto ...	Ditto.	
	Kalu ...				
	Naju ...				
	Yad Ilahi ...				
Omed Ali ...					
Fakhr-ul-Husain ...					
Anand Bahadur ...	Jamadar ...	Misappropriation and falsifying muster rolls.	Ditto.		
Nisar Ahmad ...	Mate ...	Ditto ...	Ditto.		
HARDOL					
Hardoi ...	Bal Kishen ...	Officer-in-Charge,	Serious irregularities in the charges.	Tried in court, but owing to difficulty in securing conviction was not punished.	
	Murtaza Husain ...	Work Agent ...	Ditto ...	Ditto.	
	Rahmat-ul-la ...	Jamadar ...	Fraud ...	Dismissed.	
	Muhammad Hussin,	Do. ...	Do. ...	Ditto.	
	Dhanpat Rai ...	Do. ...	Do. ...	Ditto.	
	Tola Ram ...	Do. ...	Do. ...	Ditto.	
	Bhagwat Lal ...	Do. ...	Do. ...	Ditto.	
	Muhammad Husain II.				
	Fyaz-ul-la ...	Do. ...	Do. ...	Ditto.	
	Daulat Ram ...	Do. ...	Do. ...	Ditto.	
	Sheo Narain ...	Do. ...	Do. ...	Ditto.	
	Nur-ul-Husain ...	Officer in-Charge,	Breach of trust ...	Case tried in the Sessions Court but could not be proved.	



**REPORT ON FAMINE RELIEF WORKS UNDER THE PUBLIC WORKS DEPARTMENT, IN THE GORAKHPUR DIVISION, FROM OCTOBER 1896 TO SEPTEMBER 1897.**

OPERATIONS under this Department commenced in this Division with the opening of a test work in the Azamgarh district on the 23rd October 1896. Following on this four works were opened in the Azamgarh district on the 16th December 1896, and five in the Gorakhpur district between the 28th December 1896 and the 6th January 1897, all under the petty contract or intermediate system—G. O. No. 9099, dated 5th December 1896. None of these works drew to any extent.

2. Famine was declared in the Gorakhpur district at a Conference held at Lucknow on the 6th and 7th January 1897, and the first relief work under Famine Code rules was opened on the 14th January, and by the end of the month five works were in progress. Similarly, Azamgarh was declared distressed at a Conference held at Azamgarh on the 29th and 30th January; the first work under Famine Code rules was opened on the 3rd February, and by the end of the month five works were in progress.

3. The number of works were gradually increased in each district as shown in the marginal note, the greatest number being reached during May, when they were 23 in Gorakhpur and 18 in Azamgarh.

	Number of works.	
	Gorakhpur.	Azamgarh.
January ...	5	5
February ...	10	5
March ...	15	9
April ...	19	10
May ...	23	18
June ...	18	18
July ...	6	8

4. The ten-seer rates of wage was paid up to the 6th February, after which date the twelve-seer rate was introduced.

5. The Lucknow system of payments, devised by Colonel Pulford, R.E., has been adopted in this Division for works on the Famine Code system.

6. The distress in this Division was limited to certain tracts, and though the charges opened in these distressed areas filled rapidly, necessitating second charges being opened, works opened outside these areas, where the conditions as regards failure of crops appeared to be similar, drew very small numbers indeed. The portion of the Gorakhpur district most seriously affected has been the southern half: in fact if the district were divided into two halves by a line due east and west, the southern half might be said to have been seriously distressed, and the northern half almost totally free from more than the pressure of high prices.

In Azamgarh the chief distress prevailed in the neighbourhood of Azamgarh itself and in the south and west.

In neither district have the numbers ever reached a high figure, 1 per cent. on the population being the highest limit reached.

7. Towards the end of March a very important change was effected by the conversion of all works from the Famine Code system to the piece-work or new intermediate system.

This change had an immediate and marked effect on the numbers on the works, the cost of supervision and the cost of the work done.

The numbers fell by 66 per cent., and the cost per thousand cubic feet of earthwork fell by one rupee in the Gorakhpur district and by one rupee four annas in the Azamgarh district. The system, as worked in this Division, was a true piece-work system; the petty contract was with the digger or the head of a group of diggers, and individual payments were avoided. The laborious system of payment to each individual, as necessary on Famine Code works, was under this system unnecessary; disbursers were reduced, and the cost of the work lowered. The system is described in detail in a memorandum attached to this report.

8. The works that have been carried out have been the raising of existing roads or village tracts, the deepening of existing tanks, the collection of *kankar*, the construction of two road embankments across river valleys, the construction of one new tank for irrigation purposes, and the cutting of a drainage channel to relieve a water-logged tract.

In the Gorakhpur district 176 miles of road have been raised an average of 18 inches at a cost of Rs. 1,175 per mile, and twenty tanks have been deepened an average of six feet at a cost of Rs. 1,566 per tank; one road has been raised an average of four feet in a length of ten miles, and one embankment one mile long and 18 feet high, and another half-a-mile long and 15 feet high have been completed.

Some five lakhs of cubic feet of *kankar* have been collected at a cost of Rs. 15,000. In the Azamgarh district 68½ miles of road have been raised an average of 18 inches at a cost of Rs. 1,085 per mile, and 27 tanks have been dug and deepened at a cost of Rs. 1,087 per tank; 119,176 cubic feet of *kankar* have also been collected at a cost of Rs. 3,362.

The total cost of the works in this Division has been Rs. 4,69,572, which is distributed thus:—

				Works.	Famine establishment.	Tools and plant.
				Rs.	Rs.	Rs.
Gorakhpur district	...	...	...	2,94,660	...	
Azamgarh	"	...	...	1,06,912	...	
			Total	4,01,572	28,000	40,000

9. The tasks actually executed have varied under the different systems and with the seasons, and there have necessarily been considerable variations among individuals on the same work.

The following averages may be taken as fairly accurate:—

On Famine Code works—

				Per man.	Per worker.
Gorakhpur district	...	...	...	46	18
Azamgarh	"	...	...	56	20

On the piece-work system—

Gorakhpur district	...	...	...	75	38
Azamgarh	"	...	...	93	32

The average per digger in both districts has been about 116 cubic feet under the piece-work system.

10. The greatest numbers were found on the works during the month of February under the Famine Code system, when they were for the week ending 27th February,—Gorakhpur 218,283, or 31,183 daily; Azamgarh 50,322 or 7,188 daily. Under the piece-work system the greatest numbers are found for the week ending 5th June in Gorakhpur, and for the week ending 12th June in Azamgarh.

The figures are—

Gorakhpur	...	...	93,151	or	15,525	daily.
Azamgarh	...	...	63,138	or	10,523	daily.

11. The total number of persons relieved under all systems has been—

Gorakhpur	...	...	...	...	3,042,945
Azamgarh	...	...	...	...	955,342

12. The cost per head has been for the Gorakhpur district under both systems annas 1·59 for wages only, and 1·528 annas, including all charges, and for the Azamgarh district 1·153 for wages only and 1·862, including all charges.

The higher cost in Azamgarh is due to the fewer numbers.

13. The total average cost of earthwork including all charges has been for the Gorakhpur district Rs. 4-4-2 per thousand cubic feet, and for kankar Rs. 3-0-9 per hundred cubic feet. For the Azamgarh district Rs. 3-15-6 per thousand cubic feet for earthwork, and Rs. 2-13-1 per hundred cubic feet for kankar.

14. Comparing the cost of earthwork per thousand cubic feet under the different systems, we have for the Gorakhpur district Rs. 4-14-5 for Famine Code works, and Rs. 3-14-3 for the new intermediate or piece-work system; and for the Azamgarh district Rs. 5-2-9 for Famine Code works, and Rs. 3-15-1 for the new intermediate system.

15. The average wage under Famine Code rules was 11½ pies, and under the new system it has been about 17 pies.

16. The Staff employed in this Division has been (a) on Famine Code works— one naib tahsildar as Officer-in-charge, two work agents to measure up, one jamadar to each 500 people to prepare muster-rolls and pay abstracts, one mate to every 50 persons to disburse wages and look after work, one clerk, one storekeeper, and one cashier, besides petty establishment for supply of drinking water, conservancy, &c., &c.

The cost for a full charge of 5,000 persons averages—

	Rs.
(a) 1 Naib at Rs. 50 ... ..	50
2 Work Agents ... ..	115
10 Jamadars at Rs. 10 each ... ..	100
100 Mates at Rs. 5 each ... ..	500
Clerk, Storekeeper and Cashier ... ..	60
Petty ... ..	75
Total ... ..	900
(b) On the intermediate or piece-work system—	
1 Naib at Rs. 50 ... ..	50
2 Work Agents ... ..	11
10 Jamadars at Rs. 12 each ... ..	12
10 Mates at Rs. 5 each ... ..	5
Clerk, &c. ... ..	75
Petty ... ..	75
Total ... ..	470

In addition to the above staff there has been an inspecting officer to every four charges.

17. The supply of coin was arranged for by the Collector; at first there was a difficulty in meeting the demand for such large quantities of copper coins, but this before long adjusted itself, when the coin began to return into the hands of the banias.

Under the new system payments were chiefly made in silver bits, and there was no difficulty.

18. The supply of food on the works was, under the Famine Code system, a difficulty to a certain extent: the people rarely lived on the work, but fed at home; there was not much trade for the bania, and consequently it was not easy to induce a good man to attend. The matter was, however, a small one, and it disappeared under the new system.

At the commencement of operations in January and February new arrivals had to be fed with parched gram until they could be drafted on to the works and earn a wage. At a later period, in May and June, a certain number of children under seven years of age, on each work in the Azamgarh district; had to be

fed twice daily; they were in an emaciated condition owing to neglect, though their parents were in fair condition. The greatest number so fed on any work was seventy daily. This was not found necessary in the Gorakhpur district.

19. Four hospital assistants and four vaccinators were employed in each of the districts—Gorakhpur and Azamgarh. There were no epidemics of sickness. Small-pox was very prevalent in February and March, but not in a virulent or epidemic form, and later on a few cases of cholera appeared on some of the works.

20. One noticeable fact in connection with the famine in this Division was the large number of children among the workers on the Famine Code works; taking the average number of workers for February in the Gorakhpur district as 23,361 daily, 7,469 of these were children.

The persistency with which people often refused to leave their homes to follow a work was also specially noticeable.

It is taken to indicate that the distress is not acute; but in many cases the distress was apparently severe, and yet they were averse to sleep away from their homes. This would be intelligible in January and February, but not in May and June. A certain number did camp on the works throughout the whole period, but they were comparatively few.

The number of charges opened was in excess of requirements, and has increased the cost of the work to a considerable extent. Taking the week ending 5th June, which gives the greatest numbers on the new system in the Gorakhpur district, the 15,526 persons daily were distributed over 18 charges, of which five charges accounted for 9,481, and the remaining 6,044 workers were distributed over 13 charges, or an average of 465 per charge. Eight or nine charges in each district were probably sufficient; but it was doubtless a wise precaution to provide more.

21. In the Basti district famine was not declared; but test works were in progress under Public Works Department control from the 9th January to the 27th June. There were four different works—the raising of existing roads and the construction of one new road. One lakh and fifty-nine thousand nine hundred and eighteen persons were relieved at a cost of Rs. 14,036, the funds for which were provided by the District Board.

Some 34½ miles of road were raised at an average cost of Rs. 407.

22. The points which it seems chiefly desirable to bring to notice are that the intermediate system of piece-work as worked in this Division is the most economical system, and is capable of being worked under almost any circumstances. It has been stated that it is more costly in supervision. This is, however, not the case as shown in paragraph 16 of this report. The cost of supervision for a full charge may be taken at nearly half that required for a similar charge under the Famine Code system. It was at first thought that it could not be worked in the case of emaciated people; but this difficulty disappears if the rates are allowed to be adjusted to suit the powers of the workers.

The whole secret of success in working the system is to make the contract with the digger and to pay him only, as the carriers are members of his own household.

Where female carriers appear with no male belongings, they are put on to dig on the same contract system. Where old, feeble or emaciated people appear, they are given the work of dressing, everything being in the form of a contract. The evident advantages of the system are—

- (1) The large reduction in the numbers on the works: one digger, one or two carriers taking the place of one digger, four carriers and one dependant on Famine Code works, a reduction in actual numbers of from 50 to 66 per cent.

- (2) The economy in staff and establishment for supervision and payments: one payment is now sufficient where six individual payments were before necessary.
- (3) The economy in the cost of the work: payments being now entirely by results.
- (4) The gain in moral tone on the works owing to the absence of idlers.
- (5) Improved sanitary conditions owing to smaller numbers.
- (6) Less chance of fraud owing to the number of disbursers being reduced.

The introduction of a maximum task is a mistake. It is a distinct advantage to have no maximum. A digger naturally objects to do more than he will be paid for, and with the maximum continually before his eyes he will do much less work, and generally fall very short of the maximum in consequence. There should be every encouragement to workers to do all the work they can, and the rates can easily be fixed, so that those in fair condition cannot earn more than is desirable.

There is a far healthier tone on works where the workers are encouraged to do all they can, and the imposition of a maximum is not understood by the native, and is only looked upon by him as a means of extortion on the part of the native staff that pays him.

23. If Famine Code works are adopted, there can be no doubt that the system of payments devised by Colonel Pulford, R.E., and known as the Lucknow system, is in every respect the best.

It is impossible to measure up the work and make payments the same day, and if it is tried, the staff are generally kept up half the night and the workers also.

The system fails during the harvest months when the workers are leaving the works in crowds. Each disburser often lost half his gang in a day, and though they had been present and mustered the day before, they were absent next day at the time of payment.

A mate on Rs. 5 a month or a jamadar on Rs. 10 looked upon this as his opportunity, and having drawn the pay for the full gangs, paid the few present and appropriated the rest.

Inspecting officers checked this; but they each had four charges, and could be only upon one at a time.

On Famine Code works it would pay to increase the size of charges to 10,000 persons, and to have a European on a salary of Rs. 150 a month on each charge.

24. In the district of Gorakhpur, which is exceedingly backward in communications, an opportunity was lost in not collecting kankar by famine labour to a large extent.

The District Board has the means at its disposal for future maintenance, and every basketful of kankar is of value afterwards. The value of raising roads is doubtful as, before the necessary culverts can be put in, they are probably cut to pieces.

The objection to the carriage of kankar by famine labour is not apparent; it would appear to be a useful way of employing large numbers of carriers on Famine Code works.

25. In the Gorakhpur district, where the heaviest work lay, Lieutenant Crookshank, R.E., Assistant Engineer, has been of the greatest assistance; he was placed in actual charge of four charges at considerable distances apart, and lived entirely on his work from January to August. The details of the piece-work system were worked out by him and Lieutenant Stokes, R.E., and to them is mainly due the success that has attended the working of the system in this Division.

He took a conspicuous interest in the work in every detail, and the work he has turned out on the roads is as smart and well finished as if turned out at leisure in an ordinary year.

Similarly, Lieutenant Stokes, R.E., Assistant Engineer, who was deputed from the Military Works Branch, was in immediate charge of four works scattered about the district. He has been continuously on his work from January to August, and has in no way spared himself, but has interested himself in every detail, and shares with Lieutenant Crookshank in the success of the working of the piece-work system. He has also turned out some excellent work on roads. The services of both these officers have been invaluable.

Mr. Browne, a factory manager, was appointed a Sub-Engineer and Inspecting Officer, and did most excellent work.

Mr. Phillips, a Clerk in the Board of Revenue Office, was the fourth Inspecting Officer in this district, and his work was distinctly good.

The following naibs who were Officers-in-charge on work, deserve high praise, and a separate report regarding them is submitted :—

Rabin-ud-din Singh, Gorakh Parshad, Abdul Wahid, Jai Bahadur Lal, Husain Raza, Niamat-ul-la Khan ; whilst eight others did excellent work also.

In Azamgarh district Mr. B. C. Lall (Assistant Engineer) District Engineer, managed the works in his district exceedingly well. He had at one time as many as 18 charges open, and on all his arrangements were perfect. He was constantly in camp, and got through his office work successfully at the same time. He deserves great praise. Overseer Nathu Mal assisted him ably, acting as an Inspecting Officer, and is recommended for special recognition.

In this district the following naibs did most excellent work as Officers-in-charge, and have been recommended in a separate report :—

Sukhdeo Singh, Gauri Singh, Kunwar Kishen, Langar and Mehdi Husain.

In Basti district, though no famine was declared, Mr. A. S. Knolles (Assistant Engineer) District Engineer, had very hard work in carrying out four test works during the hottest months with no extra assistance.

Finally, office establishments should not be forgotten. Extra establishment was provided, but it was necessarily untrained, and the strain on the permanent establishment has been exceedingly heavy, and has lasted for fully twelve months, as the pressure commenced before the famine works were opened.

In the Divisional Office the Accountant, the Head-Clerk, and the Computer have been overworked for twelve months.

In the office of the District Engineers of Azamgarh and Gorakhpur the Head-Clerks have had exceedingly heavy work, and have done it well, whilst the junior clerks have also had a great deal of extra work to do.

C. H. HOLME,

*Executive Engineer,  
Gorakhpur Provincial Division.*

*The 23rd August 1897.*

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*Note on the new intermediate system, Gorakhpur Division.*

THE principle adopted in this Division is one of direct piece-work contracts with the workers themselves.

In the case of roads the work is laid out in lengths of 90 feet by 10 feet, and is dug to a depth of one foot or more as required. This length of 90 feet by 10 feet is given out to each digger or group of diggers, and is called a chain. Books of

tickets (with a counterfoil) are kept, and a ticket is issued on first arrival to each digger or group by the Officer-in-charge. This shows his name, the date he comes on to the work, the number of his chain on the mile, and the rate per hundred cubic feet for the work.

The measurements and the amount due are entered daily on the back of the ticket which is retained by the digger, the counterfoil being written up and kept in the book by the Work Agent.

A ticket lasts for about eight days, when a fresh one is issued. Measurements are made in the evening or early morning by the Work Agents, and payments are made at noon by the Officer-in-charge for the previous day's work. Measurement books are kept, in which the details of the measurements are daily recorded.

The Allahabad gang register or muster-roll is kept up, but only the head of the gang or family is shown by name; the others are simply numbered and entered in their proper columns as men, women, and children, and the name of the village. Payments are made to the digger only, the carriers being members of his own household.

Frequently the diggers, some five or six from one village, combine under one head digger chosen by themselves, in which case the payment is made to him only, and he disburses it among the others.

Women frequently come without male belongings, and make up their own parties of diggers and carriers of their own sex.

Where the aged and feeble apply for work the dressing work is generally given to them at a contract rate per hundred square feet.

Mates under this system are not required for payments; a few only are employed to look after the work, but they have nothing to do with payments. They see that work is finished off according to orders.

The jamadars, who are paid at the rate of Rs. 12 per month, keep the muster-rolls, and assist in the payments where the numbers are great. There is one jamadar to 500 persons. The rates should be fixed so as to avoid all necessity for a maximum task.

In this Division the rates fixed were at first—

			Per 1,000 c. ft.	Per 100 c. ft.
			Rs. a. p.	Rs. a. p.
For very soft soil	...	...	1 9 0	0 2 6
Do. ordinary do.	...	...	1 11 6	0 2 9
Do. very hard do.	...	...	2 0 6	0 3 3

They were arrived at on the supposition that in ordinary soil eight men and eight women can dig and carry 1,000 cubic feet on a roadside.

Allowing four annas for the breaking of clods and wages of six pice and four pice with an addition of one-sixth of the rate extra for Sundays, the result obtained was Re. 1-12-0 per thousand cubic feet. Similarly, in soft soil with six diggers and eight carriers and in hard soil with ten diggers and eight carriers the rates worked out to Re. 1-7-3 and Rs. 2-1-0 per thousand cubic feet.

At these rates there was no necessity for fixing a maximum task, as a digger could not in hard soil do more than 125 cubic feet, 207 cubic feet in very soft or 156 cubic feet in ordinary soil, and he could not therefore earn more than the maximum of Re. 0-4-3 fixed by the orders of Government.

The Commissioner, however, raised the rates to Re. 1-11-6, Re. 1-14-0, and Rs. 2-3-0 per thousand cubic feet, and subsequently by the orders of Government the lowest rate allowable was fixed at Re. 1-14-0 per thousand or three annas per hundred.

This change necessitated the introduction of the maximum task of 125 cubic feet. For work where the lead exceeds 50 feet or the lift five feet, an extra rate of five annas per chain of lead or five feet of lift was given.

The rates include rough dressing and the breaking of clods.

For the finished dressing a rate of Re. 1-3-0 per hundred running feet of road, comprising the 24 feet top width of formation and the two slopes, was allowed.

In the case of kankar quarries the rates have been Rs. 1-9-0 per hundred cubic feet for digging, breaking, and cleaning, and Re. 0-3-3 per hundred cubic feet for stacking.

The average tasks were ten cubic feet for digging, breaking, and cleaning; and 60 cubic feet for stacking.

The system of piece-work was the same as for earthwork on roads.

The chainage on the roads is marked by small flags numbered 1 to 52.

A ten-foot space is left in each chain to allow of a crossing over the ditch, and the actual excavation done is 90 feet long.

The ticket-books can contain 52 tickets each or rather more to allow for damage. A book goes to a mile of road one side only, or two books to each mile. A daily abstract form is printed with 52 lines, numbered, in which is entered the work done daily on each mile right or left. The work can be checked and measured at any time, the chainage and mile being known.

C. H. HOLME,

*Executive Engineer, Gorakhpur Provincial Division.*

*The 23rd August 1897.*



GORAKHPUR DIVISION.

Statement showing number of persons relieved and expenditure incurred on Famine Relief Works from 1st October 1896 to 31st August 1897 (Chief Engineer's No. 4380F., dated 18th August 1897).

District or Division.	Workers and dependants.					Total number of children who received cooked food as dependants on relief works.	Expenditure.						REMARKS.
	Men.	Women.	Children.	Dependants.	Total.		Workers.	Gratuitous relief.		Tools and plant.	Establishment.	Total.	
								Dependants.	Hospital expenses.				
						Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
Gorakhpur district ...	1,208,484	918,948	647,255	273,258	3,042,945	Nil.	2,84,992	8,380	1,645	...	...	...	
Azamgarh do. ...	852,045	381,307	160,336	47,940	941,628	13,714	98,094	1,343	...	...	...	...	
By Division ...	...	...	...	...	...	...	...	...	...	89,930	28,205	...	
<b>Total</b> ...	<b>1,660,529</b>	<b>1,295,255</b>	<b>807,591</b>	<b>321,198</b>	<b>3,984,573</b>	<b>13,714</b>	<b>3,83,086</b>	<b>9,723</b>	<b>1,645</b>	<b>89,930</b>	<b>28,205</b>	<b>4,62,589</b>	

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GORAKHPUR: }  
The 15th September 1897.

C. H. HOLME,  
Executive Engineer, Gorakhpur Provincial Division.

## GORAKHPUR DIVISION.

*Works carried out by the Public Works Department during the Famine of 1896-97.*

District.	Number of miles raised.	Cost per mile.	Number of tanks deepened.	Cost per tank.	Kankar collected.	Cost.	Road embankments formed.	Cost.
Gorakhpur ... ..	176	Rs. 1,175	20	Rs. 1,568	517,886	Rs. 15,771	1½ miles	Rs. 29,138
Asamgarh ... ..	68½	1,085	27	1,087	119,176	8,362	...	...
Basti ... ..	84½	407	...	...	...	...	...	...
<b>Total</b> ... ..	<b>278½</b>	...	<b>47</b>	...	<b>637,062</b>	<b>19,133</b>	<b>1½ miles</b>	<b>29,138</b>

*Statement showing quantities and cost of work done in Gorakhpur Division.*

District.	Total persons relieved.	Total earthwork, cubic feet.	Cost.	Cost per head in annas and cents.		Total cost earthwork per 1,000 cubic feet.	Cost per 1,000 cubic feet earthwork.			REMARKS.
				All charges.	Wages only.		Famine Code.	New intermediate system.	Old intermediate system.	
Gorakhpur ... ..	8,042,945	65,499,181	2,78,891	1-528	1-59	Rs. a. p. 4 4 2	Rs. a. p. 4 14 5	Rs. a. p. 3 14 3	Rs. a. p. 3 6 6	Funds supplied by the District Board.
Asamgarh ... ..	Kankar ... .. 955,343	517,886 26,099,502	15,771 1,08,550	...	1-862	3 0 9 3 15 6	... 5 2 9	... 3 15 1	... 2 12 6	
Basti ... ..	Kankar ... .. 159,913	119,176 7,109,071	8,362 14,169	...	1-417	2 13 1 1 15 11	... ...	... 1 15 11	... ...	
<b>Total</b> ... ..	<b>4,158,205</b>	...	<b>3,15,743</b>	...	...	...	..	...	...	

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C. H. HOLME,

*Executive Engineer, Gorakhpur Provincial Division,*

*Report on Famine Relief Works under the Public Works Department in the Benares Division from October 1896 to September 1897.*

*Extent of the Famine.*—The rains stopped early in August 1896, and the *khariif* or autumn crops were a failure in most districts of the Division, the rice crop in particular having failed entirely in the north of the Jaunpur district and in the Mirzapur district south of the Ganges. The early stoppage of the rains also affected the *rabi* or cold weather crops. The want of moisture prevented fields being prepared, and where this was even done, the outturn was small, especially in north Jaunpur and in south Mirzapur. The maps attached to the report show—

(i) the whole distressed area ; and

(ii) where distress was acute.

2. In portions of the three other districts in the Division—Benares, Gházipur, and Ballia—the outturn of the *khariif* had also been small, and only a limited area of the *rabi* could be sown ; but although prices ruled high and there was distress, it never became acute. Test works were started in different parts of the three above-named districts ; but they never attracted large numbers, and in the end had to be abandoned for want of labourers. The new railway extensions in the Benares, Gházipur, and Ballia districts also afforded employment to many. Famine was therefore confined to Jaunpur and Mirzapur in this Division.

3. *Programme of Relief Works.*—A programme of relief works for the Benares Division was laid before His Honor the Lieutenant-Governor at the Conference held by him at Benares on the 7th November 1896, and was duly approved of. It provided relief on major works for the following number of labourers for three months in the different districts of the Division :—

						Number of persons who can be employed for three months.
Jaunpur	...	...	...	...	...	28,947
Mirzapur	...	...	...	...	...	44,893
Benares	...	...	...	...	...	172,051
Gházipur	...	...	...	...	...	48,956
Ballia	...	...	...	...	...	34,767

4. In January 1897 a revised programme was submitted in which provision for extra works was made in Jaunpur and Mirzapur, and, finally, as it was feared that the famine in the above-named districts would be severe, a third programme for major works was submitted in April 1897 through the Commissioner, in which provision was made for affording employment for the following numbers for three months :—

Jaunpur	...	...	...	...	...	106,420
Mirzapur	...	...	...	...	...	201,515
Benares	...	...	...	...	...	116,986
Gházipur	...	...	...	...	...	70,962
Ballia	...	...	...	...	...	68,740

5. Experience has shown that the number of works provided for Jaunpur and Mirzapur has been ample ; and from the last report submitted to the Secretary, Scarcity Department, in accordance with G. O. No.  $\frac{301}{8-8}$ , dated the 1st December 1896, Statement B, column 6, the number of persons for whom work is still available for three months is 69,300 for Jaunpur and 133,900 for Mirzapur.

6. *Famine in Jaunpur.*—In this district nearly the whole of the country north of the Gumti comprising the Kutahan tahsil and parts of Jaunpur and Kerakat tahsils was distressed. There was distress also round Badshahpur. The distress was most acute in the north-east of the Kutahan and in the east of the Jaunpur tahsils, as shown on the divisional map attached to this report.

7. Three test works were opened by the Collector at Baragaon, Jaunpur, and Badshahpur between the 19th and 23th October 1896. The numbers on the Baragaon-Surapur road increased rapidly, and when it was inspected by the Commissioner and myself on the 30th October 1896 there were 4,000 persons on it. The Commissioner then applied to Government for the work to be taken over by the Public Works Department. Telegraphic orders were received from the Chief Engineer, and the work was taken over by the District Engineer on the 10th November 1896.

8. Sub-Overseer Munshi Ram, a most capable subordinate, was transferred to Jaunpur: he had already had experience of famine works at Banda. Work Agents were appointed and náib tahsildars and hospital assistants applied for. Work was laid out, tools and baskets were got, and relief camps were organized, and the subordinate staff of muharrirs, &c., engaged. Mr. Ashton, who was appointed District Engineer and joined the district on the 14th December 1896, very soon got everything into good working order, and his arrangements were excellent in every respect. Two Inspecting Officers, Sub-Overseer Munshi Ram, who had been promoted temporarily to Overseer, and Mr. W. O'Brien, a temporary hand, were appointed, and helped the District Engineer in organizing and controlling the different charges.

9. The numbers on relief works continued to rise rapidly. On the 10th November 1896, when the Baragaon-Surapur road was taken over, there were 4,842 persons; but by the end of December 1896 these had risen to 14,000.

On the 14th December 1896 another relief work in the Kutahan tahsil was opened out on the Tigra-Malhini road. At the end of January 1897 there were five works in the district affording relief to 33,160 persons. At end of February 1897 there were 59,120 persons on 13 works. In March, owing to the commencement of *rabí* harvest and to a slight fall in prices, which enabled the Collector to raise the basis on which wages were fixed from 10 to 12 seers, there was a considerable fall in numbers, and at the end of March 1897 there were only 22,591 persons on the works.

10. Up to the end of March 1897 all relief works had been carried out under Famine Code rules; but with the advent of the *rabí* harvest, on the intermediate system, as laid down in Resolution No.  $\frac{573}{8-75}$ , of the Scarcity Department, dated the 16th March 1897, was ordered to be introduced into Jaunpur by the Commissioner. Seven works were thus converted, and only two continued under Famine Code rules till 20th April 1897, when on these also the intermediate system was adopted. In June 1897 there were early showers, and famine works were closed on the 22nd June 1897; but owing to the long break with hot westerly winds which followed, they were reopened on the 2nd July and finally closed on the 24th July 1897, when general rain had fallen.

11. Full details of the numbers on the relief works are given in the statement attached to this report. The total number of all classes who were relieved was 4,872,723, reduced to units of one day, who received an average wage of 41·2 per head:—

	Workers.	Dependants.	Total.
Under Famine Code work	2,653,384	897,280	3,550,664
Do. Intermediate do.	1,193,763	128,296	1,322,059
Total	3,847,147	1,025,576	4,872,723

On Famine Code works the percentage of dependants to the total number of persons employed was 25·3, while on intermediate works it was only 9·7. The dependants were nearly all children below the age of seven years or in arms, and the number of adults was barely 6 per cent. of the total number of dependants.

12. The work done consisted of earthwork in raising roads and in deepening tanks: 73,674,757 cubic feet of earthwork was done altogether:—

						Cubic feet.
In raising	60 miles of road	...	...	...	...	26,769,946
In deepening	307 small tanks	...	...	...	...	36,904,811
	Ditto	4 large do.	...	...	...	10,000,000
				Total	...	<u>73,674,757</u>

13. The roads to be raised in Jaunpur were nearly all in low ground and through rice-fields, and were impassable for a great part of the year. They have all been raised not less than two feet, and are now above flood level. Ten roads, aggregating a total length of 602 miles, have been raised, of which about 40 miles are in the Kutahan tahsil.

14. Nearly all the road raising required was finished by February 1897, and it was then resolved to employ the famine labourers in deepening tanks. Three hundred and seven small tanks were deepened from four to eight feet in Jaunpur, from which a little over a lakh of cubic feet of earthwork was excavated from each.

15. Four large tanks known as the Gujar, Menagh, Khodauli, and Gharmandi Tals, the water from which is extensively used for irrigation, were also partially deepened. The earthwork excavated from the Gujar and Gharmandi Tals was 1,654,104 cubic feet and 2,742,217 cubic feet, respectively, or about 10,000,000 cubic feet for all four. A scheme for reclaiming land as well as deepening tanks recommended by Mr. M. King, Superintending Engineer, was commenced on the Gujar Tal in February 1897, but was vetoed by his Honor the Lieutenant-Governor.

16. The rate at which the earthwork was done was high in the beginning. In November 1896 the rate per 1,000 cubic feet was Rs. 14-13-11, owing chiefly to the work taken over by the Civil Department not having been dressed; but as soon as a proper staff was organized and full tasks were exacted, the rate became lower. In December it was Rs. 6-15-4, and steadily got lower till in April 1897 it was Rs. 4-6-3 on wages of workers.

17. From April to July 1897 work was done on the intermediate system, and chiefly on tanks. The average rate per 1,000 cubic feet in this period was Rs. 2-6-7 on wages of workers, which may be considered very satisfactory, and shows the superiority of the intermediate system. The average rate for the whole of the earthwork done was Rs. 3-12-5 on wages of workers and Rs. 5 including all charges, including gratuitous relief.

18. The total sum spent in Jaunpur on Famine Code works was Rs. 2,45,264 and on intermediate work Rs. 1,61,296, or a total of Rs. 4,06,560, as shown in statements A and B. The actual sums paid were—

					Rs.
(1)	Total expenditure on workers including miscellaneous items	...	...	...	3,68,890
(2)	Wages of dependants and gratuitous relief	...	...	...	19,409
(3)	Expenditure on tools and plant	...	...	...	12,318
(4)	Establishment	...	...	...	5,943
				Total	<u>4,06,560</u>

The charges for gratuitous relief, tools and plant, and establishment represent a percentage of 4.68, 2.07, and 1.46, respectively, of the total cost. If the cost of work establishment is also added to (4), the amount is increased to Rs. 22,562, representing a percentage 5.45 on the total cost.

19. There were nearly double the number of women in comparison with the men, both in the case of workers and dependants, as shown below:—

			Men.	Women.	Children.	Total.
Workers	...	...	1,120,697	2,007,035	7,19,415	3,847,147
Dependants	...	...	22,420	37,885	9,66,271	1,025,576

The men did not as a rule come on to the works till distress became severe, and they were the first to leave as times became easier or they found work in the fields.

20. The men employed on relief works in Jaunpur belonged, as a rule, to the labouring and cultivating classes, and consisted largely of chamars and kewats. The castes of all labourers were entered in the muster-rolls, and from an examination of a certain number of these, the District Engineer estimates that 33 per cent. were chamars, 19 per cent. kewats, 11 per cent. bhars, 10 per cent. shirs, or 78 per cent. belonged to the class of agricultural labourers: of the balance, 20 per cent. were brahmans, banias, kahars and other Hindus, while only 2½ per cent. were estimated to be Musalmans. Nearly all the workers came from the neighbouring villages, and there were only a small number of persons from the neighbouring district or from the large towns in the district. Very few of the better class of cultivators came to the famine works.

21. *Conditions of the labourers*—In November when relief works were first opened, especially on the Baragaon-Surapur road, the condition of a small proportion of the labourers was poor; but they soon picked up, and after a month there was very little difference between them and agricultural labourers of their class in ordinary years. They continued to thrive on their famine wages till the works were closed. A few that were old and infirm and unfit for work were sent to the nearest poor house.

22. *Health*.—The health of the workers was very good on the whole. There were a number of cases of small-pox and a few deaths; but as it was more or less epidemic in the surrounding villages it could not be kept out entirely from the works. The people do not seem to mind small-pox, and often children suffering from it were brought on the works. They were always removed with their parents to the huts for inspection cases, which were provided in each camp. There were a few isolated cases of cholera in some of the camps; but it never appeared in an epidemic form in Jaunpur. There were five hospital assistants who, under the orders of the Civil Surgeon, looked after the health of the workers. As the number of charges was double the number of hospital assistants, central hospitals were arranged for and patients were conveyed to them either in doolis or on bullock carts.

23. *Hutting*.—The relief works, as mentioned before, were surrounded by villages and groves, and although ample accommodation was provided, it was seldom made use of, as the labourers preferred to go to their homes and to the neighbouring villages and groves for the night. In the hot weather, however, *tatti* huts were put up on each work in which the small children could obtain shelter while their parents were working.

24. There was no difficulty experienced in obtaining supplies. The civil authorities, and especially the Tahsildár of Kutahan, rendered every assistance. There are a number of villages with banias all over the place, who were only too glad to be allowed to sell on the works. Huts were provided for them in all the camps. There was at first some difficulty in obtaining copper coin, but after a time the Officers-in-Charge had no difficulty in getting back pice from the banias.

25. The rules about drinking water and conservancy were carefully observed. All wells from which the labourers took water were protected and treated with permanganate of potash when found necessary. A staff of brahmans and kahars were kept up on each work. Conservancy both in the camp and on the works was carefully attended to, and a staff of sweepers or domes kept up on each work.

26. The gang system was rigidly enforced, while works were under Famine Code rules, and tasks were exacted from all able to work. The District Engineer has explained clearly in his general report the procedure followed both on Famine Code

and intermediate works, for which a set of rules were prepared by the Divisional Engineer, with Mr. Ashton's assistance, and were duly approved of by the Superintending Engineer. A copy of the rules is forwarded with this report.

27. The famine works under the Public Works Department were brought to a close on the 24th July 1897. The total number of persons relieved on works was 4,872,723, reduced to units of one day, who received an average wage of 14·2 pies. The quantity of earthwork done was 73,674,757 cubic feet at an average rate of 3·77 per 1,000 cubic feet on wage of workers and Ra. 5 including all charges. The total expenditure was Ra. 4,06,560.

28. The whole staff, from the District Engineer downwards, worked admirably, and the relief operations in Jaunpur were carried out without a hitch. This is due in a large measure to the sympathetic interest taken in the famine by Mr. Reynolds, the Collector, and to the help rendered at all times by him and by Mr. Ford, Joint Magistrate.

29. *Famine in Mirzapur.*—Telegraphic orders were received by the Divisional Engineer on the 23rd December 1896 ordering test works to be started at once in south Mirzapur on works selected by the Collector and approved of by the Commissioner. Work was commenced on the 8th January 1897 on the Hallia-Lalganj road by the District Surveyor, and the numbers increased rapidly. On the 14th January 1897 they exceeded 5,000.

The Commissioner ordered the works to be carried out under Famine Code rules, and the whole of the district south of the Ganges was declared distressed.

30. Arrangements were at once made for conducting relief operations on a large scale, and naib tahsildárs and hospital assistants were applied for, and work agents and the subordinate staff of muharrirs, &c., engaged. Overseer Birbul Das and Sub-Overseer Anand Rup were transferred at once from the Gházipur district, and the Commissioner appointed several men as naib tahsildárs till the ten naib tahsildárs asked for from the Board of Revenue could arrive. Telegrams were sent to the Roorkee Workshops and the large European firms in Calcutta to supply digging tools, and the jails were indented on, and arrangements made locally for the large quantity of baskets required.

31. Numbers on the Hallia-Lalganj road continued to increase rapidly, and on the 20th January 1897 another charge was opened on the Hallia-Drummondganj road. By 21st February seven more charges had been opened on the following roads:—Lalganj-Kalwari, Lalganj section; Sitakund-Khukuri; Hallia-Debhar; Marihan-Ghorawal; Lalganj-Kalwari, Kalwari section; Robertsganj-Panuaganj; Chunar, Chota Mirzapur, with an average daily attendance of 27,940.

32. Thus in little more than a month nine works had been opened in different parts of south Mirzapur. Extensive famine works had already been started in Bundelkhand, Allahabad, and in other districts in the Province, and the greatest difficulty was experienced in getting suitable work agents, and in equipping and starting the different charges.

33. As the District Surveyor could not alone look after the works spread over such a large area, a new sub-division was formed at Robertsganj with the approval of His Honor the Lieutenant-Governor, and Syed Shujat Ali, who was District Surveyor of Ballia, was appointed to take charge of it.

34. Two new works were opened on the 1st and 4th March on the Mirzapur-Chunar road and the Ghorawal-Robertsganj road. Eleven works were opened altogether in March with an average daily attendance of 30,000. They were kept open till the rains fell and earthwork could not be done. In April 1897 numbers declined largely owing to the harvest and to the ripening of mahua and other fruits in the forest, and the average daily attendance fell to 17,327.

35. As there was very little harvest to be reaped and it was feared that numbers would increase again, all the eleven charges were kept open. In May numbers commenced to increase till the maximum number was reached in the week ending 22nd May 1897, when the daily average attendance was 34,500. They kept up to 30,000 till the first week in June, when they began to go away, and the average daily attendance for that month was 21,888.

36. In July there was heavy rain, and the earthwork in raising roads and digging tanks had been completed, and work was confined chiefly to breaking stone metal on the Mirzapur-Rewah road, while the daily average attendance fell to 5,363.

In August only metal breaking was done on the Rewah road, and the numbers continued to decline, and all relief works were closed on the 31st August 1897.

37. The total number of persons relieved in the Mirzapur district on relief works was 4,262,347, of which 3,083,837 were workers and 1,178,510 dependants. The percentage of dependants on the total numbers of persons relieved was 27. As at Jaunpur the great majority of dependants were children, the total number of adult dependants being 169,809 and of children 1,008,701.

38. *Intermediate work.*—In Mirzapur nearly all the relief works were carried out under Famine Code Rules. In April 1897 the Commissioner ordered three works, two of which were close to Mirzapur and one at Chunar, to be charged to the intermediate system, as distress was not so great in these parts; but they never attracted large numbers and were finally closed in June 1897.

39. The work done consisted of earthwork in raising roads and deepening tanks, and, when the rains set in, of breaking stone metal on the Rewah road. Ten roads, with an aggregate length of 122 miles, have been raised. All roads have been raised above flood-level, and they were all completed, with the exception of the Marihan-Robertsganj road, of which some portions could not be finished owing to the setting in of the rains. This road is 33 miles long and is a second class one; but there were many places where it required raising and improving: 17 miles have been raised and improved, and the approaches to nálas have been sloped off with easy gradients.

40. On the Lálganj-Kalwári road the section from Lálganj to Amoi (12 miles), where it crosses the Tándá-Sirsi road, was finished, but as the road beyond crosses a range of hills and numerous ravines, only 3½ miles from the Kalwári end was raised, and work on the remainder was stopped with the consent of the Collector. On the Mirzapur-Chunár road also only the first ten miles were raised, the rest of the road crossing so many ravines and nálas that it was not considered suitable for raising.

41. As the quantity of work in raising roads was limited, and as relief works had to be kept open in the distressed tracts while famine lasted, the deepening of roadside and village tanks was carried on at the same time as the road raising was being done. Thirty-six tanks have been deepened, the greater number being in pargana Uproudh.

42. The breaking of stone metal has all been done at the Hurrye pass and at Lálganj on the Mirzapur-Rewah road. Attempts were made to start metal breaking charges at Ahrora, Marihan and the Márkundi pass, but as the rains set in and the labourers deserted relief works in these localities, the work had to be abandoned.

The total quantity of work done has been in raising 122 miles of road and in deepening 36 tanks :—

					Cubic feet.
Total earthwork	...	...	...	...	41,229,175
Stone metal broken	...	...	...	...	164,213



43. The rate at which the earthwork was done was high in the beginning, as the condition of the majority of workers was poor and full tasks could not be exacted. In January 1897 the average rate for earthwork was Rs. 11-2-0 and in February Rs. 8-2-0 for wages of workers, but this was reduced to Rs. 3-9-8 in April 1897, and the average rate for the total earthwork done was Rs. 5 per 1,000 cubic feet for wages of workers, and Rs. 7, including all charges, except gratuitous relief. The average rate for metal collection was Rs. 4-8-0 per 100 cubic feet. These are about double the ordinary rates at which work is usually done, but considering the severity of the famine in Mirzapur, they cannot be considered too high.

44. The total sum spent on relief works in Mirzapur was Rs. 3,30,333, divided as under :—

				Rs.
1. Wages of workers including miscellaneous items	...	...	...	2,66,736
2. Dependants and gratuitous relief	...	...	...	27,400
3. Tools and plant	...	...	...	29,635
4. Establishment	...	...	...	6,562

The charges for gratuitous relief, tools and plant, and establishment represent a percentage of 8.3, 8.9 and 1.9 of the total cost.

The number of women on relief works was only slightly in excess of the men, as shown below :—

				Men.	Women.	Children.	Total.
Workers	...	...	...	1,034,570	1,390,248	6,59,019	3,083,837
Dependants	...	...	...	68,708	1,01,101	1,008,701	1,178,510
Total				4,262,347			

This proves that distress in Mirzapur was severe, and that the men had no work in the fields as at Jaunpur.

45. The great majority of the men on relief works were of the class of agricultural labourers, consisting of chamárs and other low caste Hindus; Kolo and the inhabitants of the hills in south Mirzapur also came on to the works in large numbers; Bráhmans, Thákurs and the better class of cultivators came in considerable numbers, especially in pargana Uproudh. There was also about 12,000 men belonging to the Rewah State who were sent back when relief works were opened there. There were very few Muhammadans.

46. When relief works were first opened at Hallia, the condition of the labourers, especially the children, was poor. At Lálganj, Kulwári and Ghoráwal also a large proportion of the men who came on to the relief works were in poor condition, but all soon picked up; and after being a month or so on the works there was little or no difference between them and men of their class in ordinary years.

47. The health of the workers was on the whole good. In the beginning there were many deaths from dysentery and fever, but as the men got into better condition their health improved, and there were only occasional deaths. There were a few deaths from small-pox, but it never became epidemic on any of the works.

48. There were only two occasions on which cholera appeared on the works. In the beginning of May 1897 cholera was reported at Omai, and the Divisional Engineer went out with the District Engineer on the 8th May, and had the camp removed to Lálganj, seven miles away, and the disease died out in a few days. There were 25 cases and 18 deaths.

49. In the beginning of June cholera appeared on the Kalwári-Ghoráwal road, and on the 8th June orders were sent to remove the camp to Kotwa, 12 miles away; but before this could be done, the labourers, who were nearly all from the neighbouring villages, left the works. When work was reopened at Kotwa there were no more cases

of cholera. The number of cases on this occasion was 68 and there were 55 deaths. There were isolated cases of cholera on some of the other works, but these were the only two occasions on which it appeared in a severe form, and 73 deaths occurred.

50. Some difficulties were experienced in getting food supplies. There are no large towns in the whole of the upland tract of south Mirzapur. There are markets at Drummondganj, Hallia, Ghoráwal and Robertsganj, but stocks in these had been exhausted, and grain had to be sent from Mirzapur and Ahrora. The Collector, however, arranged to send out supplies to places where local arrangements could not be made, and all the works were kept well supplied. Water is also scarce in these parts, but with the help of watering carts, of which 50 were got, and by keeping up a proper staff of Bráhmans and Káhars, efficient arrangements were made, even in the hot weather.

51. The rules for formation of gangs, exaction of tasks, payment, &c., were carried out in accordance with the orders laid down, the system adopted being the same as at Jaunpur.

52. Relief works in Mirzapur closed on the 31st August 1897. The total number of persons relieved on works was 4,262,347 day units, who received an average wage of ten pies. The quantity of earthwork done was 41,229,175 cubic feet at an average rate of Rs. 5 per 1,000 cubic feet for wages of workers, and Rs. 7 per 1,000, including all charges; 164,213 cubic feet of stone metal for roads was also broken at an average rate of Rs. 4-8-0 per 100 cubic feet.

53. The difficulties encountered in conducting relief operations in a country like south Mirzapur have been very great.

Although relief works in the Family Domains of the Mahárája of Benares were carried out by the Deputy Superintendent, and in the country south of the Sone by civil agency, the area in which work was done by the Public Works Department was larger than most districts in the Province, while the physical and other difficulties were great.

54. Famine was declared in January 1897 and by the 17th February, or in little more than a month, eleven works had been started in different parts of the district, and others were opened out subsequently where necessary.

Great credit is due to Babu Baijnath Sahai, District Surveyor, on whom the chief burden of starting and looking after these works fell; he was ably assisted by Saiyid Shujat Ali, Sub-divisional Officer, and special reports regarding these officers have been submitted to Government. Mr. Broun, the Collector, took the keenest interest, and was ready with advice and help at all times, and the success of the work alone is due in a large measure to him.

55. The following is a complete list of the officers employed on famine works in this Division :—

*In Jaunpur.*

Mr. A. H. Ashton, District Engineer.  
Babu Munshi Ram, Overseer, Inspecting Officer.  
Mr. W.O'Brien, Temporary Inspecting Officer.  
Abdul Gafur, Sub-Overseer.  
Maya Ram, Sub-Overseer.  
Abdul Rahim, Sub-Overseer.

*In Mirzapur.*

Babu Baijnath Sahai, Overseer, District Surveyor.  
Bisheshwar Nath, Overseer.  
Birbul Das, Overseer.

Anand Rup, Sub-Overseer (dead).

A list of the Naib Tahsildárs employed in this Division is given in Appendix E; most of these men worked well.

56. This concludes the general report on famine works in the Jaunpur and Mirzapur districts, where alone relief works have been carried out in this Division.

Some tools were purchased in Benares, but no relief works were carried out.

The following general figures are given for easy reference for the whole Division :—

1. Total number of persons on relief works—

	Workers.	Dependants,	Totals.
In Jaunpur ... ..	2,847,147	1,025,576	4,872,723
In Mirzapur ... ..	3,083,837	1,178,510	4,262,347
Total for division ... ..	6,930,984	2,204,086	9,135,070

2. The average daily wage was—

In Jaunpur ... ..	14'2 Pias.
In Mirzapur ... ..	10 "

Average for the Division—10 pies.

The quantity of earthwork done was—

	Cubic feet.
In Jaunpur ... ..	73,674,757
In Mirzapur ... ..	41,229,175
Total for Division ... ..	114,903,932

164,213 cubic feet of stone metal was also broken in Mirzapur.

4. The total sum spent was—

	Rs.
In Jaunpur ... ..	4,06,560
In Mirzapur ... ..	3,03,333
In Benares (for tools) ... ..	6,114
Total for Division ... ..	7,16,007

5. The rate at which earthwork was done, calculated on wages of labourers, was—

	Rs. a. p.	
In Jaunpur at ... ..	3 12 0	per 1,000 cubic feet.
In Mirzapur ... ..	5 0 0	" " "
Average rate for Division ... ..	4 8 0	" " "

57. A report in accordance with Government Order, Scarcity Department, No. 1717, dated 6th August 1897, has already been submitted to Government through the Commissioner of the Division regarding those officers whose services should be brought to the notice of Government, but I beg here also to recommend for special recognition the services rendered by—

Mr. A. H. Ashton, Assistant Engineer, District Engineer, Jaunpur, and Babu Baijnath Sahai, Overseer, District Surveyor, Mirzapur on whom the task of organizing and conducting the relief works fell.

I also beg to recommend strongly—

Saiyid Shujat Ali, Overseer, Sub-divisional Officer at Robertsganj, and

Babu Munshi Ram, Temporary Overseer and Inspecting Officer in Jaunpur.

58. The work in the Divisional Office and in the District Offices at Jaunpur and Mirzapur has been very heavy, and great credit is due to the clerical staff. The Divisional Engineer brings to favorable notice the services of Babu Baldeo Ram, Accountant, and Babu Trylokho Nath Haldar, Head Clerk of the Divisional Office; when Babu Baldeo Ram joined the Division the accounts were two months in arrears, but he soon set things right and pulled up arrears. Babu Trylokho Nath Haldar had special charge of the famine papers, and as the Divisional Engineer could but seldom be at headquarters, he had heavy responsibilities in addition to his work. Babu Akhil Nath Bose, Head Clerk of the District Engineer's Office at Jaunpur, has been very highly recommended by Mr. Ashton. Babu Ram Das Banerji, Head Clerk, District Surveyor's Office, Mirzapur, worked satisfactorily.

59. *Organization of relief works.*—The orders regarding—

1st, organization of charges,

2nd, employment of staff,

3rd, formation of gangs,

4th, setting out and exaction of tasks,

5th, wages,

6th, duties of the staff, and

7th, reports and accounts required,

laid down in the rules issued with Resolution No. 18P.W., dated the 5th December 1896, and in subsequent orders and circulars, including the instructions to gang muharrirs issued by Mr. C. G. Palmer, Superintending Engineer, have been carried out on all the relief works done in this Division.

The system adopted both on works carried out under the Famine Code and the intermediate system is fully illustrated and explained in the detailed report (Appendix C) submitted by Mr. Ashton, District Engineer of Jaunpur.

60. Gang registers were prepared weekly instead of every fortnight, and the daily attendance was entered on one register for the week instead of two on which the attendance was entered on alternate days. In the form of gang-register adopted the names of all adult workers were entered at the back instead of total workers and dependants being only shown by classes.

The fortnightly gang-register proved after a short trial to be not so useful for purposes of control and check as the weekly one. In the former case, if an officer wanted to check the numbers in a gang, he could not do so, as the register in which the attendance for that day was entered was taken away by the gang muharrir, and was not with the mate. By adopting weekly gang registers, which remained always with the mate, gangs could be checked at any time.

The weekly gang-registers could also be sent in with Form No. III of the Famine Code, in which the total transactions of each week are entered, and District Engineers were enabled to maintain an efficient check, and to point out and correct errors at once, instead of having to wait till the end of the month, when only the fortnightly gang-registers could be sent in.

Entering the names of workers on the back of gang-registers also proved useful for purposes of check. The extra work was small, as the nominal roll was

written up when each gang-register was issued at the beginning of a week, and only charges had to be noted by the gang muharrirs when taking the daily attendance.

All enrolment of new comers was done at the camp under the superintendence of the Officer-in-Charge, and gang muharrirs were not allowed to enrol men in any gang in place of absentees.

61. *The Intermediate System.*—This was introduced in April 1897 by order of the Commissioner on all the works in Jaunpur and on three works in Mirzapur. The Divisional Engineer drew up a set of rules (Appendix II) with the help of Mr. Ashton, District Engineer, Jaunpur, which were duly approved of by the Superintending Engineer and Commissioner, and in accordance with which work was carried out.

Mr. Ashton in his detailed report (Appendix C) has fully explained the working of this system. It became very popular in Jaunpur as the work of each digger with his carriers was measured up and paid for separately. The rate at which earthwork was done under this system, was about Rs. 2-4-0 per 1,000 cubic feet, or about the normal rate.

H. G. PASSANAH.

*Executive Engineer,*

*Benares Provincial Division.*

J. HEINIG,

*Superintending Engineer, 3rd Circle,*

*Provincial Works.*

*The 17th September 1897.*

*The 21st September 1897.*

## APPENDIX C.

*Detailed Report on Famine Relief Operations in the Jaunpur District, 1896-97.*

IN this report I propose to enlarge on the method of work organization, establishment, &c., more in detail, and point out where I diverged from the rules laid down in the pamphlet, dated 6th December 1896. These small changes were made with the sanction of the Executive Engineer; and were only made when experience showed me that work would be either more thoroughly supervised, or that it was necessary in the interest of work people. Before going into detail I would first call attention to the fact that owing to local customs there were no camps of work people properly so called. There are in this district no concentrated villages such as are met with in the districts of Bundelkhand or Agra, and that habitations are everywhere scattered over the country, so that a village, in the sense of what a village is in the western and southern parts of the Province, is rarely met with in these parts. Workers every evening dispersed to their homes, though shelter was provided for them, and it was only in the case of foreigners that any were found living on the works.

*Famine Code Works.*—On these works the workers were formed into gangs of 15 diggers and these constituted the foundation of a gang, and with their women, children, and dependants formed the *gang*, which was under charge of a mate, who received slightly higher wages than the digger. The names of the number of the gang were entered in a muster-roll with a gang-register of the same form as found in rules, dated 6th December 1896, on the back. This gang once formed and the nominal-roll once written up was on no account allowed to be changed during the week by the introduction of new members; of course the gangs became smaller as the week advanced, on account of the defection of members; but this was rectified every Monday when a new nominal-roll and gang-register were written up. Here I would point out the change I made from the rules of 6th December 1896. In these rules the gang-registers are for a fortnight, and are supposed to be changed every day, thus having two gang registers, one on the works and the other in charge of the muharrir. This to my mind is both unnecessary and troublesome, as the previous day's register is difficult to get, and it does not allow a proper comparison with Form No. III. Again, if a mate makes off with a gang-register the other one is useless, as it contains only alternate day's records. Another thing is that constant and regular change is a factor that does not appear to have been sown in the brain of an ordinary muharrir. In my system the nominal-rolls and gang-registers were printed for one week's entries only; it remained with the gang mate, and all entries were made on this one paper during the week it was on the work. The muharrir when finally filling in his attendance in the evening also filled in on the *spot* his day-book, and thus the gang-register was never taken off the work, and was always open to inspection and check. Another advantage—and to my mind the chief—was that the gang-registers corresponded with Form No. III: thus the entire gang-registers, muharrirs' day-books, officer-in-charge's day-books, and Form No. III were submitted in weekly packets to the District Engineer, thus constituting a perfect voucher as well as allowing of thorough check. Under the system laid down in rules, dated 6th December 1896, this is not possible, and the gang-registers are not received till the close of the month, and then probably too late to admit of errors being rectified. No difficulty was experienced regarding the weekly nominal-rolls, and I tried the other system, which showed me that it admitted of extensive fraud unless one muster-roll was attached to the other—a procedure which defeated its object.

As regards the establishment, a muharrir—whose duty it was to take attendance and fill up the gang-register and make totals—was placed in charge of ten gangs, each consisting of a mate, 15 diggers, and their dependants. These muharrirs were in direct subordination to the Officer-in-Charge. In addition to the muharrirs there were time-keepers, each of whom had also ten gangs; and whose duty it was to supervise the execution of the work, measure it up, enter it in the column on the gang-register

provided for the purpose, and submit results daily to the work agent or sub-overseer. These muharrirs and time-keepers received salaries varying from Rs. 10 to Rs. 15: in the majority of cases the former wage, and if a man showed himself capable he was gradually raised to the higher scale. The time-keepers were in direct subordination to the work agent or sub-overseer, and took their instructions from him. The work agent was placed under the orders of the officer-in-charge, and attended entirely to the executive part of the work. Thus on a work having 5,000 people there were one officer-in-charge, one work agent, ten muharrirs and ten time-keepers. In addition to these there was one enrolling muharrir, who enrolled all new-comers under the flag; one supply muharrir, who was responsible that all *baniyas* and parchers were properly distributed and guarded; one water muharrir, whose duty was to attend to all water arrangements; one sanitation muharrir, who attended to sanitation on the works and in the camp, and whose duty it was to disinfect the wells. These with the sub-cashier, two clerks, chaprásis of the officer-in-charge, mates of the work agent and time-keepers, Bráhmín watermen and Kahár water-carriers and sweepers, constituted the paid establishment of the famine work. The officer-in-charge made all the payments himself and was himself responsible for payments. In the first stages the workers were paid three times a week, but with the advance of organization it became possible to pay them daily, and this was done the morning of the day after that for which the wages were earned, and later on, with the advance of the hot weather, the wages were paid the same evening as payments could be carried on into the night. The task (maximum) was in this district 110 cubic feet per digger, and there was no minimum; but fines were levied for less than 80 or 90 per cent.; the diggers were mulcted six pies if they did less than 80 per cent, and three pies if less than 90 per cent.: the carriers were also fined three pies if the work was not more than 80 per cent. and also in cases where they did not carry the earth the full load. No variation from the 110 cubic feet task was made, as the Collector did not wish it, and the nature of the soil did not admit of a smaller task. Wages were paid up to 1st March 1897 on the ten-seer basis, after that date on the 12-seer basis till the conversion of the works into intermediate works.

No difficulty was experienced in obtaining supplies. A tahsílí chaprásí was attached to each work to facilitate obtaining *baniyas* and parchers, and these were provided with shelter where necessary and protected in every possible way. The tahsildár of the pargana (especially Kutahan, where the majority of the works were located) gave every assistance, and *baniyas* were always forthcoming; after a time there was no necessity to compel their attendance, as they perceived that it was to their own advantage. Sanitation ensured by a gang of sweepers and a responsible muharrir, and as far as possible cleanliness was enforced on both sides of the line of road, or round a tank, where gangs of sweepers went round collecting the excreta and bringing it in a selected spot, well removed from the wells and from the work. During the hot weather another muharrir was put on and *dulis* were provided, and the sick and helpless were weeded out and either sent to the nearest hospital or to the poorhouse: this muharrir also attended to the disinfection of wells with permanganate of potash; and as these wells were private ones in most instances, they were disinfected every Sunday during the summer months after being cleaned. There were five medical subordinates on the work; and as there was no epidemic, these had little or nothing to do except look after a couple of fever cases, some small-pox cases, and famine-stricken children who required exceptional treatment.

As the number of charges was double the number of hospital assistants central hospitals were arranged, and patients were conveyed to them either in Government *dulis* or bullock-carts. On all works ample shelter was provided, but rarely used, the workers dispersing, as I mentioned in the preamble, to their own houses. In the hot weather months the *tatties* which formed the shelter houses were brought on to the works and given to the workers to shelter their babies,

and sheds were erected where the children who accompanied their parents could either sleep or play as suited them. These were much appreciated and constantly crowded. The sheds were simple and rapidly put up and moved, but gave effectual protection from the hot winds and sun.

*Intermediats works.*—The opening of these works after rejection of the Famine Code works came at first as a disagreeable surprise to the workers, and many of them left the works; but once the "new-fangled" style of work was understood, they appreciated the change, and many and loud were the comments on the advantages of such a system. Before descending upon the wages and tasks I beg to indicate the system on which I worked these. I laid down that a digger and two carriers constituted a *unit*; that the carriers may be two adults, or that every two children above seven were to be reckoned as an adult. Each gang contained ten such units. I selected "ten" as the average task done by a gang, allowing 100 cubic feet to each unit would be a 1,000 cubic feet, and this would allow a rough estimate of the cost of each gang to be arrived in while inspecting. Five such gangs were placed under a muharrir or time-keeper (a man who understood measuring and calculating). A muharrir had then to measure up the work of 50 diggers, and this was rendered easy by the method of laying out tanks *before* work was opened on it. I will indicate this method in my final remarks. There was no attendance call, but the work had to be done by four o'clock in the evening, after which no work was allowed, and no work was allowed to be carried over to the next day, but all measured there and then and entered in the measurement-book. As the muharrir measured each work he entered the measurements in his note-book and transferred the cubic contents to the total *under the unit*, that is, each single digger's work was measured and entered in the muster-roll. When entering the work done the muharrir also entered the amount to be paid each member of the unit, for which purpose he was provided with a ready reckoner. This took for a whole gang about ten minutes, so that the whole work was done in about an hour by every muharrir. When the muharrir started measuring the officer-in-charge, giving him a start, came round and paid each member of the gang. I have seen with my own eyes 1,000 men paid in half-an-hour. After the members of a gang had been paid the mate of the gang was detained until the amount paid his gang had been entered in the muharrir's day-book. Thus every single member of a gang received his wages from the hands of the officer-in-charge, and the officer-in-charge had a double check on the muharrir's figures. With the exception of this the intermediate works were managed in the same manner as Famine Code works, there being no minimum wage and no dependants. The children's kitchens were managed on the lines laid down in Appendix F of Code, with slight alterations to suit local requirements, and those attending them were only dependants.

The task and wages were paid on the ordinary standard rate laid down in G. O. No.  $\frac{758}{8-73}$ , dated 16th March 1897, and were practically applied as follows:—

Work done in cubic feet.	Rate per unit.	Amount to be paid to each member of a unit.			Remarks.
		Digger.	Carrier.	Carrier.	
		Rs. a. p.	Rs. a. p.	Rs. a. p.	
From 125 to 113 ...	0 4 8	0 1 9	0 1 8	0 1 8	When children are employed as carriers they will each receive half the amount shown under carriers, the minimum pay one pie.
" 112 to 88 ...	0 8 6	0 1 6	0 1 0	0 1 0	
" 87 to 63 ...	0 2 9	0 1 8	0 0 9	0 0 9	
" 63 to 38 ...	0 2 0	0 1 0	0 0 6	0 0 6	
" 37 to 13 ...	0 1 8	0 0 9	0 0 8	0 0 8	

Nothing will be paid for less than 12 cubic feet.

And these were adhered to the whole time except on three works which contained a proportion of very weakly persons who were not able to do the full task. On these



works a maximum task of 80 cubic feet with full wage of four annas three pies was laid down : in compliance with the Collector's instructions great care was taken that this was not abused, and from the small numbers paid the "weakly" wage and from personal count and inspection this was not, I am confident, at all abused, but rather the other way ; and I had on several occasions to pick out weakly ones and put them on the lighter tasks much against their will, as they seemed to feel it a degradation to be classed among the weakly.

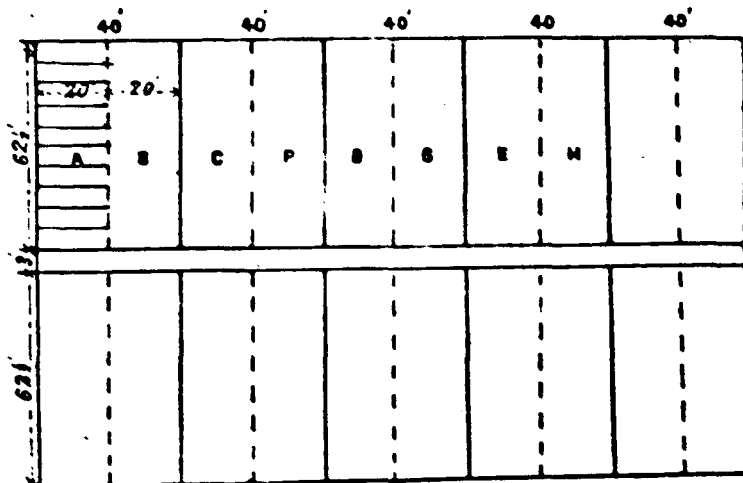
All the comers were provided with work, some with dressing, some employed in carrying earth greater distances, and I personally saw that none were rejected, and insisted on my visiting inspectors paying particular attention to this matter. As before mentioned, with the exceptions noted there was no change in the conduct of the works from those of the Famine Code, and though the establishment was in certain cases slightly reduced, no great change was made even in the number of the officials.

*Works.*—As to the laying out of works both on roads and in tanks the same system was followed in both Famine Code and Intermediate works. On roads the allotment of individual tasks was tried, but abandoned as hopeless in a over-cultivated district like Jaunpur, where roads are hemmed in by fields and where "permanent settlement" is written on every clod. I tried the system in open usar plains (and there only), and yet I found it did not suit the workers at all. (Of course I am referring now to works under the Famine Code.) On these works the allotment of individual tasks resulted in the weakly ones doing all the works and the strong ones taking it easy, knowing there was no system which would expose their idleness. It was also tried on tanks, but abandoned, and the whole task for the gang was given out ; but any complaints about a man not working were attended to and the "complaine" given an individual task. This was found to work more satisfactorily, as the members of a gang after a time were almost in every case composed of relatives of each other.

On intermediate works the consolidated system of tasks for gang was impossible ; and here the individual task was enforced both on roads and tanks. Owing to the fixed constitution of a gang this worked very smoothly and satisfactorily, the difficulty of apportioning the work being nil, and after a time the laying out of tasks was done by the units themselves. Taking as an example a tank 600 feet long, 123 feet wide, and to be deepened four feet, the work was laid out on the plan given below :—

*NOTE.*—There was very little road work done under the intermediate system.

A. H. ACROX.



The firm lines show the tank laid out well in advance of requirements; the dotted lines show the lining out done on the day before the work was opened, and the *daghbels* is only lightly run along. Now we bring a gang of ten units on to the work and set them to begin work on A, telling them they must dig the whole length one foot deep that day, and a second gang is put on C, and a third on D, and a fourth on F: before gang on A (and so on other sections) actually begins work, the time-keeper marks off nine *daghbels* as shown in blue, so that 125 cubic feet per man is given, and then they may begin digging. Supposing A to have been dug, then next day the gang is put on to B, and when that is dug back again to B A, and so alternately till the whole four feet depth has been completed. I have found in my experience that a gang will dig the whole surface of a section of the same depth; but that depth will not be a foot and in fact sometimes six inches, and that they will resort to various devices to show that they *have* dug the foot ordered. I have never found that they left a section undug so far as its surface is concerned. Hence, though the different sections may be dug they will be of different depths, and herein lies the advantage of the alternative sections; for if a gang finds it has not been paid full wages, for digging A after dodging the depths, they will dig B deeper and await results. Eventually the full task is done, and the method is both simple and easy. The path three feet wide is to allow of inspections and effectually separate the gangs in widths as well as to prevent any commingling of members at the time of payment, as it is notorious that a Purbia can do a great deal more than 125 cubic feet a day, in fact I have seen them do 250 cubic feet on works under the civil authorities, but then of course they were not half-starved. The measurements of the tanks, &c., taken are of course arranged to admit of easy explanation; but the general principle is, I think, clear enough, and a tank—no matter how large and how small—can always be lined out to give a gang a day's task or two days' tasks in a section of such a width as to admit of individual tasks being merely ticked off.

A. H. ASHTON,  
*District Engineer.*

*The 29th August 1897.*

APPENDIX D.

*Memorandum of instructions drawn up by H. G. PASSANAH, Esq., Executive Engineer, regarding intermediate works in the Jaunpur and Mirzapur districts, dated 10th April 1897.*

THE adoption of intermediate works was ordered in Government Resolution No. <sup>753</sup><sub>8-73</sub>, dated 16th March 1897, Scarcity Department, and has been introduced by order of the Commissioner on all the works in the Jaunpur district, with the exception of two, and three works in the Mirzapur district, since the commencement of April 1897. Its objects are fully detailed in paragraph 2 of the above resolution.

2. The principle of the intermediate system is that money is earned by labourers in proportion to the amount of work done. There is no minimum sum to be paid as under Code works, and no gratuitous relief is to be given except to children. Every person therefore on an intermediate work is either a digger or a carrier. A certain number will, however, be employed on a dressing gang, the strength of which will be fixed by the District <sup>Engineer</sup><sub>Surveyor</sub>, and will be paid at special rates.

3. Every person coming on a work must be taken on. If the proportion of carriers to diggers is too great, then earth must be taken with a longer lead, in order to employ the extra carriers, but no one must be sent away.

4. Each digger with his carriers is to be treated as an unit, and his work must be measured up and paid for separately. As far as possible, members of one family or persons from the same village should compose a unit. Each unit will consist generally of one digger and two carriers for lead, up to 100 feet, and for every extra 100 feet of lead, a third carrier should be allowed. Carriers will be adult women and men who are unfit to dig. Children above seven years are also to be employed as carriers, but these will only be considered as half a carrier, and a unit may consist of one digger, one adult woman carrier, and two children over seven years of age reckoned as one carrier.

5. When the lead is greater than 100 feet, or when there may be extra carriers, three carriers may be allowed to each digger; but as a rule this should be specially sanctioned by the District <sup>Engineer</sup><sub>Surveyor</sub>, or an inspecting officer.

6. A gang will consist of 14 diggers with their carriers, and will be under a mate, who will get two annas a day, and will be responsible that the work is properly done. In case of neglect of duty on part of mates the work agents will fine them.

7. As regards the task to be exacted, the maximum has been fixed at 125 cubic feet per unit of one digger and two carriers, any quantity over and above this will not be paid for, but the maximum rate in the table given in paragraph 9 will be given to any unit which has done 125 cubic feet. If the maximum task is not done, the unit will be paid at the rates shown in the table; but nothing will be paid if less than 12 cubic feet has been done by a unit. As a matter of fact there has been no difficulty in getting the maximum task, as laid down above, done in Jaunpur and Mirzapur, where intermediate works have been in progress since beginning of April 1897. In Mirzapur there are only three intermediate works, part of the labourers being employed on raising roads and part in digging tanks. In the case of roads where the ground is particularly hard, the maximum task may be reduced to 100 cubic feet per unit, and the wages shown in the table in paragraph 9 may be given for a proportionately smaller quantity of work done. Each case should, however, be decided by the District <sup>Engineer</sup><sub>Surveyor</sub> personally if possible, or at least by the inspecting officer, otherwise there will be laxity in the observance of this order.

8. The rates at present fixed for Jaunpur, where the work is chiefly in tanks per, which will as fairly soft, is Rs. 2-3-0 per 1,000 cubic feet of earthwork, and must

not be exceeded without the special sanction of the District <sup>Engineer</sup> Surveyor. The unit will be paid at this rate, which will cover carriage up to 200 feet, and also rough deepening and breaking of clods. Where, however, owing to the presence of a large number of carriers it is found necessary to increase their number, the rate will be proportionately increased also.

9. The rates to be paid to units of one digger and two carriers who do 125 cubic feet and less are shown in the following table, which also shows what should be paid to individuals :—

Work done in cubic feet.	Rate per unit.	Amount to be paid to each individual of a unit.			Remarks.
		Digger.	Carrier.	Carrier.	
1	2	3	4	5	6
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
From 125 to 113 cubic feet ...	0 4 3	0 1 9	0 1 3	0 1 3	When children are employed as carriers they will receive half the amount shown under carriers, columns 4 and 5, the minimum being one pice.
Do. 112 to 88 ditto ...	0 3 6	0 1 6	0 1 0	0 1 0	
Do. 87 to 63 ditto ...	0 2 9	0 1 3	0 0 9	0 0 9	
Do. 62 to 38 ditto ...	0 2 0	0 1 0	0 0 6	0 0 6	
Do. 37 to 13 ditto ...	0 1 3	0 0 9	0 0 3	0 0 3	

When an extra carrier is employed the rate in column 2 will proportionately be increased.

10. Children under seven years of age will not be paid in money, but will be given cooked meal when the labourers knock off work for the midday rest. This will ordinarily consist of three chhattaks of *khichri* (rice and *dāl* cooked together) for each child: no elaborate arrangements for kitchen will be needed. A couple of large vessels for cooking on; two or three men for cooking and distributing the food, will be required. In the case of children in arms a dole of pice will be given to the mother.

11. A separate dressing gang will be employed when necessary, the strength of which must be specially fixed by District <sup>Engineer</sup> Surveyor, or by the Inspector of works acting under their orders. As intermediate test works are chiefly in the Jaunpur district, where the work consists principally of digging tanks, very little extra deepening will be required. The numbers of a dressing gang may be paid up to the maximum laid down in table in paragraph 9. But the work agent must supervise their work carefully, and fine them when he finds them idle.

12. The ordinary staff of muharrirs, mistris and work agents will be employed as on Code relief works. The same forms will also be used. The method of writing up the gang-register is shown in the specimen form attached; the nominal-roll side will only be used. The names of each individual composing a unit or group of workers will be shown, and the work done by each unit and the sums earned also be entered in it every evening after measurement of work. The muharrir's day-book and all other forms will be filled up as under Famine Code rules.

13. It is important that tasks should be laid out in advance for some days, so that every unit as it comes on may be able to begin work. The responsibilities of work agents and mistris will also be increased, as the individual task of each unit must be measured up each day, and the sum earned must be entered in the gang-register, which will as heretofore be the most important document.

14. The usual rules for conservancy, water, hospital arrangements, hutting, &c., will be observed as on ordinary Code works.

15. There will be no Sunday labour, nor will any payments be made for work done on that day.

16. In case of persons who come to the works in an enfeebled condition either from age or disease, and who are not capable of doing a task of any kind, the Commissioner has directed that these should be brought on the village relief lists and relieved at their houses, but till this can be done the naib tahsildár in charge of the work can act as village relief officer and make the necessary advances, which will be recouped afterwards by the Collector. Lists of such persons should be made out showing the villages they have come from, and one copy of such lists should be sent to the District <sup>Engineer</sup> Surveyor, and another to the circle officer. A subsistence allowance at the minimum Code rate calculated on a basis of 12 seers to the rupee should be given to those persons to get to their houses. Any person who is too ill to go to his village or who gets ill while on the work must be kept in the hospital till he is fit to work or to go home, or if a poor-house is near he can be sent to it.

H. G. PASSANAH,  
*Executive Engineer,*  
*Benares Provincial Division.*

APPENDIX E.

*List of naib tahsildars employed on famine relief works during 1896-97 and 1897-98 in Jaunpur and Mirzapur districts.*

A.—JAUNPUR DISTRICT.

- |                            |                            |
|----------------------------|----------------------------|
| 1. Munshi Muhammad Chaman  | 2. Mathura Dat Joshi.      |
| 2. Krishna Narain Seopuri. | 3. Munshi Bisheshar Dayal. |
| 3. Ram Sarup.              | 4. Ram Prasad Varma.       |
| 4. Mahadeo Parshad.        | 5. Uma Charn Misra.        |
| 5. Raj Kishore.            | 6. Nazir Ahmad.            |
| 6. Prasad Narain.          | 7. Muhammad Suleman.       |
| 7. Harbans Sahai.          | 8. Kanhya Lal.             |
| 8. Muhammad Ashraf (I).    | 9. Ahmad Ali.              |
| 9. Muhammad Ashraf (II).   | 10. Raghunath Sinha.       |
| 10. Wali Muhammad.         | 11. Gauri Shankar.         |
| 11. Jalpa Sahai.           | 12. Wali Muhammad.         |
| 12. Raghunath Sinha.       | 13. Sham Narain Lal.       |
| 13. Ahmad Ali.             | 14. Kalka Parshad.         |
| 14. Sayid Ali Azhar.       | 15. Muhammad Ishaq Beg.    |
| 15. Amar Nath.             | 16. Muhammad Yusuf.        |
| 16. Qurban Ali.            | 17. Ghulam Husain.         |
| 17. Lal Bah.               | 18. Jang Bahadur Sinha.    |
| 18. Shiva Lal Varma.       | 19. Rup Narain.            |

B.—MIRZAPUR DISTRICT.

- |                           |                      |
|---------------------------|----------------------|
| 1. Munshi Shambhu Narain. | 21. Shiva Lal Varma. |
|                           | 22. Jwala Parshad.   |

H. G. PASSANAHA,  
*Executive Engineer,*  
*Benares Provincial Division.*

C.—Statement showing expenditure to date on Famine Relief Works.

Reference number.	Name of work.	Length of road raised.		Number of tanks deepened.	Quantity in cubic feet.		Expenditure.				Rate per 100 cubic feet, taking wages only.	Rate per 100 cubic feet, taking wages, gratuitous relief and other items.	Date of opening.	Date of closing or completion.	Remarks.	
		Miles.	Furlongs.		Earthwork.	Metal collection.	Wages.	Gratuitous relief.	Other items.	Total.						
1	Raising Malhni-Tigra road ...	8	...	...	7,144,808	...	89,078	2,991	7,426	49,495	5	5	0	14th Dec. 1896	24th July 1897	The raising of all the roads taken in hand has been completed. Tanks have been deepened from four to eight feet. In some cases only portions of tanks have been deepened. This, however, increases their utility and power of storing water.
2	Do. Baragaon-Kutaban road ...	7	...	...	2,766,403	...	14,132	1,331	2,497	17,960	5	1	9	1st Jan. 1897	24th July 1897	
3	Do. Bádahapur-Shujanganj ...	10	...	...	4,342,252	...	22,776	896	5,979	29,651	5	3	10	8rd Jan. 1897	24th July 1897	
4	Do. Surpatha-Kutaban road and Narandpur Fatti.	8	...	...	5,067,972	...	22,643	3,008	4,309	29,965	4	7	4	25th Jan. 1897	1st May 1897	
5	Making a tank at Gujar ...	...	...	1	1,654,104	...	8,994	578	2,967	12,539	5	11	2	1st Feb. 1897	13th Feb. 1897	
6	Raising Ramnagar-Arsia road ...	2	3	...	1,444,958	...	6,326	494	572	7,392	4	5	9	1st Feb. 1897	6th Mar. 1897	
7	Tank at Khadauli and tanks along Khata Saráí-Shábganj road.	...	...	32	6,031,664	...	21,897	1,219	7,214	30,330	3	10	1	5th Feb. 1897	24th June 1897	
8	Deepening Managh tank and tanks along Khata Saráí and Saráí Khoja road.	...	...	87	6,546,886	...	21,446	1,799	9,875	33,120	3	4	4	8th Feb. 1897	24th July 1897	
9	Raising Surapur-Dostpur road ...	1	...	...	805,297	...	1,271	276	108	1,655	4	2	5	8th Feb. 1897	27th Mar. 1897	
10	Do. Lme Bazár-Tirwa road ...	3	6	...	808,856	...	4,007	804	780	5,091	12	5	1	8th Feb. 1897	6th Mar. 1897	
11	Improving tanks along Baragaon-Kutaban road and tanks at Surutha Khurd.	...	...	14	2,719,721	...	10,482	920	4,277	15,679	3	13	0	15th Feb. 1897	11th July 1897	
12	Raising Badlapur-Koripur road ...	8	4	...	2,572,329	...	7,785	271	3,561	11,617	3	0	4	15th Feb. 1897	24th July 1897	
13	Deepening Gburnandi Tál known as Isapur Bund.	...	...	1	2,742,217	...	9,563	601	2,004	12,168	3	7	8	14th Feb. 1897	24th Apl. 1897	
14	Tanks along Malhni-Tigra road and tanks around village of Tigra.	...	...	21	2,778,794	...	7,474	20	4,099	11,593	3	10	11	7th Mar. 1897	14th July 1897	

C.—Statement showing expenditure to date on Famine Relief Works—(continued).

Reference number.	Name of works.	Length of road raised.		Number of tanks deepened.	Quantity in cubic feet.		Expenditure.				Rate per 100 cubic feet, taking wages only.	Rate per 100 cubic feet, taking wages, gratuitous relief and other items.	Date of opening.	Date of closing or completion.	Remarks.				
		Miles.	Furlongs.		Earthwork.	Metal collection.	Wages.	Gratuitous relief.	Other items.	Total.									
								Rs.	Rs.	Rs.	Rs.	Rs.	a.	p.	Rs.	a.	p.		
15	Improving Baraut tank along Baragaon-Sansarpatti road.	...	...	43	6,199,564	...	14,731	508	6,037	21,276	2	6	3	3	7	3	7th Mar. 1897	19th June 1897	The raising of all the roads taken in hand has been completed. Tanks have been deepened from four to eight feet. In some cases only portions of tanks have been deepened. This, however, increases their utility and power of storing water.
16	Tanks along Baragaon-Sháhganj road...	...	...	14	107,423	...	246	9	237	492	2	3	0	4	9	1	11th June 1897	19th June 1897	
17	Improving tanks at Bhakuri ...	...	...	9	1,788,165	...	4,077	21	3,892	7,990	2	4	6	4	7	10	26th April 1897	24th July 1897	
18	Tanks along Bádshahpur-Shujanganj road.	...	...	22	4,628,029	...	11,847	145	5,471	17,463	2	8	4	3	12	4	25th May 1897	17th June 1897	
19	Deepening tanks around village of Arrah.	...	...	8	691,479	...	1,629	22	2,790	4,441	2	5	4	6	6	9	23rd May 1897	10th July 1897	
20	Ditto at Pissara charge ...	...	...	4	553,084	...	1,220	23	1,980	2,626	2	8	2	4	15	4	23rd May 1897	19th June 1897	
21	Tanks along Badlapur-Kauripur road...	...	...	12	1,175,025	...	2,697	37	3,720	6,454	2	4	8	5	7	10	31st May 1897	17th July 1897	
22	Raising Chaukia-Arrah road ...	...	1	...	7,955	...	18	...	...	18	2	4	2	2	4	2	13th July 1897	13th July 1897	
23	Tanks along Surpatha-Kutaban road and Narandpur Patti.	...	...	89	324,333	...	717	...	253	970	2	3	3	2	14	8	12th April 1897	29th April 1897	
24	Tanks along Baragaon-Surapur road ...	...	...	54	8,965,823	...	19,432	1,127	6,829	27,388	2	2	11	3	0	10	28th April 1897	10th July 1897	
25	Raising Baragaon-Surapur road ...	11	4	...	2,809,614	...	23,809	2,806	4,311	30,926	8	7	6	11	0	0	11th Nov. 1896	24th July 1897	
	Total, Jaunpur district ...	60	2	311	736,74,757	...	278,302	19,409	90,588	383,299	8	11	4	5	3	10	...	...	



C.—Statement showing expenditure to date on Famine Relief Works.

Referenc <sup>e</sup> number.	Name of work.	Length of road raised.		Number of tanks deepened.	Quantity in cubic feet.		Expenditure.				Rate per 1,000 cubic feet taking wages only.	Rate per 1,000 cubic feet, taking wages, gratuitous relief and other items.	Date of opening.	Date of closing or completion.	Remarks.	
		Miles.	Furlongs.		Earthwork.	Metal collection.	Wages.	Gratuitous relief.	Other items.	Total.						
								Rs.	Rs.	Rs.	Rs.	Rs. a. p.	Rs. a. p.			
1	Raising Hallia-Laliganj road	14	4	10	5,870,480	...	40,077	4,008	6,008	67,893	7 15 8	9 13 2	14th January 1807.	13th July 1807.	The whole road has been raised.	
2	Raising Hallia-Drummondganj road.	10	...	5	5,511,054	...	32,000	2,794	4,357	40,271	5 18 1	7 5 1	20th January 1807.	15th July 1807.	ditto ditto.	
3	Raising Hallia-Debhor road...	7	4	5	2,520,122	...	20,120	2,557	4,002	26,730	5 11 8	7 9 8	10th February 1807.	27th June 1807.	Has been raised from Hallia to village of Debhor. Beyond Debhor to part of that name it is crossed by dikes and ravines, and is unsuitable for raising.	
4	Raising Laliganj-Kalwari road, Laliganj section.	12	...	3	1,893,142	...	12,810	1,630	2,025	16,284	7 5 5	9 11 2	12th February 1807.	10th May 1807.	This section has been raised.	
	Raising Laliganj-Kalwari road Kalwari section.	3	4	2	1,858,241	...	10,500	952	1,000	13,451	5 11 8	7 2 10	1st February 1807.	31st March 1807.	Is 16 miles, but only 2½ miles between Kalwari and Gopdipur have been raised. The rest is crossed by dikes, and is unsuitable for raising.	
5	Raising Sitakend-Khakuri road	18	...	2	5,200,028	...	20,400	1,650	3,382	27,428	2 15 1	5 4 4	14th February 1807.	20th June 1807.	Has been raised throughout.	
6	Raising Marhan-Ghorawal road	6	...	1	1,407,844	...	6,081	1,200	4,109	12,390	4 10 0	8 4 1	11th February 1807.	30th June 1807.	This section has been raised.	
	Marhan-Kalwari section ... Kalwari-Ghorawal section ...	...	...	...	...	60,000 665,728	600 2,476	...	...	600 4,405	...	...	1st April 1807.	30th June 1807.	This section is eight miles, of which 2½ miles to Bahher nail has been raised; work was stopped owing to rains.	
7	Raising Bhortaganj and Pannaganj road.	15	...	5	4,281,230	...	16,540	2,224	6,408	25,278	2 10 1	5 14 5	12th February 1807.	28th June 1807.	Has been raised throughout.	
8	Raising Chundi and Chhota Mirzapur road.	14	...	...	2,098,125	...	9,002	1,144	2,031	13,238	2 7 1	3 9 2	21st February 1807.	23rd June 1807.	Raising completed.	
9	Raising Mirzapur Chundi road	10	...	3	4,447,747	...	18,017	1,194	2,745	17,950	2 14 0	4 0 8	1st March 1807.	20th June 1807.	First 10 miles have been raised. The rest of the road to Chundi is crossed by ravines and dikes, and is not suitable for raising.	

C.—Statement showing expenditure to date on Famine Relief Works—(concluded).

Reference number.	Name of work.	Length of road raised.		Number of tanks deepened.	Quantity in cubic feet.		Expenditure.				Rate per 1,000 cubic feet, taking wages only.	Rate per 1,000 cubic feet, taking wages, gratuitous relief and other items.	Date of opening.	Date of closing or completion.	Remarks.
		Miles.	Furlongs.		Earthworks.	Metal collection.	Wages.	Gratuitous relief.	Other items.	Total.					
							Rs.	Rs.	Rs.	Rs.	Rs. a. p.	Rs. a. p.			
11	Raising Ghoráwal-Robertsganj road. Ghoráwal section.	4	...	...	1,524,521	...	5,285	1,140	3,478	9,903	3 7 5	6 7 2	4th March 1897.	25th July 1897.	This section is nine miles in length; 4 miles up to Belau nadi have been raised; work was closed owing to rains. This section is 10 miles long. Only 3 miles near Robertsganj were raised when work was closed. Raised up to the Márkundi Pass.
	Robertsganj section	3	...	...	256,542	...	877	98	364	1,339	3 6 9	5 3 2	2nd July 1897.	25th July 1897.	
	Raising Robertsganj-Chopan road.	6	...	...	861,636	...	3,782	820	1,967	6,579	4 6 1	7 10 1	7th May 1897.	7th July 1897.	
10	MIRZAPUR AND REWAH ROAD.														
	Metal collection, Harrai Pass quarry.	...	...	...	...	123,047	4,155	802	2,545	7,502	3 1 2	5 15 2	9th March 1897.	In progress.	
	Metal collection, Lalganj quarry.	...	...	...	...	70,078	4,783	1,315	1,821	7,919	7 10 5	12 0 1	20th May 1897.	In progress.	The extra work by relief labour was on consolidation, Rs 99.
	Earthwork, ditto	...	...	...	26,079	...	251	94	...	345	9 8 9	13 3 7	...	...	
	Metal collection at Nari quarry.	...	...	...	...	963	147	71	129	347	15 4 2	36 0 7	16th July 1897.	23rd July 1897.	This work was open only for a few days. Muram was collected.
17	NABAINPUR AND AHRAURA ROAD.														
	Metal collection at Ahraura	...	...	...	...	7,701	156	9	132	297	1 11 2	3 8 7	5th July 1897.	22nd July 1897.	This work was closed as no labourers would come.
	ROBERTSGANJ-CHOPAN ROAD.														
	Metal collection at Márkundi	...	...	...	...	5,468	134	26	398	558	...	...	26th July 1897.	24th August 1897.	This work was open for a short time; no labourers would come.
	METALLING MIRZAPUR-MARHAN ROAD, MILES 8 TO 11.														
	Metal collection	...	...	...	...	18,461	89	37	369	495	1 8 10	8 12 4	1st July 1897.	23rd August 1897.	
	Earthwork	...	...	...	125,603	...	399	116	244	759	3 2 9	6 0 9	...	...	
	Total	22	...	36	*41,229,175	275,713	211,483	27,361	55,292	294,136	5 1 1	7 0 3	...	...	

\* This includes 18,153 cubic feet muram, costing Rs. 179 and consolidation Rs. 217.

D.—Statement showing particulars as required by Chief Engineer in his No. 4380F., dated 18th August 1897.

Month and date.	1. Number of persons.							2. Total number of children who received cooked food.	3. Total expenditure.							Remarks.
	Workers.			Dependants.			Total.		(a) Works.		(b) Gratuitous relief.		(c) Tools and plant.	(d) Establishment.	Total of columns (a), (b), (c) and (d).	
	Men.	Women.	Children.	Men.	Women.	Children.			(1) Wages.	(2) Other items.	(1) Dependents.	(2) Hospitals, &c.				
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				
MIRZAPUR DISTRICT. From 8th January 1897 to 31st August 1897.	1,034,570	1,390,248	659,019	68,708	101,101	943,354	4,197,000	65,347	211,528	55,208	27,400	...	29,635	6,562	3,30,333	A.—It includes work establishment and other contingencies, such as hospital charges. B.—No separate account kept for hospital charges. It is charged to other items in which it is included. E.—This sum (Rs. 5,044) is incorporated in other items, though under hospitals, &c., in this statement only.
JAUNPUR DISTRICT. From 11th November 1896 to 31st July 1897.	1,120,697	2,007,035	719,415	22,420	37,885	H. 965,271	4,872,723	75,667	278,302	19,409	E. 5,044	12,318	F. 22,562	G. 3,37,635	3,37,635	F.—Under head establishment— Pay of naib tahsildar ... 5,943 Do. of work establishment, which is incorporated in other items ... 16,619 = 22,562 G.—Rs. 3,37,635 plus the amount of other items Rs. 90,588 after deduction of the sum Rs. 5,044 + Rs. 16,619, aggregating Rs. 21,663, which is a part of other items, i.e., Rs. 68,925. This item will correspond to the total sum Rs. 4,06,560 of Statement A. H.—Famine Code up to— 31st March 1897.. 8,00,394 In April 1897 for two works ... 49,359 Intermediate system from April to July 1897— Babies in arm ... 89,851 State kitchen ... 75,667 } 8,49,753 } 9,65,271 } 1,15,518
								+16,619 work establishment. +68,925 miscellaneous items. 8,68,846					5,943			

( 251 )

The 17th September 1897.

H. G. PASSANAH,  
Executive Engineer, Benares Provincial Division.

REPORT BY C. G. PALMER, ESQ., SUPERINTENDING ENGINEER,  
PUBLIC WORKS DEPARTMENT, ON FAMINE RELIEF WORKS  
IN THE ADDITIONAL THIRD CIRCLE, FROM OCTOBER 1896  
TO SEPTEMBER 1897.

Dated the 23rd September 1897.

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*Report on the Famine Relief Operations carried on by the 1st and 2nd Allahabad Divisions, Public Works Department, from October 1896 to the 15th September 1897, by C. G. PALMER, Esq., M. I. C. E., Superintending Engineer, Famine Relief Works, Additional 3rd Circle, Buildings and Roads Branch, Public Works Department, dated the 23rd September 1897.*

#### I.—INTRODUCTORY.

DUE preparations having been made in all districts, the actual relief operations were commenced by opening large works in the several districts in the following order:—

Jalaun ...	...	...	...	...	...	on 20th October 1896.
Bánda ...	...	...	...	...	...	on 26th October 1896.
Hamirpur ...	...	...	...	...	...	on 25th October 1896.
Allahabad ...	...	...	...	...	...	on 29th October 1896.
Jhánsi ...	...	...	...	...	...	on 10th November 1896.
Cawnpore ...	...	...	...	...	...	on 4th December 1896.
Lalitpur (Sub-division of Jhánsi)	...	...	...	...	...	on 10th January 1897.
Fatehpur ...	...	...	...	...	...	on 20th January 1897.

2. In Cawnpore and Fatehpur the comparatively favourable conditions permitted the closure of the last works in those districts on the 23rd and 31st of July 1897, respectively. In Jalaun and Hamirpur the last works were closed on the 18th and 23rd of August respectively. In Jhánsi and Lalitpur the last were closed on 31st August. During the first half of September there were five works kept open in Bánda and four works in the south of Allahabad; these were all closed on the 15th September. The departmental relief works in this Circle have thus been under continuous operation for nearly 11 months, and there was necessarily a great deal of preparation to be done before they were commenced, and a great deal of clearing up still remains to be done.

3. Lalitpur is now a sub-division of the Jhánsi district for revenue purposes; it used formerly to be a separate district, and in the Public Works organization it still remains a separate unit. This tract of country is so large (1,947 square miles in area) and so geographically separated from the Jhánsi district proper that it has seemed advantageous to leave its statistics separate. Again, the portion of Allahabad district lying to the south of the Jumna is, for the most part, under the geological and climatic conditions of the Bundelkhand districts, and is largely inhabited by the same races. It would have been too burdensome to divide the Allahabad records into two separate parts for all purposes, but the totals of the figures relating to attendance on the departmental relief works have been separated for the preparation of an Intensity Diagram, which is given as Appendix XII.

4. The accounts in general are still under compilation and adjustment, and in some cases the original accounts have but just reached the district offices from the works last closed, so that the figures given in this report are liable to small errors, and will not agree, in many points, with those which will appear in the final accounts after corrections and subsequent adjustments have taken effect. But it is not anticipated that the difference will amount to a sensible proportion in any of the larger results here brought to notice.

#### II.—NUMBERS RELIEVED, AND THE COST.

5. The first object of relief work is to preserve life and stamina among the people by affording efficient and immediate relief to those able and willing to work for it, and it is necessary to do that with all possible economy. The present chapter deals with the quantity and cost of relief afforded. The total numbers of persons who were relieved on the departmental works from the 20th October 1896 to the 15th September 1897 amounted to 114,014,064 "units of relief" altogether, of whom

92,329,557 were "workers" and 21,684,507 were "dependants of workers." A "unit of relief" is one person for one day. The "workers" included all persons, however weakly, so long as they were fit to do even a moderately passable tale of work, down to all the children of just seven years old : and the "dependants" comprised the children of seven years and downwards, with a few absolutely incapable adults dependent on the workers. The figures are given in detail, by districts, in Appendix I, attached hereto.

6. An examination of the figures contained in Appendix I gives the following results worthy of notice :—

(i) out of every 10,000 attendants on the relief works, taken over the whole course of their duration, the workers and dependants were distributed in the following proportions :—

<i>Workers.</i>			<i>Dependants.</i>		
Men	...	2,512	Men	...	87
Women	...	3,390	Women	...	115
Children	...	2,195	Children	...	1,701
		Total			Total
		8,097			1,903

If these proportions are stated as percentages, we find that 81 per cent. were workers and 19 per cent. were dependants. Only 2 per cent. were adult dependants, the remaining dependants, or 17 per cent. of all persons on the works, being children of seven years and under : or again, 26 per cent. were men, 35 per cent. were women, and 39 per cent. children.

(ii) Taking the proportions among the workers alone by themselves, we obtain the following percentages :—

Men	...	31 per cent.
Women	...	42 ditto.
Children	...	27 ditto.

(iii) Recalculating the proportions, so as to indicate the numbers of men, women and children for every 100 men-workers on the works, we obtain the following results :—

<i>Workers.</i>			<i>Dependants.</i>		
Men	...	100	Men	...	3
Women	...	135	Women	...	5
Children	...	87	Children	...	68
		Total			Total
		322			76
Total of both	...	...	...	...	398

This indicates a higher proportion of men than there were last year, and the difference is partly explained by (a) so much of the work having been done on the Intermediate system, (b) a larger proportion of the populace being present, (c) the immigrants from Native States bringing few women and children with them, and (d) partly, I fear, by there being a smaller proportion of children among the classes which have suffered so severely for two years in succession.

(iv) From the Native States we received a total of 1,306,565 units, or nearly 1·14 per cent. of the whole number relieved. More than half of these, or 773,638 units, were from Rewa, and most of them came into Allahabad. A separate detailed report regarding the immigrants from Native States has been submitted to the Chief Engineer. The cholera epidemics which occurred in Allahabad, Banda and Jalaun appear to be fairly traceable to infection brought in by immigrants from Native States.

7. The daily average number of persons attending the relief works is shown for alternate weeks in the following table :—

TABLE I.—Both Divisions. Average daily attendance in alternate weeks.

During the week ending,	Average daily attendance, workers and dependants, all districts.	Remarks.
1896.		
1st November	19,757	N. B.—The numbers here given are abstracted from the weekly reports as first submitted, and some of them have been slightly modified in the final returns, but the modifications are inconsiderable. C. G. PALMER.
15th November	49,584	
29th November	71,291	
12th December	111,557	
26th December	167,361	
1897.		
9th January	271,695	People leaving for the <i>mahua</i> and <i>rabi</i> harvests.
23rd January	391,998	
6th February	506,655	People returning after harvesting.
20th February	627,889	
6th March	653,208	The week of maximum numbers.
20th March	668,212	
3rd April	489,494	People streaming off after the rain and Jubilee holidays. A pause in dispersal caused by cessation of rain.
17th April	518,086	
1st May	632,431	Monsoon set in and people recommenced leaving rapidly.
15th May	685,077	
29th May	777,018	
12th June	751,492	
26th June	331,572	
10th July	260,078	
24th July	96,813	
7th August	39,283	
21st August	23,107	
5th September	10,854	

The rise and fall in numbers followed much the same course as in the famine of last year. The attendance gradually rose till it reached 653,000 persons in the first week of March, that number being about six-sevenths of the subsequent highest number. The people then went off to the generally favourable *mahua* and generally poor *rabi* harvests, so that by the first week of April the numbers had fallen to 489,000, or under two-thirds of the subsequent full numbers. They then rose to their full numbers of 777,000 persons in the last week of May, after which a fall set in. The promising rain which fell in the third week of June was immediately followed by two days of Jubilee holidays succeeding on a Sunday, and when works reopened on the 23rd June the numbers fell to 332,000 persons, or about three-sevenths of the previous full attendance. From the latter part of June to nearly the middle of July there was practically no rain, and while people left in some districts they came on the others, the net result being a slower diminution in numbers. But in the middle of July the monsoon set in with good rain, and the numbers fell off with great rapidity until the last works closed on the 15th of September.

8. *Children's kitchens.*—During the progress of the famine the supply of cooked food to children, in place of money, assumed a place of greater and greater importance. Soon after the close of the cooler months it began to be noticed that although the parents of little children were paid for them on the scale laid down in the Code, a large proportion of the smaller children were painfully emaciated in some districts, and were generally not improving in condition, but rather losing. This being brought to the notice of the Lieutenant-Governor at a conference held at Fatehpur on the 30th March, His Honor ordered the establishment of children's kitchens for the distribution of cooked food to children of seven years and under (not being in

arms) instead of payments being made to their parents. The change to be made wherever the Commissioner considered it desirable. With the Commissioner's sanction kitchens were successively established on all works in the districts of Fatehpur, Cawnpore, Allahabad, Banda, Jalaun, and Hamirpur, and on some works in Jhansi and Lalitpur. The scale of diet for a child for one day was 3oz. of rice and 3oz. of *dál* (weight of the uncooked grains), with  $\frac{1}{2}$ oz. of *ghí*, a pinch of salt, and occasionally a little turmeric or other common condiment. Half this quantity was cooked in the morning and half in the evening, thus giving each child two meals in the day. In the larger camps provision had sometimes to be made for 400 to 500 children a day. The quantity of rice and *dál* required for one meal for all the children of a camp was mixed together and boiled into a *khichri* in a sufficient number of large iron pots. When the grain was cooked the *khichri* was finished off with *ghí* and salt, and was then ladled out to the children, who had meanwhile been seated in rows within an enclosure to prevent scrambling and confusion. The cooked food swelled to over double its dry weight; the larger children received a little more and the smaller rather less than the six ounces. The food was excellent: I often tasted it myself. It was very generally stained with iron, but that probably increased its value for the anæmic children. Under later orders of the Lieutenant-Governor the feeding was extended to all very thin children between the years of 12 and 7, wherever the Commissioner considered it desirable.

9. The total number of children so fed amounted to 2,229,259 units of one child for one day; and the greatest number fed on one day was 43,760 in all the districts added together. The cost varied with food prices at different times and places, as it must always do; but the average cost was just over six pies per unit; or nearly double the *minimum* wage allowed under the Code. When the kitchens first opened many of the children were emaciated to a painful degree, and many were anæmic; they required good food and plenty of it. The subsequent improvement in their condition was unexpectedly rapid, and the results most satisfactory. Without these kitchens there must have been an enormous loss of infant life, and most of those who survived would have gone through life with weakened constitutions and frames, making them more or less of a burden on the community for long years to come. There is no part of the relief operations which has had more satisfactory effect in saving life and preserving stamina. The people were more grateful for it than for any other detail of the relief. It seemed to them a final proof of tender consideration; and I am sure that very many shared the feeling expressed by a small landowner in Allahabad who said, with oriental extravagance of phrase, "now the Sarkár has caused our children to live, wherefore we are altogether become its bondsmen" (the relation of "bondsmen" being here intended as one of unquestioning loyalty and trust). All officers directly concerned with the relief work now agree that, in all cases, children should be fed from the first start instead of allowances being paid to their parents.

10. *Field hospitals* were constructed of grass huts and screens at all points where required, and small separate huts were provided as isolated wards at every outbreak of small-pox. When a hospital had been used for a cholera epidemic, or had to take up a fresh position, the old huts and screens were burnt down and their sites disinfected with quicklime. The patients were given cooked food and not money; they were allowed sufficient attendants from among their own relations. The hospital huts and screens were made up from the general stock of shelter screens supplied to the works, and under the enormous masses of original accounts which have accumulated it is impossible to now pick out the cost of the hospital items. Similarly with the food of the patients, and the daily minimum wage of the relief workers allowed as attendants. I regret it is thus at this stage impossible to give any very reliable account of the cost of the hospitals, which is almost inextricably mixed up with that of the works they were situated on.



11. The outlay on the whole Public Works relief operations in the two Allahabad Divisions is represented in the following abstract :—

	Rs.
(i.) Cost of works, exclusive of gratuitous relief, but including all " works establishment " and all cost of materials not properly chargeable to " Tools and Plant " ...	72,85,759
(ii.) Gratuitous relief, including allowances to dependants, food to children, and wages to workers on Sundays, and when dispersed for cholera, and when on the march ...	13,91,618
(iii.) Establishment proper, including salaries and allowances of Military Officers ...	1,79,154
(iv.) Tools and plant ... ..	2,82,219
Total ...	91,38,749

As against this outlay there are certain assets which should be credited to the cost of the actual relief. These are—

- (i) the estimated value of the ordinary kinds of tools and plant now left on hand ;
- (ii) the probable sum which will be obtained by sale of the miscellaneous articles left on hand, such as bamboos, kerosine tins, utensils of various sorts, &c. ; and
- (iii) a certain portion of the sum which it would have cost to execute under ordinary rates the work which has been accomplished.

12. In the case of (i) the method of disposal has not yet been decided on, but the value which can be recovered may be estimated at not under one-third the original cost, and will thus amount to not under Rs. 94,000. In the case of (ii) the sales are not yet completed, but will probably amount to about Rs. 14,000 in all. In these cases the money recovered will naturally be credited to the original cost. But in case (iii) there must be considerable doubt on the point. The work actually performed consists of the improvement of unmetalled roads, the deepening of tanks and increasing water storage, the provision of stone-metalling ready to lay on roads. The cost of these works if carried out under similar circumstances by ordinary labour is dealt with in paragraphs 24 to 26 of this report.

13. Accepting these estimates we arrive at the following account of the net cost of famine relief :—

	Rs.
* Receipts by value of tools and plant ... ..	94,000
* Receipts by value of miscellaneous articles ... ..	14,000
Cost of the road work, <i>vide</i> paragraphs 24 to 26 ... ..	13,60,000
Cost of the tank work, <i>vide</i> paragraphs 24 to 26 ... ..	22,34,500
Cost of the stone-metalling and moorum... ..	53,750
Total receipts ... ..	37,56,250
Total outlay as per paragraph ... ..	91,38,749
Net cost of relief... ..	53,82,499

This outlay represents the cost of 114,014,064 units of famine relief, or an average of 375,046 persons relieved daily for a period of 10 months, or 304 days.

14. It represents more. The census of 1891 gave a total population of over

South Allahabad	...	393,800
Banda	...	705,800
Hamirpur	...	513,700
Jalaun	...	896,300
Total	...	2,009,600

two millions in the districts of Banda, Hamirpur, Jalaun, and South Allahabad. There is no doubt but that without the assistance afforded by relief works the actual mortality which has occurred in these four tracts of country would have been

exceeded by not less than 10 per cent. on the whole population. I believe this is a low estimate. But even so, it means that even leaving out of consideration all the benefits conferred on the remaining population of three and three-quarter millions in the other districts, and taking no credit for other benefits than that of saving life, the Government has ransomed some 200,000 human lives at the price of under twenty-seven rupees for each.

15. Analysing the gross expenditure as given in paragraph (11) it is found that the proportionate cost of the several heads of relief has been as follows:—

		Percentage.
(i) Works, exclusive of gratuitous relief as before	...	79.72
(ii) Gratuitous relief as before	...	15.23
(iii) Establishment and printed forms, &c., as before	...	1.96
(iv) Tools and plant	...	3.09
Total	...	100.00

The charges for establishment proper (inclusive of heavy printing charges for gang-registers and other forms) amount to under 2 per cent. of the outlay; and the gross charges for tools and plant to 3 per cent.; the remaining 95 per cent. has been spent on actual relief of the people, excepting a relatively small amount which has been paid to men of the works and petty establishment. Considering the hard times these men would have undergone without employment during a period of such general distress, I think that even their salaries may justly be reckoned as giving relief. In any case it would be a very small percentage.

Again, taking the *gross* expenditure as a basis, the average cost of relief works out to a sum of 15.39 pies per head per day, including all charges, and taking no credit for work done, or money to be subsequently recovered by sale of tools and materials, &c. This, it must be remembered, was done under the weight of a general grain price of eight to nine seers per rupee on the works, practically the whole time, for over 90 per cent. of the workers and attendants. The cost of dependants alone, including the time when the children were paid in cash, as well as the time when they were fed and not paid, works out from Appendix VI to a rate of 4.78 pies per head per day.

### III.—THE WORK DONE AND ITS VALUE.

16. The second object of relief works, always subordinate to the first, is to employ the available labour on works of utility and in the most advantageous manner, in order to get the work economically carried out, and to thus recover, by the value of work done, as much as practicable of the money which has been expended with the primary object of affording relief. The present chapter accordingly deals with the quantity and cost of work done, and it attempts to estimate the value of it. The enormous mass of labour at the disposal of the Department during the famine was employed on three kinds of work:—

- (i) embanking and otherwise improving unmetalled roads;
- (ii) deepening and otherwise improving tanks, including the construction of a few reservoir dams, and the excavation of a few new, or renewed, tanks; and
- (iii) collecting and breaking up stone-metalling for roads, including the transport of a large quantity, and some consolidation.

17. The figures are given by districts in Appendices II, III, and IV for roads, tanks and stone-metalling respectively. Examined in the gross they give the following results :—

- (i) *Roads*.—There were in all 1,244½ miles of road embanked to an average height of two feet, and to widths varying from 20' to 30 feet at the road surface ; the variation in width roughly corresponding to the importance of the road. The total quantity of earthwork executed amounted to 340 millions of cubic feet, executed at a cost of Rs. 3,152,623, exclusive of gratuitous relief, or a rate of Rs. 9·25 per thousand cubic feet.
- (ii) *Tanks*.—There were in all 1,013 tanks deepened or otherwise improved, including 14 new, or practically new, tanks in Lalitpur and Jalaun, and the work on filling in the moats around seven ancient village forts in Jalaun, which were in an insanitary condition from being so close to the villages. These figures include six great reservoir dams constructed in the Banda district. The total quantity of earthwork executed in these 1,013 works, classed under the head of Tanks, amounted to 436 millions of cubic feet, executed at a cost of Rs. 39,15,202, exclusive of gratuitous relief, or a rate of Rs. 8·97 per thousand cubic feet.
- (iii) *Stone-metalling*.—This kind of work was done in only six of the districts, Fatehpur and Cawnpore having none. The total quantity broken up amounted to 1,335 thousands of cubic feet broken to a gauge of 1½ inches, and turned out at 29 quarries, the stone of which varied in toughness from the hard sandstone used in Allahabad to the harder quartz and granite of other districts, and to one quarry of extraordinarily hard granite in Banda. There were also 1,875 thousands of cubic feet of hard *moorum* excavated and spread over 16 miles of road. This is a ferruginous earthy rock, it cannot be classed as stone, nor yet as earth, but being used as a covering to roads it has been placed under the heading of "Stone-metalling" to avoid opening a new head for so comparatively small an item. The cost of excavating and carrying *moorum* was Rs. 19,700, exclusive of gratuitous relief, giving a rate of Rs. 1·05 per hundred. The cost of transporting 215 thousand cubic feet of stone-metalling from certain quarries to adjacent roads within a distance of four furlongs has been included in the cost of breaking the stone, as has also the cost of consolidating the metalling on one mile of road in the Allahabad district. The latter items are inconsiderable compared with cost of breaking, and including carriage and consolidation (but excluding *moorum*) the cost has amounted as at present recorded to Rs. 1,98,223, exclusive of gratuitous relief. Thus giving a mean rate of Rs. 14·86 per 100 cubic feet. This is much more than it has really cost, because stone-breaking was the last work done, and it has, for the present, been debited with all the various settling-up payments, which form a large proportion of the comparatively small total expenditure against that head. This is shown by the very varying cost in the different districts. The real cost will probably work out to about Rs. 8 when adjustments are completed, and this rate includes the carriage and consolidation which was done.

18. *The roads* embanked are, in almost every case, very useful ones ; some are very important roads : others were getting into a very bad condition from erosion by carts and were being cut into by the floods which then ran down them in the rains. Under the rather stringent financial conditions of recent years it would never have been practicable to find money for the adequate repair of more than a very small portion of them ; and yet all were in want of it, and the local traffic of the country has been greatly facilitated by their repair. Regarded in this light, it

is certain that although the money expended on these roads is far larger in amount than any probable financial conditions would ever have justified the Government in laying out on them, yet the work done on them is of distinct economic advantage; and it will immediately tend to increase the economic facilities of the people, and thus indirectly affect the Government revenue at a later date, by better assuring the financial position of landowners and increasing the income from land.

19. In the Cawnpore district the very sudden drop in numbers which commenced in the middle of March made it impossible to connect up all the embanked portions of roads on which work had commenced, as after the fall took place there were never workers enough to do it, and thus there are a few breaches of continuity in the new works in that district. In all other districts the work is continuous in the few cases in which a road has not been quite completed. Among the more important roads which have been improved during the relief operations the following are specially noticed:—

*Allahabad district.*—The most backward part of the district is in the Karaon and Meja tahsils lying south of the Jumna and between the Tons river and Mirzapur district. In this tract there was no good road and practically no wheel traffic, everything being carried on pack bullocks. The earthwork of a good road has now been made from Meja road station to Meja town. A mile in length of it has been metalled, and very large quantities of stone-metalling broken up and collected for subsequent use. The road from Meja to Karaon has also been put into fair order. This is the great opening-up road of that tract, and when completely metalled its existence will lead to an advantageous extension in the use of wheeled conveyances, with which the people have become familiarized during the relief operations.

*Bánda district.*—The several roads radiating from Bánda into the northern parts of the district, where there is no railway or metalled road, have been greatly improved and will facilitate internal traffic.

*Hamirpur district.*—Two very important new roads have been made, (1) Ráth-Kulpahár, and (2) Ráth-Mahona Ghát. Ráth is the most important town in the district, and the first road connects it with the Indian Midland Railway at Kulpahár, while the second gives it access to the Jalain district across the Betwa river and on to the Cawnpore-Jhánsi Branch of the Indian Midland Railway at Orai. Two existing 2nd class railway feeder roads, (1) Mahoba-Kulpahár, and (2) Kulpahár-Jaitpur, have been surfaced with *moorum* and are now practically almost as good as metalled roads, or at least fit for traffic throughout the year.

20. *The tanks* constructed, deepened or otherwise improved, are of use in all cases, and in some they are of great use. In the Bundelkhand districts a tank or reservoir of water holds a position in agricultural economy which is of unusual importance. The ancient Bundela Chiefs knew this so well that they made numerous great reservoirs and tanks besides the thousands of village tanks that are scattered over the land. The vast majority of them are not mere holes filling up from all sides, but are situated on sloping ground with a strong bank on the lower sides and open at the upstream end to admit flood waters. The soil is mostly a very porous black-cotton overlying rock at no great depth, and the climate is arid with a fierce hot wind which is scarcely surpassed in any part of India. A westerly breeze is liable to spring up very soon after the rains, and again very early in spring, and it often stunts green crops, or even withers them up. The mere presence of a tank full of water seems, even without the direct application of irrigation, to in some degree protect the crops for a little distance around it. This is perhaps caused partly by some moisture yielded by percolation and capillary action through the very open soil, and partly by evaporation from the tank mitigating the dryness of the air and its power of withering. In addition to this important function the tank is ordinarily the sole watering place of the village cattle,

and its existence keeps up the water level in the village well, which is usually placed very close to the tank. Of direct irrigation there is comparatively little, and it is a very minor function of the tanks as a whole: yet even in this respect many of the small tanks deepened this year in the south of Allahabad have already been of use in supplying water for the irrigation of rice, which would otherwise have suffered from the deficient rainfall of September.

21. Taking these factors into consideration, the expenditure on tanks in the south of Allahabad and the Bundelkhand districts promises to be directly reproductive to the people in so far as it is represented by work done in increasing the storage of water; and to the same degree it will be indirectly reproductive to the Government by reflexion from the improved stability of agriculture. By far the greater part of the work done consisted of merely deepening the beds of long established tanks of proved utility, which had become silted up in course of time. All this work is a direct increase of the water storage. Practically the increase in storage capacity is rather more than the quantity of earth excavated, because the spoil earth has everywhere been used to repair or strengthen the containing dam which is at the lower end of almost every tank. Speaking generally I think that the storage capacity may be taken as increased by not less than 1·2 cubic feet for each cubic foot of earth excavated. This will form the basis of the storage calculations in a later paragraph.

22. In every district a certain proportion of the tanks worked on were necessarily left incomplete, in the sense that they were not made so large, or so deep, as originally intended, for work practically went on till stopped by rain, and as one tank was completed another had to be started. This however is not a matter of much importance in tank-work, because a hole dug in the bed of an existing tank adds to the storage capacity in proportion to its size, although the size may not be quite what was planned. The principal points of interest regarding these tanks are as follows:—

*Allahabad.*—There were 667 tanks operated on, all consisting of old tanks deepened; there were no new tanks. Most of them were deepened by 5 feet over an area of about 200 feet square, and were dug under the system of small works near the homes of the people.

*Bánda.*—In addition to the tanks deepened there were six great reservoir dams commenced. Four of them proved to have been originally designed on too ambitious a scale for completion this year and three of these were executed on modified designs. The expectation of completing them was based on the numbers of relief workers that had been employed on adjacent works in the previous year: whereas sanitary considerations, and in some works the difficulties in connection with water-supply, made it necessary this year to keep down the numbers congregated in one place. Five of these dams have been successfully carried out. Two have been completed as designed, namely, one at Tikri, close to Bánda, and one across the Sahaya Khagar *nálas* at Sarayán near Mánikpur. A breach was left in the lowest part of the latter to pass possible floods, and as it was being closed after completion of the rest of the dam, a flood came down on the 20th of June, before the filling was complete, and reopened the breach. This will be reclosed and thus complete the work. Three others have been modified in design so as to form very large reservoirs, though of smaller dimensions than originally intended. These are the dams at Dewárgan-ghati (“the gate of the Gods”), and Marjádpur near Karwi, and the “Ferard Tank” near the village of Khapta. The first of these tanks was also breached in the low place left to carry off floods, but on repair of the breach it will form a very considerable lake. The sixth dam, in Sidhpur near Karwi, could not be advanced enough to admit of completion under the slight modification which alone was practicable under the local conditions of the site. If another famine afflicts that tract the work should be taken up again and completed.

*Hamirpur.*—The only tanks of special interest are the very large ones at Maudha, Mirtala, and Girwar, which have all been restored and deepened and their dams raised and strengthened.

23. *In stone-breaking* there is nothing of interest to record excepting that practically the whole of it was carried out under an improved form of the modified intermediate system, in accordance with the Superintending Engineer's printed instructions issued with the approval of His Honor the Lieutenant-Governor. The works done under these instructions proved to be most successful of all, and especially so in obtaining an almost perfectly correct account of the progress in the original papers, the method of which saved much labour in making check measurements and friction arising from their results. The whole of the broken stone being of use for road construction or repairs, it forms an asset the value of which can be definitely stated.

24. *A comparison of the cost of this work* as done by famine labour with what its cost would have been if done by ordinary labour, involves a consideration of the enormous *quantity* of work done, and of its being carried on regardless of weather. The work ordinarily done by the Public Works Department is comparatively small in quantity and is done by the temporarily surplus labour population during the time most effective in digging, or else when labour is otherwise unemployed; and the ordinary Public Works Department rates are based on these conditions. If earthwork were required in large quantity, in quantities even remotely approaching those we are dealing with, and to be carried on throughout the hot months, it would be found impossible to get it done for the usual Public Works Department rate of Rs. 2-8-0 per thousand for earthwork. I doubt whether any reasonable addition to the rate would enable us to get this quantity of work done in an ordinary year in those districts, but, putting that aside, it is certain that a rate of not less than Rs. 4 per thousand would have to be given for the work and probably that rate would not get any large proportion of the work completed. In tank-work it is necessary to add Rs. 1-2-0 to this rate because of the great length of lead and height of lift on to the old embankments. In working with famine labour the lead and lift have little effect because carriers are so much in excess of requirements, but in estimating the cost by ordinary labour the lead and lift must be taken into account. As regards the *measurements* of work done, all officers have been very careful on this point, and the recorded quantities are the result of frequent check measurements: they are very closely correct.

We thus have the following comparative costs:—

#### ROAD WORK.

	Rs.
Cost by ordinary labour, 340 millions of cubic feet at Rs. 4 per thousand	... 13,60,000
Cost by famine labour, exclusive of gratuitous relief, as per paragraph 17-i	... 31,52,628
	<hr/>
Loss by famine labour	... 17,92,628
	<hr/>

Ordinary rate Rs. 4. Famine rate Rs. 9-4-0.

#### TANK WORK.

	Rs.
Cost by ordinary labour, 436 millions of cubic feet at Rs. 5-2-0 per thousand	... 22,34,500
Cost by famine labour, as per paragraph 17-ii	... 39,15,202
	<hr/>
Loss by famine labour	... 16,80,702
	<hr/>

Ordinary rate Rs. 5-2-0. Famine rate Rs. 9 nearly.

In considering the difference of rates it is necessary to bear in mind that nearly all the work of this circle was in black cotton soil, a soil of extraordinary toughness when baked dry by the sun, and one in which the weakly digger is proportionately far less effective than in soft soil. At the same time all comers were taken on and paid as workers, even the most weakly persons, so long as they could do a passable task of work: most of the weakly ones would have been starved out of any ordinary labour gangs unless unusually high rates were given them. The children also formed 27 per cent. of the "workers" and at least half of them were quite ineffective for labour. I have no doubt it would be better in another famine to treat the children under 12 years of age as "dependants," and give them cooked food instead of cash.

#### STONE WORK.

	Rs.
Cost by ordinary labour of 1,335,000 of cubic feet of metalling at Rs. 3 per hundred ... ..	40,050
215,000 carried and one mile of road consolidated ... ..	2,000
	-----
Total ordinary ... ..	42,050
Cost by famine labour as per paragraph 17-iii ... ..	1,98,228
	-----
Loss by famine labour ... ..	1,56,178
	-----

Ordinary labour Rs. 3. Famine labour (after allowing for carriage and consolidation at double ordinary cost, the breaking up comes to) Rs. 14-9-0 nearly. The overcharges to this small head of account are mentioned at the end of paragraph 17-iii.

#### MOORUM.

	Rs.
Cost by ordinary labour of 1,875,000 of cubic feet excavated and spread on roads, at 10 annas per hundred ... ..	11,700
Cost by famine labour as per paragraph 17-iii ... ..	19,700
	-----
Loss by famine labour ... ..	8,000
	-----

The hard sandstone around Sheorájpur (Allahabad district) is the softest we had to deal with. Large contractors around those parts pay the actual stone-breakers Rs. 1-9-0 per hundred cubic feet, and bear all other expenses themselves. The stone in Jhánsi, Lalitpur and Jalaun was a shade tougher; in Bánda it was very different in the different quarries, granite, quartz, sycnite were all broken there. One largely worked quarry of granite (at Mataundh) gave such a small outturn in experiments conducted by Captain Fisher at my request that I tried it myself, and came to the conclusion we could not possibly expect an ordinary able-bodied man unaccustomed

to the work to turn out more than two cubic feet of that stone broken to a  $1\frac{1}{2}$ " gauge. Taking all the circumstances of the case, I consider that a rate of Rs. 2-8-0 per hundred all round is certainly not *more* than we would pay a contractor for the same work done at leisure; and Rs. 3 per hundred is the least we should have to pay for that quantity done during the rainy season as this was. The breaking was everywhere most thoroughly supervised, as the establishment was well trained by that time. The gauging was so much better than ordinary stone metalling that I think a specification of 2 inches might have done instead of  $1\frac{1}{2}$  inches, and it would have given a much larger outturn. Stone-breaking requires a certain knack in handling the hammer which is not acquired at once, for which reason ordinary stone-breaking is done almost as a trade by people who work in families and become experts in a humble way. The whole of the work was done on the modified intermediate system of payment by results. Taking into consideration, then, the poor quality of the labour and the novelty of the work, I am sure that we got as much work from the people as they could give, notwithstanding the excess over ordinary rates.

25. Making an abstract from the findings of the last paragraph, we obtain the following results of the work done:—

#### ROAD WORK.

One thousand two hundred and forty-four and a half miles of road embanked and improved at a cost of Rs. 31,52,628; the probable cost of the same work being Rs. 13,60,000 if done by ordinary labour. The return to be expected is the same as in all other road-making, and consists of the economic advantages which will be reaped from improved facilities of traffic. No road brings in direct returns; all reasonably well placed roads bring in some indirect return: some more, and some less.

#### TANK WORK.

One thousand and thirteen tanks and reservoirs improved or constructed, and affording an increased water storage, amounting to over 523, millions of cubic feet at a cost of Rs. 39,15,202 as against the sum of Rs. 22,34,500 which the same work would have cost if done by ordinary labour. The return to be expected is a little greater stability in local agriculture, which will immediately, in its degree, have an effect on the condition of the people, and in some degree reduce the ill-effects of future droughts. These will ultimately be among the forces tending to increase the Government land revenue.

#### STONE METALLING AND MOORUM.

One million three hundred and thirty-five cubic feet of metalling provided at a cost of Rs. 1,98,228 (pending subsequent adjustments and including some carriage and consolidation) as against the sum of Rs. 42,050, which the same quantity and quality of stone alone would ordinarily cost to purchase from contractors at that season; and 1,875,000 of cubic feet of moorum dug and spread at a cost of Rs. 19,700 as against ordinary cost of Rs. 11,700.

26. The estimation of the value of the works executed may be considered from two points of view:—

*First.*—The value as measured by the cost of the same work if executed by ordinary labour. From the figures given in preceding paragraphs this may be stated thus:—



						Rs.
Road-work	...	...	...	...	...	13,60,000
Tank-work	...	...	...	...	...	22,34,500
Stone-metalling	...	...	...	...	...	42,050
Moorum	...	...	...	...	...	11,700
				Total	...	<u>36,48,250</u>

Thus the total expenditure on works compared with the effective expenditure was, on these figures, as Rs. 72,85,758 to Rs. 36,48,250, or as 100 to 51, nearly.

*Second.*—The value as works of utility to the country, without reference to their affording any direct return to the Government.

The economic value of each kind of work done has been discussed in the preceding paragraphs; and though the question is obscure, I think we have grounds for holding that the economic advantages afforded to the people are a sufficient, or almost sufficient, return for the *ordinary* cost of the work. That is to say, the whole of the work has some value, and it would have actually paid, or nearly paid, the people as a whole to have done the same work at ordinary rates of cost.

27. The quantity of earthwork done in proportion to each unit of relief, including dependants, affords the most logical basis for the calculation of the number of the persons which each work in a famine relief programme will give support to. The numbers of persons presumably requiring support during a famine cannot be estimated in terms of workers only, but in terms of the general population that will resort to relief works; nor can the cost of their support be foretold in rupees, because the wages vary with prices of food. The quantity of earthwork done per unit can be most conveniently, and perhaps most accurately, found by utilizing certain statistics drawn up in June last for Mr. T. Higham, Deputy Secretary to the Government of India, in connection with his tour in the famine districts. They deal with pure labour figures up to the end of May only, a period which covers the ordinary period of relief works, and during which the distribution of labour was not materially disturbed by the mixture of stone-breaking and moorum-digging. The work done includes a certain quantity of moorum, but the equivalent quantity of earthwork for it can be very nearly calculated by substituting four times the same quantity of earthwork. Treating the progress made up to that date in this manner, we arrive at the equivalent of 646,316,000 cubic feet of earthwork executed during the presence of the following numbers on the works: (i) 88,596,000 units of relief, including dependants; (ii) 71,289,000 units of all workers; and (iii) 2,206,000 units of all male workers (not diggers alone). From these we obtain the following results:—

- (i) *All units* of relief taken together will do an average of 7·3 cubic feet of earthwork per unit.
- (ii) *All worker units* taken together will do an average of 9·07 cubic feet of earthwork per unit.
- (iii) *All male workers* taken together, and including men employed as water-carriers, on conservancy, &c., will do an average of 29·1 cubic feet per unit.

No. (i) is of practical use as a means of estimating the numbers each work will support; and it shows that the supporting capacity of an earthwork will not be over-estimated if each lakh of cubic feet of earthwork is credited with the support of 13,000 units, including Sundays; or to 144 persons for three months, taking on all-comers.

The figures given as (ii) and (iii) are interesting; but not of any practical use, because the original accounts were not based on a system of keeping the persons employed on "task-work" separate from the "other workers," as is done in Bengal. The three sets of figures have been worked out from those given to Mr. Higham, quite independently of all figures given in this Report, but on a comparison with



*Staff specially posted or appointed.*

Officers of the Royal Engineers	...	...	...	...	...	4
Officers of the Staff Corps	...	...	...	...	...	9
Visiting Inspectors	...	...	...	...	...	27
Famine naib tahsildárs, or "officers in charge"	...	...	...	...	...	235
Medical Subordinates and Vaccinators	...	...	...	...	...	138
Work agents	...	...	...	...	...	409
Assistant cashiers and clerks	...	...	...	...	...	403
Tahsildárs or wages distributors	...	...	...	...	...	79
Muharrirs on relief parties, water-supply, tools, &c.	...	...	...	...	...	2,583
					Total	3,887

A statement of this staff is given by districts in Appendix XIII, and will be further discussed in a later paragraph.

31. The organization and methods of carrying on work followed the orders laid down in the rules issued by the Government of the North-Western Provinces and Oudh in December 1896, with some developments and further detailed orders which were found to be necessary in face of the enormous scale of operations. The people who came on for enlistment were registered and formed into gangs of 60 to 70 workers with their dependants (nearly all of whom were children). The persons in each gang were registered on the back of a "gang register," the gang was given a distinguishing number, placed under the charge of a "mate" chosen from among the relief workers, and assigned to a muharrir there and then.

The muharrir had charge of 6 to 10 gangs according to circumstances; these formed his "party," and it usually contained rather over 500 persons. As soon as a gang was assigned to a muharrir, he marched it to the tools store (usually a zareeba with a hut in the middle), got it supplied with tools and then marched it on to the works, impressing on the people various matters in connection with their work and daily life; such as the number of their gang, the name of their "mate," his own name, the work to be done, the task, how they were to sit when mustered for tally or wages, certain matters of sanitation and water-supply, &c. &c. The muharrir had charge of these men after that, and practically lived among them. He mustered them in the morning and called a roll, and again in the evening he mustered and paid them off for the day's work, deducting any fines for short work. He obtained his gang's wages each day from the officer in charge on the basis of his day-book and supported by the gang registers. Two of these ran currently for use on alternate days, and the one paid off for the day went in with the muharrir's day-book as voucher for the wages. It was returned to the muharrir next morning.

The officer in charge, or the naib tahsildár, was the local administrative authority on the spot, and responsible for the general conduct of the work and the expenditure. He was the general supervisor on the spot, and his duties were most onerous. The relief parties working under him were as far as possible kept down to 5,000 or 6,000 workers, by breaking off a fresh "charge" when the numbers ran up. In the earlier stages of the works, however, it frequently happened that a work was so rapidly "rushed" by new comers that the workers ran up to very large numbers for a few days. All returns, reports and original accounts were drawn up and submitted by the officer in charge, who had clerks and assistant cashiers to assist him.

Work agents looked to the laying out and measuring up of work, and assessed the fines which had to be inflicted for short tasks when the work was on the Code system.

Tahsildárs were a speciality of the Jalaun district devised by the Collector and the District Surveyor. They were respectable men, such as Government pensioners and men of good position, who were employed in the actual distribution of wages and had no other duties. The experiment was a success, but I doubt its practical value.

Medical subordinates and vaccinators were appointed by the Inspector-General of Hospitals and placed under the orders of the Superintending Engineer. There

was in general one to each relief charge, but not always enough for that. They were supplied with field hospitals and funds by the Public Works Department, and were generally looked after by the Civil Surgeon of the district.

*Conservancy and water-supply* were the special business of foremen appointed for that purpose and paid as muharrirs.

*Childrens' Kitchens* were managed in a similar way, all under the direction of the officer in charge.

32. The officials whose duties are described in the preceding paragraph formed the staff of a "relief charge": the higher officials had to overlook several charges, and were as follows:—

*Visiting Inspectors* were Public Works Department subordinates temporarily appointed to the post by the Chief Engineer, or else men of a superior class temporarily appointed by the Superintending Engineer on a salary of Rs. 120 to Rs. 180 per month, the higher salaries requiring the sanction of the Chief Engineer. They overlooked three to five charges in all respects, and originally worked under the orders of the District Engineer or District Surveyor; but in the districts or parts of districts where military officers were appointed, they worked under the general control of the military officer. When the officer was appointed a "Sectional officer," his control became complete, and the Visiting Inspector took orders from him alone.

*Military officers* did not arrive on the scene till early in February, and these were only the first arrivals; others came on much later. In their distribution local circumstances had to be taken into account. A very strong organization was required in the Allahabad district, and it was at once broken up into four sections. Two Royal Engineers and two Staff Corps officers being appointed to take entire charge of them, excepting in the compilation of accounts. These officers were called *Sectional officers*, and worked exactly as Public Works Department sub-divisional officers under the Famine District Engineer, excepting that they were not burdened with the accounts. The southern half of Hamirpur is remote and rather inaccessible from the district headquarters: the military officer posted to that district was therefore appointed as a Sectional officer in charge of the southern extremity. In other districts they were first appointed as *Inspecting officers*, that is to say without having any direct executive responsibilities; but, excepting in Banda, they were all sooner or later converted into Sectional officers, as it was found to more fully utilize their energies. In Banda the work was going on so satisfactorily and on so great a scale that it appeared inadvisable to disturb the existing machinery, and the three military officers appointed to that district remained inspecting officers to the end; but each having a separate tract of country to work in, they were practically working as Sectional officers by the time the works closed. I now feel sure it would have been better to give all military officers the duties and powers of sectional officers from the first. In all cases the military officers made inspection reports direct to the Superintending Engineer in the form attached as Appendix XIV, each charge being thus formally reported on about once in every three weeks.

33. The ordinary *Public Works Department subordinate establishment* present was utilized in various ways, mostly in professional work and matters of technical organization, in which they were of the highest value. A very much larger number of such men could have been employed with advantage.

*District Engineers* and *District Surveyors* had the general executive control of all the works in a district; they built up the whole organization below the Work Agent, made all arrangements for marking out and opening new works, for supplying tools and other plant at numerous sites, and in the required quantities with promptitude. Their office work was crushingly heavy and had mainly to do with keeping up constant and prompt supplies of money for each separate charge, in writing the very many reports, and supervising the compilation of the

numerous returns and very heavy accounts to be submitted. In most cases these officers received the assistance of subordinates specially attached to their offices; but even with that help, they have been worked to the uttermost that men are capable of.

The *Divisional* and *Superintending Engineers* were constantly on tour, and looked after every point of the work, going wherever their presence appeared to be most wanted at the time. The former had to deal with enormous masses of accounts as well, and the latter to also administratively supervise all matters in connection with the Departmental Works.

34. The following list of *articles supplied* is given as an example of the numbers of tools and plant and other articles it was necessary to procure at the shortest notice, and to transport and distribute in varying quantities to numerous centres. Nearly all of these centres shifted their position from time to time, and some were always at a great distance from headquarters and remote from a railway or a good road, these changes greatly increased the difficulties of correct and timely distribution of money and materials.

#### II.—TABLE OF TOOLS AND OTHER ARTICLES SUPPLIED.

Small shelter houses built (mud walling and thatch)	...	...	...	12
Portable shelter huts erected	...	...	...	842
Shelter screens distributed	...	...	...	146,813
Water casks and iron tanks	...	...	...	3,165
Iron buckets and kerosine tins fitted for water supply	...	...	...	47,178
Phaorahs	...	...	...	264,566
Picks and pickaxes	...	...	...	69,684
Hammers and jumpers for stone breaking	...	...	...	57,973
Bamboos made up into measuring rods 5 feet long	...	...	...	14,483
Baskets	...	...	...	1,963,721
Utensils for feeding children, all kinds included	...	...	...	2,285

It will be noticed the digging tools are greatly in excess of actual requirements, if it could have been foretold exactly where they would be required. This excess is caused by the necessity for being prepared at a great number of points for the "rushes" which are a feature of famine relief works when first opened, and which are certain to occur at some points, oftenest in the most unexpected places. This is one of the most harassing difficulties in relief works, and can only be avoided by opening works at an early stage and increasing their number by slow degrees. A very large proportion of the tools were not purchased, but were obtained by transfers, notably from the 2nd Circle of the Provincial Branch, which gave great help in this respect as those works began to close down, still they had to be procured, transported and distributed,

35. *Payment of wages* was carried out by the gang muharrirs in the manner described in an earlier paragraph. The wages were paid daily. In Jalaun a class of men named talvildárs were employed for the sole duty, and did their work with great accuracy; but the experiment was not extended to other districts. It is a curious fact that in several places where the experiment was tried of paying the wages of each day on the next, it was found that if men were paid about midday or a little later, a number of the workers more or less struck work after getting their wage, and the whole work distinctly slackened off. In general the wages were paid on the evening of the day they were earned. The payment of wages through muharrirs was very satisfactory on the whole. A few experiments were tried in paying through the mates: but they caused more trouble in subsequent complaints from workers than they saved in other respects, and the method proved less satisfactory than paying through muharrirs; more especially so as regards the welfare of the people. The mates or "headmen" were appointed from among the relief workers themselves in accordance with the principles of section 74 of the Famine Code. In the Bundelkhand districts, which are the most backward in these provinces, there are very few such men who can read and

write or keep accounts. To have paid the workers through their mates, and employed the latter in keeping up muster-rolls of attendance, would have required the importation of men from Oudh or the Doáb districts for the purpose. There were in all nearly 9,000 mates on the works: at least 7,000 would have had to be imported, which is impracticable: but supposing it could have been done, the cost would have been prohibitive. Such men would not come to Bundelkhand for less than Rs. 7 per month at the least, and their employment would have added over Rs. 40,000 a month to the expenditure. I have several times discussed this question with the officers in daily and practical contact with the work; and still consider that, as a means of ensuring that the money gets to the worker, we could not have improved on our muharrir system of payment with the men at our command.

36. The provision of *drinking water* was one of the greatest tasks of the famine. Wells were guarded, and all precautions taken in the manner laid down in the North-Western Provinces Rules for famine relief works; after the first cholera epidemic which suddenly burst on us in March, all wells were constantly disinfected with permanganate of potash, and this became an important part of the naib tahsildár's duties. For some works, as in the great dams around Karwi in the Banda district and on several works in Lalitpur, the water had to be carted in casks for a distance of 1½ to 3 miles. On one work in Lalitpur the water-carts alone cost Rs. 70 a day for nearly a month together, and it was unavoidable. The whole health of people congregated in large numbers in India appears to depend on the most scrupulous attention to their water supply, and any failure in this respect occurring after the latter part of February appears to be immediately followed by an epidemic of cholera. The work is necessary, but it is expensive and requires incessant vigilance. The fencing in of all wells from which water was being drawn was tried on several works, and proved to save more than it cost, besides giving very valuable additional security.

37. The *food supply* caused no special trouble. Baniyas and petty local traders of all kinds followed the camps from place to place; and made their own arrangements for carriage. A space was set apart for shops, and a chaprâsi or two kept a watch on them to prevent thefts or looting by the workers. As the works developed many of the bazárs were fenced in with light bamboo trellis work, leaving only open gates at the ends of the little street formed by the shops. This added to the security, and the cost was nominal. A few cases of looting the baniyas occurred; but if the enormous numbers of people on the works are taken into consideration, the number of cases becomes quite remarkably small. Each such case was investigated by the Magistrates, the offenders punished, and the cases reported to Government. The cases have not been registered in the Public Works offices.

38. An original line was struck out in connection with the food supply by Mr. J. E. Murphy, District Engineer of Cawnpore, and it seems to contain the promise of very useful development, which makes it worth special mention in this report. It was necessary to encourage and foster private trade by strict protection of the trader, and that was done. The baniya, *more suo*, immediately took advantage of the protection to form combinations for keeping up the price of every kind of flour and grain sold on the works. I believe that nearly all the looting cases which occurred owed their origin to these combinations, and to a well-grounded feeling of the people that they were being charged extortionate prices by the local sellers. To keep flour fresh and sweet for any time requires facilities not possessed by relief workers; but grain can be easily stored, and all agricultural Indians are accustomed to do it. Grain, again, can be purchased from numbers of small farmers, at farmer's prices; but flour must generally be got from baniyas, at dealer's prices. Mr. Murphy provided a number of the cheapest kind of stone hand-mills, and placed them at various points in certain relief camps, for general

use. Mr. Sutherland informs me the mills could be heard all over the camp as soon as work stopped, and well into the night. Thus the people appreciated and immediately utilized the facility given them to make their own flour; and were thus able to buy grain direct from farmers, or their own villages, and elude the bariya's monopoly tax. This is the most promising device I have heard of to defeat the retail trade combinations; and I regret it was not brought to my notice till too late for more extended experiment. The mills only cost a few annas each, and would repay their cost in a very short time by supplying the people with cheaper food than they can otherwise get, which would lead to a lower wage.

39. *Misconduct.*—There were many cases of misconduct ranging from irremediable carelessness or laziness up to criminal action. In all cases the offenders were dismissed: in the more serious cases the offenders were prosecuted before the local magistrate whenever there was a reasonable prospect of conviction. All the tried cases have been reported through the District Magistrate; of the others no record was kept: nor was it possible without using up very valuable time. Considering the dimensions and the rapidly-built nature of the organization, which led to many unknown men being employed, and considering the great temptations and the heavy strain under which work was being carried on, I think the cases of misconduct must be pronounced to have been less than might be expected. On the whole, we enjoyed a very remarkable freedom from more than very petty frauds, and I think some of it was due to no one having much time to hatch little schemes, though perhaps most of it was due to the activity of the officers directly supervising the works, and especially the military officers temporarily attached.

#### V.—SYSTEM OF CONDUCTING RELIEF WORKS.

40. The strict code system of conducting relief works may be described as a system of paying a meagre wage in return for a moderate task of work to be performed for it; but with the *proviso* that even if the task is not performed, a certain *minimum wage*, sufficient to live on, must be given. The provision of the minimum wage very largely defeats the provision of the task, because there is so little margin between the minimum and the ordinary wages that it is not worth really working for. Nevertheless the plain and simple Code system had been proved to undoubtedly effect the first object of relief works, namely, to *afford relief*, and relief works were opened on that system in the districts of Banda, Hamirpur, Jhansi (including Lalitpur), Jalann and Allahabad, in which the famine was most severe. Early in December 1896 a new system was devised for use, partly as a test of scarcity. This was the original Intermediate system of these provinces, as issued under G. O. No. 9099, dated 5th December 1896, and it was considered applicable to famine districts in which distress was less acute, while also ensuring a better outturn of work for the outlay. The system may be described as one of giving greatly extended employment to manual labour by means of very numerous small contracts in which the contractor is bound over to pay the workers at certain rates, is limited in the quantity of work he may do in a month, and is liable to lose his contract if he does less than a given quantity. The relief works of Cawnpore and Fatehpur were started under this system.

41. Complaints soon arose that the contractors would only employ the strong, and turned away the weak. There seems to be no reason in nature why a contractor who pays, and is paid, strictly by the quantity of work done, should prefer to have it done by strong people rather than by weakly ones: nor does it appear probable that, supposing a very large number of such contracts were given out, many contractors would prefer to forego their profit on the work rather than to make that profit by the labour of weakly persons. I personally, therefore, disbelieve in the truth of the complaints, and suspect that most of them originated with the vague complaints of professional mendicants, and of persons too weakly to really do any profitable work,

and specially the complaints of that very large class of the shiftless and nearly always destitute poor, who will carefully avoid and loudly complain of any system which may oblige them to really *work* for their living. I am inclined to rather believe that the contract rate was not quite high enough to tempt contractors in sufficient numbers to make the relief both effective and sufficiently distributed in area. But, however that may have been, the complaints were numerous and strong, and accordingly the works in Fatehpur and Cawnpore were converted into Code works to ensure relief reaching the people.

42. Under Government Resolution No.  $\frac{753}{8-73}$ , dated 16th March 1897, and in preparation for the harvesting operations, a modification of the intermediate system was issued, which provided for the works being conducted directly under the management of the Public Works Department without the interposition of petty contractors or middlemen between the Government and the actual labourers. The rates of earthwork and tasks were so graduated as to enable an ordinary family of labourers to earn the same as they did under the Code system; but they would have to work for it, and would be paid by results. No Sunday or dependants' allowances were admitted. The unit of work-account and the standard of wage adopted was a family of one digger and two adult carriers, who would be able to earn as much as their Code wages on the same basis of grain prices, with as much more as the Code allowances for two dependants would amount to. If a digger and his two carriers executed the "ordinary" standard task of 100 cubic feet, they would earn 14 pice among them; if they executed a "full" task, that is 25 per cent. in excess, they would earn 17 pice between them, being a pice more to each. In accordance with the orders contained in that Resolution, and after receipt of the Commissioner's sanction, the modified intermediate system was introduced on the 12-seeer scale of wages from the 2nd of April in Fatehpur and in Cawnpore, and from the 10th of April in the portion of Allahabad which lies north of the Jumna and Ganges. In Cawnpore and Fatehpur there were no further changes of system; but on the 22nd of April the Allahabad works situated on the Ganges and Jumna rivers were thrown back to the Code system on the Collector's report, and during the next two months they were again converted into modified intermediate works, by piecemeal, under the authority of the Commissioner. All these intermediate works were carried out as to details on the instructions drawn up by the Superintendent of Works after consultation with the Commissioner as to tasks and wages. In these instructions the family party of one digger and two adult carriers was used as the unit for theoretical calculations; but the working and accounts unit was enlarged to two such parties. A copy of the instructions is given as Appendix VII.

43. In practical work it was soon found that the small unit gave rise to very grave difficulties in forming working parties, and it multiplied the original accounts. Many family, or neighbourly, groups formed themselves into working parties without much difficulty, but many did not do so; and if uncongenial elements were formed into a party, they quarrelled and broke up next day. The mere labour of forming up these parties was very great; and it was constantly recurring. The process of checking their work was so laborious that supervision was deprived of half its efficiency, by covering only half the ground. The introduction of children, women, and weakly men only fit for carrying, became a most difficult task if they were much in excess of the strict proportions. The payments entered on gang registers could only be checked by a comparison of them with the separate accounts in the small books of each working party. All this friction and labour went on for over two months in the effort to loyally carry out the system in accordance with the orders issued. Fortunately the area and numbers to which the system was applied were comparatively small during this period.

44. In the middle of June there was general rain for some days, the 20th was a Sunday, the 21st and 22nd were a Jubilee holiday for all on the relief works by order of His Honor the Lieutenant-Governor. All workers and dependants present



on Saturday were, on that date, to be paid off up to Tuesday evening on the dependant's scale of wages. Orders were not given much in advance (presumably from the danger of their becoming known to people who would have crowded on to the works), and it required special measures to get them out to the works in time. This was, however, successfully accomplished, and 694,000 people were paid up on Saturday, and went off to their homes on Sunday, very happy and contented. From inquiries made I believe that nearly all the people really did understand this was a gift in commemoration of *some* event in relation to Her Majesty, and a large number understood what the event was.

45. Orders had issued in the meantime for all works to reopen on the modified intermediate system on the 23rd June; the Bundelkhand districts and South Allahabad on the 12-seer basis, and North Allahabad, with Fatehpur and Cawnpore, on the 14-seer basis. In the former districts, excepting in Jalann, nearly all the work was stone-breaking. A careful consideration of the problem had proved that the existing methods of conducting the modified intermediate system were altogether unworkable in the case of stone-breaking. Under these circumstances the Superintending Engineer issued a fresh set of instructions on the 21st June for stone-breaking by the intermediate system; they were approved by the Lieutenant-Governor and a copy of them is attached as Appendix VIII. In these there were three points of departure from previous rules:—

- (i) The small working-parties were abolished, and the gang as a whole was the unit: thus immensely reducing accounts and proportionately increasing the efficiency of checks.
- (ii) Weakly persons were most conveniently brought into the gangs along with the strong members of the same families, by merely debiting the gang with a lower task for each weakly person. It is quite impracticable to place weakly persons in gangs by themselves, because they are so generally members of a family in which others are strong, and if the members of a family are placed in separate gangs they all desert and re-enlist elsewhere.
- (iii) The work done was practically measured "up to date" by the fact of each week's work of each gang being placed in a stack by itself.

The work carried on under these instructions proved to be the most methodical and satisfactory work done during the whole progress of the famine relief works; and the workers very soon fell into methodical ways and got through their work with regularity.

46. A new set of instructions for intermediate earthwork was issued by the Divisional Engineer of the 1st Allahabad Division, at my request, on the 23rd June 1897, and was made applicable to earthwork in the 2nd Allahabad Division as well. They were on somewhat the same lines as the stone-metalling instructions; and under their operation the intermediate "parties" or "lots" were very soon absorbed into the gangs. These instructions are attached as Appendix IX. The modified intermediate system has thus at length come round to the Code system in appearance; but in reality it has two most significant differences. In the first place there is no *minimum*, and this has an immediate effect on the workers; secondly, the workers do not acquire a title to any wage by the mere lapse of time, but only by work executed: so that when paid a low wage they do not feel that they have been *finéd*, but only that they have *not earned* the money. When fined under the Code system the workers almost always lodged complaints against the work-agents or the muharirs; but they took the low intermediate wage without discontent; or at all events without any ill-feeling against the men who measured the work. This is a great relief and support to the minor officials who have to measure up and value the work, as they no longer incur the odium of constantly fining the workers. These differences lead to more work being turned out, and to more accurate measurements being taken, with less friction.

47. The *tasks* varied in earthwork from 65 to 125 cubic feet per day for an able-bodied digger, according to the quality of soil. Under the intermediate system there was a "full" (perhaps more properly described as an "extra") task of 150 cubic feet in the lighter soils of the Doab: and it was occasionally done, but very seldom; so far as noticed it was only the Lunia or professional labourer who ever completed the "full" task. In stone-breaking the "ordinary" task for a man breaker was five cubic feet in most quarries, the softest of them being a hard sandstone for which large contractors paid the regular stone-breakers one pice per cubic foot. This rate affords the practised hand a far better wage than an ordinary agricultural labourer could hope to get at the same work with our rate of six pice for five cubic feet, subject to a maximum of seven pice for six cubic feet. In the quartz and other quarries the "ordinary" task fell to  $4\frac{1}{2}$ , 4, and as low as  $3\frac{1}{2}$  cubic feet. In one particular quarry of extraordinarily hard granite (mentioned in paragraph 24 under stonework), it had to be reduced to two cubic feet.

48. *Wages* were fixed by the Commissioner in accordance with the wage table in the North-Western Provinces Rules, and in relation to the cheapest food grain in the condition it is retailed for consumption. The wages table appears to fix wages at a shade lower point than the Famine Code lays down. The actual price of grain was intended to be the basis, but it never was so. When grain sold at  $8\frac{1}{2}$  seers on the works the wages were fixed on the 10-seer basis, and so on with other rates: yet our long and very wide experience proved them to be ample. We thus have practical proof that the Code wages are too high and require reinvestigation.

#### VI.—LOCAL AND MISCELLANEOUS SUBJECTS.

49. The more prominent occurrences of each district which have not been reported elsewhere, are touched on very lightly in the following local notes:—

*Allahabad Division.*—The wide spread of the famine in the 3rd Circle made it impossible for the Superintending Engineer to overlook the whole of it as well as the ordinary work. The greater part of the famine was in the Allahabad Revenue Division, and the famine relief works of the two Public Works Divisions which cover the same area were formed into an Additional Circle for famine relief by the Chief Engineer, and placed under the charge of Mr. C. G. Palmer, Superintending Engineer, from the 1st February 1897: and Mr. A. R. Sutherland, Executive Engineer, was placed in charge of the 1st Allahabad Division from the 25th January 1897.

*Allahabad District.*—Great pressure was caused by an attendance of workers, very far in excess of the estimated numbers, according to which provision had been made by Departmental Officers, and it was increased by opening fresh works at widely separated points of the district. The two together made more work than it was possible for a District Engineer to carry on in addition to his heavy duties in connection with Allahabad itself. Under these circumstances the relief works were made into a special sub-division and placed under charge of Mr. C. E. Dupuis, temporary Executive Engineer, from the 1st February 1897, there being then over 120,000 persons on the works. The departmental staff was made up to unusual strength, and from that time till the end it carried on the entire work without outside assistance of any kind. A sharp epidemic of cholera which occurred in the Bara tahsil early in March could not be got rid of by moving the people, and at the same time the water-supply of the country to south of Jumna threatened to fail at several points where drawn on by large numbers of relief workers. Under these circumstances the Lieutenant-Governor ordered the large works to be replaced by small ones, of not over 500 persons to each, all over the south; and the people to be dispersed to the work nearest their homes. The orders are contained in the notes of Conferences held by His Honor at Lucknow on the 13th March and at Allahabad on the 20th March.

The operations ordered were commenced on the 22nd March and completed early in April. They included paying off 8,662 people for eight days at a cost of Rs. 4,699, and shifting altogether 89,000 persons from 16 large works on to over 250 small works, which had to be hastily selected, marked out, and started. The paying off the people gave our officers a little breathing time in which to get new work started. The operation was carried out by Mr. C. E. Dupuis, Lieutenant R. L. Morris, 3rd Bengal Cavalry, Lieutenant C. D. Mears, 8th Bengal Cavalry, and Lieutenant W. H. Bunbury, R.E. It was a little delayed by the outburst of another cholera epidemic in the Karaon tahsil while the shifting was in progress, and the unfortunate collapse of Lieutenant Morris with enteric fever before the work was completed. The beneficial effects of the measure were immediately felt, and were very great. The people had made no improvement in their condition for some months; but they now commenced to pick up at once, and there were no more epidemics of any consequence. Up to this time all the relief works were on the Code system and the 10-seer basis of wages. Now, however, at the same time that the whole system of works south of the Jumna was being broken up and recast, a change was also made all over the north of the district by the wages basis being altered to 12 seers in the Doáb and north of Ganges. On the 10th April another change was made and the intermediate system was introduced in the Doáb and north on the 12-seer basis. On the 22nd April, in accordance with the Collector's views, the Code system was reintroduced in the Doáb, but on an 11-seer basis. During May there were, on an average, 10 large works and about 350 small ones constantly in progress. On the 20th May another change was made by reintroducing the Intermediate system in the Siráthu tahsil of the Doáb; and on the 14th June it was extended to the Manjhanpur tahsil and the northern part of Chail tahsil, while at the same time a change was made south of the Jumna by altering the 10-seer wage into a 12-seer wage in a few charges in tappa Chaurási. Under the Commissioner's orders in force at this time there were four different combinations of wage and system working concurrently in the district. On the 23rd June the whole Doáb works were changed to intermediate on a 14-seer basis, and seven works were kept open in the Doáb and north. On the 20th June, when workers had been paid off for the Jubilee holidays, about 250 small tank-works (these had been closing off, and the workers concentrated, in preparation for the change) were closed in south Allahabad, and on the 23rd June nine large works were opened in their place on the Intermediate system and a 12-seer basis of wage. By the 2nd September the works were reduced to four works for the whole district: and the last of these closed on the 15th. I specially applied for the services of Mr. C. E. Dupuis for this district, and can only say I know very few other men who could have carried through this harassing work without a breakdown, and it had to be done entirely by the Public Works organization without any assistance from outside.

*Fatehpur.*—The works, commenced on the original Intermediate system on 20th January, were changed to Code works on the 12-seer basis on 12th February, and reverted to the "modified Intermediate" system on 2nd April. The wage basis was altered to 14 seers after the Jubilee holidays, and the last works were closed on the 31st July, being then almost deserted. There was practically no sickness. Children were fed from early in April.

*Cawnpore.*—The works started on the Code system on the 4th December 1896, and on the 12-seer basis of wages; on the 23rd December the wages were raised to the 10-seer basis, and on the 1st January they were raised to the 9½ seer basis: this led to a continuous rise in numbers, which lasted till the wages were reduced to the 12-seer basis by order of the Lieutenant-Governor; after which there was an immediate collapse. In the first week of April the Intermediate system on a 12-seer basis with childrens' kitchens were started: and the basis was altered to 14 seers after the Jubilee holidays. The works were almost deserted for some time before they were closed on the 23rd July. There was practically no sickness.

*Bānda, Hamirpur, Jhānsi, Lalitpur, and Jalaun.*—In these districts the works opened on the Code system and 10-seer basis on the dates given in the first paragraph of this report, and they closed on the dates given in the second paragraph. There was no change till after the Jubilee holidays, when the intermediate system was introduced on the 12-seer basis. The cessation of rain through the latter part of June and the beginning of July led to a partial reintroduction of Code work in July, but the re-establishment of the monsoon permitted a very early return to the Intermediate system. The local departmental officers in these districts, as well as in Cawnpore and Fatehpur, received such constant assistance from the Collector and his whole staff that their work was made possible without the development of any specially strengthened organization in connection with the District Engineers and Surveyors. Childrens' kitchens were introduced in all these districts with beneficial results.

50. The first two violent epidemics of cholera were brought into south Allahabad from Rewa in the beginning and the end of March; after these there were no more unmanageable attacks, but Hamirpur experienced a sharp attack which commenced on the 17th May, spread over eight camps and was got under some control early in June, but lingered on till near the end of the month. Lalitpur had two minor outbreaks in April, which only spread to two works. An outbreak in May was more severe but was stamped out by the efforts of Mr. Hoar, C.S., Lieutenant Anderson, Inspecting Officer, and the District Surveyor. In Jalaun there was an outbreak in June which was supposed to have been introduced from Gwalior, and was successfully stamped out in a few days.

51. The experience of the present famine and latter part of the preceding one affords the highest presumptive evidence of the value of *permanganate of potassium* as a disinfectant in cholera. During April 1896 we were attacked by cholera, and could not in any way get rid of it except by marching the people from place to place till it died out. We felt all the time that we were not combating it, but simply running away till it was tired out. Under this difficulty I consulted Professor E. H. Hankin of Agra on the subject, and he immediately furnished me with instructions on the use of permanganate of potassium, which were issued to all on the 18th April 1896; but the permanganate did not come to hand till May. In the succeeding epidemic of May 1896 the permanganate was used somewhat perfunctorily and without any understanding of its importance, or much belief in its efficacy, on the part of the Officers-in-Charge and the Visiting Inspectors: its use, however, extended. The disinfection of wells is strongly insisted on in the Public Works Department Rules issued in December 1896, and they enforced general attention to the point. The first March epidemic in Allahabad was earlier than expected and caught us in the midst of a struggle with other difficulties, without a large enough supply of the drug at hand. A supply of 1,700 lbs. of permanganate was at once ordered (ready made up in 5 lb. boxes of 2-ounce packets) and obtained with difficulty: meanwhile the epidemic raged in just the same ungovernable way as last year. In April we got the drug well distributed at all points and the disinfection of wells going on everywhere, whether apparently contaminated or not. After this there was no more mere blind running away from cholera, but we were able to fight it, and we did so with early success in every case excepting the attack in Hamirpur. All officers on the relief works got to thoroughly believe in the efficacy of the drug and much attention was given to its use. Many zamindars asked for packets of it for use in wells which were not near our works, and many others asked us to disinfect their wells for them. Under the name of *lāl dawā* this drug is now familiar in every hamlet of the Bundelkhand districts and is largely believed in. It has been often shown how impossible it is to ensure disinfection, very picturesquely shown by Professor Hankin in many cases, but there is no reasonable doubt that in permanganate of potassium we have a most valuable ally in combating these baneful choleraic epidemics. Altogether we used up about 1,950 lbs. of the drug;

and the small practical point of having it ready made up in 2-ounce packets, packed 40 in a tin box, was found to be of the greatest assistance in facilitating its use. The simple directions now are, to go on putting in half a packet at a time till the water retains a faint pink colour for four hours; and to repeat the dose every week, preferably on a Sunday.

52. The daily average number on works is given week by week for each district in Appendix X, but as a means of exhibiting and comparing the local movements of numbers on relief works Mr. Sutherland suggested drawing a diagram of them, and he has been good enough to prepare for me the two diagrams which are given as Appendices XI and XII of this Report. The first is a diagram of the *average daily attendance* in alternate weeks; the second is a diagram of the *intensity of distress*, as shown by the percentage of the populace on the works at the same periods. An examination of these diagrams reveals more than could be so forcibly shown in any other way. Appendix XI pictures the marked temporary effect of the harvesting in all districts; the sudden collapse of numbers in Cawnpore as soon as wages were reduced below the point at which they competed with private employment; the marked increase which followed the introduction of small works in the south of Allahabad; the sudden fall which universally followed the rain of June, so opportunely succeeded by the Jubilee holidays, which sent people home. It pictures the recommencement of fear and distress caused by the long break of rain extending to the second week of June: and it shows the efficacy of relief given by small works near their homes, in that Allahabad alone, of all the severely stricken districts, showed no actual rise in numbers during the temporary hesitation of the monsoon.

Appendix XII compares the numbers on the works with the population, and thus pictures the intensity of distress. For the purposes of this diagram the numbers in south Allahabad have been separated from those of the north and Doáb, showing a startling difference in the intensity. The apparent intensities of Cawnpore and northern half of Allahabad have, however, been unduly lowered by the presence of large city populations which do not largely attend such works. The first noticeable feature is that the intensity of distress is in more or less rough *inverse* proportion to the density of the population. In an agricultural population the density of it is an effect of the prevailing agricultural advantages, and a sparse population is the effect, and may be accepted as the expression, of agricultural disabilities. Population does not tend to create famine, but the conditions which have created a dense agricultural population are favourable to its continuance, for they must have acted uninterruptedly through long periods. The country of scanty agricultural population is the country where natural checks have prevented its increase: it is the country of famine. The diagram brings out the result that although the numbers in Banda were much greater than in Jalann, the relative distress was not nearly so unequal, and the intensity of south Allahabad was far greater than either; the attendance in that tract amounting to 53 per cent. of the populace for six weeks. The flat top of the south Allahabad diagram during that period shows that under the village works system a stable maximum of relief was attained and preserved. The regular slope from the 5th of June shows people going off to their ordinary pursuits in anticipation of rain, and in orderly progress. The continuous fall through July, when other tracts rose, shows how effective the village works had been in giving relief that could tide the people over small troubles. Both the diagrams repay a careful examination.

53. Different views have been taken regarding the comparative advantages of *small works near villages*, as compared with large works to which some of the attendants must travel a considerable distance. In the small works there is the loss of the "distance test," and consequently many more people come on than otherwise would. On the other hand the "distance test" is to a great extent fallacious even with large

works, because a very considerable proportion of the workers come from the nearest villages: and it must always remain partly inoperative unless the works are situated in a desert and five miles from everywhere. So far as it is operative it is a waste of power which might have been better utilized. Speaking from a fairly wide experience, and after constant discussion of the problem with the officers directly engaged on the work, I think the argument for small works may be fairly put in the following form. Nearly all agriculturists have some sort of local resources; with small works they are able to utilize all such resources while eking them out with the help of relief wages; and they do so. With large works the people who fulfil the "distance test" will stay at home till their own resources are fallen below the point of supporting them without other assistance, and then they must abandon what remains and go on the works. For this reason smaller wages will support the people on small works near the villages than on large works at a distance. In the case of small works the people being still at their homes can practice their usual small economies, utilize their small local resources, and make their usual arrangements for the coming season. Large works deprive them of all these, and the State must provide the entire livelihood, instead of mere assistance. In large works, village and home life is broken; the women are sometimes demoralized by the change of life: shelter, water, food arrangements, and hospitals must be provided at great cost; and the danger of epidemics is vastly increased. The people in their discomfort cannot really do so much work when camped out at large works as they can near their own homes. Almost all agriculturists possess, or can borrow, digging tools, and are willing to use them on piece-work near their own homes; if this is taken due advantage of a slightly higher rate could be paid for work done with their own tools. To sum up, I am convinced our experience shows that the general institution of small relief works, where they are practicable, accompanied by an allowably smaller wage, and very slender provision for tools, water, shelter and hospitals, will give a more effective relief, spread over a greater area, and at less cost than the large works; comparing them both by cost per unit relieved and in gross. With small works a greater proportion of the money spent will go directly into the hands of the people by savings in miscellaneous items, and the people will suffer far less from epidemics: above all, they will be in a better position to make preparations for the coming season.

54. *The feelings of the people* with regard to the relief afforded them is a matter of great interest, and ultimately of great importance for the future. In the Bundelkhand tracts (including south Allahabad) their bearing towards all officers of the Government has changed much in the last two years. They well know the country would have been practically depopulated but for the relief afforded by the Government. The manner of the little children is the most changed. A year ago they ran away at sight, or stood afar off in anxious watch. The children have been fed (and most of the muharrirs who managed kitchens must have been locally selected for their kindness to children), and now they fear no more, not the long-coated *munshi-ji* so much more clothed than is ordinary and natural in their eyes, nor yet the *sahib* in curious clothing and a vast hat, and always dripping with perspiration on any comfortable day. They talk openly and fearlessly, often trotting along by one's side without any invitation. Young lads and children have keen ears and close memories; their looks and manner are the surest indications of what kind of pictures their parents paint in home-talk. The pictures must be in warm and glowing colours; a little contemptuous, perhaps, as of men who dispense charity without becoming any the richer for it, yet pictures which are friendly and comfortable, and depict men not too exalted or too sharp sighted for a child to feel at home with. This utter confidence of the children is a curious and very touching thing to see: it is so new and comes so naturally now. It is well if it can last.

55. *The Sunday holiday* has been proved to be a necessity for the health of both the staff and the workers. The former enjoy a slight easing of the usual tense effort and labour on that day. The latter wash themselves and their clothes and

look to their private affairs ; many go off to their homes and fetch a fresh supply of locally purchased food a little cheaper, or more to their taste, than what the *bania* sells on the works. There is no difference of opinion as regards the Sunday holiday, but the gratuitous allowance for Sunday brings two evils in its train. It requires somewhat labourious special precautions to prevent a mob of loafers joining as "new comers" on Friday evening, with the object of getting the "new comer's food dole" and the Sunday cash allowance, in addition to Saturday's wage and in exchange for as little work as it is possible to get off with. It alters the sum payable to each person on Saturday, and thus throws out the ordinary routine of payments, besides necessitating a double set of wage entries and calculations which throw more work on an overtaxed staff. The more complex compilations which have to be made from these entries next day seriously eat into the small pretence of a Sunday holiday, which the staff might otherwise enjoy. It would very tangibly simplify all accounts to provide for subsistence on Sunday by an increase in the earnings of working days, just as occurs in the ordinary conditions of labour. To provide for necessitous new comers on a Sunday the Officer-in-Charge might be empowered to give a dole of cooked food to any of them who appear to be really starving. This would be conveniently given along with the childrens' food, but only to the starving. The necessity for immediately compiling and despatching the week's returns, so as to reach Collectors on a Tuesday, eats up most of the remainder of the holiday. It would make the intended holiday much more of a reality if the week ended on Thursday for purposes of account, and if the Sunday allowances were merged in those of the working days : the Saturday's units of attendance being repeated on Sunday for purposes of computation only.

56. The distribution of *cooked food to all new-comers*, as enforced by the Code, is almost pure waste of money. The allowance can only be based on the unexpressed hypothesis that the people had resources of their own to live on up to the day before they reached a relief work, but those resources dried up on the day of their arrival. The hypothesis only requires plain statement to carry its own refutation. Even when the cooked food is mere parched grain it leads to numbers of idlers from adjacent villages, with youngsters "on the lark," coming on the work of an evening to see the *tamasha* and have a chat with their friends. They then fall in as "new-comers," get their dole of grain, eat it in cheerful company, and presently disappear till another evening. The accounts for the distribution of this food are very difficult to keep a satisfactory control over, and for purposes of relief it would be quite sufficient if new comers were given no dole unless the Officer-in Charge considers them to be actually starving.

#### VII.—SERVICES OF OFFICERS AND OTHERS.

57. A complete roll of the Public Works Department ordinary staff is given as Appendix XV, and it is within the truth to say that no single member of it has shirked his work ; every individual in it has done heavier and more harassing work than he ever did before, and almost every man has worked more successfully than we had any right to hope for. The task of selecting names for special mention is thus embarrassing from the number that would deserve mention under ordinary circumstances. I therefore mention the officers who were exposed to the highest strain, and the subordinates who showed special qualities. They are mentioned in the order of their standing. The following officers are placed by themselves, both in consideration of the magnitude of their work, and of the success with which it was carried out :—

Mr. R. C. Battie, Executive Engineer, 2nd Allahabad Division.

Mr. A. R. Sutherland, Executive Engineer, 1st Allahabad Division.

Mr. C. E. Dupuis, Executive Engineer, in charge of the Allahabad Famine Relief Sub-Division.

Mr. R. M. Thompson, Honorary Assistant Engineer, District Engineer of Banda.

Pandit Kula Nand, Rai Bahadur, Supervisor, District Surveyor of Jalaun.

Mr. A. Cuerden, Supervisor, District Surveyor of Hamirpur.

58. The following subordinates have been specially noticed in the districts in which they served :—

*Allahabad*.—Munshi Mahomed Hadi, Sub-Overseer, 3rd grade, promoted to Visiting Inspector early in the famine.

*Cawnpore*.—Babu Sita Nath Mythi, Overseer (temporary rank), was recommended for his work in Banda during the previous famine and is again recommended.

*Banda*.—Babu Bhagat Ram, Overseer (temporary rank), for his general supervision of nine heavy charges.

Munshi Mahomed Husain Khan, Sub-Overseer, for general supervision of two charges in addition to that of the issue of all tools and plant to 24 charges.

*Hamirpur*.—Mr. J. E. Myers, Overseer, 2nd grade, as Assistant to the District Surveyor and for special work during outbreaks of cholera.

Babu Harnand Lal, Sub-Overseer, 2nd grade, for excellent work throughout.

*Jhansi*.—Babu Nadir Lal, Overseer, 2nd grade, for excellent work in charge of a section.

*Lalitpur*.—Sayid Asghar Ali, Overseer, 2nd grade, for general assistance, and overlooked technical work.

*Jalaun*.—Pandit Lakshmi Shankar, Overseer, 1st grade, for general assistance in organizing and special assistance in all office work.

The subordinates not mentioned here did very good work and deserve any ordinary promotion or increment which may come their way.

59. *The Military Officers* appointed to famine duty have earned the highest praise. The work could not have been carried on without their devoted exertions and assistance. They supplied the unceasing inspection and local guidance which is a necessity for these works, and in many cases they practically managed the whole executive work of their sections. They went out in all weathers and were on the spot at every outbreak of cholera or other difficulty. I have nothing but praise for their zeal and effective work. The following officers have all done excellent work and are specially recommended for their services :—

*Captains*—In the order of joining famine duty—

A. D. C. Pond	...	... 5th Bengal Light Infantry.
D. F. Stuart	...	... 11th Bengal Infantry.
J. Fisher	...	... 1-2nd Gurkhas.
M. Stevens	...	... 13th Bengal Infantry.

*Lieutenants*—In the order of joining famine duty—

R. L. Morris	...	... 3rd Bengal Cavalry.
C. L. Magniac	...	... Royal Engineers.
W. H. Bunbury	...	... Royal Engineers.
C. D. Mears	...	... 8th Bengal Cavalry.
E. A. Tandy	...	... Royal Engineers.
C. B. L. Greenstreet	...	... Royal Engineers.
R. E. Cheyne	...	... 8th Bengal Cavalry.
N. C. Anderson	...	... 8th Madras Infantry.
G. Thomas	...	... 5th Bengal Cavalry.



60. *The Officers-in-Charge* of the relief charges were nearly all appointed by the Board of Revenue, either from among náib tahsildars and other officials, or from the Board's approved list of candidates. Taken as a whole they were exceedingly good men. The strain upon an Officer-in-Charge of relief work is very heavy, both in the responsibility and the actual labour, and it is unceasing. His whole day and much of the night is taken up with work; he is responsible for everything; he must overlook everything; and is called upon to decide some point almost every hour of the day. A single slip may prove to be his undoing. The work is also done under conditions of the most trying exposure and hardship for months together. The men who, being suddenly placed in such a position, have been able to carry on their duties with success and credit are men who will do any work they may hereafter be put to, and do it well. Among even those who broke down or failed at some point, there must be a number who would have done well under conditions less trying to strength, health, temper, and nerve. The high proportion of those who have done well shows the men must have been selected with great judgment. Lists of men specially recommended have been separately submitted to the Chief Engineer with detailed information regarding the men, and a copy of the names in those lists is given as Appendix XVI. There are many others who have done well although not specially recommended, and all have been given certificates in accordance with their work. Particular mention is made of Babu Sri Krishen Lal of the Allahabad district; his qualifications have proved to be quite exceptional.

61. Among the men temporarily appointed as *Visiting Inspectors or as Work Agents*, a certain number have shown special qualifications which deserve notice. A list of all such men is given as Appendix XVII, and it is hoped that their good work on the famine may be a recommendation for other employment. Particular mention is made of Mr. F. L. E. Purvis, Banda district; Mr. A. E. Hobbs, Allahabad district; and Mr. J. W. Cox, Banda district—all of them Visiting Inspectors. All have been given certificates in terms proportionate to their services. The generality of the Work Agents were, as a whole, the least satisfactory feature in the organization, for the supply of suitable men is not equal to the requirements of an organization of such dimensions. If so widespread a famine has to be grappled with again it would be better to employ a large number of selected men from among the non-commissioned officers and privates of the Army, both British and Indian, as they could easily learn the duties, and they would possess a most desirable habit of order and discipline.

62. The great number and variety of orders to be issued, the very heavy correspondence necessarily kept up, and the enormous mass of original accounts to be dealt with threw a very severe strain of work on the Accountants and Clerks of all the Departmental Offices, and they met it by continuously working overtime, sometimes to the extent of four hours a day. It has been a very hard time for the Accountants and Clerks as well as for the Executive Establishment, and their case has been dealt with under a separate report.

63. It is a pleasing task to record the assistance received from native gentlemen, as detailed in the following statement:—

*Allahabad.*—Lala Debi Parshad, Contractor and influential resident of Allahabad, placed his whole establishment and organization at the disposal of the Public Works for distribution of tools and materials all over the district. This was of peculiar value south of the Jumna, where there are practically no wheeled vehicles to be obtained.

*Fatehpur.*—Lala Khushwakht Rai, Vice-Chairman of the Municipal Board, carried on a large relief work in Fatehpur town under the original intermediate system, in which he must have spent his own money besides giving his time to it.

*Bānda.*—Srimant Rao Balwant Rao Harijai, *Rais* of Karwi, placed a large *bāoli* and a large well at the entire disposal of the Public Works Department when the supply of ordinary wells fell short. Practically the whole supply for over 12,000 persons was drawn from these two wells for some months, and it would have been most difficult to get it elsewhere.

Munshi Ali Hasan Khan, zamindār of Hardauli, came forward in the most liberal way and provided shelter for famine coolies in the winter, when shelter screens could not be sent out quickly enough for the numbers who flocked on.

*Hamirpur.*—Sheo Darsan Singh, zamindār of Magraot, tahsil Rāth, lent two large tents to the relief works, of his own motion.

*Bānda.*—Kunwar Pakhar Singh, zamindār of Bagra, gave general assistance in the management and provision of relief camps near his estates.

64. The undermentioned Medical Subordinates are recommended. In most cases for good work done during the prevalence of epidemic disease in the charges they were connected with—

<i>Allahabad.</i>			
Abdul Rahman Khan	...	...	Hospital Assistant.
Shere Ali	...	...	Ditto.
Anant Parshad	...	...	Ditto.
Mahomed Baza	...	...	Vaccinator.
<i>Fatehpur.</i>			
Mahomed Ghafur	...	...	Native Doctor, Police Hospital, Etāwah.
<i>Cawnpore.</i>			
Chandar Dat Joshi	...	...	Hospital Assistant.
Lachmi Narain	...	...	Ditto.
<i>Bānda.</i>			
Jwala Singh	...	...	Hospital Assistant.
Ram Lal Das	...	...	} Ditto.
Brij Lal	...	...	
Ganga Parshad	...	...	
Amir Husain...	...	...	Military Hospital Assistant.
<i>Hamirpur.</i>			
Cheda Lal	...	...	Hospital Assistant.
Munim Hussain	...	...	Vaccinator.
<i>Jhānsi.</i>			
Imdad Ali	...	...	Hospital Assistant.
<i>Lalitpur.</i>			
Ram Kumar Lal	...	...	Hospital Assistant.
Rammo	...	...	Compounder.
<i>Jalaun.</i>			
Bhaiya Lal	...	...	Military Hospital Assistant.

65. *Obituary.*—I regret to report the following deaths among the staff; the men all died in the execution of their duty:—

<i>Allahabad.</i>			
Of cholera.			
Mr. M. V. Ferguson	...	Work Agent	13th April 1897.
*Jagdamba Parshad	...	Muharrir	11th March 1897.
*Lakhpat Bai	...	Do.	15th March 1897.
*Nur Mahomed	...	Do.	10th April 1897.
Subhan Ali	...	Do.	8th May 1897.

\* These three men were volunteer cholera attendants under Lieutenant Mears, VIII Bengal Cavalry and died of cholera while attending their patients.

*Fatehpur and Cawnpore: No deaths.**Bānda.*

## Of cholera.

Bhawani Dat	...	...	Work Agent	...	...	12th April 1897.
Kanahya Lal	...	...	Do.	...	...	5th May 1897.
Biazat Hussain	...	...	Do.	...	...	7th May 1897.
Iman Khan	...	...	Do.	...	...	31st May 1897.

*Hamirpur.*

## Of cholera.

Vindbashni Parshad	...	...	Officer-in-Charge	...	...	3rd June 1897.
Sita Parshad	...	...	Work Agent	...	...	7th June 1897.
Hafiz Ali	...	...	Muharrir	...	...	5th June 1897.
Ram Dyal	...	...	Do.	...	...	5th June 1897.
Bhagwan Sahai	...	...	Do.	...	...	7th June 1897.
Kirpa Ram	...	...	Do.	...	...	22nd June 1897.
Gaya Parshad	...	...	Do.	...	...	6th June 1897.
Abdulla	...	...	Do.	...	...	22nd June 1897.
Jagannath Parshad	...	...	Do.	...	...	5th June 1897.

*Jhānsi: No deaths.**Lalitpur.*

## Of cholera.

Ajudhya Parshad	...	...	Muharrir	...	...	7th May 1897.
Makhbul Husain	...	...	Do.	...	...	7th May 1897.
Muhammad Husain	...	...	Do.	...	...	8th May 1897.

*Jalaun.*

## Of cholera.

Rahmat Hussain	...	...	Assistant Work Agent...	...	...	12th July 1897.
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## Of dysentery.

Jaggannath	...	...	Time-keeper	...	...	December 1896.
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66. In the recommendations of officers I beg to mention the name of Mr. W. P. Housden, Executive Engineer, who has acted as my Personal Assistant. The mass of correspondence and office work has necessarily been very heavy throughout, and Mr. Housden has managed the whole of it. He took personal charge of the heavy work in connection with appointments, with keeping up the district supplies of the special forms required, and latterly with the compilation of statistics. Most of my time was necessarily spent on tour, and my work could not have been got through without his very effective assistance.

C. G. PALMER, M.I.C.E.,  
*Superintending Engineer, Additional 3rd Circle,*  
*Famine Relief Works.*

FINAL REPORT, PUBLIC WORKS DEPARTMENT FAMINE RELIEF WORKS, OCTOBER 1896 TO SEPTEMBER 1897.

APPENDIX I.—Relief Units on Departmental Relief Works.

District.	Workers—Relief Units.				Dependants—Relief Units.				GRAND TOTAL.
	Men.	Women.	Children.	Total.	Men.	Women.	Children.	Total.	
1	2	3	4	5	6	7	8	9	10
Allahabad ... ..	8,084,933	11,056,426	6,647,195	25,768,554	831,233	545,645	6,083,938	6,960,816	32,729,370
Fatehpur ... ..	360,459	329,852	155,761	846,072	5,799	5,123	193,653	204,575	1,050,647
Cawnpore ... ..	1,430,654	1,540,899	1,156,790	4,128,343	60,740	53,920	944,707	1,059,367	5,187,710
Banda ... ..	9,826,554	13,261,861	8,263,043	31,350,958	284,088	307,853	5,566,149	6,158,040	37,508,998
Hamirpur ... ..	2,598,060	4,474,104	3,048,851	10,121,015	100,423	131,506	2,042,442	2,274,371	12,395,386
Jhansi ... ..	1,890,058	2,522,028	1,661,016	6,073,102	127,974	163,983	1,147,547	1,439,504	7,512,608
Lalitpur ... ..	666,917	752,886	578,855	1,998,658	6,133	13,095	405,351	442,579	2,423,237
Jalaun ... ..	3,805,100	4,718,013	3,519,742	12,042,855	73,975	84,439	3,004,841	3,163,255	15,206,110
Total ... ..	28,642,735	38,655,563	25,031,253	92,329,557	990,315	1,305,564	19,388,628	21,684,507	(a) 114,014,064

(a) Of these 1,306,565 units came from adjoining Native States, including 773,638 from Rewah State, mostly into Allahabad district. Persons relieved by the relief works under the Canal Department are not included in any of these statements.

APPENDIX II.—Statistics relating to roads.

Items.	I.—Allahabad Division.			II.—Allahabad Division.					GRAND TOTAL.
	Allahabad.	Fatehpur.	Cawnpore	Banda.	Hamirpur.	Jhansi.	Lalitpur.	Jalaun.	
Total length embarked or otherwise improved in miles ... ..	229	71	79	252	152	125	67	269½	1,244½
Total quantity of earthwork done in cubic feet ... ..	59,018,658	10,763,236	31,610,827	107,868,800	81,007,246	29,500,000	12,018,000	58,774,982	340,561,599
Cost ( Work (excluding gratuitous) Rs. ... ..	479,824	66,487	271,786	1,102,800	291,498	305,399	127,580	507,754	3,152,628
( Gratuitous relief, Rs. ... ..	87,894	3,075	53,581	186,000	39,104	82,500	19,433	51,672	523,259
( Total cost, Rs. ... ..	567,718	69,562	325,367	1,288,800	330,602	387,899	147,013	559,426	3,675,887
Rates (excluding gratuitous relief) 1 per mile, Rs. ... ..	2,090	*936	3 440	4,874	1,917	2,443	1,904	1,886	2,533
Per 1,000 cubic feet, Rs. ... ..	8.13	*6.17	8.59	10.21	9.40	10.35	10.61	8 63	9.25

\* Practically the whole of the work was done on the Intermediate system in Fatehpur.

C. G. PALMER, M.I.C.E.,

Superintending Engineer, Additional Brd Circle, Famine Relief.

FINAL REPORT, PUBLIC WORKS DEPARTMENT FAMINE RELIEF WORKS, OCTOBER 1896 TO SEPTEMBER 1897.

APPENDIX III.—Statistics relating to tanks and dams:

Items.	I.—Allahabad Division.			II.—Allahabad Division.					GRAND TOTAL.
	Allahabad.	Fatehpur.	Cawnpore.	Bánda.	Hamírpur.	Jhánsi.	Lalitpur.	Jalaun.	
Number of old tanks deepened or otherwise improved ...	667	12	39	67	43	22	18	139	1,007
Number of new reservoir dams constructed ...	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	6	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	6
Total quantity of earthwork done in above in cubic feet...	193,468,009	6,700,164	9,957,441	110,991,200	35,953,133	9,500,000	3,882,000	65,695,865	436,137,812
Cost { Works (excluding gratuitous relief) Rs. ...	1,562,396	30,976	64,787	1,291,800	404,063	112,852	44,000	404,328	3,915,202
Gratuitous relief Rs. ...	333,610	2,483	12,109	298,800	84,591	32,200	8,725	62,396	835,014
Total cost Rs. ...	1,896,006	33,459	76,896	1,590,600	488,654	145,052	52,725	466,724	4,750,216
Rate per 100 cubic feet (excluding gratuitous), Rs. ...	8.07	4.62	6.50	11.64	11.23	11.88	11.33	6.15	8.97

APPENDIX IV.—Statistics relating to stone metalling (including moorum).

Items.	I.—Allahabad Division.			II.—Allahabad Division.					GRAND TOTAL.
	Allahabad.	Fatehpur.	Cawnpore.	Bánda.	Hamírpur.	Jhánsi.	Lalitpur.	Jalaun.	
Kind of stone broken up ...	Sandstone.	<i>Nil.</i>	<i>Nil.</i>	Granite, white quartz, sandstone.	Quartz.	Quartz and moorum.	Quartz and sandstone.	Quartz.	
Number of quarries worked ...	7	<i>Nil.</i>	<i>Nil.</i>	7	2	4 1	7	2	30
Quantity of stone broken up, in cubic feet ...	639,923	<i>Nil.</i>	<i>Nil.</i>	484,900	q. 17,740 m. 1,787,889	q. 48,549 m. 37,000	33,737	109,848	*q. 1,334,697 m. 1,874,889
Cost { Work (excluding gratuitous), Rs. ...	55,615	<i>Nil.</i>	<i>Nil.</i>	115,000	q. 3,365 m. 18,502	q. 9,544 m. 1,198	6,622	8,082	q. 198,228 m. 19,700
Gratuitous relief, Rs. ...	3,704	<i>Nil.</i>	<i>Nil.</i>	28,100	q. 199 m. <i>Nil.</i>	q. 166 m. 52	79	1,045	q. 33,293 m. 52
Total cost, Rs. ...	59,319	<i>Nil.</i>	<i>Nil.</i>	143,100	q. 3,504 m. 18,502	q. 9,710 m. 1,250	6,701	9,127	q. 231,521 m. 19,752
Rate per 100 cubic feet (excluding gratuitous), Rs. ...	8.69	...	...	23.71	q. 18.99 m. 1.03	q. 19.67 m. 1.33	19.62	7.36	q. 14.86 m. 1.05

NOTE.—The charges for Allahabad have been got out with probably close accuracy, but the others are liable to considerable alterations under adjustments of the allocation of charges. At the same time, the

\*q. Stands for quarry (stone).  
m. Ditto moorum.

C. G. PALMER, M.I.C.E.,

FINAL REPORT, PUBLIC WORKS DEPARTMENT, FAMINE RELIEF WORKS, OCTOBER 1896 TO SEPTEMBER 1897.

APPENDIX V.—Abstract account of total expenditure.

Items.	Superintending Engineer's Office.	I.—Allahabad Division.			II.—Allahabad Division.					GRAND TOTAL.
		Allahabad.	Fatehpur.	Cawnpore.	Bánda.	Hamirpur.	Jhánsi.	Lalitpur.	Jalonn.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Works ... ..	...	2,523,043	103,021	402,363	3,022,000	841,322	543,911	206,439	1,035,277	8,677,876
Establishment and contingencies, including printing charges ...	20,000	54,178	4,740	8,088	42,100	13,365	13,023	7,556	16,154	179,154
Tools and Plant ... ..	...	166,139	14,579	29,466	29,900	13,070	6,850	4,444	17,771	282,219
Total ... ..	20,000	2,743,360	122,340	439,867	3,094,000	867,757	563,784	218,439	1,069,202	9,138,749

APPENDIX VI.—Statement of wages of dependants and cooked food.

Items.		I.—Allahabad Division.			II.—Allahabad Division.					GRAND TOTAL.
		Allahabad.	Fatehpur.	Cawnpore.	Bánda.	Hamirpur.	Jhánsi.	Lalitpur.	Jalonn.	
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Wages of dependants and cooked food ... ..	...	168,317	4,910	20,280	152,772	81,195	45,745	8,131	58,039	539,389
Other "gratuitous" charges ... ..	...	256,891	648	45,510	360,128	42,699	69,173	20,106	57,974	852,229
Total as from Skeleton Reports ... ..	...	425,208	5,558	65,790	512,900	123,894	114,918	28,237	115,113	1,391,618

C. G. PALMER, M.I.C.E.,  
Superintending Engineer, Additional 3rd Circle, Famine Relief.

## APPENDIX VII.

## FAMINE RELIEF WORKS, 1897.

## ALLAHABAD COMMISSIONERSHIP.—CONVERSION OF CODE WORKS INTO INTER-MEDIATE WORKS.

READ—

G. O. No.  $\frac{753}{8-73}$ , dated 16th March 1897.

Chief Engineer's No. C.2242F., dated the 18th March 1897, and enclosure.

Orders by C. G. PALMER, Esq., *Additional Superintending Engineer, 3rd Circle, Famine Relief Works, dated 22nd March 1897.*

THE principle of the Intermediate works as developed in the above papers is that of direct piece-work contracts by small working parties without the intermediary of a contractor, each member of the associated party being paid daily wages in proportion to the amount of work done by the party as a whole.

2. In consultation with the Commissioner, the following tasks and wages have been agreed on, and the Commissioner has despatched letters to Collectors, Cawnpore, Fatehpur, Allahabad, to ask whether they agree with these findings.

(See table annexed to Resolution No.  $\frac{753}{8-73}$ , dated 16th March 1897.)

Kind of soil.	Task. c. ft.	Ordinary task.				Full task which may be done.			
		Rate per 1,000 c. ft.	Rate per 100 c. ft.	Wages earned.	Remarks.	c. ft.	Wages.	Remarks.	
		Rs. s. p.	Rs. s. p.	Rs. s. p.			Rs. s. p.		
II. Ordinary	...	100	2 3 0	0 3 6	0 3 6	...	125	0 4 3	
Hard bits	...	80	2 11 9.	0 4 4½	0 3 6	...	100	0 4 3	

3. This is intended to be worked in the following way:—

A *task* is for the party of one digger with his two carriers. If the length of lead is more than 50 feet there will be an additional carrier for every 100 feet of lead; but the rate is based on the assumption of an ordinary lead.

4. Then if a party of three associated workers does the 'ordinary' task they get 14 pice in all *i.e.*, six for the digger and four to each carrier. If they do the "full" task they get in all 17 pice, *i.e.* seven to digger and five each to the carriers. If they do three-fourths of the "ordinary" task they get 11 pice, *i.e.* five to digger and three each to the carriers. If they do half the task they get seven pice, *i.e.* three to digger and two each to carriers.

5. For shortness a party of associated workers in a common piece-work contract may be called a "lot." As diggers prefer working in couples we will make each "lot" contain two diggers and four carriers on road work, with such additional carriers as are required in the case of tank work.

Roads are now being made 24 feet wide at top and banked two feet. This gives 56 cubic feet of earthwork per foot run of road.

6. A Mate's gang will contain 14 diggers, and ordinarily 28 carriers, in all 42 workers, when there is ordinary lead. Such a gang will ordinarily excavate, throw up, and roughly dress 1,400 cubic feet a day, and will thus complete the rough work of 25 lineal feet of road in a day. In practice, if a gang is placed in every half furlong of such a road it will be at work there for 15 days, including Sundays. We therefore distribute the gangs at distances of half furlongs.

7. As the whole of the attendants on a relief work will be workers and as the measurements will have to be carried out with greater exactitude than is necessary under Code works, a muharrir can only manage six of these smaller gangs, or 84 diggers and (ordinarily) 168 carriers, in all 252 workers. The muharrir must measure the work in detail and keep the accounts in the mate's note-book giving a separate opening to each "lot." The muharrir's beat will extend over only three furlongs.

8. The work agent will lay out the work, check measurements of work done by lots, and when found different to the muharrir's measurement will make an entry to that effect in the mate's note-book, signing and dating it. He will also look into the quality of the work and report to the Officer-in-Charge any muharrir whose work is incorrectly measured.

9. The accounts and disbursement work of an Officer-in-Charge is practically proportionate to the number of muharrirs he has to work through. Wherever possible a "charge" should therefore be kept down to 14 muharrirs, of whom 12 will be in charge of excavating gangs, one in charge of dressing gangs, and one in charge of water, &c.: this will make about 3,500 workers in a "charge." As only 12 of these are excavating gangs, a charge will thus spread over  $4\frac{1}{2}$  miles of road if no tanks are worked; but with tanks at work the length may be reduced to a mile. This is on the basis of 15 days' work in one place. Where there are no tanks it may be more convenient to place gangs at distances of 220 feet apart, thus giving ten days' work in one place, and reducing the length of road simultaneously worked on to three miles.

10. The gang register will be kept up as before. The mate's list at its back will be kept in groups of "lots" with the name of village of each lot, instead of in the family groups now in force.

11. Each mate will keep a note-book showing the daily measurements: this will be written up by the muharrir daily; who will leave a separate opening for each lot, in which he will enter the work done by the lot day by day, till the reach of a half furlong, or of 220 feet (as the case may be), is completed.

12. Under this system it is necessary to make the measurements in the evening, and the payments next day. The Executive Engineer, I Allahabad Division, will recast the "detailed instructions" for these localities after a few days' experience of the intermediate system now to be introduced.

13. As to the task. It must be understood that this includes breaking up and rough dressing: and that the lower special task of 80 cubic feet is only applicable in a few cases of very hard soil, of which there are patches here and there.

With the 100 cubic feet task, if a "lot" will do 250 cubic feet they get the extra wage, but they get no more for doing over 250 cubic feet.

14. The method of marking out is obvious, it must be done in quarter tasks of 25 cubic feet, so that it can be seen whether a "lot" has done a half task, or three-fourths, or "ordinary," or "full" task, the last being five-fourths of an ordinary task.

All further details which require adjustment will be worked out by the Executive Engineer, I Allahabad Division.

15. The actual rates and tasks await confirmation by the Collector, and it has been arranged that Commissioner will at once inform Executive Engineer on these points being settled.

16. The date of commencing the conversion of Code works in the Cawnpore and Fatehpur districts, and in the Doáb and north of Ganges portions of the Allahabad district will also be fixed by Commissioner. But all arrangements should be thought out and necessary instructions drawn up at once. The actual conversion must be carried out charge by charge under close supervision.

ALLAHABAD:  
The 22nd March 1897.

} C. G. PALMER, M.I.C.E.,  
Additional Superintending Engineer,  
111 Circle, Famine Relief Works.



## APPENDIX VIII.

## FAMINE RELIEF WORKS.

*Stone-breaking for road metal by the Intermediate system,  
and on the twelve-seer scale of wages.*

NOTE BY C. G. PALMER, Esq., M.I.C.E., ADDITIONAL SUPERINTENDING ENGINEER,  
III CIRCLE, FAMINE RELIEF WORKS, DATED 21st JUNE 1897.

UNDER the authority of letter No.  $\frac{8403}{VII-27}$ , dated 19th June 1897, from the Commissioner, Allahabad Division, all relief works south of the Jumna in the districts of Allahabad, Banda, Hamirpur, Jhansi (including Lalitpur), and Jalaun are to be carried out on the Intermediate system from and after the 23rd June, and on the 12-seer scale of wages. In accordance with the Commissioner's verbal authority the children under seven years of age are to be given cooked food, and the mothers of children in arms are to be given one pice extra in cases when the Collector considers this absolutely necessary, provided that it will not interfere with local demand for agricultural labour. By far the greater part of the work will consist of breaking stone for road metal.

2. The stone breaking will be done in the rainy season; at this season the workers do not remain continuously on the works, as in April to June, but they come and go with changes in the weather and fluctuations in agricultural employments. If small co-operative groups of labour were formed, in the same manner as for earthwork, the fluctuations of labour would lead to such frequent dissolution and reorganization among the groups that accounts would be thrown into hopeless confusion; and in any case their existence would add immensely to the complexity of the accounts, without affording any practical benefit in other ways. We require a larger unit of labour in which the constant small fluctuations can have room to exhaust themselves without much disturbance of the unit as a whole. For this purpose the "gang" is of a most convenient size; and that being treated as the unit of labour, all the members forming a gang must gain or lose by the outturn of its labour, which will vary with the industry of the "breakers" who form the greater part of it.

3. The stone is to be broken to pass through a  $1\frac{1}{2}$  inch ring. In the ordinary qualities of stones mostly used for metalling in these districts, it is found that an ordinary man, fit to break stone, can on the average break up five cubic feet to this size; a weakly man, or ordinary woman, can break up about  $3\frac{1}{2}$  cubic feet; and a weakly woman or a child, between 12 and 16 years, can break up on the average  $2\frac{1}{2}$  cubic feet. The actual quantities broken will vary with the quality of the stone, but the proportions of 5,  $3\frac{1}{2}$ , and  $2\frac{1}{2}$  will remain fairly constant, and they afford the means of simplifying the accounts.

4. A gang will be headed by a "mate," and must have two to six strong men (according to nature of the quarry) who will do the hard work of getting out the stone, and of sizing it into 5 to 8-inch blocks ready for breaking up. These men will require to use crowbars and sledge hammers; and their wages will correspond to the wages of "diggers" on earthworks. There will then be some 35 to 50 "breakers" consisting of weaker men, of women, and of children from 12 to 16 years; these will form the mass of the gang. The children between seven and twelve years will usually be able to do all the carrying required, but in some situations it may be necessary to reserve a few of the women or bigger children for carrying stone.

5. The principle of the modified Intermediate system lies in payment by results, with a rather higher rate allowed for the weakly, so that they may earn enough to live on. As regards the money earned, if a lighter task is accepted for a certain wage it has the same effect as if a higher rate is paid for a certain quantity; and under the present circumstances it is far simpler for the subordinate staff to deal with. If gangs are made up with different capacities of work the daily estimation of their correct wages requires a different calculation to be applied to each gang, and this is in practice beyond the powers of the subordinate staff available; nor could

they be entrusted with it, because the results could not be checked by superior officers without their also going through all the gang calculations in detail, which is impracticable. The first step therefore is to form all gangs with the same capacity of outturn, and the following orders for District Engineers and Surveyors are based on this first principle, and depend entirely on it.

6. In forming a gang, first appoint the mate, if possible, from among those men who have shown themselves fit for it in our past work. Next select the required number of able-bodied men to "get" and "size" stone under the local conditions of that particular quarry. Then make up that gang of enough "breakers" to break up 165 cubic feet of stone, with enough carriers to carry to that amount of stone under the local conditions of the work in hand. It will seldom be necessary to appoint any carriers in excess of the children between 7 and 12 years of age who belong to the adults of the gang.

7. In making up the "breakers" of a gang the quality of the stone will determine the number of people to be employed, but the proportions of stone broken by the units of each kind of labour will be maintained. The experience of last year was that able-bodied men left the work immediately after rain fell, and it was difficult to find enough of them for work that could not be done by any one else. The same thing will probably happen this year; but if able-bodied men are in such excess that some of them have to be put on to stone-breaking, then select the weakest of them for that work, and pay them on the scale of all "other workers" of the ready reckoner. These able-bodied men are required for agricultural labour, and they must not be tempted to stay on the works in preference to seeking it in their villages. Men breakers of ordinary strength are to be debited with a task proportionate to five cubic feet of the standard stone. The women will also be paid as "adult females, all other workers" of the ready reckoner, and debited with a task proportionate to  $3\frac{1}{2}$  cubic feet of the standard stone. The children of grade I will be debited with a task proportionate to  $2\frac{1}{2}$  cubic feet. The whole calculated task of the gang should total up to 165 cubic feet, but five cubic feet may be allowed as a margin for temporary absentees and, taking the mean as 160 cubic feet, an outturn of 140 to 180 cubic feet will entitle the gang to receive "ordinary" wages. An outturn of over 180 cubic feet will entitle it to "full" wages. Outturns of under 140 cubic feet will entitle the gang to reduced wages as detailed in the table of paragraph 12.

8. It must be understood that the actual quantity calculated to be broken up by each class of breaker may differ according to the quality of the stone, but the relative proportions broken by each unit of the different classes will remain constant, and the calculated quantity to be broken up by the gang as a whole will always be approximately 165 cubic feet whatever the stone may be. Thus a gang working on tough stone will have a larger number of breakers, but their total task will still be 165 cubic feet, and a gang working on brittle stone will contain fewer breakers, but still must turn out the same total quantity of 165 cubic feet per day.

9. Most ordinary hard stone used for metalling can be broken in the quantities of 5,  $3\frac{1}{2}$ ,  $2\frac{1}{2}$ , which have been taken as a standard, and a stone of this quality should be worked if there is any choice in the matter; but if it happens that a softer stone must be worked, as, say, one in which an able-bodied man can break up 11 cubic feet in a day, then the gang must be made up of fewer breakers, so as to give a proportionately larger task to each person. This proportionate modification can be more easily applied to the total task of the gang than to that of each individual separately, and the result is the same. It should be applied in the following manner:—

The standard stone runs to five cubic feet per man; the particular quarry being worked runs to 11 cubic feet per man; the total task done must be 165 cubic feet.

Then  $x : 165 :: 5 : 11$ .

$$x = \frac{165 \times 5}{11} = 75.$$

So that a number of "breakers" capable of turning out 75 cubic feet of the standard quality of stone are capable of turning out 165 cubic feet of this quarry.

Thus each gang on the quarry requires enough breakers to turn out 75 cubic feet of the standard stone ; but they must turn out 165 cubic feet of that particular stone.

10. It is the particular business of the Engineer to carefully ascertain the quantity of stone which an able-bodied man can be fairly expected to break up on each quarry in work ; having done this (and see provisions of paragraph 48 of the rules under Circular No. 18P.W., dated 5th December 1896), he will make up the strength of the " breakers " for each gang in accordance with the following table :—

Quality of stone. Quantity which can be broken to 1½ inch gauge by an able-bodied man.	Breakers. Required capacity of the breakers stated in terms of the standard stone.	Remarks.
1	2	3
Cubic feet.	Cubic feet.	For each kind of stone in column 1 the breakers of each gang are to be made up to a capacity for breaking the quantity of the standard stone shown in column 2.
4	206	
5	165	
6	138	
7	118	
8	103	
9	92	
10	83	
11	75	

11. Then on a quarry of the standard stone the gang may be somewhat as follows :—

Class of worker.	No.	Task of standard stone.		Wages (ordinary).		Remarks.
		Each person.	Total of class.	Each person.	Total of class.	
1	2	3	4	5	6	7
		Cubic feet.	Cubic feet	A. p.	Rs. a. p.	
<i>Men, getters (= diggers) ...</i>	3	...	...	1 6	0 4 6	Wages are on the 12-seer basis.
<i>Men, breakers (= other workers) —</i>						
(a) Ordinary ...	2	5	10	1 3	0 6 3	
(b) Weakly ...	3	3½	10½			
<i>Women, breakers (= other workers) —</i>						
(a) Ordinary ...	26	3½	91	1 0	1 14 0	
(b) Weakly ...	4	2½	10			
<i>Children, grade I (12 to 16) ...</i>	18	2½	45	0 9	0 13 6	
<i>Do. grade II (7 to 12) ...</i>	11	...	...	0 6	0 5 6	
<b>Total, Workers ...</b>	66	Task.	166½	Workers' wages.	3 11 9	

The following example shows how a gang may be formed for a quarry of stone in which an able-bodied man can break eight cubic feet. In this the task, in terms of the standard stone, must total up to about 103 cubic feet.

Class of worker.	No.	Task in terms of standard stone.		Wages ("ordinary")		Remarks.
		Each person.	Total of class.	Each person.	Total of class.	
1	2	3	4	5	6	7
				A. p.	Rs. a. p.	
<i>Men, getters (= diggers) ...</i>	3	...	...	1 6	0 4 6	Wages on 12-seer basis. Task of standard stone 105 cubic feet equal to more than 165 of this stone. Three children first grade reserved as carriers.
<i>Men, breakers —</i>						
(a) Ordinary ...	1	5	5	1 3	0 3 9	
(b) Weakly ...	2	3½	7			
<i>Women, breakers —</i>						
(a) Ordinary ...	18	3½	63	1 0	1 5 0	
(b) Weakly ...	3	2½	7½			
<i>Children, grade I (12 to 16) ...</i>	9	2½	22½	0 9	0 9 0	
<i>Do. ...</i>	3	...	...	0 6	0 3 0	
<i>Do. II (7 to 12) ...</i>	6	...	...			
<b>Total, Workers ...</b>	42	Task of standard stone.	105	Workers' wages.	2 9 3	As carriers. Do.

In making up gangs care should be taken that the "getters" are not in excess of actual requirements. The men breakers get paid the same, whether ordinary men or weakly, and therefore need not be kept separate in the daily accounts on face of gang register, but they should be distinguished in the nominal roll at back of register. Similarly with the women.

12. With gangs formed to turn out equal tallies of work the Intermediate system is to be applied in accordance with the following table, which is based on an "ordinary" mean outturn of 160 cubic feet for the gang, with the 12-seer scale of wages :—

TABLE.

Class of worker.	Wages to be paid when the outturn is				Remarks.
	Fuel, i.e., over 180 c.ft.	Ordinary, i. e., from 140 to 180 c.ft.	Short, i. e., from		
			100 to 140 c. ft.	60 to 100 c. ft.	
	200	160	120	80	Mean quantities.
	A	B	C	D	Distinguishing letters.
	A. p. 2 0	A. p. 2 0	A. p. 1 9	A. p. 1 6	If the quantity is under 60 cubic feet the stone should be kept over for next day's work and no wages given; this will sometimes occur when work is stopped by heavy rain.
Mate ...					
Getter (= "digger") of the rules.	1 9	1 6	1 3	1 0	
Men breakers (= "other workers").	1 6	1 3	1 0	0 9	
Women breakers (= "other workers").	1 3	1 0	0 9	0 6	
Children, grade I (12 to 16 years).	0 9	0 9	0 9	0 6	
Children, grade II (7 to 12 years).	0 6	0 6	0 6	0 3	

13. Payments to be made daily excepting for Sundays, and when work has fallen short of 60 cubic feet, as above. When the broken stone is stacked on or near the quarry each week's work of each gang will be stacked separately for purposes of checking afterwards. The stacks to be 11 feet wide at base, nine feet at top, and one foot deep. Where stacked along a road the stacks will have the usual dimensions, but each week's work of a gang must be a separate stack. The gangs should have separate breaking and stacking grounds, so far as practicable.

14. It will be noticed that the amount payable to each member of the gang will frequently change according to the outturn of work: in filling up the face of the gang register it will therefore be necessary to enter the rate of wage for each class every day: this can be done in red ink above or below the number of workers in each class. There will now be *no fines*, but workers will be paid by the outturn. Special attention must be paid to the accuracy of measurements recorded on the gang register, and work agents must not be allowed to over-measure with the benevolent idea of letting the people have a higher wage: this is most demoralizing, and would induce people to stay on the works instead of seeking for ordinary agricultural work.

C. G. PALMER, M.I.C.E.,

*Additional Superintending Engineer,*

*3rd Circle, Famine Relief Works.*

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*P.S.*—It was afterwards found convenient to use the distinguishing letters A to D to denote the scale of wages for each day, and these have since been added. It was also found necessary to make a proportionate allowance in the task when there were more absentees than the margin of five cubic feet would cover. This allowance was only made for a day or two till the gang could be reinforced.

C. G. PALMER.

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*Note by Commissioner, Allahabad Division.*

I AGREE to these rates as sufficient to support the labourers, but at the same time so calculated as not to interfere with the demand for agricultural labour. The rate of money payment for work done is lower than what farmers will pay now for labour. I should discourage all except those who are unable to procure agricultural work.

A. W. CRUICKSHANK,  
*Commissioner, Allahabad Division.*

## APPENDIX IX.

## FAMINE RELIEF WORKS, 1897.

*Earthwork by the Intermediate system with an "ordinary task" of 125 cubic feet and wages on the 12 and 14-seer scales.*

NOTE BY A. SUTHERLAND, Esq., EXECUTIVE ENGINEER, I ALLAHABAD DIVISION.

IN accordance with the instructions of the Commissioner communicated to the Additional Superintending Engineer, Famine Relief Works, III Circle, in his No.  $\frac{8403}{VII-27}$ , dated 19th June 1897, the whole of the relief works in the I Allahabad Division will be carried out on the Intermediate system after the Jubilee holidays, i.e. after the 22nd June.

2. In the Allahabad district the wages in the tracts south of the Jumna will be fixed on the 12-seer basis, and in the Doab and north Ganges tract on the 14-seer basis. In Fatehpur and Cawnpore districts the wages throughout will be on the 14-seer basis.

3. The ordinary task for earthwork in all three districts will be 125 cubic feet and the full task 150 cubic feet; and in the annexed table will be found the rates and wages which can be earned by workers alone for each scale of wages:—

Kind of soil.	Ordinary task.					Full task which may be done.		
	Task c. ft.	Rate per 1,000 c.ft.	Rate per 125 c.ft.	Wages earned.	Remarks.	C.ft.	Wages.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.			Rs. a. p.	
Ordinary (12-seer basis).	125	2 4 0	0 4 6	0 4 6		150	0 5 6	
Ordinary (14-seer basis).	125	2 2 0	0 4 3	0 4 3		150	0 5 3	

4. The above table has been worked out for one digger and two women carriers and one extra woman who can be employed on breaking clods, if not actually required as a carrier, and the task and wages earned is for a party of four associated workers; thus on the 12-seer basis, if a party does the ordinary task of 125 cubic feet they will earn 18 pice in all, i.e. six for the digger and four for each of the carriers; if they do the full task of 150 cubic feet they will each earn one pice extra or 22 pice in all. In the same way the collective wages have been arrived at for the 14-seer basis. It may happen that one or even two of the carriers may be weakly men unable to dig, in which case they will be paid one pice more than the women carriers on the 12-seer basis, which will not materially affect the rates or wages earned.

5. In addition to the diggers and carriers or actual workers we have to employ others who may come for enlistment and who on the Famine Code system would be classed as dependants. These will generally consist of old men, women, and children, who can be best employed by drafting them into each party in numbers of five or six, and employing them in breaking clods and dressing, and who should be paid at a lower scale of wages which will approximate very closely to the dependant's scale.

6. Table No. I shows the rates and wages to be earned by the workers alone if they complete the exact amount of tasks, but in practice this is seldom done, and tables Nos. II and III give the limits for tasks varying from 30 to 150 cubic feet with the wages to be paid for each, for workers, and those employed in lighter work, such as dressing.

TABLE II.

Class of workers.		Wages 12-seer basis in pice.				
		Full task, 150 cubic feet.	Ordinary, 125 cubic feet.	Low task.		
				100 cubic feet.	75 cubic feet.	50 cubic feet.
		A.	B.	C.	D.	E.
Over 140 cubic feet.	120 cubic feet to 140 cubic feet.	90 cubic feet to 120 cubic feet.	60 cubic feet to 90 cubic feet.	30 cubic feet to 60 cubic feet.		
Workers.	Mates... ..	9	8	7	6	5
	Men diggers ... ..	7	6	5	4	3
	Men carriers ... ..	6	5	4	3	2
	Women carriers ... ..	5	4	3	2	2
Non-Workers.	Other workers ... ..	4	3	3	2	2
	Children I C. ... ..	4	3	3	2	1
	Do., II C. ... ..	2	2	2	1	1
	Do., III C. ... ..	Khichri.				
	Do., IV C. ... ..	One pice to the mother.				

TABLE III.

Class of workers.		Wages 14-seer basis in pice.				
		Full task, 150 cubic feet.	Ordinary, 125 cubic feet.	Low task.		
				100 cubic feet.	75 cubic feet.	50 cubic feet.
		A.	B.	C.	D.	E.
Over 140 cubic feet.	120 cubic feet to 140 cubic feet.	90 cubic feet to 120 cubic feet.	60 cubic feet to 90 cubic feet.	30 cubic feet to 60 cubic feet.		
Workers.	Mates ... ..	8	7	6	5	4
	Men diggers ... ..	6	5	4	3	2
	Men carriers ... ..	5	4	3	2	2
	Women carriers ... ..	5	4	3	2	2
Non-Workers.	Other workers ... ..	4	3	3	2	2
	Children, I C. ... ..	4	3	3	2	1
	Do., II C. ... ..	2	2	2	1	1
	Do., III C. ... ..	Khichri.				
	Do., IV C. ... ..	One pice to the mother.				

7. If less than 30 cubic feet is done in one day, and further work has been stopped on account of rain, the amount done may be carried on to the next day's work if possible.

8. As each party of workers will have a number of dressers attached to them, the rates shown in Tables II and III should include breaking of all clods, rough dressing, and bringing up the bank to proper section.

9. No person coming for enlistment must be turned away; but it must be remembered that only those are to be taken on who are capable of doing work of some kind.

10. Before enlisting, it should be clearly explained to the workers the rates at which they will be paid, and they should be made to understand that there are no such things as fines, but the wages earned will depend entirely upon the quantity of work done. Work agents and muharrirs should also have the latter clearly explained to them.

ALLAHABAD: }  
The 23rd June 1897. } A. SUTHERLAND,  
Executive Engineer, I Allahabad Division.

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Note by C. G. Palmer, Esq., M.I.C.E., Additional Superintending Engineer,  
3rd Circle, Famine Relief Works.

ALL earthwork on the Intermediate system in the I and II Allahabad Divisions is to be carried out on the basis of the above note with the following provisos:—

*First.*—The khichri to children of the III grade, and the pice extra to mothers of children in arms, is to be given in only those districts in which the Collector considers it absolutely necessary, provided that it will not interfere with local demand for agricultural labour.

*Second.*—If the “ordinary task,” as fixed for the rains under the provisions of paragraph 48 of the Rules of 1st December 1896, is some other figure than 125 cubic feet, than the full and low tasks, and the limits of the different stages of task, must be proportionately adjusted to suit it. This requires the special attention of the Executive Engineer, II Allahabad Division.

C. G. PALMER, M.I.C.E.,  
ALLAHABAD: } Additional Superintending Engineer, 3rd Circle,  
The 26th June 1897. } Famine Relief Works.

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*Post Scripta.*—It was found convenient in practice to distinguish the scale of wages by letters of the alphabet instead of speaking of “full task,” “ordinary task,” &c., and this system eventually was universally adopted.

A. SUTHERLAND.

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IN a short time the small working parties disappeared under the operation of these rules, and the gang as a whole became responsible for the task as a whole. This change followed on the immense difficulty experienced in working the small parties, and as a consequence of the success attending the gang-task in stone breaking.

C. G. PALMER.



APPENDIX X.

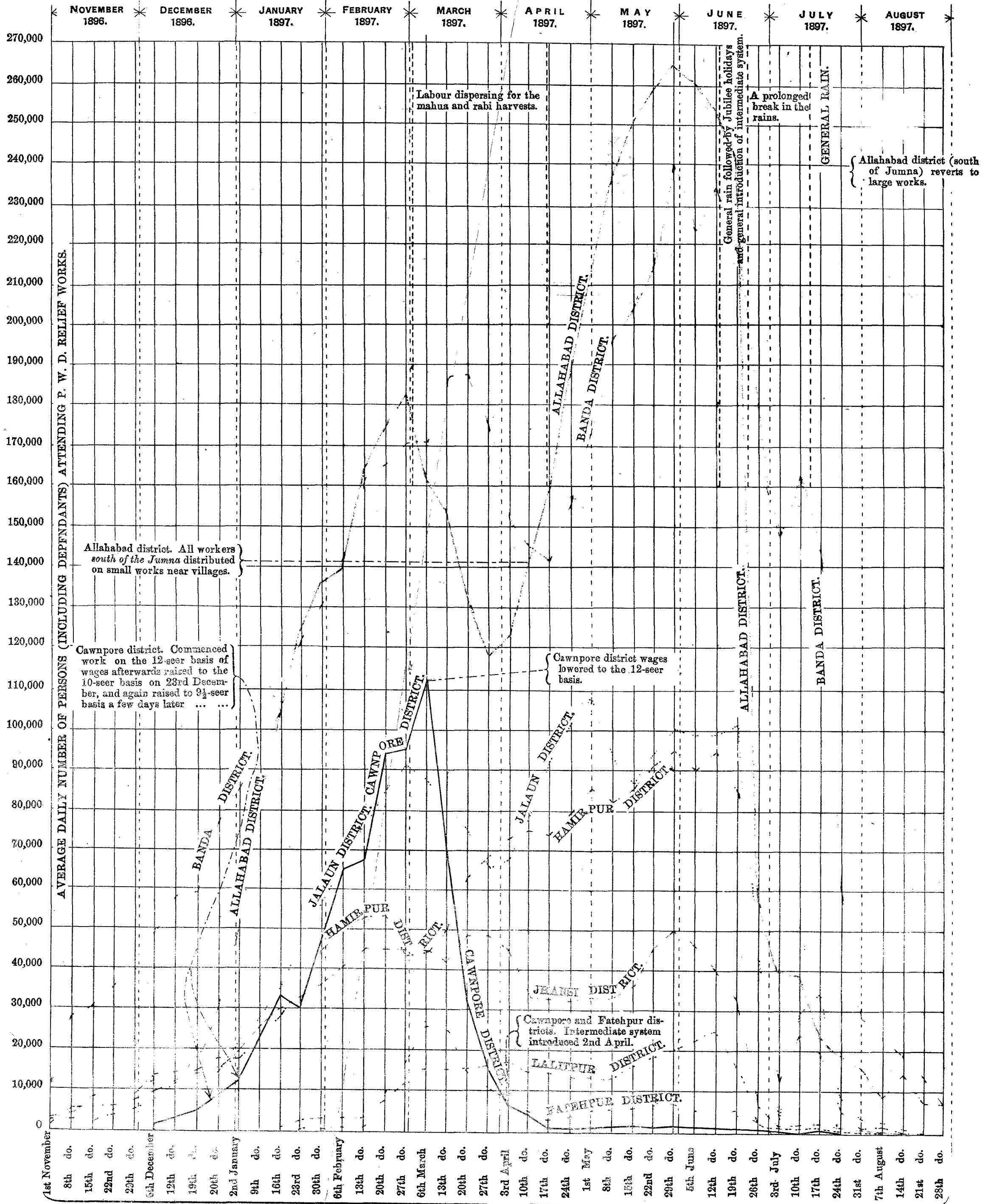
Table of attendance on relief works.

Week ending—	Number of attendants.								REMARKS.
	Allahabad.	Fatehpur.	Cawnpore.	Jalaun.	Bánda.	Hamírpur.	Jhánsi.	Lalitpur.	
1st November 1896	2,208	...	...	3,186	11,866	2,497	...	...	The figures entered now are abstracted from the weekly notes submitted at the time and will sometimes disagree with figures recompiled at later dates.
8th ditto	4,675	...	...	4,977	28,030	3,132	...	...	
15th ditto	5,479	...	...	8,474	30,204	3,452	1,975	...	
22nd ditto	5,818	...	...	9,993	35,553	3,901	5,594	...	
29th ditto	8,401	...	...	10,537	39,528	4,890	7,885	...	
6th December 1896	13,467	...	856	12,938	48,811	7,832	9,341	...	
12th ditto	13,736	...	2,967	12,822	57,772	12,165	12,095	...	
19th ditto	18,390	...	4,718	14,300	58,658	15,670	14,821	...	
26th ditto	31,348	...	9,553	15,136	77,221	18,014	16,089	...	
2nd January 1897	48,397	...	12,422	22,039	85,035	18,154	19,169	...	
9th ditto	78,198	...	23,666	27,699	94,047	22,665	25,420	...	
16th ditto	104,514	...	33,463	35,745	104,069	23,512	29,901	1,013	
23rd ditto	123,226	...	30,492	45,815	121,888	35,524	32,768	2,285	
30th ditto	117,231	...	47,173	56,030	130,485	44,421	36,030	2,699	
6th February 1897	140,849	...	64,818	66,001	142,292	48,802	40,675	3,218	
13th ditto	161,090	417	67,855	75,038	162,058	53,172	45,246	3,239	
20th ditto	175,176	5,815	94,023	84,213	165,151	53,573	44,212	6,725	
27th ditto	182,598	13,108	95,177	90,457	170,146	43,239	45,740	12,894	
6th March 1897	160,691	19,936	112,952	87,618	170,859	41,019	44,533	15,551	
13th ditto	152,710	18,332	67,485	80,252	186,851	50,471	42,291	15,570	
20th ditto	133,287	11,918	33,352	75,173	187,813	62,815	43,214	15,660	
27th ditto	117,890	8,566	15,055	65,219	171,439	69,054	43,954	16,383	
3rd April 1897	122,705	5,220	6,549	67,197	151,908	72,916	45,710	17,289	
10th ditto	142,398	2,143	4,182	79,294	144,817	74,999	33,556	15,386	
17th ditto	168,581	1,805	1,196	92,233	141,975	74,128	33,240	14,828	
24th ditto	158,861	2,646	915	102,596	157,519	79,962	32,367	13,967	
1st May 1897	212,452	3,690	1,270	108,209	173,923	85,600	33,549	13,980	
8th ditto	237,448	3,896	1,597	92,631	196,670	82,266	33,694	12,709	
15th ditto	250,423	4,414	1,911	86,495	204,262	85,387	36,235	16,264	
22nd ditto	259,829	5,353	1,640	94,267	214,415	91,831	46,076	18,247	
29th ditto	265,328	5,338	1,898	100,337	239,928	95,043	49,338	20,014	
6th June 1897	262,344	3,975	1,797	99,328	222,297	89,450	46,411	21,970	
12th ditto	265,671	2,900	1,257	99,338	235,123	91,657	40,062	24,944	
19th ditto	239,848	3,371	152	101,839	218,035	81,775	32,292	16,691	
26th ditto	69,562	1,207	819	44,542	158,304	59,617	6,946	1,394	
3rd July 1897	39,543	653	132	3,136	147,681	12,036	3,755	896	
10th ditto	38,320	727	...	28,908	162,605	23,838	4,297	1,229	
17th ditto	23,898	535	...	34,107	143,554	19,407	5,221	904	
24th ditto	19,000	383	...	9,490	59,173	5,730	2,211	694	
31st ditto	16,621	283	...	3,588	28,126	1,345	934	554	
7th August 1897	9,126	...	...	3,314	24,548	371	1,028	496	
14th ditto	11,799	...	...	1,620	18,816	79	668	402	
21st ditto	7,387	...	...	304	14,502	33	513	363	
28th ditto	7,253	...	...	...	7,222	...	572	255	
4th September 1897	5,151	...	...	...	5,703	...	...	...	
11th ditto	4,674	...	...	...	4,802	...	...	...	

PUBLIC WORKS DEPARTMENT, RELIEF WORKS.

1st & 2nd ALLAHABAD DIVISIONS, NOVEMBER 1896 to AUGUST 1897.

DIAGRAM OF AVERAGE DAILY ATTENDANCE OF EACH WEEK.



WEEKS ENDING ON DATES ABOVE.

C. G. PALMER,

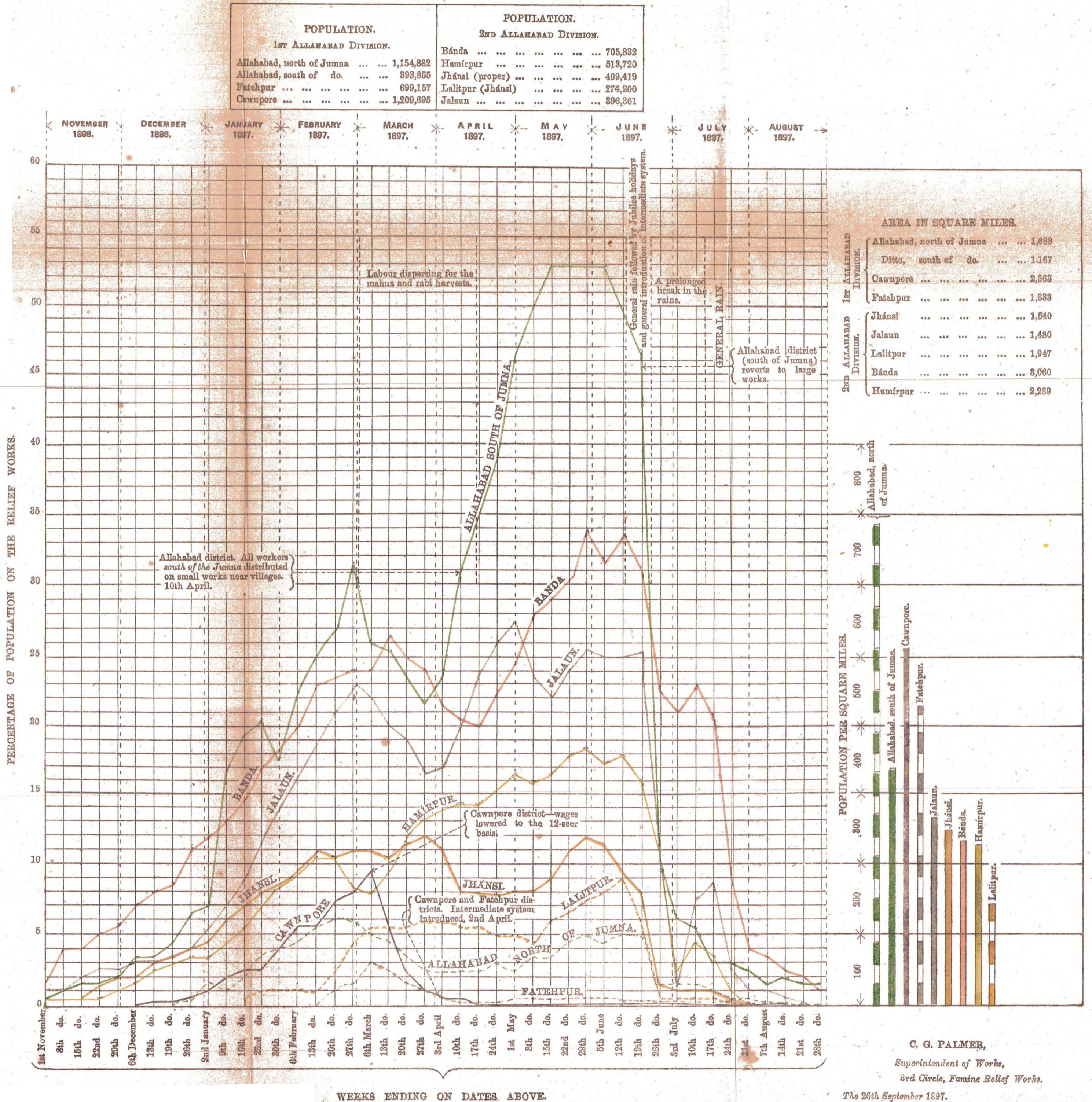
Superintendent of Works,  
3rd Circle, Famine Relief Works.

The 26th September 1897.

PUBLIC WORKS DEPARTMENT RELIEF WORKS.

1st & 2nd ALLAHABAD DIVISION. NOVEMBER 1896 to AUGUST 1897.

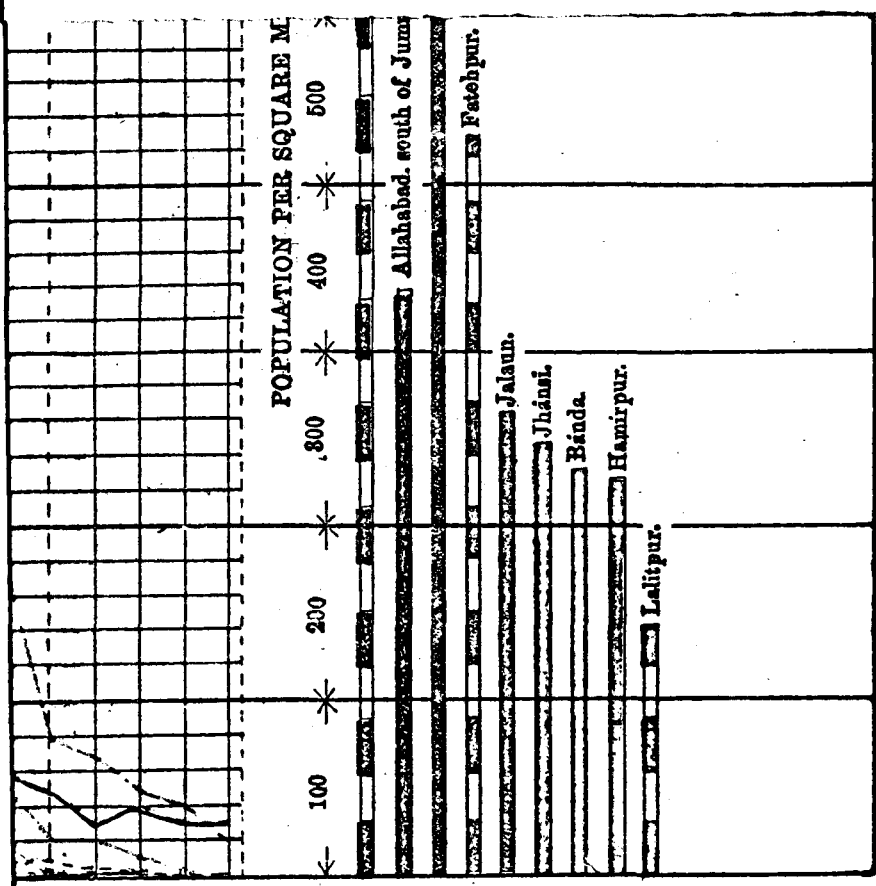
DIAGRAM OF THE INTENSITY OF DISTRESS.



WEEKS ENDING ON DATES ABOVE.

C. G. PALMER,  
Superintendent of Works,  
3rd Circle, Famine Relief Works.

The 26th September 1897.



21st do.  
7th August  
14th do.  
21st do.  
28th do.

POPULATION PER SQUARE MILE

Allahabad. south of Jumnasari

C. G. PALMER,  
Superintendent of Works,  
3rd Circle, Famine Relief Works.

The 26th September 1897.

APPENDIX XIII.

Table of Public Works Department Superior Famine Establishment during the height of operations, I and II Allahabad Divisions.

District.	Ordinary Departmental Staff.				Staff specially posted or appointed for the famine.										REMARKS.
	District Engineer.	District Surveyor.	Upper Subordinates, including men temporarily in the position.	Lower Subordinates.	Military.		Visiting Inspectors.	Famine *Naib Tahsildars or "Officers-in-Charge."	Medical Subordinates and Vaccinators.	Work Agents.	Assistant Cashiers and Clerks.	Tahsildars or wage distributors.	Muharrirs on relief parties, water-supply, tools, &c.	Total.	
					Royal En-gineers.	Staff Corps.									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cawnpore ... ..	1	...	1	...	...	...	2	15	4	45	850	...	50	468	
Fatehpur ... ..	1	...	...	...	...	...	1	7	6	19	100	...	17	151	
Allahabad ... ..	1	...	8	2	2	2	11	62	25	147*	1,058	...	116	1,424	
Jalaun ... ..	...	1	2	2	1	1	4	30	26	45	807	79	50	548	
Jhānsi ... ..	1	...	1	...	1	1	...	10	10	25	110	...	25	184	
Lalitpur ... ..	...	1	1	...	...	1	...	6	10	20	43	...	8	90	
Hamirpur ... ..	...	1	1	2	...	1	2	19	17	38	254	...	40	375	
Bānda ... ..	...	1	2	2	...	3	7	45	40	70	366	...	97	633	
Total ... ..	4	4	11	8	4	9	27	194	138	409	2,583	79	403	3,873	

\* Practically the whole of these were appointed by the Board of Revenue and posted by Superintendent of Works.

† Practically the whole of these were appointed by the Inspector-General of Civil Hospitals and posted by Superintendents of Works.

C. G. PALMER, M.I.C.E.,

Superintendent of Works, 3rd Circle, Famine Relief.

## APPENDIX XIV.

Allahabad Division, Public Works Department, \_\_\_\_\_ district.

\_\_\_\_\_ on \_\_\_\_\_ 1897.

Charge No. \_\_\_\_\_ Officer in Charge \_\_\_\_\_

Despatched to \_\_\_\_\_ as No. \_\_\_\_\_ dated \_\_\_\_\_

## PRELIMINARY NOTES.

(a) Is the charge "open" for recruitment, or is it a "closed" charge? (b) On what work or works are the people employed? (c) On the marginal table enter the reported numbers of attendants this day and for the three previous days. (d) If there have been any great differences, note the explanation given by the Officer-in-Charge. (e) Are the numbers of attendants on relief works in the vicinity—(i) rising, (ii) fairly steady, or (iii) falling?

Date.	Work-ers.	Gratuit-ous.	Total.

## DETAILED NOTES.

## STEPS TAKEN TO REMEDY DEFECTS.

**I.—Future work.** (a) How many more days' work is there here? (b) Where will the workers go next? (c) Is there enough work marked out ahead for a month?

**II.—New-comers.** (a) Are the arrangements for receiving, registering, and placing new-comers in good order? (b) Are all immigrants from Native States kept in separate gangs, and their numbers reported weekly to the District Engineer Surveyor?

**III.—Conservancy.** (a) Are flags fixed at the 300 yards range? (b) Is the intervening ground clean? (c) Is there a staff of patrols to enforce conservancy rules?

**IV.—Water arrangements.** (a) Are wells selected and guarded as directed? (b) Are the other arrangements complete? (c) Is the weekly disinfection attended to?

**V.—Shelter.** (a) Are there enough grass screens for those who live on the works? (b) Are they strongly made?

**VI.—Food supplies.** (a) Quantity and quality. (b) Prices of some of the principal foods. (c) Does there appear to be any combination of the local men? (d) Is *kisari* being sold on the works?

**VII.—Condition of the workers and of non-workers, specially children under seven years of age.**

DETAILED NOTES.	STEPS TAKEN TO REMEDY DEFECTS.
<p><b>VIII.—The sick.</b> What arrangements are there for sending the sick to hospital and feeding them while there?</p>	
<p><b>IX.—Hospitals.</b> (a) Is there a separate hospital for this charge? (b) If not, where are the sick sent to? (c) Are there isolated huts for small-pox patients? (d) Is there a spare hospital ahead ready for an epidemic.</p>	
<p><b>X.—The dead.</b> What are the arrangements for disposing of the bodies of dead persons?</p>	
<p><b>XI.—Complaints.</b> State results of inquiries into complaints made.</p>	
<p><b>XII.—Difficulties.</b> State any peculiar difficulties in the proper management of this charge.</p>	
<p><b>XIII.—</b> If able to make complete count of the number attending this work, give a short note of the results as compared with the reported numbers. [On such occasions it will scarcely be possible to fill in the remainder of this report, and it is not expected.]</p>	
DETAILED NOTES.	STEPS TAKEN TO REMEDY DEFECTS.
<p><b>XIV.—Daily routine.</b> (a) At what hour is the mustering done? (b) At what intervals are wages paid: and (c) at what hours, and by whom?</p>	

DETAILED NOTES.	STEPS TAKEN TO REMEDY DEFECTS.
<p><b>XV.—Establishment.</b> (a) How many work agents are there, (b) and gang muharrirs? (c) Do they seem to know the rules and to understand their duties? (d) Are they all provided with huts or tents? Note any who appear to be (e) specially good men, (f) incompetent or lazy.</p>	
<p><b>XVI.—The task.</b> (a) What is the task on this work? (b) Is it marked out in such a way that it can be understood by the people and effectively checked?</p>	
<p><b>XVII.—Gang registers.</b> (a) Are the tasks due and done properly entered? Give results of some checks. (b) Are the alternate registers exchanged on wages being paid and at no other times? (c) Is the mate's list at back of register correctly written up by villages and family groups?</p>	
<p><b>XVIII.—Checking numbers by samples.</b> (a) Muster one gang, by random, in each muharrir's party on the spot and check the gang register entries for the day. (b) Then count up the whole number of gangs on the work and estimate of men, women, and children by the mean numbers of the counted gangs. State the results.</p>	
<p><b>XIX.—Checking accounts.</b> (a) Take the checked registers to the charge headquarters. Then compare them with the entries in muharrirs' day-books of the day, and note any differences. (b) Take the complete set of muharrir's day-books for three or four days back and compare their totals with entries in the Charge day-book for the same days. (c) Trace out the fines for the same days. (d) Compare the charge day-book with the cash-book entries. (e) Trace out and look into the "other items" details. (f) Compare day and cash-book entries with Code Form No. III. State results.</p>	
<p><b>XX.—Funds and Coin.</b> What are the arrangements for (a) keeping in funds, (b) transport and custody of coin, (c) keeping up supply of copper coin?</p>	
<p><b>XXI.—Fire-protection.</b> Are all grass huts, specially in the headquarters' camp, protected by mud "leep" or mud washing?</p>	



DETAILED NOTES.	STEPS TAKEN TO REMEDY DEFECTS.
<b>XXII.—Stores, tools, and baskets.</b> (a) Are the registers in good order so that every transaction is traceable. (b) What numbers of spare kodalis, phaorahs, baskets are there? (c) Is anything wanting?	
<b>XXIII. Office matters.</b> If there is any unnecessary writing or account rendering notice it here.	

### GENERAL REPORT.

As regards general condition and management of the works, and conduct of the Officer-in-Charge.

(Signed) \_\_\_\_\_

### INSTRUCTIONS.

THIS form of Inspection Report is intended to have two uses. It is intended for the use of every officer who is engaged on Public Works Department relief works as a guide to the principal points of management, organization, and field accounts which require his attention and active assistance. It is intended as a form for the submission of formal inspection reports to be made from time to time on each relief charge in the manner laid down below. It is *not* intended for use as a mere vehicle for criticism.

2. Whenever an officer submits a report in this form he must devote at least one whole day to a "charge," he must see that his facts are correct; that his counting is complete in the manner done (either by sampling gangs or by a full count), and he must record in each case the steps taken by him to remedy the defects reported. If there are serious defects, he must stay on the charge two or three days if possible, and get them righted so far as practicable at the time.

3. Each relief charge should be formally reported on in this manner not less than once a month. Full or sample counts of the workers and dependants should be taken on other occasions, whenever practicable.

4. When a full count is taken it should be made without any warning. A drum should be beaten, the whole work stopped, the workers and dependants given ten minutes to seat themselves, and the whole then counted up by head and entered in a note-book ruled in lines for gangs, men, women, and children. While the count is in progress the workers and dependants must remain seated; as soon as it is over a second drum should signal them to resume work. A full count is better directed to checking the gross numbers of gangs, men, women, and children. It is impracticable to at the same time check their correct classification in the registers: this is

better done during the sample counts which are made by means of the gang registers (No. XVIII of Report). Two officers working together from opposite ends of a work make a more satisfactory count than is possible by a single officer.

5. In a district which is divided into "sections" for the purposes of Public Works Department famine relief, the Sectional Officer should make the formal inspections and submit them direct to the Additional Superintending Engineer. He should also forward a copy of each report to the Public Works Department Sub-Divisional Officer-in-Charge of the relief works, who will forward it to the Divisional Engineer after taking such action as he considers necessary.

6. In a district which is not divided into sections, but in which the staff is strengthened with one or more military officers appointed as "Inspecting Officer," the reports will be made both by the Inspecting Officer and the District <sup>Engineer</sup> Surveyor; the former are to be submitted direct to Additional Superintending Engineer, and a copy sent to District <sup>Engineer</sup> Surveyor as in the case of Sectional Officers, and the latter submitted to Divisional Engineer who, after passing requisite orders, will forward them to Superintending Engineer.

7. In a district which has no Inspecting Officers only the reports made by the District <sup>Engineer</sup> Surveyor should be submitted to the Divisional Engineer, and then after issue of requisite orders to the Superintending Engineer. The reports made by Visiting Inspectors or other subordinates need not go out of the district.

8. The Divisional Engineer should make an inspection report when practicable and submit it to Superintending Engineer.

C. G. PALMER, M.I.C.E.,

ALLAHABAD : }  
The 20th May 1897. }

*Additional Superintending Engineer, 3rd Circle,  
Famine Relief Works.*

*P.S.*—This is the latest form of the report: several small changes were made in the successive issues of it.

C. G. PALMER.

## APPENDIX XV.

## NOMINAL-ROLL OF PUBLIC WORKS DEPARTMENT ADMINISTRATIVE AND EXECUTIVE STAFF EMPLOYED.

*Direction and Control.*

- Palmer, C. G. ... Superintending Engineer, III Circle, to 13th November 1896.
- Heinig, J. ... Superintending Engineer, III Circle, including famine works, 13th November 1896 to 31st January 1897.
- Palmer, C. G. ... Superintending Engineer, Famine Relief, Additional III Circle, from 1st February 1897.
- Housden, W. P. ... Executive Engineer, on special duty, Famine Relief, III Circle.

## EXECUTIVE.

*I.—Allahabad Division.*

- Simpson, S. J. ... Executive Engineer, Divisional Engineer, to 25th January 1897.
- Sutherland, A. R. ... Executive Engineer, Divisional Engineer, from 25th January 1897.

*Allahabad District.*

- Chapman, T. ... Honorary Captain, Assistant Engineer, District Engineer, to 1st February 1897.
- Dupuis, C. E. ... Executive Engineer, Special Famine Relief Sub-Division from 1st February 1897.
- Cairncross, A. ... Sergeant, Supervisor on Famine duty from 10th May 1897 to 31st July 1897.

- Raghubar Dayal ... Overseer.
- Muhammad Hadi ... Sub-Overseer, promoted to Visiting Inspector for Famine Works.
- Zia-ul-Haq ... Sub-Overseer.

*Fatehpur District.*

- Chapman, T.... ... Honorary Captain, Assistant Engineer, District Engineer, from 6th February 1897.
- Rennell, E. M. ... Overseer, 1st grade, District Surveyor to 6th February, then on Famine duty till 2nd March 1897.
- Barkat Ali ... Sub-Overseer.
- Jewan Lal ... Sub-Overseer.

*Cawnpore District.*

- Murphy, J. ... Assistant Engineer, District Engineer.
- Rennell, E. M. ... Overseer on Famine duty from 6th March to 18th June 1897.
- Sita Nath Mythi ... Overseer (temporary rank for famine works).
- Suraj Narain, I. ... Sub-Overseer.

*II.—Allahabad Division.*

- Battie, R. C. ... Executive Engineer, Divisional Engineer.
- Mahendra Nath Chakravarti. ... Assistant Engineer, on special duty in Office of Divisional Engineer.

*Bánda District.*

Thompson, R. M.	...	Honorary Assistant Engineer, District Engineer.
Purves, F. L. E.	...	Temporary Supervisor for famine works.
Ganga Sahai	...	Sub-Overseer.
Muhammad Husain Khan,		Sub-Overseer.
Bhagat Ram...	...	Sub-Overseer.

*Hamirpur District.*

Cuerden, A. ...	...	Supervisor District Engineer.
Rennell, E. M.	...	Overseer on famine duty from 19th June to 2nd September 1897.
Myers, F. E.	...	Overseer.
Harnand Lal	...	Sub-Overseer.
Jainti Parshad	...	Sub-Overseer.

*Jhánsi District.*

Belcher, W. E. G.	...	Assistant Engineer, District Engineer.
Chandan Gopal	...	Supervisor.
Sinclair, W. ...	...	Overseer.
Nadir Lal ...	...	Sub-Overseer.
Faiz Bakhsh ...	...	Sub-Overseer.

*Lalitpur District.*

Ganga Ram ...	...	Supervisor, District Surveyor.
Asghar Ali ...	...	Overseer.
Kalian Singh, II	...	Sub-Overseer.

*Jalaun District.*

Rai Bahadur Kula Nand,		Supervisor, District Surveyor.
Lakshmi Shankar	...	Overseer from 20th April 1897.
Muhammad Nadir	...	Sub-Overseer.
Sarb Dyal ...	...	Sub-Overseer.

C. G. PALMER, M.I.C.E.,

*Superintending Engineer, 3rd Circle, Famine Relief.*

## APPENDIX XVI.

LIST OF FAMINE NAIB TAHSILDARS SPECIALLY RECOMMENDED UNDER  
A PREVIOUS REPORT TO CHIEF ENGINEER.

*Allahabad.*

Sri Krishen Lal.	Sri Parshad.
Bashir Ahmad.	Abdul Rashid.
Murari Lal.	Chandra Mohan.
Abdul Haq.	Mahomed Latif.
Salig Ram.	Hazari Lal.
Karim-ud-din.	Surwat Husain.
Sardar Singh.	Manik Chand.
Rai Kishun Prakash.	Niaz Ahmad.
Gauri Shankar.	Dwarka Parshad.
Wasi-ud-din.	Sajjad Husain.
Madan Mohan.	Anand Sarup.
Mahomed Athar.	Ali Fyaz.
Sham Lal.	Mazahir Husain.
Irshad Husain.	

*Fatehpur.*

Ghazanfar Ali.	Chandu Lal Bhargava.
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*Cawnpore.*

Hardut Joshi.	Hardayal Singh.
Sardar Singh.	Shamshair Ali.
Wasi-ud-din.	Khalil-ud-din.

*Banda.*

Inait Husain.	Barkat-ulla.
Jagannath Parshad.	Ahmad Husain.
Jagdamba Parshad.	Kunwar Ram Charan Singh.
Saiyid Abid Husain.	Hem Chandar.
Raj Bahadur.	Karim-ulla Khan.

*Hamirpur.*

Abdul Karim Khan.	Hazari Pande.
Lekraj Sinha.	Baqar Ali.
Baldeo Parshad.	Hirdey Narain.

*Jalaun.*

Mamnun Hasan Khan.	Kampta Prasad.
Niamut-ulla.	Brij Lal.
Habib-ul-Ambia.	Khushal Singh.
Bankey Lal.	Kuar Shiuaraj Singh.
Brij Ballabh Kishore.	Mahomed Shams-ud-din.

*Jhansi.*

Debi Parshad.	Radha Ballabh.
Nand Sarup.	Mahomed Alam.
Muhammad Moin.	

*Lalitpur.*

Zulfikar Ali.	Rahim-ulla Khan.
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C. G. PALMER, M.I.C.E.,  
Superintending Engineer, 3rd Circle, Famine

## APPENDIX XVII.

*List of temporarily employed Visiting Inspectors and Work Agents specially noticed.*

Name.	Rank.	Remarks on special qualities displayed.
<i>Allahabad District.</i>		
A. E. Hobbs ...	Visiting Inspector ...	A very hard working, active, and generally useful man. Has army service in the artillery and holds the Chitral Campaign Medal.
F. W. Everett ..	Ditto ...	Worked hard and well throughout.
A. Hardacre ...	Work Agent ...	A thoroughly good lad, very hard working, cheery and good tempered under all conditions and on the best of terms with all about him, did well all through the worst of the cholera.
D. Abel ...	Ditto ...	A hard working, painstaking, straightforward little man, very useful throughout.
<i>Fatehpur District.</i>		
Chowdhry Wahaj-ud-din ...	Visiting Inspector...	Worked exceedingly hard and was thoroughly honest and trustworthy.
Babu Sheeratan Lal ...	Work Agent ...	Very hard working and trustworthy. He laid out two of the roads north of the Grand Trunk Road and kept things going there.
<i>Cawnpore District.</i>		
P. Phillips ...	Visiting Inspector...	Very active, hard-working and painstaking.
Mir Bahadur Husain ...	Work Agent ...	Understands his work thoroughly, took an interest in it and gave satisfaction.
Behari Lal ...	Ditto ...	Hard-working and intelligent, gave satisfaction.
<i>Banda District.</i>		
F. L. E. Purves ...	Supervisor (temporary).	Laying out and construction of dams at Deogaughati, Sidhpur, Marjadpur, and Sayahkaggar. All the executive and administrative work connected with above charges, also large tals on charge at Kashai near Karwi.
J. W. Cox ...	Visiting Inspector...	Organization of work. Selection of good tanks and the proper method of deepening them. Arrangements for treating cholera patients when most of the medical subordinates were only compounders and vaccinators. Tact in dealing with those under him. Technical knowledge in laying out and construction of roads and dams. Energy and resourcefulness were also qualities displayed.
H. F. Niblett ...	Ditto ...	Energy, attention to minutiae in matters of organization and every day duties. Strictness in dealing with those under him. Checking numbers and accounts.
J. A. B. Douglas ...	Ditto ...	Very careful and conscientious in carrying out orders, checking numbers and accounts, also in attending to matters of general supervision of work of all under him. Possesses a certain amount of technical knowledge.
J. C. Hill ...	Work Agent ...	Attentive to orders, takes great interest in his work. Hard-working and intelligent. Treated the coolies under him with kindness and consideration. Well behaved.
E. V. Browne ...	Ditto ...	Ditto ditto ditto.
Munshi Hasan Khan...	Ditto ...	He had a little experience on road work in Burma.
Babu Asa Ram ...	Ditto ...	Good, hard-working man, reliable, qualified for duties of Sub-Overseer in Public Works Department.
Babu Asa Ram ...	Ditto ...	Intelligent and qualified for duties of a Sub-Overseer in Public Works Department.
E. A. Williams ...	Ditto ...	Hard-working and energetic.
Babu Sant Lal ...	Ditto ...	Hard-working and could carry out duties of a Sub-Overseer, Public Works Department.
B. D'Crux ...	Ditto ...	Hard-working and conscientious, looked after his work well.
C. Benjamin ...	Ditto ...	Ditto ditto ditto.
F. Sullivan ...	Ditto ...	Painstaking and intelligent. Looked after his work very well.
<i>Hamirpur District.</i>		
Babu Harnath Sahas...	Visiting Inspector...	An exceptionally sharp man, promoted for good work from Work Agent. Not only did his own work, but taught Naib Tahsildars also.
Babu Radhe Lal ...	Ditto ...	Promoted from Work Agent for good work; an energetic hard-working and useful man. He is a passed Sub-Overseer.

## APPENDIX XVII—(continued).

Name,	Rank.	Remarks on special qualities displayed.
Babu Dhannu Lal ...	Work Agent ...	Exceptionally good Work Agent ; cheap measurements accurate and work well done. A steady, honest, hard-working, and careful man, who proved useful and reliable.
Munshi Muhammad Khan ...	Ditto ...	
<i>Jalawn District.</i>		
O. W. Stiffle ...	Visiting Inspector...	Has worked with great zeal and kept full control over the subordinates under him.
Babu Sarb Dyal ...	Ditto ...	Has done exceptionally good service in the famine works. He belongs to the permanent establishment, and I recommend him for 2nd grade Sub-Overseer.
Munshi Muhammad Ismail, Local Sub-Overseer.	Ditto ...	Is a very experienced man and has given me entire satisfaction. I recommend him for some increase.
Ram Adhar ...	} Work Agents ...	These are trustworthy and capable men, and I recommend them for the posts of Sub-Overseer, 3rd grade.
Ganga Din ...		
Hulasi Ram ...		
Indraji Mal ...		
Abdul Latif ...		
<i>Jhānsi District.</i>		
Hamid Husain ...	Work Agent ...	Very competent ; did very economical work on mooram quarry and earthwork.
M. Cooke ...	Ditto ...	Painstaking ; worked hard ; attentive to orders.
Abdul Razak ...	} Ditto ...	Have both had previous experience on road-making, worked hard ; are competent.
Ganga Singh ...		
Janki Parshad ...		
	Ditto ...	Intelligent and hardworking ; attentive to orders.
<i>Lalitpur District.</i>		
Pandit Balmokand ...	Work Agent ...	Laid out road and tank excellently ; laid out tanks very well ; took full task without any harshness on workers ; made excellent road and an excellent tank bandh ; assisted very much in checking numbers and water and conservancy arrangements ; proved very trustworthy, and knows surveying ; is a hard-working and intelligent man ; bears rough weather and hard work cheerfully.
Makhan Lal Mukerji ...	Ditto ...	Carried out orders very carefully and took full task without any harshness on workers ; laid out roads and tank very well ; has read in Patna College Survey Class, and knows drawing. Is intelligent and very trustworthy.

C. G. PALMER, M.I.C.E.,

Superintending Engineer, 3rd Circle, Famine Relief.

No. C.436I.E., dated Naini Tal, the 21st October 1896.

From—COLONEL F. V. CORBETT, R.E., *Secretary to Government,  
N.-W. P. and Oudh, P. W. Dept., Irrigation Branch,*

To—M. KING, Esq., *Superintending Engineer.*

I AM directed to inform you that you have been deputed by His Honor the Lieutenant-Governor and Chief Commissioner to make a careful inquiry into the desirability of constructing the Sarda Canal, with a view to the final disposal of the question as to whether it should be made or not; and to communicate the following instructions for your guidance.

2. On your arrival at Allahabad you should at once make preparations for moving into camp, and thoroughly examine and study the records of the Sarda Canal, which you will find in the Chief Engineer's Office in Allahabad. It is expected that you will be able to take the field not later than the middle of the month. The direction in which you should begin your inquiries will be settled at Allahabad in consultation with the Chief Engineer.

3. You should arrange, as far as possible, to meet the Deputy Commissioner of each district; but as all Deputy Commissioners will be very busy and may not always be able to make definite appointments, this need not be considered absolutely necessary; but you should in any case inform each Deputy Commissioner of your intended marches though the district before entering it.

4. You should, as a rule, avoid troubling Deputy Commissioners for statistics; these will be supplied by this office through the Director of Land Records.

5. The first and most important work is the location of the lines of main canal and of the principal distributaries. After a careful examination of the plans, you will be able to judge what assistance you will require for this. While locating the lines, you will carefully observe and make notes on the soil, drainage, and existing sources of irrigation; *jhils* and swamps should be examined: and the probable effect on them of the introduction of canals should be considered. It would frequently be necessary to drain such *jhils* and the scope and probable cost of such drainage work should be noted approximately. It would, perhaps, often happen that these drainage works would reclaim a considerable area of land for *rabi* cultivation; while, on the other hand, they would generally destroy, or render less effective, some sources of natural irrigation, and thus produce claims for compensation. You should endeavour to form some estimate of the probable mileage and cost of drains and probable amount of claims.

6. The want of assured and sufficient means of irrigation in a season like the present for most of the districts that would be served by the Sarda Canal will probably not be disputed, and one question that you should attempt to solve, is whether a canal could be made as a famine protective work which would be satisfactory security against famine and at the same time be neither mischievous nor objectionable in its effects in ordinary years.

7. You will be able, at an early period of your investigation, to form an opinion as to how far each district is really protected against the effects of drought by wells and *jhils*. Mr. Bennett says (paragraph 11 of his note) that in the year of famine in Oudh of which he has experience, though the tanks failed, the wells did not. You should note the degree of efficiency of the existing source of irrigation under the test of the present drought, the area of land irrigated from wells and tanks, and report from time to time.

8. Another question is, whether the canal should be carried out as a productive work. The supply of the Sarda is beyond doubt, and this is, perhaps, the main cause of the project being pushed by its advocates before the vital questions of its necessity or desirability were considered. The reasons for selecting the Gogra-Gumti



Doáb for the first portion of the Sarda Canal are not given very clearly in the printed papers, and (see paragraph 5 of Mr. Bennett's report) it seems very possible that the western portion) Gumti-Ganges may prove more suitable for the introduction of a canal. For this reason it will probably be best that you should move across from one doáb to another, in preference to taking up each doáb separately.

9. It is probable that by the end of January you will have formed some opinion as to the merits of the project, which, if favourable to it, might induce the Government to consider whether the work might not be begun as a famine relief work should the circumstances of the time require this. I am therefore to request that you will, when communicating your opinion, advise as to which portion or portions should first be undertaken. These would naturally be the portions about the alignment of which there is least room for doubt.

10. You should provide yourself, in the first instance, with a temporary establishment as follows:—

						Rs.
One <i>chaprásí</i> at	...	...	...	...	...	7
One ditto	...	...	...	...	...	6
One <i>dafadár</i> at	...	...	...	...	...	6
Three <i>barkandázes</i> at	...	...	...	...	...	5
One camp clerk at	...	...	...	...	...	25

to be entertained when found necessary. You should apply to the Chief Engineer, Irrigation Branch, for any Survey establishment that may be required as soon as the necessity for it is evident.

## MEMORANDA ON THE PROJECT FOR THE SARDA CANAL.

THE first project for the Sarda Canal was submitted by Captain Forbes in 1870. The scheme provided for the irrigation of the whole of the country between the Gogra and Ganges. The amount was Rs. 6,17,15,238, and the net income was estimated at Rs. 52,94,929, or 8½ per cent. on the capital. It was, however, foreseen by Captain Forbes that water might not be required for the whole tract, and it was proposed to divide it into four sections, allowing nine years for the construction of each. It was also recommended that the scope of the canal should, in the first instance, be restricted to the north-west of a line drawn from Fatehgarh to Fyzabad, thus leaving out part of Hardoi and the whole of Unao, Rae Bareilly, Partabgarh, and Sultanpur in Oudh; and Benares, Ghazipur, Azamgarh, and Jaunpur in North-Western Provinces.

2. This recommendation was supported by the Inspector-General of Irrigation, and in September 1871 Captain Forbes submitted a revised scheme, amounting to 301 lakhs, for the above tract. The scheme was approved by India and sanctioned by the Secretary of State.

3. Preliminary works were accordingly put in hand, but after 103 miles of centre line had been marked out and six bungalows built, work was suddenly stopped in September 1872. This was apparently the result of a memorial to the Viceroy from the talúqdárs of Oudh; it was to some extent supported by the Chief Commissioner.

4. I can find nothing more on record till 1879,\* when India forwarded to this Government a report† by Major Forbes and an estimate for 238½ lakhs for the irrigation of Hardoi, Kheri, Sitapur, Lucknow, Bara Banki, and Fyzabad in Oudh, with possible extension to Azamgarh and Jaunpur in the North-Western Provinces. Major Forbes also suggested that the scheme should at first be still further reduced, so as to provide only for the Gogra-Gumti Doáb. The opinions of District Officers were called for. They were generally adverse to the construction of the canal. In the meantime Sir G. Couper, formerly Chief Commissioner of Oudh and then Lieutenant-Governor, North-Western Provinces and Oudh, in acknowledging receipt of the project, intimated his unwillingness to proceed further with the elaboration of the scheme until driven to do so by the necessity of putting it in hand as a work of famine relief.

5. The opinions of District Officers, alluded to in the last paragraph, were received in 1879 and 1880. In November 1880, Colonel Brownlow, the Chief Engineer of Irrigation, wrote a note on the advisability of carrying out the surveys for the completion of the revised project, after a deficient *kharif* harvest, and having regard to the low supply in the wells and to the emptiness of the *jhils* and tanks in Oudh. Sir G. Couper wrote a minute on this, accepting, with evident reluctance, the necessity for providing work in case of a possible failure of the winter rains.

6. The survey and completion of the project were accordingly carried out by Captain Clibborn and Mr. Garstin, and the final estimate was submitted in September 1881.

7. This project provides for the irrigation of the Gogra-Gomti Doáb only; the proposed channels are shown by broad continuous red bands on the map.‡ The dotted bands show possible extensions, not included in the estimate. The total cost is put at Rs. 3,77,82,856 direct and indirect, the direct charges being Rs. 3,20,58,312. It was estimated that there would be a net return from direct revenue of Rs. 16,11,600 of 4½ per cent., and from direct and indirect revenue Rs. 24,09,600 or 6½ per cent. on this capital outlay. The figures for expenditure have been very liberally estimated, and those of revenue moderately. This estimate was reviewed

\* 10th January 1879.

† Page 1 of collection marked C.

‡ See map F in Proceedings, November 1884.

\* H in large collection. Minimum volume generally 6,000 cusecs. in March. Once 4,000 in March 1869—very exceptional.

by Colonel Brownlow in a very complete note\* dated 28th September 1881. The volume of water to be taken into the head is 3,044 cusecs, which is considerably below the minimum volume of the

river. Failure of supply, therefore, is not to be feared.

8. The financial prospects of the canal have been worked out by Captain Clibborn in the usual way. Statement No. IV-A† show

† A page 52C of large collection.

a total gain of Rs. 24,67,264 in 26 years from starting work, assuming that 20 lakhs is allotted every year, i.e. the works take 16 years to complete. It is probable that he has overestimated the irrigated

840,000 A.: suppose a duty of 280 A. per cubic foot annually; whereas 732,500 A. gives a duty of Rs. 240, which is more in accordance with experience.

area at the end of 26 years—10 years after completion; indeed, it is entered at 840,000 acres. whereas 732,500 acres is the area finally adopted. However, the figures down to the date of completion of canal,

when four lakhs of acres are supposed to be irrigated, are moderate enough, and column 6, which shows the amount of interest to be paid each year, may be accepted.

9. The project for the Sarda Canal was considered in the Local Financial

‡ Page 36, Proceedings, November 1894 (shortly after E), Resolution No. 1072, dated 28th June 1882.

Page 39, ditto.

Department in June 1882,‡ and Government came to the conclusion that "the Sarda Canal project can only be carried out from Imperial resources as an Imperial work." The Govern-

ment of India in September 1882 refer to the above resolution, but seem to take for granted that the project will shortly be put in hand. They say that the annual grant for productive works for these provinces is not likely to exceed 20 to 25 lakhs in future, and ask whether there is any prospect of rapid progress being made on the work if commenced at an earlier date than 31st March 1885. Chief Engineer, Irrigation, North-Western Provinces (who adopts 1886 instead of 1885 without any explanation) recommends that it should not be started before 1st April 1886,

Printed Proceedings, November 1884, page 42.

§ No. 49, page 47.

No. 50, page 48.

No. 53, page 52.

No. 55, page 53.

and this is communicated, with replies to other points raised by them, to India in November 1883. The next four § letters close the case. The Local Government is unwilling to guarantee to finance

the scheme (i.e. to be responsible for the annual interest on capital expenditure), and India declines to treat the project as a "protective" work. Finally, it is decided that "the question regarding the Sarda Canal may be left in abeyance until the next canal compact is about to be considered."

10. The unirrigated area (cultivated plus culturable) in the Gogra-Gumti Doab is 2,880,255 acres. It is proposed to irrigate about one-fourth of this, say 720,000 acres. The irrigated area in the Doab is shown as 2,093,262 acres; but there is reason to suppose that this is considerably in excess of what is irrigated in any one year. Also, of this irrigated area, five-eighths is from *jhils* and tanks, which more or less fail in dry years.

11. The water-supply, as mentioned before, is absolutely secure, the volume required being only half of the usual minimum (6,000 cusecs in March), and only three-fourths of the actual minimum of 4,000 cusecs in March 1869. It would seem, then, that if there are no special reasons against introducing canal irrigation in this tract, the construction of a canal would both protect it against the effects of drought and add greatly to the wealth of the country.

12. It is clearly desirable that a logical conclusion should be arrived at as to whether the Sarda Canal should be constructed under any circumstances or conditions, and if so, under what circumstances; or whether it should be rejected and its construction postponed indefinitely. To this end I propose that an officer should be deputed next old weather to visit all the districts concerned and enquire very carefully into the sufficiency or otherwise of existing means of irrigation. A most suitable officer will, with the sanction of the Government of India, be available in Mr M. King, Superintending Engineer, who will rejoin from furlough at the end of October. He would march from Allahabad to Jaunpur and thence up the

line of canal as far as the head of the Lucknow Branch, covering as much country as possible and making full and systematic notes of all matters connected with irrigation. He would of course be in close communication with the District Officers, and would obtain the latest statistics, which he would check as far as possible. I would give him the whole cold weather, *i.e.*, up to 31st March or 15th April, so that the investigation may be complete. He would give special attention to the *jhils* and tanks from which irrigation is practised, with a view to deciding whether

B. page 17 of Chief Engineer's note, revised project (large printed collection.)

it will be necessary to drain them. This is a very important question, and will have to be taken up in some detail.

The present *jhil* irrigation is effected, it is believed, by blocking up the minor drainages of the country, and we know by experience that these drainages will have to be opened out if a canal comes very close to them; and in many cases it is probable that compensation will have to be paid. Mr. King would also examine all the detailed estimates very carefully, and see that sufficient provision has been made for all contingencies. I would myself meet him for several days at one or two convenient points.

13. It is quite possible that the Sarda Canal is not required and should not be made. But to determine this, an irrigation expert should examine the country in close communication with the District Officers and *zamindars* and others interested in the question.

27-8-96.

F. V. CORBETT,  
Chief Engineer, Irrigation Branch.

BEFORE passing orders on Colonel Corbett's proposal I should be glad to have the benefit of Mr. Benett's views on the subject of the Sarda Canal. I think that we should come to some conclusion on the questions—Should the canal be constructed under any circumstances? If so, under what circumstances?—and on these two questions I am sure that Mr. Benett's views will be of much value to me.

28-8-96.

A. P. MACDONNELL,  
Lieut.-Govr. and Chief Commr.

I UNDERSTAND from Colonel Corbett's note that the project immediately under consideration is the canal for the Gogra-Gumti Doab. Colonel Brownlow in his note of November 8th, 1880, says that the canal is certainly not wanted in Kheri and parts of Sitapur and Fyzabad. No settlement returns have been received from Kheri, and from Sitapur only those for about half the district. My knowledge of both districts is slight, and I leave them out of consideration. The Oudh districts left are the whole of Fyzabad, nearly the whole of Bara Banki, and considerable portions of Lucknow and Sultánpur.

2. These districts differ very materially from the districts of the Meerut and Agra Divisions, where the canals have proved successful in many important respects. The first is in the facilities for irrigation already in existence. I compare the irrigated areas from all sources, including canals, in those divisions with the irrigated areas for the Oudh districts:—

Division or District.	Total cultivated.	Irrigated.	Percentage of irrigated.
Meerut Division	4,394,509	770,523	23
Agra „	3,813,195	563,681	15
Lucknow District	346,809	113,216	32½
Fyzabad „	675,416	326,957	49
Sultánpur „	609,488	274,050	45
Bará Banki „	...	...	41

These figures are taken from the Land Records returns (Appendix III to the Board's Administration Report for 1894-95). The figures given there for Bara Banki (as is noted at the foot of the statement) are imperfect. The *patwáris* were nearly all diverted from their regular work by settlements. The settlement returns from that district give an irrigated area of 277,416 against a cultivated area of 680,257 acres, or 41 per cent. It may be objected that these returns are for a year in which irrigation was very much reduced by heavy floods. But this is quite as true of Oudh as it is of Meerut and Agra; in fact, the floods were probably worse and more prejudicial to irrigation in Oudh than in the western districts. In one *pargana* in Sultánpur which I have lately dealt with, the irrigated area in 1894-95 was 12,000 acres, while the average for two preceding years was 55,000 acres. In ordinary years about half the cultivated area of Oudh (excluding the districts where the canal will not come in any case) is irrigated, and half as much again is irrigable.

3. A point which deserves to be considered in this connection is the great extent to which the people of Oudh have secured themselves by wells. The numbers of the old and new wells that have been built within the last 30 years are—

				<i>Old.</i>	<i>New.</i>	<i>Total.</i>
Sultánpur	...	...	...	8,992	7,461	16,453
Lucknow	...	...	...	1,967	2,985	4,952
Bara Banki	...	...	...	2,549	7,664	10,213
Fyzabad	...	...	...	8,460	8,075	16,535

The returns for Fyzabad are for four *parganas* only or about two-fifths of the whole district. Large numbers of these new wells are substantial structures with several runs, and they represent a large investment of capital. The percentages of the cultivated area irrigated from wells only in a year of flood were in Fyzabad 22 per cent. and in Sultánpur 24 per cent. There are no good figures for Bara Banki; but in those three districts the well-irrigated area only must be nearly, if not quite, as great as the area irrigated from all sources in the western districts of the North-Western Provinces. In the small district, Lucknow, of which only a corner is reached by the proposed canal, it is less.

4. The conclusions to be drawn from these figures are that in ordinary years there is already nearly, if not quite, as much irrigation in the eastern districts of the Gogra-Gumti Doáb as is wanted; and that it would be impossible to introduce a canal without annihilating the returns from a large amount of recently invested capital. No canal could be so laid as to avoid breaking down large numbers of existing wells and supplanting the use of others.

5. Another point deserving attention is the very large area of tank irrigation in Oudh. This amounts in Lucknow to 20 per cent., in Fyzabad to 25 per cent., in Sultánpur to 20 per cent., and in Bara Banki to 18 per cent. of the cultivated area. It is to be remembered that these are for a year of flood, and that the Bara Banki returns are imperfect. In the Agra and Meerut Divisions the irrigated area from this source is only 23,892 acres against a total cultivated area of 8,207,706 acres or less than 3 per cent. The significance of this fact lies in its indicating a most material difference in the physical features of the two tracts. The whole of this part of Oudh is intersected by *jhils* and chains of *jhils*, such as are almost unknown in the Western Doáb. The subsoil water is generally near the surface, and the climate and soil are much moister. In its natural characteristics, as well as in the character of its people and cultivation, Eastern Oudh is much more like the adjoining part of Bengal. The drainage, which would be required if a canal is made, is a point to which perhaps hardly sufficient attention has been paid. It is likely to be very expensive: and, whatever may be done, there appear to me to be good grounds for fearing that considerable areas may be waterlogged; that what is now flourishing cultivation may be turned to waste; and that the people may be decimated by malarial fever.

6. The Canal Department lay considerable stress on the superior cheapness of canal irrigation. Here, again, there is an important difference between Oudh and the Western Doáb. I am unable to lay my hands on the figures, but, speaking from memory, I believe I am well within the mark when I say that the average size of a holding in Meerut is more than twice the average size in Oudh, and three times what it is in Fyzabad. Small farms like those in Oudh barely give the cultivator sufficient occupation for himself and his cattle. He must keep cattle for ploughing, and the same do his watering as well. Practically irrigation costs him little or nothing in addition, and the superior cheapness of a canal would be no recommendation to him, in fact it might be a disadvantage to him that he and his beasts should be kept idle.

7. In some of their notes the Canal Department seem to entertain hopes of profit from large extension of the cultivated area. These I am unable to share, or even to sympathize with. The returns of cultivable area at the last settlement are of absolutely no value. Nearly the whole of land returned as such is of the most inferior description—sandy, or covered with *úsar*—and would barely repay cultivation even with the help of canal water. In some districts the very large areas of old fallow show where its reclamation has been attempted and failed. In this connection it is instructive to find that in nearly every part of Oudh the increase of population has been greatly in excess of the increase in the cultivated area. The latter has been much less than was expected when the last settlements were made, and is, indeed, absolutely and relatively small. Having failed in their attempts to open up new ground, the people have turned their attention to the problem of increasing the produce of the land already under the plough. It is a general opinion that the stretches of infertile land which are left are not more than is required for the pasture of the cattle. The only effect of breaking up more, if it were possible, would be to call into existence an ever more crowded population, living with still less than its present very moderate degree of comfort and enfeebled by endemic malaria.

8. It is likely that the realization of any profits from the proposed scheme would present considerable difficulties. Nearly the whole of the present cultivation is paying very high rates of rents, which are, indeed, about as much as the cultivators could pay for irrigated land. The reason which enables them to pay these rents is that nearly all their cultivation is in fact either irrigated or irrigable. It would, to the best of my belief, be impossible to impose any occupier's rate, unless the existing rents were reduced. The meaning of this operation would be that, in the same way as the irrigation from canals was substituted for irrigation from wells and tanks, so the profits from well and tank irrigation would be transferred to profits on the capital invested in canals. The people themselves, instead of gaining, would be losers. If the rents were reduced by the occupier's rate, or even if they remained the same, the landlords would not be able to pay an owner's rate. In fact, in the former event they might justly claim to have their present revenue reduced. In any tract which is already very largely occupied by irrigation, and especially by artificial irrigation, it seems impossible to realize any substantial profit from the introduction of a canal, except at the price of the gravest injustice to existing interests.

9. It is not, perhaps, necessary to go into the complicated difficulties which would be experienced in apportioning canal dues over properties where, besides the superior proprietor and the tenant, there are one or even two grades of intermediate proprietary rights. Subordinate rights of that kind are specially numerous in Fyzabad and Sultánpur.

10. The above remarks have reference to ordinary years only. In those I find it difficult to believe that a canal would prove a financial success. Economically I am of the opinion that the disadvantages would largely preponderate over the

gains. Politically it would certainly be unpopular, and not at all likely to attach any class of the people to our Government. The disadvantages would be exaggerated, the benefits overlooked, and the canal establishment would be a continual source of irritation.

11. In periods of very prolonged drought, when both wells and tanks were exhausted, there is of course no doubt that a canal would be of the greatest benefit primarily to the districts through which it flowed, and indirectly to the whole of India so far as it was affected by the same drought. But it is worth enquiring how often a famine in these regions may probably be expected. In the permanently settled districts to the east there have been occasional seasons of scarcity, but not, I believe, one year of famine since the commencement of the century. Of them, Jaunpur at least (I am unable to speak of the others) is, like Oudh, very largely protected by wells. During the forty years of our administration of Oudh there has been only one year of real famine, and that was very partial in its extent. Having been in charge at the time of the tract where it was perhaps at its worst, I may say that, though the tanks were all dry, the wells had not failed, and that well irrigation was, until the need of it was removed by rain, supporting a large number of labourers who would otherwise have starved earlier. In this part of the provinces famine is of very rare occurrence, and widely spread famine has not been known since the appalling calamities of the end of the last century. The risk diminishes every day, and it is for Government to consider whether a remote contingency of this kind would justify the construction of expensive works which are not required in ordinary years.

12. As a relief work, again, the canal has very great merits in supplying the simplest form of labour to a very large number of labourers. But it may be asked whether a work could not be found of which the benefits in ordinary times would be more unquestionable. The provision of extensive works whose results will not be positively mischievous is perhaps a problem of some difficulty.

I may add that all the above remarks (except those referring to under-proprietary tenures) apply with even greater force to Rae Bareli and Partágarh.

W. C. BENETT,

*The 17th September 1896.*

*Settlement Commissioner for Oudh.*

I AGREE that the idea of starting the Sarda Canal as a famine work should not be hastily entertained; but it seems to me highly desirable, not only from the point of view of possible employment of famine labour, but also with a view to a final disposal of the question of canal or no canal, that we should without delay put on special duty the best Canal Officer we can spare for the purpose of enquiring generally, on the basis of the maps and drawings of the canal, into the desirability from all points of view of making such a canal or any portion of it. Mr. King, now coming out from furlough, may be deputed for this work.

I may add that I am more than disposed to doubt the strict accuracy of Mr. Benett's final paragraph. It is, I should think, not by any means improbable that the Gumti-Ganges Doáb, the soil of and climate of which is, I am told, not very unlike the Ganges-Jumna Doáb, may be in more need of canals than the Gogra-Gumti Doáb, assuming Mr. Benett's views regarding the latter to be correct. But this is a point which Mr. King's inquiry will throw light on.

A. P. MACDONNELL,

*The 2nd October 1896.*

*Lieutenant-Governor and Chief Commissioner.*