

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No.	787	Press
B.P. No.		Mts.
Dated	19-3-	1875
		195

Ref
Not to be folded or roughly handled

Read the following papers —

No. 500. From Captain J. PENNYCUICK, R.E., District Engineer, North Arcot, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Vellore, 20th November 1874, No. 2,366.

With reference to G. O., No 3,210, of 13th instant, I have the honor to state that, so far as this district is concerned, little or nothing remains to be done for the protection of the railway from injury owing to the breaching of tanks.

2 The subject has received careful consideration during the time that I have held charge of the district, and the best proof of the attention that has been given to it lies in the fact that, as far as I am aware, notwithstanding the almost unprecedented floods that have occurred during this year, there has not been a single instance of direct injury to the railway owing to the action of any work belonging to Government.

3. The flood in the Cortilliar was doubtless increased by the enormous discharge of the Caveripauk tank calingulahs, caused by the bursting of the Poondy tank, but with regard to this it may be observed, first, that the flood did no damage; second, that the bursting of the tank was not due to any defect in the tank itself, but to an entirely abnormal overflow of the Palar; and, third, that measures have already been taken for preventing a recurrence of such a disaster, and that estimates for the necessary embankment, which will form the subject of a separate report, are now on my table.

4. The flood in the Poiney may also have been to some slight extent affected by the bursting of the Poiney tank, but in this case the quantity of water let loose was not sufficient to produce any serious increase to the natural flood, and this breach also was caused by the overflow of the river, and not by any defect in the tank itself.

5 The embankment between Arconum and Sholinghur was, I believe, injured by the flood in the branch of the Cortilliar which is crossed by the railway about the 46th mile, but this flood was caused by local rain and consequent tank surplus, and not by breaching of tanks.

6. The Attoopaukum tank, referred to in paragraph 4 of Lieutenant Coaker's letter as affecting the seventh mile of the Carnatic line, is more properly known as the Pinnovaram tank, and is one of those for which estimates were sanctioned by G. O., No 2,244, of 14th August 1874; the estimate for this work includes the construction of a calingulah, the proper position for which is correctly indicated by Lieutenant Coaker.

7. It must, however, be borne in mind that the Carnatic line crosses a large amount of tank surplus drainage, and will always be liable to damage, however good the condition of the tanks themselves may be, unless ample waterway is provided for this drainage.

8. I have within the last few days been over the Carnatic line (as far as Palloor) with Lieutenant Coaker and Mr. Fox, and believe that the necessity for additional waterway is sufficiently recognized.

Proceedings of the Madras Government, Public Works Department.
19th March 1875.

9 I hope I have made it clear that the protection of the Railway from danger through irrigation works has not been neglected in the manner apparently supposed by Government. A few open river channels still require to be covered by

* It must, however, be remembered that our funds for minor new works are limited, the estimates sanctioned for such works in this district at present amount to Rs. 18,426 against a budget grant for the year of Rs. 6,000.

head sluices, and these will require attention. * Doubtless, from time to time, works will fall to disrepair and require repair, and on a work (the Manjankottai) which had been overlooked last year, will be brought to notice and will be attended to; but these isolated cases are no more than can be easily managed, and will be managed by the ordinary staff of the district.

10. If one of the shortly expected Assistant Engineers can be spared for duty in this district I shall be very glad, for there is plenty of work to be done; but there are other matters far more pressing than the protection of the Railway. I may mention, as the most urgent, the proper regulation of the Palar and Choyan by means of embankments; this, however, will form the subject of a separate report.

No. 1,045-A.

Note by the Chief Engineer for Irrigation.

No. 501. The letter, No. 2,366, of the 25th ultimo, from the District Engineer, North Arcot, contains information of interest in connection with G. O. No. 3,210, of the 13th idem, and it is satisfactory to find that already nearly all that is practicable in that district has been done to prevent tanks continuing to be a source of danger to the railway.

2. In the Salem District, between a few miles south-west of Salem and the Canavery, there are only a very few tanks, and these of small size, commanding the Railway; these can and should all be made safe and efficient during the first half of 1875-76 if funds be available. Government have already been promised that the District Engineer has been provided with much more money under Minor

No. 984-A, dated 1st December 1874

New Works than the amount of the budget grant for the district. Near Salem there is a small catchment basin to the west of the railway with about a dozen small tanks in it. Several of these have been recently inspected, and the way in which they should be treated pointed out. To the eastward also there are a few tanks on affluents of the Salem river, but none of them are large. Between should be taken up successively as soon as may be practicable. The line of railway in this neighbourhood does not appear to have sustained any damage. Between Mullapuram and the Poonjar there are but three or four tanks, and no danger of tanks above the railway; there are many tanks in the basin of the Poonjar which surplus into that river, and in the interests of North Arcot as well as of the railway they should be rendered perfectly safe. The north-east corner of the Salem District, from Tripatore to Vaniambaud, is the locality in which the tanks gave way this year; a majority of these appear to be tanks not belonging to Government. Their requirements have been ascertained, and for two of the

Proceedings of the Madras Government, Public Works Department.
19th March 1875.

groups the measures taken with regard to them have already been reported *
* No. 984-A, dated 1st December 1874.

The Tripatore and other tanks in the neighbourhood will be inspected by me in January.

3. As regards Chingleput, at any rate in this year, very little has been done, for as already noticed in submitting the monthly statements of outlay on Repairs and Minor New Works, this district has been greatly behindhand. Those tanks or chains of tanks which surplus directly across the railway, i.e., not first into some considerable river, should be first attended to, for they are more apt to occasion damage. It will certainly take a good deal of time and study to deal effectively with the drainage of the Chingleput District, because many of the minor water sheds and even some of the larger ones are liable to overflow by the smaller rivers, and again several of them are intersected by artificial channels which divert outfall from its natural course. The proposed operations in North Arcot, for the effective embanking of the Palar and the regulation of the channels taking off from that river, will have a very beneficial effect upon Chingleput, and especially upon the drainage which crosses the Conjeeveram line of railway.

The Chembrambakum drainage basin*

* About 110 square miles

is one of the first that must be attended

to, as it is of very great importance that every tank above that great reservoir should be in perfect order. The next in importance is the Madranticum basin;†

the Madranticum tank has been in

† About 330 square miles

danger three or four times in the last

three years from the breaching of tanks above it, and the safety of the South Indian Railway is intimately connected with the security of this series. A good many of the tanks in the part of the basin situated in the North Arcot District have been attended to, or at least have had their requirements ascertained and estimates sanctioned, but more money is required for Minor New Works. Recently a survey establishment has been sanctioned to admit of this tract being more comprehensively dealt with. In Chingleput, as much progress has not been made, but the part of this basin in that district is comparatively small. The subject has been repeatedly under the notice of the Superintending Engineer, and it is hoped that a fair start will soon be made. Another very important group is that of which the Tennary is the terminal tank, and many of the upper tanks of this series affect the Conjeeveram line of railway.

4 All District Engineers have been informed that assistance in the way of temporary establishments will be given

Circular No. 62.

them on their submitting estimates, sup

ported by such information as will show that they themselves know what the Surveyors are to do

With regard also to the way of dealing with tanks, so as to render them safe and efficient, very full instructions have been given in the Circulars issued from this office. Nothing more can, it is thought, be done in this direction generally; whenever also estimates have been sent up for sanction they have been reviewed in detail, and such subsidiary instructions as were necessary given. The importance of the subject, and the need of a radical change in the old system of

*Proceedings of the Madras Government, Public Works Department,
19th March 1875*

patching up tanks without ascertaining or providing for their real requirements, has been fully understood by this office, and what little improvement in this respect has as yet been effected is due to the instructions given, and to the pressure which has been applied by insisting in the case of all estimates submitted for the sanction of Government that the essential conditions of safety should be attended to. When the Public Works Commission was sitting, some five years ago, several Revenue Officers considered that the Chief Engineer for Irrigation should not concern himself with the tanks of the country, and should not interfere with the proceedings of the local officers of the Revenue and Public Works Department in regard to them, but this very erroneous view of what was necessary was not acquiesced in, and a very considerable share of the time and attention of this office has been devoted to an endeavour to introduce system and order, and to secure a due return for expenditure. That more success has not attended these efforts is due to several causes, among which the principal are—

1st.—The large amount of work to be done, and the incapacity of many Range Officers to deal with it effectively without much more instruction than officers in such a position should require.

2ndly.—To the absence of the preliminary information on which alone action could properly be taken.

3rdly.—The absence in some cases of that zeal and energy which are essential to the effective treatment of work requiring painstaking investigation, much thought, and a very large amount of trouble. As a rule, I do not think that the Government are likely to obtain unlimited devotion to work without a mutual modification of the details of the present organization of the Department. The system would be good enough were District Engineer-his valuable appointments as they were in 1857—1863, and were proper qualifications required of, and corresponding pay allowed to, all members of the Department holding Ranges. Government do get most excellent and antistated service from some District Engineers and Range Officers, but it is my impression, and I see a good deal of what is going on, that with many there is great room for improvement, and that, so long as many members of the Department are contented neither with their present position nor with their prospects, and would gladly get out of the Department if they could, this improvement is not likely to be secured very rapidly.

5. A copy of the instructions issued in connection with the preparation of the return required by Government is submitted.

CAMP AT AUTHUR, (Signed) JOHN MULLINS, Lieut-Colonel, R.E.,
14th December 1874. Chief Engineer for Irrigation

No 502. ORDER THEREON, 16th March 1875, No 781.

IRRIGATION, No. 34.

His Excellency the Governor in Council is glad to receive these assurances of concerted action having been taken between the Chief Engineer for Irrigation and the Officers in charge of

*Proceedings of the Madras Government, Public Works Department,
19th March 1875*

Districts for securing the railways from damage by the Irrigation Works by which they are commanded. It is most satisfactory to find that the effects of such action have already told in the District of North Arcot; to the energetic officer in charge of which, Captain Pennycuik, R.E., great credit is due. Lieutenant-Colonel Mullins may rely on the thorough appreciation by His Excellency the Governor in Council of his untiring efforts to place the treatment of Irrigation Works upon a proper footing; and on his full support of every practical recommendation that may be made for carrying out the orders of Government on this important subject.

2. His Excellency in Council will only observe, with reference to the matters discussed in paragraph 4 of Colonel Mullins' letter, to which the attention of District Officers will be directed, that he expects that in the reports due after June next it will be plainly stated who have failed to carry out the orders of Government and the subsidiary instructions of the Chief Engineer for Irrigation; and to what extent such failure may be attributed to incompetence or to apathy.

3. The damages caused to the North West Line by Irrigation Works of Cuddapah and Bellary require the extension to those districts of the Order of the 13th November, No. 3,210. But it is applicable in spirit not only to them, and to the districts of Coimbatore, Trichinopoly and Tanjore, through which the railways already run, but also to South Arcot, Madura, and Tinnevely, through which they are in progress. And this, His Excellency in Council observes, has already very properly been understood and acted on by the Chief Engineer for Irrigation in his Circular No. 1,010, of 14th December 1874.

(True Extract)

Colonel, R.E.,

Secretary to Government.

To the District Engineer, Salem.

" " North Arcot.
" " Bangalore
" " Chingleput.
" " Malabar
" " Bellary,
" " Cuddapah,
" " South Arcot,
" " Tanjore,
" " Coimbatore.
" " Trichinopoly,
" " Madura,
" " Tinnevely,
" " Chief Engineer for Irrigation.
" " Consulting Engineer for Railways.
" " Revenue Department.

} with G. O., No. 3,210 of 1874

Edw S. T. Austin

Spare Copies

No. 2366.
From,

North Arcot
District Engineer's Off
Vellore 20th November
1874.

To, The District Engineer,
North Arcot.
The Chief Engineer
For Irrigation
Madras

With reference to O. G. No. 3210
of 13th Instant, I have the honour to
state that so far as this District is
concerned little or nothing remains to
be done for the protection of the Railway
from injury owing to the breaching of
tanks.

2 The subject has received
careful consideration during the time
that I have held charge of the District
and the best proof of the attention that
has been given to it lies in the fact
that as far as I am aware, notwithstanding
the almost unprecedented
floods that have occurred during
this year there has not been a single
instance.

instance of direct injury to the railway, owing to the action of any work belonging to Government.

3 The flood on the Cortilliar, was doubtless increased by the enormous discharge of the Caverpauk tank, calingulahe, caused by the bursting of the Poudy tank, but with regard to this it may be observed, 1st that the flood did no damage, 2^d that the bursting of the tank was not due to any defect in the tank itself, but to an entirely abnormal overflow of the Palat, and 3^d that measures have already been taken for preventing a recurrence of such a disaster and that estimates for the necessary embankment, which will form the subject of a separate report, are now on my table.

4 The flood on the Poiner may also have been to some slight extent affected by the bursting of the Poiner tank, but in this case the quantity of water let loose was

was not sufficient to produce any serious increase to the natural flood, and this breach also was caused by the overflow of the river and not by any defect in the tank itself.

5 The embankment between Arcanum and Sholingher was, I believe, injured by the flood on the branch of the Cortilliar which is crossed by the Railway about the 4th mile, but this flood was caused by local rain and consequent tank out-pluv, and not by breaching of tanks.

6 The Attopankam tank referred to in para 4 of Lieut Coaker's letter as affecting the 7th mile of the Carnatic line, is more properly known as the Pinnevaram tank, and is one of those for which estimates were sanctioned by G. O. No 2246 of 14th August 1874; the estimate for this work included the construction of a Calingulah, the proper position for which is correctly indicated by Lieut Coaker.

7 It must however be borne in mind that the Carnatic line proper

crosses a large amount of tank surplus drainage, and will always be liable to damage; however good the condition of the tanks themselves may be, unless ample waterway is provided for this drainage.

8. I have within the last few days been over the Carnatic line (as far as Pulloor) with Lieut. Coaker and Mr. Fox, and believe that the necessity for additional waterway is sufficiently recognised.

9. I hope I have made it clear that the protection of the railway from danger through irrigation works has not been neglected in the manner apparently supposed by Government. A few open river channels still require to be covered by head sluices, and these will receive attention*, doubtless from time to time works will fall into disrepair, and require repair and one work (the Merial tank) which had been overlooked, has recently been

* It must however be remembered that our funds for minor new works are limited, the estimates sanctioned for such works in this District at present amount to Rs 18426, against a budget grant for the year of Rs 6000

brought to notice and will be attended to; but these isolated cases are no more than can be easily managed, and will be managed by the ordinary staff of the District.

10. If one of the shortly expected Assistant Engineers can be spared for duty in this District, I shall be very glad, for there is plenty of work to be done; but there are other matters far more pressing than the protection of the railway. I may mention, as the most urgent, the proper regulation of the Palar and Chervar by means of embankments; this however will form the subject of a separate report.

I have the honour to be,

Sir,

Your Most Obedt Servant
Rambhadr I. Captain R.E.

District Engineer,

North Arcot.

No 1045 A

Note by the Chief Engineer for Irrigation.

Enclosure 3

The letter No. 2366 of the 20th Ultimo from the District Engineer, North Arcot, contains information of interest in connection with G. O. No. 3210 of the 13th Idara, and it is satisfactory to find that already nearly all that is practicable in that District has been done to prevent tanks continuing to be a source of danger to the Railway.

In the Salem District, however, twice in a few miles South West of Salem and the Cauvery, there are only a very few tanks, and these of small size, commanding the Railway; these can and should all be made safe and efficient during the first half of 1875-76, if funds be available. Government have already been informed, that the District Engineer has

No 984 A dated 1st Dec 1874

To the Chief Engineer for Irrigation
North Arcot.
From the District Engineer North Arcot.
No. 2366.
Dated 20th Ultimo.
Enclosure 3.
States that in the District there is no tank which is so situated as to be a source of danger to the Railway.
The District Engineer is of opinion that the tanks in the District are all safe and efficient.

No 1045 A

has been provided with much more money under Minor New Works than the amount of the Budget grant for the District. Near Salem there is a small catchment basin to the west of the Railway with about a dozen small tanks in it. Several of these have been recently inspected, and the way in which they should be treated pointed out. To the eastward also there are a few tanks on affluents of the Salem river, but none of them are large. They

1874
Dec: 1874

170
they should be rendered perfectly safe. The North East corner of the Salem District from Tripatore to Vaniembady is the locality in which so many tanks gave way this year. a majority of these appear to be tanks not belonging to Government. Their requirements have been ascertained, and for two of the groups the measures taken with regard to them have already been reported. The Tripatore and other tanks in the neighbour-

surplus directly across the Railway, i.e. not first into some considerable river, should be first attended to, for they are more apt to occasion damage.

It will certainly take a good deal of time and study to deal effectively with the drainage of the Chingleput Dis-

trict, because many of the minor water sheds, and even some of the larger ones, are liable to overflow by the

smaller rivers, and again several of them are intersected by artificial chan-

nels which divert out-fall from its natural course. The proposed opera-

tions in North Arcot for the effective

embanking of the Palur and the regulation of the channels taking off from that river will have a very beneficial effect upon Chingleput, and especially upon the drainage which crosses the Conjeevaram line of Railway.

The Chembrambakam drainage basin is one of the first that must be atten-

-ded

* about 330
sq. miles.

* about
110 sq.
miles

attended to, as it is of very great im-

portance that every tank above that great reservoir should be in perfect order. The next in importance is the

Madrauntic basin: the Madrauntic tank has been in danger 3 or 4 times in the last 3 years from the

breaching of tanks above it, and the safety of the South Indian Railway is intimately connected with the security

of this series. A good many of the tanks in the part of the basin situated in the

North Arcot District have been attend-

ed to, or at least have had their re-

quirements ascertained and estimates sanctioned, but more money is required

for minor new works. Recently a survey establishment has been sanctioned to

administer this tract being more com-

prehensively dealt with. In Chingle-

put as much progress has not been

made, but the part of this basin in

that District is comparatively small. The

The subject has been repeatedly under the notice of the Superintending Engineer, and it is hoped that a fair start will soon be made. Another very important group is that of which the Ternary is the terminal tank, and many of the upper tanks of this series affect the Congoveram line of Railway.

4 All District Engineers have been informed that assistance in the way of temporary establishments will be given them on their submitting estimates supported by such information as will show that they themselves know what the Surveyors are to do.

With regard also to the way of dealing with tanks so as to render them safe and efficient, very full instructions have been given in the Circulars issued from this office. Nothing more can, it is thought, be done in this direction generally; whenever also estimates have been sent up for sanction they have

210
have been revised in detail, and such subsidiary instructions as were necessary given. The importance of the subject, and the need of a radical change in the old system of patching up tanks without ascertaining or providing for their real requirements, has been fully understood by this Office, and what little improvement in this respect has as yet been effected is due to the instructions given, and to the pressure which has been applied by insisting in the case of all estimates submitted for the sanction of Government that the special conditions of safety should be attended to. When the Public Works Commission was sitting some 5 years ago, several Revenue officers considered that the Chief Engineer for Irrigation should not concern himself with the tanks of the country, and should not interfere with the proceedings of the local officers of

of the Revenue and Public Works Department in regard to them, but this very erroneous view of what was necessary was not acquiesced in, and a very considerable share of the time and attention of this Office has been devoted to an endeavour to introduce system and order, and to secure a due return for expenditure. That more success has not attended these efforts is due to several causes among which the principal are:-

1st the large amount of work to be done, and the incapacity of many Range Officers to deal with it effectively, without much more instruction than officers in such a position should require.

2nd to the absence of ^{the} preliminary information on which alone action could properly be taken

3rd the absence in some cases of that zeal and energy which are essential to the effective treatment of work requiring painstaking investigation, much thought

thought, and a very large amount of trouble. As a rule I do not think that the Government are likely to obtain unlimited devotion to work without a material modification of the details of the present organization of the Department. The system would be good enough were District Engineers ships valuable appointments as they were in 1857-1863, and were proper qualifications required of, and corresponding pay allowed to, all members of the Department holding Ranges. Government do get most excellent and unstinted service from some District Engineers and Range Officers, but it is my impression, and I see a good deal of what is going on, that with many there is great room for improvement and that, so long as many members of the Department are contented with their present position, nor with their prospects, and would gladly get out

out of the Department if they could, this improvement is not likely to be secured very rapidly.

5 A copy of the instructions issued in connection with the preparation of the return required by Government is submitted.

Camp at
Austin
14 December
1874

Wm. L. Sullivan, Lieut. Col. R.R.
Chief Engineer for Irrigation

To
The Secretary to Government
Public Works Department.

P. W 1874 Depart.
 No of foot for march

- Go 28th Feb/72 No 442-444
- 27th Nov/72 -- 437-438
- 20 Jan/73 -- 376-377
- 28th March/73 -- 665-671
- 24th April -- 410-411
- 4th June -- 63-64
- 16th Aug/74 -- 280-281
- 14th Sept -- 95-98
- 13th Nov -- 208-209

No 8018
 From
 The Chief Engineer
 for Irrigation

To
 The Secretary
 to Govt of M.D.
 No 1545-A

Dated 16th Dec 74
 Recd 22nd Dec 74
Page 3

At No on the
 subject of the sys-
 tematic means ad-
 ed for ascertaining
 & supply deficiencies
 of irrigation works
 affecting Railways-

No 501

G.O. No. 781-19-2-75

P. W. D

Proceedings of the Madras Government,
 Under date the 187

—Read the following —

From the Chief Engineer } (M.D. No 1045 A d/11 Dec/74)
 for Irrigation } 781

The Excellency the
 Governor or Council is glad
 to receive their assurance
 of concerted action having
 been taken between the Chief
 Engineer for Irrigation and
 the Officers in Charge of
 Districts for securing the
 Railways from damage by
 the Irrigation works by
 which they are commanded.
 It is most satisfactory to
 find that the effects of
 such action have already
 told in the District of
 North Arcot; to the
 Emergence

M.D.
 11/2
 Col
 20/2

Managerial Officer in Charge,
Captain Pennycook R.E.,
of which great credit is due
Lt Col. Mullins may rely
on the thorough appreciation
by His Excellency the Governor
in Council of his untiring
efforts to place the treat-
ment of Irrigation works
upon a proper footing; and
on his uncompromising
support of every practical
recommendation that may
be made for carrying out
the Orders of Government
on this important subject.

[But] His Excellency
in Council cannot deal
with generalities. Incapacity
of Range Officers must
be supplemented by
personal instructions and
directions of the Chief

Name him
here -

LOS

As I say
will not observe with respect
The matters discussed
in Para 4 of Col Mullins
letter - to what the attention
of the Council officers will be
directed - that is

29C
Engineers; whose hands ^{of}
have been specially ^{h-}
strengthened for the pur-
pose of obtaining all the
preliminary information
required. The present ^{if}
organization of the Dept ^{is}
is not likely to be again
altered for some time; and
shortcomings of individuals
will not be cured by any
changes in it. They can
be as effectually dealt
with, and want of zeal
and energy furnished,
if brought to notice,
under existing as under any
other arrangements; of
tangible grievances in
the present establishment
there is no record. And
His Excellency the Governor
in Council expects that

The damages caused to the North West Line by Irrigation works of Luddahab and Bellary require the extension to those Districts of the Order of the 13th November No 3210. But it is applicable in spirit not only to them, and to the Districts of Coimbatore

1874. Guano

Wash. D. C. 3210 of 1874

Dec 22-8-712

2013
Coll. of 1875: 1875
PUBLIC WORKS.

To

Sir Engineer
Alm.

Dated

Recd

Recd

C. O. 14/12/75, No. 781

No. 511-512

Irrigation works affecting
Public Works Proving Orders
on papers submitted by the
Chief Eng^r for Irrigation on the
subject of the systematic
measures adopted for ascertaining
and supplying deficiencies of
irrigation

14500/2

c. 6.2.75