

(1) Number of pages 38  
(2) Date of repair 30-1-43  
(3) Initials of the Referencer \_\_\_\_\_

# MADRAS RECORD OFFICE.

Government of Madras.

*Public works* DEPARTMENT.

G.O. No. 1932-33

Press

~~Mis.~~

442-445

Dated 20

6

1866.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,  
20th June 1866.*

Read the following papers :—

No. 442. From the Secretary to the Government of India, Public Works Department, (Railway), to the Chief Secretary to the Government of Madras, dated Simla, 16th June 1865, No. 460 R.

1. I am directed to acknowledge the receipt of your letter No. 242, dated the 21st April 1865, on the subject of making defensible the principal stations on the Madras Railway.

2. It appears that the stations already built have been laid out without reference to defence, that there are no existing defences of any kind, and that nothing is recommended to be done with this object.

3. It is argued that it is useless to defend the stations when the rails, *i. e.*, the line itself, can be so easily broken up, and impolitic to do anything now which would evince a distrust of the Native population.

4. The Government of India cannot admit the sufficiency of either of these arguments. In regard to the latter the Governor General in Council is of opinion that the Government should not be deterred by such a consideration from taking a step which prudence commends as of considerable political and Military importance; and as to the former it is sufficient to say that if the rails were broken up, their relaying (when once we had the command of the country: and without that neither rails nor stock could be used) would be an easy matter, and capable of rapid execution, compared with the time it would take to replace the shops and rolling stock if they were destroyed.

5. As to the large expenditure which the Government of Madras suppose that the adoption of the proposed course will involve, I am to state that the Government of India consider it would be unwise economy to restrict too closely the cost of protecting these great lines of communication, by means of which when completed the vast territory of the Crown can be held with a diminished Military force. The defensive works themselves need not however be costly. In general an enclosure of some kind is demanded for purposes of ordinary security, and an enclosure wall (with iron gates to close openings) affording no footing on its summit, and flanked by towers or other buildings adapted to give a musketry fire, of which considering the range of the rifle there need be very few; and with the exterior cleared of cover for some space around, is all that is really required or contemplated by the Government of India. At the same time I am to add that the Government of India did not contemplate in ordinary cases a garrison of troops. It is important therefore that the defences should not be disproportionate to the number of employes who can be relied on at such stations, for it is upon them as a rule that the defence in case of a sudden attack of a tumultuous character would devolve. In very exceptional cases only would troops be available.

6. Where stations have been already laid out without any reference to defence, it is quite possible that the object cannot be very completely effected without incurring a heavy outlay, but in such cases a less perfect arrangement may be accepted. On lines under construction, such as the Madras North-West and the Erode Extension, the main stations should, however, be in the first instance designed with this view; and it may be mentioned that on the North-West Division of the East Indian

Railway the small or third class stations, even, have been built defensible, the angles of the passenger buildings being loopholed, and a commanding tower built in continuation of the well from which the water tank is supplied.

7. But it is to the protection of the large and important stations of its railways where property or machinery of value and difficult to renew is placed, or which are considerable depôts of rolling stock, that the Government of India desires to direct the special attention of the Government of Madras. These must be few in number, and it is not meant to include amongst them the terminal stations at the Presidency Towns or other stations where a large force of European troops is located, though protection from thieves alone would necessitate an enclosure, and in the case of a new terminal station nothing could be lost by bearing in mind the principles of defence in arranging the buildings, &c.

8. The number of stations which the Consulting Engineer to the Madras Government considers it would be deemed advisable to defend seems, in the absence of detailed reasons for their selection, to be needlessly large, viz., eleven on the Madras Railway Company's lines, and five on the Great Southern of India Company's line. The first stations to be provided for are those at which there are extensive workshops or depôts of rolling stock. To these should perhaps be added junctions and changing stations.

9. The Government of India would now suggest, that the Government of Madras should determine what stations on the open lines under the views now and previously set forth it is desirable to defend, that the necessary plans should be prepared, and the matter be again referred to the Government of India. On the lines under construction the plans of the main stations should be, in the first instance, designed to meet the object in view.

Referred to the Consulting Engineer for Railways who will state with reference to the remarks made in this letter what stations he would propose to render defensible, and will submit the necessary plans.

(Signed) A. J. ARBUTHNOT,  
Chief Secretary.

FORT SAINT GEORGE,  
7th July 1865.

No. 443. From the Acting Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 19th May 1866, No. 222 :—

1. Referring to the endorsement of the Chief Secretary to Government, No. 5,954, dated the 7th July 1865, transmitting the letter\* noted in the margin from the Secretary to the Government of India, I have the honor to submit the following observations upon the question of rendering defensible the principal Railway stations in this Presidency.

2. The subject, even in the modified form which, under the views expressed by the Government of India in their letter quoted above, it has assumed, is still beset with difficulties. The greater part of the Railway system at present con-

templated for this Presidency, is now completed to the south of the town of Cuddapah, and the stations have in every case been built without reference to defence. In order now to render any of them defensible, it would be necessary to undergo very considerable expense in altering and re-arranging the present buildings, and in some cases, from defects inherent in the sites selected, any attempt to make the stations tenable in the event of attack would be useless.

3. The stations to which the Government of India especially direct attention are those at which there are extensive workshops or depôts of rolling stock. In this Presidency these stations have been laid out upon a most extensive scale, with the various buildings scattered over a large area, and with so complete a disregard of any future defensive requirements, that it is almost impossible now to devise any protective works which, while sufficiently large to ensure the safety of the machinery, rolling stock, &c., will not at the same time be altogether disproportionate to the small number of men who can be relied on to defend the station.

4. Of the stations on the Madras and Great Southern of India Railways, enumerated by Lieutenant-Colonel O'Connell in his letter to Government, dated the 29th March 1865, No. 190, those which may be classed as having extensive workshops or depôts of rolling stock are Royapooram, Perambore, Jollarapett, Bangalore, Coimbatore, Beypoor, and Negapatam. Of these, Royapooram and Bangalore, being in the neighbourhood of strong European Garrisons, need not be considered; such places being expressly excluded by the Government of India from the test of those stations where defensive measures are required.

5. The workshops adjoining the Perambore station might, from their proximity to Madras, be also placed in the same category; but as they are of great extent and of vital importance to the Railway, and as, from the fact of their being already enclosed with a high and strong wall, an efficient means of defence might be provided at moderate cost, I have thought it right to make special mention of them. The space enclosed is in shape an irregular polygon, and measures about 40 acres. It is surrounded by a wall about 10 feet in height. By constructing six bastion towers at different points, by excavating a small trench outside the wall, and using the debris to form a banquette in the interior, the enclosure might be rendered fairly defensible at moderate cost. Should the Government consider it advisable, I will submit a plan and estimate of what I have now suggested.

6. To the remaining four stations, viz., Jollarapett, Coimbatore, Beypore, and Negapatam, the objections stated above, in paragraph 3, apply with especial force. At each of these places the space occupied by the workshops, engine sheds, &c., is so extensive, and the arrangement of the building so scattered and irregular, and so faulty if viewed from any Military point, as to render any defensive scheme, which shall be at once practicable and efficient, a matter of great difficulty. A refuge in case of danger for the employés at each of these stations could easily be devised, but this would not fulfil the objects which the Government of India have in view; while defensive works, of however simple a character, adequate to the protection of the workshops, material, rolling stock, &c., would not only be very costly, but from the utter disproportion between their extent and the number of men who can be relied on as a garrison, would become a source rather of danger than of security.

7. Before Colonel Anderson's departure from Madras, I had the advantage of discussing with him this important question, and after a careful consideration of the circumstances of each station, with its defensive capabilities and requirements, we arrived at the conclusion that on the lines of Railway now open to traffic in this Presidency, we could not recommend the construction of defensive works at any one station. Subsequent personal examination of the stations has confirmed me strongly in this opinion.

8. The North-West Line of the Madras Railway is now open for traffic as far as the town of Cuddapah, a distance from Madras of 161 miles, and a further section to the Mootanoor Station, a distance of 35 miles, will probably be opened in the course of the next three months. The suggestions which I have to make regarding the provision of defensive works at stations, refer exclusively to the unopened portion of this line, between Mootanoor and Raichoor, a distance of about 160 miles.

9. Raichoor itself, the point of junction for the Madras and the Great Indian Peninsula Railways, will be one of the most important stations in the whole of the Indian Railway system. About midway between Madras and Bombay, in the heart of the great cotton-growing tract, it occupies a commanding position on the watershed of the Deccan, and is about equidistant from the two great rivers across which the Railway is here carried, and which between them drain the Southern Deccan. The distance, at this point, between the Kistna and Toombuddra is about 31 miles, and the importance of maintaining uninterrupted communication by the bridges which will here span those large rivers can scarcely be exaggerated.

10. In paragraph 30 of my letter of the 6th ultimo, No. 152, I alluded to the necessity of securing, as far as possible, the traffic across the Toombuddra river from all chance of interruption, and I recommended, in general terms, the construction of a small defensive work at the south end of the bridge. I have since learnt from Mr. Smart, who is now officiating as Agent and Manager, that he at one time entertained the idea of constructing a fortified archway across the line, on the south bank of the river, somewhat similar to the fort on the well known Barrage across the Nile, and that he had abandoned the design only on account of its probable cost.

11. On carefully re-considering the question, the proximity of the two large rivers, and the singularly important position of Raichoor, have led me to the opinion that it will greatly conduce to the advantage of both the Railway Companies concerned if, in designing the station at that place, either the whole or a part of the necessary buildings be so arranged as to form a stronghold and a place of refuge, if such should ever be required. In their

\* No. 761 R-5,782.

Government of India have distinctly stated that the necessary protection of the principal Railway stations will henceforth be one of the chief considerations which will govern the distribution of the Army, and I trust that I shall not be held to transgress my duty in suggesting that there are few places where a small body of troops, whether of the Hyderabad Contingent, or of the Indian Army, could be located with as much direct advantage as at Raichoor. To further ensure the safety

of the two bridges, I would recommend the construction, on the Raichoor bank of either river, of a square tower of small dimensions, placed so as to command each bridge throughout its whole length. These towers need not be of the costly nature suggested by Mr. Smart. If built with a second storey, provided with a good ditch, with planking turrets at the opposite angles, and with the means of mounting small pieces of ordnance, the expense should not be great.

12. Gooty is the only other point on this line at which it seems to me advisable that any special precautions should be taken to ensure the defensibility of the

station. In† previously bringing this matter to the notice of Government, I pointed out that the site already chosen, though good in other respects, was very unfavorably situated in a Military point of view. I have since learnt from the Commissary General that it is proposed to establish an extensive dépôt for Commissariat stores at Gooty. Such dépôt should of course be near the Railway station, and it also seems to me important that it should be defensible. My information on the subject is vague; but, under the circumstances, I am inclined to recommend that another site be chosen for the station, adjoining which might be the Commissariat dépôt, and that some such inexpensive means of defence as are detailed by the Government of India in their letter†

† No. 460 R, 16th June 1865, paragraph 5. now under reference be adopted. A personal examination of the ground showed me that if it be determined to change the site, it must be moved about three-quarters of a mile to the westward. This would slightly increase its distance from the town of Gooty, and on discussing the question with Mr. Smart and Mr. Anderson, the present Officiating Chief Engineer, those gentlemen pointed out, as a further objection, that the cost of the station buildings would be somewhat enhanced by altering the site, as the line will there be on an embankment, instead of, as at the present proposed site, in a slight cutting.

13. At the stations of Tadputri, Goondacul, and Adoni, I am of opinion it would be well to adopt some slight defensive measures, similar to what have been adopted on the North-West Division of the East India Railway. From the letter\*

\* No. 460 R, 16th June 1865.

of the Government of India above quoted, I gather that at the smaller stations on that line "the passenger buildings have been loopholed, and a commanding tower built in continuation of the well from which the water tank is supplied." The Tadputri and Adoni stations will be near two large and very populous towns, while the Goondacul station derives importance from the fact of its being the point where the Bellary branch leaves the main line. I solicit the early orders of Government on the points mooted in this and the preceding paragraphs.

14. At Bellary, as a large force of Europeans is stationed there, I do not propose the adoption of any defensive measures.

15. One of the most important points connected with this subject, viz., the source from which the funds are to be provided to meet the additional cost which the provision of means of defence will involve, I have not touched upon. The subject has already been brought to the

Vide G. O. No. 2,646, 9th September 1865.

Vide letter from Government of India, 13th December 1865, No. 1,087 R.

notice of Government by Colonel Anderson, and the point has been referred by the Government of India to the Secre-

tary of State for India. From conversations which I have held on the subject with the Agents of the two Companies, I gather that both of the Home Directories would oppose the application of their funds to the alteration of existing stations, with a view of rendering them defensible; but Mr. Elwin was of opinion that no objection would be raised on the part of the Directors of the Madras Railway to any slight modification which might seem desirable in the plans of the stations on the unopened portion of the North-West Line, even though it entailed a somewhat increased expenditure.

No. 444. ORDER THEREON, 20th June 1866, No. 1,932.

RAILWAY, No. 34.

1. In the second of the letters above recorded the Officiating Consulting Engineer for Railways replies to a reference from the Government of India on the question of rendering the principal Railway stations in this Presidency defensible. The stations to which that Government direct especial attention, as being those at which large workshops or depôts of rolling stock are maintained, appear to be Royapooram, Perambore, Jollarepett, Bangalore, Coimbatore, Beypoor and Negapatam. Major Shaw Stewart considers the first and fourth of these to be situated too near strong European garrisons to require any special arrangements to be made for their defence, and, with regard to the others, he remarks that as they have been laid out over extended areas of ground without regard to any thing but convenience, they are peculiarly unfitted for defence, and cannot be provided with the necessary protective works within any reasonable outlay.

2. The Government fully concur in these views, and they likewise feel disposed to think that, if the space occupied by the workshops at Perambore, said to consist of some forty acres, can be rendered defensible by the construction, at a moderate outlay, of bastion towers at different points, the excavation of a trench outside the wall, and the formation of a banquette in the interior, it will be well to carry out these works; and the Consulting Engineer will submit the necessary plans and estimates for them.

3. So important a station as Raichoor, on the junction of the Madras with the Great Indian Peninsula Railway, should unquestionably be planned with a view to secure for it the capabilities of defence mentioned by the Government of India, and the Government of Bombay will be addressed on the subject, in order that the respective Railway officials may be moved to design the arrangements of the junction with that view, in communication with the Consulting Engineers.

4. The square towers which Major Shaw Stewart recommends to be erected to guard the bridges over the Kistna and Toomboodra rivers may perhaps be sufficient for the purpose, but the Government think that they should be so placed as completely to command not only the bridges, but their approaches, and that they should be designed of such capacity and strength as to afford a secure refuge in case of need to the Railway employés and others, and to give the means of effectually protecting the passage of the rivers in the neighbourhood of the line.

5. The site fixed for the Ghootty Station being unfavorable for the purposes of defence, the Government think that it will be desirable to alter it, and the Consulting Engineer will accordingly communicate with the Officers of the Railway Company in order that a more eligible position may be selected.

6. The proposals made in paragraph 13 with regard to the stations at Tadpatri, Goondacul, and Adoni, are approved.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,  
Secretary to Government.

To the Consulting Engineer for Railways.  
„ Military Department.

Ed. S. T. Augustin.

Railway

N<sup>o</sup> 460.R  
From  
The Secretary to Government of India  
To  
The Chief Secretary to the  
Government of Madras  
Railway Department  
Public Works Department  
Simla 15<sup>th</sup> June 1865

Sir  
I am directed to acknowledge  
the receipt of your letter N<sup>o</sup> 242 dated  
the 21<sup>st</sup> April 1865 on the subject of  
making defensible the principal  
stations on the Madras Railway.

2. It appears that the stations  
already built have been laid out  
without reference to defence, that  
there are no existing defences of any  
kind and that nothing is recommended  
to be done with this object.

3. It is argued that it is useless  
to defend the stations when the rails

i.e. the line itself, can be so easily broken up, and impolitic to do anything now which would evince a distrust of the native population.

So. The Government of India cannot admit the sufficiency of either of these arguments. In regard to the latter the Governor General in Council is of opinion that the Government should not be deterred by such a consideration from taking a step which prudence commends as of considerable political and military importance; and as to the former it is sufficient to say that if the rails were broken up, their relaying (when once we had the command of the country; and without that neither rails or stock could be used) would be an easy matter and capable of rapid execution compared with the time it would take to replace the shops and rolling stock if they were destroyed.

11  
5. As to the large expenditure which the Government of Madras suppose that the adoption of the proposed course will involve, I am to state that the Government of India consider it would be unwise economy to restrict too closely the cost of protecting these great lines of communication, by means of which when completed the vast territory of the Crown can be held with a diminished military force. The defensive works themselves need not however be costly. In general an enclosure of some kind is demanded for purposes of ordinary security, and an enclosure wall (with iron gates to close openings) affording no footing on its summit, and flanked by towers or other buildings adapted to give a musketry fire, of which considering the range of the rifle there need be very few; and with the exterior cleared of cover for some space around, is all that is really required.

or Contemplated by the Government of India. At the same time I am to add that the Government of India did not Contemplate in ordinary cases a garrison of troops. It is important therefore that the defences should not be disproportionate to the number of employees who can be relied on at such Stations, for it is upon them as a rule that the defence in case of a sudden attack of a tumultuary character would devolve. In very exceptional cases only would Troops be available.

6. Where Stations have been already laid out without any reference to defence, it is quite possible that the object cannot be very completely effected without incurring a heavy outlay, but in such cases a less perfect arrangement may be accepted. On lines under construction, such as the Madras North West and the

the Erode extension, the main Station should however be in the first instance designed with this view; and it may be mentioned that on the North West Division of the East Indian Railway the small or 3<sup>d</sup> Class Stations, even, have been built defensible, the angles of the passenger buildings being loopholed and a commanding tower built in continuation of the wall from which the water tank is supplied.

7. But it is to the protection of the large and important Stations of its Railways where property or Machinery of value and difficult to renew is placed, or which are considerable depôts of rolling stock <sup>that</sup> the Government of India desires to direct the special attention of the Government of Madras. There must be few in number and it is not meant to include amongst them the terminal Stations at the Presidency Towns or other Stations where a large force of

of European troops is located, though protection from thieves alone would necessitate an enclosure, and in the case of a new terminal station nothing could be lost by bearing in mind the principles of defence in arranging the buildings &c.

8. The number of stations which the Consulting Engineer & the Madras Government considers it ~~would~~ be deemed advisable to defend seems, in the absence of detailed reasons for their selection, to be needlessly large, viz: 11 on the Madras Railway Company's lines and 5 on the Great Southern of India Company's line. The first stations to be provided for are those at which there are extensive workshops or depôts of rolling stock. To these should perhaps be added junctions and changing stations.

9. The Government of India would now suggest that the  
Govt

13A  
Government of Madras should determine what stations on the open lines under the views now and previously set forth it is desirable to defend, that the necessary plans should be prepared and the matter be again referred to the Government of India. On the lines under construction the plans of the main stations should be in the first instance designed to meet the object in view.

I have the honor to be  
Sir

Your most obedt servant

W. D. Williams Secy to the Govt of India

Secretary to the Govt of India

Railway Department.

CONSULTING ENGINEER'S OFFICE,

No. 222

From

Majr J A M Shaw Stewart R.E.  
Consulting Engineer for Railways,

To

Colonel L. A. Barr R.E.

Secretary to Government,

Public Works Department,

Fort Saint George.

SIR,

Referring to the endorsement of the Chief Secretary to Government, No 5954, dated the 9<sup>th</sup> July 1865, transmitting the letter noted in the margin from the Secretary to the Government of India, I have the honor to submit the following observations upon the question of rendering defensible the principal Railway Stations in this Presidency -

2 The Subject, even in the modified form which, under the views expressed by the Government of India in their letter quoted above, it has assumed, is still beset with difficulties. The greater part of the Railway System at present contemplated for this Presidency, is now completed to the South of the town of Maddur, and

No 450. R.  
16<sup>th</sup> June/65.

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

Received 16/6/65

and the Stations have in every case been built without reference to defence. In order now to render any of them defensible, it would be necessary to undergo very considerable expense in altering and rearranging the present buildings, and in some cases, from defects inherent in the sites selected, any attempt to make the Stations tenable in the event of attack would be useless.

3 The Stations to which the Government of India specially direct attention are those at which there are extensive Workshops or Depôts of Rolling Stock. In this Presidency these Stations have been laid out upon a most extensive scale, with the various buildings scattered over a large area, and with so complete a disregard of any future defensive requirements, that it is almost impossible now to devise any protective works which, while sufficiently large to ensure the safety of the Machinery, Rolling Stock, &c., will not at the same time be altogether disproportionate to the small number of men who can be relied on to defend the Station.

4 Of the Stations on the Madras and Great Southern of India Railways, enumerated by Lieut Colonel O'Connell in his letter to Government, dated

17  
dated the 29 March/65, No 190. Those which may be classed as having extensive Workshops or depôts of Rolling Stock are Royapuram, Perambore, Tallaipattinam, Bangalore, Coimbatore, Belpoor and Kypatiam. Of these, Royapuram and Bangalore, being in the neighbourhood of strong European garrisons, need not be considered; such places being expressly excluded by the Government of India from the list of those Stations where defensive measures are required.

5 The Workshops adjoining the Perambore Station might, from their proximity to Madras, be also placed in the same category, but as they are of great extent and of vital importance to the Railway, and as, from the fact of their being already enclosed with a high and strong wall, an efficient means of defence might be provided at moderate cost, I have thought it right to make special mention of them. The space enclosed is in shape an irregular polygon, and measures about 40 Acres. It is surrounded by a wall about 10 feet in height. By constructing six bastion towers at different points, by excavating a small trench outside the wall, and using the debris to form a banquette in the interior, the enclosure might

might be rendered fairly defensible at moderate cost.  
Should the Government consider it advisable, I will submit  
a plan and estimate of what I have now suggested -

6 To the remaining four Stations viz.  
Tatanapett, Coimbatore, Baysore and Negapatam, the  
objections stated above, in para. 3, apply with especial force.  
At each of these places the space occupied by the Workshops,  
Engine-Sheds, &c. is so extensive, and the arrangement  
of the building so scattered and irregular, and so faulty  
if viewed from any military point, as to render any defen-  
sive scheme, which shall be at once practicable and  
efficient, a matter of great difficulty. A refuge in  
case of danger for the employees at each of these Stations could  
hardly be devised, but this would not fulfil the objects  
which the Government of India have in view; while  
defensive works, of however simple a character, adequate to  
the protection of the Workshops, material, Rolling Stock,  
&c., would not only be very costly, but from the utter dis-  
proportion between their extent and the number of men  
who can be relied on as a Garrison, would become a source  
rather of danger than of security -

7 Before Colonel Anderson's departure  
from

17  
from Madras, I had the advantage of discussing with  
him this important question, and after a careful consideration  
of each Station, with its defensive capabilities and requirements,  
of the Circumstances, we arrived at the conclusion that on  
the lines of Railway now open to traffic in this Presidency,  
we could not recommend the construction of defensive works  
at any one station. Subsequent personal examination of  
the Stations has confirmed me strongly in this opinion -

8 The North West Line of the Madras  
Railway is now open for Traffic as far as the town of Co-  
diah, a distance from Madras of 161 Miles, and a  
further section, to the Mootanoor Station, a distance of  
35 Miles, will probably be opened in the course of the next  
three months. The suggestions which I have to make  
regarding the provision of defensive works at Stations refer  
exclusively to the unopened portion of this line between  
Mootanoor and Raichoor, a distance of about 70 miles -

9 Raichoor itself, the point of junction  
for the Madras and the Great Indian Peninsula Rail-  
ways, will be one of the most important Stations in the  
whole of the Indian Railway System. About midway  
between Madras and Bombay, in the heart of the Great  
Colton

cotton-growing tract, it occupies a commanding position on the watershed of the Doab, and is about equidistant from the two great rivers across which the Railway is here carried, and which between them drain the Southern Deccan. The distance, at this point, between the Krishna and Tumbhura is about 31 Miles, and the importance of maintaining uninterrupted communication by the bridges which will here span those large rivers can scarcely be exaggerated in

10. In para. 30 of my letter of the 6<sup>th</sup> ultimo, N<sup>o</sup> 152, I alluded to the necessity of securing, as far as possible, the traffic across the Tumbhura river from all chance of interruption, and I recommended, in general terms, the construction of a small defensive work at the South end of the Bridge. I have since learnt from Mr Smart, who is now officiating as Agent and Manager, that he at one time entertained the idea of constructing a fortified archway across the line, on the South bank of the river, somewhat similar to the Fort on the well-known Barrage across the Nile, and that he had abandoned the design only on account of its probable cost.

11 On carefully reconsidering the question,  
the

N<sup>o</sup> 781 R  
5782 -

21  
The proximity of the two large rivers and the singularly important position of Raichoor have led me to the opinion that it will greatly conduce to the advantage of both the Railway Companies concerned if, in designing the Station at that place, either the whole or a part of the necessary buildings be so arranged as to form a stronghold and a place of refuge if such should ever be required. In their letter to the Government of Bombay dated the 6<sup>th</sup> December 1864, the Government of India have distinctly stated that the necessary protection of the principal Railway Stations will henceforth be one of the chief considerations which will govern the distribution of the Army, and I trust that I shall not be held to have neglected my duty in suggesting that there are few places where a small body of troops, whether of the Hyderabad Contingent or of the Indian Army, could be located with as much direct advantage as at Raichoor. To further ensure the safety of the two bridges, I would recommend the construction, on the Raichoor bank of either river, of a square tower of small dimensions, placed so as to command each bridge throughout its whole length.

These

These towers need not be of the costly nature suggested by Mr Smart. If built with a second story, provided with a good ditch, with flanking towers at the opposite angles, and with the means of mounting small pieces of Ordnance, the expense should not be great.

12. Gooty is the only other point on this line at which it seems to me advisable that any special precautions should be taken to ensure the defensibility of the Station. In previously bringing this matter to the notice of Government, I pointed out that the Site already chosen, though good in other respects, was very unfavorably situated in a military point of view. I have since learnt from the Commisary General that it is proposed to establish an extensive depot for Commisariat Stores at Gooty. Such depot should of course be near the Railway Station, and it also seems to me important that it should be defensible. My information on the subject is vague, but under the circumstances, I am inclined to recommend that another Site be chosen for the Station, adjoining which might be the Commisariat depot, and that some such inexpensive means of defence as are detailed by the

No 152 - 6 April 60  
Para: 24

No 460 R 16 June 65  
Para: 5.

23  
The Government of India in their letter now under reference be adopted. A personal examination of the ground showed me that if it be determined to change the Site, it must be moved about 3/4 mile to the westward. This would slightly increase its distance from the town of Gooty, and on discussing the question with Mr Smart, and Mr Anderson, the present officiating Chief Engineer, those gentlemen pointed out, as a further objection, that the cost of the Station buildings would be somewhat enhanced by altering the Site, as the line will there be on an embankment, instead of, as at the present proposed site, in a slight cutting.

13. At the Stations of Tadpatri, Gooty, and Adoni, I am of opinion it would be well to adopt some slight defensive measures, similar to what have been adopted on the North West Division of the East India Railway. From the letter of the Government of India above quoted, I gather that at the smaller Stations on that line the Paperen buildings have been loopholed, and a commanding tower built

No 460 R  
16 June 65

"in continuation of the well from which the water tank is supplied". The Tadpatri and Adoni Stations will be near two large and very populous towns, while the Gooddahl Station derives importance from the fact of its being the point where the Bellary branch leaves the main line. I solicit the early orders of Government on the points mooted in this and the preceding paragraphs.

14. At Bellary, as a large force of Europeans is stationed there, I do not propose the adoption of any defensive measures.

15. One of the most important points connected with this Subject, viz: the source from which the funds are to be provided to meet the additional cost which the provision of means of defence will involve, I have not touched upon. The subject has already been brought to the notice of Government by Colonel Gordon, and the point has been referred by the Government of India to the Secretary of State for India. From conversations which I have held on the Subject with the Agents of the two Companies,

vide G.O. No. 2646.  
9 September 1885.

vide letter from Government  
of India 15 Decr/85  
1087 R -

25-  
I gather that both of the Rome Directories would oppose the application of their funds to the alteration of existing stations, with a view of rendering them defensible; but Mr. Rhin was of opinion that no objection would be raised on the part of the Directors of the Madras Railway to any slight modification which might seem desirable in the plans of the Stations on the unopened portions of the North West Line, even though it entailed a somewhat increased expenditure in

I have the honor to be,  
Sir,

Your Most Obedt Servant.

Wm Stewart. Major R.E.  
Acting Consulting Eng for Railways

Madras  
19<sup>th</sup> May  
1886

*Public Works Dept*

*No 1932*

*Proceedings of the Madras Government*

*Under the  
From the Government of India  
From the Acty Engrs  
for Railways.*

*20<sup>th</sup> June 1866*

*Read the following  
N. 2. 16<sup>th</sup> June 1865. No 194*

*Here enter 19<sup>th</sup> May 1866  
No 222*

*second of the above recorded  
In the letters the Official  
ting Consulting Engineer  
for Railways replies to  
a reference from the Govern-  
ment of India on the  
question of rendering the  
Principal Railway Stations  
in this Presidency defensible.  
The Stations to which that  
Government direct especial  
attention, as being those  
at which large Workshops  
or Depôts of Rolling Stock  
are maintained, appear to*

*W*

*1866 21<sup>st</sup> March 1866  
23.24  
21.25  
22.25  
23.25  
24.25  
25.25*

*To  
The Consulting Engineer  
for Railways,  
Railway Department,  
19<sup>th</sup> May 1866*

*To  
The Secretary to Government,  
Public Works Department,  
Fort Saint George,*

*Dated 19<sup>th</sup> May 1866  
Received 22<sup>nd</sup> May 1866*

*No. 222  
No 211*

*2. 119 June 1866 A. 130*

*443*

*Exhibiting the  
statements of the  
question of rendering  
defensible the principal  
Railway Stations in the  
Presidency of Madras  
19<sup>th</sup> May 1866*

be Royapuram, Perambore,  
Jolarpetty, Bangalore,  
Coimbatore, Bellary and  
Negapatam. Major Sha-  
rkwart considers the first  
and fourth of these to be  
situated too near strong Eu-  
ropean garrisons to require  
any special arrangements  
to be made for their defence,  
and, with regard to the  
others, he remarks that as  
they have been laid out  
over extended areas of ground  
without regard to any thing  
but convenience, they are  
peculiarly unfitted for  
defence, and cannot be  
provided with the necessary  
protective works within any  
reasonable outlay.

The Government

39  
fully concur in these views,  
and they likewise feel  
disposed to think that,  
if the space occupied by  
the Workshops at Perambore  
did so consist of some  
10 Acres, can be rendered  
defensible by the construction  
at a moderate outlay, of  
bastion towers at different  
points - the excavation of  
a trench outside the wall,  
and the formation of a bar-  
quette in the interior, it  
will be well to carry out  
these works, and the Con-  
sulting Engineer will  
submit the necessary plans  
and estimates for them.

So important a  
station as Raichoor, on the

junction of the Soradra  
with the Great Indian  
Peninsula Railway, should  
unquestionably be planed  
with a view to secure  
for it the Capabilities of  
defence mentioned by the  
Government of India, &  
the Govt. of Bombay will  
be addressed on the subject,  
in order that the respective  
Railway officials may  
be enabled to design the  
arrangements of the  
junction with that view,  
in communication with  
the Consulting Engineers.

The square towers  
which Major Shaw Stewart  
recommends to be erected  
to guard the Bridges over  
the Krishna & Poombodra

Rivers may perhaps be  
sufficient for the purpose,  
but the Government think  
that they should be so placed  
as completely to command  
not only the Bridges but  
their approaches, and that  
they should be designed  
of such Capacity and strength  
as to afford a secure refuge  
in case of need to the  
Railway employes and others,  
and to give the means of  
effectually protecting the  
passage of the Rivers in  
the neighbourhood of the  
line.

The site fixed for  
the Lyhour Station being  
unfavorable for the purposes  
of defence, the Government  
think that it will be

desirable to alter it, and the Consulting Engineer will accordingly communicate with the officers of the Railway Company in order that a more eligible position may be selected.

The proposals made in Para 13 with regard to the Stations at Tadpatri, Goondacul and Adoni, are approved.

*[Signature]*

$\frac{20}{2}$

To  
3 The Comg Engr for Railways  
7 Military Dept  
Sept 21<sup>st</sup> 1880

P. W. B. Dept  
Secy of Govt for India

1932  
Secy of the Madras Govt  
20 June 1932

Captain orders on  
certain correspondence  
relative to the construction  
of Defences for the  
Principal Railway  
Stations in this Presidency

A 442. 443/1932

35  
Ranching

1933

The Secretary to the  
Government of Bombay

The Government of  
India having drawn at-  
tention to the necessity  
of the principal Railway  
Stations in this Presidency  
being rendered defensible,  
the Officiating Consulting  
Engineer has submitted the  
observations which are con-  
tained in the accompany-  
ing extract from his re-  
port with regard to the  
proposed Station at Ranching.  
As it is of importance

that, on the junction of the  
Madras with the Great In-  
dian Peninsula Railway  
the station at Raichoor  
should be laid out in a  
manner as to secure for  
the capabilities of defer  
contemplated by the Govt  
of India, I am directed  
to request that the Govt of  
Bombay will issue such in-  
structions as may be  
necessary with a view to  
the junction station being  
designed by the respective  
Railway Officers in con-  
sultation, and in con-  
sult with the Consulting  
Engineers.

W.B.

For at Genl  
20th June/66 }

Recd 21<sup>st</sup> June with a copy of the Extract.

1886 Dept  
Pro. of Govt for India

A. 1933.

To The Secretary to the  
Govt of Bombay.

8/19 June/86

The Govt of Bombay  
requested to issue certain  
instructions relative to the  
designing &c of Junction  
Station proposed at Vaichoor.

A. 445