

General  
Estab<sup>t</sup>  
P. W. D.

No 344 W of 30<sup>th</sup> January 88

Read Cn 719 of 1888

Order

Communicated  
to the Supl<sup>y</sup> Engrs I, II  
& VI Circles, who will  
ascertain & report  
whether the Asst. Engrs  
named in the margin  
are desirous to proceed  
to England for profes-  
sional training under  
the conditions noted,  
and whether they can  
be recommended for  
the indulgence in  
the sense of para 9  
of

S. A. Subrahmanya Aiyar, B.A., B.C.S.,  
Rai Sahib, Asst Engr, 1<sup>st</sup> Grade -  
I Circle  
R. A. Srinivasa Aiyar, B.A., B.C.S.,  
Rai Sahib, Asst Engr, 2<sup>nd</sup> Grade -  
I Circle  
R. Gopala Aiyar, B.A., B.C.S., Asst  
Engr, 3<sup>rd</sup> Grade, VI Circle.

9. In view of these orders, it is now necessary to call for revised recom-  
mendations on behalf of young Engineers who fulfil the condition of being  
natives or domiciled Europeans. Such recommendations should be carefully  
made on behalf of those only who shew a *bona fide* desire to improve their  
professional knowledge, and must be strongly supported by their immediate  
superiors, on the ground that the officers possess the necessary qualifications  
for profiting by their deputation to England.

10. All previous recommendations will, under these orders, be considered as  
cancelled, and should not be repeated unless they can be now brought forward  
as cases to be specially considered under the new orders by the Government of  
India and by the Secretary of State.

The age of officers recommended should be limited for this year (1888) to  
30 years, for next year to 28, and thereafter to 25 years.

ORDER.—Ordered that this Resolution be forwarded to the Local Govern-  
ments, Administrations and Officers noted on  
the margin; also that it be published in  
Part I of the Gazette  
of India.

The Governments of Madras, Bombay, Bengal, the North-Western Provinces  
and Oudh, and the Punjab.  
The Chief Commissioners of the Central Provinces, Burma <sup>Upper</sup> Lower, Assam, and  
Coorg.  
The Resident at Hyderabad.  
The Agents to the Governor General for Central India, Rajputana, and  
Baluchistan.  
The Director General of Railways.  
The Consulting Engineers to the Government of India for Railways, Calcutta,  
Central Division and Lucknow.

Colonel, R.E.,  
Secy. to the Govt. of India.

The Secy to the Govt. of Madras  
Public Works Department

No 917 W of 21. 3. 83  
" 2734 W of 28. 9. 83  
" 22 C of 9. 1. 84  
" 633. 634 W of 7. 3. 84  
" 1934 W of 8. 8. 84  
" 2907 W of 4. 11. 86

No. 116 G.  
GOVERNMENT OF INDIA,  
PUBLIC WORKS DEPARTMENT.  
GENERAL.

Fort William, January 16, 1888.

Practical training of Native Engineers in England.

Read again—

Resolution in the Public Works Department, No. 1541—57G., dated 29th November 1882, on the subject of practical training of native Engineers in England.

Read—

Despatch from the Secretary of State for India, to the Government of India, No. 13 P. W., dated 24th March 1887.

Despatch to Secretary of State, No. 63 P. W., dated 31st October 1887.

Despatch from Secretary of State, No. 69 P. W., dated 8th December 1887.

OBSERVATIONS.—The Resolution of 1882, now read again, indicated the procedure under which, as an experiment, not more than two Native Engineers annually were to be sent to England at the public expense for professional training.

2. Under these orders, ten young Engineers, being natives or domiciled Europeans, have been sent to England in the five years from 1883 to 1887 inclusive.

3. In March last, the Secretary of State called for a full report on the results that had been obtained from the experiment, and for a definite opinion of this Government as to their value.

4. A report was accordingly obtained from the several Local Governments concerned as to the value of the experience gained in England by the officers who, after having passed a period of training there, had returned to their work in this country.

Bombay.  
Bengal.  
Punjab.

5. The three Local Governments consulted were of opinion that the value of the training was not commensurate with the expense incurred.

6. The Government of India, on a perusal of the reports from the Local Governments and of the reports on the progress of the several officers while under training, forwarded from time to time by the Secretary of State, was of opinion that training in England is an undoubted advantage to those officers who have a real desire to profit by it; but that the expenses of it ought to be largely contributed to by the officers themselves.

7. Accordingly, it was recommended that the contribution made by the State should be limited to paying the officers, while absent from duty in India, two-thirds of their salary only, together with an allowance of Rs. 1,000 to assist in defraying the expense of the voyage to and from England. And it was proposed to continue to send annually to England not more than two carefully selected officers, who were willing to accept the modified terms.

8. The orders of the Secretary of State on these proposals have now been received. His Lordship accepts the modified financial conditions proposed by the Government of India; but, in view of the reports received as to the success of the experiment, is inclined only to consider cases of a very special character, which may arise from time to time, and which this Government may deem desirable to recommend in the public interest.

344 W  
Cuo 719

Dr

I submit a draft order for approval, but I am doubtful whether we should include R. Gopala Aiyar, who has not yet completed his probation.

Cu  
26/1/88

He completes his year of probation next April and I think his name should be included.

Wm  
26.1.88

Gobt. of (1886) Madras.

PUBLIC.

Issued

Recd.

Encl.

G.O., 26th October 1886, No. 2267.

OCTOBER.

Messrs. Thomas Cook and Son.

Communicating correspondence relating to Messrs. Cook and Son's offer to provide passages for native students and others going to England on different occasions at the expense of Government.

26TH OCTOBER 1886, No. 2267, PUBLIC.

GOVERNMENT OF MADRAS.

PUBLIC DEPARTMENT,

READ—the following papers:—

From Messrs. THOMAS COOK AND SON, General Railway and Steamship Agents, &c., to the Secretary to the Government of India, Home Department, dated Ludgate Circus, London, E.C., 12th August 1886.

We see by the advertisements and notices in the Indian papers that the Government of India are sending native students and others to England on different occasions at the expense of the Government.

2. We have therefore to respectfully submit for your consideration that all passages, whether direct by steamer or by the overland route, for passages paid by the Government, should be arranged for through us.

3. We need scarcely say we shall have pleasure in arranging for the comfortable conveyance of such passengers at the lowest possible rates, and that we should make no charge to the Government of India for our services, and the passengers would receive the assistance and benefits of our various agents, interpreters, &c., in just the same way as first-class tourists.

Hoping this application will meet with your favorable consideration.

No. 12-341.

Madras.  
Bombay.  
Bengal.  
North-West Provinces  
and Oudh.

Punjab.  
Central Provinces.  
Burma.  
Assam.  
Coorg.  
Hyderabad.

Copy forwarded to the local Governments and Administrations marginally noted for information, with the remark that the proposal made by Messrs. Cook and Son appears to the Government of India to be one which might with advantage be adopted.

(By Order.)

(Signed) F. C. DAUKES,  
Under Secy. to the Govt. of India.

HOME DEPT. (EDUCATION),  
SIMLA, 23rd September 1886.  
To the Government of Madras.

From J. H. TAYLOR, Esq., Lieut., R.N.R., Port Officer, Madras, to the Chief Secretary to Government, dated Madras, 11th October 1886, No. 9784.

In returning reference No. 1684-C, in the Public Department, dated 6th instant, on Messrs. Thomas Cook and Son's application to provide all Government passages, whether direct by steamer or overland route, I have the honor to state that considering the uniform satisfaction afforded to the travelling public by this firm, I think the proposal may well be accepted by Government.

ORDER—dated 26th October 1886, No. 2267, Public.

Communicated to the departments of the Secretariat and to all heads of departments for information.

(True Extract.)

H. E. STOKES,  
Ag. Chief Secretary.

To the Departments of the Secretariat.  
„ all Heads of Departments.

Exd. T. O'Connor.

and above all with a thorough determination to learn all they can, that they have made great progress in acquiring a good knowledge of waterworks engineering, and I may say that I am very pleased indeed to be able to report most favourably of them in every way.

Now that they have received a good general insight into our waterworks at Bradford, I have made arrangements with some of my professional friends to enable them to visit similar works at Leeds, Edinburgh, Glasgow, Manchester, Liverpool, and Halifax, after doing which I think that they will have acquired as much insight as is possible into our English system of water-supply.

During their stay at Bradford I have taken many opportunities of showing them all that relates to the iron and textile manufactures of the district, as well as taking them over our drainage and sewerage and gasworks.

The tour of the above works, I think, may occupy about another month or six weeks, when, looking to the further insight which it is desired they should obtain into architectural practice, I think they might pass with advantage into other hands.

I say this, not with any desire to relieve myself of any further responsibility, or to curtail the period of six months for which they were originally sent to Bradford, but because I do not think any good can possibly accrue to Government or to themselves by keeping them longer engaged on office work, or in the drudgery of the details of levelling and measuring up on works, all of which are duties with which they are perfectly familiar.

I can assure you that their visit to Bradford has been a source of great pleasure to me, and I am sure of still greater advantage to the gentlemen themselves.

If I might be permitted to offer an opinion, I would suggest that in future Government would obtain the object it has in view by throwing them, under proper advice, on their own resources, and allowing them to travel about to works scattered over the country rather than by placing them for any lengthened period in one place.

By this course they would attain a more enlarged experience, and avoid the risk of falling into one narrow professional groove, which is always to be avoided.

I find that they are naturally anxious to return to India at as early a date as possible, and that they have a great desire to return home after a year in this country via America, Japan, and China, and that they are themselves prepared to defray all the expenses of the homeward journey by that route.

To my mind the expression of such a desire is one of the best proofs I can give of the advantages of the experiment Government is now trying in their particular case; for there can be no doubt that the enlarged experience and cultivation afforded by foreign travel will do much, both directly and indirectly, to educate the gentlemen in question, and through them their friends in the Department in India.

In conclusion, I may remark that they are gentlemen who, I feel sure, can be trusted and that Government, I am sure, will benefit by trusting them as far as possible in completing their own education, a subject which, I know, they have fully at heart.

No. 739-84P.W., dated India Office, 14th May 1884.

From—J. K. Cross, Esq., India Office, London,  
To—The President, Coopers Hill College.

I am directed to acknowledge the receipt of your letter No. 120, dated 23rd April, reporting on the progress made in their studies by the two Native Assistant Engineers. \* \* \* now under practical instruction in this country.

Lord Kimberley regrets to learn from your letter that, although the report of their study of waterworks during their first six months' residence in this country was a favourable one, the subsequent reports of their progress in studying architecture and machine and engine construction are unsatisfactory.

As it appears that they are unwilling to complete the two years' course of study for which they came to England, and are extremely desirous of now returning to India, and as in your opinion it would be best to let them do so, I am to request that you will inform them that permission to return to their duties in India is accorded them; \* \* \* being granted the equivalent of his passage out, with sanction to his proceeding via America and Japan, receiving pay until the 15th September, the date at which he might have reached India, had he gone direct, and thenceforward being on leave without pay until his arrival in India, and \* \* \* being allowed to proceed direct to India on or about the 1st August. The interval of time during which they may remain in this country can be spent in the manner suggested in your letter under reply.

The necessary communication will be made to the Government of India regarding the approaching return of these officers to their duty.

An important consideration now presents itself: less than two months remains of the original term agreed upon for their instruction. It is quite certain I shall never make good draughtsmen out of them, though, in this respect, \* \* \* is much better than \* \* \*; and when I say draughtsmen, I mean careful, accurate draughtsmen, and not artistic. I have no complaints to make of them; they are industrious, though slow; they are interested in their work, and show great intelligence in following my arguments, though in the application of the principles laid down they frequently fail, sometimes from sheer carelessness, sometimes from want of power of drawing. This carelessness of which I speak and disinclination to take trouble to arrive at what they seem to think are small matters are quite peculiar to them. I do not remember ever to have noticed the same defect (at all events not to the same extent as in \* \* \*) in any of the two or three hundred students who have passed through my school at the Royal Academy.

A great portion of my time has been occupied in teaching them how to project features on plan, section, and elevation, which they as Engineers ought to have known better how to teach me. They seemed to have forgotten all about the elementary problems of intersections of cones, cylinders, and spheres, which, I presume, formed a part of their earlier courses of study. They say that they could set the construction of such features out on the works if such were ever required, and that may possibly be the case. I have known foremen of works who could set out the most complicated problems of vaulting, but whose draughtsmanship on a small scale was deplorable. Foremen, however, are not called upon to design, and this is the chief difficulty which presents itself with \* \* \*; they seem to think that because, having a retentive memory, they are able to recollect and could probably pass a good examination in writing about what I have told them, nothing more is required excepting to set some Native draughtsman to work out designs from their description—an idea which, of course, is quite illusory. They might be able to describe a palace in writing and unable to design and draw even a pigsty.

I think it may be advisable that, in June and July, they should travel either in England or Italy to study existing buildings and make sketches and notes, and I am now laying down routes for them to take in London, where they will find interesting and useful examples of architecture.

Dated 18, Shorncliffe Road, Folkestone, 5th April 1884.

From—J. L. O'CALLAGHAN, Esq.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.B., R.E.

In compliance with your request I send the following report on the two Native Engineers now studying in England.

When I took charge of the practical course they had just come up to London from Bradford, and were supposed to be attending the works of Messrs. Westwood, Baillie and Company. Arrangements were being made for a course of instruction in architecture under Mr. P. Spiers, and they having expressed a wish to spend a portion of their time in locomotive shops, it was settled that they were to spend two days a week at the Great Eastern shops at Stratford.

Mr. Spiers has, I believe, sent you a report on them, and I need only add that I was disappointed in their work under him. They seem to me to have misunderstood the object of their visit to England, and so soon as the novelty wore off they failed to work with the zeal they at first displayed.

In the locomotive works they have seen a good deal, but have not made many notes or sketches, giving as an excuse that the Locomotive Superintendent objected to their making sketches. It, however, turned out that what he objected to was only what from the first he said he would not allow, viz., the making copies of drawings in his office. Instead of sketching simple useful appliances they wished to copy drawings of complicated hydraulic machinery which could not be of any future use to them. This naturally was objected to.

Their sole desire now seems to be to return to India, and I fear it would not lead to any useful result if they are compelled to remain in England for another year.

It will be impossible to ascertain the amount of information they have acquired until they are again at work in India, but I fear a good deal of what they have learned is only superficial.

Dated Waterworks Engineer's Office, Town Hall, Bradford, 24th July 1883.

From—ALEXANDER R. BINNIE, Esq.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.S.I.,

Now that \* \* \* have been with me for some time, I feel sure that you would like to hear how they are getting on, as well as my opinion on the probable usefulness of such instruction as they are receiving.

In the first place, I would remark that, coming as they do to this country after a good theoretical education, ten years' practical experience in the Public Works Department in India,

The Secretary of State will remember that \* \* \* soon after their arrival in the country, reported themselves in May 1883 to Mr. Binnie, and studied the Bradford waterworks of which Mr. Binnie is Engineer, under his guidance; that they visited many of the chief engineering works in the north of England with his advice and assistance, finally leaving Bradford in September 1883, and bringing with them from Mr. Binnie a very favourable, indeed complimentary, report. That they then in November took up machine and engine fitting at Stratford; and architecture under Mr. Spiers, with whom they are still working. And as they have not secured favourable reports on their winter's work, the Secretary of State will probably desire to have before him the full text of Mr. Binnie's favourable report on their work with him. A copy of this report I accordingly submit herewith.

The engagement made with Mr. Spiers will come to an end in less than a month, and it has to be considered what it will be best then to do with both Assistant Engineers.

I have asked them to state their wishes on this head, and find that they both most heartily desire to return to India. It is not perhaps necessary that I should enter into a detail of the reasons influencing them. It is easy to see that in the case of Hindus keeping within their caste rules, and with a staff of Indian servants attending on them, a prolonged residence in this country, with ways so novel to them all, must be attended with many very irksome difficulties.

\* \* \* asks permission to leave England about the 1st June next, rejoining his duties in India in the middle of October. He wishes to be allowed to travel *via* America and Japan, and is willing to bear all expenses that may be in excess of the sum it would cost Government to send him back by the route by which he came. He begs, however, the favour of being advanced the passage money that Government would have to pay if he returned direct, and his pay for the four months which the journey would occupy.

\* \* \* requests to be allowed to return direct to India, leaving England in the first week in August, and he proposes to employ the time after leaving Mr. Spiers in visiting important Engineering works in this country, and buildings of architectural interest on the Continent.

There remain the three Native servants, whose passages to England Government paid. No doubt their passages back will similarly be paid.

The Secretary of State will perhaps desire that I should state the course I would recommend. My opinion is that, seeing how earnestly both the Assistant Engineers desire to return to India this summer, it is undesirable to detain them longer.

I think that they might turn a month or six weeks to good account, after leaving Mr. Spiers, in inking in and completing the studies made in pencil while with him, and in visiting carefully such buildings in London as he may recommend. After that it would be best, in my judgment, to let them return to India without delay.

I do not believe in much good being likely to result from butterfly visits, either to large engineering works in England or to buildings of architectural interest on the Continent. The impressions thus hastily made cannot be expected to be other than superficial; useful knowledge is not to be acquired in this easy way.

I would draw attention to \* \* \* application to be allowed to go back to his duties *via* America and Japan.

Dated Carlton Chambers, 12, Regent Street, March 1884.

From—R. PHENE-SPIERS, Esq., F.S.A.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.B., President of the Royal Indian College, Coopers Hill.

In accordance with your request conveyed to me through Mr. O'Callaghan, I beg to report that the course which I laid down for the instruction of \* \* \* in architectural design has been carried out more or less as suggested. The progress made, however, has been comparatively slow, owing to their extremely weak draughtsmanship; this was, in fact, one of the first defects I found out, and in answer to my inquiries whether they had ever learnt drawing at all, they explained to me it was so many years ago that they had forgotten all about it—a singular confession for Engineers to make. I trusted, after a time, that their former acquirements in this respect might return, and to a certain extent this has happened; but, even now, their drawings seem to me to be inferior to those of the students at Coopers Hill. Their studies in design have been, therefore, materially delayed in consequence of their being unable to express their ideas in drawing. I was at one time inclined to insist that every design should be completed before I gave another subject; they pointed out to me that the acquirements of the principles of design were more important to them now, and that they could finish their drawings at their leisure afterwards in India. I gave way, therefore, until I found out through Mr. O'Callaghan that they intended to hand over these drawings to Native draughtsmen to finish in ink (an idea which would be repugnant to an English student who had any interest in his own work), and then I insisted on their completing some of their designs. I understand they propose to take these down to you next week.

8

*Inclines*

No. 27, dated India Office, London, 15th May 1884.

From—The Secretary of State for India,  
To—The Government of India,

PARAGRAPH 1.—In continuation of my Public Works letter, No. 36, dated 21st June 1883, I now transmit, for the information of your Excellency's Government, copy of correspondence\* which has recently passed between Sir A. Taylor and this office, in respect to the results of the practical instruction of the two Native Assistant Engineers, \* \* \* who came to England in 1883.

2. Your Excellency will observe from Sir A. Taylor's letter and its accompaniments that although the reports of their study of water-works during their first six months of residence in this country were favourable, the subsequent reports of their studies of architecture and construction of locomotives are unsatisfactory.

3. As it appears that they are very desirous to return to India at once without completing the two years' course for which they came to England, I considered that under the circumstances, and for the reasons given by Sir A. Taylor, it would not be desirable to insist upon their remaining. I have accordingly decided to allow them to return in the manner and by the routes desired by themselves. \* \* \* will travel by way of America and Japan, rejoining his duties in India in the middle of October, and receiving pay until the 15th September, the date at which he might have reached India had he gone direct, and thenceforward being on leave without pay. \* \* \* will go direct, and will arrive in India about the end of August.

4. This first experiment of permitting Native Engineers to visit this country with the view of gaining knowledge and experience in matters connected with their profession cannot be pronounced to have been successful, and it suggests the necessity of reconsidering the conditions under which they should be selected in future.

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No. 120, dated Coopers Hill, 23rd April 1884.

From—GENERAL SIR ALEXANDER TAYLOR, K.C.B.,  
To—The Under-Secretary of State for India,

PUBLIC WORKS letter No. 1979, dated 9th November last, conveyed Lord Kimberley's approval to the two Native Assistant Engineers, \* \* \* devoting six months to the study of architecture under the personal instruction of Mr. Spiers.

They have been engaged in accordance with these instructions since November last. For five days in the week they have studied architecture, and have spent the other two days at the workshops of the Great Eastern Railway Company at Stratford, near London, under the general supervision of Mr. O'Callaghan, a distinguished and experienced Superintendent Engineer of the Indian Public Works Department, who is assisting me in superintending those Assistant Engineers lately appointed from the College, who are undergoing a short course of practical engineering in this country. Mr. O'Callaghan has also, on a few occasions, inspected the work they had done for Mr. Spiers.

Recently I have thought it well to obtain from Mr. Spiers and also from Mr. O'Callaghan specific reports on the progress so far made. These reports I have now the honour to submit in original (return requested).

They are not what I had hoped for. Mr. Spiers is disappointed. The results he had anticipated have not been accomplished. But it is important to notice that he does not attribute the failure to secure a full measure of success so much to the Lallas being wanting in industry, for he says, "they have taken an interest in their work, and have been industrious, though slow," as to their being much less skilful draughtsmen than he had been led to expect.

And I would remark that this is a source of disappointment to which we shall always be liable in endeavouring to teach architecture to Engineers to whom skill in drawing is by no means the vitally essential qualification that it is to architects.

Neither is Mr. O'Callaghan satisfied. The object with which both Assistant Engineers were sent to the Stratford workshops was explained in paragraphs 5 and 6 of my letter No. 101, dated the 19th October 1883, to be to enable them to acquire a good knowledge of engine and machine fitting, a kind of knowledge likely to be useful to them in their future career, and which they themselves expressed a warm desire to acquire. But this object they appear to have lost sight of, and, while attending the works, I believe, with regularity, to have employed their time there in a way which was not in accordance with the instructions they received.

7  
GOVERNMENT OF INDIA.  
PUBLIC WORKS DEPARTMENT.  
GENERAL.  

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To

No. 812G.

Dated Simla, July 8, 1884.

Received

No. 734 G. 812G  
Forwards copy of despatch and enclosures from the Secretary of State, showing the result of the training during the first year of the two Native Engineers who were sent for the purpose to England in 1883, and requests that great care may be taken in the selection of officers to be sent to England for practical training.

No. 812G.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

GENERAL.

To

THE GOVERNMENTS OF MADRAS, BOMBAY, BENGAL, THE NORTH-WESTERN PROVINCES AND  
ODDH, AND THE PUNJAB, PUBLIC WORKS DEPARTMENT.  
THE CHIEF COMMISSIONERS OF THE CENTRAL PROVINCES, BRITISH BURMA, ASSAM, AND  
COORG.  
THE RESIDENT AT HYDERABAD.  
THE AGENTS TO THE GOVERNOR GENERAL FOR CENTRAL INDIA, RAJPUTANA AND  
BILUCHISTAN.  
THE DIRECTOR GENERAL OF RAILWAYS.

Simla, July 8, 1884.

SIR,

ADVERTING to previous correspondence on the subject of the practical training in England of Native Engineers, I am directed to forward copy of a despatch from the Secretary of State, No. 27 P. W. of 15th May 1884, and enclosures, showing the result of the training during the first year of the two Native Engineers who were sent for the purpose to England in 1883, and, with reference thereto, to request that great care may always be exercised in the selection of officers to be sent to England for practical training, the officers selected being made most clearly to understand what description of training is before them, and what the inconveniences to them of life in England may be.

I have the honor to be,

SIR,

Your most obedient Servant,

A. B. SAMPSON,

Under Secretary.

Documents accompanying.

Copy of despatch and enclosures referred to.

5

GOVERNMENT OF INDIA.  
PUBLIC WORKS DEPARTMENT.

GENERAL.

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No. 1171G.

Dated Simla, August 31, 1883.

Received

142 2731 43 28/9 83

Extension to European, Eurasian, and other  
Natives of India in the wider statutory sense  
of the rules for practical training in England of  
Natives of pure Asiatic descent.

No. 1171G.  
GOVERNMENT OF INDIA.  
PUBLIC WORKS DEPARTMENT.  
GENERAL.

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Simla, August 31, 1883.

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The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab, in the Public Works Department.  
The Chief Commissioners, Central Provinces, British Burma, Assam, and Coorg.  
The Resident, Hyderabad.  
The Agents to the Governor General for Central India, Rajputana, and Beluchistan.  
The Director General of Railways.  
The Consulting Engineers to the Government of India, for Guaranteed Railways, Calcutta, Lahore and Lucknow.  
The Superintendent of Works, Simla Imperial Circle.

The following is forwarded to the Local Governments, Administrations and Officers marginally noted for information.

By order,

G. H. D. WALKER.

Offg. Under Secretary to the Govt. of India.

*Extract*

Extract of a letter No. 1127G., dated 18th August 1883, from the Secretary to the Government of India, Public Works Department, to the Secretary to the Government of Bengal, Public Works Department.

\* \* \* \* \*

I am directed to state that the Right Hon'ble the Secretary of State has approved of the proposal that the provisions of Public Works Department Resolution No. 1541-57G., dated 28th November 1882, for enabling Native Engineers to proceed to England for practical training should be, at the discretion of the Government of India, extended to European, Eurasian, and other members of the Engineer Establishment who are Natives of India in the wider statutory sense.

*H*

GOVERNMENT OF INDIA.  
PUBLIC WORKS DEPARTMENT.  
GENERAL.

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To

Nos. 1541—57 G.

Dated November 29, 1882.

Received

*13/2 927 5 7 2 1883*

Practical training of Native Engineers in England.

No. 395, P. W. D. Press—30-11-82—318.

ORDER.—Ordered, that a copy of this Resolution, and of the papers read,

The Governments of Madras, Bombay, Bengal, and North Western Provinces and Oudh, in the Public Works Department.  
The Chief Commissioners, Central Provinces, British Burma, Assam and Coorg.  
The Resident, Hyderabad.  
The Agents to the Governor General for Central India, Rajputana and Beluchistan.  
The Director General of Railways.  
The Consulting Engineers to the Government of India for Guaranteed Railways, Calcutta, Lahore and Lucknow.

be forwarded to the Government of the Punjab, with special reference to paragraph 10, and to the Local Governments and Administrations and Officers noted in the margin; also that it be published in Part I of the *Gazette of India*.

G. H. D. WALKER.

Offg. Under Secy. to the Govt. of India.

11

ORDER.—Ordered, that a copy of this Resolution, and of the papers read, be forwarded to the Government of the Punjab, with special reference to paragraph 10, and to the Local Governments and Administrations and Officers noted in the margin; also that it be published in Part I of the *Gazette of India*.

G. H. D. WALKER.

Offg. Under Secy. to the Govt. of India.

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in the supervision of passed students of Coopers Hill College under practical instruction. In fact, during the first 18 months of their stay, they will be afforded the same opportunities of improvement as such passed students are afforded, and the last six months of their stay will be spent, as suggested by you, in visiting important engineering works in progress, under Sir A. Taylor's advice.

5. The passages to and from India of the selected Engineers will be provided, and their salary while in this country will be issued at the rate suggested in your letter, namely, to 1st and 2nd Grade Assistants, full pay, converted into sterling at the official rate for the year, leaving the case of the pay of an Officer of higher grade to be decided hereafter, should the occasion arise.

6. As regards their social well-being while in England, I will take such steps as appear most likely to assist them through my Political Aide-de-Camp who is specially charged with such duties.

7. It is obvious that the success or failure of the privilege to be thus afforded to native Engineers will depend largely on the selection made of the individual in India. Great care must, of course, be taken by the Local Governments in recommending candidates, for with them alone rests the real knowledge whether the native Engineer to be selected is possessed of the qualifications, mental and physical, which are likely to enable him to derive benefit from his studies here, and render him of enhanced usefulness to the State on his return to India. An injudicious selection would probably cause some injury to the young man himself, as well as useless expense to the State. The importance of these points will, no doubt, be impressed by you on the Local Governments.

8. I will only add a caution that a condition of selection should be that the young Engineer shall already have had some years' experience of serious work in India, otherwise he will hardly be in a position to benefit by what he sees in Europe.

9. The selected candidates shall receive all possible facilities in this country, and reports of the progress of the Engineers will be, from time to time, submitted to this Office, and transmitted to your Government. In the event of failure to derive benefit from instruction, or of unsatisfactory conduct, the Engineer will at once be required to return to India.

10. I accordingly sanction a compliance with the application of Lalla Gunga Ram to be allowed to come home for two years' study of practical engineering, and I request that I may be at once informed of the probable time of his arrival in England, in order that the necessary arrangements may be made with the President of Coopers Hill College for his being posted to work immediately on arrival.

RESOLUTION.—The attention of Local Governments and Administrations should be specially directed to paragraphs 7 and 8 of the Despatch last read.

The Government of India is prepared to receive the names of native Engineers who may be considered well fitted to be benefitted by the training proposed, and who are willing to avail themselves of it. The recommendations should be accompanied by an account of their previous experience, their character, and their acquirements, which will enable the Government of India to select the most promising.

If the Engineers who are sent to England desire to draw part of their salary in India for the support of their families, they should indicate the person to whom the payment is to be made, and should give him formal authority to receive it and grant a receipt for it. A last-pay certificate should be given to the Engineer showing the balance to be drawn at the India Office. Full pay should be drawn in India up to the date of embarkation.

Govt. of (1888) Madras.

PUBLIC WORKS.

Dated January, 30th.

Recd.

Encl.

G.O., 30th Jan. 1888, No. 344 W.

JANUARY.

### Practical Training of Native Engineers in England.

Resolution of the Government of India regarding —, communicated to Superintending Engineers, I, V and VI Circles, for report whether certain Assistant Engineers in their respective circles are desirous to proceed to England for professional training and whether they can be recommended for the indulgence.

Government of India; but, in view of the reports received as to the success of the experiment, is inclined only to consider cases of a very special character, which may arise from time to time, and which this Government may deem desirable to recommend in the public interest.

9. In view of these orders, it is now necessary to call for revised recommendations on behalf of young Engineers who fulfil the condition of being natives or domiciled Europeans. Such recommendations should be carefully made on behalf of those only who show a *bonâ fide* desire to improve their professional knowledge, and must be strongly supported by their immediate superiors, on the ground that the officers possess the necessary qualifications for profiting by their deputation to England.

10. All previous recommendations will, under these orders, be considered as cancelled, and should not be repeated unless they can be now brought forward as cases to be specially considered under the new orders by the Government of India and by the Secretary of State.

The age of officers recommended should be limited for this year (1888) to 30 years, for next year to 28, and thereafter to 25 years.

The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab.  
 " Chief Commissioners of the Central Provinces, Burma (Upper and Lower), Assam, and Coorg.  
 " Resident at Hyderabad.  
 " Agents to the Governor-General for Central India, Rajputana, and Beluchistan.  
 " Director-General of Railways.  
 " Consulting Engineers to the Government of India for Railways, Calcutta, Central Division and Lucknow.

Order—Ordered that this resolution be forwarded to the Local Governments, Administrations and Officers noted on the margin; also that it be published in Part I of the *Gazette of India*.

(Signed) R. C. B. PEMBERTON, Colonel, R.E.,  
 Secy. to the Govt. of India.

ORDER—dated 30th January 1888, No. 344 W., Public Works.

Communicated to the Superintending Engineers, I, V and VI Circles, who will ascertain and report whether the Assistant Engineers named in the margin are desirous to proceed to England for professional training under the conditions stated, and whether they can be recommended for the indulgence in the sense of paragraph 9 of the Government of India resolution.

S. A. Subrahmanya Aiyar, B.A., B.C.E., Rai Sahib, Assistant Engineer, 1st Grade, V Circle.  
 R. A. Srinivassa Aiyangar, B.A., B.C.E., Rai Sahib, Assistant Engineer, 2nd Grade, I Circle.  
 R. Gopala Aiyar, B.A., B.C.E., Assistant Engineer, 3rd Grade, VI Circle.

2. The resolution will be communicated to other Superintending Engineers for information, and will be republished in the *Fort St. George Gazette*.

(True Extract.)

Colonel, R.E.,  
 Secy. to Govt., P.W.D.

To the Superintending Engineer, I Circle,  
 " " " V " }  
 " " " VI " }  
 To other Superintending Engineers,  
 To the Chief Engineer for Irrigation,  
 " Consulting Architect to Government,  
 " Examiner, Public Works Accounts, }  
 Fxd. J. Moses.  
 Spare Copies

with collection of previous papers.

## ANNEXURE.

Proceedings of the Government of India, Public Works Department (General), dated Fort William, 29th November 1882, Nos. 1541—57 G.

### *Practical training of Native Engineers in England.*

Read—the following despatches:—

From the Government of India, to the Secretary of State for India, dated 29th July 1882, No. 43 P.W.

In personal communication with the Lieutenant-Governor of the Punjab, we have been considering an application from a young Punjabi Assistant Engineer, Lalla Gunga Ram, for permission to go to England on duty to study practical engineering. He is said to be a good English scholar, and better read than most natives in the theory of his profession, and has the power, more than is usual with natives, of applying practically what he has learnt by study.

2. We are gratified by this spontaneous expression of a desire for self-improvement. One of the great drawbacks to our Native Engineers is a poverty of invention in design. This is more especially the case in designing buildings, in which they do not rise above the type of the Indian bungalow or the Indian barracks, which are their model for all European dwellings. They have seen nothing higher and aim at nothing higher. There can be no doubt that their professional knowledge would be enlarged, and their usefulness to the State would be increased, by a visit to England and observation of large works.

3. Officers of this class are not entitled to furlough until they have served 10 years, when they would be too old to obtain the full benefit of such training, and, moreover, their furlough pay, if specially permitted to take furlough at an earlier period of their service, would be insufficient for the purpose in the case of a stranger in a foreign land.

4. The salary of Lalla Gunga Ram is Rs. 450 per mensem, and we have no objection to his receiving the equivalent of this in sterling for two years, together with a free passage by sea both ways, the whole forming a charge against the Provincial assignment, and with your Lordship's permission we are prepared to carry this into effect.

5. We do not expect that, at present at all events, many Native Engineers will desire to follow his example. Most will consider themselves debarred by considerations of caste or religion. But we should be glad to extend the concession to a limited number of selected Native Engineers who may voluntarily come forward. We propose, as a rule, to select them from the 1st and 2nd grades of Assistant Engineers, which would fix the age from 25 to 28 or thereabouts. They should be conspicuous for a good knowledge of English, for industry, energy and engineering ability of a practical rather than a theoretical nature. The selections would be made by Local Governments, and their names submitted to the Government of India for approval and for transmission to the Secretary of State.

6. Their absence from India might extend to two years. They would on arrival report themselves to the Secretary, in the Public Works Department, at the India Office, and should be attached for 18 months or thereabouts to some Engineer or Engineers of repute, in the same way and under the same supervision as the passed students of the Royal Indian Engineering College, the State paying the usual fees. It would perhaps be better that their training should be general rather than special.

The remaining few months of their deputation might be spent in visiting, under the auspices of the Secretary of State, important works in progress.

7. With a view to their social well-being, the East India Association might be invited to interest themselves in the experiment.

8. We consider that 1st and 2nd grade Assistants might receive their full pay converted into sterling at the usual rate. This is more than is given to the passed students of the Royal Indian Engineering College who undergo their term of practical training in England, but not more than is given to those who elect for a training in India. Natives of the age indicated have, in accordance with caste or religious necessities, married very early, and are of course generally burdened with families and part of their pay must be left for their support. Moreover, the country and its customs will be to them foreign, and they will be treated as foreigners in all matters of payment. If on special grounds an officer of higher rank were sent, his case would be specially considered, but we think the equivalent of Rs. 500 per mensem should suffice.

9. The continuance to individuals of the privilege we propose would be dependent on good behaviour and satisfactory progress. Any failure to maintain a satisfactory standard in these respects would be followed by the withdrawal of the privilege, and possible reduction in rank, or dismissal from the service, in case of any flagrant acts of misconduct.

From the Secretary of State for India, to the Government of India, dated 28th September 1882, No. 53 P.W.

Your Excellency's Public Works letter, No. 43 of the 29th July last, makes certain proposals in respect to the possible study of practical engineering in this country by a limited number of Native Engineers of the Indian Public Works Department, to be selected carefully by your Government from time to time, and submits at the same time the name of one Lalla Gunga Ram, an Assistant Engineer, in the Punjab Public Works Department, as desirous of at once visiting England for such opportunities of study and improvement.

2. The general principle on which your suggestions are based, namely, the desire of your Government to afford competent and willing Native Engineers all reasonable opportunities of professional improvement, has my cordial approval, and there only remains for me to consider whether the proposals made in your letter are such as could be satisfactorily put in practice.

3. After due consideration of the subject, I see no reason why the experiment should not be made. It is admittedly an experiment, and I should be disposed to limit the number of Engineers so sent home to two annually for the first 3 years, supposing that two annually shall be found thoroughly qualified to benefit by the offer of your Government, as well as desirous of availing themselves of it. It will then be tested by experience how far the practical instruction afforded them in this country is likely to be of real benefit to them, and whether any difficulties arise in connection with their mode and manner of life in this country.

4. While in England, they will be placed under the immediate orders of Sir A. Taylor, the President of Coopers Hill College, who will arrange for their distribution and supervision under Engineers of repute, in consultation with the officer of your Public Works Department who may be employed at that time in the supervision of passed students of Coopers Hill College under practical instruction. In fact, during the first 18 months of their stay, they will be afforded the same opportunities of improvement as such passed students are afforded, and the last six months of their stay will be spent, as suggested by you, in visiting important engineering works in progress, under Sir A. Taylor's advice.

5. The passages to and from India of the selected Engineers will be provided, and their salary while in this country will be issued at the rate suggested in your letter, namely, to 1st and 2nd Grade Assistants, full pay, converted into sterling at the official rate for the year, leaving the case of the pay of an officer of higher grade to be decided hereafter, should the occasion arise.

6. As regards their social well-being while in England, I will take such steps as appear most likely to assist them through my Political Aide-de-Camp who is specially charged with such duties.

7. It is obvious that the success or failure of the privilege to be thus afforded to Native Engineers will depend largely on the selection made of the individual in India. Great care must, of course, be taken by the Local Governments in recommending candidates, for with them alone rests the real knowledge whether the Native Engineer to be selected is possessed of the qualifications, mental and physical, which are likely to enable him to derive benefit from his studies here, and render him of enhanced usefulness to the State on his return to India. An injudicious selection would probably cause some injury to the young man himself, as well as useless expense to the State. The importance of these points will, no doubt, be impressed by you on the Local Governments.

8. I will only add a caution that a condition of selection should be that the young Engineer shall already have had some years' experience of serious work in India, otherwise he will hardly be in a position to benefit by what he sees in Europe.

9. The selected candidates shall receive all possible facilities in this country, and reports of the progress of the Engineers will be, from time to time, submitted to this office, and transmitted to your Government. In the event of failure to derive benefit from instruction, or of unsatisfactory conduct, the Engineer will at once be required to return to India.

10. I accordingly sanction a compliance with the application of Lalla Gunga Ram to be allowed to come home for two years' study of practical engineering, and I request that I may be at once informed of the probable time of his arrival in England, in order that the necessary arrangements may be made with the President of Coopers Hill College for his being posted to work immediately on arrival.

#### Resolution—

The attention of Local Governments and Administrations should be specially directed to paragraphs 7 and 8 of the despatch last read.

The Government of India is prepared to receive the names of Native Engineers who may be considered well fitted to be benefited by the training proposed, and who are willing to avail themselves of it. The recommendations should be accompanied by an account of their previous experience, their character, and their acquirements, which will enable the Government of India to select the most promising.

If the Engineers who are sent to England desire to draw part of their salary in India for the support of their families, they should indicate the person to whom the payment is to be made, and should give him formal authority to receive it and grant a receipt for it. A last-pay certificate should be given to the Engineer showing the balance to be drawn at the India Office. Full pay should be drawn in India up to the date of embarkation.

#### Order—

Ordered that a copy of this resolution, and of the papers read, be forwarded to the Government of the Punjab,

The Governments of Madras, Bombay, Bengal, and North-Western Provinces and Oudh, in the Public Works Department.  
 „ Chief Commissioners, Central Provinces, British Burma, Assam and Coorg  
 „ Resident, Hyderabad.  
 „ Agents to the Governor-General for Central India, Rajputana and Biluchistan.  
 „ Director-General of Railways.  
 „ Consulting Engineers to the Government of India for Guaranteed Railways, Calcutta, Lahore and Lucknow.

with special reference to paragraph 10, and to the Local Governments and Administrations and Officers noted in the margin; also that it be published in Part I of the *Gazette of India*.

(Signed) G. H. D. WALKER,  
 Offg. Under Secy. to the Govt. of India.

Proceedings of the Government of India, Public Works Department (General),  
dated Simla, 31st August 1883, No. 1171 G.

The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Outh, and the Punjab, in the Public Works Department.  
" Chief Commissioners, Central Provinces, British Burma, Assam, and Coorg.  
" Resident, Hyderabad.  
" Agents to the Governor-General for Central India, Rajputana, and Bilachistan.  
" Director-General of Railways.  
" Consulting Engineers to the Government of India for Guaranteed Railways, Calcutta, Lahore and Lucknow.  
" Superintendent of Works, Simla Imperial Circle.

The following is forwarded to the Local Governments, Administrations and Officers marginally noted for information.

(By Order.)

(Signed) G. H. D. WALKER,  
Offg. Under Secy. to the Govt. of India.

EXTRACT of a letter, No. 1127 G., dated 18th August 1883, from the Secretary to the Government of India, Public Works Department, to the Secretary to the Government of Bengal, Public Works Department.

I am directed to state that the Right Hon'ble the Secretary of State has approved of the proposal that the provisions of Public Works Department Resolution No. 1541-57 G., dated 28th November 1882, for enabling Native Engineers to proceed to England for practical training, should be, at the discretion of the Government of India, extended to European, Eurasian, and other members of the Engineer Establishment who are natives of India in the wider statutory sense.

From A. B. SAMPSON, Esq., Under Secretary to the Government of India, Public Works Department (General), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 8th July 1884, No. 812 G.

Adverting to previous correspondence on the subject of the practical training in England of Native Engineers, I am directed to forward copy of a despatch from the Secretary of State, No. 27 P.W., of 15th May 1884, and enclosures, showing the result of the training during the first year of the two Native Engineers who were sent for the purpose to England in 1883, and, with reference thereto, to request that great care may always be exercised in the selection of officers to be sent to England for practical training, the officers selected being made most clearly to understand what description of training is before them, and what the inconveniences to them of life in England may be.

ENCLOSURES.

From the Secretary of State for India, to the Government of India, dated India Office, London, 15th May 1884, No. 27.

Paragraph 1.—In continuation of my Public Works letter, No. 36, dated 21st June 1883,

I now transmit, for the information of your Excellency's Government, copy of correspondence \* which has recently passed between

Sir A. Taylor and this office, in respect to the results of the practical instruction of the two Native Assistant Engineers, \* \* \* who came to England in 1883.

2. Your Excellency will observe from Sir A. Taylor's letter and its accompaniments that although the reports of their study of water-works during their first six months of residence in this country were favorable, the subsequent reports of their studies of architecture and construction of locomotives are unsatisfactory.

3. As it appears that they are very desirous to return to India at once without completing the two years' course for which they came to England, I considered that under the circumstances, and for the reasons given by Sir A. Taylor, it would not be desirable to insist upon their remaining. I have accordingly decided to allow them to return in the manner and by the routes desired by themselves. \* \* \* will travel by way of America and Japan, rejoining his duties in India in the middle of October, and receiving pay until the 15th September, the date at which he might have reached India had he gone direct, and thenceforward being on leave without pay. \* \* \* will go direct, and will arrive in India about the end of August.

4. This first experiment of permitting Native Engineers to visit this country with the view of gaining knowledge and experience in matters connected with their profession cannot be

pronounced to have been successful, and it suggests the necessity of reconsidering the conditions under which they should be selected in future.

From General Sir ALEXANDER TAYLOR, K.C.B., to the Under Secretary of State for India, dated Coopers Hill, 23rd April 1884, No. 120.

Public Works letter No. 1979, dated 9th November last, conveyed Lord Kimberley's approval to the two Native Assistant Engineers, \* \* \* devoting six months to the study of architecture under the personal instruction of Mr. Spiers.

They have been engaged in accordance with these instructions since November last. For five days in the week they have studied architecture, and have spent the other two days at the workshops of the Great Eastern Railway Company at Stratford, near London, under the general supervision of Mr. O'Callaghan, a distinguished and experienced Superintendent Engineer of the Indian Public Works Department, who is assisting me in superintending those Assistant Engineers lately appointed from the College, who are undergoing a short course of practical engineering in this country. Mr. O'Callaghan has also, on a few occasions, inspected the work they had done for Mr. Spiers.

Recently I have thought it well to obtain from Mr. Spiers and also from Mr. O'Callaghan specific reports on the progress so far made. These reports I have now the honor to submit in original (return requested).

They are not what I had hoped for. Mr. Spiers is disappointed. The results he had anticipated have not been accomplished. But it is important to notice that he does not attribute the failure to secure a full measure of success so much to the Lallas being wanting in industry, for he says, "they have taken an interest in their work, and have been industrious, though slow," as to their being much less skilful draughtsmen than he had been led to expect.

And I would remark that this is a source of disappointment to which we shall always be liable in endeavouring to teach architecture to Engineers to whom skill in drawing is by no means the vitally essential qualification that it is to architects.

Neither is Mr. O'Callaghan satisfied. The object with which both Assistant Engineers were sent to the Stratford workshops was explained in paragraphs 5 and 6 of my letter, No. 101, dated the 19th October 1883, to be to enable them to acquire a good knowledge of engine and machine fitting, a kind of knowledge likely to be useful to them in their future career, and which they themselves expressed a warm desire to acquire. But this object they appear to have lost sight of, and, while attending the works, I believe, with regularity, to have employed their time there in a way which was not in accordance with the instructions they received.

The Secretary of State will remember that \* \* \* soon after their arrival in the country, reported themselves in May 1883 to Mr. Binnie, and studied the Bradford waterworks, of which Mr. Binnie is Engineer, under his guidance; that they visited many of the chief engineering works in the north of England with his advice and assistance, finally leaving Bradford in September 1883, and bringing with them from Mr. Binnie a very favorable, indeed complimentary, report. That they then in November took up machine and engine fitting at Stratford; and architecture under Mr. Spiers, with whom they are still working. And as they have not secured favorable reports on their winter's work, the Secretary of State will probably desire to have before him the full text of Mr. Binnie's favorable report on their work with him. A copy of this report I accordingly submit herewith.

The engagement made with Mr. Spiers will come to an end in less than a month, and it has to be considered what it will be best then to do with both Assistant Engineers.

I have asked them to state their wishes on this head, and find that they both most heartily desire to return to India. It is not perhaps necessary that I should enter into a detail of the reasons influencing them. It is easy to see that in the case of Hindus keeping within their caste rules, and with a staff of Indian servants attending on them, a prolonged residence in this country, with ways so novel to them all, must be attended with many very irksome difficulties.

\* \* \* asks permission to leave England about the 1st June next, rejoining his duties in India in the middle of October. He wishes to be allowed to travel *via* America and Japan, and is willing to bear all expenses that may be in excess of the sum it would cost Government to send him back by the route by which he came. He begs, however, the favor of being advanced the passage money that Government would have to pay if he returned direct, and his pay for the four months which the journey would occupy.

\* \* \* requests to be allowed to return direct to India, leaving England in the first week in August, and he proposes to employ the time after leaving Mr. Spiers in visiting important engineering works in this country, and buildings of architectural interest on the Continent.

There remain the three native servants, whose passages to England Government paid. No doubt their passages back will similarly be paid.

The Secretary of State will perhaps desire that I should state the course I would recommend. My opinion is that, seeing how earnestly both the Assistant Engineers desire to return to India this summer, it is undesirable to detain them longer.

I think that they might turn a month or six weeks to good account, after leaving Mr. Spiers, in inking in and completing the studies made in pencil while with him, and in

visiting carefully such buildings in London as he may recommend. After that it would be best, in my judgment, to let them return to India without delay.

I do not believe in much good being likely to result from butterfly visits, either to large engineering works in England or to buildings of architectural interest on the Continent. The impressions thus hastily made cannot be expected to be other than superficial; useful knowledge is not to be acquired in this easy way.

I would draw attention to \*\*\* application to be allowed to go back to his duties *via* America and Japan.

From R. PHENE-SPIERS, Esq., F.S.A., to General Sir ALEXANDER TAYLOR, K.C.B.,  
President of the Royal Indian College, Coopers Hill, dated Carlton Chambers, 12,  
Regent Street, March 1884.

In accordance with your request conveyed to me through Mr. O'Callaghan, I beg to report that the course which I laid down for the instruction of \*\*\* in architectural design has been carried out more or less as suggested. The progress made, however, has been comparatively slow, owing to their extremely weak draughtsmanship; this was, in fact, one of the first defects I found out, and in answer to my inquiries whether they had ever learnt drawing at all, they explained to me it was so many years ago that they had forgotten all about it—a singular confession for Engineers to make. I trusted, after a time, that their former acquirements in this respect might return, and to a certain extent this has happened; but, even now, their drawings seem to me to be inferior to those of the students at Coopers Hill. Their studies in design have been, therefore, materially delayed in consequence of their being unable to express their ideas in drawing. I was at one time inclined to insist that every design should be completed before I gave another subject; they pointed out to me that the acquirements of the principles of design were more important to them now, and that they could finish their drawings at their leisure afterwards in India. I gave way, therefore, until I found out through Mr. O'Callaghan that they intended to hand over these drawings to Native draughtsmen to finish in ink (an idea which would be repugnant to an English student who had any interest in his own work), and then I insisted on their completing some of their designs. I understand they propose to take these down to you next week.

An important consideration now presents itself: less than two months remains of the original term agreed upon for their instruction. It is quite certain I shall never make good draughtsmen out of them, though, in this respect, \*\*\* is much better than \*\*\*; and when I say draughtsmen, I mean careful, accurate draughtsmen, and not artistic. I have no complaints to make of them; they are industrious, though slow; they are interested in their work, and show great intelligence in following my arguments, though in the application of the principles laid down they frequently fail, sometimes from sheer carelessness, sometimes from want of power of drawing. This carelessness of which I speak and disinclination to take trouble to arrive at what they seem to think are small matters are quite peculiar to them. I do not remember ever to have noticed the same defect (at all events not to the same extent as in \*\*\*) in any of the two or three hundred students who have passed through my school at the Royal Academy.

A great portion of my time has been occupied in teaching them how to project features on plan, section, and elevation, which they as Engineers ought to have known better how to teach me. They seemed to have forgotten all about the elementary problems of intersections of cones, cylinders, and spheres, which, I presume, formed a part of their earlier courses of study. They say that they could set the construction of such features out on the works if such were ever required, and that may possibly be the case. I have known foremen of works who could set out the most complicated problems of vaulting, but whose draughtsmanship on a small scale was deplorable. Foremen, however, are not called upon to design, and this is the chief difficulty which presents itself with \*\*\*; they seem to think that because, having a retentive memory, they are able to recollect and could probably pass a good examination in writing about what I have told them, nothing more is required excepting to set some Native draughtsman to work out designs from their description—an idea which, of course, is quite illusory. They might be able to describe a palace in writing and unable to design and draw even a pigsty.

I think it may be advisable that, in June and July, they should travel either in England or Italy to study existing buildings and make sketches and notes, and I am now laying down routes for them to take in London, where they will find interesting and useful examples of architecture.

From J. L. O'CALLAGHAN, Esq., to General Sir ALEXANDER TAYLOR, K.C.B., R.E.,  
dated 18, Shorncliffe Road, Folkestone, 5th April 1884.

In compliance with your request I send the following report on the two Native Engineers now studying in England.

When I took charge of the practical course they had just come up to London from Bradford, and were supposed to be attending the works of Messrs. Westwood, Baillie and Company. Arrangements were being made for a course of instruction in architecture under Mr. P. Spiers, and they having expressed a wish to spend a portion of their time in locomotive shops, it was settled that they were to spend two days a week at the Great Eastern shops at Stratford.

Mr. Spiers has, I believe, sent you a report on them, and I need only add that I was disappointed in their work under him. They seem to me to have misunderstood the object of their visit to England, and so soon as the novelty wore off they failed to work with the zeal they at first displayed.

In the locomotive works they have seen a good deal, but have not made many notes or sketches, giving as an excuse that the Locomotive Superintendent objected to their making sketches. It, however, turned out that what he objected to was only what from the first he said he would not allow, viz., the making copies of drawings in his office. Instead of sketching simple useful appliances they wished to copy drawings of complicated hydraulic machinery which could not be of any future use to them. This naturally was objected to.

Their sole desire now seems to be to return to India, and I fear it would not lead to any useful result if they are compelled to remain in England for another year.

It will be impossible to ascertain the amount of information they have acquired until they are again at work in India, but I fear a good deal of what they have learned is only superficial.

From ALEXANDER R. BINNIE, Esq., to General Sir ALEXANDER TAYLOR, K.C.S.I.,  
dated Waterworks Engineer's Office, Town Hall, Bradford, 24th July 1883.

Now that \*\*\* have been with me for some time, I feel sure that you would like to hear how they are getting on, as well as my opinion on the probable usefulness of such instruction as they are receiving.

In the first place, I would remark that, coming as they do to this country after a good theoretical education, ten years' practical experience in the Public Works Department in India, and above all with a thorough determination to learn all they can, that they have made great progress in acquiring a good knowledge of waterworks engineering, and I may say that I am very pleased indeed to be able to report most favorably of them in every way.

Now that they have received a good general insight into our waterworks at Bradford, I have made arrangements with some of my professional friends to enable them to visit similar works at Leeds, Edinburgh, Glasgow, Manchester, Liverpool, and Halifax, after doing which I think that they will have acquired as much insight as is possible into our English system of water-supply.

During their stay at Bradford I have taken many opportunities of showing them all that relates to the iron and textile manufactures of the district, as well as taking them over our drainage and sewerage and gasworks.

The tour of the above works, I think, may occupy about another month or six weeks, when, looking to the further insight which it is desired they should obtain into architectural practice, I think they might pass with advantage into other hands.

I say this, not with any desire to relieve myself of any further responsibility, or to curtail the period of six months for which they were originally sent to Bradford, but because I do not think any good can possibly accrue to Government or to themselves by keeping them longer engaged on office work, or in the drudgery of the details of levelling and measuring up on works, all of which are duties with which they are perfectly familiar.

I can assure you that their visit to Bradford has been a source of great pleasure to me, and I am sure of still greater advantage to the gentlemen themselves.

If I might be permitted to offer an opinion, I would suggest that in future Government would obtain the object it has in view by throwing them, under proper advice, on their own resources, and allowing them to travel about to works scattered over the country rather than by placing them for any lengthened period in one place.

By this course they would attain a more enlarged experience, and avoid the risk of falling into one narrow professional groove, which is always to be avoided.

I find that they are naturally anxious to return to India at as early a date as possible, and that they have a great desire to return home after a year in this country *via* America, Japan, and China, and that they are themselves prepared to defray all the expenses of the homeward journey by that route.

To my mind the expression of such a desire is one of the best proofs I can give of the advantages of the experiment Government is now trying in their particular case; for there can be no doubt that the enlarged experience and cultivation afforded by foreign travel will do much, both directly and indirectly, to educate the gentlemen in question, and through them their friends in the department in India.

In conclusion, I may remark that they are gentlemen who, I feel sure, can be trusted, and that Government, I am sure, will benefit by trusting them as far as possible in completing their own education, a subject which, I know, they have fully at heart.

From J. K. CROSS, Esq., India Office, London, to the President, Coopers Hill College, dated  
India Office, 14th May 1884, No. 739-84, P.W.

I am directed to acknowledge the receipt of your letter, No. 120, dated 23rd April, reporting on the progress made in their studies by the two Native Assistant Engineers, \*\*\* now under practical instruction in this country.

Lord Kimberley regrets to learn from your letter that, although the report of their study of waterworks during their first six months' residence in this country was a favorable one, the

subsequent reports of their progress in studying architecture and machine and engine construction are unsatisfactory.

As it appears that they are unwilling to complete the two years' course of study for which they came to England, and are extremely desirous of now returning to India, and as in your opinion it would be best to let them do so, I am to request that you will inform them that permission to return to their duties in India is accorded them; \* \* \* being granted the equivalent of his passage out, with sanction to his proceeding *via* America and Japan, receiving pay until the 15th September, the date at which he might have reached India, had he gone direct, and thenceforward being on leave without pay until his arrival in India, and \* \* \* being allowed to proceed direct to India on or about the 1st August. The interval of time during which they may remain in this country can be spent in the manner suggested in your letter under reply.

The necessary communication will be made to the Government of India regarding the approaching return of these officers to their duty.

Proceedings of the Madras Government, Public Department, dated 26th October 1886, No. 2267.

Read—the following papers:—

From Messrs. THOMAS COOK AND SON, General Railway and Steamship Agents, &c., to the Secretary to the Government of India, Home Department, dated Ludgate Circus, London, E.C., 12th August 1886.

We see by the advertisements and notices in the Indian papers that the Government of India are sending native students and others to England on different occasions at the expense of the Government.

2. We have therefore to respectfully submit for your consideration that all passages, whether direct by steamer or by the overland route, for passages paid by the Government, should be arranged for through us.

3. We need scarcely say we shall have pleasure in arranging for the comfortable conveyance of such passengers at the lowest possible rates, and that we should make no charge to the Government of India for our services, and the passengers would receive the assistance and benefits of our various agents, interpreters, &c., in just the same way as first-class tourists.

Hoping this application will meet with your favorable consideration.

No. 12-341.

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|----------------------|--------------------|
| Madras.              | Punjab.            |
| Bombay.              | Central Provinces. |
| Bengal.              | Burma.             |
| North-West Provinces | Assam.             |
| and Oudh.            | Coorg.             |
|                      | Hyderabad.         |

Copy forwarded to the local Governments and Administrations marginally noted for information, with the remark that the proposal made by Messrs. Cook and Son appears to the Government of India to be one which might with advantage be adopted.

(By Order.)

HOME DEPT. (EDUCATION),  
SIMLA, 23rd September 1886.

(Signed) F. C. DAUKES,  
Under Secy. to the Govt. of India.

From J. H. TAYLOR, Esq., Lieut., R.N.R., Port Officer, Madras, to the Chief Secretary to Government, dated Madras, 11th October 1886, No. 9784.

In returning reference No. 1684-C., in the Public Department, dated 6th instant, on Messrs. Thomas Cook and Son's application to provide all Government passages, whether direct by steamer or overland route, I have the honor to state that, considering the uniform satisfaction afforded to the travelling public by this firm, I think the proposal may well be accepted by Government.

Order—dated 26th October 1886, No. 2267, Public.

Communicated to the departments of the Secretariat and to all heads of departments for information.

(True Extract.)

(Signed) H. E. STOKES,  
Ag. Chief Secretary.

GENERAL.  
ESTABLISHMENT.

**Gobt. of (1888) Madras.**  
**PUBLIC WORKS.**

*Dated January, 30th.*

*Recd.*

*Encl.*

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**G.O., 30th Jan. 1888, No. 344 W.**

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**JANUARY.**

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**Practical Training of Native  
Engineers in England.**

Resolution of the Government of India regarding —, communicated to Superintending Engineers, I, V and VI Circles, for report whether certain Assistant Engineers in their respective circles are desirous to proceed to England for professional training and whether they can be recommended for the indulgence.