

Government of Madras.

EDUCATIONAL DEPARTMENT.

Recd.

Regd.

} 1914.

Enclosures

Spare copies

G.O. No. 1222, 20th December 1913.

Engineering College.

Passing orders on the proposals of the Principal of the —, Madras, for the revision of the existing arrangements for the practical training of engineering and upper subordinate students.

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GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

READ—the following papers :—

I

Letter—from the Hon'ble Sir ALFRED GIBBS BOURNE, D.Sc. F.R.S., K.C.I.E.,
Director of Public Instruction.
To—the Secretary to Government, Educational Department.
Dated—Madras, the 2nd July 1913.
No.—Ref. on Cur. 4001.

I have the honour to submit herewith the enclosed copy of letter No. 1335/C., dated 25th June 1913, from the Principal, College of Engineering, expressing his views on the proposal made in paragraph 1 of the Chief Engineer's Circular Memorandum No. 208 C., dated 18th January 1909, regarding the practical training of the college students in the Madras harbour works, and to state that the suggestions contained therein have my support.

2. The terms of the Madras Electric Supply Corporation contained in the Principal's letter No. 251-C., dated 1st May 1912, about which mention has been made in paragraph 3 of the present letter of the Principal, were embodied in this office letter Ref. on Cur. No. 3678, dated 14th May 1912, on which orders were passed in G.O. No. 508, Educational, dated 11th June 1912.

ENCLOSURE.

Letter—from W. H. JAMES, Esq., B.Sc., Principal, College of Engineering,
Madras.
To—the Director of Public Instruction.
Dated—the 25th June 1913.
No.—1335/C.

Your Ref. on Cur. No. 4001, dated 21st May 1913, can hardly be dealt with apart from some consideration of the conditions applying elsewhere.

2. The present position is that students of the Engineer and Upper Subordinate classes qualifying for the diplomas proceed on the termination of the college course for a year's practical instruction during which time they are ordinarily granted by Government subsistence allowances of Rs. 25 and Rs. 20 respectively. Facilities for practical training are provided by Government in the Public Works Department without any charge to the students. Mechanical engineer students of the engineer class may go to the Perambur workshops of the Madras and Southern Mahratta Railway on payment of a premium of Rs. 500 of which Government pay half for one student, but any others who may elect to go there have to pay the full amount. This premium entitles the student to a stay of two years, but as no student has ever done so it is to all intents and purposes a one year's premium. The Chief Engineer of the Madras Harbour Trust will also take engineer and upper subordinate students for a six months' course of training on payment of a premium of Rs. 100 and under the conditions laid down in the Public Works Memorandum under reference.

3. The limited opportunities thus afforded cannot be regarded as altogether satisfactory, particularly should there be any considerable expansion of the work of the college in connection with mechanical and electrical engineering and to ascertain whether any improvement could be effected the Chief Engineer, South Indian Railway Workshops, Negapatam, the Chief Electrical Engineer, Mysore Government, and the Chief Engineer, Madras Electric Supply Corporation, were addressed on the subject. I submit herewith copies of correspondence with the two first-named officers from which it will be seen that as far as they were concerned the effort was of little avail. The terms arranged with the Madras Electric Supply Corporation were communicated to you with this office letter No. 251-C., dated 1st May 1912, but the offer was not taken advantage of by any student. I may add also that demi-official correspondence with an officer on the Kolar fields held out no hope of the authorities there granting facilities in this connection.

4. It seems unlikely therefore that anything much can be done unless the matter is taken in hand by Government, when it might be possible to arrange for the training of at least a few civil engineering students on construction work with both the Madras and Southern Mahratta and South Indian Railways and for mechanical engineer students in the railway shops at Perambur and Negapatam. The premium now demanded at Perambur is a severe tax on students coming to the end of a long period of study, and I would suggest that Rs. 200 should be the maximum premium chargeable for a year's training. As an incentive to close application it would be of advantage when a premium is charged if Government could see their way to undertake to refund half the amount to those students who make more than ordinary progress—a decision on which point might be accepted from the Chief Engineer under whose charge the student is working, or by that officer in consultation with the Principal of the College.

5. I would apply the above in all cases and in regard to this particular reference in connection with the harbour trust premium, I would accordingly recommend that the students should in the first case be called on to pay the full premium but that Government might refund the half Rs. 50 to those students whose diligence and application justify the concession.

Sub-Enclosures.

(i)

Letter—from W. H. JAMES, Esq., B.Sc., Principal, College of Engineering, Madras.
To—the Loco and Carriage Superintendent, South Indian Railway Workshops,
Negapatam.
Dated—the 3rd April 1913.
No.—17-C.

Under our college rules students of the engineer class who pass the final examination at the end of the three years' theoretical course proceed to one or two years' practical training on works.

At present in the case of mechanical engineer students their choice is limited to the Public Works Department Workshops and the Madras and Southern Mahratta Railway shops at Perambur. At the latter place it has been the custom to demand a heavy premium with the result that no students have applied to take the course there for the last few years.

I am anxious to widen the students' opportunities in this regard and before addressing Government on the subject I have the honour to inquire whether you would be prepared to admit, say, two students each year for a twelve months' course of training in the workshops under your control without the payment of any premium.

The students receive a subsistence allowance from Government and my idea is that they should not receive any special consideration in regard to hours of attendance, etc.

(ii)

Letter—from the Loco and Carriage Superintendent, South Indian Railway
Workshops, Negapatam.
To—the Principal, College of Engineering, Madras.
Dated—the 12th April 1911.
No.—2064-4.

In reply to your letter No. 17-C., dated the 3rd instant, I have the honour to express my regret at being unable to give you any assurance to entertain any engineering student for practical training in these workshops.

(iii)

Letter—from the Principal, College of Engineering, Madras.
To—the Chief Electrical Engineer to the Government of Mysore, Bangalore.
Dated—the 24th October 1911.
No.—1413-C.

Under our college rules students of the engineer class who pass the final examination at the end of the three years' theoretical course proceed to one or two years' practical training on works.

At present in the case of mechanical engineer students their choice is limited to the Public Works Department Workshops and the Madras and Southern Mahratta Railway Workshops at Perambur. At the latter place it has been the custom to demand a heavy premium with the result that no students have applied to take the course there for the last few years.

I am anxious to widen the students' opportunities in regard to gaining experience of electrical work and before addressing Government on the subject I have the honour to enquire whether you would be prepared to admit, say, two students each year, for a twelve months' course of training at Sivasamudram without payment of premium.

The students receive a subsistence allowance from Government and my idea is that they should not receive any special consideration in regard to hours of attendance, etc.

I may add that several of the engineer students are Mysore Government scholarship-holders.

(iv)

Letter—from the Chief Electrical Engineer to the Government of Mysore.

To—the Principal, College of Engineering.

Dated—the 7th November 1911.

No.—4253.

Replying to your communication No. 1413-C., dated 24th October 1911, I would advise that the question of affording students an opportunity of acquiring practical experience through the several departments of the Cauvery power scheme has been discussed with Government but on definite decision arrived at as yet. An outline of course will be submitted to Government for approval, though in view of the approaching darbar, it is not likely action will be taken until January next at the earliest.

[No further communication has been received.]

II

Letter—from the Hon'ble Mr. W. FRANCIS, I.C.S., Acting Secretary to Government.

To—the Agent, Madras and Southern Mahratta Railway.

Dated—the 22nd October 1913.

No.—2075-1, Edl.

I am directed to address you on the subject of the practical training of mechanical engineer students of the Madras College of Engineering in the Railway Workshops at Perambur.

2. Under the present arrangement mechanical engineer students are admitted for training at the workshops on payment of a premium of Rs. 500 for each student. This entitles the student to a course of training for two years, of which one year is obligatory under the college rules. In view however of past experience and because it has been found in practice that the fee of Rs. 500 now charged for the two years deters students from availing themselves of it, His Excellency the Governor in Council is of opinion that the obligatory period of one year will be sufficient and has decided to limit the course to that term.

He is however anxious that a larger number of students should avail themselves of the opportunity to receive the valuable training at the Perambur Works.

3. I accordingly am directed to enquire whether the company would agree to charge a premium of Rs. 250 for the one year's course in place of the present one of Rs. 500 for the two years' course.

III

Letter—from the Agent, Madras and Southern Mahratta Railway.

To—the Secretary to Government, Educational Department.

Dated—Madras, the 22nd November 1913.

No.—4731-E.

In the circumstances stated in your letter No. 2075-1, dated 22nd October 1913, on the subject of the practical training of mechanical engineer students, I have no objection to offer to the proposal that the Engineering College students be admitted to the Perambur Works for a period of one year instead of, as at present, two years and that the premium to be paid for the shorter course be only Rs. 250.

Order—No. 1222, Educational, dated 20th December 1913.

The Government have considered the proposals of the Principal of the Engineering College for the revision of the existing arrangements for the practical training of engineering and upper subordinate students. They are of opinion that there is no need for any special training for civil engineer students on railway construction, as suggested by the Principal, since all that is necessary in this respect can be sufficiently provided for by the Public Works Department. The scope of training will, however, be extended by sending students to the Madras City drainage and water-works and in future they will be trained at one or other of the following workshops or works:—

Civil.

- (1) Public Works divisions in which large works are in progress.
- (2) The Madras City water-supply and drainage works.

Mechanical.

- (3) The Public Works Workshops, Madras.
- (4) The Madras and Southern Mahratta Railway locomotive shops at Perambur.
- (5) The Central Power station of the Madras Electric Supply Corporation.
- (6) The Madras Harbour works.

The period of training will be reduced from two years to one year. As at present, no fees will be charged for any training under the Public Works Department, but the amount of premium payable by each student will be fixed at Rs. 250 in the case of the Perambur Workshops and the Central Power station of the Madras Electric Corporation and Rs. 200 in the case of the Madras Harbour works and the Madras water-supply and drainage works. The students will pay the premium themselves in the first instance, but 50 per cent. of it will be refunded to them if the reports of their progress while under training are satisfactory. This concession will not be allowed to more than ten students in each year.

2. The Director of Public Instruction will be requested to submit for the approval of Government a draft of the alterations in the college rules necessitated by these orders.

(True Extract.)

W. FRANCIS,
Ag. Secretary to Government.

To the Director of Public Instruction.
„ Public Works Department with copy of notes.
„ Financial Department with copy of notes.
„ Accountant-General.
Editors' Table (order only).

EDUCATIONAL DEPARTMENT.

NOTES CONNECTED WITH G.O. No. 1222, EDUCATIONAL, DATED
20TH DECEMBER 1913.

[SUBJECT.—*Practical course of Engineer and Upper Subordinate students in the
Madras Harbour works.*]

PUBLIC WORKS DEPARTMENT.

Under the rules relating to the constitution and working of the College of Engineering, Madras, the Engineer and Upper Subordinate students who pass out of the college have to undergo a year's practical training in a Public Works Division or an Engineering workshop. In the year 1908, the Chief Engineer, Public Works Department, suggested that the Madras Harbour works would be a suitable training ground for some of the students for six months. The Chairman, Madras Port Trust, who was consulted, stated that he would take the students on the following conditions, viz.:—

(1) That the students must keep the regular working hours of the Port Trust, viz., 7 A.M. to 5 P.M. and overtime when required; and they will have to be subject to the same rules, as regards absence from duty, etc., as the regular employes of the Port Trust.

(2) That Government might fairly pay a fee of Rs. 100 for each student for the six months' course—the fee to be given as remuneration to the foreman or Upper Subordinate under whom the student will be trained in accordance with the instructions to be issued by the Chairman, from time to time.

2. The Chief Engineer, Public Works Department, then suggested to the Principal, College of Engineering, that some of the students should be given the option of taking their practical course in the Madras Harbour works, paying the fee of Rs. 100 demanded by the Chairman, themselves, pending decision in the Educational Department as to whether the fee should be paid by the students themselves or by the Government.

3. From 1909, only three students have till now joined the Madras Harbour works for practical training paying the fee of Rs. 100 for six months themselves.

4. The Chief Engineer, Public Works Department, thinks that the Madras Harbour works would afford a source of extremely useful practical training in a variety of branches of engineering and that similar training would be afforded by the extensive sanitary works carried out by the Madras Corporation. The President of the Corporation has accordingly recently been asked by the Chief Engineer whether he would take selected students for such training. His reply has not yet been received. The Chief Engineer however considers it very unlikely that students as a rule would be willing to pay the premium of Rs. 100 for the six months' course themselves.

5. As it is desirable that students wishing to undergo practical training in either of the above works, should be encouraged to do so, it is submitted that the Educational Department may be requested to consider the question whether the Government would pay the premium.

T. S. RAMASWAMI AYYAR—10-6-13.

C. A. SMITH—10-6-13.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

Page 22 of G.O. No. 451, Educational, dated 8th July 1911.

the Government now pay half the premium

G.O. No. 742, dated 13th August 1912.

when the Government sanctioned the proposal of the Director of Public Instruction

G.O. No. 508, Educational, dated 11th June 1912.

did not undertake to pay from Provincial revenues any portion of the premium payable to the company. It is for consideration whether, as recommended by the Chief Engineer, the Government should agree to pay the whole of the premium of

Yes.

W. FRANCIS—20-6-13.

In accordance with rule 16 of the rules for the constitution and working of the College of Engineering, Madras, of Rs. 500 towards the practical training of one of the Mechanical Engineer students of the college in the Railway workshops, Perambur. In June last year to post one of the students of the college to the Central Power station of the Madras Electric Supply Corporation, they Rs. 100 payable to the Port Trust. The remarks of the Director of Public Instruction may, it is submitted, be obtained u.o. on the proposal.

2. As regards the question of posting a student to sanitary works this proposal has been made by the Chief Engineer in connection with the proposal to make provision for the teaching of sanitary engineering in the College of Engineering. The file on this subject was circulated to the Hon'ble Mr. Sivaswami Ayyar on the 23rd April last. It has not yet returned. Final orders on that file may perhaps be awaited.

S. KRISHNA AYYAR—18-6-13.

C. RAMANUJACHARI—19-6-13.

W. FRANCIS—20-6-13.

To the Director of Public Instruction.

OFFICE OF THE DIRECTOR OF
PUBLIC INSTRUCTION.

It has been so far held that Government need not pay the premium, but apparently not doing so has frustrated the aim of the Chief Engineer in proposing more varied opportunities of training for the students. Training in the Perambur workshops has been held out as a privilege. I suppose that the students' prospects are so much improved by it that it is worth their while to pay Rs. 250 premium. Whether the Harbour works course is likely to result in similar benefit to students undergoing it is not so clear. The Principal, College of Engineering, says the only advantage a student gets is being able to remain in Madras for his practical course. I have just received a letter from the Principal on the subject of these premia which I am submitting immediately for the favourable consideration of Government.

J. H. STONE—27-6-13.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

Await receipt of the above letter.

W. FRANCIS—30-6-13.

The official communication promised by Mr. Stone in his u.o. note above has been received. The Principal of the College of Engineering, in offering his opinion on the suggestion made by the Chief Engineer in his Memorandum No. 208 C., dated

18th January 1909, regarding the posting of certain students of the College of Engineering to the Madras Harbour works for practical training, submits for the consideration of Government proposals for the general revision of the arrangements existing at present for practical training of students. His proposals consist—

(i) in arranging for training a few Civil Engineer students on construction work in connection with the South Indian and Madras Railway Companies and a few Mechanical Engineer students in the workshops of these companies or in the Madras Harbour works;

(ii) in limiting the maximum period of training to one year and amount of premium to Rs. 200;

(iii) in requiring the students to pay the premium in the first instance; and

(iv) in refunding 50 per cent. of the premium to the students on report of more than ordinary progress on their part while under training.

2. Under the present rules of the college, Civil Engineer and Upper Subordinate students are posted for their practical course to Public Works divisions where large works are in progress and Mechanical Engineer students are trained in workshops. The training of the former is free of charge; while of the latter those who are trained in Government workshops pay no fee, but those who prefer to undergo training in the Railway workshops at Perambur have to pay a premium of Rs. 500 for a course of training extending over two years. Towards the training of one of the Mechanical Engineer students at the Perambur workshops the Government pay a moiety of the premium. All these students receive subsistence allowances during the period of practical training.

Rule 16, page 5 of Government Order *ibid.*

Rule 16, page 5 of Government Order *ibid.*

Rules 54 and 59 of the rules of the college—pages 9 and 10 of G.O. No. 194, Educational, dated 1st March 1913.

3. The Principal's proposals detailed in paragraph 1 above are examined below:—

(i) *Training of Civil and Mechanical Engineer students in the works and workshops of Railway Companies and Harbour works.*—The Principal is of the opinion that the opportunities now afforded to the students for practical training are very limited and considers that a wider choice should be given to them by enabling them to undergo training in the works and workshops of the Railway Companies and Harbour works, Madras. The Chief Engineer also is in favour of posting students for practical training to works other than those of Government. There can possibly be no objection to the principle underlying the proposal. The only question is whether the proposed extension is feasible. The rules of the Civil Engineering College at Sibpur also provide for the training of candidates under public bodies or firms approved by the College Board. It is not known how this is arranged for there. The facilities in Madras for such training are limited. Some of the few agencies that are available are not willing to help in the matter. The officers in Kolar Gold Fields and the South Indian Railway officers are not prepared to allow the training. Perhaps a communication from Government to the Agent of the latter company may elicit a favourable reply. The Mysore Darbar will also have to be addressed as regards the training in Cauvery electric power house. The proposal to depute Civil Engineer students to construction work on the railway seems also acceptable and may have to be made the subject of a reference to the Madras and Southern Mahratta Railway Company.

Memorandum No. 208 C., dated 18th January 1909.

Please see the Bengal Government notification on pages 551 and 552 of *Calcutta Gazette*. "Section III, Practical training." Please see also rule 78 of the college rules—page 37 of the college calendar.

The officers in Kolar Gold Fields and the South Indian Railway officers are not prepared to allow the training. Perhaps a communication from Government to the Agent of the latter company may elicit a favourable reply. The Mysore Darbar will also have to be addressed as regards the training in Cauvery electric power house. The proposal to depute Civil Engineer students to construction work on the railway seems also acceptable and may have to be made the subject of a reference to the Madras and Southern Mahratta Railway Company.

* Please compare note of interview with the Chief Engineer on page 56 of Messrs. Dawson and Atkinson's report.

Those authorities now take in only Mechanical Engineer students in workshops alone.

4. (ii) *Period of training.*—As regards the period of training it is submitted that the proposal to train Mechanical Engineer students at the Railway workshops first emanated from the committee appointed in 1880 to consider the question of remodelling

the Engineering College. The committee recommended that a two years' course should be prescribed for both Civil and Mechanical Engineer students—one year's course in workshops and another year's course in Public Works circles for Civil Engineer students, and two years' course at the largest workshops available, preferably those of the Madras and Southern Mahratta Railway and South Indian Railway, for Mechanical Engineer students. This was approved by Government and embodied in the college rules—page 5 of G.O. No. 443, Educational, dated 16th July 1885. In 1896, the two years' course was reduced to one year in the case of the Civil Engineer students, the training in workshop practice being given in the college shops during the theoretical course. The same course was adopted in the case of Mechanical Engineer students also—paragraph 5 on pages 3 and 4 of G.O. No. 438, Educational, dated 18th July 1896. The Committee of 1904, appointed to consider the question of reorganization of the college, recommended that the practical course for the Mechanical Engineer students should be raised to two years, as a twelve months' course was too short for efficient training. The Government, however, apprehended that a compulsory two years' course would deplete the Mechanical Engineer class and accordingly proposed that the additional year should be entirely voluntary; but as the Committee strongly insisted that the course should not be abbreviated the Government accepted its recommendation. The Principal, however, pointed out that the revised course could not be introduced until the new laboratories and workshops had been provided in the new buildings contemplated, and it was not accordingly laid down in the code of rules formulated with reference to the recommendations of the Committee that Mechanical Engineer students should have two years' practical course. The existing rules therefore insist only on one year's practical course for Mechanical Engineer students; and in rule 16 which provides for a two years' course in the Railway workshop it is expressly laid down that only one year of it is obligatory. It is now for consideration whether the proposal to reduce the period to one year may be accepted. The only effect of the reduction (which should necessarily be followed by the reduction in the amount of premium paid for the purpose) will be that those who may desire to undergo a prolonged course of training in the Railway workshops will have to make their own arrangements to secure it. But, as a matter of fact, none of the students have hitherto availed themselves of the second year course. There seems to be no objection to accept the Principal's present suggestion.

It may here be noted that the rules of the Sibpur Engineering College lay down only one year's practical training for the students of that college. When the college is removed to the new buildings the rules will then come under revision.

5. *Amount of premium.*—The Principal states that the premium payable to the Railway Company is too high and that though it is for a two years' course still candidates actually stay only for one year in the workshop. He therefore suggests that Rs. 200 should be the premium for a year's course. The Committee of 1880 first considered that a fee of Rs. 1,000 should be paid to the Railway Company by the Educational Department for each student sent for training. Later on the company was made to agree to a fee of Rs. 500; and the Government pay a moiety of this premium, viz., Rs. 250 to one student every year. It is not known whether the Railway Company will agree to

the reduction of the premium to Rs. 200. It may be pointed out to them that the period has been limited to one year only. The premium * demanded by the Port Trust is within the maximum suggested by the Principal.

6. (iii) *Pre-payment of the full premium by students.*—The proposal of the Principal is that students should, in the first instance, pay the full premium demanded by the company. Government refunding a portion to those students who show more than ordinary progress. Apparently, the present practice of paying one student at the Railway workshop half the premium will be abrogated. It is not stated how far this will affect the admission of students for Mechanical Engineer class. The object of the rule is only to ensure that full use is made of the training. This proposal is dependent on the next suggestion which deals with the question of Government help.

7. (iv) *Payment of a portion of the premium by Government.*—The Principal proposes that as an incentive to close application, in cases in which premia are charged, the Government should pay one-half of the amount to those students who show more than ordinary progress. While this rule may have the effect of discouraging students from taking mechanical engineer course, it will have the sure effect of making the student realize that while undergoing practical training in the workshop, it is incumbent on him to conform to the rules of discipline in force therein and to endeavour to satisfy the manager by his readiness to keep to workshop hours and to undertake to work with his own hands. Absence of these qualities has been prominently brought to notice in Messrs. Dawson and Atkinson's report on the enquiry to bring technical education into close touch with employers of labour. The proposal to confine the concession to students evincing diligence and application may have therefore a wholesome effect.

Paragraphs 30 and 31 on page 9 of report.

Paragraph 32, page 10 of report.

As regards the financial liability to Government, it is submitted that when the proposal was originally made, the Director of Public Instruction recommended that Government should undertake to pay the whole premia, as it was desirable that every facility should be afforded to young men seeking the profession of mechanical engineers. The

Paragraph 3, page 3 of G.O. No. 294, Educational, dated 23rd April 1890.

Notes with Government Order *ibid*.

Hon'ble Sir Henry Stokes observed as follows in that connection:—

"... It seems to me out of the question that Government should undertake to bear in the case of every student who may demand to be trained in mechanical engineering premia of Rs. 1,000 per annum for two years or even of Rs. 500 per annum. If anything of the sort were done the fees of the college would have to be raised to a considerable extent. There is no reason why advantages so very great should be offered to engineering students and denied to those of other professions such as law and medicine. A proposal that Government should pay the apprenticeship fees of every B.L., who wants to be a High Court Vakil, would at once be scouted. But considering the state of the engineering profession in the country, the excellence of the training obtainable at Perambur, the desirability of encouraging within reasonable limits the College of Engineering and the indefinite expectations which have been held out to the students just passed out and now in it, I think Government may reasonably pay a moiety of the premia for two students of the Assistant Chief Engineer grade at a time at the Perambur or other approved private workshops up to a maximum of Rs. 250 each. This would give the prize of training at Perambur to one student of each year as the course extends to two years; and the exaction of a moiety from the students themselves would be a strong inducement to them to take the utmost possible benefit out of the course."

Opinion seems to be now more than ever confirmed regarding the necessity of efficient practical training as an integral part of the Engineer course. That the Public Works Workshop cannot afford the same facilities as the Railway Workshop seems to be admitted; and it does not need any demonstration to say that the best training should be procured for the students. The Chief Engineer, the Principal and the Director of Public Instruction consider that Government assistance is necessary. Attention is invited to paragraph 21 of Messrs. Atkinson and Dawson's report in which it is pointed out that "the cost to Government of granting a year's apprenticeship in practical work to every man passed out of an Engineering College would

"be amply repaid by the general benefit it would confer on the country at large professionally and financially." The practice of the grant of half the premium in the case of one of the students has now been in force sufficiently long without drawing any similar application from students of law or medicine that no apprehension need now be entertained that an extension of that principle will form an inconvenient

*Rs. 250 for a two years' course granted precedent. The Government are now annually will amount to Rs. 250 per annum. prepared to lay out Rs. 250 * annually as premium for a student of two years' course. On an average about 8+ students

† Taken from College calendars.

pass out as mechanical engineers every year. Assuming that the maximum amount of premium will not exceed Rs. 200 per student and that every student that goes for training proves satisfactory, Government will be called upon to meet Rs. 800 annually in the shape of premium, if the course of training is only for one year. The excess of Rs. 550 per annum is negligible considering the importance of the training. The practice followed in Sibpur in this matter is not known. Though as observed above that College rules provide for the training of students under firms or other public bodies the calendar does not contain information as to what premium is paid to other bodies and how it is apportioned between the students and Government.

8. The file may be first sent to the Chief Engineer, Public Works Department, for remarks and if he agrees to the proposals of the Principal, it may be forwarded to Financial.

C. RAMANUJACHARI—13-8-13.

Every competent critic laments the unpractical foolishness of these students, their want of discipline and their dislike to regular hours and working with their own hands—see especially Colonel Atkinson and Mr. Dawson's report, *passim*. The Public Works Department can provide sufficient training on the civil engineering side, and it is only the mechanical and electrical sides that require consideration.

2. Madras City seems to contain, in the Perambur Works, the Public Works Workshops, the Harbour and the Electric Supply Corporation, sufficient facilities for practical training and there seems to be no need to endeavour to persuade the Nega-patam workshops and the Cauvery power scheme people to take our students, as suggested on page 3 above.

3. It seems clear that what has deferred students from the practical courses are the premia charged—Rs. 500 for two years at Perambur, Rs. 250 for a year at the Electric Supply Corporation and Rs. 100 for six months at the Harbour.

4. As a year has been the utmost that students have hitherto spent on practical work, it might be the rule that a year shall suffice.

5. The Madras and Southern Mahratta Railway may be asked if they would agree to Rs. 250 for one year instead of Rs. 500 for two as at present. They do not seem to be likely to object. Perambur and the Electric Supply Corporation's premia would then be Rs. 250 per annum and the harbour, Rs. 200.

6. To pay half these premia to the few students who pass out each year on condition that they distinguished themselves during the practical course would cost very little and may well be sanctioned. It would probably set a fashion for practical training which would be useful; for at present as no one is practically trained would-be employers have to take the untrained man, while if a proportion were trained they would get jobs so much more easily that their fellows would have to take up training in self-defence.

W. FRANCIS—14-8-13.

To the Chief Engineer, P.W.D.

OFFICE OF THE CHIEF ENGINEER.

Secretary—

Submitted.

2. The proposals made in the Educational Secretary's note *supra* may be agreed to.

3. To the list of places specified in paragraph 2 of that note may perhaps be added the Madras Corporation to which Civil Engineer and Upper Subordinate students may be sent for practical training and admitted to the concession referred to in paragraph 6 of the note above. The President of the Corporation has agreed to

take students for practical training on payment of a premium of Rs. 100 for a six months' course. *Vide* his letter on page 3 of No. 360-D., dated 17th June 1913.

T. S. RAMASWAMI AYYAR—12-9-13.

G. D. PLUMMER—12-9-13.

W. G. MOLESWORTH—13-9-13.

I have no objection to the Principal's proposals. I would however add the Madras Corporation where useful training in drainage and water-supply works can be obtained for several years to come.

C. A. SMITH—18-9-13.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

Supposing it is agreed that the practical course may be reduced to one year, and supposing the Madras and Southern Mahratta Railway agree to allow students to attend the Perambur workshops for one year at a premium of Rs. 250, will Financial Department object to Government undertaking to repay half the premiums of students who distinguish themselves at (1) the Perambur works, (2) the Electric Supply Corporation, (3) the Harbour and (4) the Madras drainage and waterworks? In the two former cases the premia would be Rs. 250 and in the two latter Rs. 200. On an average eight mechanical and electrical students would need training annually. Supposing they *all* qualified for a refund of their premia, the annual charge would be between Rs. 800 and Rs. 900.

2. Even then, these students will be at a disadvantage, as Civil Engineering students are charged no premia for their practical course. We have plenty of the latter and not enough of the two former kinds,* whom it is necessary to create by all possible inducements.

* Mechanical and electrical.

W. FRANCIS—20-9-13.

To the Financial Department.

FINANCIAL DEPARTMENT.

The proposal in this file is to afford to the mechanical engineer students of the Madras Engineering College greater facilities for practical training in a variety of branches of engineering than at present exist.

2. The students at present undergo such training in †(1) the Public Works Workshops, †(2) the Perambur Work-

shops, †(3) the Central Power station of the Madras Electric Supply Corporation and ‡(4) the Madras Harbour Works. In

consultation with the Chief Engineer, the Educational Department propose to

include the Madras water-supply and drainage works as an additional field for the training.

3. On an average eight mechanical engineer students pass out of the Engineering College after receiving theoretical training in the College. *All* the students are trained *free* at the Public Works Workshops, but, at the remaining three workshops

under the control of local bodies, only *one* student receives practical training, except at the Perambur Workshops where *more than one student may attend*. The fees for the training at these workshops of the local bodies have, however, to be borne entirely by the students themselves except in the case of *one student* at the Perambur Workshops, in which a moiety (Rs. 250) of the premium of Rs. 500 is made good to the student by Government.

It is pointed out both by the Chief Engineer and by the Educational Department that, as the payment of the full premium is a heavy charge on the mechanical engineer students, very few of the students take advantage of such training. In order to induce all the students to undergo the training in future, it is proposed by Educational that Government might bear one-half of the amount of the premium payable by *all the students* at the four private workshops mentioned in paragraph 2 *ante*.

4. The present position and the proposal now made in regard to the payment of the premium are shown below :—

	Present		Proposed.	
	Total premium.	Proportion payable by Government.	Total premium.	Proportion payable by Government.
(1) Perambur Workshops	Rs. 500 (two years' training.)	Rs. 250	Rs. 250 (one year training.)	Rs. 125
(2) Electric Supply Corporation	250 (one year training.)	Nil.	250 (one year training.)	125
(3) Madras Harbour works	100 (six months' training.)	Nil.	200 (one year training.)	100
(4) Madras Water-supply and Drainage Works.	Nil.	Nil.	200 (one year training.)	100

The present charge borne by Government is only Rs. 250 annually, for *only one student* trained at the Perambur Workshops. As on an average eight students pass out of the college every year, the charge on Government under the Educational

* This is the cost if for all the eight students Rs. 100 each is payable by Government.

† This is the cost if for all the eight students Rs. 125 each is payable by Government.

Department's proposal would amount to between Rs. 800 and Rs. 1,000.† The extra charge to Government will, therefore, be from Rs. 550 to Rs. 750 *per annum*. This will fall on Provincial

revenues, as the Government's share of the payment of the premium is debited to the head "22-D. EDUCATION—GOVERNMENT COLLEGES, PROFESSIONAL—Engineering College—*Supplies and Services*—Riding and Workshop fees."

5. Financial may, it is submitted, agree to the Educational Department's proposal that Government should bear *one-half* of the premium for training at the four workshops, but it is a matter for consideration whether Government should grant this concession to every mechanical engineer student that goes for training. It may be noted that the grant of this concession will probably tend to increase the number of mechanical engineer students of the College, so that in future years the number receiving *practical training* will be much more than eight, and consequently the charge on Government towards the payment of the premium will undoubtedly exceed Rs. 1,000.

6. It is, therefore, suggested for consideration whether it would not be advisable to restrict the grant of this concession to a maximum number of students every year.

We might agree to *ten*.

C. REILLY.

the extra charge being therefore from Rs. 350 to Rs. 500.

7. For orders.

A. HANUMANTHA RAO—2-10-13.

C. REILLY—3-10-13.

It will probably be desirable to fix a maximum, and Educational may be asked to say what it should be and to circulate the file to the Honourable Member in charge of Financial.

A. G. CARDEW—4-10-13.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

Submitted that ten students per annum may be fixed as the maximum.

W. FRANCIS—7-10-13.

Yes.

P[ENTLAND]—9-10-13.

H. A. S[TUART]—12-10-13.

Draft.

W. FRANCIS—14-10-13.

Of the four places selected for the practical training of students, viz., the Perambur Workshops, the Electric Supply Corporation, the Madras Harbour Works and the Corporation Water-supply and Drainage works all except the first have already been addressed with regard to the terms on which they will take students

Memorandum Nos. 360, 361-D., dated 17th June 1913.

G.O. No. 508, Educational, dated 11th June 1912.

Circular Memorandum No. 208-C., dated 18th January 1909.

orders on this file the Railway Company may be asked whether they would be content with Rs. 250 for a one year's course of training. A draft letter to the Agent of the Railway Company is submitted for approval. It will be seen that Mr. James, suggestion was that Rs. 200 should be the maximum premium for one year's training. The proposal so far accepted in this file is that it should be Rs. 250.

Approved.

W. FRANCIS—20-10-13.

S. KRISHNA AYYAR—15-10-13.

C. RAMANUJACHARI—16-10-13.

[Letter to the Agent, Madras and Southern Mahratta Railway, No. 2075-1, Educational, dated 22nd October 1913.]

From the Agent, Madras and Southern Mahratta Railway, No. 4731-E., dated 22nd November 1913.

The Agent and Manager, Madras and Southern Mahratta Railway Company, accepts the proposal.

2. A draft order is submitted, which may issue with the concurrence of Public Works Department and Financial. The Financial Department may be requested to enter the necessary provision in the Educational budget now with it.

B. GOPALA CHARI—30-11-13.

3. It is not clear whether the training at the Corporation drainage and water-works is intended for Civil Engineering students also. In paragraph 3 of the Public Works office-note on page 6 *supra* this training is mentioned only in connection with Civil Engineers. Water-supply and drainage form part of "Hydraulic Engineering" which is a subject of study for the *civil*, and not for mechanical, Engineer students. Subject to approval this training has been put down in the draft for Civil Engineering students.

C. RAMANUJACHARI—2-12-13.

Draft Approved.

W. FRANCIS—2-12-13.

To the Financial Department
,, Public Works Department } for acceptance.

FINANCIAL DEPARTMENT.

[Please see Financial Department notes on pages 7-8 *ante*.]

The suggestion made in this department that the *maximum* number of students, to whom a refund from Government of 50 *per cent.* of the premium originally paid by them (*viz*, the students) on account of their practical training, should be restricted to *ten* each year, has been approved by His Excellency the Governor and Honourable Member (Financial).

2. The extra cost involved is between Rs. 750 and Rs. 1,000 *per annum*. The charge is debitable to the head "22 D. Education—Government Colleges, Professional—College of Engineering—*supplies and services*—Riding and workshop fees." There will be *no* extra charge during the *current year*, and it is not known whether any extra charge will be incurred even during the *next year*. As, however, the charge involved is small, it is submitted that it does *not* appear necessary to make any specific provision in the next year's budget, the charge during next year, if any, being met by reappropriation from the total savings under the minor head "22 D. EDUCATION—GOVERNMENT COLLEGES, PROFESSIONAL."

3. The draft order may, it is submitted, be accepted, and the case passed on to Public Works Department.

C. P. KRISHNA AYYAR—11-12-13.

C. REILLY—11-12-13.

W. O. HORNE—12-12-13.

To the Public Works Department.

PUBLIC WORKS DEPARTMENT.

The draft may be accepted. An addition is proposed in pencil to the sub-clause of paragraph 1 on page 2 of the draft.

T. S. RAMASWAMI AYYAR—16-12-13.

Accepted in Public Works Department.

W. G. MOLESWORTH—17-12-13.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

I don't like the proposed addition. It makes the order read as though outside Perambur the period of training was still two years. Don't add it.

Issue.

W. FRANCIS—19-12-13.

[G.O. No. 1222, Educational, dated 20th December 1913.]

C.No. 2075 Edl., from the D.P.I.

3629 2d of M. S. R.

No. 4001, dated 2nd July 1913.

4731 of 22-11-13

ORDER:- 1222 of 20.12.13. 130

The Government have considered

the proposals of the Principal of the Engineering College for the revision of the existing arrangements for the practical training of engineering and upper subordinate students. They are of opinion that there is no need for any special training for Civil Engineer students on ^{Railway} construction works of ~~Railway Companies~~ as suggested by the Principal. ^{Since} All that is necessary in this respect can be sufficiently provided for by the Public Works Department themselves. The scope of training will, however, be ~~further~~ extended by ~~the inclusion of~~ the Madras City drainage and water-works ^{they will} and students ^{an} shall in future be trained in one or other of the following workshops or works:--

CIVIL.

- (1) P.W. divisions in which large works are in progress.
- (2) The Madras City water-supply and drainage works

MECHANICAL.

- (3) The P.W. Workshops, Madras.

- 14 2.
- (4) The Madras and Southern Mahratta Railway locomotive shops at Perambur.
- (5) The Central Power station of the Madras Electric Corporation, and
- (6) The Madras Harbour works.

in the Madras and Southern Mahratta Railway locomotive shops at Perambur
 Para 4 q. Ed. Secy's note on p. 14 N.F.

The period of training will be reduced from two years to one year. As at present, no fees will be charged for ^{any} training under the P. W. D., but the amount of premium payable by each student will be fixed at Rs.250 in the case of the Perambur workshops and the Central Power station of the Madras Electric Corporation and Rs.200 in the case of the Madras Harbour works and the Madras water-supply and drainage works. The students will pay the premium ^{themselves} in the first instance, but 50 per cent of ^{it} ~~the premium~~ will be refunded to them on report of ^{their} satisfactory progress while under training. This concession will ^{not} ~~however~~ be allowed to ~~not~~ more than ten students in each year.

Para 5 q. Notes on page 14 N.F.

accepted in Financial pp 17-20 N.F.

an satisfactory

A.S.'s marginal note on page 20 N.F.

2. The Director of Public Instruction will be requested to submit for the approval of Government a draft of the ~~consequential~~ alterations in the College rules necessitated by these orders.

Noted in CB
22/1/14

20/1/13
100% Ed. Secy
40% S. Secy only depl
 To the D.P.I.
 " P.W.D. *in the works*
 " Financial Dept. with copy of notes.
 " A.G.
 E.T.
150%
2-7-13
CR
27/1/13
12/1/13
12/1/13

ORDINARY

PRESS SLIP.

PREFERENCE

URGENT (a).

DEPARTMENT.

Current No. 1275 dated 5-2-1913

G.O. No. 1220 dated 2-2-1913

(b)

Number of MS. pages sent { Correspondence 14
(b¹)
Notes 25

Brief subject *note bank pay*

(c) Number of copies required when struck off (not including copies for volumes and editors' table which are retained in the Press).	E. T. copies to supply requisitions for purchase by the public.	Complete correspondence and orders.	Notes.
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Madras Records ...	4	20	20
Ooty Records ...		10	8
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Total ..			
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	Letter only.	Complete G.O.	(b) Special issue copies of G.O.		Notes
			No.	Papers.	
Signature copies.....					
India Office.....					
Govt. of India.....Dept.					
Revenue Department.....					
Public Works Department.....		4			
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.....Dept.					
Public Dept.....					
Judicial Dept.....					
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Marine Dept.....					
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Total		4			
Spare copies					
The <i>S.B.I.</i>		10			
The <i>12</i>		15			
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INSTRUCTIONS FOR THE SECRETARIAT.

(a) If a paper is marked to be printed urgently, the Superintendent of the section concerned should sign the Press slip. The Superintendent should exercise a careful discretion in the matter.

(b) Each letter, memorandum, or order, or set of orders, in the file of correspondence should be headed in succession with the Roman numeral I, II, III, etc., the number being written in red ink or blue chalk above the item. The particular papers to be printed in the special issue-copies should be indicated by the Roman numeral (I, II, etc.) by which that item has been headed in the correspondence file. All matter, including marginal remarks or references, to be printed should be written in ink and matter which should not be printed should be encircled. Initials and signatures that are not quite legible should be re-written distinctly.

(b¹) For rules regarding printing of notes, see rule 315 of the office Manual.

(c) The number of copies and the details of distribution should be filled in by the Superintendent or Referencer concerned.

(d) In the absence of special instructions to the Press to keep matter standing for a specified period, ordinary papers of 8 pages and under will be kept standing for one week, and larger papers for two weeks only. The type of notes and of all confidential papers is distributed immediately after striking.

(e) This slip, properly and completely filled in, should accompany every paper sent to Press; it will be returned by the Press when proofs are furnished; it should be sent to the Press when a call is made for revised proofs or when a corrected proof is sent for striking. When finally returned by Press it should be filed with the original order or letter.

INSTRUCTIONS FOR THE PRESS.

(a) If, in the opinion of the Superintendent of the Press, a paper has been marked urgent unnecessarily, he should send the Press slip to the Registrar with a remark to that effect.

(b) Unless a note to the contrary is made against the matter, pencil entries should not be printed. The Superintendent of the Press may bring to the notice of the Registrar any instance of incomplete or careless editing.

(c) Signature copies of letters to the Secretary of State or to the Government of India should be printed on hand-made paper.

(d) This slip should be returned by the Press to the Secretariat when proofs are furnished; it will be sent back to the Press when proofs are returned corrected and should be finally returned to the Secretariat when struck-off copies are supplied.

(e) The names of the Secretary and Members should be printed in full when they occur on the right hand side, only the first time when they appear on the left side, the initials alone being printed later.

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‡ To be initialed and dated.

TO PRESS, MADRAS OOTY.

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Referencer. Clerk.	Referencer. Clerk.	Referencer. Clerk.
Supdt.	Supdt.	Supdt.

SPECIAL INSTRUCTIONS.

Abstract of the
Engineering College
Passing orders on the proposals
of the Principal of the —, Madras, for the
revision of the existing arrangements for
the practical training of engineering and
upper subordinate students

TO BE FILLED IN BY THE PRESS.

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