

Government of Madras.

HOME DEPARTMENT.

(EDUCATION)

G.O. No. 1092, 17th October 1916

INDEXED

Trades school

Approving the scheme submitted by Mr. Couchman for opening classes in the Madras—
for giving instruction in plumbing and mechanical engineering.

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N.P.

ORIGINAL

Trades school

Approving the scheme submitted by Mr. Couchman for opening classes in the Madras —
for giving instruction in plumbing and mechanical engineering.

GOVERNMENT OF MADRAS

HOME DEPARTMENT

(Education)

READ—the following papers :—

I

Letter—from K. T. B. TRESSLER, Esq., Director of Industries.
To—the Secretary to Government, Educational Department.
Dated—Madras, the 26th February 1915.
No.—E. 44.

I have the honour to submit herewith proposals for the establishment of a Trades school in Madras.

2. It will be remembered that a committee was convened in 1912 for the purpose of considering the limited question of educational facilities for mechanical engineering apprentices in the North of Madras. Their recommendations are given in appendix A. A subsequent committee was convened in G.O. No. 780, dated 4th July 1914, to consider the broader question of the provision in Madras of educational facilities in industrial trades generally. The recommendations of this committee are given in appendix B.

3. So far as the original question—mechanical engineering training—is concerned the findings of the two committees are in a substantial agreement. Both committees are of opinion—

(a) That it is necessary to make some provision for training in a school outside the workshops.

(b) That the neighbourhood of Washermanpet is most suitable as a location for a mechanical engineering institute.

(c) That it is advisable to charge fees.

(d) That it would be advisable to devise some means (in the nature of indentures) which would ensure the completion of the training.

The committees, however, differ on the following points :—

(a) *The scope of the school.*—The first committee dealt with only mechanical engineering. The second committee is not in favour of restricting the instruction to mechanical engineering subjects, but proposes also to include other trade subjects in the scheme of instruction.

(b) *The time of instruction.*—The first committee suggested the afternoon; the second found after enquiry that either the morning or evening would have to be chosen.

(c) *Management.*—The first committee was in favour of a committee of management of the school; the second committee does not recommend a committee of management for the school alone, but a general committee of advice to nominate examiners.

4. The present proposals regarding the scheme of instruction are based on the recommendations and reports of the two committees so far as they can be reconciled.

5. *Time.*—The time for lectures has been determined mainly by the character of the replies received from employers. Some employers are willing to let their men and apprentices “off” during working hours: the majority, however, seem to be of opinion that if mechanics want to improve themselves they ought to do so out of working hours. I personally incline towards the latter view as I consider that the development of a certain amount of grit, such as working overtime demands, is an essential element in all industrial education. On the other hand I fancy that the number of individuals whose desire for improvement is sufficiently great to induce them to do extra work is small, and if we want to get numerical results we must make

things easy and allow apprentices to acquire their training at the expense of their practical work, i.e., during working hours. On the other hand there will always be a considerable number of individuals who cannot get away during working hours.

The only way I can see of completely meeting requirements is by having two sets of classes—one in the day and one in the evening.

6. *Location.*—The location proposed for the school by the original committee was a site somewhere near Basin Bridge station. The site actually selected is at Washermanpet adjoining the Leather Trades school. This site is quite suitable for engineer apprentices, but is by no means central for individuals wishing to attend other courses and it appears to be quite impracticable to concentrate all technical education in this one place. The second committee therefore considers it necessary to provide facilities for education in another place also—preferably near Vepery. In another letter I have put forward proposals for a Normal Training school. This school is to be located close to my office on the Poonamallee road and, as it is essential that some sort of teaching school should be attached to the Normal Training school, it seems reasonable to propose that the other centre of technical education should be located here. The site is also one of the most central in Madras.

7. To provide adequately for technical education it therefore appears to be necessary to contemplate two sets of classes at two centres. But the whole idea of a Trades school is a new one and we have no experience whatever of the working of a scheme of this kind. The first steps must therefore be largely of a guesswork character.

8. *Classes.*—The second committee proposes instruction in the following subjects :—

Fitting and turning.	Carpentry and joinery.
Blacksmithing.	Brickwork and masonry.
Foundry work.	Weaving.
Motor-car work.	Tailoring.
Motor-car driving.	Rattan work.
Electric wiring and fitting.	Printing trades.
Plumbing and sanitary work.	Oil and gas engine driving.
Metal work.	

These courses are fully worked out in the time-table (appendix C). It will be observed that these courses require the following accommodation :—

At Washermanpet—
One mechanical workshop.
Two class rooms and drawing office.
At Vepery—
Three workshops.
Six class rooms and drawing office.

They will also require, besides permanent staff, the services of 20–22 outside lecturers lecturing four hours a week (say Rs. 25,000). Whilst fully accepting the recommendations of the committee as a statement of the lines on which the Trades school is to be developed, I consider it impracticable for financial reasons to provide complete facilities at the very start. What I suggest to begin with is that there should be only one set of classes at one or other of the proposed centres, and that only such classes should be provided as there appears to be an immediate demand for. I must, however, explain that this proposal will only suit a part of the class of individual we wish to train and will only partially carry out the recommendation of the second committee, my idea being to make a start and develop the scheme as we gain knowledge of the conditions and extent to which the facilities provided are likely to be taken advantage of.

9. *Proposed classes.*—Having due regard for necessity and cost, the classes I suggest for a start are—

- (i) Trade instruction classes in—
 - Mechanical work at Vepery.
 - Woodwork at Vepery.
 - Motor-car driving at Vepery.
 - Oil, gas and steam engine driving at Vepery.

(ii) Extension classes in—

Fitting and turning at Washermanpet.
 Blacksmithing at Washermanpet.
 Foundry practice at Washermanpet.
 Plumbing and sanitary work at Vepery.
 Carpentry, joinery and cabinetmaking at Vepery.
 Electric wiring and fitting at Vepery.
 Motor-car work at Vepery.

(iii) Theoretical classes in—

Practical mathematics at Washermanpet and Vepery.
 Technical and machine drawing at Washermanpet and Vepery.
 Practical mechanics at Washermanpet and Vepery.
 Prime-movers at Washermanpet.
 Technical electricity at Vepery.
 Elementary science at Vepery.
 Plumbing and sanitary work at Vepery.

(iv) Regular printing courses at Vepery.

General education classes must also be provided for backward pupils. These are to be of two kinds, viz. :—

Courses A up to about fourth standard
 Courses B up to about fourth form

in subjects of technical value, e.g., English, Arithmetic, Mathematics and Elementary Science. These classes would be held in the evening at the Vepery school.

10. *Proposed accommodation.*—To carry out even this limited programme I require accommodation in two places. We are committed to providing accommodation at Washermanpet in connection with the Leather Trades school, and it might appear desirable in the first instance to concentrate all work there. After a careful consideration of the matter I have, however, come to the conclusion that this is not practicable. Those artisans whose work lies more to the south of Madras certainly will not go out to Washermanpet for instruction, and if we want to catch them we must provide instruction at a more convenient centre, such as Vepery, even at the start.

11. For the limited instruction I propose now to provide I shall require—

At Washermanpet—	At Vepery—
One workshop.	Two workshops.
Two class rooms.	Four class rooms.

The time-table is shown in appendix D. The outside staff required is 12, each lecturer teaching for four hours a week (say Rs. 15,000).

At Washermanpet the lecture rooms and laboratory to be provided for the Leather school may be used in connection with the mechanical courses and the only extra building required is a demonstration workshop, say 70 by 30, a drawing office, say 70 by 30, also a foundry and smith's shop. The complete building will be a two storey one and the proposals on this point are submitted in a separate letter. The cost of the part debitable to the Trades school is Rs. 20,000.

So far as lecture rooms and laboratories on the other site are concerned I can set aside a couple of rooms in my new office building in Vepery for trade instruction purposes until such time as they will be required for the Bureau of Industrial Information. I shall also require instructional workshops. If mechanical courses are provided in the evening I can utilize my repair shop for such instructional purposes, but a workshop for carpentry and printer's work will also be necessary. Two plain buildings 60 by 25 with corrugated iron roof and costing say Rs. 12,000 each will suffice: unfortunately I have no place to put them. The enclosed sketch plan will show that on the land already in the possession of Government, or to be acquired, there is no room to put sheds except in front of my proposed office, an obviously impossible position. If classes are to be held in Vepery therefore, the Friend-in-need Society's premises must be acquired. The cost of this acquisition is not however entirely debitable to the Trades school as it is proposed to locate the Normal Training

school on the same site. These building proposals are incorporated in the Normal Training school scheme sent up separately. The cost debitable to the Trades school is approximately :—

	RS.
Land	40,000
Buildings	20,000

12. It has been suggested that work might be started in temporary quarters. Unfortunately the committee insist on the necessity for workshop accommodation and equipment and this requires considerable floor space and adequate head room. An ordinary building would not provide nearly enough floor space or head room and the only alternatives are either to build a new building on an open space or else to acquire a house and rebuild it. Neither alternative seems to offer any advantage in respect either of time or cost over the immediate provision of the accommodation required on the final site.

I have been unable to find any building that would prove suitable either near the Washermanpet or the Vepery site.

13. *Cost of equipment.*—As already stated, the Committee is emphatically of opinion that proper workshop equipment should be provided. The cost is given in detail in appendices E, F and G and is as follows for classes of 20 :—

	RS.
Mechanical shop (Washermanpet)	9,000
Do. (Vepery) Director of Industries Workshop	3,210
Carpentry (Vepery)	1,500
Printing (Vepery)—	13,600
Machine section	2,300
Book-binding section	

14. *Cost of staff.*—* The estimated cost of staff is—

	RS.
One Principal (to be specially appointed)	120
Office	
One head clerk Rs. 50—5—70	60
One despatching clerk Rs. 25—2½—35	30
Three peons at Rs. 10 each	30
	120
	Rs. 1,440 per annum.

Teaching staff. Outside lectures : Technical subjects (including technical drawing).—The suggested rate of remuneration for single lectures is Rs. 15 for 50 minutes—one hour lecture. For a series of lectures extending over one year the rate will be Rs. 750 for 2 one hour periods per week and Rs. 1,250 for 4 one hour periods if given on two days or nights a week and Rs. 1,500 if given on 4. The number of outside lectures of one hour duration is about 32 a week and the total cost on any reduced scheme will be Rs. 10,000 per annum or so.

Permanent staff.

	RS.
One head teacher in English and mathematics at Rs. 50—2½—70. }	
One teacher in science and mathematics at Rs. 35—2½—50	1,740
One drawing master at Rs. 35—2½—50	15,000
Materials per annum	
Total, excluding principal, say	33,200

* All at Vepery.

15. *Numbers.*—Mechanical engineering firms have expressed their willingness to take apprentices. The figures given amount to 40 but a certain number of the firms have expressed their inability to give exact figures.

Most firms approached have also expressed their general willingness to allow paid workmen to attend evening classes.

In the printing trades definite figures are 100 *plus* general offers from firms

In carpentry there are no regular firms and for our raw material we must rely on apprentices working with small employers of labour.

As I have already explained some firms are willing to let their apprentices go during the day—others insist on them getting their education out of working hours.

Numbers provided for.—In the first instance I propose only morning classes in mechanical work and so cannot cater for all these individuals. I am, however, providing, in the first instance for classes of 20, as proposed by the Committee. A similar number is contemplated in other subjects.

16. Seeing that the trade school is a pure experiment I am unable to submit a cut and dried scheme. All I can do is to make out draft proposals, to be modified in accordance with experience, and my present proposals are to be regarded as of a purely tentative character. When we have discovered the right lines to work on, the scope of the school may be extended to include all the subjects proposed by the Committee and to provide for both morning and evening classes as found necessary.

17. It will probably take a full year for the plans to be sanctioned, accommodation provided and plant to be purchased. No provision need be made this year for expenditure and next year 1915-16 only capital expenditure need be met. I should say that regular classes can only be begun about June 1916. As plans for the buildings are herewith sent it should be possible to get them sanctioned and carried out before April 1916.

18. The total capital expenditure is approximately Rs. 70,000 excluding the share of cost of land acquisition and buildings in Vepery, which expenditure is also partly to be borne by the Normal Training school. The total cost of these items is Rs. 1,20,000 and the share for the Technical Institute may be reckoned as half. The recurring expenditure will be Rs. 33,000 to begin with. The receipts will not exceed Rs. 500 per annum.

APPENDIX A.

Recommendations of a Committee appointed in G.O. No. 23, Educational, dated 16th January 1912, to consider and report upon the question of improving Industrial and Technical education in the north of Madras.

1. That it is desirable to establish a system of State apprentices among the engineering shops in the north of Madras.
2. That it is necessary to make some provision for technical training in a school outside the workshops.
3. That instruction be given in the school to each boy on three days a week in the afternoons.
4. That the instruction be given in English and that the boys should possess such educational qualifications as to enable them to take advantage of it.
5. That the school be established as near Basin Bridge station as a convenient site can be found.
6. That the management of the institution be vested in a committee to be nominated by Government and to be representative of the various interests concerned.
7. That the Committee recommend that a fee should be charged to all apprentices.

APPENDIX B.

Recommendations of the Committee appointed in G.O. No. 780, Educational, dated 14th July 1914, to consider certain questions relating to improvements of Industrial and Technical education in the north of the City of Madras.

1. This Committee accepts the system of division (as suggested by the Director of Industries) on Technical Education into two classes of Technological and Industrial and approves of the Director's proposal to aim at the improvement of Industrial Education.
2. This Committee having heard the report of the Director upon his visit to the Victoria Technical Institute, Bombay, is of the opinion that for the present the arrangement he outlines for dealing with any demand for Technological Education is adequate.

3. With regard to regular and complete courses of training as given in the Draft Code this Committee is unable to express any opinion upon the value of the "Mechanism" proposed but lays stress upon the final examination tests being of such a character that the results will testify to the suitability of those who pass them, for industrial employment. The Government Technical Examinations have not, so far as they deal with trades, supplied such a test and it is considered essential that in the examinations it is proposed to introduce the Examiners should be actively employed in the trade or profession in which they are examining.

4. The Committee is of opinion that the nomination of Examiners should be entrusted to a Board of Representative employers, to be presided over by the Director of Industries.

5. The Committee is of the opinion that regular and complete courses of instruction do not entirely provide for industrial requirements and recommends that "Extension" courses should also be provided, in the Madras Trades School, for subjects such as fitting and turning, Blacksmith's work, foundry work, carpentry and joinery, plumbing and sanitary work, brick work and masonry, Electric Wiring and Fitting, Motor-car work and motor-car driving, weaving and dyeing, metal work and metal spinning.

6. The Committee further recommends that facilities should be provided for such general education by means of evening classes as may be necessary for a pupil to take advantage of the Trade School course, it being a condition for admission to the classes however that pupils should be *bona fide* industrial workers or apprentices.

7. The Committee considers the proposed Washermanpet site to be the most suitable centre for the teaching of Engineering Trade subjects, but it is of opinion that for general subjects another site would probably be more central and recommends that provision should be made in the Poonaallee High Road adjoining the Director's Office for another branch of the Trade School.

8. The Committee considers a system of stipends to apprentices to be objectionable. It is however recognised that financial assistance may in some cases be necessary but instead of fixed stipends, it recommends the grant of scholarships to individual cases.

9. The Committee is not in favour of the provision of hostel accommodation in connection with this school.

10. It is considered essential that for teaching purposes every effort should be made to secure the partial services of individuals possessing practical experience of the subjects they teach, and is of opinion that provided suitable remuneration be given it will in most cases be possible to arrange for the part-time services of individuals actually practising the trade to be taught. The Committee regards it as desirable to fix the permanent staff of the Trades School at the minimum possible limit. Except for the teaching of general literary and scientific subjects, it will in their opinion be unnecessary to employ any regular whole-time teachers.

11. The Committee anticipates that a considerable time may elapse before a building scheme in connection with these proposals matures and it recommends that, if possible, work should be started in a rented building. There appears however some doubt as to whether a suitable building will be available near either of the sites proposed for these trade schools and the Committee accordingly recommends that permanent arrangements should be made as expeditiously as possible.

Abstract Report of an unofficial meeting convened to consider the proposals embodied in the Draft Code for Technical Education.

The Committee approve generally the principles embodied in the Director of Industries' scheme but wish to point out that the main difficulty hitherto connected with Industrial Education has been the lack of qualified teachers. This difficulty will continue so long as no facilities are provided for training teachers and the Committee feel very strongly that in a scheme for the development of industrial education the very first step to be taken is the establishment of a Normal Training School at Madras.

The Committee understand that the development of certain schools in up-country centres is contemplated by Government and would request that early steps be taken to give effect to this proposal. They consider that schools of this kind would give a valuable impetus to local industries. One member of the Committee wishes to express the opinion that more should be done to investigate and develop industries.

The Committee as a body also considers that much greater attention should be given to works accounting and that if possible a special arrangement should be made for the teaching of the subject.

The Committee also think that the Government workshops constitute a valuable training ground for apprentices that have not yet been exploited and submit for careful consideration the desirability of developing these workshops with a view to their securing educational value.

APPENDIX C.

ARRANGEMENT OF CLASSES SUGGESTED BY THE COMMITTEE.

(a) Mechanical trades at Washermanpet.

A.M.		
Monday	7-8-45	Fitter's and turner's extension class.
Tuesday	7-7-50	Practical mathematics, first year.
"	7-50-8-45	Machine drawing, second year.
"	7-50-8-45	Machine drawing, first year.
Wednesday	7-8-45	Practical mathematics, second year.
Thursday	7-7-50	Blacksmith's extension class.
"	7-8-45	Prime-movers.
"	7-50-8-45	Practical mathematics, second year.
Friday	7-8-45	Practical mechanics.
		Machine drawing, second year.
		Foundry practice extension class.

(b) Other than Mechanical Trades at Vepery.

CLASS ROOM A.

Preliminary classes.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
5-30-6-30 P.M.	English ..	English ..	English ..	English ..	English ..
6-30-7-30 "	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics

CLASS ROOM B.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
7-7-50 A.M.	Printer's Composition, second year.	Printer's Composition, second year.	Proof reading, second year.	Printer's Composition, second year.	Proof reading, second year.
7-55-8-45 "	Printer's Composition, first year.	Printer's Composition, first year.	Proof reading, first year.	Printer's Composition, first year.	Proof reading, first year.
5-30-6-25 P.M.	Practical Mathematics, Electricians, first year.	Practical Mathematics, Electricians, second year.	Practical Mathematics, Metal workers, first year.	Practical Mathematics, Electricians, second year.	Practical Mathematics, Electricians, first year.
6-30-7-30 "	Practical Mathematics, Carpenters, etc., first year.	Practical Mathematics, Carpenters, etc., second year.	Oil (or gas) engine driving.	Katan work ..	Oil or gas engine driving.

CLASS ROOM C.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
7-7-50 A.M.	Bookbinding, second year.	Press and Machine work, second year.	Bookbinding, second year.	Printer's warehousing, second year.	Press and Machine work, second year.	General printing, High Proficiency class.
7-55-8-45 "	Bookbinding, first year.	Press and Machine work, first year.	Bookbinding, first year.	Printer's warehousing, first year.	Press and Machine work, first year.	...
5-30-6-25 P.M.	....	Motorcar work, Theoretical.	Brickwork ..	Motorcar work, Theoretical.	Brickwork ..	....
6-30-7-30 "	....	Motorcar work, Practical.	Masonry ..	Motorcar work, Practical.	Masonry ..	....

CLASS ROOM D.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
5-30 P.M.	Embroidery ..	Tailoring, trade Instruction.	Embroidery ..	Tailoring, extension.	Lacemaking ..	Tailoring, 2-30 P.M.
7-25 "	Needlework ..	Do.	Needlework ..	Do.	Do.	Tailor's cutting, 3-30 P.M.

CLASS ROOM E.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
5-30-6-25 P.M.	Plumbing and Sanitary work.	Leather work, Trade Instruction.	Plumbing and Sanitary work.	Leather work, Trade Instruction.	..
6-30-7-30 "	Bookbinding, Trade Instruction.	Printing, Trade Instruction.	Bookbinding, Trade Instruction.	Printing, Trade Instruction.	..

SCIENCE ROOM.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
..	Handloom weaving, Steam engine driving.	Carpet weaving ..	Dyeing (weavers). Steam engine driving.	Handloom weaving, Mechanics	Technical electricity, Elementary science.

DRAWING HALL.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
..	Technical drawing, Wood workers, first year.	Carpenters joiners, etc., second year.	Drawing and weaving design for weavers.	..	Technical drawing, Metal workers.
..	Machine drawing, Electricians, first year.	Machine drawing, Electricians, second year.	Technical drawing, Metal workers and Plumbers.	Machine drawing, Electricians, second year.	Machine drawing, Electricians, first year.

WORKSHOPS.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
5-30-7-30 P.M.	Mechanical work, Trade Instruction.	Plumbers and Metal workers.	Electric wiring and Fitting, Carpenters, etc.	Mechanical work, Trade Instruction.	Wood work, Trade Instruction.	Motorcar driving (afternoon).

APPENDIX D.

ARRANGEMENTS OF CLASSES PROPOSED TO BE HELD AS A COMMENCEMENT.

(a) Mechanical Trades at Washermanpet.

Monday	7-8-45 A.M.	Fitter's and Turner's extension class.
Tuesday	7-7-50 "	Practical Mathematics, first year.
"	7-50-8-45 "	Machine Drawing, second year.
Do.	7-50-8-45 "	Machine Drawing, first year.
Wednesday	7-8-45 "	Practical Mathematics, second year.
"	7-8-45 "	Blacksmith's extension class.
Thursday	7-7-50 "	Prime Movers.
"	7-7-50 "	Practical Mathematics, second year.
Do.	7-50-8-45 "	Practical Mechanics.
"	7-50-8-45 "	Machine Drawing, second year.
Friday	7-8-45 "	Foundry practice extension class.

(b) Other than Mechanical Trades at Vepery.

CLASS ROOM A.

Preliminary classes.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
5-30-6-30 P.M.	English ..	English ..	English ..	English ..	English ..
6-30-7-30 "	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics

CLASS ROOM B.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
7-7-40 A.M. ..	Printer's Composition, second year.	Printer's Warehousing, second year.	Proof-reading, second year.	Printer's Composition, second year.	Proof-reading, second year.
7-55-8-46 A.M. ..	Printer's Composition, first year.	Printer's Warehousing, first year.	Proof-reading, first year.	Printer's Composition, first year.	Proof-reading, first year.
5-30-6-26 P.M. ..	Practical Mathematics, Electricians, first year.	Practical Mathematics, Electricians, second year.	Practical Mathematics, Metal Workers, Plumbers, first year.	Practical Mathematics, Electricians, second year.	Practical Mathematics, Electricians, first year.
6-30-7-30 P.M. ..	Practical Mathematics, Carpenters, etc., first year.	Practical Mathematics, Carpenters, etc., second year.	Steam, Oil or Gas Engine driving.	..	Steam, Oil or Gas Engine driving.

CLASS ROOM C.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
7-7-60 A.M. ..	Bookbinding, second year.	Press and Machine work, second year.	Bookbinding, second year.	Printer's Warehousing, second year.	Press and Machine work, second year.	General Printing, High Proficiency class.
7-55-8-46 A.M. ..	Bookbinding, first year.	Press and Machine work, first year.	Bookbinding, first year.	Printer's Warehousing, first year.	Press and Machine work, first year.	..
5-30-6-26 P.M. ..	Plumbing and Sanitary work.	Motorscar work, theoretical.	Plumbing and Sanitary work.	Motorscar work, theoretical.	..	..
6-30-7-30 ..	..	Motorscar work, practical.	..	Motorscar work, practical.	..	..

SCIENCE ROOM.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8-30 to 6-26 P.M. ..	..	....	....	....	....
6-30 to 7-25 ..	Technical electricity.	....	....	Mechanics ..	Elementary science.

DRAWING HALL.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
....	Technical drawing, wood-workers, first year.	Carpenters, joiners, etc., second year.	....	....	....
....	Machine drawing, Electricians, first year.	Machine drawing, Electricians, second year.	Technical drawing.	Machine drawing, Electricians, second year.	Machine drawing, Electricians, first year.

WORKSHOPS.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
5-30 to 7-30 P.M. ..	Mechanical work, Trade Instruction.	Plumbers ..	Electric wiring and fitting, carpenters, etc.	Mechanical work, Trade Instruction.	Wood-work, Trade Instruction.	Motorscar driving.

APPENDIX E.

Estimate of equipment for mechanical trade workshop, Washermanpet.

	RS.
One drilling machine	1,000
One milling machine	3,000
Two 8-inches lathes	1,200
One 8-inch lathe	750
One surface table	180
One motor for driving	600
Shafting, etc.	500
Taps and dies	110
Forge and blower	150
Tools, chucks, benches, etc.	580
Contingencies	300
Total	8,370

APPENDIX F.

Estimate of equipment required for a wood-working shop, Madras Trade school, Vepery.

	RS.
1. Twenty sets of standard tools	300
2. Six sets of wood-carving tools	250
3. One set special tools	600
4. Ten benches with vice and stop, complete	300
5. Drawing hall equipment (desks, almirahs, models, etc.)	650
6. Wood-working machinery—	
(i) Foot driven scroll saw	55
(ii) Band and circular sawing machine (hand or power)	355
(iii) Planing and joining machine	250
(iv) Centre motion mortising machine	135
(v) Wood-turning lathe	40
(vi) Incidentals	275
Total	3,210

APPENDIX G.

Estimate of equipment required for a printing trades workshop, Madras Trade school, Vepery.

	RS.
Composing section—	
Frames, composing cabinets and cases	247
Accessories	103
Imposing stone and chases	142
Metal and wooden furniture, racks, leads and accessories	460
Ruling cabinet and accessories	250
Steel furniture fount, type and borders, blocks, galleys, etc.	342
Total	1,544

Machine section—

One hand press inking table, etc.	670
One Haddon safety platen machine	2,750
One Falcon brown folio platen	1,500
One Haddon Victoria platen crown folio	950
One small Art Caxton	1,685
One Elliot double crown wharfedale with latest improvements	3,400
One royal Babcock drum cylinder machine, complete	2,460
Accessories	180
Total	13,595

	Rs.
Book-binding section—	
Clamp cutting and trimming machine	1,200
Board cutting machine	300
Blocker, 7 x 8 $\frac{1}{2}$	335
Marbling outfit	100
Two revolving book clamps	60
Knives, pallets, hand tools, presses, burnishers, etc.	310
Total	2,305

II

Letter—from K. T. B. TRESSLER, Esq., Director of Industries.
To—the Secretary to Government, Educational Department.
Dated—Madras, the 28th February 1915.
No.—E. 44.

In connection with the proposals for the Madras Trades School I have the honour to submit the enclosed sketch plan for the Washermanpet branch.

2 When the Government tannery was built the prospect of this Trades School being erected on the same site was borne in mind and no provision was made in the Tannery buildings themselves for class room accommodation. Such accommodation it was proposed to provide in the main building now described.

3. The appended site plan shows the property now owned by Government. In the original scheme the acquisition of the small block of tenements was also proposed. These tenements have not yet been acquired for reasons unknown to me. For the present they are not absolutely necessary.

Extension of accommodation will no doubt become necessary soon and the finished building will cover the area shown in skeleton outline. To begin with I propose to build only the south wing.

4. The details of this wing are shown in another plan. The accommodation is very limited, but I do not wish to spend much money to begin with and the north wing can be added when required.

On the ground floor will be the mechanical workshop, office and store: on the upper floor drawing office, professors' room and laboratory.

At a square foot rate of Rs. 9-8-0 the cost amounts to Rs. 34,770 *plus* say Rs. 1,500 for fencing, etc.

5. Behind a corrugated iron shed is also to be constructed to serve as a foundry and blacksmiths' shop. The cost of this at a square foot rate of Rs. 2 is Rs. 5,400.

6. The total cost is therefore Rs. 40,170 for this branch (excludes fencing).

7. The proposed Vepery branch will be accommodated for the time being in the proposed Director's Office and the proposed normal Training School building and no special buildings are required just now.

III

Letter—from K. T. B. TRESSLER, Esq., Director of Industries.
To—the Secretary to Government, Educational Department.
Dated—Madras, the 26th February 1915.
No.—44 E.

We, the members of the Committee constituted in G.O. No. 780, dated 4th July 1914, to consider certain questions relating to improvements in Industrial and Technical education in the City of Madras have the honour to submit the following report.

2 The Committee held three meetings on the 10th and 12th of September and 27th November respectively, and having discussed the points placed before it and others which have a bearing upon the question of Industrial education formulated and passed the resolutions appearing at the end of the present report.

3. The Committee agrees with the definition of the functions of Industrial and Technological education as laid down by the Director of Industries, and has limited itself to the discussion of means whereby the Industrial part could be improved.

As regards higher technical training in subjects for which no provision is made in the Madras Presidency the Committee is of opinion that a demand of this character could most advantageously be met by assisting such pupils as were fitted therefor, to take their training at institutions in other parts of India. Such assistance might be in the form of scholarships. The Committee considers that the granting of scholarships is in general to be preferred to any provision of hostel accommodation or the usual methods of direct stipends to all pupils.

4. The Committee observes that the system of Industrial Education proposed by the Director of Industries deals mainly with the problem of taking entirely raw material into the Industrial schools and providing a complete course of Industrial education to fit the pupils for taking up an industrial career. As explained in the third resolution, the Committee does not feel itself qualified to pass any opinion upon this school part of the Industrial Education Scheme, but considers that it is best qualified to deal with the portion which aims at the improvement of the practical industrial worker and with means whereby this object is to be attained. The provision of facilities of which the workman may take advantage for personal improvement is very desirable and since, from the conditions of employment, it is impossible for a workman to attend regular classes or to undergo a complete and thorough course of training, it is considered advisable that these facilities should take the form of *Extension Courses* teaching the correct methods to be employed in practice and demonstrating the improvements to be aimed at. For individuals capable of taking advantage of them, the provision of *Technical Courses* to explain the principles underlying the work are also recommended.

5. The Committee is of opinion that in connection with the Madras Trade School Extension Courses in the following subjects should be provided, viz:—

Fitter's and Turner's work.	Brick work.
Blacksmith's work.	Masonry work.
Foundry work.	Metal work.
Motor car work.	Rattan work.
Motor car driving.	Weaving.
Joiner's work.	Tailoring.
Carpenter's work.	Oil and Gas Engine driving.
Electric wiring.	Printing Trades.
Plumbing and Sanitary work.	.....

and that for apprentices general theoretical courses of instruction might be provided in—

- | | |
|---------------------------------|---------------|
| (a) Mechanical Trades. | (c) Printing. |
| (b) Plumbing and Sanitary work. | |

6. As it is extremely likely that many individuals desirous of attending these classes will not possess the general education which would permit of them taking full advantage of the instruction the committee recommends that evening classes should also be provided in the Madras Trades School to give preliminary instruction in English, Arithmetic and drawing; admission to these classes, however, to be strictly limited to workmen.

7. A further type of instruction for which there appears to be a demand is what is called *Trade Instruction*, being elementary instruction to trade subjects for individuals desirous of learning something about a trade they are not actually engaged on.

8. With regard to the number of the pupils to be catered for this committee is of opinion that in the first instance it will be sufficient if provision is made for classes of 20.

9. Although the question of the fees to be charged for admission to the classes is one of some uncertainty owing to the varying circumstances of workmen, the Committee considers it eminently desirable to charge some fee, if only a small one, and suggests that at present an admission fee of Re. 1 should be charged for each course.

10. The classes should be held in the morning or evening so as to interfere as little as possible with the working hours of the apprentices. With regard to the Mechanical Trades in particular it is considered that the morning from 7 to 8-45 would be the most convenient time, the classes being so arranged that no apprentice will

have to attend the school on more than three mornings a week. It may, however, prove necessary to provide evening classes also. Classes in the Printing Trades might also be held in the mornings but in all other subjects, evening classes from 5-30 onwards would appear to be most suitable.

11. The syllabuses of instruction have already been drawn up by the Sub-Committees. Any alterations in these syllabuses should be made by a Board appointed for the purpose upon which the interested employees should be largely represented. The curriculum the Committee must leave to the Director of Industries to arrange. With reference to the teaching, the Committee lays stress upon the necessity of obtaining the services of really industrially competent men as teachers, that is, men who have themselves had a thorough training and are actively employed in the trade they teach. The Committee considers that if suitable remuneration be given, there should be no difficulty in arranging for the part-time services of qualified men employed in Madras.

12. The Committee would also draw special attention to the question of the selection of examiners. To ensure that the capacity of candidates and their suitability for industrial employment shall be effectively tested it recommends that nominations would be made by a Board of representative employers as stated in Resolution 4. No particular examination tests need be specified and it would be left to the examiner to impose any test within the limits of the course of instruction laid down in the syllabus which any competent workman might be expected to fulfil.

13. The question of the location of the Madras Trade School is one of importance as it is clearly essential that the centre of instruction should be conveniently situated, and the Committee whilst agreeing with the original committee that the Mechanical Trades classes should be held in the neighbourhood of Washermanpet, is of the opinion that all other subjects may be more advantageously taught in a Central school to be erected on the land adjoining the Director of Industries' Office in the Poonamallee road. It is also recommended that the services of teachers in the Madras Trades School should be available for giving instruction in classes which might be arranged for by some of the large employers of labour in Madras in connection with their works, provided that suitable class room accommodation is provided without any expense to Government and the attendance of a sufficient number of industrially employed pupils is arranged for.

14. The Committee would lay stress upon what it considers to be the central feature of the Madras Trade School Scheme, viz., the character of the Extension Lectures which are to be of a demonstrative and practical nature as distinct from an academic one and considers therefore that its ideas cannot be given effect to unless the Trade School is provided with fully equipped workshops for each trade.

15. Since the provision of workshop accommodation necessitates a considerable floor space, the Committee doubt if a suitable building could be rented for teaching purposes pending the construction of permanent buildings and would therefore urge the necessity for the immediate construction of the buildings required.

Note.—With regard to the possibility of obtaining the part-time services of qualified men employed in Madras for teaching purposes, Mr. C. B. Simpson and Mr. Scott-Mackenzie dissent from the opinion expressed in paragraph 11 above. Mr. Simpson writes "My experience is that the services of qualified men employed in Madras are not readily available, and that when available such men are not suitable teachers. I am of opinion that unless men trained in the art of teaching, with a knowledge of the vernacular, are made available that no real progress can be made. The difficulty of real progress being made with this kind of instruction is the entire absence of trained teachers in Madras."

ENCLOSURES

(i)

Proceedings of the Employers' Committee Meetings, dated 10th and 12th September 1914.

P R E S E N T :

Mr. K. T. B. Tressler, *President*.
Dr. F. Marsden, *Secretary*.

Members.

Mr. Arthur A. J. Leech.
M.R.Ry. Rao Bahadur P. Thyagaraya Chetti Garu.
Mr. H. B. Peirce.
Mr. J. W. Madeley.
Mr. W. H. James.
Mr. Scott-Mackenzie.
The Rev. C. H. Hudson.
Mr. C. B. Simpson.
Mr. N. Nadel.
Mr. R. B. Stewart.
Mr. S. J. Green.
Mr. H. A. Shore.

The Employers' Committee meetings were held on September 10th and 12th.

The Chairman explained that Government desired the opinion of the Committee upon the policy of Industrial Education now under consideration and especially upon the questions of the effect of the re-organisation of schools, the suitability of the revised Code, the suitability of the Government Technical Examinations as a test of the practical capacity of pupils and, if necessary, to devise a more suitable test, also the nature and location of a central school in Madras. He thought that a general discussion upon underlying principles would suffice in this Committee and Sub-Committees could be appointed to deal with details.

Mr. James raised an objection to the scope of work as outlined by the Chairman and was of opinion that the Committee was bound by the terms of G.O. No. 780 of 4th July 1914, appointing this Committee to consider certain questions relating to improvements in Industrial and Technical education in the north of the city of Madras and proposed that the discussion should be limited to the question of the proposed school and that of apprentices.

The Chairman drew the attention of the Committee to a subsequent G.O. No. 833 of 16th July 1914, and informed the Committee that it was the intention of Government that representative employers of labour should be consulted before the revised scheme of industrial education was adopted.

The Committee decided to discuss the general policy regarding industrial education as well as that of the foundation of the Madras Trade School and the Chairman proceeded to outline the effects he hoped to obtain by the proposed changes. At the present time the training given in the Industrial Schools was not uniform and was not in general of a type which resulted in the creation of efficient workmen. From his experience of the schools he found there was a lack of methodical teaching, due probably to the fact that no trained teachers were available, and the scheme which had been outlined was intended to remedy this, to provide really efficient teachers, and a class of workmen and foremen who from the fact of their training having been completed upon practical lines, would be immediately available for employment in workshops and factories. To ensure that their ability should not be open to question, he proposed that the certificates should only be granted after the pupils had undergone a practical examination conducted by an employer or other person actively engaged in productive work and with an intimate acquaintance of the requirements, as regards labour, of the industry in question.

A general discussion followed with special reference to the type of man to be trained and Mr. Simpson and Mr. Mackenzie were strongly of opinion that there was a good opening in Madras in ordinary Mechanical Engineering for the type of man turned out by the Victoria Technical Institute, Bombay. Mr. Simpson having suggested that provision should be made for the training of both passed and unpassed candidates, it was pointed out that provision was made for the teaching of such men in the new Engineering College. The feeling was expressed that the men who would attend the Engineering College were only desirous of entering Government Service and would not be available for industrial work, it was further objected that the training which might be expected there would not be sufficiently practical to meet the requirements from an industrial point of view, and that even the appointment of whole-time professors to teach mechanical subjects in the proposed Trade school would not be really satisfactory owing to their general lack of acquaintance with practical requirements.

The Chairman informed the Committee that the scheme he had so far outlined dealt not with higher Technological Education, such as he presumed was given at Bombay, but only with the lower type of Industrial Education, for the artisan and foreman. He proposed to take pupils of low or medium educational qualifications and give them a training which would make practical workmen of them; and to such as were intelligent and capable of assimilating it he would give sufficient theoretical training to qualify them as foremen. From the latter class, individuals could be selected for further training as Industrial School teachers.

Some members of the Committee spoke of the demand which existed for practical workmen and maistries in almost all branches of industrial work and especially in the Mechanical Trades, and Mr. James intimated that this type of man was to be catered for by classes in the new Engineering College. Mr. Hawkins and Mr. Green were convinced that men who would attend the Engineering College would not be practically inclined and would besides not be willing to take to industrial work unless higher salaries were offered and Mr. Mackenzie pointed out the need there was for men who could attend to and control a machine and keep it in constant working order.

Mr. James stated that no pretension was made that the Engineering College turned out geniuses only, but he did affirm that they turned out sound practical men. He had had no opportunity of comparing the results of their training with that given in Bombay, but he was confident that their passed man represented a good type of mechanical engineer.

The Chairman proceeded to explain the proposed school system to be introduced in Madras and invited opinions as to whether it would be advisable at present to make arrangements to give higher Technological training.

Mr. James thought that no such provision need be made in the Mechanical Trades subjects as the higher educated type of man was catered for by the Engineering College.

Mr. Leech enquired as to the firms which would take apprentices and whether they would permit the apprentices to leave the works to attend lectures in the day time, and was informed that the question had been dealt with by a previous Committee and some information upon the point obtained, and no difficulty was expected as the time to be devoted to lectures would only be a few hours per week.

The Committee was of opinion that no provision need, at present, be made for technological training, but Mr. Simpson thought that it would be necessary to give every workman some theoretical instruction and not to restrict this only to foremen and apprentices.

With regard to the apprentice system Mr. Hawkins was not in favour of demanding any standard of general education qualification, but other members pointed out that unless some standard were demanded the apprentices could not take advantage of the course, would get no benefit from the proposed classes, and Government could not be expected to spend money on their training since neither Government nor the firms employing them could expect to get any commensurate return. Mr. Hudson thought apprentices might be admitted upon the recommendation of employers and the Chairman thought that, as the firms were prepared to take Government apprentices, others who were recommended by the firms might be given instruction, as incompetent men would not be recommended. As the firms would recommend men with a view to subsequent employment, they could be expected to recommend only such as held out promise of competence.

Mr. James enquired as to the type of examination it was proposed to introduce and whether the examinations were to be held annually. He was of opinion that the Government Technical Examinations, especially in the advanced grades, provided quite a good test.

The Chairman explained that there would be two Government Examinations, one to test the ability of the pupil as a workman, and another his capacity as a foreman. They would be held at the end of the respective courses. He was confident that the present Government Technical Examinations did not provide a satisfactory test and the main idea of the new scheme was that the test would be applied by people who were thoroughly conversant with the practical side of an industry and were capable of judging whether the pupil could be employed industrially.

Mr. Stewart thought it was distinctly advisable that the examinations should be independent of the schools.

Mr. James said that the Government Technical Examinations would serve the purpose if properly carried out, but Dr. Marsden thought that they could not be so good as the proposed Industrial Examinations as they took no account of the method of teaching and this was a matter of distinct importance.

Mr. Hawkins enquired how the practical examinations would be conducted and Mr. Shore observed that there would still be many candidates for the Government Technical Examinations; and wished to know what provision would be made to meet their requirements.

The Chairman explained how, under the scheme, a Board of Examiners might be appointed which would select capable men to report upon the candidates' work. The Examinations would be conducted in workshops under practical conditions and any certificate given would thus be a guarantee of the man's practical capacity and the thoroughness of his training. For those who still desired to get the Government Technical Examination certificates these examinations might remain, but as the Department of Industries had no control in the matter, he was not directly interested.

Turning to the question of stipends to pupils and the provision of hostel accommodation in Madras the Committee was against the provision of Government hostels, neither did it consider that general stipends to all students were to be recommended, but preferred that scholarships should be granted in individual cases. The Committee was also strongly of opinion that the system of apprenticeship in vogue in England was not applicable in this country.

When dealing with the question of the subjects to be taken up in the proposed Madras Trade school, and the provision of continuation classes, Mr. Hudson pressed for the provision of a course in General Building Construction. This was opposed on the ground that unless the instruction were thorough it would be of little value and further that such a course was already provided for in the syllabus of the Engineering College. Mr. Madeley did not think that any men from the Engineering College took service with private firms and that in many subjects courses of extension lectures could be given with advantage.

Motor-car Engineering had been suggested as a subject of instruction and Mr. Green pointed out that it would be better to separate such instruction into two divisions, one of Motor-car driving, the other of Motor-car fitting—after discussion, altered to Motor-car work. It was then decided that only qualified mechanics should be admitted to classes in Motor-car work. Other subjects of instruction were also discussed and afterwards a resolution dealing with these was framed.

In dealing with the question of school buildings, it was the general opinion that instruction in Mechanical Trade subjects should be given in a school at Washermanpet and that instruction in other trades and general subjects could be given at another branch school, for which the site proposed in the Poonamallee Road was, so far as the committee could judge, the most central and suitable. Asked as to the length of time it would take to provide suitable buildings, the Chairman regretted his inability to make any estimate. If started in hired buildings, classes might be held in 6–9 months' time. The committee thought that there would be some difficulty in finding suitable buildings which could be rented, and in which courses of extension lectures or continuation classes could be held, and desired to press upon Government the advisability of proceeding with any formulated building scheme as rapidly as possible.

Sub-committees were appointed to draw up syllabuses and deal in general with the courses of instruction in the various subjects and the meetings of the committee were adjourned until November 1918, the meeting being afterwards postponed until November 27th.

(ii)

Proceedings of the Employers Committee meeting, dated 27th November 1914.

PRESENT:

K. T. B. Tressler, Esq., President.
Dr. F. Marsden, Secretary.

Members.

Arthur A. J. Leech, Esq.
M. R. Rao Bahadur P. Thyagaraya Chetti Garu.
H. B. Peirce, Esq.
W. H. James, Esq.
The Rev. C. H. Hudson.
E. J. Hawkins, Esq.
C. B. Simpson, Esq.
N. Nadel, Esq.
E. D. Sampson, Esq.
R. B. Stewart, Esq.
H. A. Shore, Esq.

The minutes of the previous meeting having been read the Chairman explained that the business of the meeting was to consider the resolutions passed at the previous meeting and to revise them in the light of further information which he had been asked to collect. He had included in the Agenda certain general points dealing with the system of Industrial Education described in the Draft Code, so that the members interested in them might offer their opinion. They had been asked by Government to report on the question of curriculum, staff and the courses of studies. He thought this Committee was too large to consider these in detail and suggested that the work might be left to a sub-committee for report. To attempt the discussion of specific points of this kind in a general Committee appeared to him a waste of time. The first point on which we would like to have something definite decided was on the question of Technological Education. His proposal was to have nothing to do with Technological Education (except in Leather Work and Dyeing) and to send all candidates in other subjects to the Victoria Technical Institute, Bombay, for training.

Objection was raised by Mr. James to the Bombay Institute alone being specified. He expressed himself as being in favour of Sibpur.

Mr. Sampson wished to know what was the ultimate aim of the students who underwent training in the Victoria Technical Institute, Bombay, and was informed by the Chairman that the pupils from that institute usually found suitable work in mills or workshops at the end of their course.

Some discussion took place with regard to the character of the training, the standard required for admission and the difference between the standard and that for which provision was being made by the scheme proposed for Madras.

The Chairman pointed out that one of the great advantages of the Victoria Technical Institute, Bombay, was that it was under private management and was therefore free from the University "incubus."

Mr. Peirce was of opinion that the pupils possessing high educational qualification might be sent to any Technological College and not only to the Victoria Technical Institute, Bombay.

The Chairman said it was immaterial what institute was selected: all he wanted was the view of the committee as to whether his proposal to leave Technological Education to others was approved.

Mr. James regarded the proposal as sound but did not consider that the committee need commit themselves to a definite recommendation regarding Technological Education and the committee generally endorsed the opinion.

Turning to purely Industrial Education the Chairman invited the opinion of the committee on the general points, which he had included in the Agenda.

Mr. Simpson did not think that any useful object would be served by discussing generalities. He desired that something definite should be settled concerning the Madras Trades school with regard to equipment, staff, etc.

Dr. Marsden thought it would be necessary to arrange for the provision of full regular courses of instruction in certain subjects and, at convenience, giving such courses of extension lectures as should be found desirable.

The Chairman said that in his opinion it would be necessary first to define the scope of the school before specific points such as those the details of which were asked for by Mr. Simpson could be discussed.

Mr. Hudson agreed and thought that it would be sufficient if the committee were assured that sufficient equipment would be provided.

Mr. Thyagaraya Chetti was of opinion this question of equipment, etc., could best be dealt with by a sub-committee and recommended that the committee should meet again after the receipt of the report of the sub-committee.

The Chairman observed that a procedure of this kind would unduly prolong the meetings of the committee. He suggested as a more convenient arrangement that the scheme drawn up by the sub-committee should be circulated to the members of the committee for approval and remarks. After this had received the approval of the members a final report could then be submitted to Government without further meeting.

Mr. James thought that it would simplify matters if the Director of Industries drew up the scheme himself and this proposal was endorsed by the meeting.

The Chairman then invited the opinion of the committee as to the desirability of an Examination Committee to nominate examiners.

The committee was of opinion that such a committee should be appointed.

Coming to the item in the Agenda referring to the character of courses of instruction the Chairman explained the difference between his Industrial School system and that proposed to be adopted in the Madras Trades school, including the nature of the extension lectures and the method of awarding certificates.

Mr. Peirce understood that the Trades school was intended merely for the practical workman.

The Chairman explained that the "Extension" lectures were intended to provide instruction for this class of man, but that another demand had to be met also and this would be done by means of the so-called Trade Instruction classes. There was no intention of providing complete courses of Industrial Education in the Trade school: the lectures would only be supplementary and pupils would in every case have to acquire their practical training in some outside workshop or factory.

On the item in the Agenda referring to regular courses of instruction the views of the committee regarding the general scheme of education were invited. The Chairman said that he included this item in the Agenda in order to give the members of the committee an opportunity of expressing their opinion thereon. As the committee had however expressed its inability to offer useful criticism this item might be passed over.

The reports of the sub-committee for the different subjects then came up for discussion.

The Chairman said that he had not yet received the syllabus for lace-making but the syllabuses drawn up by the other sub-committees appeared to him to cover the whole field of Industrial Education. The syllabuses were available for inspection, but probably the committee would prefer to read them through at their leisure and arrangements were being made to circulate them.

Regarding mechanical work Mr. Peirce said that the sub-committee had arranged their syllabus with the object of providing a practical demonstration course and not merely extension lectures as he understood that term.

The Chairman explained that what he was now trying to do was as far as possible to reduce the teaching both in Industrial schools and the Trades school to a common basis, so as to correlate the two kinds of instruction. The committee no doubt regarded the Trades schools as a unit complete in itself: the Chairman's idea was to make it also form part of his Industrial School system, so that pupils from such schools upcountry could, as part of the scheme of training, attend the courses of instruction given in the Trade school. As he had explained, the nomenclature and system of splitting up courses was a matter of detail that was not of much interest to the committee. What was being done with Mr. Peirce's syllabus was to divide it into two parts: one of a practical or demonstration character, the other of a theoretical character, the reason being that the latter course formed a part of the Industrial School course and the former did not. The character of the syllabus however was unchanged.

Mr. Hudson was in favour of separating the courses as suggested by Mr. Tressler.

Mr. Stewart did not consider practical courses to be necessary. In his opinion the apprentice would get all the practical training he required in the workshop.

Mr. Peirce did not agree with this view: he particularly emphasised the necessity for a practical or demonstrative course explanatory of the work done in the workshop.

The next point upon which the Chairman invited opinions was whether extension lectures should be certificated or not.

Mr. Peirce was of opinion that pupils attending the lectures should be granted certificates of proficiency.

The Chairman suggested that a certificate of attendance would be sufficient.

Mr. Peirce pointed out an attendance certificate would be useless for a pupil who wished to seek some employment. For instance a certificate of attendance of lectures in Motor-car driving would not be regarded as evidence of competence.

The Chairman explained that he particularly wished to avoid granting certificates of competence except for complete training. If men were given certificates for a single set of lectures, attendance at which did not necessarily imply efficiency, the value of the certificates given for complete training would be much reduced. The extension classes might be regarded as tutorial classes for the Journeyman's certificate. If, in addition to attending the extension classes a pupil had also put in the qualifying period of apprenticeship he could sit for the Journeyman's examination and obtain the regular certificate. This being the case he thought it would be unnecessary to award more than a mere certificate of attendance for the extension classes by themselves.

The question of site then came up for discussion.

Mr. James did not consider it was necessary at this stage to consider the question of the proposed Poonamallee Road site. The previous committee had already decided in favour of the Washermanpet site and he thought that all instruction might be given there.

The Chairman pointed out that these proposals related only to mechanical trades. For subjects other than the mechanical ones the Washermanpet site was inconvenient. Mr. Fisher, for instance, had declared in favour of the Poonamallee road for printing: that site was also much more central for carpentry and the building trades. It seemed clear to him that the Trades school would ultimately have to be divided between two centres and if so, there seemed little point in concentrating on one now. It would not be any cheaper to do all the work at Washermanpet than to do some there and some in Vepery.

The view that work should be started in both centres was adopted after further discussion.

Mr. Peirce did not see why they should not adopt the proposals of the first committee.

The Chairman considered that the recommendation of the original committee had been adhered to as far as possible but that as the present scheme was a more comprehensive one than the first these recommendations were not altogether applicable. He then invited the opinion of the committee on the question of levy of fees. Did they think eight annas a course was a reasonable charge? Mr. Nadel thought it was too little. Mr. Hudson suggested that Rs. 2 might be levied for a course.

After due consideration it was resolved that Re. 1 a term for each course might be levied.

The committee then finally authorised the Director of Industries to draw up a scheme for the Madras Trades school for their scrutiny and passed the following resolutions:—

(1) This committee accepts the system of division (as suggested by the Director of Industries) of Technical Education into two classes of Technological and Industrial and approves of the Director's proposal to aim at the improvement of Industrial Education.

(2) This committee having heard the report of the Director upon his visit to the Victoria Technical Institute, Bombay, is of the opinion that for the present the arrangement he outlines for dealing with any demand for Technical Education is adequate.

(3) With regard to regular and complete courses of training as given in the Draft Code this committee is unable to express any opinion upon the value of the "mechanism" proposed but lays stress upon the final examination tests being of such a character that the results will testify to the suitability of those who pass them for industrial employment. The Government Technical Examinations have not, so far as they deal with trades, supplied such a test and it is considered essential that in the examinations it is proposed to introduce the Examiners should be actively employed in the trade or profession in which they are examining.

(4) The committee is of opinion that the nomination of Examiners should be entrusted to a Board of Representative employers, to be presided over by the Director of Industries.

(5) The committee is of the opinion that regular and complete courses of instruction do not entirely provide for industrial requirements and recommends that "extension" courses should be provided in the Madras Trades school for subjects such as Fitting and Turning, Blacksmith's work, Foundry work, Carpentry and joinery, Plumbing and sanitary work, brickwork and masonry, Electric wiring and fitting, Motor-car work and Motor-car driving, Weaving and Dyeing, Metal work and Metal spinning.

(6) The committee further recommends that facilities should be provided for such general education, by means of evening classes, as may be necessary for a pupil to take advantage of the Trade school course, it being a condition for admission to the classes however that pupils should be bona-fide industrial workers or apprentices.

(7) The committee considers the proposed Washermanpet site to be the most suitable centre for the teaching of engineering trade subjects but it is of opinion that for general subjects another site would probably be more central and recommends that provision should be made in the Ponnamallee High Road, adjoining the Director's Office, for another branch of the Trades school.

(8) The committee considers a system of stipends to apprentices to be objectionable. It is however recognized that financial assistance may in some cases be necessary but instead of fixed stipends, it recommends the grant of scholarships to individual cases.

(9) The committee is not in favour of the provision of hostel accommodation in connection with this school.

(10) It is considered essential that for teaching purposes every effort should be made to secure the partial services of individuals possessing practical experience of the subjects they teach, and is of opinion that provided suitable remuneration be given it will in most cases be possible to arrange for the part-time services of individuals actually practising the trade to be taught. The committee regards it desirable to fix the permanent staff of the Trades school at the minimum possible limit. Except for the teaching of general literary and scientific subjects, it will in their opinion be unnecessary to employ any regular wholetime teachers.

(11) The committee anticipates that a considerable time may elapse before a building scheme in connection with these proposals matures and it recommends that, if possible, work should be started in a rented building. There appears however some doubt as to whether a suitable building will be available near either of the sites proposed for these Trade schools and the committee accordingly recommends that permanent arrangements should be made as expeditiously as possible.

IV

G.O. Mis. No. 1046, Home (Education), dated 3rd October 1916.

Read—the following papers:—

(i)

Letter—from M. E. COUCHMAN, Esq., I.C.S., Special officer, Department of Industries.

To—the Secretary to Government, Home (Education) Department.

Dated—Madras, the 15th September 1916.

No.—B-44.

I have the honour to report that I have at last found a suitable building for opening the Madras Trades school. It is situated at the corner of Angappa Naick street and Muker Nallamuthu street, Georgetown, and will accommodate the two classes (plumbers and mechanics) with which I propose to start. The building is fitted with lights and fans and is in good repair. The rent is Rs. 125 per mensem. I have promised to let the owner have a reply within ten days. It will be taken on a monthly lease for the present.

2. I shall shortly submit the syllabus and other details about the classes for the approval of Government.

(ii)

Memorandum No. 3365-1, Home (Education), dated 20th September 1916.

With reference to his letter No. B 44, dated the 15th September 1916, Mr. Couchman, Officer on Special duty, Department of Industries, is requested to report at a very early date whether it is proposed to have a workshop as an adjunct to the Trades school at Madras and, if so, whether it can be located within the premises of the building selected by him. He is also requested to report whether the requisite plant is immediately available, and if not, whether the opening of the school and the taking of the building on lease should not be postponed.

P. RAJAGOPALA ACHARIYAR,
Secretary to Government.

To M. E. Couchman, Esq., I.C.S., Officer on
Special duty, Department of Industries.

(iii)

Letter—from M. E. COUCHMAN, Esq., I.C.S., Special officer, Department of Industries.

To—the Secretary to Government, Home (Education) Department.

Dated—Madras, the 23rd/27th September 1916.

No.—B 44.

In reply to memorandum No. 3365-1 of 20th instant, I have the honour to report that the workshop will be located in the school itself. The plant necessary can be procured locally almost at once. Consequently I hope to be able to open the school very soon, and solicit permission to rent the building from 1st proximo so that a beginning may be made in fitting it up.

Order—Mis. No. 1046, Home (Education), dated 3rd October 1916.

The Government approve Mr. Couchman's proposal to hire from the 1st October 1916, on a rent of Rs. 125 per mensem, the building selected by him in Georgetown, Madras, for the location of the Trades school. He is requested to submit a reappropriation statement to meet the charge to be incurred during the current year.

(True Extract)

P. RAJAGOPALA ACHARIYAR,
Secretary to Government.

To M. E. Couchman, Esq., I.C.S., Officer on Special duty,
Department of Industries.
,, the Financial Department.

V

Letter—from M. E. COUCHMAN, Esq., I.C.S., Special officer, Department of Industries.

To—the Secretary to Government, Home (Education) Department.

Dated—Madras, the 25th September 1916.

No.—G. Cur. 4.

I have the honour to submit for approval the scheme for opening classes for practical instruction in plumbing and mechanical engineering.

2. Both Mr. Madeley, the Special Drainage Engineer, and Mr. Coats, the Municipal Engineer, tell me that these are the two subjects in which trade classes are most urgently required. The introduction of the new water-works and drainage works has created a demand for good plumbers, and the workmen who now call themselves plumbers are very often quite incompetent. One result of this is that connections are badly made and burst, entailing heavy loss to the private house-owner and waste of water. Mr. Coats has tried to establish a system of apprentices in the municipal workshops, but he meets with the difficulty that as soon as the boys under training have learnt enough to enable them to earn a living, they frequently leave him before completing the full course.

3. Only working plumbers and mechanics will be admitted to the classes it is now proposed to open. It is hoped that employers will allow them to attend at least one day a week in the working hours for which they receive pay. Those who attend regularly and receive a certificate of proficiency will, it is expected, get an increased rate of pay from their employers, and this will be a sufficient inducement to make them regular in their attendance. In course of time it may be hoped that none but certificated plumbers will be allowed to practise in Madras.

4. Mr. Fyfe's letter, a copy of which is enclosed, gives the particulars of the proposed courses. The lectures in plumbing will be given by Mr. A. Hillier, Sanitary Engineer of Messrs. Oakes & Co., a professional plumber brought out by them from England. Those in mechanical engineering will be given by Mr. W. H. Lockley, works manager of the Beehive foundry. They have agreed to accept a fee of Rs. 15 for each lecture of one hour's actual teaching, but they will, of course, have a good deal of preparation to do out of hours. The General Manager of Messrs. Oakes & Co.'s Engineering Department, Mr. W. H. Wilson, has very kindly permitted these gentlemen to undertake this work and to let them off duty during working hours, if necessary, as well as any of their workmen who may be admitted to the classes.

5. Each lecturer will require a demonstrator to help him in the manual part of the teaching, and it is proposed to pay them Rs. 1-8-0 to Rs. 2 per lecture according to their qualifications.

6. Twenty students will be admitted to each class, and there will be two lessons a week in each subject.

7. The cost of the equipment for the plumbers' and the mechanical engineering classes will be Rs. 6,246, and the recurring expenditure for both classes will be Rs. 8,172.

8. Provision having been made for a caretaker on Rs. 40 per mensem, I do not think that any superintendent will be necessary at present. The Director will be able to do all that is required, with the help of Mr. Fyfe, regarding whose employment I am addressing the Government separately.

9. The present scheme is experimental. I have limited the class to those subjects in which employers assure me that there is urgent need for instruction and for which competent professional lecturers are available, men actually engaged in practising their profession, this being essential to success. It has the further advantage that the lecturers will be in close touch with the class of men attending their classes, and know what instructions they need, and what they are capable of assimilating. Only experience can show whether a sufficient number of intelligent artisans will attend the classes, and whether employers will be able to allow them off work in order to attend, and whether night classes can be made a success in Madras, that is to say, classes in which the men attend out of working hours in their own time. On receipt of the approval of Government, I shall settle the times, etc., of the classes after advertising them in the press and consulting the leading employers.

ENCLOSURES

(1)

Letter—from W. Fyfe, Esq., Instructor in Manual Training for European Schools.

To—the Director of Industries.

Dated—the 19th September 1916.

I have the honour to forward my suggestions for the establishment of a Trades school in Madras.

2. I suggest that in the first instance only classes in two subjects, mechanical engineering

Subjects.

Course of instruction.

and plumbing, be opened, and that other classes be added when these have been put on a sound footing. I further suggest that the courses of instruction for these two classes be kept fairly simple for the first year at least, so that the students may receive immediate practical

benefit from the lessons. My experience is that there is always a danger of the practical artisan being neglected, whilst time and money is expended on the purely theoretical professional student. For the present of course the classes must be started in a rented building and I consider the premises we inspected on Friday morning, 15th September 1916, suitable for the purpose.

Building.

3. I attach a schedule showing approximately the amount of money required to establish the classes. I have not allowed in the first instance for any heavy machinery, as I consider that for a time at least quite valuable work can be done without expensive heavy machinery, requiring power to drive it, and presenting difficulties when the school is finally established in a building of its own and the plant has to be transferred. Some of the items allowed for may cost less than the amount estimated, but in establishing a new venture, which is largely experimental, it is impossible to calculate with the same accuracy as when dealing with existing institutions.

Machinery.

4. I should like the classes to meet twice a week and I consider that the employers might co-operate to the extent of allowing the students time off duty to attend one lesson during working time. One lesson should, I think, be in the evening in the students' own time. It will, of course, be necessary to make the time-table suit the majority, but that can best be done after the employers have been circularized and the applications from intending students have been received.

Time-table.

Time-tables.

5. With regard to the question of a drawing master, I consider that the lecturers had better be left to teach what drawing their syllabus requires. The lecturers should, of course, be practical European British trained gentlemen who are actually employed in supervising or directing the work of the trade they are to teach.

Drawing.

Lecturers' qualifications.

Such gentlemen are in a position to know the students in their daily work, their faults and failings and the best means of improving their value as workmen. They are also more likely to influence the attendance of their apprentices and younger journeymen at such a class, and to take a more intimate interest in the results of their teaching than an outsider would. I recommend that a nominal fee be charged and that it be returned to the student if he makes 80 per cent of the possible attendances.

Fee.

6. I should make the course one of 20 weeks at two lessons per week. If the classes are started almost immediately, a twenty weeks' course would be completed within the present financial year—a consideration when estimating costs. The class should, for reasonable efficiency in teaching, be confined to twenty students in each class.

Length of course.

7. The instruction will have to be in English and it will therefore be necessary to insist on a certain general educational standard. I suggest a standard IV pass, but I should allow the superintendent of the classes a fair amount of discretion when dealing with applications. Even with these conditions I am aware that the language will present occasional difficulties and occasions will arise when a few words in the vernacular will clear up knotty points and save confusing repetition. This difficulty can, I imagine, be met to a great extent by making each lecturer an allowance to pay a demonstrator, one of his own senior workmen whom he will bring with him to assist in demonstrating correct methods of handling tools and materials and to do any heavy hammering or filing or unclean work, which a lecturer could not be expected to handle with his workshop familiarity, unless suitably attired. Such demonstrators would interpret when necessary, and I think would be of valuable assistance to the lecturers in their work. The employment of such men does not imply that the lecturers will not be expected to do more than lecture. On the contrary, it should be distinctly understood that when the heavy machinery is installed, the lecturers will be required to personally demonstrate correct methods of handling and caring for such machinery and that for such lectures they will be expected to attend suitably attired.

Numbers.

Language.

Lecturers to demonstrate personally.

8. Later on when the classes are firmly established I should like to start supplementary classes for such of the artisans as are unable to take advantage of a class where the teaching is in English. If the demonstrators are carefully selected, they may after gaining some experience be able to teach small classes of such men with quite valuable practical results, although not perhaps up to examination standard.

Supplementary classes for illiterates.

9. I have allowed Rs. 40 per month for a caretaker. This item may seem heavy as the man will not be fully employed. I propose however that the man appointed be an Anglo-Indian who will keep the store ledger, supervise the menial servants, keep the tools and plant oiled and

Caretaker.

in good order and generally make himself useful. If a Eurasian mechanic be appointed, I think it will be possible to get a suitable man for the money and it must be borne in mind that the greater part of his work will be outside class hours.

10. I have made no allowance for supervision but an organizer or superintendent will be required to attend to the organization, administration and departmental part of the work. The superintendent may later on require a clerk, but if a suitable caretaker be appointed to keep the registers and store ledger, the rest of the clerical work will be better undertaken in your office. For the present a budget allowance will have to be made for

	RS.
Recurring expenditure as per enclosure (1)	8,172
Non-recurring expenditure „ (2)	6,246
	<u>14,418</u>

If the heavy plant be obtained now, the non-recurring expenditure must be increased by Rs. 6,520 making a total of Rs. 12,766—vide enclosure (2).

The budget allowance will then have to be—

Recurring expenditure	8,172
Non-recurring expenditure	12,766
Organizing superintendent?	

(2)

Recurring Expenditure.

	RS.
Two lecturers at Rs. 15 per lesson for a course of 20 weeks (40 lessons) ...	1,200
Allowance to each lecturer for one demonstrator at Rs. 2 per lesson ...	160
Rent at Rs. 125 per month for six months to end of financial year ...	750
Lights and fans, say, Rs. 40 per month for six months ...	240
Cleaning charges (two sweepers at Rs. 6 each per month) ...	60
One peon on Rs. 10 to March 1917 ...	50
Postage ...	200
Library books, etc. ...	200
Materials for plumbing class ...	400
„ engineering class ...	400
„ drawing class ...	400
Furniture, additions and repairs ...	800
Tools and plant „ ...	1,000
Workshop attendant and storekeeper (caretaker) on Rs. 40 ...	240
Contingencies ...	2,000
Advertisement charges ...	200
	<u>8,172</u>

(3)

Non-recurring expenditure.

	RS.
Furniture as per attached list, enclosure 5	1,600
Tools and plant as per attached lists—	
Enclosure 4, Rs. 1,075	4,818
Do 3 „ 2,619	
Do 6 „ 624	
Apparatus as per attached list, enclosure 7	328
Stationery obtainable from the Superintendent of Stationery ...	Nil.
Total ...	<u>6,246</u>

NOTE.—If the heavy machinery be indented for now, the total must be increased by Rs. 6,520 for the machinery detailed in Mr. Lookley's column 2, enclosure 3, making a gross total for non-recurring expenditure 12,766

(4)

Estimate for equipment for Mechanical engineering class, 20 students.

Articles.	Necessary.			Advisable.		
	RS.	A.	P.	RS.	A.	P.
One 22" Champion blacksmith's forge ...	96	0	0	96	0	0
One set of blacksmith's tools including hammers, hot sets, cold sets, top and bottom, Fuller's bring tools, tongs of sizes C.I. Swage block and stand ...	125	0	0	125	0	0
One anvil (91 lb.) ...	30	0	0	30	0	0
$\frac{1}{4}$ Steel bar for chisels—say 1 cwt. ...	35	0	0	35	0	0
$\frac{1}{2}$ do. tools do. ...	35	0	0	35	0	0
One small Drummond treadle lathe S.O. ...	225	0	0	225	0	0
One 3" or 4" centre screw cutting lathe ...	.....	.....	.....	1,875	0	0
One slotting machine ...	.....	.....	.....	2,000	0	0
One drilling do. ...	650	0	0	650	0	0
One hand shaping machine 13" ...	450	0	0	.....	.....	.....
One power shaping machine ...	.....	.....	.....	2,000	0	0
Twenty Bench vices 3" jaw, Rs. 20 each ...	400	0	0	400	0	0
Twenty hand hammers $1\frac{1}{2}$ lb., Rs. 2 each ...	40	0	0	40	0	0
Two hacksaw frames with blades ...	15	0	0	15	0	0
Three dozen 10" flat files with handles, smooth. ...	45	0	0	45	0	0
Three dozen 10" flat files with handles, rough. ...	45	0	0	45	0	0
One dozen 8" files $\frac{1}{2}$ dia. S and R ...	13	0	0	13	0	0
One do. 10" files $\frac{1}{2}$ „ S and R ...	15	0	0	15	0	0
Half-dozen 8" files $\frac{1}{2}$ square S and R ...	7	8	0	7	8	0
Half do. 10" „ „ S and R ...	7	8	0	7	8	0
Small tools. Out and in calipers, squares, Divider's bevel gauge ...	25	0	0	25	0	0
Flat steel for duplicating above say $\frac{1}{4}$ cwt. ...	30	0	0	30	0	0
Set of drills for machine ...	15	0	0	15	0	0
16" grindstone in trough ...	30	0	0	30	0	0
Emery cloth of numbers, 4 dozen ...	5	0	0	5	0	0
Belting for machines ...	30	0	0	150	0	0
Countershaft gear for power machines ...	.....	.....	.....	450	0	0
$3\frac{1}{2}$ h.p. electric motor with starter and wiring, etc. ...	.....	.....	.....	750	0	0
Sundries ...	250	0	0	250	0	0
Total ...	2,619	0	0	9,189	0	0

(5)

Plumbing equipment.

	RS.
Two pipes at Rs. 18	36
Five plumbing sets at Rs. 60	300
Four sets stocks and dies at Rs. 100	400
Four pipe cutters at Rs. 6-8-0	26
One drilling machine (hand) at Rs. 35	56
Four pipe tongs at Rs. 14	35
Two melting pots and ladles at Rs. 18-8-0	27
Two do. furnaces at Rs. 42-8-0	85
Two ratchet braces and drills at Rs. 20	40
Two hack saws at Rs. 5	10
Total ...	<u>1,075</u>

(6)

Furniture.

	RS.
Twenty drawing desks at Rs. 12-8-0	250
Twenty chairs at Rs. 6-8-0	130
Four blackboards at Rs. 19-8-0	78
Four easels at Rs. 7-8-0	30
Four almirahs at Rs. 65	300
Two teachers' tables at Rs. 52	104
Four armchairs at Rs. 16	64
Three 8 feet benches with cupboards underneath at Rs. 107	321
Three 8 feet benches but open underneath at Rs. 60	180
Bath-room furniture	100
Sundries	113
Total ...	1,600

(7)

Woodworking tools for pattern making lectures.

	RS.
Four double benches at Rs. 30	120
Eight vices for above at Rs. 13	104
Tools for above, Rs. 400	400
Total ...	624

(8)

Apparatus.

	RS.	A.	P.
Two sets blackboard instruments at Rs. 35	70	0	0
Twenty-two drawing boards at Rs. 3	66	0	0
Twenty-two tee squares at Rs. 1-8-0	33	0	0
Twenty-two pairs set squares at Rs. 1-8-0	33	0	0
Twenty-two protractors at As. 8	11	0	0
Twenty-two rulers (wood) at As. 8	11	0	0
Twenty-two pairs compasses at As. 10	13	12	0
Two sets teachers' instruments at Rs. 20	40	0	0
Sundries, Rs. 50	50	4	0
Total ...	328	0	0

3. The payment of fees to the lecturers and demonstrators at the rates proposed, is approved. Sanction has already been accorded to the hiring of a building on a rent of Rs. 125 a month for the accommodation of the school. The estimates as regards the other items of recurring charges and for equipment, amounting to Rs. 5,762 and Rs. 6,246, respectively, are also approved. Mr. Couchman is requested to submit a reappropriation statement to meet the charge to be incurred during the current official year.

4. The Government await detailed recommendations as to the fees to be levied from pupils attending the school, the syllabus of studies, and the certificates to be granted to the pupils at the end of their course.

A report on the working of the school should be submitted to the Government by the 1st March 1917.

(True Extract)

P. RAJAGOPALA ACHARIYAR,
Secretary to Government.

To M. E. Couchman, Esq., I.C.S., Special Officer, Department of Industries,
,, the Financial Department.

Order—No. 1092, Home (Education), dated 17th October 1916.

The Government approve the scheme submitted by Mr. Couchman for opening classes in the Madras Trades school for giving practical instruction in plumbing and mechanical engineering.

2. Sanction is accorded to the employment in the school, for a period of six months to begin with, of a workshop attendant (and storekeeper) on Rs. 40 per mensem and a peon on Rs. 9 per mensem. The peon will be ineligible for grain compensation allowance.

NOTES CONNECTED WITH G.O. No. 1092, HOME (EDUCATION),
DATED THE 17TH OCTOBER 1916.

[SUBJECT.—*Establishment of a Trades school in Madras.*]

*From the Director of Industries, Madras, dated the 26th February 1915,
No. E. 44.*

In 1911, Mr. Chatterton, the Superintendent of Industrial Education, submitted Pages 2 and 3 of G.O. 621, Educational, 5th September 1911. certain proposals for the improvement of the training of artisans in Madras by the establishment of a system of State apprenticeships and suggested the formation of a committee to work out details connected with the scheme. A committee was accordingly appointed in G.O. No. 28, Educational, dated the 16th January 1912, and the recommendations of the committee were received in February 1912. These were as follows:—

- (1) that it was desirable to establish a system of State apprentices among the engineering shops in the north of Madras;
- (2) that it was necessary to make some provision for technical training in a school outside the workshops;
- (3) that instruction should be given in the school to each boy on three days a week in the afternoons;
- (4) that the instruction should be in English and that the boys should possess such educational qualifications as to enable them to take advantage of it;
- (5) that the school should be established as near Basin Bridge station as a convenient site could be found;
- (6) that the management of the institution should be vested in a committee to be nominated by the Government and to be representative of the various interests concerned; and
- (7) that a fee should be charged for all apprentices.

When these recommendations were under consideration, the Government thought that the scheme of State apprenticeships which related only to one subject, mechanical engineering, should be extended to other subjects also and that details of the apprenticeship system should be further worked out. In order to consider these matters, the Government appointed a committee of representative employers of labour and expert officers of the Government competent to advise on the several trades. The committee held its meetings towards the end of 1914 and the Director of Industries now submits the report and recommendations of the committee as well as the abstract proceedings of its meetings.

Ibid.

2. The specific points on which the opinion of the committee was called for are the following:—

- (i) *Subjects.*—Whether, in addition to mechanical engineering, the facilities for technical education in the school should not be extended to other branches of work also and whether the motor works should not be invited to co-operate in the scheme;
- (ii) *Apprentices.*—How many apprentices each employer will be prepared to take, what rates of pay they will be willing to give the apprentices, and whether the Government help to the latter should be in the form of supplementary money payments or in kind, such as the provision of hostel accommodation and the like;

(iii) *Schools*.—How many apprentices should be admitted into the school, what rate of fees should be adopted with reference to the course to be introduced, what should be the curriculum of instruction to be imparted, the examination or tests to be prescribed at the end of the course, the staff necessary for the purpose and what the estimate of cost would be; and

(iv) *Accommodation*.—Whether the school might, pending the construction of a new building, be held in a rented building and whether, if the hostel system is recommended, a building could not be rented for the purpose and if not, what rate of payment should be made by the Government to the apprentices.

The proposals now received in respect of these points will be dealt with below.

3. *Subjects*.—On the first of the points mentioned above, the committee has expressed its opinion that the school should provide instruction in a number of subjects besides mechanical engineering. The subjects are enumerated in paragraph 8 of Mr. Tressler's letter and include motor driving and mechanism also. In regard to this recommendation Mr. Tressler states that it may not be possible to provide instruction in all the subjects from the very beginning. He, therefore, proposes to omit some five * subjects for the present.

- | | |
|------------------|-----------------|
| * 1. Metal work. | 4. Tailoring. |
| 2. Brick work. | 5. Rattan work. |
| 3. Weaving. | |

Washermanpet as proposed by the original committee of 1912 and also supported by the later one, and the other classes regarding motor mechanism and driving electric power, oil-gas and steam engines, carpentry, plumbing and sanitary work in Vepery near the present premises of the office of the Director of Industries. Mr. Tressler

states that the Washermanpet site is quite suitable for engineer apprentices, but is by no means central for individuals wishing to attend other courses and that it appears to be quite impracticable to concentrate all technical education in that one quarter. Hence another site is proposed for the other trade subjects. From the nature of the subjects selected and in consideration of those who would be apprenticed to firms in Mount Road the school at Washermanpet may not be convenient and the proposal to have a school in another quarter of Madras seems therefore acceptable.

The recommendation to locate the mechanical engineering classes at Washermanpet and the others in Vepery may be accepted.

P.R.—15-6-15.

4. The subjects to be taught in each of the centres and the nature of the instruction to be imparted are specified by Mr. Tressler in paragraph 9 of his letter. As the instruction is to be imparted to artisans actually engaged in the trades and as the pupils will not undergo a regular industrial school course but will only receive instruction out of working hours, the committee has recommended the provision of these classes which are of a specialized character. In printing trade alone, however, regular courses are proposed to be established at Vepery.

5. As regards the necessity for general education classes, it is submitted that the original committee of 1912 recommended that instruction should be given in English and that the boys should possess such educational qualifications as to enable them to take advantage of it. The second committee recommends that facilities should be provided for such general education by means of evening classes as may be necessary for a pupil to take advantage of the trade school course, it being a condition for admission to the classes, however, that pupils should be bona fide industrial workers or apprentices. Accordingly, Mr. Tressler proposes to provide general education classes of two different courses: one up to the fourth standard and the other up to the fourth form. These classes are to be held in the Vepery school. The standards proposed are those

prescribed for admission to the journeyman's and craftsman's courses of industrial education in the Technical Education Code submitted by Mr. Tressler. This presumes that artisans, even without any general education, will also be admitted for study in the proposed schools.

6. In these arrangements two things come out prominently for consideration: one, the hours of instruction, and the other, the extent of general education to be given. As regards the first point, it is submitted that the main object of the present arrangement is that the instruction to be given at the school should interfere as little as possible with the regular work of the students in the workshops. The hours now proposed are between 7 to 8-45 in the mornings and between 5-30 to 7-30 in the evenings. The day hours are intended for those who can come out during working hours and the evening for others who cannot. It is estimated that the majority of the students will be of the latter description. In connection with the evening classes

* Officers deputed by the Government of India to enquire into the working of technical institutions.

or classes out of workshop hours it may be of use to note what the previous committee of 1912 and Messrs. Atkinson* and Dawson* stated. The former observed as follows:—

"The committee do not think that evening classes would prove successful as it is hardly to be expected that apprentices after a full day at the works will exhibit that interest in the teaching which is essential to success. They also hold that early morning classes would probably cause too great a dislocation of the ordinary works routine and they conclude therefore that the classes should be held every afternoon, each apprentice receiving instruction for three afternoons a week."

Messrs. Atkinson and Dawson wrote also as follows:—

"After a long day's work in the Indian climate the Indian student is physically incapable of doing any serious work in a night school."

"In confirmation of this opinion it may be mentioned that some years ago the Victoria Jubilee Technical Institute, Bombay, started night classes for apprentices and workmen employed in the various mills, workshops, etc. There is a great deal of force in this. P.R.—15-6-15.

Every effort was made to render these classes attractive and efficient; it was, however, found that a very small number of those who attended were capable of taking any intelligent interest in the subject and the majority were unfit to carry on any continued mental effort. The classes were ultimately discontinued owing to lack of students."

In the face of those opinions it may be doubted whether the proposed arrangement of evening classes will work successfully. No doubt it may be arranged that no student who attends the morning class will have to attend the evening class also. In paragraph 10 of its report the second committee states—

"With regard to the Mechanical Trades in particular it is considered that the morning from 7 to 8-45 would be the most convenient time, the classes being so arranged that no apprentice will have to attend the school on more than three mornings a week. It may, however, prove necessary to provide evening classes also. Classes in the Printing Trades might also be held in the mornings but in all other subjects evening classes from 5-30 onwards would appear to be most suitable."

This arrangement is purported to be made in the interests of the students themselves but is apparently in the interests of employers also. Some of the latter are willing to allow their apprentices to attend classes during working hours, but the majority seem to be of the opinion that if mechanics want to improve themselves they ought to do so out of working hours. It is doubtful whether, even if it is physically possible, the apprentices will be inclined to undertake the additional mental exertion, which including the workshop hours may extend oftentimes to ten hours.

Very doubtful indeed: but the experiment has to be made.

P.R.—15-6-15.

7. The circumstances above stated will apply with greater force to the proposed general education classes. With the technical classes, it will hardly be possible to make any advance in general education if the only available hours are the out-of-workshop hours. It is almost impossible to expect that under the arrangement any student will be able to attain the fourth form standard.

It is also a matter for consideration

I would rather omit the 'general education' classes completely. There is other provision now in Madras for 'general education.'

P.R.—15-6-15.

8. Mr. Tressler, however, himself admits that the whole thing is a tentative arrangement and a guess work. It is therefore for consideration whether the proposed arrangement may be allowed for the present. If it does not prove a success, Mr. Tressler will doubtless address for its revision.

P.R.—15-6-15.

9. *Apprenticeship system—Number of apprentices.*—The second committee was asked to work out details connected with the proposed apprenticeship system—please see paragraph 2 (ii) on page 2 supra.

As regards the number of apprentices each employer will be prepared to take, Mr. Tressler gives various figures quoted by the several firms. He, however, proposes to provide for classes of 20 pupils in each subject in the first instance. This proposal is, it is submitted, in accordance with the recommendation of the second committee, and may be accepted.

P.R.—15-6-15.

In regard to carpentry, however, Mr.

Cannot be helped.

P.R.—15-6-15.

10. *Rates of pay of apprentices.*—In respect of the question of the rates of pay that will be given to the apprentices by the firms, the committee does not furnish any information and Mr. Tressler too does not say anything about it. It is apparently a matter to be left to the employers.

Quite so.

P.R.—15-6-15.

Paragraph 3 of His Excellency the Governor's note on page 13 of notes to G.O. 780, Educational, 4th July 1914.

P.R.—15-6-15.

scholarships in special cases should be given, the information above is not now necessary.

11. *Government assistance to apprentices.*—As regards the question of Government assistance to apprentices, the committee states that a system of stipends to apprentices is objectionable and that, where necessary, scholarships should be granted in individual cases. The committee is not also in favour of the provision of hostel accommodation in connection with the schools. It is submitted that Mr. Chatterton originally proposed the payment of a stipend of As. 4 to As. 8 to each apprentice.

These views may be concurred in.

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Paragraph 4, page 3 of G.O. 776, Educational, 24th August 1912.

Mr. Tressler, however, later on reported that the payment of such stipends was objected to by employers as that would give the apprentices more than the market rate of wages and that the Government assistance should therefore be in the form of hostel accommodation. It is not free from doubt whether some inducement will not be necessary to make the boys attend the school. Perhaps, as a tentative measure, the recommendation of the committee may be accepted.

Some inducement is probably necessary. But in view of the adverse recommendation of the committee, I would rather not force on any direct or indirect Government help. The scholarships in individual cases may be considered sufficient for the present.

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It is not stated whether the number of scholarships available for technical education is consequently to be increased. Perhaps Mr. Tressler will address separately after the principles are approved.

Details relating to the school (paragraph 2 (iii), page 2 supra).

12. *Strength of the school.*—In regard to the strength of the school, Mr. Tressler proposes to admit for the present 20 apprentices in each subject in the school.

Fees.—As regards the fees to be charged, it is submitted that on this point the committee states that "although the question of the fees to be charged for admission to the classes is one of some uncertainty owing to the varying circumstances of workmen, the committee considers it eminently desirable to charge some fee, if only a small one, and suggests that at present an admission fee of Re. 1 should be charged for each course." The original committee considered As. 8 a month as a reasonable fee. The second committee does not recommend a monthly fee but only a nominal admission fee. In view of the facts that most of the pupils would belong to the working classes and that proposals for other inducements have been withdrawn it is not likely that any fees could be realized monthly even if levied.

Paragraph 11, page 5 of G.O. 776, Educational, 24th August 1912.

P.R.—15-6-15.

The proposal of the second committee may be accepted for the present.

13. *Curriculum.*—As regards the curriculum of instruction to be imparted, it is submitted that Mr. Tressler has, with the aid of the committee, drawn up details of the courses in each subject and the curricula of instruction have also been prepared.

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The period of training for each class has not been definitely laid down. From the tentative time-table submitted and from the Code it however appears that the period is likely to be one year generally and two years in some cases.

14. *Examinations.*—In respect of the examination or test at the end of the courses, it is submitted that according to the draft Code submitted by Mr. Tressler pupils who attend regular courses alone have examinations at the end of the courses. Those who attend only special classes such as the extension classes proposed to be opened in the Madras Trades school will have no examinations, and no certificates except certificates of attendance will be awarded to them. The apprentices who receive their practical training in the workshop and who receive further instruction in extension classes may apply for the "journeyman's" examination which is held twice a year in May and November and is conducted by a Board of Examiners appointed by the Government. In regard to this matter there was a discussion at the meeting of the committee. Mr. Peirce, pupils attending the lectures should be granted certificates of proficiency. To this Mr. Tressler replied that he wished to avoid granting certificates of competence except for complete training and that, if men were given certificates for a single set of lectures, attendance at which did not necessarily imply efficiency, the value of the certificate given for complete training would be much reduced. He added that the extension classes might be regarded as tutorial classes for the journeyman's certificate and that if, in addition to attending the extension classes, a pupil had also put in the qualifying period of apprenticeship, he could sit for the journeyman's examination and obtain the regular certificate. This being the case he thought it unnecessary to award anything more than a certificate of attendance

Paragraph 35 of Part III of the Code.

Paragraph 35 of Part III, page 43 of Code, Vol. I.

Paragraph 3 of Part III, page 33 of Code, Vol. I.

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I agree.

P.R.—15-6-15.

Quite so.

P.R.—15-6-15.

for the extension classes by themselves. It is submitted that, as the apprentices can obtain a certificate of efficiency after appearing for the journeyman's examination, the proposal of Mr. Tressler to award only a certificate of attendance to the pupils attending the extension classes may be accepted.

P.R.—15-6-15.

15. *Teaching staff of the school.*—As regards the staff of the school, the committee of 1912 were of opinion that none of the firms in Madras possessed a sufficiently large European staff to make it possible for them to spare men for industrial purposes and it therefore recommended that the staff should be provided by the Government. In forwarding the report of the committee Mr. Chatterton stated that, as the school was to be established at Washermanpet by the side of the Leather

Trade school, it would not add greatly to the latter institution to look after the technical classes proposed to be opened, provided suitable technical assistants were given for teaching work. The second committee however states that it is necessary to obtain the services of really industrially competent men as teachers, that is, men who have themselves had a thorough training and are actively employed in the trade they teach.

This view may be accepted.

P.R.—15-6-15.

time services of qualified men employed in Madras. Messrs. Simpson and Scott-Mackenzie do not agree with this view. Mr. Simpson states that his experience is that the services of qualified men employed in Madras are not readily available and that, when available, such men are not suitable teachers. In his opinion, unless men trained in the art of teaching, with a knowledge of the vernacular, are made available, no real progress can be made. It is submitted that the opinion of the majority may for the present be accepted and acted upon as an experiment.

I fear that there is a great deal in what Messrs. Simpson and Scott-Mackenzie says: but we may accept the opinion of the majority, so as to give the scheme a start.

P.R.—15-6-15.

As regards the Principal of the school, Mr. Tressler has separately proposed that Dr. Marsden may be put in charge of the institution. He considers that there is not sufficient work for a full-time dyeing expert in Madura and that it would be advisable to fix Madras as the head-quarters of Dr. Marsden. The proposal is dealt with in another file.

16. As regards lecturers, Mr. Tressler states that the suggested rate of remuneration is Rs. 15 for 50 minutes, that is, one-hour lecture. For a series of lectures extending over one year the rate is said to be Rs. 750 per annum for two one-hour periods per week and Rs. 1,250 for four one-hour periods if given on two days or nights a week and Rs. 1,500 if given on four. For the courses proposed to be opened in the school at present Mr. Tressler calculates that the number of outside lectures of one hour duration is about 32 a week and that the total cost will be between Rupees 10,000 and Rs. 15,000 per annum. Mr. Tressler has apparently ascertained the rates by actual enquiry and it is for orders whether the estimate may be accepted for the present. With such a

I would accept Mr. Tressler's estimate of Rs. 10,000 rising to Rs. 15,000 provisionally.

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variety of subjects to be taught and the few hours every day to be devoted for instruction, it may be desirable and economical to arrange for part-time lecturers if they could be secured. Considering, however, the quality of the materials which will be available as students it is doubtful whether the engagement of high class lecturers who can only handle the subjects in English will not lead to the delivery of lectures which may be over the head of several of the students. It may perhaps be sufficient if qualified *assistants* could be procured for the purpose and in that case a high rate of Rs. 15 per lecture may not be necessary.

17. Besides the above part-time lecturers the following permanent staff is proposed for the *general education* classes :—

	Average.
One head teacher on Rs. 50—2½—70	Rs. 62½
One teacher on Rs. 35—2½—50	44½
One drawing master on Rs. 35—2½—50	44½

If the "general education" classes are given up, this expenditure will not be necessary.

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* G.O. 1191, Educational, 22nd October 1914.

Total cost of the permanent establishments—

	Rs.
One head-master	62½
One teacher	44½
One drawing master	36½
Total .. 144½ or 1,730 per annum.	

As regards these scales, it is submitted that the two teachers who will have to teach up to and inclusive of the fourth form standard may be allowed the rates of pay proposed by Mr. Tressler. As regards the drawing master it is submitted that the scale of pay allowed for the similar teacher in the Madura Technical institute * is Rs. 30—2—40. The same scale may be adopted here also.

18. *Establishment.*—Mr. Tressler proposes to have the following establishment :—

	Rs.
One head clerk on	50—5—70
One despatching clerk on	25—2½—35
Three peons on	10 each.

As regards these scales, it is submitted that certain standard scales were sanctioned for the clerks and menials in the Department of Industries in G.O. No. 1191, Educational, dated the 22nd October 1914. If these scales are adopted in the present case also, the establishment will be as shown below :—

	Average.
One head clerk on Rs. 50—4—70	Rs. 65
One clerk + on Rs. 25—1—35	31½
Three peons + on Rs. 10 each	30
	126½ or 1,520 per annum.

+ Without grain compensation allowance.

Yes.

P.R.—15-6-15.

* Mr. Tressler states the receipts will not exceed Rs. 500 per mensem, paragraph 18, page 6, current file.

This figure—Rs. 15,000—may be accepted provisionally.

P.R.—15-6-15.

	Rs.
\$ Outside lecturers	15,000
Permanent staff	1,730
Clerical and menial	1,520
Materials	15,000

Total .. 33,250

It is submitted that the above scales which have been adopted in the case of the other sections of the department may be adopted in the present instance also.

19. Mr. Tressler has provided a sum of Rs. 15,000 per annum for materials. No details are given for this allotment and no receipts are estimated for. If this figure is accepted, the total recurring expenditure involved is Rs. 33,250. \$

20. *Accommodation and equipment.*—When the first committee's report was under consideration, His Excellency the Governor noted that the starting of the school should not be delayed for the completion of an elaborate building scheme and that it ought to be possible to obtain by loan or hire adequate class room accommodation while plans were being matured for a comprehensive technical institute. His Excellency also observed that, in the case of

Page 13 of notes to G.O. 780, Educational, 4th July 1914.

mechanical engineering, which was to be begun with, no difficulty would arise in making such a temporary arrangement for accommodation, as room would be required only for theoretical instruction and as practical instruction was to be given in the shops where the apprentices worked. The second committee also considered this question of accommodation and in the abstract proceedings it is stated:—

"In dealing with the question of school buildings, it was the general opinion that instruction in mechanical trade subjects should be given in a school at Washermanpet and that instruction in other trades and general subjects could be given at another branch school for which the site proposed in the Poonamallee Road was, so far as the committee could judge, the most central and suitable. . . . The committee thought that there would be some difficulty in finding suitable buildings which could be rented and in which courses of extension lectures or continuation classes could be held and desired to press upon Government the advisability of proceeding with any formulated building scheme as rapidly as possible."

In accordance with this suggestion Mr. Tressler now submits proposals for the construction of new buildings. He states that for the present there will be required—

at Washermanpet—
one workshop and two class rooms and
at Vepery—
two workshops and four class rooms.

In a separate letter submitted by him he has estimated the cost of constructing new buildings at Washermanpet at Rs. 40,170. He states that only a portion of this amount, viz., Rs. 20,000 is debitable to the trades school and the balance would be debited to the Leather school as increased accommodation would be provided for it also.

As regards the Vepery school, he states that if the new buildings proposed for his office are constructed, a portion of his office buildings might be used for the location of these classes and that his workshop might be utilized for instructional purposes if K classes are held in the evening. According to the tentative arrangement two additional buildings costing about Rs. 24,000 will suffice. In regard to permanent arrangements it will be necessary to acquire the adjoining Friend-in-Need Society's property and to locate in it the proposed Normal Training school as it will have the Trades school as the Model school to the training classes and in that case he states that a sum of Rs. 60,000 will be debitable to the Trades school. It is submitted that

the question of constructing new buildings for the office of the Director of Industries on the Poonamallee Road site has itself not yet been decided and a final report from Mr. Tressler is being awaited. It is therefore too soon to consider the question of locating further additional buildings on that site; and pending decision of that question it is doubtful if the proposals for the construction of buildings for the Vepery school should now be considered by the Government. Further, it is highly improbable that under the present financial circumstances large funds will be made available for any comprehensive building scheme at present and it is therefore for consideration whether Mr. Tressler should not again be asked to endeavour to start the proposed classes at Vepery and Washermanpet in some rented building as a temporary arrangement, meanwhile getting the detailed plans and estimates ready for his building schemes, to be submitted to the Government on a decision having been arrived at regarding the site for his office.

I agree. P.R.—15-6-15.

Quite so. P.R.—15-6-15.

Mr. Tressler may be instructed accordingly. P.R.—15-6-15.

21. In paragraph 13 of his letter Mr. Tressler has also given an approximate estimate of the cost of equipment of the schools. This amounts to Rs. 29,610. It is not known whether all this expenditure will have to be incurred if the schools are started in rented buildings. Some expenditure will anyhow have to be spent on equipment immediately.

22. Cost of the scheme.—The total approximate cost of his proposed scheme is as follows:—

	Rs.
<i>Recurring.</i>	
Teaching staff, establishment and materials	33,250
<i>Non-recurring.</i>	
The ultimate cost of the building scheme at Washermanpet is Rs. 40,170.	
Buildings { at Washermanpet 20,000	
at Vepery 24,000 }	44,000
The ultimate cost of the building scheme at Vepery is Rs. 60,000.	
Equipment	29,610
Total	1,06,860

23. There is still one other matter which does not appear to have been discussed by the committee, viz., the question of compelling the apprentices to complete their training. Mr. Tressler states that both the committees which considered the scheme agree that it would be advisable to devise some means (in the nature of indentures) which would ensure the completion of the training. Beyond this nothing is stated about the point either in the committee's report or in Mr. Tressler's letter. When the scheme was last under consideration the Secretary (the Hon'ble Mr. Davidson)

Page 3 of notes to G.O. 780, Educational, 4th July 1914.

general pecuniary assistance from the Government to the apprentices. It is therefore not clear how the apprentices can be forced to complete their training.

This point may be reserved for consideration. P.R.—15-6-15.

24. The file may, it is submitted, be sent to the Financial Department for examining the financial part of the scheme.

S.K.—11-6-15.

C.R.—12-6-15.

P. RAJAGOPALA ACHARIYAR—15-6-15.

To the Financial Department.

FINANCIAL DEPARTMENT.

This case relates to the scheme regarding the establishment of a Trades school in Madras. The question of the improvement of industrial education in the north of Madras has been engaging the attention of Government since 1911. When the question was last referred to Financial the proposals were for—

G.O. 274, Educational, 12th May 1911.
G.O. 730, Educational, 4th July 1914 (pages 3 and 4 of notes).

(i) the establishment of State apprenticeships among the engineering shops in the north of Madras, a rough scheme of which was then submitted to Government; and

(ii) the opening of a Technical school for the apprentices, proposals in regard to which were to be submitted.

The outlines of the schemes were generally accepted in Financial. Subsequently a question arose whether in addition to mechanical engineering, referred to above, facilities for technical education should not be extended to other branches

Paragraph 3 of His Excellency's note, 2nd June 1914, on page 13 of notes to G.O. 780, Educational, 4th July 1914.

of work. The Government accordingly appointed a committee to advise in detail on the general question mentioned above and the present proposals are made with reference to the recommendations of this committee.

2. The proposals now submitted are generally as follows:—

(i) That classes in the technical subjects should be held not only in the north of Madras at Washermanpet but also in the south at Vepery. Educational Department approve of this proposal.

(ii) The subjects in which instruction is to be given are those detailed in paragraph 9 on page 3 of current file. Educational approve all the subjects except classes in general education for backward pupils which the Educational Department consider to be unnecessary.

(iii) That in regard to apprentices no assistance from Government nor provision of hostels for them is necessary, except scholarships which Mr. Tressler considers should be given in special cases. Details in regard to this system of scholarships have to be worked out later on. Educational Department accept this proposal.

(iv) That in respect of fees an admission fee of rupee one only is to be charged for each course. The strength of each class is to be 20 and the Director anticipates receipts amounting to Rs. 500 per annum.

The conclusions of the Educational Department on all the above points may, it is submitted, be accepted.

3. Turning now to the details of expenditure it will be seen from paragraphs 19 and 22 of the Educational Department notes ante that Mr. Tressler's proposals involve a recurring expenditure of Rs. 33 lakh per annum and a non-recurring expenditure on accommodation and equipment for the present, of 0.74 lakh. They are examined below:—

Recurring expenditure.—The proposals are—

- (a) That Dr. Marsden, Dyeing Expert, Madura Technical Institute, be transferred to Madras, which will be in future his headquarters; and that he be appointed Principal of the Trades school.

Extra cost per annum.
Rs.
Not known (apparently nil.)

Educational state that this question is under separate consideration.

- (b) That part-time lecturers be appointed from outside to lecture on technical subjects: the rate of remuneration being for single lectures Rs. 15 for 50 minutes—one hour lecture: for a series of lectures extending over one year, the rate will be Rs. 750 for two one-hour periods per week; Rs. 1,250 for four one-hour periods if given on two days or two nights a week; and Rs. 1,500 if given on four: number of outside lectures of one-hour duration is about 32 a week: cost estimated at ..

10,000
to
15,000

Educational Department approve of this proposal.

- (c) That an office establishment costing Rs. 120 per mensem or Rs. 1,440 per annum as per details in the margin be appointed ..

1,520

Educational Department approve of this proposal, subject to alterations noted in margin, cost Rs. 126½ per mensem.

- (d) That an expenditure of Rs. 15,000 per annum on materials for the schools be incurred ..

15,000

Educational Department approve of the expenditure provisionally.

Total .. 31,520

Items (a) and (d) do not, it is submitted, call for remarks. It seems impossible to criticize item (d) at the present stage.

Item (b).—The expenditure proposed may, it is submitted, be accepted as an estimate only. It is presumed that Mr. Tressler will submit for the orders of Government the case of each part-time officer whom he proposes to employ and the amount of the remuneration to be given to him. Attention is solicited to the correspondence in G.O. Nos. 93-99, Educational, dated the 1st February 1915, regarding the appointment of Mr. Luber as Pencil Expert in the Industries department. This officer was first employed by Mr. Tressler on his own authority on daily wages of Rs. 10 a day. It was subsequently found that the sanction of the Government of India was necessary to his appointment under article 773 (a) of the Civil Account Code and it was obtained. In view of this, it seems, it is submitted, necessary to adopt the procedure at K and to retain in the hands of Government the power of fixing the remuneration of each officer to be employed.

G.O. 234, Educational, 1st March 1915. Code and it was obtained. In view of this, it seems, it is submitted, necessary to adopt the procedure at K and to retain in the hands of Government the power of fixing the remuneration of each officer to be employed.

Item (c).—Please see page 33 of G.O. No. 1191, Educational, dated 22nd October 1914, regarding scales of establishments sanctioned for the clerks in the various sections in the department of Industries. As the Trades school wants only a staff of two clerks, and as one of them is only for despatching work it is for orders whether the following scale may not be adopted and whether they may not all, for the present, be on a temporary footing:—

We may suggest the scale proposed by office. The men should be engaged on a temporary basis in the first instance.	Scale proposed by Educational.		Scale suggested in Financial.	
		Cost per mensem.		Cost per mensem.
		Rs.		Rs.
The establishment proposed seems decidedly extravagant. The scale may be reduced as proposed in the Financial office-note. But in fact it has yet to be proved that any special establishment is necessary just at present. All correspondence may probably for some time be done by an extra clerk attached to the Director's office. I would authorize the Director to entertain a clerk on Rs. 25-1-35 in his office and he can report later what change is necessary. The need for peons has not been established.	One head clerk (50-4-70) ..	65	One clerk* (35-2½-50) ..	46
	One clerk (25-1-35) ..	31½	One clerk* (20-1-25) ..	23½
	Three peons (10) ..	30	One peon (10) ..	10
	Total ..	126½	Two peons (9) ..	18
	or Rs. 1,520 per annum.		Total ..	97½

A.B. (The second clerk and the peons are to be ineligible for grain compensation allowance.)

* Cf. establishment item (ii) (c) in Madura Technical Institute on page 33 of G.O. 1191, Educational, 22nd October 1914.

[The general instruction establishment costing 152½ per mensem is proposed by Educational to be negatived—paragraph 17 on page 8 ante.]

4. *Non-recurring expenditure.*—The expenditure under this head is composed of two items, viz. (i) equipment and (ii) accommodation. In regard to equipment, the Educational Department propose to accept provisionally the estimate of Rs. 24,610 framed by Mr. Tressler. The expenditure of (roundly) Rs. 30 lakh on this item may, it is submitted, be accepted in Financial.

Accommodation.—Please see paragraphs 11 and 13 on pages 3-4 and 6 of current file and paragraph 20 of Educational department note on pages 9 and 10 ante. Mr. Tressler proposes the construction (i) at Washermanpet of buildings for both the Trades school and Leather school at a cost of Rs. 40 lakh of which portion debitable to former is Rs. 20 lakh and (ii) at Vepery of buildings for the Trades school and the Normal Training school at a cost of Rs. 1.20 lakhs of which portion debitable to Trades school is Rs. 60 lakh. The Educational Department propose to disallow, for the present, the large building programme and to ask Mr. Tressler to start the schools at the two places in rented buildings as a temporary arrangement. This may, it is submitted, be accepted in Financial.

L.E.K.

5. *Provision of funds.*—Mr. Tressler has stated that during 1915-16 only capital expenditure on account of buildings and equipment need be met and that regular classes can only be begun about June 1916. As expenditure on buildings is proposed to be disallowed, expenditure on account of equipment alone (30 lakh) will have to be incurred immediately; and there seems to be ample time to get the equipment

The classes may start earlier as the buildings are to be postponed.

L.E.K.

ment may, it is submitted, be informed that

L.E.K.

materials as the classes are to be started in June 1916 only. As there is no provision in the budget estimates for 1915-16 for these charges, Educational Department may, it is submitted, be informed that if any expenditure on equipment for the Trades school is to be incurred in the current year the charges will have to be met by reappropriation.

T.R.N.N.—23-6-15.

A.S.—29-6-15.

We can accept these proposals as estimates—detailed expenditure will have to be sanctioned separately.

L. E. KERSHAW—2-7-15.

It is impossible upon these papers to determine what the ultimate cost of these proposals is likely to amount to

As I understand the scheme contemplates imparting by means of morning and evening classes—

- (1) trade instruction in the elements of certain handicrafts and mechanism;
- (2) extension or continuation teaching to artisans who wish to know more about their particular jobs;
- (3) theoretical instruction in mathematics, electricity, etc., and further, by means of a special permanent staff; and
- (4) general instruction.

The Educational Department has eliminated (4) as unnecessary and it seems to be necessary to decide at this stage whether the rest of the system cannot be reduced and simplified. In the first place is it necessary to distinguish between trade instruction and extension classes? Is not "trade instruction" a thing to be given in a regular industrial or technical school and is it not proper, in the case of these morning and evening classes, to cater only for the wants of the man who needs only to learn something more about his own special trade?

May we not omit from this scheme altogether the head "trade instruction"?

Then, further, may not the list of extension classes be reduced? May we not for the present omit "plumbing and sanitary" work and perhaps "carpentry, joinery and cabinet-making"? Finally, is it necessary at this stage to hold "theoretical classes" in the seven subjects mentioned on page 3, current file.

I suggest that the whole scheme should be cut down as much as possible because its success is, to say the least, uncertain, because we are bound therefore in financial to see that no very large sum is spent on it at the outset and because it is questionable whether there will not be great difficulty in procuring competent teachers.

In fact the want of trained teachers, a want which cannot be supplied for some years to come in any case, is as likely to wreck the scheme as anything.

We may readily assent to pay such teachers as may be forthcoming Rs. 15 per lecture or whatever may be necessary to get good men but it seems to me highly desirable that the number of subjects to be taught at the start should be considerably reduced and that the subjects elected should, in the first instance, be such as can be taught at Washermanpet so that Government may not be let in for building at both that place and Vepery. Later on, when the Director's office is enlarged and room for classes is thus provided, the scheme can be extended to embrace classes at Vepery also. Financial of course agrees with Educational that building ought, if possible, to be avoided altogether and that Mr. Tressler should be required to satisfy Government that no rented building can be got before anything is spent even at Washermanpet on raising a building.

The scheme of scholarships is not worked out and it is impossible to express approval or disapproval of it. But, if the general plan is for the present to be restricted to offering to artisans special instruction in their own particular trades, it is not apparent why Government should undertake to give any scholarships at all.

The papers should go to Honourable Member, Financial, but perhaps Educational would let me see the file before it goes in circulation if they have any further remarks to offer.

A. BUTTERWORTH—3-7-15.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

The points raised in the Chief Secretary's note on page 14 supra are noted on briefly below :—

(a) *Separate classes in "Trade instruction" and "Extension" courses.*—Chapter IV of Part III of the Technical Education Code submitted by Mr. Tressler deals with these special classes. These are, it is submitted, classes which do not come under the regular courses of instruction in industrial schools. According to the Code, "trade instruction" classes are elementary practical classes in handicraft for individuals desirous of learning something about a trade they are not actually engaged on, while "extension" classes are practical classes of a more specialized character intended for and open only to individuals who are already practically engaged in the trade to which the teaching applies. The committee of employers of

P.R.—9-7-15.

labour which considered the scheme have recommended that provision should be made for both these kinds of courses. The committee states that there is a demand for trade instruction. It is for

consideration whether Mr. Tressler may be asked to state whether these may be omitted for the present.

(b) *Reduction in the number of subjects to be taught in the school.*—It is suggested that the subjects selected for teaching should in the first instance be such as can be taught at Washermanpet and that the scheme may be extended to embrace classes in Vepery later on. According to the scheme, mechanical trades subjects are to be taught at Washermanpet and the other subjects at Vepery. It is submitted that the scheme as worked out by the original committee of 1912 provided for the training in mechanical engineering only and that at Washermanpet. In the course of the examination of the scheme His Excellency the Governor desired that the question as to whether other subjects may not also be included should be examined. He also

Please see the demi-official from the Superintendent of Industrial Education on page 10 of notes to G.O. 780, Educational, 4th July 1914.

Paragraphs 1 to 3 of His Excellency the Governor's note on page 13 of notes to G.O. ibid.

P.R.—9-7-15.

suggested that it would be worthwhile to see whether the motor shops in the Mount Road would join in the scheme of apprenticeship proposed. The committee which was appointed subsequently to work out details connected with the scheme considered

P.R.—9-7-15.

the above points. There are several subjects including motor-car work and motor-car driving which the committee recommended should be taught in the school. Mr. Tressler has omitted a few of these and has suggested that the remaining subjects should be taught, some at Washermanpet and some at Vepery, from the very beginning. It is

for orders what subjects should be taught in the school at the start. The introduction

of plumbing and sanitary work class seems to be desirable in view of the large demand that exists in the service of the Corporation and other local bodies for qualified men for water and drainage works.

Carpentry also commands great demand. If in view of the fact that there are other places where this could be taught, it is considered that it may be omitted, there would seem to be no objection. But Mr. Tressler may be consulted.

It is submitted in this connection that besides the courses mentioned in the Chief Secretary's note on pages 13-14 *supra*, Mr. Tressler has also proposed that regular printing courses should be provided for at Vepery. There are technical classes in compositor's work and other branches of printing and book-binding in the Government Press at Madras. It is

Page 27 of G.O. 1030, Educational, 1st September 1914.

understood that these classes are held out of the Press hold these classes for a few

Page 24 of G.O. 1030, Educational, 1st September 1914.

Paragraph 12, page 5 of G.O. 1433, Public, 7th November 1914.

I should think so.

P.R.—9-7-15.

(c) *Necessity for the award of scholarships.*—Please see paragraph 11 of note on page 4 *supra*. It has been held up to this that some special inducement will be necessary to induce the artisans to attend these classes. But the present

P.R.—9-7-15.

committee have stated that no general stipends are necessary from the Government but that selected pupils should be awarded scholarships. It is doubtful whether these latter may also be dispensed with. Mr. Tressler has not stated whether any special allotment will be needed on account of the scholarships or the usual provision for this item will meet the expenditure.

2. The Financial Department also suggest that instead of an establishment consisting of two clerks and three peons proposed by Mr. Tressler and accepted by this department it may be sufficient to employ one clerk to look to the correspondence work of the school. It is doubtful whether the employment of a clerk alone will be sufficient for the school. Registers and accounts will have to be maintained, correspondence will have to be carried on with employers and firms where apprentices undergo practical training and the school which will contain materials and

P.R.—9-7-15.

But if two schools have to be started two clerks may perhaps be necessary—one for each; similarly at least two peons. The idea of the clerks working only at the central office may not work well, especially as the tutorial staff will all be on the temporary basis.

Approved.

P.R.—9-7-15.

P.R.—9-7-15.

3. Subject to approval a draft demi-official on the lines of the Chief Secretary's note is submitted below.

4. The question of the abolition of the general education classes has not been referred to in the draft.

S.K.—8-7-15.

C.R.—8-7-15.

I hardly think that the scheme could be cut down to the extent contemplated by Financial; but the reference may issue.

P. RAJAGOPALA ACHARIYAR—9-7-15.

Demi-official—from the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR, Avargal, C.I.E., Secretary to Government, Educational Department.

To—K. T. B. TRESSLER, Esq., Director of Industries.

Dated—Ootacamund, the 9th July 1915.

No.—745-2 Edl.

With reference to your letter No. E. 44, dated the 26th February 1915, regarding the establishment of the Madras Trades school, I am to enquire whether, in view of the fact that the whole scheme is of an experimental character, it may not be sufficient for the present to confine attention to the extension classes and to such subjects as could be arranged for at Washermanpet. The Government would be glad to have an approximate estimate of the expenditure contemplated in respect of the grant of scholarships and some further justification for such grant. I am also to ask whether the clerical establishment proposed may not be reduced to one clerk to be attached to the Central office, whether the establishment of peons may not be omitted and whether the proposed school may not be located for the present in a rented building at Washermanpet.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Hon'ble Mr. C. G. TODHUNTER, I.O.S., Acting Secretary to Government, Educational Department.

Dated—Madras, the 31st July 1915.

No.—B. 44.

From Rajagopala Achari's demi-official No. 745-2, Educational, dated 9th July, I understand that Government do not at present wish to commit themselves to the general scheme of trade training. In submitting my proposals I had to express the views of the committee convened to consider this matter and the committee's opinion was that a general scheme embracing a large number of trades should be started at once. If, however, Government wish to take up only a part, I would suggest that, to begin with, the mechanical section be started at Washermanpet since this section has been under consideration for the longest time. If work is limited in the manner proposed, it would of course be unnecessary to have the whole clerical establishment provided for in my scheme and one peon would be sufficient to look after the premises.

2. To this extent it is possible to give effect to the views of Government but I have been quite unable to discover any suitable accommodation available for rental. For one thing, Washermanpet has, after mature consideration, been selected as the most suitable centre (after Vepery) and it would be necessary therefore to have this school somewhere near Washermanpet. That is, at least within easy reach of railway and tram. I have looked through this district with considerable care and I am unable to find any building providing the facilities required. If the mechanical section is to be started, machinery and fittings must be installed and therefore a considerable amount of accommodation is required. In my proposals I provide a room 60' x 30' for a mechanical shop and I think this is the absolute minimum. Again at least 12' of head room is required in order to fix shafting and this head room is not available in any of the buildings I have seen. It might be possible to throw 3 or 4 small rooms together but this will cost a good deal of money, take a good deal of time and would not do away with the difficulty regarding head room. Again, one of the most essential features of the scheme is the drawing office which must be a spacious and well lighted room.

3. I am unable therefore to think of any rented building which would be suitable for the purpose we have in view. Moreover, I have to explain that at the time the tannery plans were drawn up, the prospect of a technical school being constructed on an adjoining site was kept in view and no provision was therefore made in the tannery itself for laboratories. To begin with, some of the rooms intended for other purposes have been utilised as laboratories so as to make it possible to start at once but this arrangement is only a temporary one and as time goes on, the accommodation thus occupied will be required for the purpose for which it was originally intended.

4. On account of the war I am afraid that it will not be possible to start the mechanical section this year for the simple reason that I do not think the machinery required can be obtained. As I have said, a part of the proposed technical school is, in any case, required in connection with the leather trade school and it seems to me best therefore to make a start with the buildings anyhow. I have submitted in my No. E. 44, dated 26th February 1915, the plan for the Washermanpet technical school showing the accommodation it is proposed to provide to begin with. I enclose a blue print copy of the plan for reference. The estimated cost for the two storeys is put at Rs. 34,770 but if this amount is too much, we might start by building the lower storey only.

5. As regards scholarships, the views of the committee was that it was undesirable to give scholarships or stipends; that, on the other hand, every effort should be made to charge fees. At the same time it was felt that it would unduly handicap the management of the school if a definite scale of fees was at once enforced. The committee also felt that in certain cases scholarships would be necessary as for instance when a student comes from the district to Madras for training and has to find his own board and lodging. These scholarships, I take it, would be

confined to pupils of my industrial schools in the district and would therefore be paid out of the scholarship allowances provided for privately managed industrial schools. They would not therefore appear as a charge on the trade school.

6. It is however quite impossible at the very start to say how the scholarship system will develop: all I can say is that I shall make every effort, to begin with, to avoid giving financial assistance and even to obtain fees and it would be only after this system has received a fair trial and found to be unworkable that I would consider the question of scholarships.

The cost of my scheme as revised in the light of this demi-official is as follows:—

1. <i>Capital.</i> —	rs.
One two-storeyed building at Washermanpet = 3,660 square feet @ Rs. 9-8-0 per square foot	34,770
<i>Note.</i> —	
If desired, only one storey may be constructed to begin with reducing the cost to	20,000
2. <i>Equipment.</i> —	
As Mr. Pierce's estimate	9,000
3. <i>Working expenses.</i> —	
Principal (for which I recommend Dr. Marsden)	
One clerk on Rs. 25-1-35	
One peon Rs. 10	
One head teacher Rs. 50-1-70 (to take all subjects for the time being)	
One drawing master, 35-2-45	
Materials	say 5,000
	per annum
Outside lectures	4,500
	per annum

I have to explain that this reduced scheme is somewhat extravagant in staff as it does not provide whole-time occupation for the teachers who must, however, be permanently retained.

EDUCATIONAL DEPARTMENT.

Please see notes above. Mr. Tressler has no objection to restricting the scope of the school for the present. He states that the mechanical section may be opened at Washermanpet to begin with. According to his original scheme the following subjects and classes were proposed to be provided for at Washermanpet:—

Extension classes in—

Fitting and turning,
Blacksmithing,
Foundry practice.

Theoretical classes in—

Practical mathematics,
Technical and machine drawing,
Practical mechanics,
Prime-movers.

The proposed mechanical section will perhaps include all these classes and subjects. Mr. Tressler was asked to state whether it would not be sufficient to confine attention to the *extension* classes. He has not given a specific reply on this point. It is for orders whether the proposal to restrict the subjects may be accepted and whether the subjects and classes mentioned above may be provided for from the beginning.

2. *Accommodation.*—Mr. Tressler was asked to report whether the school could not be held in a rented building at Washermanpet. He states that it has not not been possible for him to secure suitable rented accommodation. He anticipates several difficulties in holding classes in a rented building and recommends the construction of a building as early as possible near the Leather Trades school which has recently been constructed at Washermanpet. The cost of the building is estimated at Rs. 34,770 and Mr. Tressler states that, if the whole of this expenditure could not be incurred immediately at least Rs. 20,000 may be provided. It is for orders whether in the circumstances, the construction of a new building may be approved.

3. Mr. Tressler has sent rough plan and estimate for the building. If the proposal to construct the building is accepted the plan and estimate will be taken up for consideration separately.

4. *Staff.*—Mr. Tressler proposes the following staff for the school in its restricted form:—

One Principal	Dr. Marsden
One head teacher on	50-1-70
One drawing master on	35-2-45
One clerk	25-1-35
One peon on	10

The proposal to appoint Dr. Marsden to be in charge of the school is dealt with in another file. The head teacher is apparently for the general education classes proposed by Mr. Tressler in his original scheme. It has been decided already to drop these classes and there is therefore no necessity for the appointment of this teacher. As regards the drawing master, Mr. Tressler proposed to employ one in his first letter for the subject. But it was considered to be in connection with the general educational classes and as these latter were to be dropped, the appointment was not taken into account. Of the subjects mentioned on page 19 *supra* one is "technical and machine drawing." It is not known whether the proposed drawing teacher is intended for this subject or he will be a member of the general education staff, "technical and machine drawing" being taught by an outside lecturer who will be an engineer. Perhaps, the appointment need not be sanctioned now. If, however, it is necessary, Mr. Tressler will come up to Government later on.

5. As regards the clerk on Rs. 25-1-35 and a peon on Rs. 10 proposed for the school, attention is solicited to the Financial Department note on page 11 *supra*. The establishment proposed seems to be the minimum required and it may, it is submitted, be sanctioned.

6. As regards remuneration to outside lecturers a sum of Rs. 4,500 per annum is provided for in the estimate of recurring expenditure. The Financial Department have noted that each case of appointment of part-time lecturer should be considered and sanctioned separately. The lump sum provided may therefore be accepted for the present as an estimate.

7. Besides the above Mr. Tressler requires a sum of Rs. 9,000 for equipment (non-recurring) and Rs. 5,000 per annum (recurring) for materials. These may also be sanctioned. As regards equipment he may be asked to submit details of the expenditure proposed for the approval of Government.

8. In the demi-official to Mr. Tressler on page 17 *supra*, he was also asked to furnish Government with an approximate estimate of the expenditure contemplated in respect of the grant of scholarships and some further justification for such grant. From his reply it appears that no special expenditure will be incurred on this account and that the charge will be met from the ordinary provision for scholarships in his budget.

9. If the restricted scheme now proposed is sanctioned in accordance with the above suggestions, the extra expenditure will be as follows:—

<i>Non-recurring—</i>		RS.
Buildings	34,770	
Equipment	9,000	
	43,770	
or Rs. 29,000 if a single storey alone is built now.		
<i>Recurring—</i>		
Outside lectures	4,500	
Materials	5,000	
One clerk and peon	500	
	10,000	
	per annum	

S.K.

C.R.—20-9-15.

18 NOTES TO G.O. No. 1092, HOME (EDUCATION), 17TH OCTOBER 1916

The scheme has been changed in the course of years and committees from one under which Government apprentices were to be sent for their practical training in firms' workshops to one under which firms' apprentices are to come for theoretical training in the Government school. I have discussed this aspect of it with Mr. Tressler, my fear being, not only that the Government would under the proposed arrangement lose all control over the apprentices, but also that there would not result that increase in the number of trained mechanics which it was the object of the system of Government apprentices to provide. Mr. Tressler assures me that the firms will not accept any scheme under which the apprentices are paid by Government, but that they are willing to employ an additional number of hands. He assures me further that they have accepted the curriculum and are ready to let the apprentices go at the hours named.

2. As regards the manner of the training, I understand that the intention is to show the apprentices in the school how the particular machines ought to be used or processes to be carried out, but to let them acquire practice in using them or carrying them out in the firms' workshops.

3. The question of the part-time lecturers was also discussed. Mr. Tressler has arranged terms with a practical tanner already. He thinks he will be able to make similar terms with others. It was agreed that Rs. 15 an hour should be the maximum.

4. The question of literary education has been gone into elsewhere. It has been agreed by Mr. Tressler and the Director of Public Instruction that the managers of industrial schools must provide the literary training required by their pupils themselves, and this must apply to the Government school with the rest. The provision for teachers may therefore be accepted.

5. No suitable rented building can be obtained. Moreover class rooms are required for the leather school. It is therefore proposed that provision should be made on a minimum scale for class rooms, workshop and drawing school on land adjacent to the leather school. If this is approved, estimates can be prepared at once in conjunction with the Consulting Architect and the work started out of the funds allotted for the Ocanada * school, on which work cannot be commenced this year.

* Included in the sum of Rs. 40,000 for building grants under 26-B. Mis. The Director expects a saving of '37 lakh on grants.

But it is not likely that much out of this Rs. 37,000 can be spent in the current year, seeing that plans and estimates have to be prepared. I would therefore ask Educational to surrender at least Rs. 25,000 out of the anticipated saving. This can be taken up separately.

A.B.

will last for one or two years according to the subjects taken.

7. It has been many times emphasized that the whole scheme is tentative and experimental. It has been discussed threadbare and what is necessary now is to buy some practical experience, but to buy it as cheaply as possible. In this view I venture to submit a draft designed to get the scheme to work as soon as possible, but on a minimum scale.

C. G. TUDHUR—22-9-15.

To the Financial Department.

FINANCIAL DEPARTMENT.

With reference to the remarks contained in the Chief Secretary's note on pages 14 and 15 in regard to the scheme for the establishment of a Trades school in Madras originally formulated by Educational, that department has re-examined the details of the scheme in consultation with Mr. Tressler; and the final conclusions of that department are embodied in the draft order sent now to this department for acceptance.

2. It will be seen that the Educational department now consider :—

(i) That it is sufficient to open classes at Washermanpet only, instead of both at Washermanpet and Vepery as originally proposed by them.

(ii) The number of subjects in which instruction is to be imparted is consequently reduced considerably.

(iii) Educational, however, now consider it necessary to open classes for giving general education to pupils attending the school, though they were originally averse to this part of the scheme.

But I don't see how both general and technical education is going to be imparted during the limited hours available for instruction.

L.E.K.

(iv) As regards scholarships, it appears that no special expenditure will be incurred and that the Director of Industries will meet any charge considered by him necessary from his ordinary provision in the budget.

As a result of these modifications made in the original proposals, the recurring expenditure on account of the Trades school is considerably reduced; the old estimates and the present estimates compare as under :—

	Old estimate. Cost per annum. RS.	Present estimate. Cost per annum. RS.
(i) Expenditure on account of outside lecturers to be specially engaged for the purpose	10,000 to 15,000	4,500
(ii) Clerical establishment	1,520	500
(iii) Teaching staff	...	1,150
(iv) Materials for the school required yearly	15,000	5,000
	31,520	11,150

3. The decisions of Educational on the above points may, it is submitted, be accepted in Financial, subject to orders on the following.

Additional staff.—In view of the fact that the whole scheme is tentative and experimental—vide paragraph 7 on page 21, the clerical and teaching staff may, it is submitted, be sanctioned temporarily instead of permanently. Please see in this connection Assistant Secretary's marginal remark against paragraph 3 on page 13 ante. As to rates of pay, it is for orders whether for the peon Rs. 9 per mensem as suggested by Financial and approved by the Chief Secretary instead of Rs. 10 per mensem will not suffice.

Yes, one year in the first instance from date of employment. We don't know when they will be employed.

L.E.K.

Yes Rs. 9.

L.E.K.

A detail which we can leave to Educational.

A.B.

The clerk and the peon will also

L.E.K.

Yes.

A.B.

Yes, I don't find it mentioned in the draft.

L.E.K.

A.B.

4. *Non-recurring expenditure.*—In the circumstances set out in paragraphs 2, 3 and 6 of Mr. Tressler's demi-official on page 18 and paragraph 5 of Educational Secretary's note on page 21 ante, this department need not, it is submitted, object to the proposal to construct a building for the school at Washermanpet (cost '35 * lakh); paragraph 2 of the draft may be accepted. The proposed expenditure of Rs. '09 lakh on equipment falls very much short of the original estimate of '20 lakh and may be approved also.

* This will be only '20 lakh, if only one storey is to be constructed at present (page 16 ante).

L.E.K.

L.E.K.

5. It does not appear likely that any expenditure other than on buildings will be incurred in 1915-16. Any expenditure on buildings in the current year can be met from the source referred to in paragraph 5 of Educational Secretary's note. The draft may, it is submitted, be accepted in Financial subject to modifications with reference to paragraph 3.

A.S.—6-10-15.

L. E. KERSHAW—7-10-15.

Financial may, I think, accept the scheme as set out in the draft. It will not cost very much at the start and if it succeeds and develops the expenditure will have been justified. Honourable Member, Financial, should see.

A. BUTTERWORTH—8-10-15.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

Extract from the notes of His Excellency the Governor on certain files relating to the Department of Industries.

3. *Madras Trades school.*—I am not prepared to assent without further information to the removal of Dr. Marsden from Madras. Dr. Marsden, it appears from Mr. Tressler's proposals, is to be taken from the work for which he was brought out and in which he is an expert and removed from the centre of the dyeing industry to help generally in the Department of Industries, to supervise the Trades school, to act generally as Chemist to the Department in Madras and at the same time to superintend the proposed paper work at Fumalur. I am aware that there is a great dearth of qualified men at present and these proposals to utilise Dr. Marsden's services are possibly due to this cause; but I cannot understand or accept without further information the reversal of policy which has taken place in regard to Dr. Marsden's employment at Madras which is the centre of the dyeing industry.

4. *Normal Training school.*—In regard to the Normal Training school, I can understand such an institution being an integral part of the system of technical education; but I think we must be content at present here with some approximation to such a system. I should like to

know in this connection how many openings annually for students so trained as teachers the Presidency now affords in its industrial schools and otherwise and how many of these students will annually pass out trained. I forget at this moment whether the training is to be for two or three years. Would there be any other professional openings for them in the Presidency? Also is it probable whether a really good craftsman would consent to remain under instruction for two or three years on the proposed stipend of Rs. 15 a month with the chance of later being made an instructor? It might be well, I think, to consider whether some system of apprenticeship could not be devised pending the establishment of a Normal Training school. The arrangements for teaching staff at the Normal Training school and also at the Madras Trades school seem to me inadequate for continuous instruction and supervision.

P[ENTLAND]—24-9-15.

The Financial Department accept the scheme as set out in the draft. They, however, make a few suggestions in regard to details. The first of these is that the establishment specified in paragraph 4 of the draft should, for the present, be sanctioned temporarily for a year. It is for orders whether this may be accepted. It is also for consideration whether the pay of the peon in the school should be fixed at Rs. 9 instead of at Rs. 10. Mr. Tressler has proposed the latter.

2. The proposal of the Financial Department that the clerk and the peon should not draw grain compensation allowance may be accepted. The following sentence may be added to paragraph 4 of the draft:—

"The clerk and the peon will not be eligible for grain compensation allowance."

3. With reference to the suggestion of the Financial Department at the end of paragraph 3 of their note on page 19 supra, the following sentence may be added to paragraph 5 of the draft:—

"The annual expenditure on the supply of materials for the school will be limited to a maximum of Rs. 5,000."

4. His Excellency the Governor has since noted that Dr. Marsden should not be transferred from Madras to Madras to supervise the Trades school and to attend to other work at Madras. His Excellency has also stated that the arrangements for teaching staff at the school seem inadequate for continuous instruction and supervision. With regard to the transfer of Dr. Marsden, it is submitted that no transfer of the dyeing class from Madras to Madras is proposed in the draft order. The Superintendent of the Leather school is to superintend the Trade school also. As Dr. Marsden is to be temporarily in charge of the Leather school he will supervise the Trade school for the present. But when Mr. Guthrie returns, he will be in charge of the two institutions.

5. As regards the arrangements for teaching staff at the Trades school it is submitted that the proposal to employ part-time lecturers has been recommended by the majority of the members of the committee which discussed the Trades school scheme. Two members, viz., Mr. C.B. Simpson and Mr. Scott-Mackenzie were of opinion that the services of qualified men employed in Madras were not readily available and that when available, such men were not suitable teachers. Mr. Tressler however hopes to secure the services of suitable men. It is, therefore, for orders whether a trial may be given to the scheme proposed by him.

6. With regard to the proposal to utilize the funds reserved for the Cocanada school on the establishment of the Madras Trades school, it is submitted that the Collector of Gōdāvari has since written to say that the schools to be opened by private agencies at Cocanada will not adequately take the place of the school contemplated by Government. Mr. Tressler has therefore been asked to submit definite proposals for introducing the scheme as early as possible. The Secretary noted in that connection that some, at any rate, of the money available would be wanted at Cocanada this year. Mr. Tressler's proposals have not yet been received. It is, however, not likely that the whole of the amount, viz., Rs. 36,000 will be spent on that scheme this year. A portion may therefore be spent on the Trades school. There does not, therefore, seem to be any objection to ask the Director of Industries to submit plans and estimates for the building of the Trades school at Madras.

S.K.—11-10-15.

The scheme may, I submit, be sanctioned as a tentative beginning.

We may accept all Financial's suggestions. I have embodied them in the draft.

As for funds, we may ask the Director to tell us at once how much he can spend in the year on buildings in Cocanada and Washermanpet and surrender the balance of this year's allotment for expenditure at Cocanada.

C. G. TODHUNTER—12-10-15.

Please instruct the Director to submit proposals for beginning this Washermanpet school in a rented building. When the experiment shows promise of success under such conditions, permanent buildings may more safely be contemplated. I can only approve Dr. Marsden's proposed employment temporarily. Please ask the Director to consider further arrangements in this respect.

P[ENTLAND]—18-10-15.

His Excellency the Governor wishes the school to be started in a rented building. When it shows promise of success then permanent buildings may be contemplated.

Instructions given to Mr. Tressler personally. Demi-official reminder below.

C.G.T.—23-10-15.

Demi-official—from the Hon'ble Mr. C. G. TODHUNTER, I.C.S., Acting Secretary to Government, Educational Department.
To—K. T. B. TRESSLER, Esq., Director of Industries.
Dated—the 23rd October 1915.
No.—2654-1 Edl.

As I informed you last night, Government are considering the modified scheme submitted by you for the establishment of a Trade school at Washermanpet. They cannot, however, during continuance of the war incur any expenditure on buildings for the school. I am, therefore, to ask you to submit at an early date proposals for starting the school in a rented building.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.
To—the Hon'ble Mr. C. G. TODHUNTER, I.C.S., Acting Secretary to Government, Educational Department.
Dated—the 30th October 1915.
No.—B. 44.

As regards the proposed Madras Trade school, I have already on several occasions expressed the view that temporary accommodation of a suitable character cannot be obtained in Washermanpet (vide my demi-official, dated 31st July) and I am unable to see how this finding can be modified. If no new building can be constructed the only alternative I can suggest is either to hold the classes in the Public Works Workshops, or else to defer any action until funds are available.

I observe from the letter under reply that the expenditure is not to be incurred during the continuance of the war. I presume that the same reasoning applies to the Cocanada proposals also, and I should be glad to know whether I am still to formulate schemes for the Cocanada school, or can let this matter also pond until the war is over. I may add that I wrote to the Collector three weeks ago, asking him if he could meet me to discuss the Cocanada question, and that he arranged an interview at the end of this month. He now writes that he is coming to Madras as Private Secretary shortly, and in the circumstances, it seems scarcely worthwhile discussing the matter with him. If the proposal is to be continued with, I will go and see the new Collector in charge.

Ask Mr. Tressler whether he can arrange with the Public Works Workshops for the holding of the classes there.

Tell him the preparation of the plans for the Cocanada school should proceed.

Put up for Friday.

C. G. TODHUNTER—1-11-15.

Draft demi-official to Mr. Tressler is submitted.

S.K.—1-11-15.

C.R.—1-11-15.

C.G.T.—2-11-15.

Demi-official—from the Hon'ble Mr. C. G. TODHUNTER, I.C.S., Acting Secretary to Government, Educational Department.
To—K. T. B. TRESSLER, Esq., Director of Industries.
Dated—the 2nd November 1915.
No.—8747-1-Edl.

With reference to your demi-official letter No. B-44, dated the 30th October 1915, I am to ask whether you can arrange with the Superintendent of the Public Works Workshops for the holding of the Trade school classes there.

C.G.T.—6-11-15.

2. I am also to ask you to proceed with the preparation of the plans for the Cocanada Mechanical Engineering school without delay.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.
To—the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR Avargal, C.I.E., Secretary to Government, Educational Department.
Dated—the 2nd February 1916.
No.—B. 44.

I had a demi-official from Todhunter on the 2nd of November regarding the possibility of arranging for the holding of Trades classes in the Public Works Workshops.

I have been in correspondence with the Superintendent since then and we have carefully discussed the question. He tells me that any attempt to introduce the classes proposed would interfere very seriously with the ordinary works of the shop and that instruction after working hours would be difficult to arrange and very expensive. The whole of the staff leave at 5 o'clock and if the shops are to remain open it will necessitate drivers, foreman, etc., and a number of men also staying on. As the bulk of the work in the Public Works Workshops is done on contract, the workers are, for the most part, subject only in a general way to the Superintendent's control and he considers therefore that for these and various other technical reasons it will not be feasible to start the classes.

EDUCATIONAL DEPARTMENT.

Please see notes supra. Mr. Tressler considers that it will not be possible to hold the Trades school classes in the Public Works Workshops. He is unable to obtain a suitable rented building also for the purpose. His Excellency the Governor has already decided that permanent buildings can be erected only when the school shows promise of success after the scheme has been tried in a rented building. As Mr. Tressler is so much against the starting of the school in a rented building it is for orders how the scheme should be proceeded with.

S.K.—7-2-16.

May the Chief Engineer be asked u.o. to suggest some way out of the difficulty so that the classes may be held in the Public Works Workshops without interfering with the regular work there?

V.S.—8-2-16.

I wonder if the Chief Engineer can suggest some way out of the difficulty.

P. RAJAGOPALA ACHARIYAR—10-2-16.

To the Public Works Department.

PUBLIC WORKS DEPARTMENT.

Submitted with reference to the portion side-lined M above.

T.V.N.—11-2-16.

Perhaps Mr. Roberts may be consulted. It appears from Mr. Tressler's d.o. that he has "carefully discussed the question" with Mr. Roberts.

W. G. MOLESWORTH—16-2-16.

I am afraid I cannot hold out any hopes about the Public Works Workshops being used for trades classes. Most of the work there is done on contract so interference during working hours is out of the question. When the men stop for the day they leave their incomplete work on the machines so that even after working hours nothing could be done.

S. B. MURRAY—16-2-16.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

Submitted for orders—vide office-note above.

V.S.—18-2-16.

Agreeably to His Excellency's wishes at page 21 ante Mr. Tressler was asked last October to consider if the Washermanpet Trades school could not be started in a rented building. In reply he wrote on the 30th October that it could not be done and that the only alternative to the construction of suitable buildings would be to hold the classes in the Public Works Department Workshops. This question of utilising the Public Works Department Workshops has been further pursued and the

Public Works Department have now definitely stated that it is not practicable. Under these circumstances I fear that the starting of the Washermanpet Trades school will have to lie over indefinitely. This is a pity. But I do not see how it can be helped. Mr. Tressler has definitely expressed the view that temporary accommodation of a suitable character cannot be secured for the school at Washermanpet.

P. RAJAGOPALA ACHARIYAR—24-2-16

All that can be said, I think, at this moment is that if a rented building at Washermanpet—or elsewhere (?)—cannot be obtained, the beginning of these classes must stand over. Is no accommodation fairly suitable elsewhere obtainable?

P[ENTLAND]—25-2-16.

Submitted that in the Trades school it is proposed to begin with engineering subjects in the first instance. For these subjects both the committees (of 1912 and 1914) have expressed the view that

Washermanpet would be the most suitable centre. It is therefore doubtful whether even if rented accommodation is available in any other centre it will be useful for the purposes of the Trades school. The Director may, however, be asked to report whether suitable rented buildings can be secured in any other locality. A draft demi-official is submitted for approval.

S.K.—28-2-16.

V.S.—28-2-16.

P.R.—29-2-16.

Demi-official—from the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR Avargal, C.I.E., Secretary to Government, Educational Department.

To—K. T. B. TRESSLER, Esq., Director of Industries.

Dated—the 1st March 1916.

No.—745-3/15.

Your letter No. B-44, dated the 2nd ultimo. I am to enquire if suitable rented accommodation can be obtained in some centre other than at Washermanpet for holding the Trades school classes.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR Avargal, C.I.E., Secretary to Government, Educational Department.

Dated—Madras, the 7th March 1916.

No.—B-44.

In reply to your letter of the 1st March regarding Trades classes, I have to point out that at the present time I do not see any prospect of obtaining machinery required for Trades school classes so that even if we have got accommodation I do not consider that we can start the classes until the war is over, unless we can hire a workshop. When I sent up my proposals for constructing the Trades school at Washermanpet I scarcely expected to get machinery but I thought we could at least complete the buildings so as to be ready for starting the school on a permanent basis when machinery could be obtained.

I think it would be possible that Chengalvaraya Nayakar's trustees might be willing to allow us the use of their school but only as a temporary measure and I do not think it is much good starting Trades school classes there unless we can decide at once to provide permanent accommodation for them. If this is not done, all that will happen is that the classes will continue for some time in Chengalvaraya Nayakar's institute and then will have to be stopped again because of the interference of the school.

Chengalvaraya Nayakar's institute is the only solution I can think of, but it is not a very good one for the following reasons: (a) the arrangements will be strictly temporary, (b) the place is not central and there will be a good deal of difficulty in getting the staff to attend at that school, (c) the equipment is very limited as several machines have been sent to Perambore for muniton work.

If, however, you think that it is desirable to make a start, I will address the trustees and see what could be done.

EDUCATIONAL DEPARTMENT.

Please see the demi-official from Mr. Tressler on the previous page. Mr. Tressler does not specifically answer the enquiry whether suitable rented accommodation for holding the Trades school classes could not be obtained in localities other than Washermanpet. But his reply shows that he could not arrange for the opening of the classes immediately. As regards the Chengalvaraya Nayakar's technical institute referred to by him, it does not appear to be desirable to interfere in the working of this private institution. There is, it is submitted, no alternative but to hold over the Trades school scheme for the present.

S.K.—10-3-16.

Please see His Excellency's note at page 24 supra with reference to which this enquiry was made of Mr. Tressler.

For orders.

V.S.—13-3-16.

His Excellency's query has to be answered. Please ask Mr. Tressler to answer as at A.

P. RAJAGOPALA ACHARIYAR—15-3-16.

A draft demi-official is submitted for approval.

S.K.—15-3-16.

V.S.—15-3-16.

P.R.—16-3-16.

Demi-official—from the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR Avargal, C.I.E., Secretary to Government, Educational Department.

To—K. T. B. TRESSLER, Esq., Director of Industries.

Dated—the 16th March 1916.

No.—745-4/15.

With reference to your letter No. B-44 of the 7th instant, I am to request you to furnish a definite reply to the enquiry in my letter No. 745-3 of the 1st idem as to whether suitable rented accommodation can be obtained in some centre other than Washermanpet for holding the Trades school classes.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR Avargal, C.I.E., Secretary to Government, Educational Department.

Dated—Madras, the 22nd March 1916.

No.—B-44.

In reply to your further reference regarding rented accommodation for the Trades school classes, I have to explain that I am making enquiries to see if I can get a building.

EDUCATIONAL DEPARTMENT.

Lodged pending receipt of the further communication.

S.K.—23-3-16.

V.S.—24-3-16.

P.R.—25-3-16.

Mr. Tressler has not yet sent his final reply to the demi-official above. He may, it is submitted, be now reminded. A draft demi-official is submitted below.

S.K.—28-7-16.

C.R.—28-7-16.

Mr. Tressler has left: please revise the draft demi-official.

P.R.—29-7-16.

A draft demi-official to Mr. Couchman is submitted.

S.K.—4-8-16.

N.K.—7-8-16.

C. RAMANUJA ACHARIYAR—8-8-16.
P. RAJAGOPALA ACHARIYAR—9-8-16.

Demi-official—from the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR
Avargal, C.I.E., Secretary to Government, Home (Education)
Department.

To—M. E. COUCHMAN, Esq., I.C.S., Officer on special duty, Department of
Industries.

Dated—the 10th August 1916.
No.—745-5/15.

Please refer to the correspondence ending with Mr. Tressler's demi-official letter No. B-44,
dated the 22nd March 1916, on the question of securing a suitable private building in a centre
other than Washermanpet for the location of the Madras Trades school. Will you kindly let me
know whether the enquiries have now been completed and, if so, with what result?

From the Special officer, Department of Industries, dated the 15th September 1916,
No. B. 44.

Please see His Excellency the Governor's note on page 24 supra. Mr. Couchman
has selected a suitable house in Georgetown on a rental of Rs. 125 per mensem.
It is for orders whether the proposal to rent it may be accepted. Attention is solicited
to the note on page 24 supra from which it will be seen that the idea all along was
to locate the Trades school at Washermanpet in connection with the engineering
shops.

2. In his letter of the 7th March last Mr. Tressler stated that unless a workshop
was hired it would not be possible to open the school as it was impossible to obtain
the machinery required from England until the war was over. It is not known how
Mr. Couchman proposes to tide over the difficulty. Please see also Mr. Tressler's
demi-official on page 15 ante. It is submitted that Mr. Couchman may be asked to
state definitely whether it is proposed to have a workshop as an adjunct to the school
and, if so, whether it can be located within the premises of the building selected.

3. Another point for consideration is the question of funds. There is no
provision for the opening of this school in the current year's budget. There is a sum
of Rs. 21,000 in the budget (Imperial recurring grant for industrial education) which
has not been earmarked for any object. Out of this a sum of Rs. 2,368 has recently

G.O. 813, Educational, 25th July 1916.

been distributed as special grant to certain
schools. It has also been proposed in
another connection that the recurring charges relating to the Mechanical engineering
school which is to be opened at Cocanada should be met from the above Imperial
grant. But the plans and estimates relating to this school are still under scrutiny
in the Public Works Department. Until the buildings are erected, no recurring
expenditure will be incurred on it. The expenditure on account of the Trades school

may be met from the Imperial grant. The
proposals which Mr. Couchman promises
to submit in paragraph 2 of his letter may
show the expenditure that will have to be
incurred as a result of his proposals.

We can't wait for this; owner wants answer
in ten days.

E.A.H.—20-9-16.

4. As the scheme relating to the Trades school has been under the consideration
of the Government for the last four years and as they are anxious that a beginning
should be made, the proposal to rent a building may be approved. But before doing
so, Mr. Couchman may perhaps be asked to furnish the particulars referred to in
paragraph 2 above.

S.K.—18-9-16.

N.K.—19-9-16.

Yes. Draft to Mr. Couchman, please. Sharp.

E. A. HARVEY—20-9-16.

A draft memorandum is submitted.

S.K.—20-9-16.

N.K.—20-9-16.

Draft may be approved.

E. A. HARVEY—20-9-16.

P. RAJAGOPALA ACHARIYAR—20-9-16.

[Memorandum No. 3365-1, dated the 20th September 1916.]

From the Director of Industries, dated the 27th September 1916, No. B. 44.

Mr. Couchman proposes to locate the workshop in the building selected by him
and states that the necessary plant can be procured locally. A draft order sanction-
ing the proposal to rent the building is submitted for approval. It may be sent to
the Financial Department for acceptance.

S.K.—29-9-16.

N.K.—9-9-16.

E.A.H.—30-9-16.

To the Financial Department.

FINANCIAL DEPARTMENT.

The Financial Department last noted on this case on page 18 ante and
accepted the proposal to open a Trade school at Washermanpet. The expenditure
involved was estimated at—

		LAKHS.
<i>Non-recurring—</i>		
Buildings	...	35
Equipment	...	09
<i>Recurring</i>		
	...	11 per annum.

His Excellency the Governor, on page 21 ante, noted that the school being in an
experimental stage should for the present be opened only in a rented building.
Mr. Couchman has now found one for a rent of Rs. 125 per mensem, wherein he
proposes to open classes in plumbing and mechanics; and promises to submit detailed
proposals shortly.

The draft order which sanctions only the rent of Rs. 125 per mensem may be
accepted. The Director of Industries is being asked to submit a reappropriation
statement to meet the charge.

T.A.S.—30-9-16.

Accepted in Financial. I do not trouble the Chief Secretary with the case as the
matter is very emergent, and the main scheme has been accepted in Financial.

L. E. KESSEAW—30-9-16.

HOME (EDUCATION) DEPARTMENT.

The file may be circulated to His Excellency the Governor for approval of the
draft.

2. The following telegram may be sent to Mr. Couchman if the proposal is
approved:—

"129. Your letter 25th September. Proposal to rent house in Georgetown from 1st
October for location (of) Trades school approved."

N.K.—30-9-16.

Draft for approval.

P.R.—1-10-16.

P[ENTLAND]—1-10-16.

Issue.

P.R.—2-10-16.

1092, Home (Edu.)—8

The telegram to Mr. Couchman has issued. Mr. Couchman's proposals relating to the syllabus and other details for the Trades school have just been received. Paragraph 2 of the draft may therefore, it is submitted, be omitted and the draft as thus amended issued.

S.K.—2-10-16.

N.K.—2-10-16.

E. A. HARVEY—3-10-16.

[G.O. No. 1046, Home (Education), dated the 3rd October 1916.]

From the Special Officer, Department of Industries, dated
the 25th September 1916, No. 4.

Mr. Couchman has submitted the detailed proposals for the establishment of the Trades school at Madras. The proposals have been framed in consultation with Mr. Fyfe, Instructor in manual training for European schools. The main features of the scheme are—

- (1) to provide instruction, to begin with, in two subjects, viz., mechanical engineering and plumbing,
- (2) to provide for a twenty-weeks' course in each of these two subjects, there being two lectures in each week—one during, and the other out of, working hours,
- (3) to admit twenty pupils for each of the classes, the selection being limited to actual working plumbers and mechanics,
- (4) to engage the services of two European instructors who are to be persons actively employed in the trade which they are to teach, and
- (5) to impart instruction to the pupils as far as possible in English with, if necessary, interpretation in vernacular by demonstrators.

2. These proposals are, it is submitted, generally in accord with the recommendations made by the committees of 1912 and 1914 which were appointed to consider the scheme of establishing a trades school in Madras City. As an experimental measure the scheme may be generally approved. Mr. Couchman proposes further to consult employers of labour and settle details.

3. *Cost of the scheme.*—The recurring cost of the scheme for the six months of the current official year is estimated at Rs. 8,172 and the non-recurring cost at Rs. 6,246. Details relating to these are in the statements forwarded by Mr. Couchman.

4. *Recurring expenditure.*—(1) *Lecturers and demonstrators.*—Mr. Couchman proposes to engage the services of Mr. A. Hillier and Mr. W. H. Lockley, both employees of Messrs. Oakes & Co., to lecture in the school and to allow them a remuneration of Rs. 15 per lecture. This rate was proposed by Mr. Tressler in his original scheme and it has been accepted. Please see Chief Secretary's note on page 12 supra.

It is proposed to allow a demonstrator to each lecturer to help in the manual part of the teaching and to pay them Rs. 1-8-0 to Rs. 2 according to their qualifications. As such assistance seems to be necessary the proposal may be accepted.

5. *Peon on Rs. 10 per mensem.*—Provision is made for the employment of a peon on Rs. 10 per mensem. The Financial Department suggested last time that the pay of the peon should be fixed at Rs. 9. This may be done now.

6. *Workshop attendant and storekeeper.*—It is proposed to employ a caretaker for the school, who will also be workshop attendant and storekeeper on Rs. 40 per mensem. Mr. Fyfe states that the post should be filled by a Eurasian mechanic. It is for orders whether the proposal may be accepted.

7. The other items of recurring expenditure do not call for remarks.

8. As regards non-recurring expenditure it is submitted that the estimates amounting to Rs. 6,246 prepared by Mr. Fyfe may be approved. As Mr. Couchman desires early orders it is not perhaps necessary to consult the Public Works Department in regard to the tools and plant which are required for the school.

9. A draft order is submitted. It may be sent to the Financial Department for acceptance. Mr. Couchman may be asked to submit a reappropriation statement to meet the expenditure during the current year.

S.K.—4-10-16.

N.K.—5-10-16.

E. A. HARVEY—6-10-16.

Financial u.o. for acceptance.

Please treat as urgent.

P. RAJAGOPALA ACHARIYAR—7-10-16.

FINANCIAL DEPARTMENT.

It is now proposed, in supersession of previous proposals, to open, as an experimental measure, a Trades school at Madras with classes for practical instruction in (1) plumbing and (2) mechanical engineering. The course of instruction proposed is to last for 20 weeks, and the cost involved in the proposals as approved by Home (Education) is shown below :—

	Total cost. Rs.
<i>Recurring charges.</i>	
(a) Employment of two lecturers (Mr. A. Hillier of Oakes & Co. and Mr. W. H. Lockley of the Beehive foundry) for a course of twenty weeks or forty lessons at a fee of Rs. 15 for each lesson lasting for one hour ($2 \times 20 \times 15 = 1,200$)	1,200
(b) Allowance to each lecturer for one demonstrator at Rs. 2 each per lesson ($2 \times 2 \times 20 \times 2 = 160$)	160
(c) One workshop attendant and storekeeper (care-taker) on Rs. 40 for six months	240
(d) One peon on Rs. 9 (inclusive of grain compensation allowance for six months)	54
	1,654
(e) Materials for plumbing, engineering and drawing classes, furniture additions and repairs, tools and plant and contingencies, advertisement charges, rent for building, cleaning charges, etc.	6,512
Total	8,166
<i>Non-recurring expenditure.</i>	
(f) Furniture, tools and plant, apparatus, etc.	6,246
Grand total for the six months	14,412

2. *Item (a).*—As the average monthly remuneration of the two lecturers will be about Rs. 120 per mensem each, the sanction of the Government of India is not required with reference to article 773 (a), Civil Account Code.

In paragraph 3 of Mr. Todhunter's note, dated 22nd September 1915, on page 18 ante, it was stated that Rs. 15 for an hour's lecture should be the maximum. It is now proposed to fix the fee at Rs. 15 for each lecture of one hour. In justification of this, it is pointed out that the lecturers will have a good deal of preparation out of teaching hours. The rate of fee proposed may, it is submitted, be accepted.

Item (b).—In the estimates prepared by Mr. Fyfe a fee of Rs. 2 for an hour's demonstration work has been provided. Mr. Couchman, however, remarks in paragraph 5 of his letter, dated 25th September 1916, that the fee will be Rs. $1\frac{1}{2}$ to Rs. 2 per lecture according to the qualifications of the demonstrators. The rate of Rs. 2 is thus to be a maximum only and may, it is submitted, be accepted.

Item (c).—In the circumstances stated in paragraph 9 of Mr. Fyfe's letter the rate of pay proposed, viz., Rs. 40, need not be objected to.

Items (d), (e) and (f).—Seem to call for no remarks, as the scheme is a new and an experimental one.

C.P.K.—10-10-16.

Accepted in Financial.

L. E. KERSHAW—10-10-16.

L. DAVIDSON—11-10-16.

HOME (EDUCATION) DEPARTMENT.

The file may now be circulated to His Excellency the Governor.

N.K.—11-10-16.

Draft for approval.

E. A. HARVEY—12-10-16

P[ENTLAND]—13-10-16.

Issue.

P. RAJAGOPALA ACHARIYAR—17-10-16.

[G.O. No. 1092, Home (Education), dated 17th October 1916.]

Trade School

Home (Education) DEPARTMENT

Approving the scheme submitted
by Mr. Bonebrun for opening classes
in the Trades — for giving instruction
in plumbing & mechanical engineering.

READ AGAIN G.O. No. 1046, dated 3 - 10 - 1916

” ” ” ” ” 191

READ ALSO:—

READ ALSO:-
C. No. 35-20 From the *Special Officer* No. *4*, dated *25.9.1916*
Dept of Industries,

" " " " |.....| " " "

191

[illegible]

ORDER.
Press

No. 1092, dated 12-10-1916

The Government approve ~~the~~^{that} ~~as~~^{an} experimental measure the scheme submitted by Mr. Couchman for opening classes in the Madras Trades School for giving practical instruction in plumbing and mechanical engineering.

2. Sanction is accorded to the employment in the school, for a period of six months to begin with, of a workshop attendant (and storekeeper) on Rs.40 per mensem and a peon on Rs.9 per mensem. The peon will be ineligible for grain compensation allowance.

3. The payment of fees to the

for the accommodation of the school. The estimates as regards the other items of recurring charges and for equipment amounting to Rs. 5,762 and Rs. 6,246, respectively, are also approved. Mr. Couchman is requested to submit a reappropriation statement to meet the charge to be incurred during the current official year.

The Government ^{AM} await detailed recommendations as to the ~~fees~~ ^{to be levied} from pupils attending the school, the syllabus of studies, and the ^{certificates} ~~to be granted~~ at the end of the course.

A report on the working of the school should be submitted to the Govt. by the 1st March 1917.

M. F. Couchman, Esquire, I.C.S.,
Special Officer, Dept. of
Industries.

The Financial Department

14/10/16

(L.C.M.S.)

9.10.16

GOVERNMENT OF MADRAS
HOME (EDUCATION) DEPARTMENT

READ—the following papers:—

I
Letter—from K. T. B. TRESSLER, Esq., Director of Industries.
To—the Secretary to Government, Educational Department.
Dated—Madras, the 26th February 1915.
No.—E. 44.

I have the honour to submit herewith proposals for the establishment of a Trades school in Madras.

2. It will be remembered that a committee was convened in 1912 for the purpose of considering the limited question of educational facilities for mechanical engineering apprentices in the North of Madras. Their recommendations are given in appendix A. A subsequent committee was convened in G.O. No. 780, dated 4th July 1914, to consider the broader question of the provision in Madras of educational facilities in industrial trades generally. The recommendations of this committee are given in appendix B.

3. So far as the original question—mechanical engineering training—is concerned the findings of the two committees are in a substantial agreement. Both committees are of opinion—

(a) That it is necessary to make some provision for training in a school outside the workshops.

(b) That the neighbourhood of Washermanpet is most suitable as a location for a mechanical engineering institute.

(c) That it is advisable to charge fees.

(d) That it would be advisable to devise some means (in the nature of indentures) which would ensure the completion of the training.

The committees, however, differ on the following points:—

(a) *The scope of the school.*—The first committee dealt with only mechanical engineering. The second committee is not in favour of restricting the instruction to mechanical engineering subjects, but proposes also to include other trade subjects in the scheme of instruction.

(b) *The time of instruction.*—The first committee suggested the afternoon: the second found after enquiry that either the morning or evening would have to be chosen.

(c) *Management.*—The first committee was in favour of a committee of management of the school; the second committee does not recommend a committee of management for the school alone, but a general committee of advice to nominate examiners.

42

20.10.16

17.10.16

4. The present proposals regarding the scheme of instruction are based on the recommendations and reports of the two committees so far as they can be reconciled.

5. *Time*.—The time for lectures has been determined mainly by the character of the replies received from employers. Some employers are willing to let their men and apprentices "off" during working hours: the majority, however, seem to be of opinion that if mechanics want to improve themselves they ought to do so out of working hours. I personally incline towards the latter view as I consider that the development of a certain amount of grit, such as working overtime demands, is an essential element in all industrial education. On the other hand I fancy that the number of individuals whose desire for improvement is sufficiently great to induce them to do extra work is small, and if we want to get numerical results we must make things easy and allow apprentices to acquire their training at the expense of their practical work, i.e., during working hours. On the other hand there will always be a considerable number of individuals who cannot get away during working hours.

The only way I can see of completely meeting requirements is by having two sets of classes—one in the day and one in the evening.

6. *Location*.—The location proposed for the school by the original committee was a site somewhere near Basin Bridge station. The site actually selected is at Washermanpet adjoining the Leather Trades school. This site is quite suitable for engineer apprentices, but is by no means central for individuals wishing to attend other courses and it appears to be quite impracticable to concentrate all technical education in this one place. The second committee therefore considers it necessary to provide facilities for education in another place also—preferably near Vepery. In another letter I have put forward proposals for a Normal Training school. This school is to be located close to my office on the Poonamallee road and, as it is essential that some sort of teaching school should be attached to the Normal Training school, it seems reasonable to propose that the other centre of technical education should be located here. The site is also one of the most central in Madras.

7. To provide adequately for technical education it therefore appears to be necessary to contemplate two sets of classes at two centres. But the whole idea of a Trade school is a new one and we have no experience whatever of the working of a scheme of this kind. The first steps must therefore be largely of a guesswork character.

8. *Classes*.—The second committee proposes instruction in the following subjects:—

Fitting and turning.	Carpentry and joinery.
Blacksmithing.	Brickwork and masonry.
Foundry work.	Weaving.
Motor-car work.	Tailoring.
Motor-car driving.	Rattan work.
Electric wiring and fitting.	Printing trades.
Plumbing and sanitary work.	Oil and gas engine driving.
Metal work.	

These courses are fully worked out in the time-table (appendix C). It will be observed that these courses require the following accommodation:—

At Washermanpet—
One mechanical workshop.
Two class rooms and drawing office.

At Vepery—
Three workshops.
Six class rooms and drawing office.

They will also require, besides permanent staff, the services of 20–22 outside lecturers lecturing four hours a week (say Rs. 25,000). Whilst fully accepting

the recommendations of the committee as a statement of the lines on which the Trades school is to be developed, I consider it impracticable for financial reasons to provide complete facilities at the very start. What I suggest to begin with is that there should be only one set of classes at one or other of the proposed centres, and that only such classes should be provided as there appears to be an immediate demand for. I must, however, explain that this proposal will only suit a part of the class of individual we wish to train and will only partially carry out the recommendation of the second committee, my idea being to make a start and develop the scheme as we gain knowledge of the conditions and extent to which the facilities provided are likely to be taken advantage of.

9. *Proposed classes.*—Having due regard for necessity and cost, the classes I suggest for a start are—

- (i) Trade instruction classes in—
 Mechanical work at Vepery.
 Woodwork at Vepery.
 Motor-car driving at Vepery.
 Oil, gas and steam engine driving at Vepery.
- (ii) Extension classes in—
 Fitting and turning at Washermanpet.
 Blacksmithing at Washermanpet.
 Foundry practice at Washermanpet.
 Plumbing and sanitary work at Vepery.
 Carpentry, joinery and cabinetmaking at Vepery.
 Electric wiring and fitting at Vepery.
 Motor-car work at Vepery.
- (iii) Theoretical classes in—
 Practical mathematics at Washermanpet and Vepery.
 Technical and machine drawing at Washermanpet and Vepery.
 Practical mechanics at Washermanpet and Vepery.
 Prime-movers at Washermanpet.
 Technical electricity at Vepery.
 Elementary science at Vepery.
 Plumbing and sanitary work at Vepery.
- (iv) Regular printing courses at Vepery.

General education classes must also be provided for backward pupils. These are to be of two kinds, viz. :—

- Courses A up to about fourth standard
- Courses B up to about fourth form

in subjects of technical value, e.g., English, Arithmetic, Mathematics and Elementary Science. These classes would be held in the evening at the Vepery school.

10. *Proposed accommodation.*—To carry out even this limited programme I require accommodation in two places. We are committed to providing accommodation at Washermanpet in connection with the Leather Trades school, and it might appear desirable in the first instance to concentrate all work there. After a careful consideration of the matter I have, however, come to the conclusion that this is not practicable. Those artisans whose work lies more to the south of Madras certainly will not go out to Washermanpet for instruction, and if we want to catch them we must provide instruction at a more convenient centre, such as Vepery, even at the start.

11. For the limited instruction I propose now to provide I shall require—

At Washermanpet—	At Vepery—
One workshop.	Two workshops.
Two class rooms.	Four class rooms

At Washermanpet the lecture rooms and laboratory to be provided for the Leather school may be used in connection with the mechanical courses and the only extra building required is a demonstration workshop, say 70 by 30, a drawing office, say 70 by 30, also a foundry and smith's shop. The complete building will be a two storey one and the proposals on this point are submitted in a separate letter. The cost of the part debitable to the Trades school is Rs. 20,000.

	RS.
Land	40,000
Buildings	20,000

I have been unable to find any building that would prove suitable either near the Washermanpet or the Vepery site.

Mechanical shop (Washermanpet)	Rs.
Do. (Vepery) Director of Industries Workshop ..	9,000
Carpentry (Vepery)	Nil.
Printing (Vepery)—	3,210
Machine section	1,500
Book-binding section	13,600
	2,300

14. *Cost of staff.*—* The estimated cost of staff is:—

	RS.
One Principal (to be specially appointed)	
Office.	
One head clerk Rs. 50—5—70	60
One despatching clerk Rs. 25—2—35	30
Three peons at Rs. 10 each	30
	120
	Rs. 1,440 per annum.

Teaching staff. Outside lectures: Technical subjects (including technical drawing).—The suggested rate of remuneration for single lectures is Rs. 15 for 50 minutes—one hour lecture. For a series of lectures extending over one year the rate will be Rs. 750 for 2 one hour periods per week and Rs. 1,250 for 4 one hour periods if given on two days or nights a week and Rs. 1,500 if given on 4. The number of outside lectures of one hour duration is about 32 a week and the total cost on any reduced scheme will be Rs. 10,000 per annum or so.

Permanent staff.

	RS.
One head teacher in English and mathematics at Rs. 50—2½—70. }	
One teacher in science and mathematics at Rs. 35—2½—50 .. }	
One drawing master at Rs. 35—2½—50	1,740
Materials per annum	15,000
Total, excluding principal, say	33,200

* All at Vepery.

15. *Numbers.*—Mechanical engineering firms have expressed their willingness to take apprentices. The figures given amount to 40 but a certain number of the firms have expressed their inability to give exact figures.

Most firms approached have also expressed their general willingness to allow paid workmen to attend evening classes.

In the printing trades definite figures are 100 *plus* general offers from firms.

In carpentry there are no regular firms and for our raw material we must rely on apprentices working with small employers of labour.

As I have already explained some firms are willing to let their apprentices go during the day—others insist on them getting their education out of working hours.

Numbers provided for.—In the first instance I propose only morning classes in mechanical work and so cannot cater for all these individuals. I am however providing, in the first instance for classes of 20, as proposed by the Committee. A similar number is contemplated in other subjects.

16. Seeing that the trade school is a pure experiment I am unable to submit a out and dried scheme. All I can do is to make out draft proposals, to be modified in accordance with experience, and my present proposals are to be regarded as of a purely tentative character. When we have discovered the right lines to work on, the scope of the school may be extended to include all the subjects proposed by the Committee and to provide for both morning and evening classes as found necessary.

17. It will probably take a full year for the plans to be sanctioned, accommodation provided and plant to be purchased. No provision need be made this year for expenditure and next year 1915-16 only capital expenditure need be met. I should say that regular classes can only be begun about June 1916. As plans for the buildings are herewith sent it should be possible to get them sanctioned and carried out before April 1916.

18. The total capital expenditure is approximately Rs. 70,000 excluding the share of cost of land acquisition and buildings in Vepery, which expenditure is also partly to be borne by the Normal Training school. The total cost of these items is Rs. 1,20,000 and the share for the Technical Institute may be reckoned as half. The recurring expenditure will be Rs. 33,000 to begin with. The receipts will not exceed Rs. 500 per annum.

APPENDIX A.

Recommendations of a Committee appointed in G.O. No. 28, Educational, dated 16th January 1912, to consider and report upon the question of improving Industrial and Technical education in the north of Madras.

1. That it is desirable to establish a system of State apprentices among the engineering shops in the north of Madras.
2. That it is necessary to make some provision for technical training in a school outside the workshops.
3. That instruction be given in the school to each boy on three days a week in the afternoons.
4. That the instruction be given in English and that the boys should possess such educational qualifications as to enable them to take advantage of it.
5. That the school be established as near Basin Bridge station as a convenient site can be found.
6. That the management of the institution be vested in a committee to be nominated by Government and to be representative of the various interests concerned.
7. That the Committee recommend that a fee should be charged to all apprentices.

APPENDIX B.

Recommendations of the Committee appointed in G.O. No. 780, Educational, dated 4th July 1914, to consider certain questions relating to improvements of Industrial and Technical education in the north of the City of Madras.

1. This Committee accepts the system of division (as suggested by the Director of Industries) on Technical Education into two classes of Technological and Industrial and approves of the Director's proposal to aim at the improvement of Industrial Education.
2. This Committee having heard the report of the Director upon his visit to the Victoria Technical Institute, Bombay, is of the opinion that for the present the arrangement he outlines for dealing with any demand for Technological Education is adequate.
3. With regard to regular and complete courses of training as given in the Draft Code this Committee is unable to express any opinion upon the value of the "Mechanism" proposed but lays stress upon the final examination tests being of such a character that the results will testify to the suitability of those who pass them, for industrial employment. The Government Technical Examinations have not, so far as they deal with trades, supplied such a test and it is considered essential that in the examinations it is proposed to introduce the Examiners should be actively employed in the trade or profession in which they are examining.
4. The Committee is of opinion that the nomination of Examiners should be entrusted to a Board of Representative employers, to be presided over by the Director of Industries.
5. The Committee is of the opinion that regular and complete courses of instruction do not entirely provide for industrial requirements and recommends that "Extension" courses should also be provided, in the Madras Trades School, for subjects such as fitting and turning, Blacksmith's work, foundry work, carpentry and joinery, plumbing and sanitary work, brick work and masonry, Electric Wiring and Fitting, Motor-car work and motor-car driving, weaving and dyeing, metal work and metal spinning.
6. The Committee further recommends that facilities should be provided for such general education by means of evening classes as may be necessary for a pupil to take advantage of the Trade School course, it being a condition for admission to the classes however that pupils should be *bona fide* industrial workers or apprentices.
7. The Committee considers the proposed Washermanpet site to be the most suitable centre for the teaching of Engineering Trade subjects, but it is of opinion that for general subjects

another site would probably be more central and recommends that provision should be made in the Poomalallee High Road adjoining the Director's Office for another branch of the Trade School.

8. The Committee considers a system of stipends to apprentices to be objectionable. It is however recognised that financial assistance may in some cases be necessary but instead of fixed stipends, it recommends the grant of scholarships to individual cases.

9. The Committee is not in favour of the provision of hostel accommodation in connection with this school.

10. It is considered essential that for teaching purposes every effort should be made to secure the partial services of individuals possessing practical experience of the subjects they teach, and is of opinion that provided suitable remuneration be given it will in most cases be possible to arrange for the part-time services of individuals actually practising the trade to be taught. The Committee regards it as desirable to fix the permanent staff of the Trades School at the minimum possible limit. Except for the teaching of general literary and scientific subjects, it will in their opinion be unnecessary to employ any regular whole-time teachers.

11. The Committee anticipates that a considerable time may elapse before a building scheme in connection with these proposals matures and it recommends that, if possible, work should be started in a rented building. There appears however some doubt as to whether a suitable building will be available near either of the sites proposed for these trade schools and the Committee accordingly recommends that permanent arrangements should be made as expeditiously as possible.

Abstract Report of an unofficial meeting convened to consider the proposals embodied in the Draft Code for Technical Education.

The Committee approve generally the principles embodied in the Director of Industries' scheme but wish to point out that the main difficulty hitherto connected with Industrial Education has been the lack of qualified teachers. This difficulty will continue so long as no facilities are provided for training teachers and the Committee feel very strongly that in a scheme for the development of industrial education the very first step to be taken is the establishment of a Normal Training School at Madras.

The Committee understand that the development of certain schools in up-country centres is contemplated by Government and would request that early steps be taken to give effect to this proposal. They consider that schools of this kind would give a valuable impetus to local industries. One member of the Committee wishes to express the opinion that more should be done to investigate and develop industries.

The Committee as a body also considers that much greater attention should be given to works accounting and that if possible a special arrangement should be made for the teaching of the subject.

The Committee also think that the Government workshops constitute a valuable training ground for apprentices that have not yet been exploited and submit for careful consideration the desirability of developing these workshops with a view to their securing educational value.

APPENDIX C.

ARRANGEMENT OF CLASSES SUGGESTED BY THE COMMITTEE.

(a) Mechanical trades at Washermanpet.

	A.M.	
Monday ..	7-8-45	.. Fitter's and turner's extension class.
Tuesday ..	7-7-50	.. { Practical mathematics, first year.
		.. { Machine drawing, second year.
" ..	7-50-8-45	.. { Machine drawing, first year.
		.. { Practical mathematics, second year.
Wednesday ..	7-8-45	.. { Blacksmith's extension class.
		.. { Prime-movers.
Thursday ..	7-7-50	.. { Practical mathematics, second year.
		.. { Practical mechanics.
" ..	7-50-8-45	.. { Machine drawing, second year.
Friday ..	7-8-45	.. Foundry practice extension class.

M. A. M.

(b) Other than Mechanical Trades at Vepery.

CLASS ROOM A.

Preliminary classes.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
5-30-6-30 P.M.	English	English	English	English	English
6-30-7-30	Mathematics ..	Mathematics ..	Mathematics ..	Mathematics ..	Mathematics ..

CLASS ROOM B.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
7-7-50 A.M. ..	Printer's Composition, second year	Printer's Warehousing, second year.	Proof reading, second year.	Printer's Composition, second year.	Proof reading, second year.
7-55-8-45 A.M.	Printer's Composition, first year.	Printer's Warehousing, first year.	Proof reading, first year.	Printer's Composition, first year.	Proof-reading, first year.
5-30-6-25 P.M.	Practical Mathematics, first year.	Practical Mathematics, second year.	Practical Mathematics, Metal workers; Plumbers, first year.	Practical Mathematics, second year.	Practical Mathematics, first year.
6-30-7-30	Practical Mathematics, Carpenters, etc., first year.	Practical Mathematics, Carpenters, etc., second year.	Oil (or gas) engine driving.	Rattan work ..	Oil or gas engine driving.

CLASS ROOM C.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
7-7-50 A.M. ..	Bookbinding, second year.	Press and Machine work, second year.	Bookbinding, second year.	Printer's warehousing, second year.	Press and Machine work, second year.	General printing, High Proficiency class.
7-55-8-45 ..	Bookbinding, first year.	Press and Machine work, first year.	Bookbinding, first year.	Printer's warehousing, first year.	Press and Machine work, first year.	....
5-30-6-25 P.M.	....	Motorcar work, Theoretical.	Brickwork ..	Motorcar work, Theoretical.	Brickwork ..	....
6-30-7-30 ..	....	Motorcar work, Practical.	Masonry ..	Motorcar work, Practical.	Masonry ..	....

CLASS ROOM D.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
5-30 P.M. ..	Embroidery ..	Tailoring, trade instruction.	Embroidery ..	Tailoring, extension.	Lacemaking ..	Tailoring, 2-30 P.M.
7-25	Needlework ..	Do.	Needlework ..	Do.	Do.	Tailor's cutting 3-30 P.M.

CLASS ROOM E.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
5-30-6-25 P.M.	Plumbing and Sanitary work.	Leather work. Trade Instruction.	Plumbing and Sanitary work. Trade Instruction.	Leather work. Trade Instruction.	..
6-30-7-30 ..	Bookbinding. Trade Instruction.	Printing. Trade Instruction.	Bookbinding. Trade Instruction.	Printing. Trade Instruction.	..

SCIENCE ROOM.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
..	Handloom weaving.	Carpet weaving ..	Dyeing (weavers).	Handloom weaving.	Technical electricity.
..	Steam engine driving	..	Steam engine driving.	Mechanics ..	Elementary science.

DRAWING HALL.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
..	Technical drawing, Wood workers, first year.	Carpenters joiners, etc., second year.	Drawing and weaving design for weavers.	..	Technical drawing, Metal workers.
..	Machine drawing, Electricians, first year.	Machine drawing, Electricians, second year.	Technical drawing, Metal workers and Plumbers.	Machine drawing, Electricians, second year.	Machine drawing, Electricians, first year.

WORKSHOPS.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
P.M. 5-30-7-50 ..	Mechanical work, Trade Instruction.	Plumbers and Metal workers.	Electric wiring and Fitting, Carpenters, etc.	Mechanical work, Trade Instruction.	Wood work, Trade Instruction.	Motorcar driving (afternoon).

APPENDIX D.

ARRANGEMENTS OF CLASSES PROPOSED TO BE HELD AS A COMMENCEMENT.

(a) *Mechanical Trades at Washermanpet.*

Monday	.. 7-8-45	A.M.	Fitter's and Turner's extension class.
Tuesday	.. 7-7-50	"	{ Practical Mathematics, first year.
Do.	.. 7-50-8-45	"	{ Machine Drawing, first year.
Wednesday	.. 7-8-45	"	{ Practical Mathematics, second year.
Thursday	.. 7-7-50	"	{ Blacksmith's extension class.
Do.	.. 7-50-8-45	"	{ Prime Movers.
Friday	.. 7-8-45	"	{ Practical Mathematics, second year.
			{ Practical Mechanics.
			{ Machine Drawing, second year.
			{ Foundry practice extension class.

(b) *Other than Mechanical Trades at Vepery.*

CLASS ROOM A.

Preliminary classes.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
5-30-6-30 P.M.	English ..	English ..	English ..	English ..	English ..
6-30-7-30 ..	Mathematics ..	Mathematics ..	Mathematics ..	Mathematics ..	Mathematics ..

CLASS ROOM B.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
7-7-50 A.M. ..	Printer's Composition, second year.	Printer's Warehousing, second year.	Proof-reading, second year.	Printer's Composition, second year.	Proof-reading, second year.
7-55-8-45 A.M. ..	Printer's Composition, first year.	Printer's Warehousing, first year.	Proof-reading, first year.	Printer's Composition, first year.	Proof-reading, first year.
5-30-6-25 P.M.	Practical Mathematics, Electricians, first year.	Practical Mathematics, Electricians, second year.	Practical Mathematics, Metal Workers, Plumbers, first year.	Practical Mathematics, Electricians, second year.	Practical Mathematics, Electricians, first year.
6-30-7-30 P.M.	Practical Mathematics, Carpenters, etc., first year.	Practical Mathematics, Carpenters, etc., second year.	Steam, Oil or Gas Engine driving.	..	Steam, Oil or Gas Engine driving.

CLASS ROOM C.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
7-7-50 A.M. ..	Bookbinding, second year.	Press and Machine work, second year.	Bookbinding, second year.	Printer's Warehousing, second year.	Press and Machine work, second year.	General Printing, High Proficiency class.
7-55-8-45 ..	Bookbinding, first year.	Press and Machine work, first year.	Bookbinding, first year.	Printer's Warehousing, first year.	Press and Machine work, first year.	..
5-30-6-25 P.M.	Plumbing and Sanitary work.	Motorcar work, theoretical.	Plumbing and Sanitary work.	Motorcar work, theoretical.	..	..
6-30-7-30 ..	..	Motorcar work, practical.	..	Motorcar work, practical.	..	..

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
5-30 to 6-25 p.m.	.....	.....	.....	.....	.....
6-30 to 7-25 ..	Technical electri- city.	.....	.....	Mechanics ..	Elementary science.

DRAWING HALL.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
.....	Technical draw- ing, wood- workers, first year.	Carpenters, etc., second year.	.....	.....	.....
.....	Machine drawing, Electricians, first year.	Machine drawing, Electricians, second year.	Technical drawing.	Machine drawing, Electricians, second year.	Machine drawing, Electricians, first year.

WORKSHOPS.

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
5-30 to 7-30 p.m.	Mechanical work, Trade Instruction.	Plumbers ..	Electric wiring and fitting, car- penters, etc.	Mechanical work, Trade Instruction.	Wood-work, Trade In- struction.	Motorcar driv- ing.

APPENDIX E.

Estimate of equipment for mechanical trade workshop, Washermanpet.

	Rs.
One drilling machine	1,000
One milling machine	3,000
Two 6-inches lathes	1,200
One 8-inch lathe	750
One surface table	180
One motor for driving	600
Shafting, etc.	500
Taps and dies	110
Forge and blower	150
Tools, chucks, benches, etc.	580
Contingencies	300
Total	8,370

APPENDIX F.

Estimate of equipment required for a wood-working shop, Madras Trade school, Vepery.

	Rs.
1. Twenty sets of standard tools	300
2. Six sets of wood-carving tools	250
3. One set special tools	600
4. Ten benches with vice and stop, complete	300
5. Drawing hall equipment (desks, almirahs, models, etc.)	650
6. Wood-working machinery—	
(i) Foot driven scroll saw	55
(ii) Band and circular sawing machine (hand or power)	355
(iii) Planing and jointing machine	250
(iv) Centre motion mortising machine	135
(v) Wood-turning lathe	40
(vi) Incidentals	275
Total	3,210

very for the future very

APPENDIX G.

Estimate of equipment required for a printing trades workshop, Madras Trade school, Vepery.

RS.

Composing section—

Frames, composing cabinets and cases	247
Accessories	103
Imposing stone and chases	142
Metal and wooden furniture, racks, leads and accessories	460
Ruling cabinet and accessories	250
Steel furniture fount, type and borders, blocks, galleys, etc.	342

Total .. 1,544

Machine section—

One hand press inking table, etc.	670
One Haddon safety platen machine	2,750
One Falcon brown folio platen	1,500
One Haddon Victoria platen crown folio	950
One small Art Caxton	1,685
One Elliot double crown wharfedale with latest improvements	3,400
One royal Babcock drum cylinder machine, complete	2,460
Accessories	180

Total .. 13,595

Book-binding section—

Clamp cutting and trimming machine	1,200
Board cutting machine	300
Blocker, 7 x 8½	335
Marbling outfit	100
Two revolving book clamps	60
Knives, pallets, hand tools, presses, burnishers, etc.	310

Total .. 2,305

0123

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II

Letter—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Secretary to Government, Educational Department.

Dated—Madras, the 28th February 1915.

No.—E. 44.

In connection with the proposals for the Madras Trades School I have the honour to submit the enclosed sketch plan for the Washermanpet branch.

2. When the Government tannery was built the prospect of this Trades School being erected on the same site was borne in mind and no provision was made in the Tannery buildings themselves for class room accommodation. Such accommodation it was proposed to provide in the main building now described.

3. The appended site plan (Appendix I) shows the property now owned by Government. In the original scheme the acquisition of the small block of tenements ~~marked~~ was also proposed. These tenements have not yet been acquired for reasons unknown to me. For the present they are not absolutely necessary.

Extension of accommodation will no doubt become necessary soon and the finished building will cover the area shown in skeleton outline. To begin with I propose to build only the south wing.

4. The details of this wing are shown in Appendix II. The accommodation is very limited, but I do not wish to spend much money to begin with and the north wing can be added when required.

On the ground floor will be the mechanical workshop, office and store: on the upper floor drawing office, professors' room and laboratory.

At a square foot rate of Rs. 9-8-0 the cost amounts to Rs. 34,770 plus say Rs. 1,500 for fencing, etc.

5. Behind a corrugated iron shed is also to be constructed to serve as a foundry and blacksmiths' shop. The cost of this at a square foot rate of Rs. 2 is Rs. 5,400.

6. The total cost is therefore Rs. 40,170 for this branch (excludes fencing).

7. The proposed Vepery branch will be accommodated for the time being in the proposed Director's Office and the proposed normal Training School building and no special buildings are required just now.

another plan

III

Letter—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Secretary to Government, Educational Department.

Dated—Madras, the 26th February 1915.

No.—44 E.

We, the members of the Committee constituted in G.O. No. 780, dated 4th July 1914, to consider certain questions relating to improvements in Industrial and Technical education in the City of Madras have the honour to submit the following report.

2. The Committee held three meetings on the 10th and 12th of September and 27th November respectively, and having discussed the points placed before it and others which have a bearing upon the question of Industrial education formulated and passed the resolutions appearing at the end of the present report.

3. The Committee agrees with the definition of the functions of Industrial and Technological education as laid down by the Director of Industries, and has limited itself to the discussion of means whereby the Industrial part could be improved.

As regards higher technical training in subjects for which no provision is made in the Madras Presidency the Committee is of opinion that a demand of this character could most advantageously be met by assisting such pupils as were fitted therefor, to take their training at institutions in other parts of India. Such assistance might be in the form of scholarships. The Committee considers that the granting of scholarships is in general to be preferred to any provision of hostel accommodation or the usual methods of direct stipends to all pupils.

4. The Committee observes that the system of Industrial Education proposed by the Director of Industries deals mainly with the problem of taking entirely raw material into the Industrial schools and providing a complete course of Industrial education to fit the pupils for taking up an industrial career. As explained in the third resolution, the Committee does not feel itself qualified to pass any opinion upon this school part of the Industrial Education Scheme, but considers that it is best qualified to deal with the portion which aims at the improvement of the practical industrial worker and with means whereby this object is to be attained. The provision of facilities of which the workman may take advantage for personal improvement is very desirable and since, from the conditions of employment, it is impossible for a workman to attend regular classes or to undergo a complete and thorough course of training, it is considered advisable that these facilities should take the form of *Extension Courses* teaching the correct methods to be employed in practice and demonstrating the improvements to be aimed at. For individuals capable of taking advantage of them, the provision of *Technical Courses* to explain the principles underlying the work are also recommended.

P. H. A.

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5. The Committee is of opinion that in connection with the Madras Trade School Extension Courses in the following subjects should be provided, viz.:—

Fitter's and Turner's work.	Brick work.
Blacksmith's work.	Masonry work.
Foundry work.	Metal work.
Motor car work.	Rattan work.
Motor car driving.	Weaving.
Joiner's work.	Tailoring.
Carpenter's work.	Oil and Gas Engine driving.
Electric wiring.	Printing Trades.
Plumbing and Sanitary work.	

and that for apprentices general theoretical courses of Instruction might be provided in—

(a) Mechanical Trades.

(b) Plumbing and Sanitary work.

(c) Printing.

6. As it is extremely likely that many individuals desirous of attending these classes will not possess the general education which would permit of them taking full advantage of the instruction the committee recommends that evening classes should also be provided in the Madras Trades School to give preliminary instruction in English, Arithmetic and drawing; admission to these classes, however, to be strictly limited to workmen.

7. A further type of instruction for which there appears to be a demand is what is called *Trade Instruction*, being elementary instruction to trade subjects for individuals desirous of learning something about a trade they are not actually engaged on.

8. With regard to the number of the pupils to be catered for this committee is of opinion that in the first instance it will be sufficient if provision is made for classes of 20.

9. Although the question of the fees to be charged for admission to the classes is one of some uncertainty owing to the varying circumstances of workmen, the Committee considers it eminently desirable to charge some fee, if only a small one, and suggests that at present an admission fee of Re. 1 should be charged for each course.

10. The classes should be held in the morning or evening so as to interfere as little as possible with the working hours of the apprentices. With regard to the Mechanical Trades in particular it is considered that the morning from 7 to 8-45 would be the most convenient time, the classes being so arranged that no apprentice will have to attend the school on more than three mornings a week. It may, however, prove necessary to provide evening classes also. Classes in the Printing Trades might also be held in the mornings but in all other subjects, evening classes from 5-30 onwards would appear to be most suitable.

11. The syllabuses of instruction have already been drawn up by the Sub-Committees. Any alterations in these syllabuses should be made by a Board appointed for the purpose upon which the interested employees should be largely represented. The curriculum the Committee must leave to the Director of Industries to arrange. With reference to the teaching, the Committee lays stress upon the necessity of obtaining the services of really industrially competent men as teachers, that is, men who have themselves had a thorough training and are actively employed in the trade they teach. The Committee considers that if suitable remuneration be given, there should be no difficulty in arranging for the part-time services of qualified men employed in Madras.

12. The Committee would also draw special attention to the question of the selection of examiners. To ensure that the capacity of candidates and their suitability for industrial employment shall be effectively tested it recommends that

P. B. P. P. P.

nominations would be made by a Board of representative employers as stated in Resolution 4. No particular examination tests need be specified and it would be left to the examiner to impose any test within the limits of the course of instruction laid down in the syllabus which any competent workman might be expected to fulfil.

13. The question of the location of the Madras Trade School is one of importance as it is clearly essential that the centre of instruction should be conveniently situated, and the Committee whilst agreeing with the original committee that the Mechanical Trades classes should be held in the neighbourhood of Washermanpet, is of the opinion that all other subjects may be more advantageously taught in a Central school to be erected on the land adjoining the Director of Industries' Office in the Poonamallee road. It is also recommended that the services of teachers in the Madras Trades School should be available for giving instruction in classes which might be arranged for by some of the large employers of labour in Madras in connection with their works, provided that suitable class room accommodation is provided without any expense to Government and the attendance of a sufficient number of industrially employed pupils is arranged for.

14. The Committee would lay stress upon what it considers to be the central feature of the Madras Trade School Scheme, viz., the character of the Extension Lectures which are to be of a demonstrative and practical nature as distinct from an academic one and considers therefore that its ideas cannot be given effect to unless the Trade School is provided with fully equipped workshops for each trade.

15. Since the provision of workshop accommodation necessitates a considerable floor space, the Committee doubt if a suitable building could be rented for teaching purposes pending the construction of permanent buildings and would therefore urge the necessity for the immediate construction of the buildings required.

Note.—With regard to the possibility of obtaining the part-time services of qualified men employed in Madras for teaching purposes, Mr. C. B. Simpson and Mr. Scott-Mackenzie dissent from the opinion expressed in paragraph 11 above. Mr. Simpson writes "My experience is that the services of qualified men employed in Madras are not readily available, and that when available such men are not suitable teachers. I am of opinion that unless men trained in the art of teaching, with a knowledge of the vernacular, are made available that no real progress can be made. The difficulty of real progress being made with this kind of instruction is the entire absence of trained teachers in Madras."

ENCLOSURES

(1)

*Proceedings of the Employers' Committee Meetings, dated 10th and 12th
September 1914.*

PRESENT:

Mr. K. T. B. Tressler, *President*.
Dr. F. Marsden, *Secretary*.

Members.

Mr. Arthur A. J. Leech.
M.R. Ry. Rao Bahadur P. Thyagaraya Chetti Garu.
Mr. H. B. Peirce.
Mr. J. W. Madeley.
Mr. W. H. James.
Mr. Scott-Mackenzie.
The Rev. C. H. Hudson.
Mr. C. B. Simpson.
Mr. N. Nadel.
Mr. R. B. Stewart.
Mr. S. J. Green.
Mr. H. A. Shore.

The Employers' Committee meetings were held on September 10th and 12th.

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The Chairman explained that Government desired the opinion of the Committee upon the policy of Industrial Education now under consideration and especially upon the questions of the effect of the re-organisation of schools, the suitability of the revised Code, the suitability of the Government Technical Examinations as a test of the practical capacity of pupils and, if necessary to devise a more suitable test, also the nature and location of a central school in Madras. He thought that a general discussion upon underlying principles would suffice in this Committee and Sub-Committees could be appointed to deal with details.

Mr. James raised an objection to the scope of work as outlined by the Chairman and was of opinion that the Committee was bound by the terms of G.O. No. 780 of 4th July 1914, appointing this Committee to consider certain questions relating to improvements in Industrial and Technical education in the north of the city of Madras and proposed that the discussion should be limited to the question of the proposed school and that of apprentices.

The Chairman drew the attention of the Committee to a subsequent G.O. No. 893 of 16th July 1914, and informed the Committee that it was the intention of Government that representative employers of labour should be consulted before the revised scheme of industrial education was adopted.

The Committee decided to discuss the general policy regarding industrial education as well as that of the foundation of the Madras Trade School and the Chairman proceeded to outline the effects he hoped to obtain by the proposed changes. At the present time the training given in the Industrial Schools was not uniform and was not in general of a type which resulted in the creation of efficient workmen. From his experience of the schools he found there was a lack of methodical teaching, due probably to the fact that no trained teachers were available, and the scheme which had been outlined was intended to remedy this, to provide really efficient teachers and a class of workmen and foremen who from the fact of their training having been completed upon practical lines, would be immediately available for employment in workshops and factories. To ensure that their ability should not be open to question, he proposed that the certificates should only be granted after the pupils had undergone a practical examination conducted by an employer or other person actively engaged in productive work and with an intimate acquaintance of the requirements, as regards labour, of the industry in question.

A general discussion followed with special reference to the type of man to be trained and Mr. Simpson and Mr. Mackenzie were strongly of opinion that there was a good opening in Madras in ordinary Mechanical Engineering for the type of man turned out by the Victoria Technical Institute, Bombay. Mr. Simpson having suggested that provision should be made for the training of both passed and unpassed candidates, it was pointed out that provision was made for the teaching of such men in the new Engineering College. The feeling was expressed that the men who would attend the Engineering College were only desirous of entering Government Service and would not be available for industrial work, it was further objected that the training which might be expected there would not be sufficiently practical to meet the requirements from an Industrial point of view, and that even the appointment of whole-time professors to teach mechanical subjects in the proposed Trade school would not be really satisfactory owing to their general lack of acquaintance with practical requirements.

The Chairman informed the Committee that the scheme he had so far outlined dealt not with higher Technological Education, such as he presumed was given at Bombay, but only with the lower type of Industrial Education, for the artisan and foreman. He proposed to the pupils of low or medium educational qualifications and give them a training which would make practical workmen of them; and to such as were intelligent and capable of assimilating it he would give sufficient theoretical training to qualify them as foremen. From the latter class, individuals could be selected for further training as Industrial School teachers.

Some members of the Committee spoke of the demand which existed for practical workmen and maistries in almost all branches of industrial work and especially in the Mechanical Trade, and Mr. James intimated that this type of man was to be catered for by classes in the new Engineering College. Mr. Hawkins and Mr. Green were convinced that men who would attend the Engineering College would not be practically inclined and would besides not be willing to take to industrial work unless higher salaries were offered and Mr. Mackenzie pointed out the need there was for men who could attend to and control a machine and keep it in constant working order.

Mr. James stated that no pretension was made that the Engineering College turned out geniuses only, but he did affirm that they turned out sound practical men. He had had no opportunity of comparing the result of their training with that given in Bombay, but he was confident that their passed man represented a good type of mechanical engineer.

19

The Chairman explained that Government desired the opinion of the Committee upon the policy of Industrial Education now under consideration and especially upon the questions of the effect of the re-organisation of schools, the suitability of the revised Code, the suitability of the Government Technical Examinations as a test of the practical capacity of pupils and, if necessary to devise a more suitable test, also the nature and location of a central school in Madras. He thought that a general discussion upon underlying principles would suffice in this Committee and Sub-Committees could be appointed to deal with details.

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Edwards

The Chairman proceeded to explain the proposed school system to be introduced in Madras and invited opinions as to whether it would be advisable at present to make arrangements to give higher Technological training.

Mr. James thought that no such provision need be made in the Mechanical Trades subjects as the higher educated type of man was catered for by the Engineering College.

Mr. Leech enquired as to the firms which would take apprentices and whether they would permit the apprentices to leave the works to attend lectures in the day time, and was informed that the question had been dealt with by a previous Committee and some information upon the point obtained, and no difficulty was expected as the time to be devoted to lectures would only be a few hours per week.

The Committee was of opinion that no provision need, at present, be made for technological training, but Mr. Simpson thought that it would be necessary to give every workman some theoretical instruction and not to restrict this only to foremen and apprentices.

With regard to the apprentice system Mr. Hawkins was not in favour of demanding any standard of general education qualification, but other members pointed out that unless some standard were demanded the apprentices could not take advantage of the course, would get no benefit from the proposed classes, and Government could not be expected to spend money on their training since neither Government nor the firms employing them could expect to get any commensurate return. Mr. Hudson thought apprentices might be admitted upon the recommendation of employers and the Chairman thought that, as the firms were prepared to take Government apprentices, others who were recommended by the firms might be given instruction, as incompetent men would not be recommended. As the firms would recommend men with a view to subsequent employment, they could be expected to recommend only such as held out promise of competence.

Mr. James enquired as to the type of examination it was proposed to introduce and whether the examinations were to be held annually. He was of opinion that the Government Technical Examinations, especially in the advanced grades, provided quite a good test.

The Chairman explained that there would be two Government Examinations, one to test the ability of the pupil as a workman, and another his capacity as a foreman. They would be held at the end of the respective courses. He was confident that the present Government Technical Examinations did not provide a satisfactory test and the main idea of the new scheme was that the test would be applied by people who were thoroughly conversant with the practical side of an industry and were capable of judging whether the pupil could be employed industrially.

Mr. Stewart thought it was distinctly advisable that the examinations should be independent of the schools.

Mr. James said that the Government Technical Examinations would serve the purpose if properly carried out, but Dr. Marsden thought that they could not be so good as the proposed Industrial Examinations as they took no account of the method of teaching and this was a matter of distinct importance.

Mr. Hawkins enquired how the practical examinations would be conducted and Mr. Shore observed that there would still be many candidates for the Government Technical Examinations; and wished to know what provision would be made to meet their requirements.

The Chairman explained how, under the scheme, a Board of Examiners might be appointed which would select capable men to report upon the candidates' work. The Examinations would be conducted in workshops under practical conditions and any certificate given would thus be a guarantee of the man's practical capacity and the thoroughness of his training. For those who still desired to get the Government Technical Examination certificates these examinations might remain, but as the Department of Industries had no control in the matter, he was not directly interested.

Turning to the question of stipends to pupils and the provision of hostel accommodation in Madras the Committee was against the provision of Government hostels, neither did it consider that general stipends to all students were to be recommended, but preferred that scholarships should be granted in individual cases. The Committee was also strongly of opinion that the system of apprenticeship in vogue in England was not applicable in this country.

When dealing with the question of the subjects to be taken up in the proposed Madras Trade school, and the provision of continuation classes, Mr. Hudson pressed for the provision of a course in General Building Construction. This was opposed on the ground that unless the instruction were thorough it would be of little value and further that such a course was already provided for in the syllabus of the Engineering College. Mr. Madeley did not think that any men from the Engineering College took service with private firms and that in many subject courses of extension lectures could be given with advantage.

C. Madras

Motor car Engineering had been suggested as a subject of instruction and Mr. Green pointed out that it would be better to separate such instruction into two divisions, one of Motor Car Driving, the other of Motor Car Fitting—after discussion, altered to Motor Car Work. It was then decided that only qualified mechanics should be admitted to classes in Motor Car Work. Other subjects of instruction were also discussed and afterwards a resolution dealing with these was framed.

In dealing with the question of school buildings, it was the general opinion that instruction in Mechanical Trade subjects should be given in a school at Washermanpet and that instruction in other trades and general subjects could be given at another branch school, for which the site proposed in the Poonamallee Road was, so far as the Committee could judge, the most central and suitable. Asked as to the length of time it would take to provide suitable buildings, the Chairman regretted his inability to make any estimate. If started in hired buildings, classes might be held in 6-9 months' time. The Committee thought that there would be some difficulty in finding suitable buildings which could be rented, and in which courses of extension lectures or continuation classes could be held, and desired to press upon Government the advisability of proceeding with any formulated building scheme as rapidly as possible.

Sub-Committees were appointed to draw up syllabuses and deal in general with the courses of instruction in the various subjects and the meetings of the Committee were adjourned until November 1917, the meeting being afterwards postponed until November 27th.

(ii)

Proceedings of the Employers Committee meeting, dated 27th November 1914.

P R E S E N T :

K. T. B. Tressler, Esq., *President.*
Dr. F. Marsden, *Secretary.*

Members.

Arthur A. J. Leech, Esq.
M. R. Ry. Rao Bahadur P. Thyagaraya Chetti Garu.
H. B. Peirce, Esq.
W. H. James, Esq.
The Rev. C. H. Hudson.
E. J. Hawkins, Esq.
C. B. Simpson, Esq.
N. Nadel, Esq.
E. D. Sampson, Esq.
R. B. Stewart, Esq.
H. A. Shore, Esq.

The minutes of the previous meeting having been read the Chairman explained that the business of the meeting was to consider the resolutions passed at the previous meeting and to revise them in the light of further information which he had been asked to collect. He had included in the Agenda certain general points dealing with the system of Industrial Education described in the Draft Code, so that the members interested in them might offer their opinion. They had been asked by Government to report on the question of curriculum, staff and the courses of studies. He thought this Committee was too large to consider these in detail and suggested that the work might be left to a sub-committee for report. To attempt the discussion of specific points of this kind in a general Committee appeared to him a waste of time. The first point on which we would like to have something definite decided was on the question of Technological Education. His proposal was to have nothing to do with Technological Education (except in Leather Work and Dyeing) and to send all candidates in other subjects to the Victoria Technical Institute, Bombay, for training.

Objection was raised by Mr. James to the Bombay Institute alone being specified. He expressed himself as being in favour of Sibpur.

Mr. Sampson wished to know what was the ultimate aim of the students who underwent training in the Victoria Technical Institute, Bombay, and was informed by the Chairman that the pupils from that institute usually found suitable work in mills or workshops at the end of their course.

Some discussion took place with regard to the character of the training, the standard required for admission and the difference between the standard and that for which provision was being made by the scheme proposed for Madras.

The Chairman pointed out that one of the great advantages of the Victoria Technical Institute, Bombay, was that it was under private management and was therefore free from the University "incubus."

Mr. Peirce was of opinion that the pupils possessing high educational qualification might be sent to any Technological College and not only to the Victoria Technical Institute, Bombay. The Chairman said it was immaterial what institute was selected: all he wanted was the view of the committee as to whether his proposal to leave Technological Education to others was approved.

Mr. James regarded the proposal as sound but did not consider that the committee need commit themselves to a definite recommendation regarding Technological Education and the committee generally endorsed the opinion.

Turning to purely Industrial Education the Chairman invited the opinion of the committee on the general points, which he had included in the Agenda.

Mr. Simpson did not think that any useful object would be served by discussing generalities. He desired that something definite should be settled concerning the Madras Trades school with regard to equipment, staff etc.

Dr. Marsden thought it would be necessary to arrange for the provision of full regular courses of instruction in certain subjects and, at convenience, giving such courses of extension lectures as should be found desirable.

The Chairman said that in his opinion it would be necessary first to define the scope of the school before specific points such as those the details of which were asked for by Mr. Simpson could be discussed.

Mr. Hudson agreed and thought that it would be sufficient if the committee were assured that sufficient equipment would be provided.

Mr. Thyagaraya Chetti was of opinion this question of equipment, etc., could best be dealt with by a sub-committee and recommended that the committee should meet again after the receipt of the report of the sub-committee.

The Chairman observed that a procedure of this kind would unduly prolong the meetings of the committee. He suggested as a more convenient arrangement that the scheme drawn up by the sub-committee should be circulated to the members of the committee for approval and remarks. After this had received the approval of the members a final report could then be submitted to Government without further meeting.

Mr. James thought that it would simplify matters if the Director of Industries drew up the scheme himself and this proposal was endorsed by the meeting.

The Chairman then invited the opinion of the committee as to the desirability of an Examination Committee to nominate examiners.

The Committee was of opinion that such a committee should be appointed.

Coming to the item in the Agenda referring to the character of courses of instruction the Chairman explained the difference between his Industrial School system and that proposed to be adopted in the Madras Trades school, including the nature of the extension lectures and the method of awarding certificates.

Mr. Peirce understood that the Trades school was intended merely for the practical workman.

The Chairman explained that the "Extension" lectures were intended to provide instruction for this class of man, but that another demand had to be met also and this would be done by means of the so-called Trade Instruction classes. There was no intention of providing complete courses of Industrial Education in the Trade school: the lectures would only be supplementary and pupils would in every case have to acquire their practical training in some outside workshop or factory.

On the item in the Agenda referring to regular courses of instruction the views of the committee regarding the general scheme of education were invited. The Chairman said that he included this item in the Agenda in order to give the members of the committee an opportunity of expressing their opinion thereon. As the committee had however expressed its inability to offer useful criticism this item might be passed over.

The reports of the sub-committee for the different subjects then came up for discussion.

The Chairman said that he had not yet received the syllabus for lace-making but the syllabuses drawn up by the other sub-committees appeared to him to cover the whole field of Industrial Education. The syllabuses were available for inspection, but probably the committee would prefer to read them through at their leisure and arrangements were being made to circulate them.

Regarding mechanical work Mr. Peirce said that the sub-committee had arranged their syllabus with the object of providing a practical demonstration course and not merely extension lectures as he understood that term.

The Chairman explained that what he was now trying to do was as far as possible to reduce the teaching both in Industrial schools and the Trades school to a common basis, so as to correlate the two kinds of instruction. The committee no doubt regarded the Trades schools as a unit complete in itself: the Chairman's idea was to make it also form part of his Industrial School system, so that pupils from such schools upcountry could, as part of the scheme of training, attend the courses of instruction given in the Trade school. As he had explained, the nomenclature and system of splitting up courses was a matter of detail that was not of much interest to the committee. What was being done with Mr. Peirce's syllabus was to divide it into two parts: one of a practical or demonstration character, the other of a theoretical character, the reason being that the latter course formed a part of the Industrial School course and the former did not. The character of the syllabus however was unchanged.

Mr. Hudson was in favour of separating the courses as suggested by Mr. Tressler.

Mr. Stewart did not consider practical courses to be necessary. In his opinion the apprentice would get all the practical training he required in the workshop.

Mr. Peirce did not agree with this view: he particularly emphasised the necessity for a practical or demonstrative course explanatory of the work done in the workshop.

The next point upon which the Chairman invited opinions was whether extension lectures should be certificated or not.

Mr. Peirce was of opinion that pupils attending the lectures should be granted certificates of proficiency.

The Chairman suggested that a certificate of attendance would be sufficient.

Mr. Peirce pointed out an attendance certificate would be useless for a pupil who wished to seek some employment. For instance a certificate of attendance of lectures in Motor-car driving would not be regarded as evidence of competence.

The Chairman explained that he particularly wished to avoid granting certificates of competences except for complete training. If men were given certificates for a single set of lectures, attendance at which did not necessarily imply efficiency, the value of the certificates given for complete training would be much reduced. The extension classes might be regarded as tutorial classes for the Journeyman's certificate. If, in addition to attending the extension classes a pupil had also put in the qualifying period of apprenticeship he could sit for the Journeyman's examination and obtain the regular certificate. This being the case he thought it would be unnecessary to award more than a mere certificate of attendance for the extension classes by themselves.

The question of site then came up for discussion.

Mr. James did not consider it was necessary at this stage to consider the question of the proposed Poonamallee road site. The previous committee had already decided in favour of the Washermanpet site and he thought that all instruction might be given there.

The Chairman pointed out that these proposals related only to mechanical trades. For subjects other than the mechanical ones the Washermanpet site was inconvenient. Mr. Fisher, for instance had declared in favour of the Poonamallee road for printing: that site was also much more central for carpentry and the building trades. It seemed clear to him that the Trades school would ultimately have to be divided between two centres and if so, there seemed little point in concentrating on one now. It would not be any cheaper to do all the work at Washermanpet than to do some there and some in Vepery.

The view that work should be started in both centres was adopted after further discussion. Mr. Peirce did not see why they should not adopt the proposals of the first committee.

The Chairman considered that the recommendation of the original committee had been adhered to as far as possible but that as the present scheme was a more comprehensive one than the first these recommendations were not altogether applicable. He then invited the opinion of the Committee on the question of levy of fees. Did they think eight annas a course was a reasonable charge? Mr. Nadel thought it was too little. Mr. Hudson suggested that Rs. 2 might be levied for a course.

After due consideration it was resolved that Rs. 1 a term for each course might be levied.

The committee then finally authorised the Director of Industries to draw up a scheme for the Madras Trades School for their scrutiny and passed the following resolutions:—

(1) This committee accepts the system of division (as suggested by the Director of Industries) of Technical Education into two classes of Technological and Industrial and approves of the Director's proposal to aim at the improvement of Industrial Education.

(2) This Committee having heard the report of the Director upon his visit to the Victoria Technical Institute, Bombay, is of the opinion that for the present the arrangements for dealing with any demand for Technical Education is adequate.

(3) With regard to regular and complete courses of training as given in the Draft Code this Committee is unable to express any opinion upon the value of the "Mechanism" proposed but lays stress upon the final examination tests being of such a character that the results will testify to the suitability of those who pass them for industrial employment. The Government Technical Examinations have not, so far as they deal with trades, supplied such a test and it is considered essential that in the examinations it is proposed to introduce the Examiners should be actively employed in the trade or profession in which they are examining.

(4) The committee is of opinion that the nomination of Examiners should be entrusted to a Board of Representative employers, to be presided over by the Director of Industries.

(5) The committee is of the opinion that regular and complete courses of instruction do not entirely provide for industrial requirements and recommends that "extension" courses should be provided in the Madras Trades school for subjects such as Fitting and Turning, Blacksmith's Work, Foundry work, Carpentry and joinery, Plumbing and sanitary work, brickwork and masonry, Electric Wiring and fitting, Motor-car work and Motor-Car Driving, Weaving and Dyeing, Metal work and Metal spinning.

(6) The committee further recommends that facilities should be provided for such general education, by means of evening classes, as may be necessary for a pupil to take advantage of the Trade school course, it being a condition for admission to the classes however that pupils should be *bona-fide* industrial workers or apprentices.

(7) The committee considers the proposed Washermanpet site to be the most suitable centre for the teaching of engineering trade subjects but it is of opinion that for general subjects another site would probably be more central and recommends that provision should be made in the Poonamallee High Road, adjoining the Director's Office, for another branch of the Trades school.

(8) The committee is of opinion that financial assistance may in some cases be necessary but instead of fixed stipends, it recommends the grant of scholarships to individual cases.

(9) The committee is not in favour of the provision of hostel accommodation in connection with this school.

(10) It is considered essential that for teaching purposes every effort should be made to secure the partial services of individuals possessing practical experience of the subjects they teach, and is of opinion that provided suitable remuneration be given it will in most cases be possible to arrange for the part-time services of individuals actually practising the trade to be taught. The committee regards it desirable to fix the permanent staff of the Trades School at the minimum possible limit. Except for the teaching of general literary and scientific subjects, it will in their opinion be unnecessary to employ any regular whole-time teachers.

(11) The committee anticipates that a considerable time may elapse before a building scheme in connection with these proposals matures and it recommends that, if possible, work should be started in a rented building. There appears however some doubt as to whether a suitable building will be available near either of the sites proposed for these trade schools and the committee accordingly recommends that permanent arrangements should be made as expeditiously as possible.

W. P. R.

22:
Revised

G.O. Mis. No. 1046, Home (Education), dated 3rd October 1916.

Read—the following paper:—

(i)
Letter—from M. E. COUCHMAN, Esq., I.C.S., Special officer, Department of Industries.
To—the Secretary to Government, Home (Education) Department.
Dated—Madras, the 15th September 1916.
No.—B-44.

I have the honour to report that I have at last found a suitable building for opening the Madras Trades school. It is situated at the corner of Angappa Naick street and Muker Nallamuthu street, George town, and will accommodate the two classes (plumbers and mechanics) with which I propose to start. The building is fitted with lights and fans and is in good repair. The rent is Rs. 125 per mensem. I have promised to let the owner have a reply within ten days. It will be taken on a monthly lease for the present.

2. I shall shortly submit the syllabus and other details about the classes for the approval of Government.

(ii)
Memorandum No. 3365-1, Home (Education), dated 20th September 1916.
With reference to his letter No. B 44, dated the 15th September 1916, Mr. Couchman, Officer on Special duty, Department of Industries, is requested to report at a very early date whether it is proposed to have a workshop as an adjunct to the Trades school at Madras and, if so, whether it can be located within the premises of the building selected by him. He is also requested to report whether the requisite plant is immediately available, and if not, whether the opening of the school and the taking of the building on lease should not be postponed.

P. RAJAGOPALA ACHARIAR,
Secretary to Government.

To M. E. Couchman, Esq., I.C.S., Officer on Special duty, Department of Industries.

(iii)
Letter—from M. E. COUCHMAN, Esq., I.C.S., Special officer, Department of Industries.

To—the Secretary to Government, Home (Education) Department.
Dated—Madras, the 23rd 27th September 1916.
No.—B 44.

In reply to memorandum No. 3365-1 of 20th instant, I have the honour to report that the workshop will be located in the school itself. The plant necessary can be procured locally almost at once. Consequently I hope to be able to open the school very soon, and solicit permission to rent the building from 1st proximo so that a beginning may be made in fitting it up.

Order—Mis. No. 1046, Home (Education), dated 3rd October 1916.

The Government approve Mr. Couchman's proposal to hire from the 1st October 1916, on a rent of Rs. 125 per mensem, the building selected by him in George town, Madras, for the location of the Trades school. He is requested to submit a reappropriation statement to meet the charge to be incurred during the current year.

(True Extract)

P. RAJAGOPALA ACHARIAR,
Secretary to Government.

To M. E. Couchman, Esq., I.C.S., Officer on Special duty,
Department of Industries.
,, the Financial Department.

V
Letter—from M. E. COUCHMAN, Esq., I.C.S., Special officer, Department of Industries.

To—the Secretary to Government, Home (Education) Department.
Dated—Madras the 25th September 1916.
No.—G. Cur. 4.

I have the honour to submit for approval the scheme for opening classes for practical instruction in plumbing and mechanical engineering.

2. Both Mr. Madeley, the Special Drainage Engineer, and Mr. Coats, the Municipal Engineer, tell me that these are the two subjects in which trade classes are most urgently required. The introduction of the new water-works and drainage works has created a demand for good plumbers, and the workmen who now call themselves plumbers are very often quite incompetent. One result of this is that connections are badly made and burst, entailing heavy loss to the private house-owner and waste of water. Mr. Coats has tried to establish a system of apprentices in the municipal workshops, but he meets with the difficulty that as soon as the boys under training have learnt enough to enable them to earn a living, they frequently leave him before completing the full course.

3. Only working plumbers and mechanics will be admitted to the classes it is now proposed to open. It is hoped that employers will allow them to attend at least one day a week in the working hours for which they receive pay. Those who attend regularly and receive a certificate of proficiency will, it is expected, get an increased rate of pay from their employers, and this will be a sufficient inducement to make them regular in their attendance. In course of time it may be hoped that none but certificated plumbers will be allowed to practise in Madras.

4. Mr. Fyfe's letter, a copy of which is enclosed, gives the particulars of the proposed courses. The lectures in plumbing will be given by Mr. A. Hillier, Sanitary Engineer of Messrs. Oakes & Co., a professional plumber brought out by them from England. Those in mechanical engineering will be given by Mr. W. H. Lockley, works manager of the Beehive foundry. They have agreed to accept a fee of Rs. 15 for each lecture of one hour's actual teaching, but they will, of course, have a good deal of preparation to do out of hours. The General Manager of Messrs. Oakes & Co.'s Engineering Department, Mr. W. H. Wilson, has very kindly permitted these gentlemen to undertake this work, and to let them off duty during working hours, if necessary, as well as any of their workmen who may be admitted to the classes.

5. Each lecturer will require a demonstrator to help him in the manual part of the teaching, and it is proposed to pay them Rs. 1-8-0 to Rs. 2 per lecture according to their qualifications.

6. Twenty students will be admitted to each class, and there will be two lessons a week in each subject.

7. The cost of the equipment for the plumbers' class will be Rs. 8,242, and for the mechanical engineering class the equipment will cost Rs. 1,975, and the recurring expenditure for both classes will be Rs. 8,172.

8. Provision having been made for a care-taker on Rs. 40 per mensem, I do not think that any superintendent will be necessary at present. The Director will be able to do all that is required, with the help of Mr. Fyfe, regarding whose employment I am addressing the Government separately.

9. The present scheme is experimental. I have limited the class to those subjects in which employers assure me that there is urgent need for instruction and for which competent professional lecturers are available, men actually engaged in practising their profession, this being essential to success. It has the further advantage that the lecturers will be in close touch with the class of men attending their classes, and know what instructions they need, and what they are capable of assimilating. Only experience can show whether a sufficient number of intelligent artisans will attend the classes, and whether employers will be able to allow them off work in order to attend, and whether night classes can be made a success in Madras, that is to say, classes in which the men attend out of working hours in their own time. On receipt of the approval of Government, I shall settle the times, etc., of the classes after advertising them in the press and consulting the leading employers.

P. Schuster

ENCLOSURES.

Letter—from W. FYFE, Esq., Instructor in Manual Training for European Schools.

To—the Director of Industries.

Dated—the 19th September 1916.

I have the honour to forward my suggestions for the establishment of a Trades school in Madras.

2. I suggest that in the first instance only classes in two subjects, mechanical engineering

Subjects.

Course of instruction.

Building.

consider the premises we inspected on Friday morning, 15th September 1916, suitable for the purpose.

3. I attach a schedule showing approximately the amount of money required to establish the

Machinery.

classes. I have not allowed in the first instance for any heavy machinery, as I consider that for a time at least quite valuable work can be done without expensive heavy machinery, requiring power to drive it, and presenting difficulties when the school is finally established in a building of its own and the plant has to be transferred. Some of the items allowed for may cost less than the amount estimated, but in establishing a new venture, which is largely experimental, it is impossible to calculate with the same accuracy as when dealing with existing institutions.

4. I should like the classes to meet twice a week and I consider that the employers might

Time-table.

co-operate to the extent of allowing the students time off duty to attend one lesson during working time. One lesson should, I think, be in the evening in the students' own time. It will, of course, be necessary to make the time-table suit the majority, but that can best be done after

Time-tables.

the employers have been circularized and the applications from intending students have been received.

5. With regard to the question of a drawing master, I consider that the lecturers had better

Drawing.

be left to teach what drawing their syllabus requires. The lecturers should, of course, be practical European British trained gentlemen who are actually employed in supervising or directing the work of the trade they are to teach.

Lecturers' qualifications.

Such gentlemen are in a position to know the students in their daily work, their faults and failings and the best means of improving their value as workmen. They are also more likely to influence the attendance of their apprentices and younger journeymen at such a class, and to take a more intimate interest in the results of their teaching than an outsider would. I recommend

Fee.

that a nominal fee be charged and that it be returned to the student if he makes 80 per cent of the possible attendances.

6. I should make the course one of 20 weeks at two lessons per week. If the classes are started

Length of course.

almost immediately, a twenty weeks' course would be completed within the present financial year—a consideration when estimating costs. The class should, for reasonable efficiency in teaching, be confined to twenty students in each class.

7. The instruction will have to be in English and it will therefore be necessary to insist

Numbers.

Language.

on a certain general educational standard. I suggest a standard IV pass, but I should allow the superintendent of the classes a fair amount of discretion when dealing with applications. Even with these conditions I am aware that the language will present occasional difficulties and occasions will arise when a few words in the vernacular will clear up knotty points and save confusing repetition. This difficulty can, I imagine, be met to a great extent by making each lecturer an allowance to pay a demonstrator, one of his own senior workmen whom he will bring with him to assist in demonstrating correct

C. A. Chubb

methods of handling tools and materials and to do any heavy hammering or filing or unclean work, which a lecturer could not be expected to handle with his workshop familiarity, unless suitably attired. Such demonstrators would interpret when necessary, and I think would be of valuable assistance to the lecturers in their work. The employment of such men does not imply that the lecturers will not be expected to do more than lecture. On the contrary, it should be distinctly understood that when the heavy machinery is installed, the lecturers will be required to personally demonstrate correct methods of handling and caring for such machinery and that for such lectures they will be expected to attend suitably attired.

8. Later on when the classes are firmly established I should like to start supplementary classes for such of the artisans as are unable to take advantage of a class where the teaching is in English. If the demonstrators are carefully selected, they may after gaining some experience be able to teach small classes of such men with quite valuable practical results, although not perhaps up to examination standard.

9. I have allowed Rs. 40 per month for a caretaker. This item may seem heavy as the man will not be fully employed. I propose however that the man appointed be an Anglo-Indian who will keep the store ledger, supervise the menial servants, keep the tools and plant oiled and in good order and generally make himself useful. If a Eurasian mechanic be appointed I think it will be possible to get a suitable man for the money, and it must be borne in mind that the greater part of his work will be outside class hours.

10. I have made no allowance for supervision but an organizer or superintendent will be required to attend to the organization, administration and departmental part of the work. The registers and store ledger, the rest of the clerical work will be better undertaken in your office. For the present a budget allowance will have to be made for

		RS.
Recurring expenditure as per enclosure (1)	...	8,172
Non-recurring expenditure	(2) ...	6,246

14,418

If the heavy plant be obtained now, the non-recurring expenditure must be increased by Rs. 6,520 making a total of Rs. 12,766—vide enclosure (2).

The budget allowance will then have to be:—

Recurring expenditure	...	8,172
Non-recurring expenditure	...	12,766
Organizing Superintendent?	...	

(2)
Recurring Expenditure.

	RS.
Two lecturers at Rs. 15 per lesson for a course of 20 weeks (40 lessons) ...	1,200
Allowance to each lecturer for one demonstrator at Rs. 2 per lesson ...	160
Rent at Rs. 125 per month for six months to end of financial year ...	750
Lights and fans, say, Rs. 40 per month for six months ...	240
Cleaning charges (two sweepers at Rs. 6 each per month) ...	72
One peon on Rs. 10 to March 1917 ...	60
Postage ...	50
Library books, etc. ...	200
Materials for plumbing class ...	400
" engineering class ...	400
" drawing class ...	400
Furniture, additions and repairs ...	800
Tools and plant ...	1,000
Workshop attendant and storekeeper (caretaker) on Rs. 40 ...	240
Contingencies ...	2,000
Advertisement charges ...	200
	8,172

(3)

Non-recurring expenditure.

	RS.
Furniture as per attached list, enclosure 5	1,600
Tools and plant as per attached lists—	
Enclosure 4, Rs. 1,075	
Do 3 „ 2,619	4,318
Do 6 „ 624	
Apparatus as per attached list, enclosure 7	328
Stationery obtainable from the Superintendent of Stationery	Nil.
Total	6,246

NOTE.—If the heavy machinery be indented for now, the total must be increased by Rs. 6,520 for the machinery detailed in Mr. Lookley's column 2, enclosure 3, making a gross total for non-recurring expenditure 12,766

Estimate for equipment for Mechanical engineering class, 20 students.

Articles.	Necessary.			Advisable.		
	RS.	A.	P.	RS.	A.	P.
One 22" Champion blacksmith's forge	96	0	0	96	0	0
One set of blacksmith's tools including hammers, hot sets, cold sets, top and bottom Fuller's firing tools, tongs of sizes C.I. Swage block and stand	125	0	0	125	0	0
One anvil (91 lb.)	30	0	0	30	0	0
1 Steel bar for chisels—say 1 cwt.	35	0	0	35	0	0
1 do. tools do.	35	0	0	35	0	0
One small Drummond treadle lathe S.C.	225	0	0	225	0	0
One 3" or 4" centre screw cutting lathe				1,875	0	0
One slotting machine				2,000	0	0
One drilling do.	650	0	0	650	0	0
One hand shaping machine 13"	450	0	0			
One power shaping machine				2,000	0	0
Twenty Bench vices 3" jaw, Rs. 20 each	400	0	0	400	0	0
Twenty hand hammers 1½ lb., Rs. 2 each	40	0	0	40	0	0
Two hacksaw frames with blades	15	0	0	15	0	0
Three dozen 10" flat files with handles, smooth.	45	0	0	45	0	0
Three dozen 10" flat files with handles, rough.	45	0	0	45	0	0
Three dozen 8" files ½ dia. S and R	13	0	0	13	0	0
One do. 10" „ ½ „ S and R	15	0	0	15	0	0
Half-dozen 8" files ½ square S and R	7	8	0	7	8	0
Half do. 10" „ ½ „ S and R	7	8	0	7	8	0
Small tools. Out and in calipers, squares, Divider's bevel gango	25	0	0	25	0	0
Flat steel for duplicating above say ½ cwt.	30	0	0	30	0	0
Set of drills for machine	15	0	0	15	0	0
16" grindstone in trough	30	0	0	30	0	0
Knery cloth of numbers, 4 dozen	5	0	0	5	0	0
Baiting for machines	30	0	0	150	0	0
Countershaft gear for power machines				450	0	0
3½ h.p. electric motor with starter and wiring, etc.				750	0	0
Sundries	250	0	0	250	0	0
Total	2,619	0	0	9,139	0	0

(5)

Plumbing equipment.

	Rs.
Two pipes at Rs. 18	36
Five plumbing sets at Rs. 60	300
Four sets stocks and dies at Rs. 100	400
Four pipe cutters at Rs. 6-8-0	26
Four pipe tongs at Rs. 14	56
One drilling machine (hand) at Rs. 35	35
Two melting pots and ladles at Rs. 13-8-0	27
Two do. furnaces at Rs. 42-8-0	85
Two ratchet braces and drills at Rs. 20	40
Two hacksaws at Rs. 5	10

Total ... 1,075

(6)

Furniture.

	Rs.
Twenty drawing desks at Rs. 12-8-0	250
Twenty chairs at Rs. 6-8-0	130
Four blackboards at Rs. 19-8-0	78
Four easels at Rs. 7-8-0	30
Four almirahs at Rs. 65	300
Two teachers' tables at Rs. 52	104
Four armchairs at Rs. 16	64
Three 8 feet benches with cupboards underneath at Rs. 107	321
Three 8 feet benches but open underneath at Rs. 60	180
Bath-room furniture	100
Sundries	113

Total ... 1,600

(7)

Woodworking tools for pattern making lectures.

	Rs.
Four double benches at Rs. 30	120
Eight vices for above at Rs. 13	104
Tools for above, Rs. 400	400

Total ... 624

(8)

Apparatus.

	RS.	A.	P.
Two sets blackboard instruments at Rs. 35	70	0	0
Twenty-two drawing boards at Rs. 3	66	0	0
Twenty-two tee squares at Rs. 1-8-0	33	0	0
Twenty-two pairs set squares at Rs. 1-8-0	33	0	0
Twenty-two protractors at Rs. 8	11	0	0
Twenty-two rulers (wood) at Rs. 8	11	0	0
Twenty-two pairs compasses at Rs. 10	13	12	0
Two sets teachers' instruments at Rs. 20	40	0	0
Sundries, Rs. 50	50	4	0

Total ... 328 0 0

Order—No. 1092, Home (Education), dated 17th October 1916.

The Government approve the scheme submitted by Mr. Couchman for opening classes in the Madras Trades school for giving practical instruction in plumbing and mechanical engineering.

2. Sanction is accorded to the employment in the school, for a period of six months to begin with, of a workshop attendant (and storekeeper) on Rs. 40 per mensem and a peon on Rs. 9 per mensem. The peon will be ineligible for grain compensation allowance.

3. The payment of fees to the lecturers and demonstrators at the rates proposed, is approved. Sanction has already been accorded to the hiring of a building on a rent of Rs. 125 a month for the accommodation of the school. The estimates as regards the other items of recurring charges and for equipment, amounting to Rs. 5,762 and Rs. 6,246, respectively, are also approved. Mr. Couchman is requested to submit a reappropriation statement to meet the charge to be incurred during the current official year.

4. The Government await detailed recommendations as to the fees to be levied from pupils attending the school, the syllabus of studies, and the certificates to be granted to the pupils at the end of their course.

A report on the working of the school should be submitted to the Government by the 1st March 1917.

(True Extract)

P. RAJAGOPALA ACHARIYAR,
Secretary to Government.

To M. E. Couchman, Esq., I.C.S., Special Officer, Department of Industries,
„ the Financial Department.

(EDUCATION)

G.O. No. 1092, 17th October 1916

Trades school.

Approving the scheme submitted by Mr. Couchman for opening classes in the Madras — for giving instruction in plumbing and mechanical engineering.

NOTES CONNECTED WITH G.O. No. 1092, HOME (EDUCATION),
DATED THE 17TH OCTOBER 1916.

[SUBJECT.—*Establishment of a Trades school in Madras.*]

From the Director of Industries, Madras, dated the 26th February 1915,
No. E. 44.

In 1911, Mr. Chatterton, the Superintendent of Industrial Education, submitted Pages 2 and 3 of G.O. 621, Educational, 5th September 1911. certain proposals for the improvement of the training of artisans in Madras by the establishment of a system of State apprenticeships and suggested the formation of a committee to work out details connected with the scheme. A committee was accordingly appointed in G.O. No. 23, Educational, dated the 16th January 1912, and the recommendations of the committee were received in February 1912. These were as follows :—

- (1) that it was desirable to establish a system of State apprentices among the engineering shops in the north of Madras;
- (2) that it was necessary to make some provision for technical training in a school outside the workshops;
- (3) that instruction should be given in the school to each boy on three days a week in the afternoons;
- (4) that the instruction should be in English and that the boys should possess such educational qualifications as to enable them to take advantage of it;
- (5) that the school should be established as near Basin Bridge station as a convenient site could be found;
- (6) that the management of the institution should be vested in a committee to be nominated by the Government and to be representative of the various interests concerned; and
- (7) that a fee should be charged for all apprentices.

When these recommendations were under consideration, the Government thought G.O. 780, Educational, 4th July 1914. that the scheme of State apprenticeships which related only to one subject, mechanical engineering, should be extended to other subjects also and that details of the apprenticeship system should be further worked out. In order to consider these matters, the Government appointed a committee of representative employers of labour and expert officers of the Government competent to advise on the several trades. The committee held its meetings towards the end of 1914 and the Director of Industries now submits the report and recommendations of the committee as well as the abstract proceedings of its meetings.

2. NOTES TO G.O. No. 1092, HOME (EDUCATION), 17TH OCTOBER 1916

G.O. 780, Educational, 4th July 1914.

2. The specific points on which the opinion of the committee was called for are the following:—

(i) *Subjects*.—Whether, in addition to mechanical engineering, the facilities for technical education in the school should not be extended to other branches of work also and whether the motor works should not be invited to co-operate in the scheme;

(ii) *Apprentices*.—How many apprentices each employer will be prepared to take, what rates of pay they will be willing to give the apprentices, and whether the Government help to the latter should be in the form of supplementary money payments or in kind, such as the provision of hostel accommodation and the like;

(iii) *Schools*.—How many apprentices should be admitted into the school, what rate of fees should be adopted with reference to the course to be introduced, what should be the curriculum of instruction to be imparted, the examination or tests to be prescribed at the end of the course, the staff necessary for the purpose and what the estimate of cost would be; and

(iv) *Accommodation*.—Whether the school might, pending the construction of a new building, be held in a rented building and whether, if the hostel system is recommended, a building could not be rented for the purpose and if not, what rate of payment should be made by the Government to the apprentices.

The proposals now received in respect of these points will be dealt with below.

3. *Subjects*.—On the first of the points mentioned above, the committee has expressed its opinion that the school should provide instruction in a number of subjects besides mechanical engineering. The subjects are enumerated in paragraph 8 of Mr. Tressler's letter and include motor driving and mechanism also. In regard to this recommendation Mr. Tressler states that it may not be possible to provide instruction in all the subjects from the very beginning. He, therefore, proposes to

- | | |
|----------------|-----------------|
| 1. Metal work. | 4. Tailoring. |
| 2. Brick work. | 5. Rattan work. |
| 3. Weaving. | |

omit some five * subjects for the present. As regards those to be immediately given effect to, he proposes to locate the classes in mechanical engineering subjects at

Washermanpet as proposed by the original committee of 1912 and also supported by the later one, and the other classes regarding motor mechanism and driving electric power, oil-gas and steam engines, carpentry, plumbing and sanitary work in Vepery near the present premises of the office of the Director of Industries. Mr. Tressler

states that the Washermanpet site is quite suitable for engineer apprentices, but is by no means central for individuals wishing to attend other courses and that it appears to be quite impracticable to concentrate all technical education in that one quarter. Hence another site is proposed for the other trade subjects. From the nature of the subjects selected and in consideration of those who would be apprenticed to firms in Mount Road the school at Washermanpet may not be convenient and the proposal to have a school in another quarter of Madras seems therefore acceptable.

The recommendation to locate the mechanical engineering classes at Washermanpet and the others in Vepery may be accepted.

P.R.—15-6-15.

4. The subjects to be taught in each of the centres and the nature of the instruction to be imparted are specified by Mr. Tressler in paragraph 9 of his letter. As

W.P.L.

2

the instruction is to be imparted to artisans actually engaged in the trades and as the pupils will not undergo a regular industrial school course but will only receive instruction *out of working hours*, the committee has recommended the provision of these classes which are of a specialized character. In printing trade alone, however, regular courses are proposed to be established at Vepery.

5. As regards the necessity for general education classes, it is submitted that Recommendation No. 4, paragraph 12, page 5 of G.O. 776, 24th August 1912. the original committee of 1912 recommended that instruction should be given in English and that the boys should possess such educational qualifications as to enable them to take advantage of it. The second committee recommends that facilities should be provided for such general education by means of evening classes as may be necessary for a pupil to take advantage of the trade school course, it being a condition for admission to the classes, however, that pupils should be *bona fide* industrial workers or apprentices.

Accordingly, Mr. Tressler proposes to provide general education classes of two different courses: one up to the fourth standard and the other up to the fourth form. These classes are to be held in the Vepery school. The standards proposed are those prescribed for admission to the journeyman's and craftsman's courses of industrial education in the Technical Education Code submitted by Mr. Tressler. This presumes that artisans, even without any general education, will also be admitted for study in the proposed schools.

6. In these arrangements two things come out prominently for consideration: one, the hours of instruction, and the other, the extent of general education to be given. As regards the first point, it is submitted that the main object of the present arrangement is that the instruction to be given at the school should interfere as little as possible with the regular work of the students in the workshops. The hours now proposed are between 7 to 8-45 in the mornings and between 5-30 to 7-30 in the evenings. The day hours are intended for those who *can* come out during working hours and the evening for others who cannot. It is estimated that the majority of the students will be of the latter description. In connection with the evening classes or classes out of workshop hours it may be of use to note what the previous committee of 1912 and Messrs. Atkinson * and Dawson * stated. The former observed as follows:—

* Officers deputed by the Government of India to enquire into the working of technical institutions.

"The committee do not think that evening classes would prove successful as it is hardly to be expected that apprentices after a full day at the works will exhibit that interest in the teaching which is essential to success. They also hold that early morning classes would probably cause too great a dislocation of the ordinary works routine and they conclude therefore that the classes should be held every afternoon, each apprentice receiving instruction for three afternoons a week."

Messrs. Atkinson and Dawson wrote also as follows:—

"After a long day's work in the Indian climate the Indian student is physically incapable of doing any serious work in a night school."

Paragraphs 35 and 36, page 11 of the report.

"In confirmation of this opinion it may be mentioned that some years ago the Victoria Jubilee Technical Institute, Bombay, started night classes for apprentices and workmen employed in the various mills, workshops, etc. There is a great deal of force in this. P.N.—15-6-16.

Every effort was made to render these classes attractive and efficient; it was, however, found that a very small number of those who attended were capable of taking any intelligent interest in the subject and the majority were unfit to carry on any continued mental effort. The classes were ultimately discontinued owing to lack of students."

W. Lee

In the face of those opinions it may be doubted whether the proposed arrangement of evening classes will work successfully. No doubt it may be arranged that no student who attends the morning class will have to attend the evening class also. In paragraph 10 of its report the second committee states—

"With regard to the Mechanical Trades in particular it is considered that the morning from 7 to 8-45 would be the most convenient time, the classes being so arranged that no apprentice will have to attend the school on more than three mornings a week. It may, however, prove necessary to provide evening classes also. Classes in the Printing Trades might also be held in the mornings but in all other subjects evening classes from 5-80 onwards would appear to be most suitable."

This arrangement is purported to be made in the interests of the students themselves but is apparently in the interests of employers also. Some of the latter are willing to allow their apprentices to attend classes during working hours, but the majority seem to be of the opinion that if mechanics want to improve themselves

Very doubtful indeed: but the experiment they ought to do so out of working hours. has to be made. It is doubtful whether, even if it is physically possible, the apprentices will be inclined to undertake the additional

P.R.—15-6-15.

mental exertion, which including the workshop hours may extend oftentimes to ten hours.

7. The circumstances above stated will apply with greater force to the proposed general education classes. With the technical classes, it will hardly be possible to make any advance in general education if the only available hours are the out-of-workshop hours. It is almost impossible to expect that under the arrangement any student will be able to attain the fourth form standard.

It is also a matter for consideration whether the general education evening classes, to be opened at Vepery alone, will ever benefit the mechanical engineering students attending the Washermanpet section.

I would rather omit the 'general education' classes completely. There is other provision now in Madras for 'general education.'

P.R.—15-6-15.

8. Mr. Tressler, however, himself admits that the whole thing is a tentative arrangement and a guess work. It is

Everything is tentative in this scheme. I would accept paragraph 9 of Mr. Tressler's report except in regard to 'general education' which may be left alone—at any rate for the present.

P.R.—15-6-15.

therefore for consideration whether the proposed arrangement may be allowed for the present. If it does not prove a success, Mr. Tressler will doubtless address for its revision.

9. *Apprenticeship system—Number of apprentices.*—The second committee was asked to work out details connected with the proposed apprenticeship system—please see paragraph 2 (ii) on page 2 *supra*.

As regards the number of apprentices each employer will be prepared to take, Mr. Tressler gives various figures quoted by the several firms. He, however, proposes to provide for classes of 20 pupils in each subject in the first instance. This proposal is, it is submitted, in accordance with the recommendation of the second committee, and may be accepted.

P.R.—15-6-15.

In regard to carpentry, however, Mr. Tressler states that there are no regular firms and that the apprentices will therefore have to work with small employers

Cannot be helped.

P.R.—15-6-15.

of labour.

Madras

10. *Rates of pay of apprentices.*—In respect of the question of the rates of pay that will be given to the apprentices by the firms, the committee does not furnish any

Quite so.

P.R.—15-6-15.

Paragraph 3 of His Excellency the Governor's note on page 13 of notes to G.O. 780, Educational, 4th July 1914.

P.R.—15-6-15.

scholarships in special cases should be given, the information above is not now necessary.

11. *Government assistance to apprentices.*—As regards the question of Government

These views may be concurred in.

P.R.—15-6-15.

Paragraph 4, page 3 of G.O. 776, Educational, 24th August 1912.

Mr. Tressler, however, later on reported that the payment of such stipends was objected to by employers as that would give the apprentices more than the

Paragraphs 2 and 5, pages 2 and 3 of G.O. 780, Educational, 4th July 1914.

Some inducement is probably necessary. But in view of the adverse recommendation of the committee, I would rather not force on any direct or indirect Government help. The scholarships in individual cases may be considered sufficient for the present.

P.R.—15-6-15.

It is not stated whether the number of scholarships available for technical education is consequently to be increased. Perhaps Mr. Tressler will address separately after the principles are approved.

Details relating to the school (paragraph 2 (iii), page 2 supra).

12. *Strength of the school.*—In regard to the strength of the school, Mr. Tressler proposes to admit for the present 20 apprentices in each subject in the school.

Fees.—As regards the fees to be charged, it is submitted that on this point the committee states that "although the question of the fees to be charged for admission to the classes is one of some uncertainty owing to the varying circumstances of workmen, the committee considers it eminently desirable to charge some fee, if only a small one, and suggests that at present an admission fee of Re. 1 should be charged for each course." The original committee considered As. 8 a month as a reasonable fee. The second committee

Paragraph 11, page 5 of G.O. 776, Educational, 24th August 1912.

P.R.—15-6-15.

belong to the working classes and that proposals for other inducements have been withdrawn it is not likely that any fees could be realized monthly even if levied.

P.R.—15-6-15.

The proposal of the second committee may be accepted for the present.

13. *Curriculum.*—As regards the curriculum of instruction to be imparted, it is submitted that Mr. Tressler has, with the aid of the committee, drawn up details of the courses in each subject and the curricula of instruction have also been prepared.

P.R.—15-6-15. These may, it is submitted, be accepted.

The period of training for each class has not been definitely laid down. From Chapter V, pages 75 and 76 of the Code, Vol. II. the tentative time-table submitted and from the Code it however appears that the period is likely to be one year generally and two years in some cases.

14. *Examinations.*—In respect of the examination or test at the end of the courses, it is submitted that according to the draft Code submitted by Mr. Tressler pupils who attend regular courses alone have examinations at the end of the courses. Those who attend only special classes such as the extension classes proposed to be opened in the Madras Trades school will have no examinations, and no certificates except certificates of attendance will be awarded to them. The apprentices who receive their practical training in the workshop and who receive further instruction in extension classes may apply for the "journeyman's" examination which is held twice a year in May and November and is conducted by a Board of Examiners appointed by the Government. In regard to this matter there was a discussion at the meeting of the committee. Mr. Peirce, one of the members, was of opinion that pupils attending the lectures should be granted certificates of proficiency. To this Mr. Tressler replied that he wished to avoid granting certificates of competence except for complete training and that, if men were given certificates for a single set of lectures, attendance at which did not necessarily imply efficiency, the value of the certificate given for complete training would be much reduced. He added that the extension classes might be regarded as tutorial classes for the journeyman's certificate and that if, in addition to attending the extension classes, a pupil had also put in the qualifying period of apprenticeship, he could sit for the journeyman's examination and obtain the regular certificate. This being the case he thought it unnecessary to award anything more than a certificate of attendance for the extension classes by themselves. It is submitted that, as the apprentices can obtain a certificate of efficiency after appearing for the journeyman's examination, the proposal of Mr. Tressler to award only a certificate of attendance to the pupils attending the extension classes may be accepted.

Paragraph 35 of Part III of the Code.

Paragraph 35 of Part III, page 43 of Code, Vol. I.

Paragraph 3 of Part III, page 33 of Code, Vol. I.

I agree.

P.R.—15-6-15.

Quite so.

P.R.—15-6-15.

P.R.—15-6-15.

15. *Teaching staff of the school.*—As regards the staff of the school, the committee of 1912 were of opinion that none of the firms in Madras possessed a sufficiently large European staff to make it possible for them to spare men for industrial purposes and it therefore recommended that

Paragraph 7, page 5 of G.O. 776, Educational, 24th August 1912.

the staff should be provided by the Government. In forwarding the report of the committee Mr. Chatterton stated that, as the school was to be established at Washermanpet by the side of the Leather

Trade school, it would not add greatly to the duties of the Superintendent of the latter institution to look after the technical classes proposed to be opened, provided suitable technical assistants were given for teaching work. The second committee however states that it is necessary to obtain the services of really industrially competent men as teachers, that is, men who have themselves had a thorough training and are

This view may be accepted.

P.R.—15-6-15.

time services of qualified men employed Mackenzie do not agree with this view.

I fear that there is a great deal in what Messrs. Simpson and Scott-Mackenzie says: but we may accept the opinion of the majority, so as to give the scheme a start

P.R.—15-6-15.

As regards the Principal of the school, Mr. Tressler has separately proposed that Dr. Marsden may be put in charge of the institution. He considers that there is not sufficient work for a full-time dyeing expert in Madura and that it would be advisable to fix Madras as the head-quarters of Dr. Marsden. The proposal is dealt with in another file.

16. As regards lecturers, Mr. Tressler states that the suggested rate of remuneration is Rs. 15 for 50 minutes, that is, one-hour lecture. For a series of lectures extending over one year the rate is said to be Rs. 750 per annum for two one-hour periods per week and Rs. 1,250 for four one-hour periods if given on two days or nights a week and Rs. 1,500 if given on four. For the courses proposed to be opened in the school at present Mr. Tressler calculates that the number of outside lectures of one hour duration is about 32 a week and that the total cost will be between Rupees

I would accept Mr. Tressler's estimate of Rs. 10,000 rising to Rs. 15,000 provisionally.

P.R.—15-6-15.

10,000 and Rs. 15,000 per annum. Mr. Tressler has apparently ascertained the rates by actual enquiry and it is for orders whether the estimate may be accepted for the present. With such a variety of subjects to be taught and the few hours every day to be devoted for instruction, it may be desirable and economical to arrange for part-time lecturers if they could be secured. Considering, however, the quality of the materials which will be available as students it is doubtful whether the engagement of high class lecturers who can only handle the subjects in English will not lead to the delivery of lectures which may be over the head of several of the students. It may perhaps be sufficient if qualified assistants could be procured for the purpose and in that case a high rate of Rs. 15 per lecture may not be necessary.

17. Besides the above part-time lecturers the following permanent staff is proposed for the general education classes :—

	Average.
	RS.
One head teacher on Rs. 50—2½—70	62½
One teacher on Rs. 35—2½—50	44½
One drawing master on Rs. 35—2½—50	44½

If the "general education" classes are given up, this expenditure will not be necessary.

P.R.—15-6-15.

* G.O. 1191, Educational, 22nd October 1914.

Total cost of the permanent establishments—

	RS.
One head-master	62½
One teacher	44½
One drawing master	36½

Total .. 144; or
1,730 per annum.

As regards these scales, it is submitted that the two teachers who will have to teach up to and inclusive of the fourth form standard may be allowed the rates of pay proposed by Mr. Tressler. As regards the drawing master it is submitted that the scale of pay allowed for the similar teacher in the Madura Technical institute * is Rs. 30—2—40. The same scale may be adopted here also.

18. *Establishment.*—Mr. Tressler proposes to have the following establishment :—

	RS.
One head clerk on	50—5—70
One despatching clerk on	25—2½—35
Three peons on	10 each.

As regards these scales, it is submitted that certain standard scales were sanctioned for the clerks and menials in the Department of Industries in G.O. No. 1191, Educational, dated the 22nd October 1914. If these scales are adopted in the present case also, the establishment will be as shown below :—

	Average.
	RS.
One head clerk on Rs. 50—4—70	65
One clerk † on Rs. 25—1—35	31½
Three peons † on Rs. 10 each	30
	126½ or 1,520 per annum.

† Without grain compensation allowance.

Yes.

P.R.—15-6-15.

It is submitted that the above scales which have been adopted in the case of the other sections of the department may be adopted in the present instance also.

‡ Mr. Tressler states the receipts will not exceed Rs. 500 per mensem, paragraph 18, page 6, current file.

This figure—Rs. 15,000—may be accepted provisionally.

P.R.—15-6-15.

	RS.
§ Outside lecturers	15,000
Permanent staff	1,730
Clerical and menial	1,520
Materials	15,000

Total .. 33,250

19. Mr. Tressler has provided a sum of Rs. 15,000 per annum for materials. No details are given for this allotment and no receipts are estimated for. If this figure is accepted, the total recurring expenditure involved is Rs. 33,250. §

20. *Accommodation and equipment.*—When the first committee's report was under consideration, His Excellency the Governor noted that the starting of the school should not be delayed for the completion of an elaborate building scheme and that it ought to be possible to obtain by loan or hire adequate class room accommodation while plans were being matured for a comprehensive technical institute. His Excellency also observed that, in the case of mechanical engineering, which was to be begun with, no difficulty would arise in making such a temporary arrangement for accommodation, as room would be required only for theoretical instruction and as practical instruction was to be given in the shops where the apprentices worked. The second committee also considered this question of accommodation and in the abstract proceedings it is stated:—

"In dealing with the question of school buildings, it was the general opinion that instruction in mechanical trade subjects should be given in a school at Washermanpet and that instruction in other trades and general subjects could be given at another branch school for which the site proposed in the Poonamallee Road was, so far as the committee could judge, the most central and suitable. . . . The committee thought that there would be some difficulty in finding suitable buildings which could be rented and in which courses of extension lectures or continuation classes could be held and desired to press upon Government the advisability of proceeding with any formulated building scheme as rapidly as possible."

In accordance with this suggestion Mr. Tressler now submits proposals for the construction of new buildings. He states that for the present there will be required—

at Washermanpet—

one workshop and two class rooms and

at Vepery—

two workshops and four class rooms.

In a separate letter submitted by him he has estimated the cost of constructing new buildings at Washermanpet at Rs. 40,170. He states that only a portion of this amount, viz., Rs. 20,000 is debitable to the trades school and the balance would be debited to the Leather school as increased accommodation would be provided for it also.

As regards the Vepery school, he states that if the new buildings proposed for his office are constructed, a portion of his office buildings might be used for the location of these classes and that his workshop might be utilized for instructional purposes if

K | classes are held in the evening. According to the tentative arrangement two additional buildings costing about Rs. 24,000 will suffice. In regard to permanent arrangements it will be necessary to acquire the adjoining Friend-in-Need Society's property and to locate in it the proposed Normal Training school as it will have the Trades school as the Model school to the training classes and in that case he states that a sum of Rs. 60,000 will be debitable to the Trades school. It is submitted that

I agree.
P.R.—15-6-15.

Quite so.
P.R.—15-6-15.

Mr. Tressler may be instructed accordingly.
P.R.—15-6-15.

the question of constructing new buildings for the office of the Director of Industries on the Poonamallee Road site has itself not yet been decided and a final report from Mr. Tressler is being awaited. It is therefore too soon to consider the question of locating further additional buildings on that site; and pending decision of that question it is doubtful if the proposals for the construction of buildings for the Vepery school should now be considered by the Government. Further, it is highly improbable that under the present financial circumstances large funds will be made available for any comprehensive building scheme at present and it is therefore for consideration whether Mr. Tressler should not *again* be asked to endeavour to start the proposed classes at Vepery and Washermanpet in some rented building as a temporary arrangement, meanwhile getting the detailed plans and estimates ready for his building schemes, to be submitted to the Government on a decision having been arrived at regarding the site for his office.

21. In paragraph 13 of his letter Mr. Tressler has also given an approximate estimate of the cost of *equipment* of the schools. This amounts to Rs. 29,610. It is not known whether all this expenditure will have to be incurred if the schools are started in rented buildings. Some expenditure will anyhow have to be spent on equipment immediately.

22. *Cost of the scheme.*—The total approximate cost of his proposed scheme is as follows:—

		RS.
	<i>Recurring.</i>	
Teaching staff, establishment and materials	.. ..	33,250
	<i>Non-recurring.</i>	
		RS.
The ultimate cost of the building scheme at Washermanpet is Rs. 40,170.	Buildings { at Washermanpet 20,000	} .. 44,000
	{ at Vepery 24,000	
The ultimate cost of the building scheme at Vepery is Rs. 60,000.	Equipment	29,610
	Total	1,06,860

23. There is still one other matter which does not appear to have been discussed by the committee, viz., the question of compelling the apprentices to complete their training. Mr. Tressler states that both the committees which considered the scheme agree that it would be advisable to devise some means (in the nature of indentures) which would ensure the completion of the training. Beyond this nothing is stated about the point either in the committee's report or in Mr. Tressler's letter. When the scheme was last under consideration the Secretary (the Hon'ble Mr. Davidson) noted that the legal difficulty of applying the Apprentices Act, 1850, to the scheme would be insuperable. Under the second committee's report there is to be no

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general pecuniary assistance from the Government to the apprentices. It is
This point may be reserved for consideration. P.R.—15-6-15. therefore not clear how the apprentices
can be forced to complete their training.

24. The file may, it is submitted, be sent to the Financial Department for
examining the financial part of the scheme.
S.K.—11-6-15.
C.R.—12-6-15.

P. RAJAGOPALA ACHARIYAR—15-6-15.
To the Financial Department.

FINANCIAL DEPARTMENT.

This case relates to the scheme regarding the establishment of a Trades school
in Madras. The question of the improvement of industrial education in the north
of Madras has been engaging the attention
G.O. 274, Educational, 12th May 1911. of Government since 1911. When
G.O. 730, Educational, 4th July 1914 (pages the question was last referred to Financial
3 and 4 of notes). the proposals were for—

(i) the establishment of State apprenticeships among the engineering shops in
the north of Madras, a rough scheme of which was then submitted to Government ;
and

(ii) the opening of a Technical school for the apprentices, proposals in regard
to which were to be submitted.

The outlines of the schemes were generally accepted in Financial. Subsequently
Paragraph 3 of His Excellency's note, 2nd a question arose whether in addition to
June 1914, on page 13 of notes to G.O. 780, mechanical engineering, referred to
Educational, 4th July 1914. above, facilities for technical education
should not be extended to other branches

of work. The Government accordingly appointed a committee to advise in detail on
the general question mentioned above and the present proposals are made with
reference to the recommendations of this committee.

2. The proposals now submitted are generally as follows :—

(i) That classes in the technical subjects should be held not only in the north
of Madras at Washermanpet but also in the south at Vepery. Educational Department
approve of this proposal.

(ii) The subjects in which instruction is to be given are those detailed in
paragraph 9 on page 3 of current file. Educational approve all the subjects except
classes in general education for backward pupils which the Educational Department
consider to be unnecessary.

(iii) That in regard to apprentices no assistance from Government nor provi-
sion of hostels for them is necessary, except scholarships which Mr. Tressler considers
should be given in special cases. Details in regard to this system of scholarships have
to be worked out later on. Educational Department accept this proposal.

(iv) That in respect of fees an admission fee of rupee one only is to be charged
for each course. The strength of each class is to be 20 and the Director anticipates
receipts amounting to Rs. 500 per annum.

The conclusions of the Educational Department on all the above points may, it
is submitted, be accepted.

3. Turning now to the details of expenditure it will be seen from paragraphs 19
and 22 of the Educational Department notes ante that Mr. Tressler's proposals involve
a recurring expenditure of '35 lakh per annum and a non-recurring expenditure on

12 NOTES TO G.O. No. 1092, HOME (EDUCATION), 17TH OCTOBER 1916
accommodation and equipment, for the present, of 0.74 lakh. They are examined below:—

Recurring expenditure.—The proposals are—

- (a) That Dr. Marsden, Dyeing Expert, Madras Technical Institute, be transferred to Madras, which will be in future his headquarters; and that he be appointed Principal of the Trades school.

Extra cost
per annum.
Rs.

Not known
(apparently
nil.)

Educational state that this question is under separate consideration.

- (b) That part-time lecturers be appointed from outside to lecture on technical subjects: the rate of remuneration being for single lectures Rs. 15 for 50 minutes—one hour lecture: for a series of lectures extending over one year, the rate will be Rs. 750 for two one-hour periods per week; Rs. 1,250 for four one-hour periods if given on two days or two nights a week; and Rs. 1,500 if given on four: number of outside lectures of one-hour duration is about 32 a week: cost estimated at ..

10,000
to
15,000

Educational Department approve of this proposal.

- (c) That an office establishment costing Rs. 120 per mensem or Rs. 1,440 per annum as per details in the margin be appointed

1,520

Educational Department approve of this proposal, subject to alterations noted in margin, cost

- One head clerk (50—4—70).
One clerk (25—1—35) } without grain compensation allowance.
Three peons (10) each } Rs. 126 $\frac{2}{3}$ per mensem.

- (d) That an expenditure of Rs. 15,000 per annum on materials for the schools be incurred

15,000

Educational Department approve of the expenditure provisionally.

Total .. 31,520

Items (a) and (d) do not, it is submitted, call for remarks. It seems impossible to criticize item (d) at the present stage.

Item (b).—The expenditure proposed may, it is submitted, be accepted as an estimate only. It is presumed that Mr.

Yes, as an estimate, but each case will require
to be sanctioned separately.

K
L.E.K.

Tressler will submit for the orders of Government the case of each part-time officer whom he proposes to employ and

the amount of the remuneration to be given to him. Attention is solicited to the correspondence in G.O. Nos. 98-99, Educational, dated the 1st February 1915, regarding the appointment of Mr. Lubber as Pencil Expert in the Industries department. This officer was first employed by Mr. Tressler on his own authority on daily wages of Rs. 10 a day. It was subsequently found that the sanction of the Government of India was necessary to his appointment under article 773 (a) of the Civil Account Code and it was obtained. In view of

G.O. 234, Educational, 1st March 1915.

this, it seems, it is submitted, necessary to adopt the procedure at K and to retain in the hands of Government the power of fixing the remuneration of each officer to be employed.

Item (c).—Please see page 33 of G.O. No. 1191, Educational, dated 22nd October 1914, regarding scales of establishments sanctioned for the clerks in the various sections in the department of Industries. As the Trades school wants only a staff of

D. S. L.

two clerks, and as one of them is only for despatching work it is for orders whether the following scale may not be adopted and whether they may not all, for the present, be on a temporary footing :—

	Scale proposed by Educational.		Scale suggested in Financial.	
		Cost per mensem.		Cost per mensem.
		RS.		RS.
One head clerk			One clerk*	
(50—4—70) ..	65		(35—2½—50) ..	46
One clerk			One clerk*	
(25—1—35) ..	31½		(20—1—25) ..	23½
Three peons (10) ..	30		One peon (10) ..	10
			Two peons (9) ..	18
Total ..	126½		Total ..	97½
		or Rs. 1,520 per annum.		or Rs. 1,178 per annum.

A.B. (The second clerk and the peons are to be ineligible for grain compensation allowance.)

* Cf. establishment item (ii) (c) in Madras Technical Institute on page 33 of G.O. 1191, Educational, 22nd October 1914.

[The general instruction establishment costing 152½ per mensem is proposed by Educational to be negated—paragraph 17 on page 8 ante.]

4. *Non-recurring expenditure.*—The expenditure under this head is composed of two items, viz. (i) equipment and (ii) accommodation. In regard to equipment, the Educational Department propose to accept provisionally the estimate of Rs. 29,610

As an estimate. We must have details later on. framed by Mr. Tressler. The expenditure of (roundly) 30 lakh on this item may, it is submitted, be accepted in Financial.

L.E.K. *Accommodation.*—Please see paragraphs 11 and 18 on pages 3–4 and 6 of current file and paragraph 20 of Educational department note on pages 9 and 10 ante. Mr. Tressler proposes the construction (i) at Washermanpet of buildings for both the Trades school and Leather school at a cost of 40 lakh of which portion debitable to former is 20 lakh and (ii) at Vepery † of buildings for the Trades school and the Normal Training school at a cost of 1.20 lakhs of which portion debitable to Trades school is 60 lakh. The Educational Department propose to disallow, for the present, the large building programme and to ask Mr. Tressler to start the schools at the two places in rented buildings as a temporary arrangement. This may, it is submitted, be accepted in Financial.

† As a tentative measure Mr. Tressler proposes to have two plain buildings with corrugated iron roof costing about Rs. 24,000.

L.E.K. 5. *Provision of funds.*—Mr. Tressler has stated that during 1915–16 only capital expenditure on account of buildings and equipment need be met and that regular classes can only be begun about June 1916. As expenditure on buildings is proposed to be disallowed, expenditure on account of equipment alone (30 lakh) will have to be incurred immediately; and there seems to be ample time to get the equipment materials as the classes are to be started in June 1916 only. As there is no provision in the budget estimates for 1915–16 for these charges, Educational Department

The classes may start earlier as the buildings are to be postponed.

L.E.K.

But

ment may, it is submitted, be informed that if any expenditure on equipment for the Trades school is to be incurred in the current year the charges will have to be met by reappropriation.

L.E.K.

T.E.N.N.—23-6-15.

A.S.—29-6-15.

We can accept these proposals as estimates—detailed expenditure will have to be sanctioned separately.

L. E. KERSHAW—2-7-15.

It is impossible upon these papers to determine what the ultimate cost of these proposals is likely to amount to.

As I understand the scheme contemplates imparting by means of morning and evening classes—

- (1) trade instruction in the elements of certain handicrafts and mechanism;
- (2) extension or continuation teaching to artisans who wish to know more about their particular jobs;
- (3) theoretical instruction in mathematics, electricity, etc., and further, by means of a special permanent staff; and
- (4) general instruction.

The Educational Department has eliminated (4) as unnecessary and it seems to be necessary to decide at this stage whether the rest of the system cannot be reduced and simplified. In the first place is it necessary to distinguish between trade instruction and extension classes? Is not "trade instruction" a thing to be given in a regular industrial or technical school and is it not proper, in the case of these morning and evening classes, to cater only for the wants of the man who needs only to learn something more about his own special trade?

May we not omit from this scheme altogether the head "trade instruction"?

Then, further, may not the list of extension classes be reduced? May we not for the present omit "plumbing and sanitary" work and perhaps "carpentry, joinery and cabinet-making"? Finally, is it necessary at this stage to hold "theoretical classes" in the seven subjects mentioned on page 3, current file.

I suggest that the whole scheme should be cut down as much as possible because its success is, to say the least, uncertain, because we are bound therefore in Financial to see that no very large sum is spent on it at the outset and because it is questionable whether there will not be great difficulty in procuring competent teachers.

In fact the want of trained teachers, a want which cannot be supplied for some years to come in any case, is as likely to wreck the scheme as anything.

We may readily assent to pay such teachers as may be forthcoming Rs. 15 per lecture or whatever may be necessary to get good men but it seems to me highly desirable that the number of subjects to be taught at the start should be considerably reduced and that the subjects elected should, in the first instance, be such as can be taught at Washermanpet so that Government may not be let in for building at both that place and Vepery. Later on, when the Director's office is enlarged and room for classes is thus provided, the scheme can be extended to embrace classes at Vepery also. Financial of course agrees with Educational that building ought, if possible, to be avoided altogether and that Mr. Tressler should be required to satisfy Government that no rented building, can be got before anything is spent even at Washermanpet on raising a building.

The scheme of scholarships is not worked out and it is impossible to express approval or disapproval of it. But, if the general plan is for the present to be restricted to offering to artisans special instruction in their own particular trades, it is not apparent why Government should undertake to give any scholarships at all.

The papers should go to Honourable Member, Financial, but perhaps Educational would let me see the file before it goes in circulation if they have any further remarks to offer.

A. BUTTERWORTH—3-7-15.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

The points raised in the Chief Secretary's note on page 14 supra are noted on briefly below :—

(a) *Separate classes in "Trade instruction" and "Extension" courses.*—Chapter IV of Part III of the Technical Education Code submitted by Mr. Tressler deals with these special classes. These are, it is submitted, classes which do not come under the regular courses of instruction in industrial schools. According to the Code, "trade instruction" classes are elementary practical classes in handicraft for individuals desirous of learning something about a trade they are not actually engaged on, while "extension" classes are practical classes of a more specialized character intended for and open only to individuals who are already practically engaged in the trade to which the teaching applies. The committee of employers of

P.R.—9-7-15.

labour which considered the scheme have recommended that provision should be made for both these kinds of courses. The committee states that there is a demand for trade instruction. It is for

consideration whether Mr. Tressler may be asked to state whether these may be omitted for the present.

(b) *Reduction in the number of subjects to be taught in the school.*—It is suggested that the subjects selected for teaching should in the first instance be such as can be taught at Washermanpet and that the scheme may be extended to embrace classes in Vepery later on. According to the scheme, mechanical trades subjects are to be taught at Washermanpet and the other subjects at Vepery. It is

Please see the demi-official from the Superintendent of Industrial Education on page 10 of notes to G.O. 780, Educational, 4th July 1914.

Paragraphs 1 to 3 of His Excellency the Governor's note on page 13 of notes to G.O. *ibid.*

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suggested that it would be worthwhile to see whether the motor shops in the Mount Road would join in the scheme of apprenticeship proposed. The committee which was appointed subsequently to work out details connected with the scheme considered

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the above points. There are several subjects including motor-car work and motor-car driving which the committee recommended should be taught in the school. Mr. Tressler has omitted a few of these and has suggested that the remaining subjects should be taught, some at Washermanpet and some at Vepery, from the very beginning. It is

for orders what subjects should be taught in the school at the start. The introduction

of plumbing and sanitary work class seems to be desirable in view of the large demand that exists in the service of the Corporation and other local bodies for qualified men for water and drainage works.

Carpentry also commands great demand. If in view of the fact that there are other places where this could be taught, it is considered that it may be omitted, there would seem to be no objection. But Mr. Tressler may be consulted.

It is submitted in this connection that besides the courses mentioned in the Chief Secretary's note on page 14 supra, Mr. Tressler has also proposed that regular printing courses should be provided for at Vepery. There are technical classes in compositor's work and other branches of printing and book-binding in the Government Press at Madras. It is understood that these classes are held out of working hours and that the employees of the Press hold these classes for a few hours every week. Teaching grants are given by the Director of Industries to remunerate the teachers in these classes.

Page 27 of G.O. 1030, Educational, 1st September 1914.

Page 24 of G.O. 1030, Educational, 1st September 1914.

Paragraph 12, page 5 of G.O. 1433, Public, 7th November 1914.

Paragraph 12, page 5 of G.O. 1433, Public, 7th November 1914.

I should think so.

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(c) *Necessity for the award of scholarships.*—Please see paragraph 11 of note on page 5 supra. It has been held up to this that some special inducement will be necessary to induce the artisans to attend these classes. But the present committee have stated that no general stipends are necessary from the Government but that selected pupils should be awarded scholarships. It is doubtful whether these latter may also be dispensed with. Mr. Tressler has not stated whether any special allotment will be needed on account of the scholarships or the usual provision for this item will meet the expenditure.

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2. The Financial Department also suggest that instead of an establishment consisting of two clerks and three peons proposed by Mr. Tressler and accepted by this department it may be sufficient to employ one clerk to look to the correspondence work of the school. It is doubtful whether the employment of a clerk alone will be sufficient for the school. Registers and accounts will have to be maintained, correspondence will have to be carried on with employers and firms where apprentices undergo practical training and the school which will contain materials and machinery may have to be watched. The suggestion of Financial may, however, be put to Mr. Tressler.

P.R.—9-7-15.

But if two schools have to be started two clerks may perhaps be necessary—one for each; similarly at least two peons. The idea of the clerks working only at the central office may not work well, especially as the tutorial staff will all be on the temporary basis.

Approved.

P.R.—9-7-15.

P.R.—9-7-15.

3. Subject to approval a draft demi-official on the lines of the Chief Secretary's note is submitted below.

4. The question of the abolition of the general education classes has not been referred to in the draft.

S.K.—8-7-15.
C.R.—8-7-15.

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I hardly think that the scheme could be cut down to the extent contemplated by
Financial; but the reference may issue.

P. RAJAGOPALA ACHARIYAR—9-7-15.

Semi-official—from the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR
Avargal, C.I.S., Secretary to Government, Educational Department.

To—K. T. B. THRESSLER, Esq., Director of Industries.

Dated—Ottacam and, the 9th July 1915.

No.—745-2 Edl.

With reference to your letter No. E. 44, dated the 26th February 1915, regarding the
establishment of the Madras Trades school, I am to enquire whether, in view of the fact that
the whole scheme is of an experimental character, it may not be sufficient for the present to
confine attention to the extension classes and to such subjects as could be arranged for at
Washermanpet. The Government would be glad to have an approximate estimate of the
expenditure contemplated in respect of the grant of scholarships and some further justification
for such grant. I am also to ask whether the clerical establishment proposed may not be
reduced to one clerk to be attached to the Central office, whether the establishment of peons may
not be omitted and whether the proposed school may not be located for the present in a rented
building at Washermanpet.

17
✓
Revenue

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.*To*—the Hon'ble O. G. TODHUNTER, I.C.S., Acting Secretary to Government, Educational Department.*Dated*—Madras, the 31st July 1915.*No.*—B. 44.

From Rajagopal Achari's demi-official No. 745-2, Educational, dated 9th July, I understand that Government do not at present wish to commit themselves to the general scheme of trade training. In submitting my proposals I had to express the views of the committee convened to consider this matter and the committee's opinion was that a general scheme embracing a large number of trades should be started at once. If, however, Government wish to take up only a part, I would suggest that, to begin with, the mechanical section be started at Washermanpet since this section has been under consideration for the longest time. If work is limited in the manner proposed, it would of course be unnecessary to have the whole clerical establishment provided for in my scheme and one person would be sufficient to look after the premises.

2. To this extent it is possible to give effect to the views of Government but I have been quite unable to discover any suitable accommodation available for rental. For one thing, Washermanpet has, after mature consideration, been selected as the most suitable centre (after Vepery) and it would be necessary therefore to have this school somewhere near Washermanpet. That is, at least within easy reach of railway and tram. I have looked through this district with considerable care and I am unable to find any building providing the facilities required. If the mechanical section is to be started, machinery and fittings must be installed and therefore a considerable amount of accommodation is required. In my proposals I provide a room 60' x 30' for a mechanical shop and I think this is the absolute minimum. Again at least 12' of head room is required in order to fix shafting and this head room is not available in any of the buildings I have seen. It might be possible to throw 3 or 4 small rooms together but this will cost a good deal of money, take a good deal of time and would not do away with the difficulty regarding head room. Again, one of the most essential features of the scheme is the drawing office which must be a spacious and well lighted room.

3. I am unable therefore to think of any rented building which would be suitable for the purpose we have in view. Moreover, I have to explain that at the time the tannery plans were drawn up, the prospect of a technical school being constructed on an adjoining site was kept in view and no provision was therefore made in the tannery itself for laboratories. To begin with, some of the rooms intended for other purposes have been utilised as laboratories so as to make it possible to start at once but this arrangement is only a temporary one and as time goes on, the accommodation thus occupied will be required for the purpose for which it was originally intended.

4. On account of the war I am afraid that it will not be possible to start the mechanical section this year for the simple reason that I do not think the machinery required can be obtained. As I have said, a part of the proposed technical school is, in any case, required in connection with the leather trade school and it seems to me best therefore to make a start with the buildings anyhow. I have submitted in my No. E. 44, dated 28th February 1915, the plan for the Washermanpet technical school showing the accommodation it is proposed to provide to begin with. I enclose a blue print copy of the plan for reference. The estimated cost for the two storeys is put at Rs. 34,770 but if this amount is too much, we might start by building the lower storey only.

5. As regards scholarships, the views of the committee was that it was undesirable to give scholarships or stipends: that, on the other hand, every effort should be made to charge fees. At the same time it was felt that it would unduly handicap the management of the school if a definite scale of fees was at once enforced. The committee also felt that in certain cases scholarships would be necessary as for instance when a student comes from the district to Madras for training and has to find his own board and lodging. These scholarships, I take it, would be confined to pupils of my industrial schools in the district and would therefore be paid out of the scholarship allowances provided for privately managed industrial schools. They would not therefore appear as a charge on the trade school.

6. It is however quite impossible at the very start to say how the scholarship system will develop: all I can say is that I shall make every effort, to begin with, to avoid giving financial assistance and even to obtain fees and it would be only after this system has received a fair trial and found to be unworkable that I would consider the question of scholarships.

1. *Capital.*—

One two-storeyed building at Washermanpet = 3,660 square feet @	Rs.
Rs. 9 8 0 per square foot	34,770

Note.—

If desired, only one storey may be constructed to begin with reducing the cost to 20,000

2. *Equipment.*—

As Mr. Pierce's estimate 9,000

3. *Working expenses.*—

Principal (for which I recommend Dr. Marsden)	...
One clerk on Rs. 25-1-35	...
One peon Rs. 10	...
One head teacher Rs. 50-15-70 (to take all subjects for the time being)	...
One drawing master, 35-2-45	...
Materials	say 5,000
Outside lectures	per annum 4,500

I have to explain that this reduced scheme is somewhat extravagant in staff as it does not provide whole-time occupation for the teachers who must, however, be permanently retained.

EDUCATIONAL DEPARTMENT.

Please see notes above. Mr. Tressler has no objection to restricting the scope of the school for the present. He states that the mechanical section may be opened at Washermanpet to begin with. According to his original scheme the following subjects and classes were proposed to be provided for at Washermanpet:—

Extension classes in—

Fitting and turning,
Blacksmithing,
Foundry practice.

Theoretical classes in—

Practical mathematics,
Technical and machine drawing,
Practical mechanics,
Prime-movers.

The proposed mechanical section will perhaps include all these classes and subjects. Mr. Tressler was asked to state whether it would not be sufficient to confine attention to the *extension* classes. He has not given a specific reply on this point. It is for orders whether the proposal to restrict the subjects may be accepted, and whether the subjects and classes mentioned above may be provided for from the beginning.

2. *Accommodation.*—Mr. Tressler was asked to report whether the school could not be held in a rented building at Washermanpet. He states that it has not been possible for him to secure suitable rented accommodation. He anticipates several difficulties in holding classes in a rented building and recommends the construction of a building as early as possible near the Leather Trades school which has recently been constructed at Washermanpet. The cost of this building is estimated at Rs. 34,770 and Mr. Tressler states that, if the whole of this expenditure could not be incurred immediately at least Rs. 20,000 may be provided. It is for orders whether in the circumstances, the construction of a new building may be approved.

3. Mr. Tressler has sent rough plan and estimate for the building. If the proposal to construct the building is accepted the plan and estimate will be taken up for consideration separately.

One Principal	...	...	...	...	...	Dr. Marsden
One head teacher on	...	...	...	...	...	Rs.
One drawing master on	...	...	...	...	...	50—19—70
One clerk	...	...	...	...	...	35—2—45
One peon on	...	...	...	...	...	25—1—35
						10

The proposal to appoint Dr. Marsden to be in charge of the school is dealt with in the linked file. The head teacher is apparently for the general education classes proposed by Mr. Tressler in his original scheme. It has been decided already to drop these classes and there is therefore no necessity for the appointment of this teacher. As regards the drawing master, Mr. Tressler proposed to employ one in his first letter for the subject. But it was considered to be in connection with the general educational classes and as these latter were to be dropped, the appointment was not taken into account. Of the subjects mentioned on page 19 supra one is "technical and machine drawing." It is not known whether the proposed drawing teacher is intended for this subject or he will be a member of the general education staff, "technical and machine drawing" being taught by an outside lecturer who will be an engineer. Perhaps, the appointment need not be sanctioned now. If, however, it is necessary, Mr. Tressler will come up to Government later on.

5. As regards the clerk on Rs. 25—1—35 and a peon on Rs. 10 proposed for the school, attention is solicited to the Financial Department note on page 4 supra. The establishment proposed seems to be the minimum required and it may, it is submitted, be sanctioned.

6. As regards remuneration to outside lecturers a sum of Rs. 4,500 per annum is provided for in the estimate of recurring expenditure. The Financial Department have noted that each case of appointment of part-time lecturer should be considered and sanctioned separately. The lump sum provided may therefore be accepted for the present as an estimate.

7. Besides the above Mr. Tressler requires a sum of Rs. 9,000 for equipment (non-recurring) and Rs. 5,000 per annum (recurring) for materials. These may also be sanctioned. As regards equipment he may be asked to submit details of the expenditure proposed for the approval of Government.

8. In the demi-official to Mr. Tressler on page 17 supra, he was also asked to furnish Government with an approximate estimate of the expenditure contemplated in respect of the grant of scholarships and some further justification for such grant. From his reply it appears that no special expenditure will be incurred on this account and that the charge will be met from the ordinary provision for scholarships in his budget.

9. If the restricted scheme now proposed is sanctioned in accordance with the above suggestions, the extra expenditure will be as follows:—

Non-recurring—

Buildings	...	...	...	...	...	Rs.
Equipment	...	...	...	...	...	34,770
						9,000
						43,770

or Rs. 29,000 if a single storey alone is built now.

Recurring—

Outside lectures	...	...	...	...	...	4,500
Materials	...	...	...	...	...	5,000
One clerk and peon	...	...	...	...	...	500

10,000
per annum

The scheme has been changed in the course of years and committees from one under which Government apprentices were to be sent for their practical training in firms' workshops to one under which firms' apprentices are to come for theoretical training in the Government school. I have discussed this aspect of it with Mr. Tressler, my fear being, not only that the Government would under the proposed arrangement lose all control over the apprentices, but also that there would not result that increase in the number of trained mechanics which it was the object of the system of Government apprentices to provide. Mr. Tressler assures me that the firms will not accept any scheme under which the apprentices are paid by Government, but that they are willing to employ an additional number of hands. He assures me further that they have accepted the curriculum and are ready to let the apprentices go at the hours named.

2. As regards the manner of the training, I understand that the intention is to show the apprentices in the school how the particular machines ought to be used or processes to be carried out, but to let them acquire practice in using them or carrying them out in the firms' workshops.

3. The question of the part-time lecturers was also discussed. Mr. Tressler has arranged terms with a practical tanner already. He thinks he will be able to make similar terms with others. It was agreed that Rs. 15 an hour should be the maximum.

4. The question of literary education has been gone into elsewhere. It has been agreed by Mr. Tressler and the Director of Public Instruction that the managers of industrial schools must provide the literary training required by their pupils themselves, and this must apply to the Government school with the rest. The provision for teachers may therefore be accepted.

5. No suitable rented building can be obtained. Moreover class rooms are required for the leather school. It is therefore proposed that provision should be made on a minimum scale for class rooms, workshop and drawing school on land adjacent to the leather school. If this is approved, estimates can be prepared at

* Included in the sum of Rs. 40,000 for building grants under 26-B. Mis. The Director expects a saving of Rs. 37 lakh on grants.

once in conjunction with the Consulting Architect and the work started out of the funds allotted for the Cocanada * school, on which work cannot be commenced this year.

But it is not likely that much out of this Rs. 37,000 can be spent in the current year, seeing that plans and estimates have to be prepared. I would therefore ask Educational to surrender at least Rs. 25,000 out of the anticipated saving. This can be taken up separately.

6. The Vepery school and the Normal school may stand over, but instruction in oil-engine driving may be given at Washermanpet. Otherwise the subjects in which instruction is to be given as a start may be as shown in Mr. Tressler's demi-official. The course will last for one or two years according to the subjects taken.

7. It has been many times emphasized that the whole scheme is tentative and experimental. It has been discussed threadbare and what is necessary now is to buy some practical experience, but to buy it as cheaply as possible. In this view I venture to submit a draft designed to get the scheme to work as soon as possible, but on a minimum scale.

C. G. TODHUNTER—22-9-15.

To the Financial Department.

FINANCIAL DEPARTMENT.

[The Financial Department notes on pages 11-15, Mr. Tressler's note on pages 16-20 and pages 26-29. A draft order alone need be read.]

With reference to the remarks contained in the Chief Secretary's note on pages 14 and 15 in regard to the scheme for the establishment of a Trades school in

Madras originally formulated by Educational, that department has re-examined the details of the scheme in consultation with Mr. Tressler; and the final conclusions of that department are embodied in the draft order sent now to this department for acceptance.

2. It will be seen that the Educational department now consider:—

(i) That it is sufficient to open classes at Washermanpet only, instead of both at Washermanpet and Vepery as originally proposed by them.

(ii) The number of subjects in which instruction is to be imparted is consequently reduced considerably—vide paragraph 3 on page 3, current file, and page 2 of draft.

But I don't see how both general and technical education is going to be imparted during the limited hours available for instruction.

L.E.K.

(iii) Educational, however, now consider it necessary to open classes for giving general education to pupils attending the school, though they were originally averse to this part of the scheme.

(iv) As regards scholarships, it appears that no special expenditure will be incurred and that the Director of Industries will meet any charge considered by him necessary from his ordinary provision in the budget.

As a result of these modifications made in the original proposals, the recurring expenditure on account of the Trades school is considerably reduced; the old estimates and the present estimates compare as under:—

	Old estimate. Cost per annum.	Present estimate. Cost per annum.
	RS	RS.
(i) Expenditure on account of outside lecturers to be specially engaged for the purpose	10,000 to 15,000	4,500
(ii) Clerical establishment	1,520	500
(iii) Teaching staff	...	1,150
(iv) Materials for the school required yearly	15,000	5,000
	31,520	11,150

3. The decisions of Educational on the above points may, it is submitted, be accepted in Financial, subject to orders on the following.

Additional staff.—In view of the fact that the whole scheme is tentative and experimental—vide paragraph 7 on page 23, the clerical and teaching staff may, it is submitted, be sanctioned temporarily instead of permanently. Please see in this connection Assistant Secretary's

Yes, one year in the first instance from date of employment. We don't know when they will be employed.

L.E.K.

Yes Rs. 9.

L.E.K.

A detail which we can leave to Educational.

A.B.

marginal remark against paragraph 3 on page 13 ante. As to rates of pay, it is for orders whether for the peon Rs. 9 per mensem as suggested by Financial and approved by the Chief Secretary instead of Rs. 10 per mensem will not suffice.

The clerk and the peon will also

L.E.K.

Yes.

A.B.

Yes, I don't find it mentioned in the draft.

L.E.K.

A.B.

have to be declared for ineligible grain compensation allowance in the draft. The Educational Department will have also to add a paragraph to the draft that the annual expenditure on account of supply of materials for the school should be limited to a maximum of Rs. 5,000 a year.

K.O.

Hand 9

4. *Non-recurring expenditure.*—In the circumstances set out in paragraphs 2, 3 and 6 of Mr. Tressler's demi-official on page 4 and paragraph 5 of Educational Secretary's note on page 4 ante, this department need not, it is submitted, object to the proposal to construct a building for the school at Washermanpet (cost Rs. 35 lakh) ; paragraph 2 of the draft may be accepted. The proposed expenditure of Rs. 49 lakh on equipment falls very much short of the original estimate of Rs. 80 lakh and may be approved also.

L.E.K.
* This will be only 20 lakh, if only one storey is to be constructed at present (page 4 ante).
L.E.K.

5. It does not appear likely that any expenditure other than on buildings will be incurred in 1915-16. Any expenditure on buildings in the current year can be met from the source referred to in paragraph 5 of Educational Secretary's note. The draft may, it is submitted, be accepted in Financial subject to modifications with reference to paragraph 3.

A.S.—6-10-15.
L. E. KERSHAW—7-10-15.
Financial may, I think, accept the scheme as set out in the draft. It will not cost very much at the start and if it succeeds and develops the expenditure will have been justified. Honourable Member, Financial, should see.
A. BUTTERWORTH—8-10-15.

To the Educational Department.

EDUCATIONAL DEPARTMENT.
Extract from the notes of His Excellency the Governor on certain files relating to the Department of Industries.

3. *Madras Trades school.*—I am not prepared to assent without further information to the removal of Dr. Marsden from Madura. Dr. Marsden, it appears, from Mr. Tressler's proposals, is to be taken from the work for which he was brought out and in which he is an expert and removed from the centre of the dyeing industry to help generally in the Department of Industries, to supervise the Trades school, to act generally as Chemist to the Department in Madras and at the same time to superintend the proposed paper work at Panalur. I am aware that there is a great dearth of qualified men at present and these proposals to utilise Dr. Marsden's services are possibly due to this cause ; but I cannot understand or accept without further information the reversal of policy which has taken place in regard to Dr. Marsden's employment at Madura which is the centre of the dyeing industry.

4. *Normal Training school.*—In regard to the Normal Training school, I can understand such an institution being an integral part of the system of technical education ; but I think we must be content at present here with some approximation to such a system. I should like to know in this connection how many openings annually for students so trained as teachers the Presidency now affords in its industrial schools and otherwise and how many of these students will annually pass out trained. I forget at this moment whether the training is to be for two or three years. Would there be any other professional openings for them in the Presidency ? Also is it probable whether a really good craftsman would consent to remain under instruction for two or three years on the proposed stipend of Rs. 15 a month with the chance of later being made an instructor ? It might be well, I think, to consider whether some system of apprenticeship could not be devised pending the establishment of a Normal Training school. The arrangements for teaching staff at the Normal Training school and also at the Madras Trades school seem to me inadequate for continuous instruction and supervision.

P[ENTLAND]—24-9-15.
The Financial Department accept the scheme as set out in the draft. They, however, make a few suggestions in regard to details. The first of these is that the establishment specified in paragraph 4 of the draft should, for the present, be sanctioned

temporarily for a year. It is for orders whether this may be accepted. It is also for consideration whether the pay of the peon in the school should be fixed at Rs. 9 instead of at Rs. 10. Mr. Tressler has proposed the latter.

2. The proposal of the Financial Department that the clerk and the peon should not draw grain compensation allowance may be accepted. The following sentence may be added to paragraph 4 of the draft:—

“The clerk and the peon will not be eligible for grain compensation allowance.”

3. With reference to the suggestion of the Financial Department at the end of paragraph 3 of their note on page 22 *supra*, the following sentence may be added to paragraph 5 of the draft:—

“The annual expenditure on the supply of materials for the school will be limited to a maximum of Rs. 5,000.”

4. His Excellency the Governor has since noted that Dr. Marsden should not be transferred from Madura to Madras to supervise the Trades school and to attend to other work at Madras. His Excellency has also stated that the arrangements for teaching staff at the school seem inadequate for continuous instruction and supervision. With regard to the transfer of Dr. Marsden, it is submitted that *no* transfer of the dyeing class from Madura to Madras is proposed in the draft order. The Superintendent of the Leather school is to superintend the Trade school also. As Dr. Marsden is to be temporarily in charge of the Leather school he will supervise the Trade school for the present. But when Mr. Guthrie returns, he will be in charge of the two institutions.

5. As regards the arrangements for teaching staff at the Trades school it is submitted that the proposal to employ part-time lecturers has been recommended by the majority of the members of the committee which discussed the Trades school scheme. Two members, viz., Mr. C.B. Simpson and Mr. Scott-Mackenzie were of opinion that the services of qualified men employed in Madras were not readily available and that when available, such men were not suitable teachers. Mr. Tressler however hopes to secure the services of suitable men. It is, therefore, for orders whether a trial may be given to the scheme proposed by him.

6. With regard to the proposal to utilize the funds reserved for the Cocanada school on the establishment of the Madras Trades school, it is submitted that the Collector of Gōdāvari has since written to say that the schools to be opened by private agencies at Cocanada will not adequately take the place of the school contemplated by Government. Mr. Tressler has therefore been asked to submit definite proposals for introducing the scheme as early as possible. The Secretary noted in that connection that some, at any rate, of the money available would be wanted at Cocanada this year. Mr. Tressler's proposals have not yet been received. It is, however, not likely that the whole of the amount viz., Rs. 36,000 will be spent on that scheme this year. A portion may therefore be spent on the Trades school. There does not, therefore, seem to be any objection to ask the Director of Industries to submit plans and estimates for the building of the Trades school at Madras.

S.K.—11-10-15.

The scheme may, I submit, be sanctioned as a tentative beginning.

We may accept all Financial's suggestions. I have embodied them in the draft.

As for funds, we may ask the Director to tell us at once how much he can spend in the year on buildings in Cocanada and Washermanpet and surrender the balance of this year's allotment for expenditure at Cocanada.

C. G. TODRUNKER—12-10-15.

Please instruct the Director to submit proposals for beginning this Washermanpet school in a rented building. When the experiment shows promise of success under such conditions, permanent buildings may more safely be contemplated. I can only

approve Dr. Marsden's proposed employment temporarily. Please ask the Director to consider further arrangements in this respect.

P[ENTLAND]—18-10-15

His Excellency the Governor wishes the school to be started in a rented building. When it shows promise of success then permanent buildings may be contemplated. Instructions given to Mr. Tressler personally. Demi-official reminder below.

C. G. TODHUNTER—23-10-15.

Demi-official—from the Hon'ble Mr. C. G. TODHUNTER, I.C.S., Acting Secretary to Government, Educational Department.

To—K. T. B. TRESSLER, Esq., Director of Industries.

Dated—the 23rd October 1915.

No.—2654-1 Edl.

As I informed you last night, Government are considering the modified scheme submitted by you for the establishment of a Trade school at Washermanpet. They cannot, however, during continuance of the war incur any expenditure on buildings for the school. I am, therefore, to ask you to submit at an early date proposals for starting the school in a rented building.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Hon'ble Mr. C. G. TODHUNTER, I.C.S., Acting Secretary to Government, Educational Department.

Dated—the 30th October 1915.

No.—B 44.

As regards the proposed Madras Trade school, I have already on several occasions expressed the view that temporary accommodation of a suitable character cannot be obtained in Washermanpet (vide my demi-official, dated 31st July) and I am unable to see how this finding can be modified. If no new building can be constructed the only alternative I can suggest is either to hold the classes in the Public Works Workshops, or else to defer any action until funds are available.

I observe from the letter under reply that the expenditure is not to be incurred during the continuance of the war. I presume that the same reasoning applies to the Cocanada proposals also, and I should be glad to know whether I am still to formulate schemes for the Cocanada school, or can let this matter also pend until the war is over. I may add that I wrote to the Collector three weeks ago, asking him if he could meet me to discuss the Cocanada question, and that he arranged an interview at the end of this month. He now writes that he is coming to Madras as Private Secretary shortly, and in the circumstances, it seems scarcely worthwhile discussing the matter with him. If the proposal is to be continued with, I will go and see the new Collector in charge.

Ask Mr. Tressler whether he can arrange with the Public Works Workshops for the holding of the classes there.

Tell him the preparation of the plans for the Cocanada school should proceed.

Put up for Friday.

C.G.T.—1-11-15.

Draft demi-official to Mr. Tressler is submitted.

S.K.—1-11-15.

C.R.—1-11-15.

C.G.T.—2-11-15.

Demi-official—from the Hon'ble Mr. C. G. TODHUNTER, I.C.S., Acting Secretary to Government, Educational Department.

To—the K. T. B. TRESSLER, Esq., Director of Industries.

Dated—the 2nd November 1915.

No.—3747-1-Edl.

With reference to your demi-official letter No. B-44, dated the 30th October 1915, I am to

ask whether you can arrange with the Superintendent of the Public Works Workshops for the holding of the Trade school classes there.

C.G.T.—5-11-15.

2. I am also to ask you to proceed with the preparation of the plans for the Cocanada Mechanical Engineering school without delay.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR AVARGAL, C.I.E.,
Secretary to Government, Educational Department.

Dated—the 2nd February 1916.

No.—B. 44.

I had a demi-official from Todhunter on the 2nd of November regarding the possibility of arranging for the holding of Trades classes in the Public Works Workshops.

I have been in correspondence with the Superintendent since then and we have carefully discussed the question. He tells me that any attempt to introduce the classes proposed would interfere very seriously with the ordinary works of the shop and that instruction after working hours would be difficult to arrange and very expensive. The whole of the staff leave at 5 o'clock and if the shops are to remain open it will necessitate drivers, foreman, etc., and a number of men also staying on. As the bulk of the work in the Public Works Workshops is done on contract, the workers are, for the most part, subject only in a general way to the Superintendent's control and he considers therefore that for these and various other technical reasons it will not be feasible to start the classes.

EDUCATIONAL DEPARTMENT.

Please see notes supra. Mr. Tressler considers that it will not be possible to hold the Trades school classes in the Public Works Workshops. He is unable to obtain a suitable rented building also for the purpose. His Excellency the Governor has already decided that permanent buildings can be erected only when the school shows promise of success after the scheme has been tried in a rented building. As Mr. Tressler is so much against the starting of the school in a rented building it is for orders how the scheme should be proceeded with.

S.K.—7-2-16.

May the Chief Engineer be asked u.o. to suggest some way out of the difficulty so that the classes may be held in the Public Works Workshops without interfering with the regular work there?

V.S.—8-2-16.

I wonder if the Chief Engineer can suggest some way out of the difficulty.

P. RAJAGOPALA ACHARIYAR—10-2-16.

To the Public Works Department.

PUBLIC WORKS DEPARTMENT.

Submitted with reference to the portion side-lined M above.

T.V.N.—11-2-16.

Perhaps Mr. Roberts may be consulted. It appears from Mr. Tressler's d.o. that he has "carefully discussed the question" with Mr. Roberts.

W. G. MOLESWORTH—16-2-16.

I am afraid I cannot hold out any hopes about the Public Works Workshops being used for trades classes. Most of the work there is done on contract so interference during working hours is out of the question. When the men stop for the day they have their incomplete work on the machines so that even after working hours nothing could be done.

S. B. MURRAY—16-2-16.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

Submitted for orders—vide office-note above.

V.S.—18-2-16.

Agreeably to His Excellency's wishes at page 26 ante Mr. Tressler was asked last October to consider if the Washermanpet Trades school could not be started in a rented building. In reply he wrote on the 30th October that it could not be done and that the only alternative to the construction of suitable buildings would be to hold the classes in the Public Works Department Workshops. This question of utilising the Public Works Department Workshops has been further pursued and the Public Works Department have now definitely stated that it is not practicable.

Under these circumstances I fear that the starting of the Washermanpet Trades school will have to lie over indefinitely. This is a pity. But I do not see how it can be helped. Mr. Tressler has definitely expressed the view that temporary accommodation of a suitable character cannot be secured for the school at Washermanpet.

P. RAJAGOPALA ACHARIYAR—24-2-16.

All that can be said, I think, at this moment is that if a rented building at Washermanpet—or elsewhere (?)—cannot be obtained, the beginning of these classes must stand over. Is no accommodation fairly suitable elsewhere obtainable?

[ENTLAND]—25-2-16.

Submitted that in the Trades school it is proposed to begin with engineering subjects in the first instance. For these subjects both the committees (of 1912 and 1914) have expressed the view that Washermanpet would be the most suitable centre. It is therefore doubtful whether even if rented accommodation is available in any other centre it will be useful for the purposes of the Trades school. The Director may, however, be asked to report whether suitable rented buildings can be secured in any other locality. A draft demi-official is submitted for approval.

S.K.—23-2-16.

V.S.—23-2-16.

P.R.—29-2-16.

Demi-official—from the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR
Avargal, C.I.E., Secretary to Government, Educational Department.

To—K. T. B. TRESSLER, Esq., Director of Industries.

Dated—the 1st March 1916.

No.—745-3/15.

Your letter No. B-44, dated the 2nd ultimo. I am to enquire if suitable rented accommodation can be obtained in some centre other than at Washermanpet for holding the Trades school classes.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR AVARGAL, C.I.E.,
Secretary to Government, Educational Department.

Dated—Madras, the 7th March 1916.

No.—B-44.

In reply to your letter of the 1st March regarding Trades classes, I have to point out that at the present time I do not see any prospect of obtaining machinery required for Trades school classes so that even if we have got accommodation I do not consider that we can start the classes until the war is over, unless we can hire a workshop. When I sent up my proposals for constructing the Trades school at Washermanpet I seriously expected to get machinery but I thought we could at least complete the buildings so as to be ready for starting the school on a permanent basis when machinery could be obtained.

I think it would be possible that Chengalvaraya Nayakar's trustees might be willing to allow us the use of their school but only as a temporary measure and I do not think it is much good starting Trades school classes there unless we can decide at once to provide permanent accommodation for them. If this is not done, all that will happen is that the classes will continue for some time in Chengalvaraya Nayakar's institute and then will have to be stopped again because of the interference of the school.

Chengalvaraya Nayakar's institute is the only solution I can think of, but it is not a very good one for the following reasons: (a) the arrangements will be strictly temporary, (b) the place is not central and there will be a good deal of difficulty in getting the staff to attend at that school, (c) the equipment is very limited as several machines have been sent to Perambore for munition work.

If, however, you think that it is desirable to make a start, I will address the trustees and see what could be done.

EDUCATIONAL DEPARTMENT.

Please see the demi-official from Mr. Tressler on the previous page. Mr. Tressler does not specifically answer the enquiry whether suitable rented accommodation for holding the Trades school classes could not be obtained in localities other than Washermanpet. But his reply shows that he could not arrange for the opening of the classes immediately. As regards the Chengalvaraya Nayakar's technical institute referred to by him, it does not appear to be desirable to interfere in the working of this private institution. There is, it is submitted, no alternative but to hold over the Trades school scheme for the present.

S.K.—10-3-16.

Please see His Excellency's note at page 27 supra with reference to which this enquiry was made of Mr. Tressler.

For orders.

V.S.—13-3-16.

His Excellency's query has to be answered. Please ask Mr. Tressler to answer as at A.

P. RAJAGOPALA ACHARIYAR—15-3-16.

A draft demi-official is submitted for approval.

S.K.—15-3-16.

V.S.—15-3-16.

P.R.—16-3-16.

Demi-official—from the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR AVARGAL, C.I.E., Secretary to Government, (Educational) Department.

To—K. T. B. TRESSLER, Esq., Director of Industries.

Dated—the 16th March 1916.

No.—745-4/15.

With reference to your letter No. B-44 of the 7th instant, I am to request you to furnish a definite reply to the enquiry in my letter No. 745-3 of the 1st idem as to whether suitable rented accommodation can be obtained in some centre other than Washermanpet for holding the Trades school classes.

Demi-official—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR AVARGAL, C.I.E., Secretary to Government, (Educational) Department.

Dated—Madras, the 22nd March 1916.

No.—B-44.

I reply to your further reference regarding rented accommodation for the Trades school classes, I have to explain that I am making enquiries to see if I can get a building.

EDUCATIONAL DEPARTMENT.

Lodged pending receipt of the further communication.

S.K.—23-3-16.

V.S.—24-3-16.

P.R.—25-3-16.

Mr. Tressler has not yet sent his final reply to the demi-official above. He may, it is submitted, be now reminded. A draft demi-official is submitted below.

S.K.—28-7-16.

C. RAMANUJA ACHARIYAR—28-7-16.

Mr. Tressler has left: please revise the draft demi-official.

P.R.—29-7-16.

A draft demi-official to Mr. Couchman is submitted.

S.K.—4-8-16.

N.K.—7-8-16.

C.R.—8-8-16.

P.R.—9-8-16.

Demi-official—from the Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR AVARGAL, C.I.E., Secretary to Government, Home (Education) Department.

To—M. E. COUCHMAN, Esq., I.C.S., Officer on special duty, Department of Industries.

Dated—the 10th August 1916.

No.—745-5/15.

Please refer to the correspondence ending with Mr. Tressler's demi-official letter No. B-44, dated the 22nd March 1916, on the question of securing a suitable private building in a centre other than Washermanpet for the location of the Madras Trades school. Will you kindly let me know whether the enquiries have now been completed and, if so, with what result?

Please see His Excellency the Governor's note on page 28 supra. Mr. Couchman has selected a suitable house in Georgetown on a rental of Rs. 125 per mensem. It is for orders whether the proposal to rent it may be accepted. Attention is solicited to the note on page 28 supra from which it will be seen that the idea all along was to locate the Trades school at Washermanpét in connection with the engineering shops.

2. In his letter of the 7th March last Mr. Tressler stated that unless a workshop was hired it would not be possible to open the school as it was impossible to obtain the machinery required from England until the war was over. It is not known how Mr. Couchman proposes to tide over the difficulty. Please see also Mr. Tressler's demi-official on page 1 ante. It is submitted that Mr. Couchman may be asked to state definitely whether it is proposed to have a workshop as an adjunct to the school and, if so, whether it can be located within the premises of the building selected.

3. Another point for consideration is the question of funds. There is no provision for the opening of this school in the current year's budget. There is a sum of Rs. 21,000 in the budget (Imperial recurring grant for industrial education) which has not been earmarked for any object. Out of this a sum of Rs. 2,368 has recently been distributed as special grant to certain schools. It has also been proposed in

another connection that the recurring charges relating to the Mechanical engineering school which is to be opened at Cocanada should be met from the above Imperial grant. But the plans and estimates relating to this school are still under scrutiny in the Public Works Department. Until the buildings are erected, no recurring expenditure will be incurred on it. The expenditure on account of the Trades school

may be met from the Imperial grant. The proposals which Mr. Couchman promises to submit in paragraph 2 of his letter may show the expenditure that will have to be incurred as a result of his proposals.

4. As the scheme relating to the Trades school has been under the consideration of the Government for the last four years and as they are anxious that a beginning should be made, the proposal to rent a building may be approved. But before doing so, Mr. Couchman may perhaps be asked to furnish the particulars referred to in paragraph 2 above.

S.K.—18-9-16.

N.K.—19-9-16.

Yes. Draft to Mr. Couchman, please. Sharp.

E. A. HARVEY—20-9-16.

A draft memorandum is submitted.

S.K.—20-9-16.

N.K.—20-9-16.

Draft may be approved.

E.A.H.—20-9-16.

P. RAJAGOPALA ACHARIYAR—20-9-16.

[Memorandum No. 3365-I, dated the 20th September 1916.]

Chs.
6-11-16-

From the Director of Industries, dated the 27th September 1916, No. B. 44.

Mr. Couchman proposes to locate the workshop in the building selected by him and states that the necessary plant can be procured locally. A draft order sanctioning the proposal to rent the building is submitted for approval. It may be sent to the Financial Department for acceptance.

S.K.—29-9-16.
N.K.—29-9-16.

E. A. HARRY—30-9-16.

To the Financial Department.

FINANCIAL DEPARTMENT.

The Financial Department last noted on this case on page 14 ante and accepted the proposal to open a Trade school at Washermanpet. The expenditure involved was estimated at—

Non-recurring—		
Buildings	...	35
Equipment	...	09
Recurring		
	...	11 per annum.

His Excellency the Governor, on page 18 ante, noted that the school being in an experimental stage should for the present be opened only in a rented building. Mr. Couchman has now found one for a rent of Rs. 125 per mensem, wherein he proposes to open classes in plumbing and mechanics; and promises to submit detailed proposals shortly.

The draft order which sanctions only the rent of Rs. 125 per mensem may be accepted. The Director of Industries is being asked to submit a reappropriation statement to meet the charge.

T.A.S.—30-9-16.

Accepted in Financial. I do not trouble the Chief Secretary with the case as the matter is very emergent, and the main scheme has been accepted in Financial.

L. E. KERSHAW—30-9-16.

To the Home (Education) Department.

HOME (EDUCATION) DEPARTMENT.

The file may be circulated to His Excellency the Governor for approval of the draft.

2. The following telegram may be sent to Mr. Couchman if the proposal is approved:—

"129. Your letter 23rd September. Proposal to rent house in Georgetown from 1st October for location (of) Trades school approved."
N.K.—30-9-16.

Draft for approval.

P. RAJAGOPALA ACHARIYAR—1-10-16.
P[ENTLAND]—1-10-16.

Issue.

P.R.—2-10-16.

The telegram to Mr. Couchman has issued. Mr. Couchman's proposals relating to the syllabus and other details for the Trades school have just been received. Paragraph 2 of the draft may therefore, it is submitted, be omitted and the draft as thus amended issued.

S.K.—2-10-16.
N.K.—2-10-16.

E.A.H.—2-10-16.

[G.O. No. 1046, Home (Education), dated the 3rd October 1916.]

From the Special Officer, Department of Industries, dated
the 25th September 1916, No. 4.

Mr. Couchman has submitted the detailed proposals for the establishment of the Trades school at Madras. The proposals have been framed in consultation with Mr. Fyfe, Instructor in manual training for European schools. The main features of the scheme are—

- (1) to provide instruction, to begin with, in two subjects, viz., mechanical engineering and plumbing,
- (2) to provide for a twenty-weeks' course in each of these two subjects, there being two lectures in each week—one during, and the other out of, working hours,
- (3) to admit twenty pupils for each of the classes, the selection being limited to actual working plumbers and mechanics,
- (4) to engage the services of two European instructors who are to be persons actively employed in the trade which they are to teach, and
- (5) to impart instruction to the pupils as far as possible in English with, if necessary, interpretation in vernacular by demonstrators.

2. These proposals are, it is submitted, generally in accord with the recommendations made by the committees of 1912 and 1914 which were appointed to consider the scheme of establishing a trades school in Madras City. As an experimental measure the scheme may be generally approved. Mr. Couchman proposes further to consult employers of labour and settle details.

3. *Cost of the scheme.*—The recurring cost of the scheme for the six months of the current official year is estimated at Rs. 8,172 and the non-recurring cost at Rs. 6,246. Details relating to these are on pages 24 and 25 of the current file.

4. *Recurring expenditure.*—(1) *Lecturers and demonstrators.*—Mr. Couchman proposes to engage the services of Mr. A. Hillier and Mr. W. H. Lockley, both employees of Messrs. Oakes & Co., to lecture in the school and to allow them a remuneration of Rs. 15 per lecture. This rate was proposed by Mr. Tressler in his original scheme and it has been accepted. Please see Chief Secretary's note on page 14 supra.

It is proposed to allow a demonstrator to each lecturer to help in the manual part of the teaching and to pay them Rs. 1-8-0 to Rs. 2 according to their qualifications. As such assistance seems to be necessary the proposal may be accepted.

5. *Peon on Rs. 10 per mensem.*—Provision is made for the employment of a peon on Rs. 10 per mensem. The Financial Department suggested last time that the pay of the peon should be fixed at Rs. 9. This may be done now.

6. *Workshop attendant and storekeeper.*—It is proposed to employ a caretaker for the school, who will also be workshop attendant and storekeeper on Rs. 40 per mensem. Mr. Fyfe states that the post should be filled by a Eurasian mechanic. It is for orders whether the proposal may be accepted.

7. The other items of recurring expenditure do not call for remarks.

8. As regards non-recurring expenditure it is submitted that the estimates amounting to Rs. 6,246 prepared by Mr. Fyfe may be approved. As Mr. Couchman desires early orders it is not perhaps necessary to consult the Public Works Department in regard to the tools and plant which are required for the school.

9. A draft order is submitted. It may be sent to the Financial Department for acceptance. Mr. Couchman may be asked to submit a reappropriation statement to meet the expenditure during the current year.

S.K.—4-10-16.

N.K.—5-10-16.

E. A. HARVEY—6-10-16.

Financial u.o. for acceptance.

Please treat as urgent.

P. RAJAGOPALA ACHARIYAR—7-10-16.

FINANCIAL DEPARTMENT.

Previous financial notes are on pages 11, 15, 20, 23 and 60-61 ante.

It is now proposed, in supersession of previous proposals, to open, as an experimental measure, a Trades school at Madras with classes for practical instruction in

32 **NOTES TO G.O. No. 1092, HOME (EDUCATION), 17TH OCTOBER 1916**
 (1) plumbing and (2) mechanical engineering. The course of instruction proposed is to last for 20 weeks, and the cost involved in the proposals as approved by Home (Education) is shown below :—

	Total cost. Rs.
<i>Recurring charges—</i>	
(a) Employment of two lecturers (Mr. A. Hillier of Oakes & Co. and Mr. W. H. Lockley of the Beehive foundry) for a course of twenty weeks or forty lessons at a fee of Rs. 15 for each lesson lasting for one hour ($2 \times 2 \times 20 \times 15 = 1,200$)	1,200
(b) Allowance to each lecturer for one demonstrator at Rs. 2 each per lesson ($2 \times 2 \times 20 \times 2 = 160$)	160
(c) One workshop attendant and storekeeper (care-taker) on Rs. 40 for six months	240
(d) One peon on Rs. 9 (inclusive of grain compensation allowance for six months)	54
	1,654
(e) Materials for plumbing, engineering and drawing classes, furniture additions and repairs, tools and plant and contingencies, advertisement charges, rent for building, cleaning charges, etc. (details on page 29, current file)	6,512
Total	8,166
<i>Non-recurring expenditure—</i>	
(f) Furniture, tools and plant, apparatus, etc. (details on page 30, current file)	6,246
Grand total for the six months	14,412

2. *Item (a).*—As the average monthly remuneration of the two lecturers will be about Rs. 120 per mensem each, the sanction of the Government of India is not required with reference to article 773 (a), Civil Account Code.

In paragraph 3 of Mr. Todhunter's note, dated 22nd September 1915, on page ante, it was stated that Rs. 15 for an hour's lecture should be the maximum. It is now proposed to fix the fee at Rs. 15 for each lecture of one hour. In justification of this, it is pointed out that the lecturers will have a good deal of preparation out of teaching hours. The rate of fee proposed may, it is submitted, be accepted.

Item (b).—In the estimates prepared by Mr. Fyfe a fee of Rs. 2 for an hour's demonstration work has been provided. Mr. Couchman, however, remarks in paragraph 5 of his letter, dated 25th September 1916, that the fee will be Rs. $1\frac{1}{2}$ to Rs. 2 per lecture according to the qualifications of the demonstrators. The rate of Rs. 2 is thus to be a maximum only and may, it is submitted, be accepted.

Item (c).—In the circumstances stated in paragraph 9 of Mr. Fyfe's letter on page 28, current file, the rate of pay proposed, viz., Rs. 40, need not be objected to.

Items (d), (e) and (f).—Seem to call for no remarks, as the scheme is a new and an experimental one.

3. The draft order may, it is submitted, be accepted in Financial. [For funds, please see latter portion of paragraph 3 of the draft, and paragraph 3 of Home (Education) office-note, pages 37-38 ante].
 C.P.K.—10-10-16.

Accepted in Financial.

L. E. KERSHAW—10-10-16.

L. DAVIDSON—11-10-16.

To the Home (Education) Department u.s.

HOME (EDUCATION) DEPARTMENT.

The file may now be circulated to His Excellency the Governor.
 N.K.—11-10-16.

Draft for approval.

E. A. HARVEY—12-10-16.

P[ENTLAND]—13-10-16.

Issue.

P. RAJAGOPALA ACHARIYAR—17-10-16.

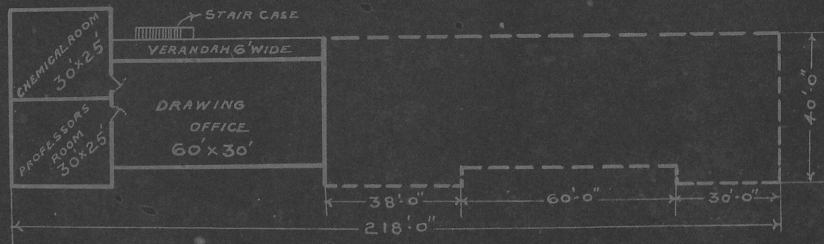
[G.O. No. 1092, Home (Education), dated 17th October 1916.]

SKELETON PLAN FOR THE
PROPOSED TECHNICAL SCHOOL
AT WASHERMENPET

SCALE 1"=30'

UPPER FLOOR

FOUNDRY & BLACK
SMITHY SHED
90' x 30'



REFERENCE

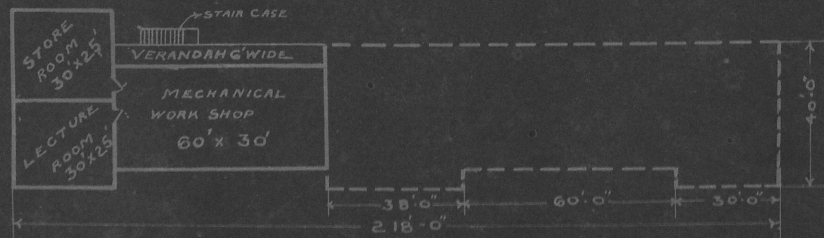
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RS 34.770

FOUNDRY & BLACK SMITHY SHED
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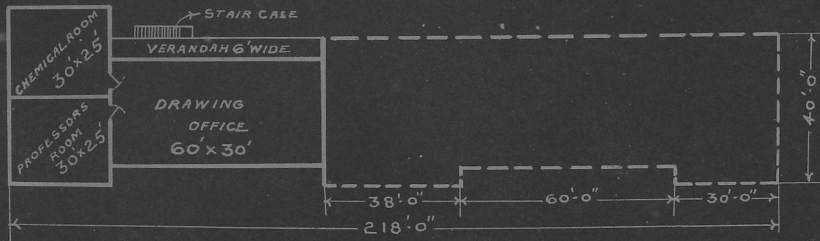
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MADRAS.

SKELETON PLAN FOR THE
PROPOSED TECHNICAL SCHOOL
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SCALE 1"=30'

UPPER FLOOR

FOUNDRY & BLACK
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90'x30'



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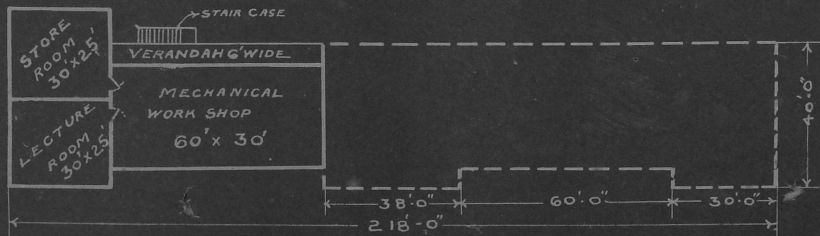
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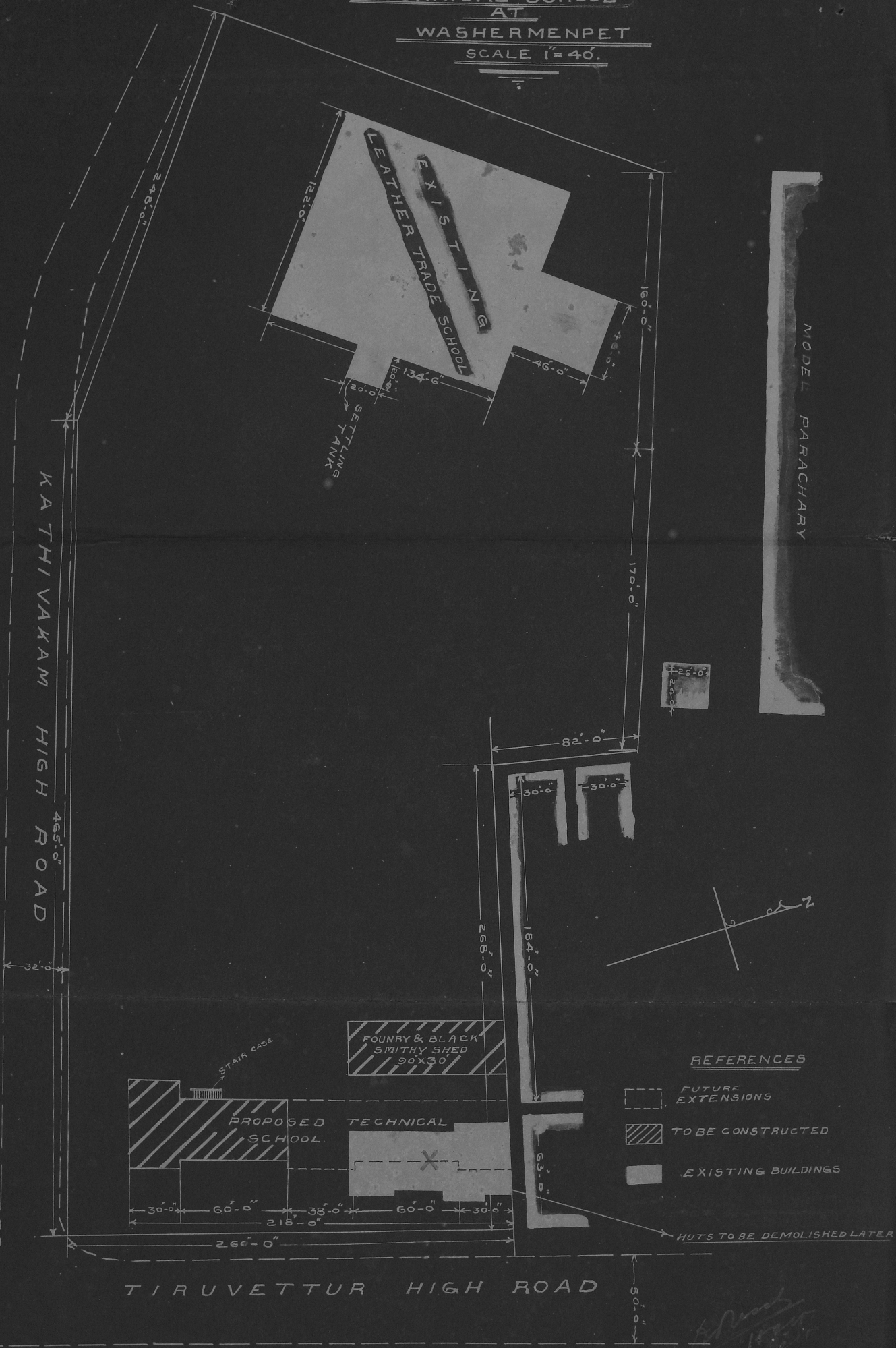


GROUND FLOOR

Adrian
DIRECTOR OF INDUSTRIES
MADRAS.

PROPOSED SITE
FOR THE
TECHNICAL SCHOOL
AT
WASHERMENPET
SCALE 1" = 40'

APPENDIX I



REFERENCES

- FUTURE EXTENSIONS
- TO BE CONSTRUCTED
- EXISTING BUILDINGS

96
Please see so. on the previous
page. Mr. French's reply thereto has
not yet been received. He may,
it is submitted, be reminded.
The draft below is for approval.

SK CR
13.12.15 13.12.15

CGS
14.12.15

No. 3747-2 Ed.

My dear Treasurer,

I am directed to invite your attention to my do. No 3747—1 Ed., dated the 2nd November 1915, and to ask when a reply to the enquiry regarding the holding of the Trade School classes in the Public Works Workshop may be expected.

SA
13.12.15

14.12.15

14/12/15

To

M. J. B. Treas. Esq.,
Dir. of Industries.

Wm.

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20th December, 1915.

My dear Todhunter,

I have discussed the question of holding Trades School classes in the P.W. Workshops with Roberts twice and have asked him to let me have his views but so far I have not received anything on paper. I have reminded him once and am doing so again.

Yours sincerely,

[Signature]

C.G. Todhunter Esq.,

Secretary to Government,

Educational Dept.

Mr. Treasurer's final reply may be awaited.

SK 21.12.15. CA 21.12.15. 22.12.15.



DEPARTMENT

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