M.R.O. 1—77,006—8-6-37.

(1) Number of pages

(2) Date of repair Sept. 1943

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No. 2303-C4 Press Misc

341-43

Dated 15 7 1869.

Not to be folded or roughly handled

Proceedings of the Madras Government. Public Works Department, 15th July 1869.

No. 341. Read the following letter from the Acting Inspector-General of Ordnance and Magazines, to the Secretary to Government, Public Works Department, dated Fort Saint George, 29th June 1869, No. 93 :—

In compliance with the order of Government, conveyed in Proceedings of Government, No. 1,739, dated 28th May 1869, I have the honour to subjoin a report regarding the School of Carnatic Ordnance Artificers, attached to the Gun Carriage Manufactory ; also statement of the cost of the Pupil Establishment and the Curriculum of studies.

A concise Report of the School of Ordnance Artificers attached to the Gun Carriage Manufactory, Madras.

A Pupil Establishment, consisting of thirty pupils, is maintained to recruit the Ordnance Artificer Company. The pupils are entertained from the age of fourteen to eighteen years ; they are attested under the European Articles of War, dieted and clothed at the public expense ; they receive pocket-money of two Rupees per mensem, and live in a Barrack-room under the supervision of two Serjeant-Instructors. The annual cost of the Pupil Establishment is about Rupees 10,543-6-4—*vide* memorandum attached.

2. The pupils are taught the trades of Carpenter, Blacksmith, Armourer, Turner, and Brass-founder, and also the working of machinery and steam engines. The pupils attend the Workshops daily from 9 A.M. to 5 P.M., and take, on an average, about four years to qualify themselves as Artificers, when they are transferred to that grade.

3. The Ordnance Artificers' school was first founded by General Maitland, when Superintendent, Gun Carriage Manufactory. His object was to raise the Ordnance Artificers from mere ordinary workmen to superior mechanics, by combining theoretical with practical instruction ; and many of the men taught in the school were, on account of their superior intelligence, selected for higher appointments in the Ordnance as well as in the Public Works, and other departments. Subsequently, Government finding the utility of the school, made it a Government institution in the year 1855, granting a salary of Rupees 300 for the Superintendent and Rupees 300 for the pay of the teachers, besides providing books, &c.

4. The teachers of the school are selected from among the most competent of the Artificers, Foremen, Serjeants, Warrant Officers, and others employed in the Manufactory.

5. The pupils and Ordnance Artificers attend the school from 7½ to 9 A.M. daily ; and on the evenings of every Tuesday, Thursday, and Friday, the pupils attend the school from 6¾ to 8 o'clock. It will be seen from this that the time for attending the school is very short, but it is as much as can be spared ; the Ordnance Artificers being required to perform a regular day's work. The progress of the school, however, has been satisfactory, which is apparent from the number of Artificers sent out, from time to time, to fill appointments of skill and trust in other departments.

6. In the Appendix are shown the number of classes the school is divided into and the subjects taught.

N. B.—If it is intended to establish a school in British Burmah—the same as the Ordnance Artificers' School—it is essential that there should be an Establishment of pupils, attested and subject to Military law and discipline, as at the Gun Carriage Manufactory : otherwise, many difficulties would arise in carrying out the object contemplated. It appears that the most feasible plan would be to transfer a few of our Ordnance Artificers, say five, to enable the Chief Commissioner of British Burmah to begin with. The men could be spared without inconvenience by entertaining and keeping up ten pupils in addition to our present establishment, and when these pupils are qualified for transfer to the grade of Artificer, more men might be sent to British Burmah, and

our own allotment of Artificers completed by degrees. By this means a Corps of Artificers for British Burmah would be gradually formed, and the school might probably be established in the course of a few years. Without some such commencement, I do not see how an Ordnance Artificers' School, similar to ours, can be formed in British Burmah; of course, the expense of the extra Pupil Establishment, &c., &c, should be met by the Chief Commissioner of British Burmah.

(Signed) T. H. CAMPBELL, Colonel,
Superintendent, Gun Carriage Manufactory.

MADRAS,
19*th June* 1869.

Memorandum of the annual cost of the Pupil Establishment, consisting of thirty pupils attached to the Gun Carriage Manufactory, Madras.

	Amount cost for thirty pupils. RS.	A.	P.
Mess Contractor's allowance for dieting the pupils, at 6¼ Annas each per diem	4,277	5	6
Pocket-money, at Rupees 2 per mensem for each pupil... ...	720	0	0
Dry batta for Her Majesty's Birth-day and Christmas and New Year's day, at 4½ Annas per day for each pupil ...	25	5	0
Regimental Clothing.—One jacket, one trouser, and one cap supplied by the Clothing Department every second year. Price of the clothing, Rupees 10-3-1, or half-price for one year Rupees 5-9-6½, for each pupil	152	14	3
Slop clothing, consisting of four white shirts, five white trousers, three white jackets, six fatigue shirts, eight fatigue trousers, and four pairs country shoes annually for each pupil	1,050	6	3
Bedding.—One quilt for each pupil biennially, price Rupees 3-13-2, or half-price for one year Rupees 1-14-7 ...	57	5	6
One canvas apron half-yearly for each blacksmith-pupil, and one blue cloth apron for each of the pupils of other trades	48	10	4
Cost of educating a pupil, at Rupees 100-1-4 per annum ...	3,002	8	0
Pay and allowances of two Serjeant-Instructors, at Rupees 47-7-9 each per mensem	1,139	10	0
Compensation in lieu of clothing for two Serjeant-Instructors, at Rupees 30-6-0 each annually	60	12	0
Dry batta for Her Majesty's Birth-day and Christmas and New Year's day, at 4½ Annas for each Serjeant-Instructor ..	1	11	0
Bedding.—One quilt for each Serjeant-Instructor biennially...	3	13	2
One blue cloth apron for each Serjeant-Instructor quarterly ...	3	1	4
Total ...	10,543	6	4

cost for each pupil per annum Rupees 351-7-1$\frac{23}{30}$, or Rupees 29-4-7 per mensem.

Barrack-accommodation and medical attendance for the Serjeant-Instructors and pupils at Government expense. When quarters are not available for the Serjeant-Instructors, an allowance of Rupees 10 each per mensem is granted, and they are also entitled to family allowance.

MADRAS,
19*th June* 1869.

(Signed) T. H. CAMPBELL, Colonel,
Superintendent, Gun Carriage Manufactory.

A Curriculum of studies in the Ordnance Artificers' School at Madras.

MORNING SCHOOL.

The Morning school consists of three divisions, and these are sub-divided into ten Classes, the average daily attendance is seventy.

Division and Class.		Subjects studied.	Text-books.
3ED DIVISION, OR ARITHMETIC CLASS.	3rd or lowest Class.	Reading and writing from Dictation. Arithmetic.—Tables of Weights and Measures; Numeration; the four Simple and Compound Rules.	Mavor's Spelling Book. The Tutor's Assistant, by Francis Walkingame.
	2nd Class.	Arithmetic.—Single and Double Rule of three; Vulgar and Decimal Fractions.	The Tutor's Assistant, by Francis Walkingame.
	1st Class.	Arithmetic.—Practice; Duodecimals; Square and Cube Roots; with a revisal of the Rules taught in the lower classes.	The Tutor's Assistant, by Francis Walkingame.
2ND DIVISION, OR GEOMETRY CLASS.	3rd or lowest Class.	Elements of Geometry.—Through the 1st Book of Euclid. Mensuration of Superficies. Elements of Algebra.—Addition and Subtraction.	Euclid's Elements, by Robert Potts, M A. By Charles Hutton. Whitaker's Catechism of Algebra.
	2nd Class.	Practical Geometry.—Through the 1st and 2nd Books. Mensuration of Superficies. Elements of Algebra.—Multiplication and Division.	Colonel Pasley's Practical Geometry. By Charles Hutton. Whitaker's Catechism of Algebra.
	1st Class.	Practical Geometry.—Through the 3rd and 4th Books. Mensuration of Solids. Elements of Algebra.—Involution and Evolution.	Colonel Pasley's Practical Geometry By Charles Hutton. Colenso's Algebra.
1ST DIVISION.	Lower Surveying Class.	Surveying with the Prismatic Compass. Notes on Building and Road making. Algebra.—As far As Simple Equations.	Jackson's course of Military Surveying. Captain Ford's Notes on building and road making. Colenso's Algebra.
	Upper Surveying Class.	Plane Trigonometry and Logarithms.—Through a course of Surveying and Levelling.	Captain Thuillier's course of Surveying.
	Machinery Class.	Geering. Theory and Practice of machinery and the principle of the steam engine.	Questions and answers by T. W. Skinner, Serjeant-Instructor. Practical Examinator on steam and the steam engine, by William Templeton, Engineer.
	Drawing Class.	Through a course of Geometrical, Architectural, Ordnance, and Survey Drawings.	Nicholson's orders of Architecture, Ordnance Drawings drawn from measurements, and Survey Drawings from surveys taken.

Proceedings of the Madras Government, Public Works Department, 15th July 1869.

EVENING SCHOOL.

The evening school consists of two Classes, the average attendance is 28.

Class.	Subjects studied.	Text-book.
2nd or Lowest Class.	Outlines of Geography. History of England.	Hogarth's Outlines of Geography. Morris's History of England.
1st Class.	General Geography. Questions in mechanics and machinery.	Goldsmith's Geography. Easy lessons in mechanics and practical questions on machinery.

MADRAS,
19*th June* 1869.

(Signed) T. H. CAMPBELL, Colonel,
Superintendent, Gun Carriage Manufactory.

No. 342. ORDER THEREON, 15th July 1869, No. 2,303.

ESTABLISHMENT, No. 33.

ORDERED that these papers be forwarded to the Chief Commissioner, British Burmah.

(True Extract.)

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

No. 343. DOCKET, No. 2,304, dated 14th July 1869.

COPY of the above forwarded to the Chief Commissioner of British Burmah, with reference to Lieutenant-Colonel Fraser's letter, No. 294-51-E., of the 27th April 1869.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

Exd. F. R. Bantleman.

Establishment Department.

ORDNANCE OFFICE:
Fort Saint George,
29 June 1869.

No. 93.

From Colonel A. T. Cadell
Acting Inspector General of Ordnance and Magazines.

To The Secretary to Government
Public Works Department.

Sir,

In compliance with the Order of Government, conveyed in Proceedings of Government No. 1739 dated 28th May 1869, I have the honor to submit a Report regarding the School of Practice Ordnance Artificers, attached to the Gun Carriage Manufactory, also a Statement of the cost of the Pupil Establishment, and the Curriculum of studies.—

"

School of Practice Report of the School of Ordnance Artificers attached to the Gun Carriage Manufactory Madras.—

1. A Pupil Establishment consisting of 30 Pupils is maintained to procure the Ordnance Artificers Company. The Pupils are entertained from the age of 11 to 18 years, they are attached under the European Artificers of that Station, and clothed at the Public expense, they receive Pocket-money of 2 Rupees per mensem, and live

lived in a Barrack square under the superintendence of 2 Sergeant Instructors, the annual cost of the Pupil Establishment is about Rupees 10,443-6-6 to pride & clothe attached.—

2. The Pupils are taught the trades of Carpenter, Blacksmith, Armourer, Turner, and Brass founder, and also the working of Machinery and Steam Engines. The Pupils attend the work shops daily from 9 A.M. to 5 P.M., and labour on an average about 6 years to qualify themselves as Artificers, when they are transferred to that grade.—

3. The Ordnance Artificers' School was first founded by General Maitland, when Superintendent Gun Carriage Manufactory, his object was to raise the Ordnance Artificers from mere ordinary workmen to superior Mechanics, by combining theoretical with practical instruction, and many of the men taught in the school were on account of their superior intelligence selected for higher appointments in the Ordnance, as well as in the Public works, and other Departments. — Subsequently Government finding the utility of the school made it a Government institution in the year 1833, granting a salary of Rupees 300 for the Superintendent, and Rupees 300 for the pay of the teachers, besides providing books &c.—

4. The teachers of the school are selected from among the most confidential of the Artificers,

Foremen

Foremen, Sergeants, Warrant Officers, and others employed in the Manufactory.

5. The Pupils and Ordnance Artificers attend the school from 7½ to 9 A.M. daily, and on the evenings of every Tuesday, Thursday, and Friday the Pupils attend the school from 6¾ to 8 O'Clock. It will be seen from this that the time for attending the school is very short, but it is as much as can be spared, the Ordnance Artificers being required to perform a regular days work, the progress of the school however has been satisfactory, which is apparent from the number of Artificers sent out, from time to time, to fill appointments of Skill and Trust, in other Departments.—

6. As the Appendix are shewing the number of Classes the school is divided into and the subjects taught.—

7. If it is intended to establish a School in British Burmah, the same as that Ordnance Artificers' School, it is essential that there should be an Establishment of Pupils, attached and subject to Military Law and discipline, as at the Gun Carriage Manufactory, otherwise, many difficulties would arise in carrying out the object contemplated. It appears that the most feasible plan would be to transfer a few of our Ordnance Artificers, boys, to enable the Chief Commissioner of

British

1 British Regiment to begin with – that men could be spared without inconvenience by entertaining and keeping up 10 Pupils in addition to our present establishment, and when those Pupils are qualified for Commissions to the grades of Officers they will be sent to 1 British Regiment, on the usual allowance of Officers compatible by degrees by their Account of Expense of Officers for 1 British Regiment would be gradually spared, and the school might probably be established in the course of a few years – without saving such Commencement, also not those borne on Ordinance Officers School, similar – units, can be spared on 1 British Regiment, of course the expense of the Extra Pupil Establishment for 40 should be added to the Charge of 1 British Regiment –

Sd/ J. H. Campbell Colt
Supt Gun Carriage Manufy

Gun Carriage Manufactory
Madras 19th June 1869.

Memo of the annual cost of the Pupil Establishment Consisting of 30 Pupils attached to the Gun Carriage Manufactory Madras.

	Annual cost for 30 Pupils	
Mess Contractors allowance for dieting the Pupils at 6¼ Annas each per diem	4277	8 6
Pocket money at Rupee 2 per mensem for each Pupil	720	" "
9½ Balls for Her Majesty's Birthday and Christmas and New Years day at 4½ Annas per day for each Pupil	25	" "
Carried forward	5,022	10 6

	Annual cost for 30 Pupils	
Brought forward	5022	10 6
Regimental Clothing – 1 Jacket and 1 Trowser and 1 Cap to be supplied by the Clothing Department every second year – Price of the Clothing Rupees 11-3-4 or half yearly – Price of the Clothing Rupees 11-3-4 or half yearly charges for one year 11½ 5-9-6½ for each Pupil	152	11 3
Mess Clothing consisting of 4 white shirts, 5 white Jackets, 6 Jalgine shirts, 3 Trowsers, 3 white Jackets, 6 Jalgine shirts, 3 Jalgine Trowsers and 4 pairs Canvas Shoes annually for each Pupil	1030	6 3
Bedding – 1 Quilt for each Pupil biennially – Price 11½ 3-13-2, or half Price for one year 11½ 1-14-7½	57	8 6
One Canvas apron half yearly for each Blacksmith Pupil and one Blue Cloth apron for each of the Pupils of other trades	118	10 4
Cost of educating a Pupil at Rupees 100-1-4 per Annum	3002	8 "
Pay and allowances of 2 Serjeant Instructors at Rupees 47-7-9 each per Annum	1139	10 "
Compensation in lieu of Clothing for 2 Serjeant Instructors at Rupees 30-6-" each Annually	60	12 "
9½ Balls for Her Majesty's Birthday and Christmas and New Years day at 4½ Annas per day for each Serjeant Instructor	1	11 7
Bedding – 2 Quilt for each Serjeant Instructor biennially	3	13 2
One Blue Cloth apron for each Serjeant Instructor quarterly	3	1 6
Total Rupees	10543	6 6

Cost for each Pupil per Annum 11½ 351-7-1 22/30 or 11½ 29-4-7 per mensem.

Barrack accommodation and Medical attendance for the Serjeant Instructors and Pupils at Government expense – When quarters are not available for the Serjeant Instructors, one allowance of Rupees 10 each per mensem is granted, and they are also entitled to Family allowance.

Sd/ J. H. Campbell Colonel
Supt Gun Carriage Manufy

Gun Carriage Manufactory
Madras 19th June 1869.

"A Curriculum of Studies in the Ordnance Artificers' School at Madras.

Morning School.

The Morning School consists of 3 Divisions and these are subdivided into 10 Classes, the average daily attendance is 70.-

Divisions and Class.	Subjects Studied.	Text Books.
3rd or lowest class	Reading and Writing from Dictation, Arithmetic Tables of weights and measures, Numeration, the four simple and compound rules.	Moore's Spelling book.- The Tutor's Assistant by Francis Wallingame.
2nd Class	Arithmetic- Single & Double rule of Three Vulgar and Decimal Fractions.	The Tutors Assist. by Francis Wallingame.
1st Class	Arithmetic- Practice, Duodecimals, Squares and Cube roots, with a revisal of the Rules taught in the lower classes.	The Tutors Assist. by Francis Wallingame.
3rd or lowest Class.	Elements of Geometry- Through the 1st Book of Euclid. Mensuration of Superficies. Elements of Algebra- Addition & Subtraction.	Euclid's Elements by Robert Potts M.A. By Charles Hutton. Whitaker's Catechism of Algebra.
2nd Class	Practical Geometry- Through the 1st & 2nd Books. Mensuration of Superficies. Elements of Algebra- Multiplication & Division.	Colonel Pasley's Practical Geometry. By Charles Hutton. Whitaker's Catechism of Algebra.
1st Class.	Practical Geometry- Through the 3rd and 4th Books. Mensuration of Solids. Elements of Algebra- Involution & Evolution.	Colonel Pasley's Practical Geom. &c. By Charles Hutton. Colenso's Algebra.
Lower Surveying Class.	Surveying with the Prismatic compass & Notes on Building and Road making, Algebra, as far as simple Equations.	Jackson's course of Civil Engineering Capt. Ford's Notes on Building & Road making Colenso's Algebra.
Upper Surveying Class.	Plane Trigonometry & Logarithms- Through a course of Surveying and Levelling.	Capt. Thuillier's course of Surveying.
Machinery Class.	Gearing. Theory and Practice of Machinery and the principle of the Steam Engine.-	Questions & answers by Mr. Skinner Asst. Instructor. Practical Examinator on Steam & the Steam Engine. by William Templeton Engineer.
Drawing Class.	Through a course of Geometrical, Architectural, Ordnance, and Survey Drawing.	Nicholson's Orders of Architecture, Ordnance Drawings drawn from measurement & Survey drawings from Surveys taken.

1st Division 3rd Class. Arithmetic.

2nd Division 2nd Class. Geometry.

1st Division.

Evening School

The Evening School consists of two classes, the average attendance is 28.

Class.	Subjects Studied	Text Books.
2nd or lowest Class	Outlines of Geography- History of England.-	Fagan's outlines of Geography. Martin's History of England.-
1st Class	General Geography Questions in Mechanics and Machinery.	Goldsmith's Geography Easy lessons in Mechanics and Practical questions on Machinery.-

Gun Carriage Manufactory Madras 19th June 1869.-

Signed J. H. Campbell Colonel Supdt. Gun Carriage Manufactory.

I have the honor to be,
Sir,
Your most Obedient Servant,

H. D. Daly Colonel
Acting Inspector General of Ordnance and Magazines.-

P.W.C. Dept
No 2303
15

Proceedings of the Madras Government
Under date the 15th July 1869.
Read the following

From the Inspector Genl
of Ordnance -

To Lieut Colonel H. Yule C.B.
Royal Engrs

Ordered that there
Royal Engrs be forwarded
to the Chief Commissioner
of British Burmah.

By Order
[illegible]
Secy to Govt

No 2303 dated 15th July 1869.

Copy of the above
forwarded to the Chief
Commissioner of British
Burmah with reference
to Lieut. Fraser's letter
No 294-51-E of the 27th
April 1869.

By Order
[illegible]

Dept of Public Works 1869 Department.
Rec'd 29th June
No. 2719

From
The Acting Inspector General
of Ordnance and Magazines
To
The Secretary to Government
Public Works Department.

Dated 29th June 1869
Received 3rd July "
No. 93

Forwarding Report on
the School of the Carnatic
Ordnance Battalion attached
to the Gun Carriage Manufactory.

No 2304
No 2303 - 15th July 69.

Ab 341

Rec 2219

Govt. of {1869} Madras.

PUBLIC WORKS.

To The Secy. Commissioner of
British Burmah

Dated

Recd. Pub.

G. O 15 July 1869 No. 2303 &
2804

Nos. 341-342 & 343

Re the Proc.s circulating information
regarding the School of Carnatic
Ordnance Artificers attached to
the Gun Carriage Manufactory
at Madras, forwarded to the
Govt. of British Burmah.

School of Carnatic Ordnance Artificers attached to the Gun Carriage Manufactory at Madras. Taking action on the letter from the Secy. Govt. of Ordnance and Magazines submitting a report regarding the School of Carnatic Ordnance Artificers attached to the Gun Carriage Manufactory at Madras.

School of Carnatic Ordnance Artificers attached at the Gun Carriage Manufactory at Madras. A Copy