Public Works (1899) Department.

1523 W

G.O. No. 1523 W

DATED 13 June 1899

[Despatch Abstract.]

Grant of Certificates of Competency to Mechanics in Charge of Boilers, Directing that the rules proposed for the — be revised in accordance with the suggestions now made and submitted for the approval of Govt. that of the two examinations the elementary examination be made permissive for 18 months the question of making it Compulsory being considered after that period and that the higher examination be altogether permissive.

//

[P. W 26. 250-27-4-99.]

1416

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

BUILDINGS AND ROADS.
CIVIL WORKS.

Government {1899} of Madras.

PUBLIC WORKS.

Recd. } 1899. *Enclosures*

Regd. } *Spare copies*

G.O., No. 1523 W., 13th June 1899.

JUNE.

Grant of Certificates of Competency to Mechanics in charge of Boilers

Directing, with remarks, that the rules proposed for the — be revised in accordance with the suggestions now made and submitted for the approval of Government, that of the two examinations, the elementary examination be made permissive for 18 months, the question of making it compulsory being considered after that period and that the higher examination be altogether permissive.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—again the following paper:—

G.O., No. 2702 W., dated 17th October 1898.

READ—also the following papers:—

Letter from Messrs. Binny & Co., Madras, dated 22nd November 1898.
Letter from the General Superintendent, Public Works Workshops, dated 24th November 1898, No. 145 C.
Letter from the Superintendent, Gun Carriage Factory, dated 2nd January 1899, No. 5442.
Letter from the Locomotive Superintendent, Madras Railway, dated 3rd January 1899, No. 41.
Unofficial-note from the Sanitary Engineer to Government, dated 7th February 1899, No. 156.
Letter from the Chamber of Commerce, Madras, dated 22nd February 1899, No.
Office-note from the Sanitary Engineer to Government, dated 24th February 1899, No. 229.

ORDER—No. 1523 W., dated 13th June 1899.

In G.O., No. 2702 W., dated 17th October 1898, the question of taking action under section 14 of the Madras Steam Boilers and Prime Movers Act, 1893, was considered. This section provides that, from a duly specified date, and within any defined local area, no boiler shall be used unless it is in the direct and immediate management of a person certified under the Act to be competent for the charge thereof. Draft rules for the grant of certificates of competency under sections 14 to 20 and 23 (*c*), (*d*) of the Act, which had been prepared by the Sanitary Engineer, were referred to certain authorities for opinion.

2. The following have responded:—

(1) Messrs. Binny & Co.
(2) The General Superintendent, Public Works Workshops.
(3) The Superintendent, Gun Carriage Factory.
(4) The Locomotive Superintendent, Madras Railway.
(5) The Madras Trades Association.
(6) The Madras Chamber of Commerce.

3. The Chamber of Commerce opposes the introduction of the proposed rules, and Messrs. Binny & Co. appear to agree. The Chamber considers —

(*a*) that the proposed rules would —

(1) seriously interfere with industrial progress in this Presidency;
(2) be a most undesirable interference with private trade;
(3) be in advance of the times or of present requirements; and

(*b*) that no cause has been shown for their introduction, *e.g.*, the occurrence of serious boiler accidents.

The Chamber also understands that, even in England, no certificates of competency, such as are here proposed, are demanded of boiler tenters; the Board of Trade rightly relying on owners to satisfy themselves of the competency of their boiler tenters. The same reliance should, the Chamber considers, be placed on owners in India whose interest is similar to that of owners at home. The Chamber suggests that, if any improvement in the existing state of things is deemed necessary, the desirability of merely extending section 14 of the Act to any mofussil factory, whose machinery is not already in responsible charge of a resident certificated Engineer, may be considered. If, however, it is still deemed advisable to demand of boiler tenters some certificate of Competency, the Chamber holds that the examination should not be of the very advanced character suggested, but should merely show that the examinee has a sound practical knowledge of the duties he has to discharge.

4. His Excellency the Governor in Council is disposed to agree with the opinions of the Chamber of Commerce on this question and considers that the industrial development of this Presidency is not sufficiently advanced to warrant the introduction of the rules proposed for certificates of the first class. The examination should be much simplified; for the first or elementary grade, it might proceed on the lines proposed by the Locomotive Superintendent, Madras Railway, and Messrs. Binny & Co. for the second or more advanced grade, an examination on the lines proposed by the Sanitary Engineer for a second-class certificate will suffice.

5. The rules for examination should be revised accordingly by the Sanitary Engineer and submitted for the approval of Government.

6. The elementary examination will be made permissive for 18 months, after which the question of making it compulsory will be considered; the higher examination will be altogether permissive. The examinations should be held every six months, and after a period of 18 months, there will probably be no difficulty for any employer in finding a man possessed of the elementary certificate.

(True Extract.)

Under Secretary to Government.

To all Collectors.
" the Judicial Department.
" the Local and Municipal Department.
" the Sanitary Engineer, with tabular statements marked A and B and revised draft rules C, to be returned.
" the Locomotive Superintendent, Madras Railway.
" the General Superintendent, Public Works Workshops.
" the Chairman, Chamber of Commerce, Madras.
" the Chairman, Madras Trades Association.
" the Superintendent, Gun Carriage Factory.
" Messrs. Binny & Co.

Exd. A. Eccleston.

Public Works DEPARTMENT.

READ again the following:—

G.O. 2702 W., dated 14th October 1898.

Read also

Letter from Messrs Binny & Co, Madras, dated 22nd November 1898.
Letter from the General Superintendent, P.C.W. Workshops, No. 445 C.M. dated 24th November 18
Letter from the Superintendent, Gun Carriage Factory, No. 5442 d/2nd January 1899.
Letter from the Locomotive Superintendent, Madras Railway, No. 41 dated 3rd January 18
Unofficial note from the Sanitary Engineer to Govt., No. 156 dated 4th February 1899.
Letter from the Chamber of Commerce, Madras, No. — dated 22nd February 1899.
Office note from the Sanitary Engineer to Govt. No. 229 dated 24th February 1899.

Circulated to

ORDER. No. 1523 W dt 3-6-99

In G.O. 2702 W., dated 14th October 1898, the question of taking action under Section 14 of the Madras Steam Boilers and Prime movers act 1893, was considered. This Section provides that from a duly specified date, and within any defined local area, no boiler shall be used unless it is in the direct and immediate management of a person certified under the Act to be competent for the charge there Draft rules for the grant of Certificates of Competency under Sections 14 to 20 and 23(c),(d) of the Act, which had been prepared by the Sanitary Engineer, were referred to certain authorities for opinion.

2. The following have responded:—

(1) Messrs Binny & Co.

(2) The General Superintendent, P.W. Workshops.
(3) The Superintendent, Gun Carriage Factory.
(4) The Loco: Superintendent Madras Railway
(5) The Madras Trades association.
(6) The Madras Chamber of Commerce.

The Chamber of Commerce opposes the production of the proposed rules, and messrs Binny & Co. appear to agree. The Chamber considers (a) that the proposed rules would

(1) Seriously interfere with industrial progress in this Presidency,

(2) be a most undesirable interference with private trade,

(3) be in advance of the times or of present requirements, and

(b) that no cause has been shown for their introduction, i.e. of the recurrence of serious boiler accidents.

The Chamber also understands that, even in England, no certificates of competency, such as are here proposed, are demanded of boiler tenters; the Board of Trade rightly relying on owners to satisfy themselves of the competency of their boiler tenters. The same reliance should, the Chamber considers, be placed on owners in India whose interest is similar to that of owners at home. The Chamber suggests that, if any improvement in the existing state of things is deemed necessary, the desirability of merely extending Section 14 of the Act to any mofussil factory whose machinery is not already in responsible charge of a resident certificated Engineer, may be considered. If, however, it is still deemed advisable to demand of Boiler tenters some certificate of competency, the Chamber holds that the examination should not be of the very advanced character suggested, but should merely show that the Examinee has a sound practical knowledge of the duties he has to discharge.

4. His Excellency the Governor in Council is disposed to agree with the opinions of the Chamber of Commerce on this question and considers that the industrial development of this Presidency is not sufficiently advanced to warrant the introduction of the rules proposed for certificates of the first class. The Examination should be much simplified; for the first or elementary grade, it might proceed on the lines proposed by the Locomotive Superintendent Madras Railway, and Messrs Binny & Co. for the Second or more advanced gr

n examination on the lines proposed
y the Sanitary Engineer for a Second
lass certificate will suffice.

The rules for examination should
e revised accordingly by the Sanitary
Engineer and submitted for the ap-
roval of Government.

6. The Elementary Examination will
be made permissive for 18 months, after
hich the question of making it Compul-
sory will be considered, the higher exami-
nation will be altogether permissive.

The examinations should be held every
six months, and after a period of 18
months, there will probably be no
difficulty for any employer in finding
a man possessed of the elementary
certificate.

P.S.

Note

After issue, papers to lie over and to be brought forward 18 months after date

To
All Collectors
The Jud: Deptt
" L & M. Deptt
" Sanj: Engineer with Tabular Statements marked A & B and revised draft rules C, — to be returned.
" Loco: Supdt Madras Ry
" Genl: Supdt. P.W. Workshops
" Chairman, Chamber of Commerce, Madras
" do Madras Trades Association
" The Superintendent, Gun carriage factory
Messrs Binny and Company

26/6/99

13

P. W. Department.

Certificates of Competency under the Boilers' Act

Read the following :—

G.O. No. 2702 W dy 17 October 1898. Read also again

Letter from Messrs Binny & Co Madras dy 22 November 1898.
Letter from the Genl Supdt P.W. Workshops No 1450 dy 24 Nov 1898.
Letter from the Supdt Gun Carriage Factory No 5442 dy 2 January 1899.
Letter from the Loco: Supdt Madras Railway No 41 dy 3 January 1899.
Unoffecial note from the Sanitary Engineer No 156 dy 7 February 1899.
Letter from the Chamber of Commerce Madras No 42 dy 22 February '99
Office note from the Sanitary Engineer No 229 dy 24 February 1899.

1. The Hon. Dr. A.T. Arundel C.S.I
2. The Hon. Dr. H. H. Winterbotham
3. H.E. the Governor.

+ Folio 'E'

FOR ORDERS.

In para 4 of G.O. No 2702 W dy 7 October 1898 criticism on the proposed rules for the grant of certificates of competency to mechanics in charge of Boilers was invited.

2 The following have responded :—

(1) Messrs Binny & Co.
(2) The Genl Supdt P.W. Workshops
(3) The Supdt, Gun Carriage Factory
(4) The Loco Supdt, Madras Railway
(5) The Madras Trades Association

3. The Statements A and B attached exhibit their criticisms in a Concise form with remarks thereon by the Sanitary Engineer

his management

I. It remains for Govt.

A copy of the proposed rules revised by the Sanitary Engineer in accordance with his remarks is also attached marked C.

4. The Chamber of Commerce × opposed the introduction of the proposed rules. It considers that they would

(1) Seriously interfere with industrial progress in this Presidency,

(2) Be a most undesirable interference with private trade,

(3) Are in advance of the times or of present requirements, and that

(4) that no cause has been shown, e.g. the occurrence of serious boiler accidents.

The Chamber understands that even in England certificates of Competency such as are

× letter of 22nd February read above Hughes.

Messrs Binny & Co. appear also to have put into the Chamber of Commerce -

To Madras Veterinary Surgeon Roosevelt.
" The Superintendent, Guncarriage Factory
Messrs Binny and Company.

the Board of Trade right to rely upon owners to satisfy themselves of the Competency of their boilers tenders. The same reliance should, the Chamber considers, be placed on owners in India whose interest is similar to that of owners at home. The Chamber suggests that if any improvement in the existing State of things is deemed necessary, the desirability of merely extending Section 14 of the Act to any Profussil factory where machinery is not already in responsible charge of a resident certificated Engineer, may be Considered. If, however, it is still deemed advisable to demand of Boiler tenders some certificate of Competency, the Chamber thinks that the examination should be at the Head Quarters

This appears a reasonable proposal -

I agree with this.

[illegible]

Character Sufficient

has a sound practical knowledge of the duties he has to discharge.

5. Attention is invited to the notes on the draft of G.O. 1741 W.S. of 8th July 1898. These show how the question of enforcing Sec. 4 of the Act, in regard to certificates of competency, rose. The question of reducing the standard of examinations is adverted to in the State-ment of particulars and in the Sanitary Engineer's remarks thereon.

D.J.

I must say that I am in sympathy with the Chamber of Commerce on this question and consider that the industrial development of this Presidency is not sufficiently advanced to warrant the introduction such stringent examinations. In Bombay with a view to avoid the necessity of certificates of competency

+ Flag 'C'

to Madras Trades Association
the Superintendent, Green carriage factory
Messrs Binny and Company.

5

can be easily found and to force them to pass examinations & take out certificates is not a practicable. It would be far wiser in this Presidency time Rules known there must be — also to meet Act 3 of 1893
if to prevent absolutely incompetent men from having charge of boilers, safety & danger to human life & property lies. In my opinion the requirements of the case would be met if every engineer or mechanic placed in charge of boilers or engines — whether in the capacity of engine driver or Boiler Attendant — should be called upon to produce a certificate, from persons employers, from Superintendents of workshops, Locomotive Superintendents of railways, Chief Engineers of vessels &c, of persons experience and of competency in the management of boilers & engines. Such a certificate would in my opinion be a sufficient guarantee against loss of life and limb management.

I do not think this is enough

AA

I agree with the Secy.

AA

I commend the Govt. ... to this ...

Engrs

I would suggest that the examinations should be very much simplified and that there should be only two grades –
First or preliminary grade in the lines proposed by Loco. Supts. to Railways & Messrs Binny & Co. vide Statement A under 27829.
Second – a more advanced examination on the lines of the 2nd class of the draft rules of the Sanitary Dept.
In my opinion the present first class under the draft rules is not required and the knowledge required of the candidate is such as might be expected from the engineer in a first class mill or shops.

Asst
24/4/99

I quite agree as to the simplification.
AEA.

This seems to me what is really wanted & quite as much as we can expect for years to come.
I would act on H.E's proposal & the Elementary at flag C and make ~~both~~ exams. permissive for 18 months. The higher exam. to be permissive altogether. As H.E. says "Employers would probably prefer men who possessed the Govt. certif."
The exams. should be held every six months & after 18 months there should be no difficulty in any employer finding a man possessed of the Elementary certif.
See side notes in A
AEA 10.5.99.

It appears to me that not only the letter of the Chamber of Commerce, but that of the Loco: Supt. Madras Railway contain powerful arguments against the introduction of the proposed exam: rules –
The Chamber alleges that there has never been a serious boiler accident due to the incapacity of the person in charge: that this is proof that owners are competent to look after their own interests; & that there is no ground for Govt. interference –
The Loco Supt. is clearly opposed to the scheme, & urges –

Public Works (189) Department.

CURRENT No. 9698

From
Messrs Binny & Co.
Madras.

No.

Dated 22-11-98.
Received
Registered 323"
Enclosures
Spare copies

SUBJECT
Boiler Act —
Offering suggestions
regarding the new regns
under the

P. W. 29.
1,000—5-9-98.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

BINNY & Co
MADRAS.

Madras, 22nd November, 1898.

The Secretary to Government,
Public Works Department,
M A D R A S.

Sir,

G.O. No 2702 17th October, 1898. Notification Fort St. George Gazette 15th November, 1898.

1 We have the honor to address you in regard to the above, as the proposed new regulations will probably affect us more than any other steam user in Madras or the Presidency.

2 It appears to us that Government are gradually increasing the tolls in the shape of fees on enterprise in the Capital City of the Presidency and that if the present policy is pursued steam users will hesitate to start or develope works in the Town of Madras, whilst Mofussil competitors are free from the same form of taxation and restriction.

3 We consider the Boiler Act a good Act, but we would submit that Madras, where capable Engineers if not regularly employed can at any time be consulted, is much less in need of such stringent supervision than the Mofussil, yet steam users in Madras are already taxed for boiler inspection and it is now proposed to introduce a set of rules that will in our opinion add considerably to the

price

P. W. 29.
1,000—5-9-98.

BINNY & Co
MADRAS.

price of supervision required for working Engines and Boilers.

4 We would instance a small factory we have working in the Bombay Presidency, where an Engineer with a Bombay second class certificate is required, whereas for a corresponding Factory in Madras inspected periodically by our own European Engineer, we would employ a Mechanic trained in a Madras Factory and pay him upcountry Rs 30/- to 35/- per mensem. To secure a man for this Factory we have to pay Rs 70/- per mensem for a less satisfactory man, as men of the same qualifications as we would employ in this Presidency, would, from want of education, find it difficult to pass the examination.

5 The result of the proposed rules will in our opinion, be that in a few years the licensed men will be men with a smattering of education and little practical training, whilst the class of quite capable men now available will, from want of education, be unable to pass the examinations.

6 The result will be enhancement of wages for the lower grade without any compensating advantage.

7 We would now respectfully submit the following suggestions.

II. Examinations.

8 6. We would suggest that examinations might be held monthly and that one examiner should suffice for each examination, thus if 3 examiners are appointed, the duty of examining would devolve on each quarterly, otherwise if a number of candidates appear for ex-amination, the examination may occupy several days and interfere unduly

P. W. 29.
1,000—5-9-98.

BINNY & Co
MADRAS.

3.

unduly with the examiner's ordinary duties.

III. A. General.

9 (13.) We assume that natives of India cannot compete for first and second class certificates in the vernacular.

C.

10 (20.) To secure a second class certificate, we would suggest that candidates should prove they have worked 5 years at making or repairing Engines and should have held a third class certificate for at least 1 year, this would ensure their having had practical experience of the management of small Engines and Boilers before obtaining a certificate enabling them to take charge of larger ones.

IV.

11 (27.) For a third class certificate we suggest that the following qualifications should suffice; the candidate to be able to read the steam gauge, and understand the working of the feed cocks, water gauge cocks, scum cocks, blow off cocks, feed pump and injector, and realize the danger of tampering with safety valves and allowing boilers to get short of water, provided always that he has worked 3 years as a fireman, or 5 years at making or repairing Engines.

XI.

12 (48 & 49.) We would point out that reading these sections along with section 32 Clause 5 division (II) the actual determination of the class of Engineer required may in some cases be difficult. We might mention a Buckingham Mill Engine (one instance in many) the Nominal Horse Power of which is 57·62 the actual indicated

700,

BINNY & Co
MADRAS.

3.

700, but the N.H.P. of the boilers attached is 200; by the rules vide section 32 Clause 5 division (II) a candidate for second class certificate is entitled to a certificate to take charge of Boilers of 60 Nominal Horse Power only, but by section 48 he could take charge of boilers attached to Engines of 60 Nominal Horse Power. Under the former section therefore a First class certifi--cated Engineer would be required, whilst under the latter section only a second class Engineer would be required.

13 The Inspector must under the new rules inspect prime movers to ascertain that they are within the scope of the Engineers certi--cate, the Inspector's ruling is binding on the employer except by appeal to a magistrate, and in this connection we would suggest that the Inspector's reports should be submitted to a Board of Commis--sion who might also be the Board of Examiners.

14 It is found advisable to have a Commission in Bombay and Calcutta and it is not apparent why Madras should not have a Com--mission also. The Acts in Bombay and Calcutta can only apply to Land Engines and Boilers as Sea going Engines and Boilers come under the Merchant Shipping Act (Colonial) of 1864.

15 We submit that if these rules, and further rules in connec--tion with prime movers, are to be brought into force only thor--oughly qualified Inspectors as required by the Acts in other parts of India, the Colonies and England should be appointed in fairness to steam owners and to their qualified employees, though this

P. W. 29.
1,000—5-9-98.

BINNY & Cº
MADRAS.

this may necessitate an additional Inspector with Engineering qualifications.

We have the honor to be,

Sir,

Your Most Obedient Servants.

Binny & Co.

Public Works (1898) Department.

CURRENT No. 9774

From
The General Supt
P. W. Workshops

No. 145C.

Dated 24-11-98
Received
Registered 325
Enclosures
Spare copies

SUBJECT
Madras Steam Boilers
Inspection Act 1893.
Offering remarks on
the proposed rules for the
Issue of Certificates of
Competency.

Compile
Ref
Rules

P. W. 29.
1,000—5-9-98.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

No. 145 W. / 6.

PRESIDENCY P. W. WORKSHOPS,
Madras, 24th November 1898.

From

H. A. MOSS, Esq.,

GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS,

To

THE Under Secretary to Government
P. W. D
Chepauk

SIR,

Enclosures.

The replies should be considered after 1st January next vide paras 5 to 9

With reference to G.O. No. 2702, W., dated 17th October 1898, I have the honour to offer the following remarks:-

2 In the first place I would venture to suggest that the Sanitary Engineer to Government is making a great mistake in making the rules for obtaining these certificates in any degree less stringent than those in force in Bombay. Facilities ought to be given to foodmen to obtain certificates in Madras equally good with those obtainable elsewhere and such will be recognised as such all over India. Otherwise Madras men holding Madras certificates will be placed at a disadvantage through no fault of their own not only if they should [illegible] Province, but even in this Presidency [illegible] competition with outsiders holding [illegible]

may recognise the Madras certificates as being as good as those obtained in Bombay or elsewhere, but they cannot expect private employers to do so. If Government considers that the supply of well qualified men in this Presidency is insufficient, and they are satisfied that inferior men are good enough for work for which better qualified men are considered necessary elsewhere, I would suggest that additional lower class certificates be also given. But I think that men ought to have the opportunity of getting good certificates of competency if they are able to do so

3 With regard to rule 3 of the notification I think it should be altered so as to ensure that none shall be nominated as Examiner excepting such as have a recognised diploma as an Engineer as well as being in actual practice as a Mechanical Engineer. Unfortunately the qualifications of a Mechanical Engineer in Madras are not necessarily of a particularly high class, and I think the Examiners ought to be better men than those who ordinarily pass as mechanical engineers here. Care should be taken too to ensure that they are always as well qualified as similar Examiners appointed in Bombay and Calcutta. The Examin-

t of each other officially.

and in their business connections.

4 Rule 7. I think it would be better not to employ clerks from the Sanitary Engineers and Boilers Inspectors offices, but let the President of the Examiners' Board appoint such clerks as he thinks necessary for the work.

5 Rule 14. - This I think should be modified so as to leave the rejection or admission of all applications to the Examining Board and not to the Sanitary Engineer. The Sanitary Engineer should receive the application and make all necessary inquiries and then forward it to the Board of Examiners with his recommendation as to whether it should be admitted or not, stating at the same time his reasons. This modification seems to be required on the principle which debars the Sanitary Engineer from being an Examiner

6 Rule 40. This rule I think should be modified. I do not see the necessity for re-examination in any case when a Candidate has passed. Further it would often be a great convenience to a candidate who is able to pass the examination, to be allowed to do so before putting in all the necessary service. I would therefore suggest that the Examining Board

whose service is deficient and examine him withholding his certificate however, until he furnishes evidence of having served the proper time.

The other Rules do not appear to call for any special comment, but as I have before observed, I consider that they should be modified where necessary so as to allow men to obtain in Madras, certificates as good and as useful as those they might obtain in Bombay and Calcutta.

If there is any real local necessity at present for inferior certificates, let these be granted as an alternative to the others. It is to be hoped that in any case the necessity for these inferior certificates will soon disappear and I think that they should not be issued at all without good cause.

I have the honour to be,
Sir,
Your most obedient servant,

H. Meads
General Supdt.,
P. W. Workshops, Madras.

Presidency P. W. Workshops.

From

THE GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS,
Madras,

To The Under Secretary to Government
P. W. Department
Madras

No. 145.6W.

Dated 24th November 1898.
Despatched 24th November 1898.
Received

No. OF ENCLOSURES. ✓

Subject.

Madras Steam Boilers & Prime Movers Act, 1893.
Govt's opinion regarding the proposed rules for the grant of certificates of competency.

Public Works (1899) Department.

CURRENT No. 125

From

Order

The Sanitary Engineer to Govt.,
Madras.

No. 14

Dated 4th. January 1899.
Received
Registered 3-1-99
Enclosures nil
Spare copies

SUBJECT.

Transferring a letter from the Superintendent, Gun Carriage Factory, Madras making certain observations regarding the rules for placing boilers under the charge of certificated men.

Compile

BACK PAPERS.

No.	Date.

FURTHER PAPERS.

No.	Date.

G. C. F. M.—2.

ORDNANCE DEPARTMENT.

No. O/ 5492

From

THE SUPERINTENDENT,

GUN CARRIAGE FACTORY,

MADRAS,

To

The Sanitary Engineer

to Government

MADRAS.

Enclosure.

GUN CARRIAGE FACTORY OFFICE,

Madras, 20 January 1899.

Reference-Your No: 1692 of 22nd November 1898-(Rules for placing boilers under the charge of certificated men-G.O. No: 2702 W of 17th October 1898.)

Sir,

I have the honor to forward herewith the following observations on the above:-

1. The rules would apply here to the actual engine driver, whereas in Bombay it is not necessary that the men employed in driving should have certificates provided that the engineers in charge of all the machinery are duly qualified.

2. In the draft act introduced in England one of the provisions ran as follows-

" Provided that nothing in this act shall apply to any Government establishment " or words to that effect. It may perhaps be feasible to introduce some such proviso.

3 Possibly also it might be found possible to exempt al members and associate members of the Institutions of Civil & Mechanical Engineers.

4 If the act is introduced, and extended to prime mov I would not be allowed to drive my oil engine without the

in England of the various makers.

5. I would therefore suggest that the following Government employés of the Factory be exempted from passing any examination.

Superintendent..... (M.I.M.E.)
Chief Mechanical Engineer.(A.M.I.M.E.)
Assistant " " .(The present man is a Whitworth exibitioner)
Leading hand Chief Mechanical Engineer's dept-

Co.

SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS. Regd. No. 21 2D JAN 99

Captain, R.A.
Superintendent Gun Carriage Factory.

No 14 d/4-1-99
transferred to Secy to Govt P.W.D to whom this suppld replies are intended to be sent

4.1.99

(6.)

de: 1176

Public Works

(189) Department.

CURRENT No. 234

From The Loco: Supt Madras Ry

No. 41

Dated 3-1-99
Received
Registered 37
Enclosures
Spare copies

SUBJECT

Offering remarks on G.O. No. 2702 d/ 17 October 98 regarding the placing of boilers under the charge of Artificers

Comptroller

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

de: 1176

2,000—7-98.

(L. 125.)

Enclosure———

No 41

MADRAS RAILWAY.

LOCOMOTIVE SUPERINTENDENT'S OFFICE,

Perambur Works, 3rd:January 1899.

CHIEF SECRETARY
-5 JAN 1899
GOVERNMENT OF MADRAS

From,

The Loco:Superintendent,

Madras Railway.

To,

The Chief Secretary to Government,

Fort St.George.

Sir,

I have the honour to acknowledge receipt of the copy of G.O. No:2702 W dated 17th:October 1898 forwarded to me for expression of opinion and in reply I have to make the following remarks:-

2. It is not fully apparent to me whether it is intended that all men now employed as boiler tenters shall be exempted from obtaining the certificates, either temporarily or permanently. Clause (4) of the Sanitary Engineer's letter is not quite clear upon this point, though I gather from it, and the clauses of the rules quoted, that as regards the men at present in charge of boilers so long as they are able to produce certificates of service, and can "satisfy the examiners of their capability", they will not be required to pass the formal examination.

3. If this be so, it will not for some few years to come probably very materially interfere with existing conditions, but if not, and all boiler tenters without exception will have sooner or later to qualify for and pass the examination, and further obtaining the formal certificates authorizing them to remain in charge of boilers, so far as my personal knowledge of local circumstances goes, I should gravely question the present possibility of introducing, without very seriously hampering industrial progress, so [illegible] reaching a measure as is now con-

No: 1176

whenever needed

4. As I read the rules, it seems to be assumed that the "person in the direct and immediate management and charge" of a boiler is in all cases a more or less qualified Engineer, the form of certificate laid down, and the qualifications prescribed, being those of "an Engineer" and the fact that this duty is ordinarily and of necessity, in the hands of a Fireman or Stoker appears to have been lost sight of. In large Mills or Factories it may perhaps be said that the "Engineer", who is in such installation maintained, is "in charge" of the boilers equally with the rest of the machinery that may exist in the factory, but he is distinctly not in the direct charge of them, and I do not understand that it is the intention of the proposed rules, that he is the person to whom the certificate shall be granted, or that the provisions of the notification would be complied with by the possession of such a certificate by him alone. If my assumption be correct, it follows that the certificates must be issued to the firemen and stokers who actually tend and look after the boilers.

5. Taking then a Mill such as the Carnatic or Buckingham Mill in Madras, there are I believe some 3 or 4 district batteries of boilers in each Mill. The Engines that these boilers supply with steam being probably all considerably in excess of 60 HP, the introduction of the rule would mean that there would have to be, in each Mill, some 3 or 4 men, each holding first class certificates, and since the hours of work are probably greater than would allow of one shift only being maintained, and allowance would further have to be made for spare men, this number would probably have to be doubled.

6. It may I think be taken as certain that few if any of the men now engaged, or available, as boiler tenters, would ever be able to pass [illegible] examinations prescribed, and therefore obtain [illegible] many years to

de: 1176

whenever needed ... at an U... greatest and most valuable safe guard against ... use ... steam boilers must always lie in skilled regular and per... cal supervision and examination, and this is far more ef... exercised by the... course at very largely increased expenditure ... Boilers and ...

of Madras, NGR. TO GOVT., mallee Road, ... 1899.

7. With regard to the general question the scheme ... to me, apart from its practicability, to aim at obtaining a ... higher standard of excellence than is necessary or than so ... as I am aware is in force in England or elsewhere.

8. The usual practice in Workshops of all kinds, so far as my experience goes, is, equally as under present circumstances in Madras, to place the charge and management of steam boilers in the hands of boiler tenters. These men are not in any sense of the word Engineers, and beyond a certain technical knowledge of how to tend and replenish the boiler fires, look after the fe... pumps, safety valves, and others of the boiler fittings, no other special technical training appears necessary.

9. Such men, whether in charge of large or small boilers, should certainly possess the knowledge ~~of~~ prescribed in Clause (a) of Para 27 of the Notification, (safety valves are not as should be included in this clause,) and should possibly know something of Clause (b) of the same para, and Clause (d) of Para 28, as also of Clause (g) of Para 29, but with this, I am of opinion their knowledge may well cease. Calculations as to strength and proportions of boilers and engines, mensuration, power, duty &c: of machinery, or their parts, and designs of Engines, boilers, or machinery, are all matters which come within the scope of the special education of an ~~Engine~~ Engineer, and no boiler tenter, stoker or fireman, is ever likely to be called upon, in the course of his daily duty, to deal with any such subjects. Repairs again of ... either ...

... answers to which they are attached & save a calculation shewing how great a difference there might be

No: 1176

whenever needed ... at an Un...ne greatest and most valuable safe guard against ... use ... steam boilers must always lie in skilled regular and per... cal supervision and examination, and this is far more efficien... exercised by the enforcement of the conditions of the Madras ... Boilers and Prime Movers Act, under which all steam users are, or ... can be compelled to have their boilers regularly inspected ... examined by a ... afforded for the simple charge and control of a boil...

Madras,
GR. TO GOVT.,
allee Road,
1899.

10. It may possibly be held advisable that boiler tende... should be called upon to qualify for, and obtain certificates of competency of some kind, but I should limit the examinations for such strictly to a practical knowldege of the care and management of a boiler, and to the duties which the men will be called upon to discharge daily.

11. There are many points in the details of the examination upon which much might be said, but in the present state of the question, it seems to be scarcely worth while entering upon the... until at any rate the general principle is laid down, defining generally what are to be the qualifications of men in charge of boilers, working in the Presidency.

12. I would, however, mention that if it should be decided to hold examinations such as that now under consideration, it would seem to me, one of the chief difficulties will be the formation of the Board of Examiners. The number of Gentlemen who, while possessing the necessary technical knowledge, would be able to afford the large amount of time, which the conduct of such examinations would occupy, is extremely limited, and I imagine very much higher fees, than those suggested in clause 4, would be required to secure their services.

13. I fully recognise the extreme desirability that exis... that all care should be taken to avoid the disaster, that must ...

soon

Save a calculation shewing how great a difference there might be

No: 1176

whenever needed, upon the condition and working ...ras,
at an Up-country ...lo Govt.,
in many c... greatest and most valuable safe guard against ...Road,
use ... steam boilers must always lie in skilled, regular and per... 1899.
cal supervision and examination, and this is far more efficien...
exercised by the enforcement of the conditions of the Madras ...
Boilers and Prime Movers Act, under which all steam users are, or
can be, compelled to have their boilers regularly inspected and
examined by a competent and responsible Government Officer.

15. This Act is, as I understand, strictly and rightly so enforced at present in the case of all boilers working within the Presidency town, and personally I should strongly advocate the extension of this system of inspection and examination to Mofussil stations, as a measure which should most certainly precede the introduction of any system of examination and gradation of Presidency boiler tenters alone.

16. Possibly when the Act has been made more or less operative over the whole of the Presidency, it might be well to follow on with some simple system of examination and certification of the boiler tenters, but this should, as I have stated, be of the simplest and most entirely practical a nature, and should certainly follow, and not precede, the examination and certification of the boilers.

17. It further seems to me that desirable though such a system is in Madras itself, it is most certainly quite as much if not far more, necessary in the Mofussil. In Madras a steam user can generally contrive to obtain, when required, a technical opin...

whe...

P. W. Current No: 1176

Madras,

to Govt.,

Road,

399.

whenever needed, upon the condition and working of his boiler
at an Up-country station, this is always far more difficult
in many cases is an impossibility. If on the other hand an
country Mill or factory owner could depend upon being able to
avail himself of an official, and qualified, and competent in-
spection, examination and opinion, at certain more or less freque
opportunities, it would necessarily relieve him of much anxiety,
and the final result would be elimination of many of the existing
dangers, attendant upon the use of steam power, and steam boilers,—
not only in the Presidency town, but, as is I consider still more
important, in the Mofussil, and throughout the Presidency itself—

I have the honour to be,

Sir,

Your most Obedient Servant,

C. Rupp

Loco:Superintendent.

C. J.

+1003 c

save a calculation shewing how
great a difference there might be

P. W. Current No: 1176

1934

No. 156

Government of Madras,
OFFICE OF SANY. ENGR. TO GOVT.,
Stowe Hall, Poonamallee Road,
Madras, 7th *February* 1899.

OFFICE NOTE. Rules 2 & 3 on file.

Recd: 8.2.99

From

THE SANITARY ENGINEER TO GOVT.,
Madras

To

The Secretary to Government,
Public Works Department.
(un-officially)

In returning with remarks the papers sent with his note (W.O) of 27.1.99, No. 589 C, the undersigned thinks that the replies to the various points raised by those who have criticised the rules are such as, in most instances, do not require further remarks - but in respect to rules 32 & 48, it is necessary to do so.

2. Messrs Binny & Co raised the point as to whether the certificates granted were to be in respect to Horse Power of Boilers or of Engines to which they are attached & save a calculation shewing how great a difference there might be

+1003 C of 16.2.99
Work reply to the reference
on C No 1248. vide reply - endd 1758

Telegram dated 2nd February 1899

To

Bombay

Collector of Bombay

From,

Madras (Refers)

Sanitary Engineer &
Inspector of Steam Bo
& Prime-movers (Ex

"Does second class certificate under Boil
rules mean charge of total of ninety horse pow
or unlimited number of boilers of that power."

(True copy)

Sanitary Engineer to Govt

2

between one or the other & consequently that a higher or lower grade of certificate would be required for the person in charge according as one or other calculation was taken as the basis of the Horse Power to be cared for - A reference was made to the Collector of Bombay and his reply (copy) is attached.

3. But on looking carefully into the Act, it is observed (vide Section 16 of the Act) that the Madras Boiler Act extends to all boilers whether attached to prime-movers or not & that therefore the Horse Power referred to in the Rules must be that of boilers & not of any prime-movers to which they might be attached.

4. Holding this view, it has been necessary to revise the rules which revision has got rid of the inconsistency pointed out by Messrs Binny & Co and in doing so the opportunity has been taken to correct the rules in other respects so that the copy now sent & altered in red shows the alterations referred to above and also the alterations embodied in the undersigned's replies to the criticisms made.

5. From the Collector of Bombay's letter alluded to above, it will be seen that the certificate of the engineers in charge is regulated with reference to the engine power & not to the boiler power at all.

6. In reference to this m however there seems to be a n for some rule which does not appear in the Bombay Rules and is, a rule which will fix some limit of distance between boilers in charge of any one person - For instance, an engineer with a second class certificate may be in charge of boilers not exceeding 60 horse-power; that is, he may have one, two or three boilers of this class but it may be that with two or three small factories with the same owner or even in a large factory the boilers might be a considerable distance apart - It is therefore suggested that a rule be adde & called Rule 50 to the following effect & accordingly the Rules (50), (51) & (52) has been altered to (51), (52) & (53) respectively:-

"50- But no one person shall be in immediate & direct manage ment and charge of boilers or sets or batteries of boilers which are more than 220 yards apart."

Sanitary Engineer to Gv

tween one or the other & consequently
hat a higher or lower grade of
ertific[illegible] would be required for
e

6. In reference to this ru
however there seems to be a n
for some rule which does not

No. B.9/524 of 1899.

From,

The Collector of Land Revenue, Customs and Opium,
Bombay.

To,

The Sanitary Engineer and
Inspector of Steam Boilers, Madras.

Bombay Collector's Office,
Steam Boiler Department,
3rd/4th February 1899.

Sir,

With reference to your telegram of 30 ster day, I have the honour to invite your attention to the Bombay Government notifica No. 4221 of 25th September 1896, General Departme declaring holders of certificates of the second cla capable as second class engineers of having charge of boilers attached to prime-movers not exceeding sixty horse power nominal - This notifica tion amended Rule 48 of the Bombay Engineer's Examination Rules, 1895, copy of which, it is presumed is available in your office.

2. For example, supposing there are in a factory one engine of 25 nominal horse power attached to 4 boilers exceeding 90 nominal horse power each, one of 60 nominal horse power attache to one boiler and one of 15 nominal horse pow attached to any number of boilers, a second

engi

tween one or the other & consequently 6. In reference to this m
that a higher or lower grade of however there seems to be a n

engineer is, according to the present rules in force, required in the factory. But supposing there are in a factory one engine of 92 nominal horse power attached to boilers, one of 40 nominal horse power attached to boilers and one of 10 nominal horse power attached to boilers; in this factory a first class engineer will be required.

I have the honor to be,
Sir,
Your most obedient servt.
(Signed) S. W. Edwardes
for Collector of Land Revenue,
Customs & Opium
Bombay.

'True copy'
Khan
Sanitary Engineer to Govt

Public Works (1899) Department.

CURRENT No. 1676

From
The Chairman
Chamber of Commerce

No.

Dated 22—2—99
Received
Registered 324
Enclosures
Spare copies. /

SUBJECT.
Offering remarks on the rules for placing boilers under the charge of certificated persons

[P. W. 20.
1,000—29-11-98.]

Govt 27/4/99.

CRW

S.E.1
1176/99

BACK PAPERS.

G.O.	No.	Department.	Date.

1003C
16/2/99
589C
27-1-99
3005W
24-11-98
2702W
17-10-98
1741W
8-7-98
5540
6-7-98
640W
10-3-98
3104W
8-11-98
1608W
12.6.97

FURTHER PAPERS.

G.O.	No.	Department.	Date.

The Chamber of Commerce,

MADRAS, 22*nd February*, 1899.

FROM

THE HON'BLE MR. S. R. TURNBULL,
CHAIRMAN, CHAMBER OF COMMERCE,
MADRAS.

To

THE SECRETARY TO GOVERNMENT,
PUBLIC WORKS DEPARTMENT,
CHEPAUK.

SIR,

The attention of the Chamber has been directed to the G.O. No. 2702, W., dated the 17th October, 1898, regarding the Rules submitted by the Sanitary Engineer to Government for placing boilers under the charge of certificated men, and as the matter is one in which several of its members are interested, the Chamber ventures to place its views before Government.

The Chamber is opposed to the adoption of the rules as it considers that (1) they would seriously interfere with industrial progress in this Presidency; (2) they would be a most undesirable interference with private trade, and (3) are far in advance of the times or of present requirements. If any cause had been shown why some such scheme as that proposed should be introduced—*i. e.*, the occurrence of serious boiler accidents caused by the incapacity of those in charge of them, with attendant injuries to the tenters, or loss of life or property—the case would no doubt have been different; but no such cause has been shown, and, so far as the Chamber is aware, there has never been an accident of this nature in this Presidency. This alone ought to show that the precautions taken by employers to prevent accidents to their boilers are quite sufficient, without the onerous conditions that it is proposed to inflict upon them under the new Rules.

In England, the Chamber understands, no certificates of competency, such as is here proposed, are demanded of boiler tenters, the Board of Trade rightly relying upon employers to satisfy themselves of the competence of their boiler tenters, and other employees, before entertaining their services. This the employers necessarily do in their own interests, for the penalties inflicted upon them in cases where it is proved that a boiler accident has been caused by the incompetence of the person in charge of it are very deterrent. Similarly in India, it is equally to the interest of employers to engage only skilled labour, and this they do, in this Presidency at all events, without being compelled thereto in the manner suggested.

In paragraph 4 of the letter of the Sanitary Engineer, dated the 19th August, 1898, it is stated that "practically every one who had been in charge of a boiler and engine for the period stated," *i.e.*, eighteen months, "would be granted a certificate unless

he showed the most gross ignorance, and that his continued employment had been due to good luck and not good guidance." This is so far satisfactory as ensuring to those now engaged a prospect of continued employment, though, at the same time, it throws a doubt upon the capacity of the employer to judge of his employees' capabilities, which, the Chamber contends, is proved by past experience to be undeserved.

For some time the Rules would not perhaps interfere with existing conditions, but there is no doubt, in the Chamber's opinion, that, ultimately, the effect of the Rules would be to add considerably to the cost of working all factories, and so hamper industrial progress, for as new men were entertained they would have to be qualified in the manner proposed, and would necessarily ask for greatly increased salaries.

The Chamber holds that the standard of efficiency which it is sought to enforce upon boiler tenters is very much higher than the necessities of the case demand, and that if it is still deemed advisable, in the public interest, to demand from boiler tenters some certificate of competency, the examination for such certificate should not be of the very advanced and theoretical character suggested, but of a character to show simply that the examinee had a sound practical knowledge of the duties which he had to discharge.

As regards the proposed Board of Examiners, the Chamber is inclined to believe that many of the gentlemen who are referred to by the Sanitary Engineer would be unable to accept seats on the Board owing to press of other engagements.

The Chamber understands that regulations similar to those which it is proposed to introduce into Madras were brought forward in the House of Commons some years ago, but that, on consideration, it was seen that if it was illegal to employ the services of any but a certificated Engineer in driving an engine it would be a great hardship to those people—farmers, for instance,—who only used their engines occasionally, and also to those who had only small engines. In both cases, the additional charge entailed by the employment of a highly paid certificated Engineer might have prevented the use of the engines altogether, and the object of the regulations would have been defeated, because a small engine may be quite as dangerous to human life as a large one. It was recognised that the proposal was more in the interests of the Trades Union than of the community at large.

Under the above circumstances, the Chamber trusts that Government will not sanction the scheme proposed, but will, if any improvement of the existing state of things is deemed necessary, consider the desirability of merely extending the Madras Steam Boilers and Prime Movers Act to any mofussil factory whose machinery is not already in responsible charge of a resident certificated Engineer. This would provide supervision at present perhaps wanting in small factories, while obviating the necessity for the large staff of Inspectors to inspect every boiler in the Presidency, and avoiding needless interference with industry.

I have the honour to be,

Sir,

Your most obedient servant,

Chairman.

Public works (1899) Department.

CURRENT No. 1758

From

The Sanitary Engineer
to Govt.

No. 227

Dated 24.2.99

Received } 28.2.99
Registered }

Enclosures 4.

Spare copies. -

SUBJECT.

Steam-boilers and
Prime-movers act.

Forwarding replies to cri
criticisms of the Trade
Association, Madras on the

[P. W. 20.
1,000—29-11-98.]

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

No 1 229 of 1899

SANITARY ... TO THE GOVERNMENT OF MADRAS
Reg. No. 336
17 FEB. 99

T H E CRITICISMS our clients wish to offer are as follows:-

1. On the Boiler and Prime Mover Act of 1893.

Alteration suggested.

Art.2. The definition of a "Prime Mover" should be so extended as to include Gas and Oil Engines.

Reason for proposed alteration.

The extent to which these classes of Engines are coming in to use in place of Steam Engines.

Alteration suggested.

Art.12. That a judicial body be constituted under the Act to be called "The Steamboiler Commission" to not less than three practical Engineers to be annually appointed by the Governemnt, such commission to sit with a Magistrate or other Government Official as President at such times and places as may be appointed and to exercise the powers conferred on the Chief Presidency Magistrate or Magistrate of a District by Art. 12. of the Act and to hear and decide all appeals and questions relating to suspensions.

Reason for proposed alteration.

The just decision of such matters requires a technical and practical knowledge which is not possessed out-side the body of practical Engineers. Their decisions could be based on personal inspection saving time and expense in procuring and hearing evidence.

Suggested addition.

Art. 12. That a maximum sum be fixed as the cost to the appellant of appeals under this Section.

Reason.

Such maximum to be sufficiently high to prevent frivolous appeals but not to be so high as to act as a deterrent where a man has a bona fide belief in the justice of his ground of appeal.

Proposed alteration.

Art.19. The Steamboiler Commission constituted as suggested in Clause 12 should have jurisdiction in the matters mentioned in this Section.

Such a body once called in to being would be well competent to deal with such matters and such an extension of jurisdiction would tend to increase their authority and the respect in which the tribunal was held.

Reason for alteration.

Art.21. (c). The "words wilfully and negligently" should be added after the words "section 14" and also a proviso to the effect that no offence shall be deemed to have been committed where the absence of a duly qualified attendant is temporary, unavoidable and is at once reported in writing either to a member of the Steam boiler Commission or to an inspector under the Act, such report setting forth the steps taken to procure a qualified attendant to take charge.

proposed alteration.

The fact that by sudden illness, death or other accidents an engine may without the fault of any one be suddenly deprived of its qualified attendant and that such a penalty as the stopping of a large quantity of machinery for such an accident is far too drastic and severe.

Reason for alteration.

Schedule B.

That 1 square foot of fire grate area be taken as the equivalent of 1 nominal Horse power.

Suggested addition.

This forms a ready and fair method of arriving at the fee leviable on any boiler.

Reason.

Criticisms on Order No. 3009 W.24th Novr.1898.

Rule 14.

That an Inspector should be satisfied under (b) in last para of the Rule with a certificate from consulting Engineers as well as from the Chief Engineer of a recognised Boiler Insurance Company.

Suggestion.

This gives a larger class from which certificates can be obtained, a class equally skilled and equally reliable with that selected in the

Reason.

Rule as it stands.

Art.19 footnote.

The addition of 1.65 to the factor of safety in case of duly certified boilers, because they are more than 10 years old is unnecessarily harsh and arbitrary.

Suggestion.

A Boiler may be perfectly good and sound though more than ten years old and if not so the present rules provide safe guards amply sufficient for all cases.

Reason.

This addition is only made if the Boiler has not been open to inspection during construction. It is never made merely because a boiler is ten years old and the addition for such reason is not provided for in any rules. Board of Trade or others, Madras stands alone in this.

Rule 25.

Provision should be made in this Rule for the case of Lancashire and Cornish boilers which are usually fitted with 2 guage glasses and no test cock instead of one guage glass and 2 test cocks as per the Regulation.

Suggestion.

Rule 29.

Provision should be made that in no case the hydraulic pressure test be applied to old boilers to a greater degree than 50% above the working pressure.

Suggestion.

The words "care being taken in case of old boilers not to overstrain them" are too vague and leave too wide a margin to the discretion of the Inspector.

Reason.

Rule 33.

That instead of ascertaining fire grate areas

by taking length from inner edge of dead plate to front of bridge the full length of the fire bars whether covered or uncovered should be taken.

Suggestion.

Rule 34.

Provision should be made that the following clauses do not apply to boilers at present or for the first time within 6 months after the issue of these rules being in Madras.

Suggestion.

(1) The safety valve should be fitted with lifting gear which should in all cases be arranged so that it can be worked by hand.

(2) The valve seats should be secured by studs and nuts.

It is not customary for land boilers to be fitted as above and though it may be right to insist upon such an alteration in the future it is not fair to throw on owners the expense of such fitting and securing in the case of boilers already in use with the stoppage of work entailed for the purpose.

Reason.

As to G.O. No. 2702 W.17th Oct.1898.

Rule 6.

Examination should be held monthly instead of half yearly.

Suggestion.

This would be more convenient for candidates and also for examiners, those persons eligible for the post of Examiners could not readily be spared from their posts for the long period of time that would probably be required if examinations were held at such long intervals as 6 months.

Reason.

Rule 12.(d) That no option as to language should be permitted in grades 1 and 2 and the examination should be conducted in the English Language only.

Suggestion.

The obvious danger of having in a responsible position a man who is unable to understand his English speaking colleagues and superior officers.

Reason.

Rule 20.

Clauses (d) and (e) should be deleted or if (d) be not deleted, those who have acted as firemen only should at any rate be excepted from its provisions.

Suggestion.

Rule 24.

That a definition of the words "continuously under steam" be given explaining what constitutes a breach of continuity and how the expression "more than half of such service was under steam" is to be interpreted.

Suggestion.

Rule 27.

That instead of (a) the following be substituted. "He can read the steam guage and thoroughly understand the working of the water guage, feed, blow off and screw cocks and realizes the danger of tampering with the safety valves or allowing the boiler to become short of water."

Suggestion.

The Rules are too stringent.

Reason.

Rule 32.

That it be made clear whether the grade of certificate is to be decided by nominal H.P. of boiler or Engine and that if it be the latter that the H.P. should be ascertained by following formulae

Suggestion.

H.P. High Pressure.

(1) Simple engines

$$\frac{\text{Area of Cylinder} \times \sqrt[3]{\text{stroke in inches}}}{46} = \text{N.H.P.}$$

I.P. Intermediate Pressure.

(2) Compound engines

$$\frac{\text{Dia of H.P. Cyr.}^2 + \text{Dia of I.P.Cyr}^2 \ldots\ldots}{25} = \text{N.H.P.}$$

L.P. Low Pressure.

(3) Triple

$$\frac{\text{D of H.P. Cyr}^2 + \text{D of I.P.Cyr}^2 + \text{D of L.P.Cyr}^2 \times \sqrt[3]{\text{Stroke in inches}}}{90} = \text{N.H.P.}$$

Rule 48.

That a 2nd Class certificate entitle the holder to take charge of Engines up to 90 N.H.P. instead of as under the rules only 60 N.H.P.

Suggestion.

Rule 49.

That a 3rd class certificate shall entitle the holder to take charge of Engines up to 30 N.H.P. instead of as under the rules only 20 N.H.P.

Suggestion.

Rule 52.

That the "Superintending Engineers" be defined.

Suggestion.

SHORT & ROLL
SOLICITORS
MADRAS.

Rec'd 20th April 1358

ENC

SHORT & ROLL,
Solicitors.
Partners.
JAMES SHORT.
HUGH WINFIELD ROLL.

18, Second Line Beach,

Madras, 8th February 189 9.

SANITARY ENGINEER
Reg. No. 336
17 FEB. 99
TO THE GOVERNMENT OF MADRAS

TO,

The Honorable The Secretary to the Government,

M A D R A S.

Sir,

Under instructions from our clients, the Trades Association of Madras, we have the honor to forward herewith certain criticisms which our clients desire to offer on the Prime Movers Act and Rules thereunder.

We have the honor to be,

S i r,

Your obedient servants,

Short & Roll

Solicitors to the Trades Association of

Madras.

2 Encl

No. 229

SANITARY ENGINEER
Reg. No. 336
17 FEB. 99
TO THE GOVERNMENT OF MADRAS.

The Trades Association
Madras

9 Feby: 1899

The Secretary to Government
P.W.D.
Madras

Sir,

I have the honor to enclose with a request that it will place before the Right Honble: the Governor in Council, criticisms on the Madras Boiler and Prime movers act and trust that they will have due consideration

I have the honor to be,
Sir,
Your most Obedt Servant
[illegible]
Chairman

PW 22 Feby 1358

SHORT & ROLL
SOLICITORS
M A D R A S.

PW 21 Feby 1358

No. 229

Government of Madras,
Office of Sany. Engr. to Govt.,
Stowe Hall, Poonamallee Road,
Madras, 24 February 1899.

OFFICE NOTE.

From

The Sanitary Engineer to Govt.,

M A D R A S.

To

The Acting Secretary to Govt.
Public Works Department.

Your Memo No.1003 C dated 16th. Feb.99.

The undersigned has the honor to forward replies to the criticisms of the Trades association, Madras on the Steam-boilers and Prime-movers Act 1893 and the rules thereunder.

Sanitary Engineer to Govt.

2/2