GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

Read—the following papers :—

From the Accountant-General, Madras, dated 19th February 1895, No. 391.
„ Sanitary Engineer to Government, dated 23rd February 1895, No. 454.
Endorsement in the Judicial Department, dated 6th March 1895, No. 488, on letter from the Chairman, Chamber of Commerce, dated 27th February 1895.
Endorsement in the Judicial Department, dated 28th March 1895, No. 664, on letter from the Government Solicitor, Madras, dated 23rd March 1195, No. 162.
From the Chief Presidency Magistrate, dated 8th April 1895, No. 92.

Order—dated 26th June 1895, No. 1549 W., Public Works.

In G.O. No. 174, dated 25th January 1895, Judicial, suggestions were invited from persons interested, as well as from certain officers of Government in regard to the notifications and orders to be issued under the Steam-boilers and Prime-movers Act, 1893. A draft of the proposed rules has already been published in the *Fort St. George Gazette* of the 5th February 1895. The rules will now be amended in accordance with the orders given below ; and, as thus revised, will be pubished in the *Fort St. George Gazette* and brought into operation with effect from the date of the publication thereof.

Notification.	Section of Act.	Remarks and suggestions.	Reporting officer.	Remarks by the Chief Engineer.	Orders of Government.
Notifications C and F prescribing a form of register of boilers.	Section 9 ..	Another column to be added headed "Time for which this license is to be in force" in order that it may agree with the form appended to the Act *vide* (schedule A) and with the license to be granted by a Magistrate under section 12, sub-section 5 of the Act.	The Sanitary Engineer.	....	Approved.
Notification D authorizing the Sanitary Engineer to revoke and suspend licenses.	Section 11 (*a*) ..	The revocation here alluded to is apparently one during the continuance of a license. The Sanitary Engineer presumes that no appeal will lie to him from the Inspector's refusal to grant a license after the expiry of a previous license.	Do. ..	....	The Sanitary Engineer's opinion is accepted.
Notification E prescribing the form in which licenses shall be granted by the Chief Presidency Magistrate.	Section 12, sub-section 5.	....	....	The form of license here given might have an extra column provided for the registry number as in the form of license issued under section 7 of the Act. The license changes hands with the boiler under section 9 (2) of the Act, and both should, for convenience of identification, bear the register number. The following words might be added to the Magistrate's certificate, "and to enter this register number under his signature in the column of the license provided for the purpose," a new column being added as column 2.	Approved.
Notification F (rule 10). The Inspector to be subordinate to the Sanitary Engineer.	Sections 11 and 23 (*b*).	The Sanitary Engineer considers that no power has been given him to enter and inspect boilers. Such a power will be necessary to enable him to exercise his authority to suspend and revoke licenses and generally to supervise the Inspector's doings.	The Sanitary Engineer.	....	The Sanitary Engineer would ordinarily act on reports received from the Inspector. But there seems no reason why that officer should not also be appointed an Inspector under section 3 of the Act. This would enable him to enter and inspect boilers when necessary. The appointment will be notified accordingly.
		The Accountant-General presumes that the pay abstracts of the establishment will be signed by the Sanitary Engineer.	The Accountant-General.	....	The Accountant-General's presumption is correct.
Notification F (rule 11). The Chief Engineer to depute an officer to inspect the office of the Inspector twice a year.	Section 23 ..	The Sanitary Engineer would desire Government either to delete this rule or to make the Boiler Inspector entirely subordinate to the Chief Engineer. With the powers vested in him by these rules, it is inconsistent that a subordinate of the Chief Engineer should inspect the records of a subordinate of the Sanitary Engineer.	The Sanitary Engineer.	I have never concealed my opinion that the whole arrangement is anomalous, but the Government having definitely decided that the Inspector is to be under the Sanitary Engineer, I agree with the latter that rule 11 should be expunged.	Rule 11 will be omitted as suggested by the Sanitary Engineer.
Notification F (*c*) Examinations of boilers.	Section 23 (*c*) ..	In the absence of any rule making Sunday a *dies non*, there is little doubt that many boiler examinations will be required to be made on that day. Would suggest a ruling that where Sunday examinations are required, the fees for such be increased 50 per cent., the Inspector and his staff being allowed 25 per cent. to be divided amongst them in proportion to their pay.	Do. ..	I concur in this view, but would prefer that the ruling should be "Examinations will not be made on Sunday except in cases of absolute necessity; in such cases the fees may be increased 25 per cent., the Inspector and his staff being allowed to divide the additional fee amongst them in proportion to their pay." The Inspector will decide as to the necessity for Sunday examinations.	The Chief Engineer's suggestion is approved.
Notification F (rule 13). The Inspector to fix the pressure to be allowed on boilers.	Section 23 ..	There may be a difficulty in working this rule. Instead of refusing to license a boiler, the Inspector may give a license at such a low pressure or may reduce the pressure named in a previous license to such a low figure that his action would be tantamount to a refusal, though not legally such. There ought to be some appeal in such cases as a safe guard against any attempt at extortion, &c.	Do. ..	There is force in this objection, but I think such cases are not likely to arise so frequently as to justify a special provision for an appeal. It would cause endless trouble if an appeal were allowed against every act of the Inspector, and something must be left to his honesty and the control of the Sanitary Engineer.	The Government does not consider it desirable to make any alteration at present.
Notification F (Boilers, general), rule 29, paragraph 5, clause 1. Inspection by more than one Inspector.	Section 23 ..	Boilers might be made in England, Bombay or Calcutta, so that the Inspector of a boiler under construction may be a servant of some other Government. It must be made clear, therefore, that the Inspector for the town of Madras is not necessarily referred to in this clause.	Do. ..	....	No alteration in the working of the rule is considered necessary.
Notification F (rule 35). The Inspector to report to the Sanitary Engineer any tampering with the weights or the loading of the valves.	Section 23 ..	A definite punishment to be added to rule 35 for altering the weight of a safety valve. The offence is a serious one and the temptation to do so is considerable to an idle or a dishonest man. A non-official does not care about being *reported* to Government, so that a provision that conviction of that offence would render a person liable to imprisonment for, say, a month, without option of a fine would render the risk much less.	The *Madras Mail*.	This seems unnecessary; the license will fix the pressure and any tampering with the safety valve will be a breach of the terms of the license, and punishable under section 21 of the Act; beyond this the Act gives no power of punishment.	The rule will stand as proposed.
		General.			
		The proposed notifications and orders seem to be sufficient and within the powers conferred by the Act. No opinion can be offered on the rules in Notification F under the head "Iron boilers" as they are of a special character.	The Advocate-General.	....	....
Paragraph 2 of G.O. No. 174, Judicial, dated 25th January 1895, fixing the pay of the Inspector at Rs. 250—300.	....	Provided a thorough competent officer on receipt of an adequate salary is appointed, the Chamber of Commerce has no remarks to offer on the proposed rules, but in order to secure the services of such a thoroughly competent man whose decisions would be respected by the Engineers in the various factories here, some of whom are in receipt of salaries considerably higher than the salary proposed for the Inspector, the Chamber would suggest that the Inspector's salary be fixed at Rs. 500; or as an alternative he be allowed to supplement his official income by undertaking other work unconnected with his business under the Act.	The Chamber of Commerce.	I very much doubt whether a competent man will usually be obtained for less than about Rs. 500; but by a fortunate accident such a man has actually been obtained for the present, and the question of raising the pay need not therefore be considered.	The question of raising the salary will be considered, should any difficulty be experienced in obtaining a competent man for that now offered.
		The pay proposed for the Inspector will only attract a superior fitter. A man of real knowledge will never care to take up the duties for the pay.	The *Madras Mail*.	....	....
		Suggests the appointment of a superior man on higher pay to be entrusted with duty of inspecting factories and boilers.	The Sanitary Engineer.	....	....
Paragraph 4 of G.O. No. 174, Judicial, dated 25th January 1895, summoning of assessors to assist the Chief Presidency Magistrate in the hearing of appeals.	Section 12 (4).	Suggests the addition of a provision that the opinions of the assessors should be recorded and considered, and that the decision of the appeal should rest with the Magistrate; considers that the opinion of expert witness will be better than that of assessors and that a fee of Rs. 15 should be awarded to the assessors or expert witnesses; and submits draft rules accordingly.	The Chief Presidency Magistrate.	I do not think it would be at all desirable to omit the provision for summoning assessers, or to substitute expert witnesses for them; the latter will almost always be summoned by the parties, whether assessors are appointed or not. The draft rules suggested by the Chief Presidency Magistrate appear suitable.	The draft rules for the hearing of appeals under section 12 (4) of the Act submitted by the Chief Presidency Magistrate are approved.

Notification.	Section of Act.	Remarks and suggestions.	Reporting officer.	Remarks by the Chief Engineer.	Orders of Government.
		General.			
		The Sanitary Engineer raises the following questions and asks for the early orders of Government thereon (*vide* paragraphs 10 to 17 of his letter) :— (1) The staff required by the Inspector (paragraph 10). (2) Authority to entertain extra coolies as occasion arises (paragraph 11).	....	....	The appointment of a clerk on Rs. 15 and a peon on Rs. 8 has been sanctioned in paragraph 2 of G.O. (Judicial Department) No. 174 of 25th January 1895; no other permanent staff is at present considered necessary, but such temporary assistance as may be required will be engaged as occasion arises.
		(3) Supply before the 1st April 1895 of the tools required by the Inspector (paragraph 12). (4) Books of reference to be supplied to the Inspector (paragraph 13).	....	....	Separately disposed of by G.O. No. 1252 W., dated 24th May 1895.
		(5) Office accommodation for the Inspector (paragraph 14).	....	....	The Sanitary Engineer will submit definite proposals on this point.
		(6) Supply of stationery, books and forms (paragraph 15).	....	....	Sanctioned as proposed.
		(7) The question of sending the Inspector to such stations as may be necessary to be left to the discretion of the Sanitary Engineer and the rate of fees to be recovered from municipalities, to be laid down after 1st April 1896 from the experience gained after a year's working (paragraph 16).	....	....	The Sanitary Engineer's proposals are approved, generally; but the Inspector should begin his mofussil inspections as soon as he is through his initial work in Madras, and fees should be recovered at once on the scale already suggested (after communication with Mr. Ellis), or on such other scale as may be approved.
		(8) Remuneration to the Sanitary Engineer for the additional work thrown upon him (paragraph 17).	....	....	The Government is not prepared at present to propose any increase to the Sanitary Engineer's salary.
		The Accountant-General suggests that the cost of the establishment and other incidental charges including those that may be incurred under section 12 (5) of the Act should be debited to "20. Police Steam-boiler Inspection establishments," except Pleader's fees which should be charged to "Law and Justice," and that the receipts be credited to the Revenue head "XVII Police, Fees, Fines and Forfeitures."	....	....	The Accountant-General's suggestions are approved.

(True Extract.)

Under Secy. to Govt., P.W.D.

To all District Magistrates.
„ the Commissioner of Police, Madras.
„ the Sanitary Engineer.
„ the Chief Presidency Magistrate.
„ the Government Solicitor.
„ the Accountant-General.
„ the Chamber of Commerce.
„ the Madras Trades Association.
„ the Local and Municipal Department.
„ the Judicial Department.
„ the Financial „

Exd. T. K. Narayana Aiyangar.

Spare Copies

GENERAL.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated June, 26th

Recd. *Encl.*

G.O., 26th June 1895, No. 1549 W.

JUNE.

Steam-boilers and Prime-movers Act, 1893

Directing the publication in the *Fort St. George Gazette* of amended rules in connection with the —.

---

field a fresh column for remarks by the Chief Engineer —

(a) I have never concealed my opinion that the whole arrangement is anomalous, as the point having definitely decided that the Inspector is to be under the Chief Engineer I agree with the latter that Rule 11 should be expunged —

(b) I concur in this view, but would propose that the ruling should be "Examinations will not be made on Sundays except in cases of absolute necessity; in such cases the fees be —"

(c) There is force in this objection, ~~and~~ but I think ~~an appeal should be allowed~~ such cases are not likely to arise so frequently as to justify a special provision for an appeal. It would cause endless trouble if an appeal were allowed against any act of the Inspector, and something must be left to his discretion and the control of the licensing system –

(d) This seems necessary; the licence will fix the premises and any tampering with the supply of water will be a breach of the terms of the licence, and punishable under section 21 of the Act – beyond this the Act gives no power of punishment –

(e) I very much doubt whether a competent man will readily be obtained for less than about Rs 500; but by a fortunate accident such a man has actually been obtained for the present, and the question of raising the pay need not at present be considered

(f) I do not think it would be at all desirable to omit the provision for nominating assessors, or to substitute expert witnesses for them; the latter will almost always be summoned by the parties, whether assessors are appointed or not – The draft rules suggested by the Chief Presidency Magistrate appear suitable –

Recast the sketch as now altered, and submit to H.E. the draft orders

21/5

C.A.W.

are there remarks the Chief Engineer remarks actually made or remarks prepared for him to make? I do not see originals in this file.

cwm
22/5

D.W.

The matter has already been disposed of by W/. and the fair copy was being sent to him for initials – but the peon took the papers to your room by mistake – The rough copies were purposely removed from the file to avoid confusion with a mass of papers already sufficiently large.

22·May 95.

W has since passed the fair, and as the paper are urgent. they were sent in circulation on the 22 Inst.

R.S.
1st May 95

CWO 2/5/95

Boiler Inspection

[illegible] list of papers brought [illegible]

The suggestions made in connection with the proposed Notifications under the Steam Boilers Act have now to be dealt with. They have been tabulated in the accompanying Statement, a column being left for "orders thereon".

The Sanitary Engineer has brought forward certain additional matters e.g. additional Establishment, increase of pay to himself, &c. These and other suggestions unconnected with the proposed Notifications have also been entered in ~~excluded from~~ the statement.

R.S.
19 Ap. 95

power should be vested in the inspecting official. But whether it is desirable to confer such powers on a person engaged on avg Rs. 250 a month is a matter for consideration. Considering the responsibility involved the pay of the appointment seems inadequate.

CWBS

18/2 95

Note

The Madras Mail of the 11th Inst. contains some remarks. A copy of the paper is put up.

N.S.
19 Feb 95

CWBS
19/2 95

~~C.A.W.~~

GOVERNMENT OF MADRAS.

JUDICIAL DEPARTMENT.

Read—again the following papers :—

G.O., dated 24th August 1893, Nos. 1712-1713A, Judicial.

Abstract.—Drawing the attention of all District Magistrates to Act III of 1893, and requesting them to report whether it is advisable to extend it to their several districts and whether a notification under section 14 should also be issued, and directing that the Governments of Bengal and Bombay be asked to furnish copies of rules and orders made under the Acts of those Presidencies.

G.O., dated 12th March 1894, No. 610, Judicial.

Abstract.—Calling for information as to the number of steam-boilers in use in certain districts and in the town of Madras, and directing, with reference to sections 9, 11 and 12 of the Madras steam-boilers and Prime-movers Act, that certain questions be considered in the Public Works Department.

Read—also the following papers :—

From the District Magistrate,	Tanjore,	dated	30th March 1894,	No.	351.
,,	,,	Coimbatore,	,,	10th May	,, ,,	568.
,,	,,	Salem,	,,	18th ,,	,, ,,	815.
,,	,,	Bellary,	,,	19th ,,	,, ,,	83.
,,	,,	Tinnevelly,	,,	22nd ,,	,, ,,	556.
,,	,,	,,	,,	20th June	,, ,,	666.
,,	,,	Kistna,	,,	24th July	,, ,,	560.

Abstract.—Reporting as to the numbers of steam-boilers in their districts.

From the Commissioner of Police, Madras, dated 25th April 1894, No. 51.

Abstract.—Forwarding a list of steam-boilers in use in the Madras City.

From the Under Secretary to the Government of Bombay, dated 24th May 1894, No. 1942.

Abstract.—Forwarding copy of the rules under the Bombay Boiler Inspection Act, 1891, as finally approved by Government.

From the Under Secretary to the Government of Bombay, dated 8th June 1894, No. 2134.

Abstract.—Inviting attention to his previous letter and stating that another set of rules under the same Act is under consideration.

From the Public Works Department, dated 18th July 1894, No. 614 D.

Abstract.—Forwarding, with remarks, a form of register of boilers referred to in section 9 of Act III of 1893.

Order—dated 25th January 1895, No. 174, Judicial.

After a careful consideration of the correspondence read above, the Government has decided that it is not necessary at present to extend any portion of the Madras Steam-boilers and Prime-movers Act, 1893, to the mufassal; it will, however, be brought into operation in the City of Madras with effect from the 1st April 1895.

2. With regard to the appointment of Inspectors under section 3 of the Act, the Government has come to the conclusion that there will not be enough work to occupy

the full time of even one such officer and therefore considers that to the Boiler Inspector should also be entrusted the duty of the periodical inspection of the engines and boilers of the several mufassal municipal water-works. For the combined duties a salary of Rs. 250–10–300 *per mensem* (*plus* travelling allowance for journeys to inspect municipal engines and boilers) will probably suffice; and towards the expenditure on this account the municipalities benefited by the appointment will be required to contribute. On this point further orders will issue in the Local and Municipal Department. The Inspector will need a clerk on Rs. 15 and a peon on Rs. 8. Eight applications for the post of Boiler Inspector have been received. These will be transferred to the Chief Engineer who will advertize in the Gazette and in the leading newspapers stating the terms offered and will, in consultation with the Sanitary Engineer, nominate a person for appointment by Government at an early date. Inasmuch as the Inspector will have to work under the Sanitary Engineer so far as regards municipal engines and boilers, it seems to Government expedient that he should be subordinate to that officer in his position as Boiler Inspector also. The draft rules in Appendix II provide accordingly and it will be considered in the Public Works Department what reports and returns relating to the working of the Act should be submitted by the Sanitary Engineer to Government.

3. With reference to section 4 of the Act, the Government resolves to fix the 1st July 1895 as the date after which no boiler may be used unless it has been licensed.

4. Section 12 (4) of the Act provides for the summoning of assessors to assist the Chief Presidency Magistrate in the hearing of appeals, in such manner as the Government may direct. Probably the best plan will be to permit the appellant to nominate one assessor and the Inspector the other, subject to the reservation that, if either of the assessors or both of them appears or appear to the Chief Presidency Magistrate to be incompetent, he may nominate one or both himself.

The Chief Presidency Magistrate will be requested to advise on the subject.

5. The Government has resolved not at present to give the direction referred to in section 14 of the Act and so much of the Act as relates to the issue of certificates of competency will, therefore, remain in abeyance until further orders.

6. The notifications and orders which it is proposed to issue under the provisions of sections 3, 4, 9, 11, 12 and 23 of the Act are printed as Appendix II to this Proceedings and will be published in the *Fort St. George Gazette*. The Government will consider any suggestions which may be made in respect of them on or before the 1st April 1895 by any persons interested. In particular the Government desires to be favoured by the said date with the opinions of the Public Works Department, the Sanitary Engineer, the Hon'ble the Advocate-General, the Chief Presidency Magistrate, the Accountant-General, the Chamber of Commerce and the Madras Trades Association.

7. All future correspondence in connection with the working of Madras Act III of 1893 will be dealt with in the Public Works Department of the Secretariat.

(True Extract.)

for *Chief Secretary.*

To all District Magistrates.
,, the Commissioner of Police, Madras.
,, the Public Works Department, with applications.
,, the Local and Municipal Department.
,, the Sanitary Engineer.
,, the Chief Presidency Magistrate.
,, the Government Solicitor.
,, the Accountant-General.
,, the Chamber of Commerce.
,, the Madras Trades Association.
Gazette.
Editor's Table.

10SC

APPENDIX I.

NOTIFICATION.

Under sub-section (2) of section 1 of the Madras Steam-boilers and Prime-movers Act, 1893, the Government directs that the said Act shall come into force upon the 1st April 1895.

APPENDIX II.

PROPOSED NOTIFICATIONS.

NOTIFICATION A.

Under sub-section (2) of section 3 of the Madras Steam-boilers and Prime-movers Act, 1893, the Government directs that the Inspector shall exercise the powers and perform the duties conferred and imposed by or under this Act on an Inspector throughout the City of Madras.

NOTIFICATION B.

Under section 4 of the Madras Steam-boilers and Prime-movers Act, 1893, the Government fixes the 1st July 1895 as the date after which no boiler shall be used unless a license authorizing its use has been granted under the Act and is in force.

NOTIFICATION C.

(*a*) Under section 9 of the Madras Steam-boilers and Prime-movers Act, 1893, the Government prescribes the following form of register of boilers :—

Name of Owner.	Place where boiler is situated.	Registry number and description of boiler and age.	Nominal horse-power.	When, where and by whom made.	When and where last repaired.	Date of grant of license.	Maximum pressure at which boiler may be worked.	Remarks.

(*b*) Under the same section the Government directs that the registry number of every boiler shall be cut in the front plate thereof in such position as shall be pointed out by the Inspector. The device to be so cut shall consist of the letters "RY" above the letters "No." and divided from them by a horizontal line; the letters "No." to be followed by the registry number in figures, the letters being at least one-half of an inch, and the figures at least one-and-a quarter inch, in height; the whole to be enclosed in a rectangular figure one-sixteenth of an inch clear from the letters and figures; thus—

$$\boxed{\dfrac{\text{RY.}}{\text{No.}}\ 148.}$$

The engraving shall be not less than one-sixty-fourth of an inch deep.

NOTIFICATION D.

Under section 11 of the Madras Steam-boilers and Prime-movers Act, 1893, the Government authorizes the Sanitary Engineer to revoke and suspend licenses granted in respect of boilers, for the reasons therein given.

+ The Inspector grants the license under Sec 7 and the Sanitary Engr. revokes it under Sec. 11 }

NOTIFICATION E.

Under sub-section (5) of section 12 of the Madras Steam-boilers and Prime-movers Act, 1893, the Government prescribes the following as the form in which licenses shall be granted by the Chief Presidency Magistrate :—

LICENSE.

Name of owner.	Description of boiler and age.	Nominal horse-power.	When and where made.	When and where last repaired.	Time for which this license is to be in force.	Maximum pressure at which the boiler may be worked.	Remarks.

Certificate.—I, the undersigned, * being assisted by A and B, two competent assessors,* am satisfied that C is entitled to the above license and have granted it to him on this date under the provisions of section 12 (5) of Madras Act III of 1893; and I hereby direct the Inspector to register the boiler specified in the above license and to allot to it a registry number in accordance with section 9 of the said Act.

(Signed) D. E.,
Chief Presidency Magistrate.

* The words between asterisks to be omitted when no assessors employed.

NOTIFICATION F.

The Government will be prepared to consider any suggestions in respect of the following draft rules under clauses (*a*), (*b*) and (*f*) of section 23 of the Madras Steam-boilers and Prime-movers Act, 1893, which are received on or before the 1st April 1895 :—

A.—*Preliminary.*

1. These rules may be called the Boiler Examination Rules.

2. In these Rules—

(*a*) "The Act" means the Madras Steam-boilers and Prime-movers Act, 1893;
(*b*) "Section" means a section of the said Act;
(*c*) "Examination" means the examination of boilers under the Act, and "examination fees" means fees leviable on account of the examination of boilers.

B.—*The Inspector.*

3. The Inspector shall not undertake any professional work unconnected with his business under the Act except with the approval, or under the orders, of Government.

4. The Inspector shall receive such salary as Government may determine, all examination fees being credited to Government.

5. The Inspector shall have an office in which all records connected with the working of the Act shall be kept.

6. The Inspector shall keep the following records :—

(*a*) a register of examination fee receipts;
(*b*) a book containing counterfoils of licenses;
(*c*) a register of boilers in the following form which has been prescribed under section 9 :—

Name of owner.	Place where boiler is situated.	Registry number and description of boiler and age.	Nominal horse power.	When, where and by whom made.	When and where last repaired.	Date of grant of license.	Maximum pressure at which boiler may be worked.	Remarks.

(*d*) a book containing a detailed account of every examination made by him;
(*e*) a diary of the work done by him from day to day;
(*f*) a register of licenses suspended or revoked under section 11 (this register to be prepared upon information furnished to the Inspector by the suspending or revoking authority, *i.e.*, the Sanitary Engineer);
(*g*) a register showing the result of appeals presented under section 12 (this register to be prepared upon information furnished to the Inspector by the Chief Presidency Magistrate).

7. The Inspector shall furnish to the Sanitary Engineer, on the third working day of every month, a copy of his diary for the preceding month.

8. All examination fees shall be paid into the Madras Bank by the owners of boilers and no boiler shall be examined under section 5 unless the notice sent to the Inspector under that section is accompanied by a Bank receipt for the fee; and the Inspector, if he finds that the right fee has not been paid, may decline to examine the boiler until it has been paid.

9. An extract from the register of examination fee receipts which is compiled by the Inspector from the Bank receipts referred to in Rule 8 shall be forwarded by him, monthly, to the Accountant-General who shall verify it by reference to the amount actually received on account of examination fees during the month to which the extract relates and forward it to the Sanitary Engineer for record.

10. The Inspector shall be subordinate to the Sanitary Engineer and shall obey all lawful orders issued to him by that officer.

11. The Inspector's office and the records kept therein shall be examined in January and July of each year by such officer as the Chief Engineer may depute for this purpose.

C.—*Examinations.*

12. Examination fees shall be paid in accordance with the following scale :—

			RS.
(i)	For the examination of each boiler not exceeding	10 N.H.P.	.. 12
(ii)	,, ,, ,, ,, ,,	20 ,,	.. 16
(iii)	,, ,, ,, ,, ,,	30 ,,	.. 24
(iv)	,, ,, ,, ,, ,,	50 ,,	.. 32
(v)	,, ,, ,, boiler exceeding	50 ,,	.. 40

Iron Boilers.

13. The Inspector is required by the Act to fix the pressure to be allowed on boilers. In performing this very responsible and onerous duty he must be very careful, as in the event of accident it will be necessary for him to prove clearly that he used due caution. On the one hand he must be careful as regards safety, and on the other hand he must not unduly reduce the pressure on a boiler.

14. The Inspector should fix the working pressure for boilers by a series of calculations of the strength of the various parts, and according to the workmanship and material.

In the case of boilers made in India, the Inspector may receive and examine plans and particulars of boilers before the commencement of manufacture with the object of preventing questions arising after the boilers are finished.

When the Inspector has received plans and tracings of new boilers, or of alterations of boilers, and has approved of them, he will of course be careful in making his examination, when the boiler is ready for work, to see that they have been followed out. When he has not had the plans submitted, but is called in to inspect a boiler, he will of course measure the parts, note the details of construction, and, if necessary, bore the plates to ascertain their thickness, &c., before he gives his certificate.

The Inspector shall not declare a boiler to be safe unless (*a*) he is fully informed as to its construction, material and workmanship, or unless (*b*) he is furnished with a certificate from a Chief Engineer of a recognised boiler insurance company. He should therefore be very careful how he ventures to give a certificate.

15. In the case of new boilers the Inspector may allow a stress not exceeding 7,000 lb. per square inch of net section on solid iron screwed stays supporting flat surfaces, but the stress should not exceed 5,000 lb. when the stays have been welded or worked in the fire.

The areas of diagonal stays are found in the following way: Find the area of a direct stay needed to support the surface, multiply this area by the length of the diagonal stay, and divide the product by the length of a line drawn at right angles to the surface supported to the end of the diagonal stay; the quotient will be the area of the diagonal stay required.

When gusset stays are used, their area should be in excess of that found in the above way.

16. When the tops of combustion boxes or other parts of a boiler are supported by solid rectangular girders the following formula should be used for finding the working pressure to be allowed on the girders, assuming that they are not subjected to a greater temperature than the ordinary heat of steam, and in the case of combustion chambers that the ends are fitted to the edges of the tube plate and the back plate of the combustion box.

$$\frac{C \times d^2 \times T}{(W-P)\, D \times L} = \text{Working Pressure.}$$

W = Width of combustion box in inches.
P = Pitch of supporting bolts in inches.
D = Distance between the girders from centre to centre in inches.
L = Length of girder in feet.
D = Depth of girder in inches.
T = Thickness of girder in inches.
C = 500 when the girder is fitted with one supporting bolt.
C = 750 when the girder is fitted with two or three supporting bolts.
C = 850 when the girder is fitted with four supporting bolts.

The working pressure for the supporting bolts and for the plate between them should be determined by the rule for ordinary stays.

17. The pressure on plates forming flat surfaces is found by the following formula :—

$$\frac{C \times (T+1)^2}{S-6} = \text{Working Pressure.}$$

T = Thickness of the plate in sixteenths of an inch.
S = Surface supported in square inches.
C = Constant according to the following circumstances.
C = 100 when the plates are not exposed to the impact of heat or flame, and the stays are fitted with nuts and washers, the latter being at least three times the diameter of the stay and two-thirds the thickness of the plates they cover.*
C = 90 when the plates are not exposed to the impact of heat or flame, and the stays are fitted with nuts only
C = 60 when the plates are exposed to the impact of heat or flame, and steam in contact with the plates, and the stays fitted with nuts and washers, the latter being at least three times the diameter of the stay and two-thirds the thickness of the plates they cover.
C = 54 when the plates are exposed to the impact of heat or flame, and steam in contact with the plates, and the stays fitted with nuts only.
C = 80 when the plates are exposed to the impact of heat or flame with water in contact with the plates, and the stays screwed into the plates and fitted with nuts.
C = 60 when the plates are exposed to the impact of heat or flame, with water in contact with the plates, and the stays screwed into the plates, having the ends riveted over to form substantial heads.
C = 36 when the plates are exposed to the impact of heat or flame, and steam in contact with the plates, with the stays screwed into the plates, and having the ends riveted over to form substantial heads.

In cases where plates are stiffened by T or L irons, and a greater pressure is required for the plates than is allowed by the use of the above constants, the case should be submitted for the consideration of the Sanitary Engineer.

When the riveted ends of screwed stays are much worn or when the nuts are burned, the constants should be reduced, but the Inspector must act according to the circumstances that present themselves at the time of inspection, and it is expected that in cases where the riveted ends of screwed stays in the combustion boxes and furnaces are found in this state, it will be often necessary to reduce the constant 60 to about 36.

The Inspector should not in any case allow a greater compressive stress on the edge of the tube plates than 7,500 lb. per square inch, which is that used in the following formula :—

$$\frac{(D-d)\, T \times 15{,}000}{W \times D} = \text{Working Pressure.}$$

D = least horizontal distance between centres of tubes in inches.
d = inside diameter of ordinary tubes in inches.
T = thickness of tube plate in inches.

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* If the diameter of riveted washers be at least two-thirds the pitch of the stays, and the thickness not less than the plates they cover, the constant may be increased to 150.

When doubling plates are fitted of the same thickness as the plates they cover and not less in width than two-thirds the pitch of the stays, the constant may be increased to 160.

W = extreme width of combustion box in inches from front of tube plate to back of fire-box, or distance between combustion box tube plates when boiler is double ended and the box common to the furnaces at both ends.

18. The Inspector should take care that boilers, the outside of which cannot be seen, are cleared of all covering and fittings for inspection whenever the Inspector considers it necessary. It will often be found necessary to reduce the pressure, unless the boilers are partially cleared from their seats to enable the Inspector to judge of their condition. If the owners in any special case have any good reasons for not wishing to clear them when the Inspector requires it, the Inspector should submit the whole case in detail to the Sanitary Engineer for his consideration. The Inspector must recollect that he is not to certify as sufficient any boiler respecting which he cannot thoroughly satisfy himself.

The Inspector should record in his inspection book the dates on which boilers are inspected, when and to what extent cleared from brick work, and whether the boilers were set or not when examined, and if not set, where they were examined. Boilers which have been cleared should in all cases be subjected to the hydraulic test before the brick work is rebuilt.

19. Boilers well constructed, well designed, and made of good material should have an advantage in the matter of working pressure over boilers inferior in any of the above respects, as unless this is done the superior boiler is placed at a disadvantage, and good workmanship and material will be discouraged. The following rules are therefore prescribed.

When cylindrical boilers are made of the best material with all the rivet holes drilled in place and all the seams fitted with double butt straps each of at least five-eighths the thickness of the plates they cover, and all the seams at least double riveted with rivets having an allowance of not more than 75 per cent. over the single shear and provided that the boilers have been open to inspection during the whole period of construction, then 5 may be used as the factor of safety. The tensile strength of the iron is to be taken as equal to 47,000 lb. per square inch with the grain, and 40,000 lb. across the grain. But when the above conditions are not complied with, the additions in the following scale must be added to the factor 5, according to the circumstances of each case :—

A †	·15	To be added when all the holes are fair and good in the longitudinal seams, but drilled out of place after bending.
B †	·3	To be added when all the holes are fair and good in the longitudinal seams, but drilled out of place before bending.
C	·3	To be added when all the holes are fair and good in the longitudinal seams, but punched after bending instead of drilled.
D	·5	To be added when all the holes are fair and good in the longitudinal seams, but punched before bending.
E *	·75	To be added when all the holes are not fair and good in the longitudinal seams.
F	·1	To be added if the holes are all fair and good in the circumferential seams, but drilled out of place after bending.
G †	·15	To be added if the holes are fair and good in the circumferential seams, but drilled before bending.
H	·15	To be added if the holes are fair and good in the circumferential seams, but punched after bending.
I †	·2	To be added if the holes are fair and good in the circumferential seams, but punched before bending.
J *	·2	To be added if the holes are not fair and good in the circumferential seams.
K	·2	To be added if double butt straps are not fitted to the longitudinal seams, and the said seams are lap and double riveted.
L	·1	To be added if double butt straps are not fitted to the longitudinal seams, and the said seams are lap and treble riveted.
M	·3	To be added if only single butt straps are fitted to the longitudinal seams and the said seams are double riveted.
N	·15	To be added if only single butt straps are fitted to the longitudinal seams and the said seams are treble riveted.
O	·1	To be added when any description of joint in the longitudinal seams is single riveted.
P	·1	To be added if the circumferential seams are fitted with single butt straps and are double riveted.
Q	·2	To be added if the circumferential seams are fitted with single butt straps and are single riveted.
R	·1	To be added if the circumferential seams are fitted with double butt straps and are single riveted.
S	·1	To be added if the circumferential seams are lap joints and are double riveted.
T	·2	To be added if the circumferential seams are lap joints and are single riveted.
U	·25	To be added when the circumferential seams are lap, and the stakes of plates are not entirely under or over.

V ‡	·3	To be added when the boiler is of such a length as to fire from both ends, or is of unusual length, as in the case of flue boilers; and the circumferential seams fitted as described opposite P, R, and S, but of course when the circumferential seams are as described opposite Q and T, V ·3 will become V ·4.
W *	·4	To be added if the seams are not properly crossed.
X *	·4	To be added when the iron is in any way doubtful, and the Inspector is not satisfied that it is of the best quality.
Y ††	1·65	To be added if no certificate is produced from a Chief Engineer of a recognized Boiler Insurance Company or if the boiler was not open to inspection during the whole period of its construction by the Inspectors of any recognized Boiler Insurance Company.

Where marked * the factor of safety should be increased still further if the workmanship or material is very doubtful or is very unsatisfactory.

† When the holes are to be rimered, or bored out in place, the case should be submitted to the Sanitary Engineer as to the reduction or omission of A, B, G, and I as heretofore.

‡ When boilers are comparatively short, the cases should be submitted to the Sanitary Engineer for consideration as to the omission of V as heretofore.

When the circumferential seams are double strapped and double riveted or lapped and treble riveted, and the calculated strength not less than 65 per cent. of the solid plate V, ·3 may be omitted as heretofore.

The strength of ordinary joints is found by the following method :—

$$\frac{(\text{Pitch} - \text{Diameter of rivet}) \times 100}{\text{Pitch}} = \Big\} \text{ Percentage of strength of plate at joint as compared with the solid plate.}$$

$$\frac{(\text{Area of rivet} \times \text{No. of rows of rivets}) \times 100}{\text{Pitch} \times \text{thickness of plate}} = \Big\} \text{ Percentage of strength of rivets as compared with the solid plate.}$$ [§]

Then take iron as equal to 47,000 lb. per square inch and use the smaller of the two percentages as the strength of the joint, and adopt the factor of safety as found from the preceding scale.

$$\frac{(47{,}000 \times \text{percentage of strength of joint}) \times \text{twice the thickness of the plate in inches.}}{\text{Inside diameter of the boiler in inches} \times \text{factor of safety}} = \text{Pressure to be allowed per square inch on the safety-valves.}$$

In the case of ordinary zigzag riveting the strength through the plate diagonally between the rivets, when diagonal pitch = $\frac{6}{10}$ horizontal pitch + $\frac{4}{10}$ diameter of rivet.

Plates that are drilled in place must have been taken apart and the burr taken off and the holes slightly countersunk from the outsides.

Butt straps must have been cut from plates and not from bars, and must be of as good a quality as the shell plates, and for the longitudinal seams must be cut across the fibre. The rivet holes may have been punched or drilled when the plates are punched or drilled out of place, but when drilled in place must have been taken apart and the burr taken off and slightly countersunk from the outside.

When single butt straps are used and the rivet holes in them punched, they must be one-eighth thicker than the plates they cover.

The diameter of the rivets must not be less than the thickness of the plates of which the shell is made, but it will be found when the plates are thin, or when lap joints or single butt straps are adopted, that the diameter of the rivets should be in excess of the thickness of the plates.

Dished ends must be stayed as flat surfaces; but when they are theoretically equal to the pressure needed, when considered as portions of spheres, the stays when solid may have a stress of 14,000 lb. per square inch of net section, but the stress should not exceed 10,000 lb. when the stays have been welded or worked in the fire.

Truly hemispherical ends subjected to internal pressure may be allowed double the pressure that is suitable for a cylinder of the same diameter and thickness.

All man-holes and openings must be stiffened with compensating rings of at least the same effective sectional area as the plates cut out, and in no case should the plate rings be less in thickness than the plates to which they are attached. The openings in the shells of cylindrical boilers should have their shorter axes placed longitudinally. It is very desirable that the compensating rings round openings in flat surfaces be made of L or T iron. Cast-iron doors are not to be passed.

The neutral part of boiler shells under steam domes must be efficiently stiffened and stayed, as serious accidents have arisen from the want of such precautions.

20. New boilers are to be tested by hydraulic pressure according to the following scale :—

[§] If the rivets are exposed to double shear, multiply the percentage as found by 1·75.

Boilers intended to work up to 100 lb. pressure per square inch or any pressure below that are to be tested to double the working pressure.

Above lb.	100	up to lb.	125	to be tested to lb.	200.
,,	125	,,	150	,,	230.
,,	150	,,	175	,,	250.
,,	175	,,	200	,,	270.
,,	200	,,	225	,,	290.
,,	225	,,	250	,,	310.
,,	250	,,	275	,,	330.
,,	275	,,	300	,,	350.

Any boilers intended for working pressure above these to be tested to not less than 50 lb. above such working pressure.

In the case of old boilers the Inspector must use his own judgment as to the necessary pressure to be applied.

21. Circular furnaces with the longitudinal joints welded or made with a butt strap.

$$\frac{90{,}000 \times \text{the square of the thickness of the plate in inches}}{(\text{Length in feet} + 1) \times \text{diameter in inches}}$$

= working pressure per square inch, provided it does not exceed that found by the following formula :—

$$\frac{8{,}000 \times \text{thickness in inches}}{\text{diameter in inches.}} = \Big\} \text{ Working pressure per square inch.}$$

The second formula limits the crushing stress on the material to 4,000 lb. per square inch.

The length is to be measured between the rings if the furnace is made with rings.

If the longitudinal joints instead of being butted are lap-jointed in the ordinary way, then 75,000 is to be used instead of 90,000, excepting only where the lap is bevelled and so made as to give the flues the form of a *true* circle, when 80,000 may be used.

When the material or the workmanship is not of the best quality, the constants given above must be reduced, that is to say, the 90,000 will become 80,000, the 80,000 will become 70,000, the 70,000 will become 60,000; when neither the material nor the workmanship is of the best quality, such constants will require to be further reduced, according to circumstances and the judgment of the Inspector, as in the case of old boilers. One of the conditions of best workmanship is that the joints are double riveted with double butt straps, or single riveted with double butt straps, and the holes drilled after the bending is done and when in place and the plates afterwards taken apart, the burr on the holes taken off and the holes slightly countersunk from the outside.[*]

The working pressure for corrugated furnaces, practically circular and machine made, provided the plane parts at the ends do not exceed 6 inches in length, and the plates are not less than $\frac{5}{6}$ inch thick, should not be greater than found by the following formula :—

$$\frac{9{,}000 \times \text{thickness in inches}}{\text{Mean diameter in inches}} = \Big\} \text{ Working pressure per square inch.}$$

Steel Boilers.

22. For steel boilers the rules for iron boilers may be increased as follows :—

The constants for flat surfaces when they are supported by stays screwed into the plate and riveted, 10 per cent. The constants for flat surfaces when they are supported by stays screwed into the plate and nutted, or when the stays are nutted in the steam space, 25 per cent. This is also applicable to the constants for flat surfaces stiffened by riveted washers or doubling strips, and supported by nutted stays.

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[*] The following examples will serve to show the application of the constants for the different cases that may arise :—
Furnaces with butt joints and drilled rivet holes—
90,000 where the longitudinal seams are welded.
90,000 ,, ,, ,, double riveted and fitted with single butt straps.
80,000 ,, ,, ,, single ,, single ,,
90,000 ,, ,, ,, ,, ,, double ,,
Furnaces with butt joints and punched rivet holes—
85,000 where the longitudinal seams are double riveted and fitted with single butt straps.
75,000 ,, ,, ,, single ,, single ,,
85,000 ,, ,, ,, ,, ,, double ,,
Furnaces with lapped joints and drilled rivet holes—
80,000 where the longitudinal seams are double riveted and bevelled.
70,000 ,, ,, ,, ,, ,, and not bevelled.
70,000 ,, ,, ,, single ,, and bevelled.
65,000 ,, ,, ,, ,, ,, and not bevelled.
Furnaces with lapped joints and punched rivet holes—
75,000 where the longitudinal seams are double riveted and bevelled.
70,000 ,, ,, ,, ,, ,, and not bevelled.
65,000 ,, ,, ,, single ,, and bevelled.
60,000 ,, ,, ,, ,, ,, and not bevelled.

In the case of upright fireboxes of donkey or similar boilers, 10 per cent. should be deducted from the constants given above, applicable to the respective classes of work.

The constants for combustion box girders, 10 per cent.

Boilers—General.

23. Small boilers must be surveyed and be fitted the same way as the main boilers, and have a water and steam gauge, and all other fittings complete, and as regards safety valves, must comply with the same regulations as the main boilers.

24. No boilers or steam chamber is to be so constructed, fitted, or arranged so that the escape of steam from it through the safety-valve can be wholly, or partially, intercepted by the action of any other valve.

A stop valve must always be fitted between the boiler and the steam pipe, and, where two or more boilers are connected with a steam receiver or superheater, between each boiler and the superheater or steam receiver. The object of this is obvious, viz., to avoid the failure of all the boilers through the failure of one. The necks of stop valves should be as short as practicable.

25. Each boiler must be fitted with a glass water-gauge, at least two test cocks, and steam-gauge, that is to say, each boiler must be fitted with all fittings as complete as if there were only one boiler. When a factory has more than one boiler, and these boilers are fitted with stop-valves, each boiler must be treated as a separate one, and have all the requisite fittings.

26. On every inspection of a steam boiler the Inspector shall, if the boiler is large enough, go inside it, and make a thorough examination of it.

When the boilers are not large enough for the Inspector to get into, he should see them tested by hydraulic pressure at every annual inspection at least. The hydraulic test should also be applied at every inspection if the Inspector consider it necessary.

Whenever it is only removable stays that prevent getting in, he must order their removal, and he must see them properly replaced before granting his declaration.

If any part of a main boiler near the uptake fireboxes or furnaces is so constructed that the Inspector cannot examine it, he is not to give a declaration, but shall report the case to the Sanitary Engineer.

If for special reasons, and for special reasons only, the Inspector cannot go inside a small boiler, he must distinctly state on the face of his declaration his reasons for not being able to do so.

27. If the boiler is too hot for the Inspector to examine the inside efficiently, and with safety and convenience, he should decline to examine the boiler, and absolutely refuse to grant a certificate, until he can make an efficient internal examination.

28. Before testing a boiler the Inspector shall examine it, take the necessary measurements, and calculate what the working pressure should be in accordance with the regulations, and only test it with reference to that pressure in accordance with Rule 8. If the test is not satisfactory, the pressure must be proportionately reduced.

This course will enable any necessary alterations to be made by the owners and prevent delay or disappointment. The Inspector who grants the certificate should not increase the working pressure without first consulting the Sanitary Engineer.

The Inspector who grants the certificate must examine the boilers thoroughly, and in the absence of special instructions from the Sanitary Engineer, will be held responsible for the pressure allowed.

29. The Inspector shall see all new boilers, and boilers that have been cleaned for a thorough repair, tested by hydraulic pressure, in accordance with Rule 8 previous to the boilers being set, and before they are covered in, to test the workmanship, &c.; but the working pressure is to be determined by the strength of stays, thickness of plates, and strength of riveting, &c., and not by the hydraulic test.

The hydraulic test should in no case exceed twice the calculated working pressure of the boiler, and it is never to be applied until the boiler has been examined and until the strength has been calculated, from the necessary measurements taken from the boiler itself.

When the boilers are set the Inspector may, at any time he thinks it necessary, before he gives a certificate, have them tested by hydraulic pressure to satisfy himself as to any doubtful part, or of places not easy of access, care being taken in the case of old boilers not to overstrain them; but the test must always exceed the working pressure.

The hydraulic test should before a certificate is granted be applied to all boilers that have not previously had a working certificate.

When a boiler is partially inspected by one Inspector, and the inspection is completed and a certificate granted by another, if the Inspector who witnesses the test of the boiler by hydraulic pressure has an opportunity of examining it inside and outside after the test, such Inspector should determine the pressure to be allowed on the boiler in question, taking care to inform the makers, owners, or agents, and the Inspector who is ultimately to grant a certificate, what pressure should in his opinion be allowed on it. In the event of the original Inspectors having no opportunity to examine the boiler inside and out after the hydrostatic test, the Inspector must re-test the boiler by water and examine the boiler inside and out before determining the working pressure and granting a certificate.

The amount of the hydraulic pressure test, and the date on which it was last applied to the boiler, should be inserted in the Inspector's certificate, and recorded in the dimension sheet of that boiler.

Inspectors should pay particular attention to the examination and testing of steam pipes and economisers.

In all cases in which a socket expansion joint is fitted to a bent steam pipe, the Inspector should require a fixed gland and bolts to be fitted, in order to prevent the end of the pipe being forced out of the socket. This regulation should be complied with in all cases of bent pipes fitted with socket expansion joints. Fixed glands and bolts should be fitted to the expansion joints of straight steam pipes, as cases have occurred, particularly with small straight pipes, in which the ends of the pipes have been forced out of the sockets.

30. In all boilers in which the Inspector finds that cast iron is employed in such a manner as to be subject to the pressure of steam or water, he shall report the circumstances to the Sanitary Engineer, in order that he may obtain instructions how to act. Cast iron must not be used for stays, and the Inspector should discourage the use of cast iron saddles for boilers.

31. A pressure once allowed on a boiler is not, *under any circumstances whatever*, to be increased unless the Inspector has previously written for and obtained the sanction of the Sanitary Engineer.

In case the Inspector is of opinion that an increased pressure may with safety be allowed, he shall communicate with the Inspector who last inspected the boiler; and if on learning the reasons why the existing pressure was formerly allowed, the Inspector is still of opinion that it may be increased, he should communicate all the facts of the case to the Sanitary Engineer; but, as above stated, the pressure shall not in any case be increased until the question has been decided by him.

Safety-valves.

32. The Inspector is instructed that in all *new boilers*, and whenever *alterations can be easily made*, the safety-valve and stop valve should be placed directly on the boiler; and the neck, or part between the valve and the flange which is bolted on to the boiler, should be as short as possible.

The Inspector should note that it is not intended by this instruction that old boilers which have been previously passed with such an arrangement should be thrown out of work for the alterations to be carried out.

Of course in any case in which the Inspector is of opinion that it is positively dangerous to have a length of pipe between the boilers and the safety-valve, it is his duty at once to insist on the requisite alterations being made before granting a declaration.

The Inspector shall declare, amongst other things, the limits of the weight to be placed on the safety-valves, and that the safety-valves are such and in such condition as the circumstances of the case demand.

33. The area per square foot of fire grate surface of safety-valves, or (when there is more than one safety-valve on the boiler) the combined area of the safety-valves should be not less than that given in the following tables opposite the boiler pressure intended, provided the valves are not less than two inches in diameter. This applies to new boilers which have not received a working certificate.

In ascertaining the fire grate area, the length of the grate should be measured from the inner edge of the dead plate to the front of the bridge, and the width from side to side of the furnace on the top of the bars at the middle of their length.

If there is only one safety-valve on a *main* boiler the Inspector should not grant a certificate without first referring the case to the Sanitary Engineer for special instructions.

In the case of small boilers, if it is wished to fit valves smaller than two inches diameter, the case should be submitted for the consideration of the Sanitary Engineer.

Safety-Valve Areas.

Boiler Pressure.	Area of Valve per square foot of Fire grate.	Boiler Pressure.	Area of Valve per square foot of Fire grate.	Boiler Pressure.	Area of Valve per square foot of Fire grate.
LB.	SQ. INCH.	LB.	SQ. INCH.	LB.	SQ. INCH.
15	1·250	77	·407	139	·243
16	1·209	78	·403	140	·241
17	1·171	79	·398	141	·240
18	1·136	80	·394	142	·238
19	1·102	81	·390	143	·237
20	1·071	82	·386	144	·235
21	1·041	83	·382	145	·234
22	1·013	84	·378	146	·232
23	·986	85	·375	147	·231
24	·961	86	·371	148	·230
25	·937	87	·367	149	·228
26	·914	88	·364	150	·227
27	·892	89	·360	151	·225
28	.872	90	·357	152	·224
29	·852	91	·353	153	·223
30	·833	92	·350	154	·221
31	·815	93	·347	155	·220
32	·797	94	·344	156	·219
33	·781	95	·340	157	·218
34	·765	96	·337	158	·216
35	·750	97	·334	159	.215
36	·735	98	·331	160	·214
37	·721	99	·328	161	·213
38	·707	100	·326	162	·211
39	·694	101	·323	163	·210
40	·681	102	·320	164	·209
41	·669	103	·317	165	·208
42	·657	104	·315	166	·207
43	·646	105	·312	167	·206
44	·635	106	·309	168	·204
45	·625	107	·307	169	·203
46	·614	108	·304	170	·202
47	·604	109	·302	171	·201
48	·595	110	·300	172	·200
49	·585	111	·297	173	·199
50	·576	112	·295	174	·198
51	·568	113	·292	175	·197
52	·559	114	·290	176	·196
53	·551	115	·288	177	·195
54	·543	116	·286	178	·194
55	·535	117	·284	179	·193
56	·528	118	·281	180	·192
57	·520	119	·279	181	·191
58	·513	120	·277	182	·190
59	·506	121	·275	183	·189
60	·500	122	·273	184	·188
61	·493	123	·271	185	·187
62	·487	124	·269	186	·186
63	·480	125	·267	187	·185
64	·474	126	·265	188	·184
65	·468	127	·264	189	.183
66	·462	128	.262	190	·182
67	·457	129	·260	191	·181
68	·451	130	·258	192	·181
69	·446	131	·256	193	·180
70	·441	132	·255	194	·179
71	·436	133	·253	195	·178
72	·431	134	·251	196	·177
73	·426	135	·250	197	·176
74	·421	136	·248	198	·176
75	·416	137	·246	199	·175
76	·412	138	·245	200	·174

34. The Inspector in his examination of the boilers and appurtenances is particularly to direct his attention to the safety-valves, and whenever he considers it necessary, he is to satisfy himself as to the pressure on the boiler by actual trial.

The Inspector is to fix the limits of the weight to be placed on the safety-valves, and the responsibility of issuing a certificate before he is fully satisfied on the point is very grave. The Inspector is to examine the whole of the valves, weights, and springs at every inspection.

The responsibility of seeing to the efficiency of the mode by which the valves are fitted so as to be as much as practicable under the control of the Engineer when steam is up, rests with the Inspector.

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

Care should be taken that the safety-valves have a lift equal to at least one-fourth their diameter; that the openings for the passage of steam to and from the valves, including the waste steam pipe, should each have an area not less than the area of valves required, and that each valve-box has a drain pipe fitted at its lower part. In the case of lever valves, if the lever is not bushed with brass, the pins must be of brass; iron and iron working together must not be passed. Too much care cannot be devoted to seeing that there is proper lift, and free means of escape of waste steam, as it is obvious that unless the lift and means for escape of waste steam are ample, the effect is the same as reducing the area of the valve or putting on an extra load. The valve seats should be secured by studs and nuts.

The Inspector shall, as far as is in his power, make these points generally known to the owners of steam boilers.

35. When the Inspector has determined the amount of pressure, he is to see the valves weighted accordingly and the weights or springs fixed in such a manner as to preclude the possibility of their shifting or in any way increasing the pressure. The limits of the weight on the valves is to be inserted in the declaration, and should it at any time come to the Inspector's knowledge that the weights or the loading of the valves have been shifted, or otherwise altered, or that the valves have been in any way interfered with, so as to increase the pressure, without the sanction of the Sanitary Engineer, he is at once to report the facts.

P. W. CURRENT No. 990

Govt. of {1895} Madras.

JUDICIAL.

Issued

Recd.

Encl.

G.O., 25th January 1895, No. 174.

JANUARY.

Steam-boilers Act, 1893.

Directing that the Madras — be brought into operation in the City of Madras with effect from the 1st April 1895, and passing certain other orders in connection with the same.

10 S. C

Encls. 16

Read: 11. 2. 95

No. 477 W of 28-2-95
" 684 C of 21. 2. 95
" 168 C of 17. 1. 95
" 606 C of 15. 2. 95
" 617 D of 18-7. 94
" 614 D of 18-7. 94
" 902 W of 3. 4. 94
" 236 g W of 14-9. 93
" 2102 W of 16-8-93

No. 3

C No. 990

Note for orders.

Para 1 - The advertisement calling for applications for the post of Boiler Inspector has already been drafted - and the applications already received through the Judicial Dept. are being tabulated.

The next point to be considered in this para of the order is "what reports and returns relating to the working of the Act should be submitted by the Sanitary Engineer to Govt."

Provision is made under Notification F. B. Appendix II for a complete set of Registers to be maintained by the Boiler Inspector and for rendering monthly accounts to the Accountant General. All that seems necessary beyond this is an annual report by the Sanitary Engineer on the working of the Act. The precise form of the report might be settled by experience.

Para 6 - Suggestions are invited as to the notifications and orders which it is proposed to issue under certain

Sections of the Act and amongst others, "the P.W. Dept" is called on to report: But as under para 7 of the G.O. all future correspondence in connection with the working of the Act is to be conducted in the P.W. Secretariat, the result must be that the P.W. Dept will report to itself.

The following suggestions are offered.

Notification D. An Inspector has power under Section 7 to grant a licence, but has no power to withdraw or revoke the licence. Another officer is empowered to do this under Section 11 viz the Sanitary Engineer. The object of this is not clear. The Inspector is the officer who must be satisfied as to the condition of the Boiler, and if he is not so satisfied he has not only the power, but is bound, under heavy responsibility, to exercise this power of withholding a licence; but having once granted a licence he becomes helpless, and although the condition of the boiler may have become such as to require the immediate revocation of the licence he can take no action. He must, it is presumed, report to the Sanitary Engineer who may be at the other end of the Presidency at the time, and it cannot be expected that this officer will revoke a licence on the mere report of some one else. he must satisfy himself by personal inspection as to the actual condition of the boiler. This may involve the delay of weeks, and it is not unlikely that the boiler will burst meanwhile and kill or injure several persons.

Owners have an appeal to the Magistrate under Section 12, and their interests are thus sufficiently safeguarded though they may be in the hands of the Inspector uncontrolled by the Sanitary Engineer.

Notification E. The form of licence here given might have an extra column provided for the Registry number as in the form of licence issued under Section 7. The licence changes hands with the boiler under Section 9 (2) of the Act. And both should for convenience of identification bear the Register No: The following words might be added to the Magistrate's Certificate:– "and to enter this registry number under his signature in the column of the licence provided for the purpose":– A new column being added as Col 2.

Notification F. Rule 11.

The Inspector is directly subordinate to the Sanitary Engineer, but the latter officer is not directly under the Chief Engineer. The intervention of the Chief Engineer, therefore, between the Sanitary Engineer and his subordinate does not seem necessary.

R. S.

15 Feby 95.

W. It seems of special importance that the officer who issues the license should have the power of suspending or revoking the same. And I consider that such

Boiler Inspection

W on return

C.W.M.

14.5.B.W.

Very well

W. !

P. W. D.

Note for His Excellency the Governor:–

The only points on which there is any difference of opinion appear to be the following:–

(a) His Excellency considers that the draft disposal places too much power in the hands of the Inspector, but as pointed out by the Honorable ~~member~~ Mr. Bliss, there is always an appeal to the Magistrate; this was in my mind when drafting the order, and I think the original proposal will be found sufficient in practice.

(b) The Hon: Mr. Bliss suggests that the Sanitary Engineer should be appointed an Inspector under the Act. This seems a good suggestion and would enable him to act in such cases as those contemplated. The Government has the necessary power under section 3 of the Act.

W.

(c) I had overlooked the point raised by the Hon: Mr. Bliss, as to the amount by which the fees can legally be raised; the modification suggested by him will I think meet the case. With regard to the question as to who is to be the judge of the necessity for Sunday examinations

W.

Very well
W.

examinations, I think the Inspector. Something must be left to the discretion of individuals in matters of this kind. If any practical inconvenience is found to arise, the rule can be altered hereafter.

(d) The following words (taken from the Hon: Mr. Bliss' note) might be added after "approved" in the draft disposal, "generally, but the Inspector should begin his mofussil inspections as soon as he is through his initial work in Madras, and fees should be recovered at once on the scale already suggested

W.

suggested (after communication with Mr. Ellis) or on such other scale as may be approved"

5.6 W

Rules &c under the Steam Boilers Act.

[illegible]
5/6 95

Presidency and A/t DEPARTMENT.

FORT ST. GEORGE,
Accountant-General's Office,
19th Febry 1895.

No. 391

From
T. W. Rawlins Esqre,
ACCOUNTANT-GENERAL TO THE
GOVERNMENT OF MADRAS,

To
THE Secretary to Government,
Public Works Department.

SIR,

With reference to para 6 of Government Order No. 174 dated the 25th January 95 Judicial, inviting suggestions from several Departments and officers regarding the introduction of Act II of 1893 into the City of Madras with effect from 1st April 95, I have the honour to state that from an Account point of view I have no remarks to offer except that the cost of the Establishment and other incidental charges connected with the working of the act including those that may be incurred under section 12(5) of the act will have to be debited to "20 Police Steam-boiler inspection Establishments" except Pleader's Fees which should as usual be debited to "Law and Justice" and that the receipts will be credited to the corresponding revenue head "XVII Police, Fees, fines, and forfeitures".

2. The directions contained in Rule 9 framed under the act and embodied in the Government Order will be attended to.

3. It is presumed that the pay abstracts of the Establishment will be signed by the Sanitary Engineer under whose control the Establishment has to work.

I have the honour to be
Sir,
Your most Obedt Servt.

Accountant General

Dw
19/2

No. 1276

(189) Department.

From

The Accountant-General,

Madras,

To

The Secretary to Government
Public Works Department

Recd: 21.2.95

No. 391

Dated 19th
Received } February 1895

No.

Subject.

Stating that the Accountant General has no remarks to offer regarding the introduction of Act III of '93 into the City of Madras Except that the cost of the Establishment and other incidental charges will have to be debited to "20 Police Steam boiler inspection Estt Except Pleaders' fees which shd be debited to Law and Justice"

Complete

S. E.
6 22-8-93—1,000.

No. 454

GOVERNMENT OF MADRAS.

OFFICE OF SANITARY ENGINEER,
Fort St. George, 23rd February 1895.

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,
SANITARY ENGINEER TO GOVERNMENT,

To

The Secretary to Government,
Public Works Department.

Sir,

With reference to G. O, dated 25th January 1895, No 174, Judicial, I have the honor to forward the following remarks for the information of Government:-

2 Notifications C & F - In the form given it would be necessary to add a column headed "Time for which this license is to be in force" - Such a column appears in the form appended to the act and also in the license form to be granted by the Magistrate.

3 Notification D - The revocation here alluded to is apparently one during the continuance of a license - it is presumed that no appeal will lie to the Sanitary Engineer from the Inspector's refusal to grant a license after the expiry of a license (section 7 of the Madras Steam Boilers act) or if the Inspector is willing to grant a license at a pressure less than that named in the

preceding license.

4 Notification F. Rule 10 - It would appear that there is no power given to the officer authorized under section 11 of the act to enter and inspect boilers, but it would not otherwise be possible to carry out the provisions of the section.

5 Rule 11. I would desire Government to delete this rule or else to make the Boiler Inspector entirely subordinate to the Chief Engineer, Public works Department - If the Sanitary Engineer is entrusted by Government with all the other powers granted to him by these rules it seems inconsistent that a subordinate of the Chief Engineer's office should be sent to examine the records of a subordinate of the Sanitary Engineer - Any records might be sent to Government if that course is necessary otherwise the Sanitary Engineer might be trusted to see that the Inspector keeps his records properly.

6 Rule 13 - There may be some difficulty in working this rule. The Inspector need never refuse to license a boiler but he may give a license at such a low pressure that it would tantamount to a refusal though not legally a refusal - Is there any appeal against such a course to the Sanitary Engineer or the Presidency Magistrate? Again the Inspector may reduce the pressure named in a previous license from say 85 lbs to 80 lbs or 75 lbs. Is there any appeal against this and to whom? powers of this kind apparently appertain

---

~~CURRENT No. 1472~~

P. W. CURRENT No. 2070

~~(1895)~~ ~~Department~~

From

Ernest A Barclay
Government Solicitor
Madras

Recd: 28.3.95

To

The Chief Secretary to
Government
Madras

No 162

Dated 23d March 1895
Recd 23rd ..
Regd 25th

Forwarded with reference to the Order of Government dated 25 January 1895 No 174. Judicial.

Ernest Barclay
Government Solicitor

Endorsement. D/28 March 1895 No 664
Transferred to the Public Works Department.

Lionel Davidson
25.3.95
Ag. Under Secretary

To
The Public Works dept.

MR 25/3/95 They have not yet replied to our memo of 16-3-95 No 555. MR

No 3

Compile

Cons
29/3/95 - BW

preceding license.

4 Notification F. Rule 10 - It would appear that there is no power given to the officer authorized under section 11 of the act to enter and inspect boilers, but it would not otherwise be possible to carry out the provisions of the section.

5 Rule 11. I would desire Government to dilete this rule or else to make the Boiler Inspector entirely subordinate to the Chief Engineer, Public Works Department - If the Sanitary Engineer is entrusted by Government with all the other powers granted to him by these rules it seems inconsistent that a subordinate of the Chief Engineer's Office should be sent to examine the records of a subordinate of the Sanitary Engineer - Any records might be sent to Government if that course is necessary otherwise the Sanitary Engineer might be trusted to see that the Inspector keeps his records properly.

6 Rule 13 - There may be some difficulty in working this rule - The Inspector need never refuse to license a boiler but he may give a license at such a low pressure that it would tantamount to a refusal though not legally a refusal - Is there any appeal against such a course to the Sanitary Engineer or the Presidency Magistrate? Again the Inspector may reduce the pressure named in a previous license from say 85 lbs to 80 lbs or 75 lbs. Is there any appeal against this and to whom? powers of this kind apparently

appertain

CURRENT No. 1472

Re Madras Steam-boilers Act, 1893.

Opinion

1. The notifications and orders which it is proposed to issue under the provisions of sections 3. 4. 9. 11. 12 and 23 of the Act seem to me to be sufficient, and to be within the powers conferred by the Act.

2. I cannot offer any opinion upon the rules contained in notification F under the head "Iron boilers" - as they are of a special character.

J. H. Spring Branson
Advocate General

Madras
22nd March
1895.

(True Copy)

Ernest Barclay

Government Solicitor.

~~CURRENT No. 1472~~

~~(1895)~~ Department

P. W. CURRENT No. 2070

From

Ernest H Barclay
Government Solicitor
Madras

Recd: 28.3.95

To

The Chief Secretary to
Government
Madras

No 162

Dated 23rd March 1895
Recd 23rd ..
Regd 25th

Forwarded with reference to the Order of Government dated 25 January 1895 No 174. Judicial.

Ernest Barclay
Government Solicitor

Endorsement. D/28 March 1895 No 664

Transferred to the Public Works Department.

Lionel Davidson
25.3.95
Ag. Under Secretary

To
The Public Works Dept.

MK 25/3/95

They have not yet replied to our memo of 16-3-95 No 565.

S.H.3

Compile

CWS
29/3/95 DW

[G/9]
2,000—23-1-95.

~~Current No. 992~~

~~Judicial~~ DEPARTMENT.

P. W. CURRENT No. 1750

Urgent

Recd: 7.3.95

From

~~The Hon: Mr. G. G. Arbuthnot~~
Chairman, Chamber of Commerce
Madras.

No.

Dated 27.2 3.95
Received 28.2 ..
Regd
Enclosures .

SUBJECT.

Acknowledging the receipt of G.O. 25.1.95 No. 174, Judl, and offering certain remarks in respect of the salary fixed therein for the Boiler Inspector.

Endorsement d/6. 3. 95 No. 488

Transferred to the Public Works Department.

Lionel Davidson
6.3
Ag. Under Secretary.

To
The Public Works Dept.

MK 5/3/95

S.H.3

Compile.

7/3/95 CWS

DW

Attention is invited to the remarks on the pay of the Boiler Inspector.

7 Mar 95

G.O. 174 : 25 Jan 95 &c

[G/9]
2,000—23-1-95.

Current No. 992

Judicial DEPARTMENT.

From The Hon: Mr G. G. Arbuthnot
Chairman Chamber of Commerce
Madras.

No.

Dated 27
Received 28
Regd 28 } Feb 95

Enclosures

SUBJECT.

Acknowledging the receipt of G.O. of 25 Jan '95, No. 174 Jud. and offering certain remarks in respect of the salary fixed therein for the Boiler Inspector

YM 5/3.

N

To await other replies.

Note. This is the 1st ~~reply to~~ of the reports called for in para. 6 of G.O. of 25. 1. 95 No. 174 J.D. A letter from Messrs Binny & Co. was transferred the other day to the P.W.D. But it is thought, should be considered in J.D. along with other replies before transferring to P.W.D.

MV 5/3/95

Noted + draft subd.

YM 5/3.

+

professional work unconnected with his business under the Act. This concession would be likely to attract an efficient man, whereas under present circumstances it appears very unlikely that the small salary offered will secure the services of such a man.

Provided that a thoroughly competent man on receipt of an adequate salary is appointed, the Chamber has no remarks to make on the rules under the Madras Steam-boilers and Prime-movers Act 1893.

I have the honour to be,

Sir,

Your most obed^t. servant,

George G. Arbuthnot

Chairman.

CHIEF SECRETARIAT
28 FEB. 1895
GOVERNMENT OF MADRAS

+ Note
Such work would probably place the Boiler Inspector under an obligation to the owners whose boilers he has to inspect.
C.S.
7 Mar 95.

The Madras Chamber of Commerce,

Madras, 27th Feby 1895.

From

The Hon'ble Mr. G. G. Arbuthnot,
CHAIRMAN, CHAMBER OF COMMERCE,
MADRAS.

To

The Chief Secretary to Government
Judicial Department
Fort Saint George.

Sir,

I have the honour to acknowledge the receipt of the Order of the Madras Government, dated the 25th ultimo, No. 174, directing that the Madras Steam Boilers Act 1893, be brought into operation in the City of Madras with effect from the 1st April 1895, and passing certain other orders in connection with the same.

In compliance with the request contained in paragraph 6 of the Order the Chamber desires to offer the following remarks in regard to the salary

it is proposed to pay the Boiler-Inspector.
In paragraph 2 of the Order the Government states that it has come to the conclusion that as there will not be enough work to occupy the full time of even one Boiler Inspector in Madras the Officer who is appointed should also be entrusted with the duty of periodically inspecting the engines & boilers of the several Mofussil municipal water-works and that "for the combined duties a salary Rs 250-10-300 per mensem (plus travelling allowance for journeys to inspect municipal engines and boilers) will probably suffice".

In the Chamber's opinion the salary which it is proposed to pay to the Boiler

Inspector is inadequate to secure the services of a thoroughly qualified and efficient man whose decisions would be respected by Engineers employed at the various factories &c, some of whom, the Chamber understands, are in receipt of salaries considerably higher than that which it is proposed to give to the Government officer. The services of a man possessing the necessary qualifications could not, in the Chamber's opinion, be secured for less than Rs 500/- per mensem, and the Chamber begs to suggest the desirability of fixing the salary to be paid to the Boiler Inspector at this figure. If, however, Government is not prepared to raise the proposed salary to the extent indicated, the Chamber would then suggest that as there will not possibly be enough work to occupy his full time, even with the combined duties, the Boiler Inspector should be allowed to supplement his Official salary by undertaking

+

professional work unconnected with his business under the Act. This concession would be likely to attract an efficient man, whereas under present circumstances it appears very unlikely that the small salary offered will secure the services of such a man.

Provided that a thoroughly competent man on receipt of an adequate salary is appointed, the Chamber has no remarks to make on the rules under the Madras Steam-boilers and Prime-movers Act 1893.

I have the honour to be,
Sir,
Your most obed^t. Servant,

George G. Arbuthnot
Chairman.

CHIEF SECRETARIAT
28 FEB. 1895
GOVERNMENT OF MADRAS

+ Note. Such work would probably place the Boiler Inspector under an obligation to the owners whose boilers he has to inspect.
7 Mar 95.

P. W. CURRENT No. 1402

1895

Recd: 25-2-95

From

The Sanitary Engineer
to Government

To

The Secretary to Government,
Public Works Department.

No. 454

Dated 23rd
Desp^d. 25th } February 1895
Rec^d.

Enc. —

Subject

Steam Boilers Act. 1893.

Submitting his opinions and suggestions in respect of the —— as desired by Government.

Compile

CHW
1/3/95

BN

person to be appointed as boiler inspector and a superior man on higher pay than is now intended to be given, obtained. The post of boiler inspector is a very responsible one & one that should have a salary attached to it which should keep the incumbent out of all temptation such as the circumstances of the position might expose him to.

I have the honor to be,

Sir,

Your most obt. servt.

J. A. Jones

Sanitary Engineer to Govt.

---

due regard to the Inspector's necessary duties in Madras.

17 A good deal of extra work and responsibility will be thrown upon me by the rules as promulgated and in addition to this there can be little doubt that there may be large number of cases for enquiry, numerous petitions as to bribery & corruption or statements that decreases of pressure were required because the inspector was not tipped. There may be such petitions as these & they may be false but whether or not they will need investigation & I need not, I think, point out to Government that some remuneration should be given for the extra labor & trouble apart from a responsibility which would come into very distinct view on the occasion of any explosion & the following magesterial enquiry which, however careful people are, nevertheless sometimes occur and I would ask Government to consider whether this remuneration cannot be given. Presumably I would rather wish the responsibility had been thrown on others shoulders but I have not been given any choice in the matter and I have no desire other than to meet the wishes of Government.

18 There is one suggestion that I may make before conclusion & that is whether the inspectorship of factories and the boiler inspectorship might not be entrusted to the

person to be appointed as boiler inspector
and a superior man on higher pay than is
now intended to be given, obtained. The post
of boiler inspector is a very responsible one &
one that should have a salary attached to it
which should keep the incumbent out of all
temptation such as the circumstances of the
position might expose him to.

I have the honor to be,
Sir,
Your most obt. servt.
J.A. Jones
Sanitary Engineer to Govt.

W.H.

6

appertain to the Inspector alone and yet this is
a case in which there ought to be some appeal
& the fact that there was such an appeal would
be a great safeguard against any attempt
at extortion &c.

7 ✓ Notification F - C Examinations - There is little
doubt that unless some rule is laid down
excepting Sunday and making it a *die non*, that
many boiler examination will be required
to be made on that day - and it is perhaps
desirable in the interests of boiler owners &c that
the examination in some cases should be
made on that day. I would suggest that,
where Sunday examinations are required,
the fees for such be increased by 50%, of which
the inspector and his staff should be allowed
25% to be divided in proportion to their pay.

dies non

8 ✓ Notification F (Boilers - General) - It is
desirable to point out, with reference to "Boilers
General", that the original inspector of a boiler
under construction may be an inspector under
some other Government as a boiler might be
made in England, Bombay, Calcutta or some
town outside the limits of Madras or again the
inspector might be asked to inspect a boiler
being made in some town adjacent to Madras
which boiler was to be used in Madras. It
would therefore seem necessary to make some
distinction to shew that an Inspector for the
town

town of Madras is not necessarily referred to in the first clause of page 11 of the G.O under reference.

9. These are all the remarks that I have to make in regard to the notification or rules but the following points I also desire to bring to the notice of Government for early orders.

10. The staff which will be required by the boiler inspector taking the Madras Railway as a guide will be

	Per month Rs
1. Boiler Inspector	250
1 First class Boiler maker 1 second class — do —	100
3 coolies at Rs 7 each	21
1. Clerk	15
1. attender	7
	393

11 Power is required also to obtain from time to time such extra coolies as may be necessary.

12 The following tools will be necessary and should be available for the Inspector before the 1st April:-

2. Baileys Hydraulic testers.

1. complete set of Boiler makers hammers, chisels, snaps, taps, drills, dies & other tools.

1- set of special standard weights for testing and adjusting safety valves.

13 The following books are desirable for reference:-

Watson's

Informed separately of
L.S.
13 Mar 95

80

Watson's Treatise on Steam Boilers
Huttons Practical Engineer's Hand Book
Works Managers Hand Book
Steam Boiler Construction by Hutton

14 An office will be required by the Boiler Inspector.

15 Sanction is required to obtain stationery &c and also to get the necessary printing of books & forms at the Government Press.

16 In regard to the inspection of Municipal Engines & Boilers, as Government are aware by the end of this year there will be only 4 sets in operation, viz those at

Cuddapah
Madura
Trichinopoly
Tanjore

I would suggest that it be left to me to send the Boiler Inspector to such towns as I think at present necessary and for such time as necessary and that no rules be laid down at present for the recovery of any fees &c from Municipalities until after the 1st of April 1896 when a report will be made to Government on the experience of a years working and suggestions laid before Govt. for the recovery of expenditure during 1895-96 & for fixing the charges to be levied thereafter. The time of inspection of Municipal water works boilers would be determined with-due regard to the Inspector's necessary duties in Madras.

17 A good deal of extra work and responsibility will be thrown upon me by the rules as promulgated and in addition to this there can be little doubt that there may be large number of cases for enquiry, numerous petitions as to bribery & corruption or statements that decreases of pressure were required because the inspector was not tipped. There may be such petitions as these & they may be false but whether or not they will need investigation & I need not, I think, point out to Government that some remuneration should be given for the extra labor & trouble apart from a responsibility which would come into very distinct view on the occasion of any explosion & the following magesterial enquiry which, however careful people are, nevertheless sometimes occur and I would ask Government to consider whether this renumeration cannot be given - presumably I would rather wish the responsibility had been thrown on others shoulders but I have not been given any choice in the matter and I have no desire other than to meet the wishes of Government.

18 There is one suggestion that I may make before conclusion & that is whether the inspectorship of factories and the boiler inspectorship might not be entrusted to the person

OW 5.9
2873

Notification item D(1)

Draft rules under Section 12. Act III of 1893.

1- Under Section 12 (4) when the Chief Presidency Magistrate thinks fit to summon assessors to assist him the appellant shall be permitted to nominate one assessor and the Inspector the other, provided that if either of the assessors or both of them appears or appear to the Chief Presidency Magistrate to be incompetent he may nominate one or both himself.

2- The opinions of the assessors shall be recorded and duly considered but the decision of the appeal shall rest with the Chief Presidency Magistrate.

3. Assessors appointed under section 12 (4) and persons summoned to give evidence as "experts" when assessors are not appointed, shall be entitled to a fee of Rupees 5 for each day's attendance in Court.

(sd/.) O. R. Jones
Chief Presy Magte

Presy Magts Court
Egmore Madras
Dated 8th April 1895

(True copy)

Chief Clerk

No. 66

Presidency Magistrates' Court,

Egmore, Madras, 18th March 1895.

From
O. R. Jones Esqre
Chief Presidency Magistrate,
Madras,

To
The Secretary to Government,
Public Works department,

Sir,

As directed by Government Order No 174, Judicial, dated 25th January 1895, I have the honor to submit the following report on the rules to be framed under Madras Act III of 1893-

2- Whenever it is found necessary to summon assessors under Section 12(4) of the act - I think the plan suggested in paragraph 4 of the above Government order will be the best. With regard to the decision of an appeal heard with assessors I would submit that some such provision as that "in the "Merchant Shipping act" V of 1883 Section 13 (2) might be entered in the rules, namely that the opinions of the assessors shall be recorded and duly considered but that the decision of the appeal shall rest with the

Magistrate - This appears to be intended from the working of sub. sections 5 and 6 but any dispute on the point would be avoided if it were clearly stated in the rules -

3 - Section 12 (4) does not contemplate that assessors shall always be summoned and they would only be necessary when some technical point, requiring technical and practical knowledge of the subject to decide, is involved - I would submit that even in such cases the opinion of a suitable person examined as an "expert" witness whose evidence would be subject to cross. examination would probably be of more use in helping the magistrate to arrive at a correct decision than the mere opinions of the assessors, and, as the assessors or the "expert" would, I suppose be paid fees, it would be cheaper - The magistrate has I think, the power to summon such a person to give evidence but the question of fees should be laid down in the rules.

4. I think that fees to assessors or "expert" witnesses are necessary on the same grounds upon which they are allowed to assessors on marine Courts of Enquiry - Under Government order no. 436, marine, dated 10th November 1894 ~~that~~ fees have been fixed at Rupees 25 per diem - I think that for the class of persons who would be available as assessors under this Act a fee of Rupees 15 per diem would be sufficient

5. I submit herewith a draft of proposed rules under section 12 of the act, containing the abovementioned suggestions -

I have etc

(Sd) O. R. Jones
Chief Presidency Magistrate

Presy Magts Court
Egmore Madras
Dated 8th April 1895

(True copy)

Chief Clerk

OWE.1
2873/95

No. 92

Presidency Magistrates' Court,

Egmore, Madras, 8th April 1895.

From

O. R. Jones Esqre.,
Chief Presidency Magistrate,
Madras,

To

The Under Secretary to Government
Public Works Department.

Sir,

I have the honor to forward copy of this office letter No. 66, dated 18th March 1895, as requested in your Memorandum No. 1488C, dated 6th instant.

I have the honor to be
Sir,
Your most obedt. servant
O R Jones
Chief Presidency Magistrate

P. W. CURRENT No. 2873

From

O.R. Jones Esqre
Chief Presy Magte
Madras

Enclo 2

Recd: 9.4.95

To

The Under Secretary to Govt
Public Works Dept

no. 1488 C d/ 26.4.95

Encl(s)
No. 92

Dated
despd } 8.4.95

Subject

Forwarding copy of this Office letter No. 86 d/ 18.3.95

8S.9

CAW
10-4-95

Code Class. } 2

INDIAN TELEGRAPHS

Monthly Number. }

To (Office) Ootacamund.

From (Office) Madras For
3. St Geor

Words.	Day.	Hour.	Minute.	Official Instructions.
36/4	1	15	53	

To (Person) Madras
P. Works.

From (Person) Sany. Engr
to Govt.

Boiler inspector joined appointment per my number 1169 of twenty fourth April when will the rules be sanctioned list of Boilers Madras City required.

Form.

F. C1.

d. from

LN.

At Hrs. s. by

Sent to

LN.

At Hrs. Mts. by

W. B. Mason
Telegraph Master.

OOTACAMUND 1-5-95

Notifications C and F prescribing a form of Register of Boilers.	Section 9.	Another Column to be added, headed "Period for which this license is to be in force" in order that it may agree with the form appended to the Act vide Schedule A and with the license to be granted by a Magistrate under section 12, subsection 5 of the Act.	The Sanitary Engineer.		Approved. BS
Notification D authorising the Sanitary Engineer to revoke and suspend licenses.	Section 11. (a)	The revocation here alluded to is apparently one during the continuance of a license. The Sanitary Engineer presumes that no appeal will lie to him from the Inspector's refusal to grant a license after the expiry of a previous license.	—do—		The Sanitary Engineer's opinion is accepted. H.E. thinks that there should be such an appeal — So there will be, but under S. 12 the appeal will lie to the Chf. Presy. Magte., not to the San. Engr. BS
Notification E prescribing the form in which licenses shall be granted by the Chief Presidency Magistrate.	Section 12. subsection 5.	"	"	The form of license here given might have an extra column provided for the Registry Number as in the form of license issued under section 7 of the Act. The license changes hands with the boiler under section 9 (2) of the Act, and both should for convenience of identification bear the Register Number. The following words might be added to the Magistrates' Certificate:— "and to enter this Register Number under his signature in the column of the license provided for the purpose", a new column being added as Column 2.	Approved. BS

Notification F Rule 10. The Inspector to be subordinate to the Sanitary Engineer	Sections 11 & 23. (b)	The Sanitary Engineer considers that no power has been given him to enter and inspect boilers. Such a power will be necessary to enable him to exercise his authority to suspend and revoke licenses and generally to supervise the Inspector's doings.	The Sanitary Engineer	" ~~Ordinarily speaking, the San:- Engr. would act on reports rec.d from the Insp.r — But I don't see why the San: Engr. shd. not also be app.d an Insp.r. — Then he would have power under S.13 to enter & inspect~~	~~The question is not likely to arise in practice.~~ The Sanitary Engineer would ordinarily act on reports received from the Inspector. But there seems no reason why that officer should not also be appointed an Inspector under Section 3 of the Act. This would enable him to enter and inspect boilers when necessary. The appointment will be notified accordingly.
		The Accountant General presumes that the pay abstracts of the Establishment will be signed by the Sanitary Engineer.	The Accountant General.	" 4	The Accountant General's presumption is correct. DS
Notification F Rule 11. The Chief Engineer to depute an officer to inspect the office of the Inspector twice a year.	Section 23.	The Sanitary Engineer would desire Government either to delete this rule or to make the Boiler Inspector entirely subordinate to the Chief Engineer. With the powers vested in him by these rules, it is inconsistent that a subordinate of the Chief Engineer should inspect the records of a subordinate of the Sanitary Engineer.	The Sanitary Engineer.	I have never concealed my opinion that the whole arrangement is anomalous, but the Government having definitely decided that the Inspector is to be under the Sanitary Engineer I agree with the latter that Rule 11 should be expunged.	Rule 11 will be omitted as suggested by the Sanitary Engineer. ~~Very well — As to the arrangement being anomalous, the objection to the C.E. being the officer empowered under S.11 is that his decisions wd. be liable to be upset by the Chf. Pres.y Magte. acting on the advice of assessors, one or both of whom wd. probably be subordinate to the C.E. — That would be an almost more anomalous result~~ DS
Notification F.C. Examinations of Boilers.	Section 23. (c)	In the absence of any rule making Sunday a dies non, there is little doubt that many boiler examinations will be required to be made on that day. Would suggest a ruling that where Sunday examinations are required, the fees for each be increased 50 per cent, the inspector and his staff being allowed 25 per cent to be divided amongst them in proportion to their pay.	The Sanitary Engineer.	I concur in this view, but would prefer that the ruling should be "Examinations will not be made on Sundays except in cases of absolute necessity; in such cases the fees may be increased ~~50~~ 25 per cent, the inspector and his staff being allowed ~~25 per cent~~ to ~~be~~ divide ~~the additional fee~~ amongst them in proportion to their pay. The Inspector will decide as to the necessity for Sunday examinations	The Chief Engineer's suggestion is approved. The fees now proposed to be charged are 80% of the maxima allowed in Schedule B of the Act. They cannot therefore legally be raised by 50%, for, if so raised, they will exceed the legal maxima. They may be raised by 25% & the whole excess may be allowed to the Insp.r & his staff as overtime fees. DS

ordinarily act on reports rece[illegible] there seems no reason why [illegible] be appointed an Inspector [illegible] This would enable him to enter [illegible] necessary. The appointment will be notified accordingly.

decide as to the necessity for a

ation and orders which it is proposed to issue under certain

			Reporting Officer	Remarks by the Chief Engineer	Orders of Government.
Notification F. Rule 13. The Inspector to fix the pressure to be allowed on boilers.	Section 23.	There may be a difficulty in working this rule. Instead of refusing to license a boiler, the Inspector may give a license at such a low pressure or may reduce the pressure named in a previous license to such a low figure that his action would be tantamount to a refusal, though not legally such. There ought to be some appeal in such cases as a safe-guard against any attempt at extortion &c.	The Sanitary Engineer.	There is force in this objection, but I think such cases are not likely to arise so frequently as to justify a special provision for an appeal. It would cause endless trouble if an appeal were allowed against every act of the Inspector, and something must be left to his honesty and the control of the Sanitary Engineer.	The Government does not consider it desirable to make any alteration at present. ~~We can see how things work, but must be prepared to allow an appeal if owners of boilers make demand for one.~~ BW
Notification F. (Boilers General) Rule 29, para 5, clause 1. Inspection by more than one Inspector.	Section 23.	Boilers might be made in England, Bombay or Calcutta so that the Inspector of a boiler under construction may be a servant of some other Government. It must be made clear therefore that the Inspector for the Town of Madras is not necessarily referred to in this clause.	The Sanitary Engineer.	"	No alteration in the working of the rule is considered necessary. BW
Notification F. (Rule 35) The Inspector to report to the Sanitary Engineer any tampering with the weights or the loading of the valves.	Section 23.	A definite punishment to be added to rule 35 for altering the weights of a safety valve. The offence is a serious one and the temptation to do so is considerable to an idle or a dishonest man. A non official does not care about being reported to Government; so that a provision that conviction of that offence would render a person liable to imprisonment for, say, a months' without option of a fine would render the risk muchless	The Madras Mail.	This seems unnecessary; the license will fix the pressure and any tampering with the safety valve will be a breach of the terms of the license, and punish~~ment~~able under section 21 of the Act. beyond this the Act gives no power of punishment.	The rule will stand as proposed. ~~Yes. It is to be noted that this rule inferentially provides for an appeal to the San. Engr.~~ BW

ation and orders which it is proposed to issue under certain

			Reporting officer	Remarks by the Chief Engineer	Orders of Government.
12	8 〃	24-12. **General** The proposed notifications and orders- to be sufficient and within the pow conferred by the act. No opinion can be offered on the rules in Notif F under the head "Iron Boilers" as the of a special character	8 The Advocate General.	20-1	19-1
Para 2 of G.O. 174 Judicial d/25.1.95 fixing the pay of the Inspector at Rs 250—300.	〃	Provided a thorough competent officer on receipt of an adequate salary is appointed, the Chamber of Commerce has no remarks to offer on the proposed rules, but in order to secure the services of such a thoroughly competent man whose decisions would be respected by the Engineers in the various factories here, some of whom are in receipt of salaries considerably higher than the salary proposed for the Inspector, the Chamber would suggest that the Inspector's salary be fixed at Rs 500; or as an alternative he be allowed to supplement his official income by undertaking other work unconnected with his business under the Act.	The Chamber of Commerce	I very much doubt whether a competent man will ~~easily~~ usually be obtained for less than about Rs 500; but by a fortunate accident such a man has actually been obtained for the present, and the question of raising the pay need not therefore be considered	The question of raising the salary will be considered should any difficulty be experienced in obtaining a competent man for that now offered.
		The pay proposed for the Inspector will only attract a superior fitter A man of real knowledge will no	The Madras Mail.		

ation and orders which it is proposed to issue under each

			Reporting officer	Remarks by the Chief Engineer	Orders of Government.
		care to take up the duties for the pay.			
		Suggests the appointment of a superior man on higher pay to be entrusted with duty of inspecting factories and boilers.	The Sanitary Engineer.		
Para 4 of G.O. dated 25th January 1895 No. 174 Judl summoning of assessors to assist the Chief Presidency Magistrate in the hearing of appeals.	Section 12 (4)	Suggests the addition of a provision that the opinions of the assessors should be recorded and considered and that the decision of the appeal should rest with the Magistrate, considers that the opinion of expert witness will be better than that of assessors and that a fee of Rs 15 should be awarded to the assessors or expert witnesses, and submits draft rules accordingly.	The Chief Presidency Magistrate. WP	I do not think it would be at all desirable to omit the provision for summoning assessors, or to substitute expert witnesses for them; the latter will almost always be summoned by the parties, whether assessors are appointed or not. The draft rules suggested by the Chief Presidency Magistrate appear suitable.	The draft rules for the hearing of appeals under section 12 (4) of the Act, submitted by the Chief Presidency Magistrate are approved. WP

ation and Orders which it is proposed to issue under

	Reporting Officer	Remarks by the Chief Engineer	Orders of Government.
General. The Sanitary Engineer raises the following questions and asks for the early orders of Government thereon vide paras 10 to 17 of his letter. (1) The staff required by the Inspector. (Para 10) (2) Authority to entertain extra coolies as occasion arises (Para 11).	"	"	The appointment of a clerk on Rs 15 and a peon on Rs 8 has been sanctioned in para 2 of G.O. (Judicial Dept.) No. 174 of 25 January 1895, no other permanent staff is at present considered necessary, but such temporary assistance as may be required will be engaged as occasion arises.
(3) Supply before the 1st April 1895 of the tools required by the Inspector. (Para 12). (4) Books of reference to be supplied to the Inspector. (Para 13)	"	"	Separately disposed of by G.O. No. 1252-W d/ 24th May/95.
(5) Office accommodation for the Inspector. (Para 14.)	"	He will "only" want one room – I daresay a spare room can be found in the Govt. Offices	The Sanitary Engineer will submit definite proposals on this point.
(6) Supply of Stationery, books & forms. (Para 15)	"	"	Sanctioned as proposed.

...ation and orders thereon is prepared...

			Reporting officer	Remarks by the Chief Engineer	Orders of Government.
	(d) 13	(7) The question of sending the Inspector to such stations as may be necessary to be left to the discretion of the Sanitary Engineer and the rate of fees to be recovered from Municipalities to be laid down after 1st April 1896 from the experience gained after a year's working (Para 16).		14	The Sanitary Engineer's proposals are approved, generally; but the ~~The effect of this will be that no recoveries will be made from Municipalities during 95-96 – I cannot [illegible].~~ generally but ~~The~~ Inspr. shd. begin his mofussil inspections as soon as he is through his initial work in Madras, & fees should be recovered at once on the ~~at~~ scale already suggested (after commn. with Mr. [illegible]) or on such other scale as may be approved. BS
		(8) Remuneration to the Sanitary Engineer for the additional work thrown upon him (Para 17).			The Government is not prepared at present to propose any increase to the Sanitary Engineer's salary. Certainly not BS
		The Accountant General suggests that the cost of the establishment and other incidental charges including those that may be incurred under section 12 (5) of the Act should be debited to "20 Police Steam Boiler inspection Establishments" except Pleader's fees which should be charged to "Law & Justice" and that the receipts be credited to the Revenue head "XVII Police, fees, fines and forfeitures". R.S.	"	"	The Accountant General's suggestions are approved. BS S 22/5

Ex. BM

Tabular Statement of remarks and suggestions on the Notifica
sections of the Steam Boilers and Prime Movers Act 1893.

Notification	Section of Act	Remarks and Suggestions

~~His Excellency the Governor~~
~~The Hon Mr Bliss C. S. I.~~

urgent
Rules. &c. under the Steam Boilers' Act

Draft orders thereon submitted for approval

approved – but in section 11 I do not quite see why no appeal should lie to the Sanitary Engineer in the event of the Inspector's refusal to renew a license. This appears to me to place too much power in the Inspector's hands.

Sec. 23.

Who is to be the judge of the "absolute necessity" for Sunday Examinations?

The Insp. may decide, I think. He will get a little extra pay for Sunday work so will have some inducement not to refuse to work on Sundays when asked to do so. 23 May

I have noted on other points within

27/5/95

586

From [illegible] Print with the tabular statement – "Proof" [illegible]

PUBLIC WORKS DEPARTMENT.

No. 1529 W. dated 26th June 1895.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Genl
Agt

READ the following

From the Accountant General, Madras, No: 391 dated 19th February 1895.
— Do — Sanitary Engineer to Govt. No: 454 d/23rd February 1895
Endorsement in the Judicial Deptt No: 488 d/6th March 1895 on letter from the Chairman, Chamber of Commerce dated 27th February 1895.
— Do — Do — No: 664 d/28th March 1895 on letter from the Govt. Solicitor Madras, No: 162 dated 23rd March 1895.
From the Chief Presidency Magistrate No: 92 dated 8th April 1895.

Lushe

In G. O. No: 174 dated 25th January 1895, Judicial, suggestions were invited from persons interested, as well as from certain officers of Govt. in regard to the notifications and orders to be issued under the Steam-boilers and Prime-movers Act, 1893. A draft of the proposed rules has already been published in the Fort Saint George Gazette of the 5th February 1895. The rules will now be amended in accordanc

(40—4,000—14-3-95.)

Tabular Statement of remarks and suggestions on the Notifie
sections of the Steam Boilers and Prime Movers Act 1893.

Notification	Section of Act.	Remarks and Suggestions

with the orders given below; and, as thus revised, will be published in the Fort Saint George Gazette and brought into operation with effect from the date of the publication thereof:

H. E.

12/6/95

7/6

10.VI.

8/6 95

Urgent

[illegible]

To

The Honorable the Chief Secy for favor of counter initials

DESPATCHED
28 JUN. 95

To

All District Magistrates
The Commissioner of Police, Madras
" Sanitary Engineer
" Chief Presidency Magistrate
" Govt. Solicitor
" Accountant General
" Chamber of Commerce, Madras
" Madras Trades Association
" Local & Municipal Deptt.
" Judicial Deptt.
" Financial Deptt.

A

Govt. of (1895) Madras.

PUBLIC WORKS.

LOCAL & MUNICIPAL SECRETARIAT

Dated

Recd. Encl.

G.O., 26/6/ 1895, No. 1549 W.

team-Boilers' and

rime-Movers' Act, 1893

—

irecting the publication

the Fort St George Gazette,

amended rules

connection with

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250/18