

Public Works (1898.) Department.

RAILWAY BRANCH.

G.O., No. 895 Ry.

DATED 7th July 1898.

Includes

G.O. No. 712 Ry. dt 18-8-96

" 928 Ry. dt 27-10-96

[Despatch Abstract.]

Rules relating to the packing and testing of
Cylinders or flasks containing liquefied
Carbonic acid gas. Govt. of India
Resolution sanctioning with effect from the
1st October 1898, the — on open lines
of all railways directly administered by
Govt, Command to the Agents, in P.S. 2000
in view to their adopting the rules.

BACK PAPERS.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

G.O.	No.	Department.	Date.

[*General Distribution.*]

Circular No. 4 Railway.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY TRAFFIC.

Simla, the 29th July 1896.

Rules relating to the packing and testing of cylinders or flasks containing liquefied carbonic acid gas.

Read—

Letter from the Director General of Railways, No. 281-T., dated 3rd July 1895.

Letters from the Secretary, Public Works Department, India Office, No. P. W. 1658, dated 1st November 1895, and P. W. 422, dated 27th March 1896, enclosing reports by the Board of Trade and by the Committee appointed by the Secretary of State, to consider the question of the conveyance by railway of compressed gas in cylinders.

Despatch to Secretary of State, No. 46, Railway, dated the 9th June 1896.

OBSERVATIONS.—Liquid carbonic acid gas has been excluded from the item "gas, compressed" in the list of goods declared dangerous in rule 14 of Part II, of the open line general rules of 1895, provided the gas is secured "in wrought iron cylinders or solid drawn steel flasks without seam or join, certified by competent authority to withstand a pressure of 250 atmospheres (3,750 lbs.)"

2. Owing to the bursting of a cylinder while being transhipped at the Amritsar Station on the North Western railway, the question of issuing revised directions in regard to the packing and testing of cylinders and flasks containing liquefied carbonic acid gas has been under careful consideration, and the set of rules accompanying this circular has been drawn up.

These rules have not been finally decided upon as certain points are still under reference to the Secretary of State, but as they have been formulated under the advice of experts in consultation with those engaged in the trade it is improbable that they will undergo any very appreciable modification and in order to avert the recurrence of an accident similar to that which occurred at Amritsar, the Government of India consider it essential, in the interests of the trade as well as for the safety of the public, that some clearly defined precautions should be adopted without further loss of time.

RESOLUTION.—The Governor-General in Council is accordingly pleased to sanction provisionally with effect from 1st January 1897 the accompanying rules for adoption on open lines of all railways directly administered by Government and desires that the administrations of other railways may also be moved to adopt the rules.

ORDER.—Ordered that the circular and the accompanying rules be communicated to the Local Governments and Administrations and to the officers noted in the margin for information and guidance; also to the Governments of the North-Western Provinces and Oudh and the Punjab, the Chief Commissioner of the Central Provinces, the Agents to the Governor General for Central India and Baluchistan, and to the Accountant-General, Public Works Department, for information.

The Governments of Madras, Bombay, and Bengal.
The Chief Commissioners of Burma and Assam.
The Resident at Hyderabad.
The Agent to the Governor General for Rajputana.
The Director General of Railways.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Assam.

By order,

E. Anderson

Offg. Under Secretary.

SEA

Document accompanying.

Rules to regulate the carriage by rail in India, of liquefied compressed carbonic acid gas in wrought iron cylinders or solid drawn steel flasks.

*The Joint Secretary to the Government of Madras,
Public Works Department, Railway Branch*

*with 50 spare copies
sent per Packet Post*

Enclosure to Government of India, Circular No. 4 Railway, dated 29th July 1896.

Rules to regulate the carriage by rail in India of liquefied compressed carbonic acid gas in wrought iron cylinders or solid drawn steel flasks—

- (a) The cylinders or flasks used should be capable of enduring a test pressure of 3,750 lbs. per square inch without deformation, and should be re-annealed and re-tested after annealing every two years. By deformation it is to be understood that no sudden stretch occurs under testing in a water-jacket furnished with a gauge glass, and that the total external bulk of the cylinder or flask is not increased after test by more than 1 per cent.
- (b) The valve should be protected by an outer metal cap screwed on to the head of the cylinder or flask.
- (c) The cylinders or flasks should either be packed in separate boxes or be completely cased in a fibrous covering not less than half an inch thick.
- (d) The amount of gas to be filled in each cylinder or flask should not exceed two-thirds by weight of its water capacity.
- (e) The date, the letter "A. and R. T. 3,750 lbs.," and a mark indicating the firm and individual responsible for such annealing and re-testing are to be stamped on the neck or shoulder of each cylinder or flask in order to indicate the date of re-testing and re-annealing.
- (f) No consignment of compressed gas in cylinders or flasks should be accepted for carriage by rail unless the consignor has given a written declaration that the above rules have been complied with.
- (g) The Railway Administration should take every precaution against exposing the cylinders or flasks when charged with gas to excessive heat, either in wagons, or by exposure to the direct rays of the sun.

W. CURRENT No. 7263

(R.) Form No. 3.

B No 712 R 7 18/8/86 2 mpls

PUBLIC WORKS DEPARTMENT,
RAILWAY BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

Ext: of India Circular No 204 R 7 29 July 96

Communicated
to the Agents Madras &
S. P. Railways for favour
of report as to whether
they will adopt the rules
referred to

C
Ref R

To the Agent or man: Madras } Sept 21/8
- Agent S. P. R }

No. 855

South Indian Railway Co., Ltd.

AGENT'S OFFICE,

TRICHINOPOLY, 17 September 1896.

From

THE AGENT,

SOUTH INDIAN RAILWAY,

To

THE CONSULTING ENGINEER

FOR RAILWAYS,

MADRAS.

Sir,

With reference to G.O. N^o 712 R dated 18th August 1896, I have the honor to inform you that this Railway will adopt the rules for the conveyance of liquefied Carbonic Acid gas, given in Government of India Circular N^o 4 Railway dated 29th July 1896 -

I have the honor to be,
Sir

Your most obedient Servant

M. L. Mesurier
for Agent.

M. L.

To await the receipt of
reply from A.M.

M. L.
for ER
18-9-96

Bf. N^o 712 R. dated 18.8.96

1/9



(No. II.)

No. *9511*
9441

Hf 24/10

MADRAS RAILWAY.

AGENT AND MANAGERS' OFFICE,

Madras, *25 October* 1896

From

The Agent and Manager. *Madras Railway*

To

The Consulting Engineer for Railways. *Madras.*

SIR,

With reference to G. O. N^o 902 R dated 18th August 1896, I have the honor to inform you that the Rules relating to the packing and testing of cylinders or flasks containing liquefied carbonic acid gas which accompanied circular N^o 11 Railway will be adopted on this Railway from 1st January 1897.

I have the honor to be
Sir,

Your most obed^t servant

Henry Clvest
Agent & Manager

Encl^d

24/10

From

THE AGENT,

SOUTH INDIAN RAILWAY,

Trichinopoly.

To

THE CONSULTING ENGINEER FOR

RAILWAYS,

Madras.

Dated
Received

No.

189

ENCLOSURE.

4667
24-10-96

No. 188
Dated 188
Recd.
To
The Consulting Engineer
for Railways.
From
The Agent and Manager.
MADRAS RAILWAY.

R. FORM No. 12.

18f

No. 928K

Government of Madras.

PUBLIC WORKS DEPARTMENT,
RAILWAY BRANCH.

To

THE SECY. TO THE GOVT. OF INDIA,

P. W. DEPARTMENT.

Similar

Madras, the 27th October 1896.

SIR,

With reference to
Govt. of India Circular to
Railway of 29 July 1896,
I am directed to inform
you that the Agents of
the Madras S. P. Railways
have agreed to adopt the
rules relating to the packing
storing of cylinders of flammable
containing liquefied car-
bonic acid gas.

Documents accompanying:-

27/10/96
Nil

YH
24/10

R

YH
24/10

Public ^{Woots} (1898) Department.

Railway
CURRENT No. 764

Bf.

Read again

Ed. 80.712 R 718.8.96

--- 928 R 727.10.96

From

The Govt of India

Order No 895 Ry of 7-7-98.

Communicated to
the Agents Madras & S. D.
Railways in view to
^{their adopting the rules}
~~the rules being adopted~~
by them.

Letter No. X Ry

Dated 11th June 1898

Received } 23. 6. 98

Registered

Enclosures

Spare copies

FWS

OR

1/7/98

SUBJECT.

Rules relating to the
packing and testing of
cylinders or flasks
containing liquefied
carbonic acid gas.

To Messrs. ...
--- Agent S. D. Ry
--- Comptroller Ry

Despatched on 7.7.98

Mr. Alden

Has the ... been passed
any ...

2 Copies ...

Shew ...
1/7/98

Bf.

No 928 R dated 27.10.96

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

(Heads of Departments.)

Circular No. X Railway.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY TRAFFIC.

Rules relating to the packing and testing of cylinders or flasks containing liquefied carbonic acid gas.

Simla, the 11th June 1898.

Read—

Government of India circular No. 4 Railway, dated the 29th July 1896.

Despatch from the Secretary of State, No. 99-Railway, dated 19th November 1896.

Letter dated the 16th January 1897, from the General Manager of the Sirdar's Carbonic Acid Inventions Syndicate, Limited, Bombay.

Despatch to the Secretary of State, No. 50 Railway, dated the 18th May 1897.

Despatches from the Secretary of State, No. 100 Railway, dated 14th October 1897, and No. 17 Railway, dated 24th February 1898.

OBSERVATIONS—Under circular No. 4 Railway, dated the 29th July 1896, the Government of India prescribed certain rules to regulate the packing and testing of cylinders or flasks containing liquefied compressed carbonic acid gas tendered for carriage by rail in India. The rules referred to were sanctioned provisionally only as certain points were then still under reference to the Secretary of State.

2. The question has now received further consideration, both at the hands of the Secretary of State and of the Government of India, and the accompanying rules have been finally decided upon.

RESOLUTION.—In supersession of the rules promulgated provisionally under Government of India circular No. 4 Railway, dated 29th July 1896, the Governor General in Council is pleased to sanction, with effect from the 1st October 1898, the accompanying rules for adoption on open lines of all railways directly administered by Government, and desires that the administrations of other railways may also be moved to adopt the same rules.

ORDER.—Ordered that this circular and the accompanying rules be commu-

The Governments of Madras, Bombay, Bengal, and Burma.
The Chief Commissioner of Assam.
The Resident at Hyderabad.
The Agent to the Governor General for Rajputana.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow and Assam.
The Managers, North-Western, Oudh and Rohilkhand, Eastern Bengal and East Coast (State,) Railways.

nicated to the Local Governments and Administrations and to the officers noted in the margin, for information and guidance; also to the Governments of the North-Western Provinces and Oudh and the Punjab, the Chief Commissioner of the Central Provinces, the Agents to the Governor General for Central India and Baluchistan, and to the Accountant General, Public Works Department, for information.

Ordered also that this circular and the accompanying rules be published under a Notification in Part I of the *Gazette of India* for general information.

W. J. McElhinney
Captain, R.E.,
Offg. Under Secretary.

Documents accompanying.

Enclosure No. 1—Rules to regulate the carriage by rail in India of liquefied compressed carbonic acid gas in wrought iron cylinders or solid drawn steel flasks.

Enclosure No. 2—Specification recommended for adoption.

Enclosure No. 3—Certificate referred to in rule (g).

To
The Joint-Secretary to the
Government of Madras,
Public Works Department,
Railway Branch.

*With 50 spare copies.
+ Sent by packet post.*

(Enclosure No. 1 to Government of India circular No. X Railway, dated the 11th June 1898.)

Rules to regulate the carriage by rail in India of liquefied compressed carbonic acid gas in wrought-iron cylinders or solid drawn steel flasks.

(a) The cylinders or flasks used must have been tested under a pressure of 3,750 lbs. per square inch without deformation, and must be re-annealed, and re-tested after annealing, every two years. By deformation it is to be understood that no sudden stretch occurs under testing in a water jacket furnished with a gauge glass, and that the total external bulk of the cylinder or flask is not increased after test by more than 1 per cent.

(b) The valve should be protected by an outer metal cap screwed on to the head of the cylinder or flask.

(c) The cylinders or flasks should either be packed in boxes or be completely cased in a fibrous covering not less than half an inch thick.

(d) A cylinder or flask shall not contain more than $\frac{2}{3}$ (two-thirds) of a pound of carbonic acid for each pound of water capacity.

(e) The date, the letters "A. & R. T. 3,750 lbs." and a mark indicating the firm and individual responsible for such annealing and re-testing are to be stamped on the neck or shoulder of each cylinder or flask in order to indicate the date of re-testing and re-annealing.

The weight of the cylinders when empty and when filled with gas to the extent prescribed must also be shewn.

(f) All cases and packages containing carbonic acid gas must be clearly marked as such.

(g) No consignment of compressed gas in cylinders or flasks shall be accepted for carriage by rail unless the consignor has signed a certificate in the accompanying form.

(h) The Railway Administration should take every precaution against exposing the cylinders or flasks when charged with gas to excessive heat either in wagons or by exposure to the direct rays of the sun.

(Enclosure No. 2 to Government of India circular No. X Railway,
dated the 11th June 1898.

Specification recommended as suitable for the metal used in the manufacture of steel
cylinders to be used as receptacles for compressed carbonic acid.

1. The proportion of carbon not to exceed 0.25 per cent ; that of iron being not less than 99 per cent.
 2. *Elongation*.—Not to be less than 18 per cent. on an 8-inch length of a bar cut from the original material, or 15 per cent. on an 8-inch length of a test bar cut from the finished cylinder.
 3. *Ultimate tensile strength*.—Not to be less than 25 tons or more than 30 tons per square inch for bars of the original material, and not to be less than 28 tons or more than 33 tons per square inch for bars cut from the finished cylinder after annealing.
-

(Enclosure No. 3 to Government of India circular No. X Railway, dated the 11th June 1898.)

Certificate referred to in rule (g) of the rules to regulate the carriage by rail in India of liquefied compressed carbonic acid gas in wrought-iron cylinders or solid drawn steel flasks.

— Railway.

Station.

-189

Certified that the cylinders or flasks containing liquefied compressed carbonic acid gas tendered by me as per Forwarding Order No. _____ of this date to the _____ Railway for despatch to the _____ Station have been packed and tested in accordance with the rules promulgated under Government of India circular No. X Railway, dated the 11th June 1898, to regulate the carriage by rail in India of liquefied compressed carbonic acid gas in wrought-iron cylinders or solid drawn steel flasks. Also that the weight of carbonic acid in each cylinder or flask does not exceed two-thirds of a pound for each pound of the water capacity of that cylinder or flask.

Signature of sender.

Dr. We have already
told you in last AM
that except the rules -
These papers may be
for be filed. -

Dr.
5/9/98

MS

(A. & M. L.)

No. 11235

666

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE,

Madras, 21st July 1898.

From

The Agent and Manager.

Madras Railway.

To

The Consulting Engineer for Railways.

Madras.

SIR,

With reference to G.O. No. 897 Ry.
dated the 7th Instant, I have the honor
to advise you that I propose to adopt
the rules regulating the carriage by rail
in India of liquefied compressed car-
bonic acid gas in wrought-iron cylinders
or solid drawn steel flasks. -

I have the honor to be,

Sir,

your most obedt. Servt.

Edmund

Agent and Manager.

Ans. As reply
MS.
fwd

CSC

25511
dd

Form No. 24.

No. 2441

Madras, 30 August 1898.

From *Long. Long. for*
THE SENIOR GOVERNMENT INSPECTOR OF RAILWAYS,
MADRAS,

Reminders.

To
THE AGENT AND MANAGER, M. Ry.
The A S. I. Ry. ✓
H. H. THE N. G. S. Ry.
AND CHIEF ENGR. N. Ry.
S. M. Ry.
ENGR. IN CHIEF, B. M. Ry.
MANAGER, E. C. Ry.
SECRETARY TO THE GOVT. OF INDIA.

Reply No. 819
dated 29.9.98

SIR,

With reference to G.O. No. 895 Ry.
dated 7th July 1898 I have the honor
to request that you will be so good as
to report ^{propose} as to whether you ~~have issued~~
~~the necessary instructions~~ to adopt
the rules referred to on the South
Indian Ry.

CM 30/8

Despatched on 30/8/98

20/9/98

No. 819

South Indian Railway Co., Ltd.,

AGENT'S OFFICE,

TRICHINOPOLY, 2^d September 1898.

From

Offg:
The AGENT,

SOUTH INDIAN RAILWAY,

To

The CONSULTING ENGINEER FOR RAILWAYS,

MADRAS.

Sir,

legⁿ 30th August 1898, I have the honor to inform
you that this Administration has adopted
the Rules relating to the packing and testing
of cylinders or flasks containing liquefied
Carbonic Acid Gas as detailed in Govern-
ment of India Circular N^o X Railway, of
11th June 1898, vide Madras Government
Mag R Order N^o 895, Railway, of 7th July 1898.



I have the honor to be,
Sir,
Your most obedient Servt

Francis L. Smith
Offg: Agent.

MS

File
MS 6/4

812

Dated
Received }

189

No.
ENCLOSURE.

From
The Agent,
South Indian Railway,
Trichinopoly,
To
The Consulting Engineer for
Railways,
Madras.