

Public Works ¹⁸⁹⁰ (~~1900~~) Department.

RAILWAY BRANCH.

G.O., No. 1235 *Rp*

DATED *21st* August *1900*.

[Despatch Abstract.]

Vacuum automatic brake. — Letter from the Govt of India forwarding Copy of letter from the Director-General of Railways relating to the accident on the London and North-western Railway, owing to an alleged failure of the — and making certain suggestions regarding the adoption of the brake on Indian Railways, Communicated to the Consulting Engineer for Railways.

BACK PAPERS.

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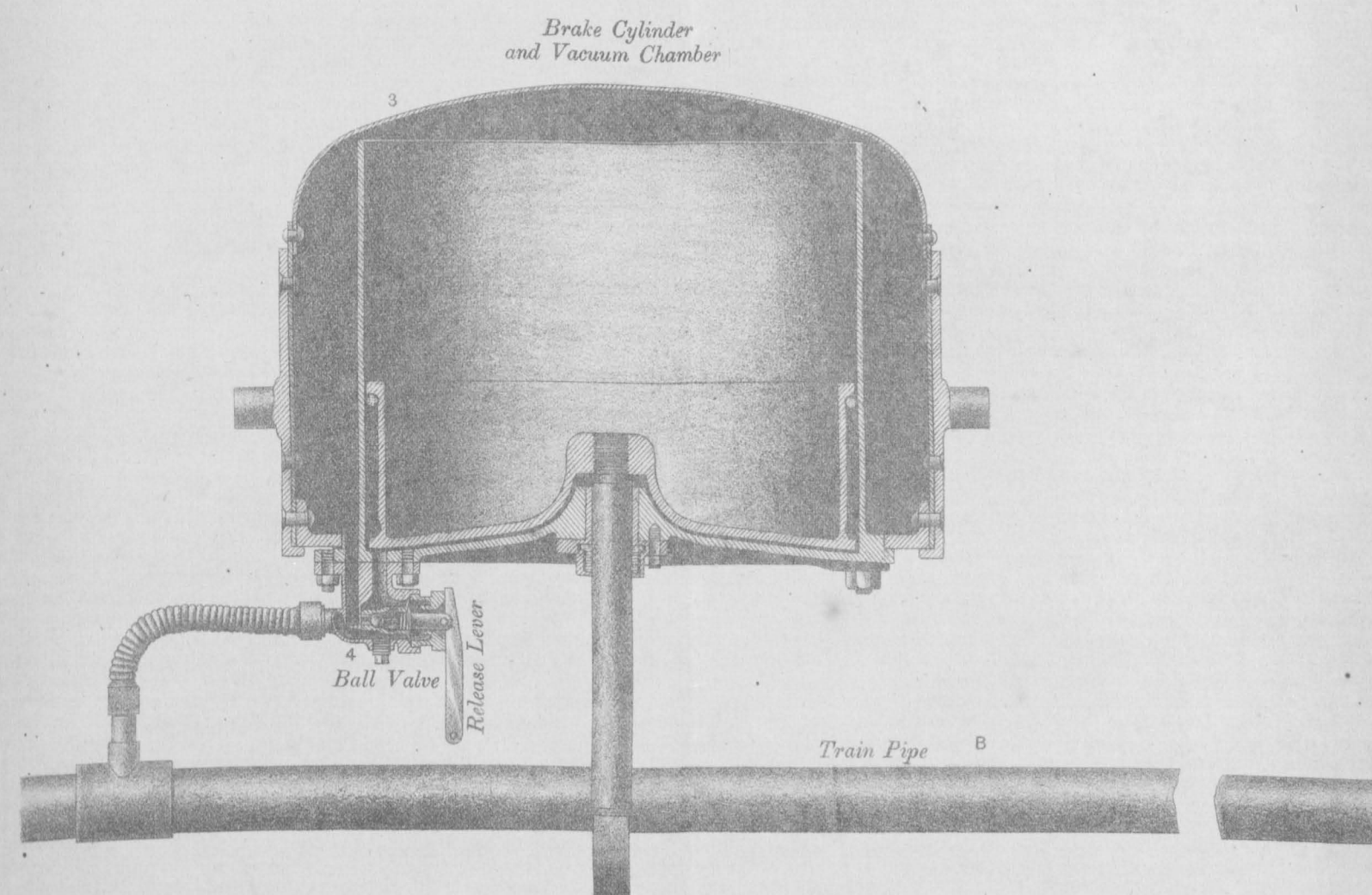
FURTHER PAPERS.

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

*Arrangement of Vacuum Brakes
on the Vehicles of the
London and North Western Railway*

*Accompaniment to Enclosure B of Director General of Railways,
letter No. 764 S. of 25th June 1890.*

THE VACUUM AUTOMATIC BRAKE,
SHOWING THE GENERAL ARRANGEMENT
ON VEHICLES,
AS ADOPTED ON INDIAN RAILWAYS.



Enclosure to letter No. 89 R.S. of 1890.

No. 764 S.

FROM

THE DIRECTOR GENERAL OF RAILWAYS,

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

Simla, the 25th June 1890.

SIR,

I have the honour to forward copy of a letter (Enclosure A) from the Agent in India of the Automatic Vacuum Brake Company covering a copy of the "Report to the Board of Trade by Colonel Rich, R.E., of his Inquiry" into the accident which occurred, on the 4th March 1890, at Carlisle in England.

2. It will be seen from this report that while acquitting the brake apparatus of the train to which the accident occurred from blame for failure to stop the train, Colonel Rich at the same time calls attention to certain defects in the apparatus. It may therefore be as well to explain that the form of Vacuum Automatic Brake, adopted for use on Indian State Railways, differs very considerably from the apparatus with the same name used on the London and North-Western Railway.

3. I enclose a copy of a further letter (Enclosure B) from the Agent of the Automatic Vacuum Company covering a tracing which shows the general arrangement of the cylinder, pistons and reservoir of the "simple" and "automatic" apparatus as used by the English Company.

I also forward a tracing showing the corresponding portion of the apparatus as being fitted to the Indian Railway stock. A comparison of that tracing (Enclosure C) with the tracing forwarded by the Agent of the Automatic Vacuum Brake Company will show at once how little similarity there is between the two apparatus.

The Indian pattern is free of the very objectionable features which appear in the London and North-Western Railway pattern, *e. g.*, the leather diaphragm packing to piston, the separate reservoir exhausted of air and the "five way cock" controlling the ball valve.

4. In addition to these structural differences, moreover, there exist very important differences in arrangement which may be shortly summarised as follows:—

London and North-Western Railway.	Indian State Railways.
Driver's valve actuates two other brakes as well as the automatic vacuum.	Driver's valve only actuates the automatic vacuum brake.
To put on brakes the lever is pushed away from driver.	To put on brakes the driver has to pull the lever.
There is no vacuum brake fitted to locomotive.	The vacuum brake is fitted to the engine with a reservoir of large capacity attached.
The drip valve is situated on a horizontal pipe on tender.	The drip valve is situated at foot of a vertical pipe and close alongside the ashpan of the engine, which keeps it warm.
The ejector discharges direct into open air.	The ejector discharges into smoke-box, thus utilising waste steam as a blast and avoiding unnecessary noise.

No. 89 R.S.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
RAILWAY STORES.

To

THE SECRETARIES TO THE GOVERNMENTS OF MADRAS, BOMBAY, BENGAL, THE NORTH-WESTERN PROVINCES AND OUDH, AND THE PUNJAB, PUBLIC WORKS DEPARTMENT.

THE CHIEF COMMISSIONERS OF THE CENTRAL PROVINCES, BURMA AND ASSAM.

THE RESIDENT AT HYDERABAD.

THE AGENT, GOVERNOR GENERAL FOR RAJPUTANA.

THE CONSULTING ENGINEERS TO THE GOVERNMENT OF INDIA FOR RAILWAYS, CALCUTTA, LUCKNOW AND CENTRAL DIVISION.

Simla, the 23rd July 1890.

SIR,

With reference to Public Works Department No. 0114 R.S., dated the 4th April 1889, intimating that the Government of India had decided on adopting the Vacuum Automatic Brake for general use on Indian Railways, I am directed by His Excellency the Governor General in Council to forward, for information, copy of a letter No. 764 S., dated 25th June 1890, from the Director General of Railways (with annexures*) relating to the accident which occurred on the 4th of March 1890 at Carlisle in England owing to an alleged failure of the automatic vacuum brake used in the vehicles of the London and North Western Railway.

* Except Colonel Rich's report.

2. Although Colonel F. H. Rich, R.E., who on behalf of the Board of Trade enquired into the circumstances which attended the accident, arrived at the conclusion that the accident was due rather to the fault of the driver than to any deficiency of the brake, yet he found some grounds for criticism in the arrangements and construction of the Brake fitted to the train to which the accident occurred. It seems therefore desirable to the Government of India to draw attention to the fact that the pattern of the Automatic Vacuum Brake which has been adopted in India is free from certain somewhat objectionable features, which appear in the London and North Western Railway pattern.

3. I am accordingly to invite special attention to paragraph 3 of the Director General of Railways' letter and the lithographed plates forwarded as an accompaniment. Attention is also invited to the important differences in arrangement which are summarized in paragraph 4 of that letter.

4. I am further to desire that you will note the suggestion made by Colonel

"The exhaust-pipe should be taken through the boiler, which will prevent the steam condensing as it does when the pipe is outside, and drivers should not shut the small ejector while their engine is attached to a train."

Rich as quoted in the margin and the remarks contained in paragraph 5 of the Director General of Railways' letter. With reference thereto, I am to say that it would seem advisable, when indenting for new locomotives in future, that provision should be made to allow of the exhaust-pipe from the ejector being taken through the boiler to prevent condensation of steam

in the manner suggested by Colonel Rich in the extract from his report which is reproduced on the margin.

5. It may be added, for the information of any Railway Administrations who are about to introduce the Automatic Vacuum Brake, that in the pattern of brake fitted to the stock of the North-Western Railway small rapid-action inlet valves can be inserted at any time if desired, the necessary connections having been provided on each vehicle without extra cost.

I have the honour to be,

SIR,

Your most obedient Servant,

L. CONWAY-GORDON,

Deputy Secretary.

Documents accompanying.

Copy of Director General of Railways' letter referred to with enclosures (except Colonel Rich's Report).

Order thereon No 1235-R of 21st August 1890.

*Communicated to the
Consulting Engineer for Railways
for information with reference
to Prop: No 437-R dated 17th April
1889.*

/True Extract/

*/Signed/ Sidney Smith
Major R.E.
Under Secy to Govt. P. W. D.
Ry: Branch.*

Lo.

*The Engr: Engr: for Ry.
a Engr: Ry: acct:*