

**IRISH RAILWAYS: THE
ATMOSPHERIC RAILWAY; A
LETTER TO THE RIGHT HON.
LORD VISCOUNT MORPETH**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649265497

Irish Railways: The Atmospheric Railway; A Letter to the Right Hon. Lord Viscount Morpeth
by James Pim

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

JAMES PIM

**IRISH RAILWAYS: THE
ATMOSPHERIC RAILWAY; A
LETTER TO THE RIGHT HON.
LORD VISCOUNT MORPETH**

IRISH RAILWAYS.

THE ATMOSPHERIC RAILWAY.

A LETTER

TO THE

RIGHT HON. LORD VISCOUNT MORPETH,

BY

JAMES PIM, JUN.,

TREASURER OF THE DUBLIN AND KINGSTOWN RAILWAY COMPANY.

LONDON:

PRINTED BY J. L. COX & SONS, GREAT QUEEN STREET,

LINCOLN'S-INN FIELDS.

1841.

A L E T T E R,

ſc.

MY LORD,

Observing that the House of Commons has granted your Lordship leave to bring in a bill, which I trust may lead to the introduction of a general and comprehensive system of Railways into Ireland, under the control and direction of the state, I am induced to submit a few observations directly connected with the practical operations contemplated under the proposed measure.

I believe it will be generally admitted by all who have paid attention to the subject, that for any probable amount of traffic, whether of goods or passengers, which can arise in Ireland for very many years to come, *single* lines of Railway would be found amply sufficient. Now by providing for a single line only, the cost of construction will be most materially diminished. In cuttings, embankments, and purchasing of

land, the saving will be nearly proportionate to the lesser breadth required. In ballasting, rails, sleepers, and all upper works, it will be fully one-half; and in tunnels, bridges over the line, and such works, the saving would be considerable; probably it would not be too much to assert, that 60 miles of single railway would not cost more than 40 miles of double line. And should a few years show such an increase of traffic as to demand a second line, I am well advised it could then be added for less money than the cost of the first.

But *single* lines of Railway cannot be worked by locomotive power to their full extent, without incurring danger from collisions, the consequences of which are of a fearful character, so much so as to render their adoption highly questionable.

If these premises be admitted, it becomes an object of the utmost importance, to ascertain if there be any other means of working a *single* line of Railway, economically and effectually, without incurring the risks which I have assumed to be attendant on the locomotive system, when applied to a *single* line.

It is very generally known that several ingenious persons have, from time to time, proposed to employ the pressure of the atmosphere as an element of locomotive power, and the names of

Papin, Lewis, Vallance, Medhurst, and Pinkus, will be familiar to those who are interested in the subject.

Some of their speculations are so curious, that I may be pardoned for trespassing on your Lordship's time in alluding to them.

Mr. Vallance, who obtained a patent in 1824, proposed to construct hollow cylinders of cast-iron, sufficiently large to allow carriages with passengers and goods to pass through them; a series of these cylinders are to be united, and extend from town to town, the junctions being made sufficiently air-tight to allow of a vacuum being produced within; and the carriages, formed to the figure and dimensions of the cylindrical trunk, are to be projected from place to place by the pressure of the atmosphere rushing forward to supply the vacuum.

It is needless to go further into the details, the specification of which, we are told, occupies sixteen and a half closely written skins of parchment. I shall only mention, that the speed which appears to have been calculated on for ordinary occasions, was about 200 miles per hour; but which, Mr. Vallance says, "*could not be conveniently carried beyond one thousand miles per hour, as that is the rate of velocity with which air rushes into a vacuum.*"

Mr. Medhurst's plan was nearly similar; he

proposed to construct a hollow tube or archway of iron, brick, timber, or any material that will confine the air, and of such dimensions as to admit a four-wheeled carriage to run through it. The tube or aerial canal must be made air-tight, and of the same form and dimensions throughout, having a pair of cast-iron or stone-wheel tracks, securely laid all along the bottom, for the wheels of the carriage to run upon; and the carriage must be nearly of the size and form of the canal, so as to prevent any considerable quantity of air from passing by it.

Mr. Medhurst then proposed to *drive* a quantity of air by a powerful engine behind the carriage, and impel it forward by this means. Its return was to be accomplished by the converse of this process. His expectations of velocity appear to have been on a much more modest scale than his predecessor Mr. Vallance,

Mr. Medhurst, however, seems to have some misgivings that his passengers might not like to be confined in the piston of an air-pump, for such his carriage would really become. And he suggested a singularly ingenious means of forming a communication between the air-pump and an *external* carriage, by means of a water valve; and by this means, he says, "to impel a carriage along upon an iron road, in the open air, with equal velocity, and in a great degree possessing

the same advantages as in passing withinside of the tube, *with the additional satisfaction to passengers of being unconfined and in view of the country.*" It unfortunately happened that this water valve required to be laid accurately level throughout its entire length, and of course could not be practically applied.

Mr. Pinkus appears to have done little more than to suggest a new form of valve, which I am not aware has led to any practical result.

It is not to be wondered at, that with such statements before us, any proposal to adopt an atmospheric or pneumatic Railway should be received with ridicule or with pity; and so great has been the prejudice against it, that very few indeed, even among those who are most interested in Railways, have taken the trouble of ascertaining what has been accomplished by Messrs. Clegg and Samuda, although their invention has been publicly exhibited for nearly twelve months within three miles of Oxford-street.

The apparatus constructed by those gentlemen appears to be based on the suggestion of Mr. Medhurst, but instead of the impracticable water valve, they have adopted one which is at the same time simple and efficacious.

It would be a most ungracious trespass on your Lordship's time, were I to attempt any

minute description of this apparatus. To those who feel an interest in such matters, I would respectfully recommend them to go and see. I have repeatedly gone, and most carefully examined all their arrangements; and although the scale upon which their experiments have been tried may be thought scarcely sufficient to arrive at an absolute demonstration by those who only view it superficially, every successive visit has tended to increase the conviction to which I have now arrived, that their invention is *economically* applicable to every existing Railway at present worked by locomotive power.

If this position be correct, and I give it deliberately, and after much consideration, it necessarily follows, that the advantages will be much greater where the lines have originally been laid out, with the view to the application of this novel principle.

It is not necessary that the gradients should be so perfect, as on those lines where the locomotive has to overcome the maximum amount of resistance; in this alone, the saving in cost of construction may be very considerable.

The curves may be of much shorter radius than on ordinary Railways, and this also tends to lessen the original cost.

The tops of the carriages need not be more