THE GEORGE BENNIE

Railplane System of Transport

Protected by Letters Patent in the undernoted countries:

1 ARGENTINE 14 GREAT BRITAIN
2 AUSTRALIA 15 d[itt]o
3 AUSTRIA 16 d[itt]o
4 BELGIUM 17 d[itt]o
5 BELGIAN CONGO 18 d[itt]o
6 BRAZIL 19 d[itt]o
7 CANADA 20 HOLLAND
8 COLOMBO 21 INDIA
9 FRANCE 22 ITALY
10 GERMANY 23 JAPAN
11 d[itt]o 24 NEW ZEALAND
12 d[itt]o 25 SOUTH AFRICA
13 d[itt]o 26 U.S.A.
NOTE – GEORGE STEPHENSON’S ROCKET COMPLETED 1829
GEORGE BENNIE’S RAILPLANE COMPLETED – 1929
100 YEARS BETWEEN THE TWO SYSTEMS – A CENTURY AND A COINCIDENCE
Mr. GEORGE BENNIE
Inventor
of the George Bennie Railplane System of Transport
General view of Railplane Car erected over L.N.E.R. line at Milngavie
The George Bennie Railplane System of Transport has been originated and developed to a practical conclusion and will be a universal means of transport by land, by virtue of the following factors:

1. The insistent demand for safe and rapid transport.
2. A new method of transport is urgently required in industrial centres due to the present congestion of roads.
3. A cheap method of transport is urgently required for the development of rural districts for the transport of mails, perishable goods, etc., and for the opening up of new and undeveloped countries.

There is a fourth factor, and one of great importance, and this may best be explained by stating the now obvious fact that fast passenger traffic should be completely separated from slow or heavy goods traffic.

By building the George Bennie Railplane System of Transport over the existing railways and making it a fast passenger and mails and perishable goods service, a great proportion of the revenue lost to the railways will flow back.

Our railways are a national asset. They cannot be allowed to go under in the transport competition. It is intended that the George Bennie Railplane
Interior of Railplane Car over L.N.E.R. line at Milngavie
System of Transport will restore them to their lost economic position by action as a feeder to the main line, and also relieving the railways of the congestion of passengers and goods. The railplane will take back all passenger traffic, and thereby relieve the railways absolutely for high-speed goods traffic. Another important aspect of this is that when the existing railways will carry only goods traffic, no night work will be necessary, with a resultant saving of at least 60% of operating costs to the railway companies.

The passenger cars, which are self-propelled, are stream-lined, and are driven by air-screws fore and aft.

The cars are suspended from a steel girder, and are suspended from a rail on the girder by bogies with laminated springs. Underneath the car is a sway-frame. This sway-frame does not bear any of the car’s weight, but simply acts as a guide, the car being provided with guide wheels which take up any undue swaying of the car.

The air-screws may be driven by electric motors or internal combustion engines, depending upon the local conditions.

This method of propulsion allows of a minimum weight of car construction, as adhesion does not enter into the calculations; in fact in this system the net
Railpane Station over L.N.E.R. line at Milngavie
Railplane Bogie showing Brake Gear  Guides underneath Railplane Car  Interior of Control Motor Room, Railplane Car

All photographs reproduced in this book, except on pages 18 and 19 are taken from The George Bennie Railplane Test Line erected over the L.N.E.R line at Milngavie, 8th July 1930.
weight carried is a greater proportion of the total weight carried than in any other known method of transport: i.e., the weight of passengers is greater in proportion to the weight of the empty car than in any other method of transport. It is obvious, that this last factor has a great influence on the cost of construction of the track.

With regard to speed it must be realised that the speed of any vehicle on rails is governed by the number of stops, curves, and gradients to be negotiated, but, so far as the railplane is concerned, on normal non-stop conditions a speed of 120 miles per hour can be attained with ease. If necessary, even greater speeds can be secured by increase in horse-power.

A decided advantage is the steepness of gradients that can be negotiated. Gradients ranging from 1 in 25 to 1 in 35 can be negotiated, depending on their length and the speed required.

This latter factor allows of the track being arranged to conform to the contours of anything short of mountainous country without the necessity of expensive cuttings and embankments. Even in the case of country where the contours cannot be followed directly, the track will always be kept level or uniformly graded by making up the difference in levels by the foundations. Thus, where
Railplane Car at Station over the L.N.E.R. line at Milngavie
in the ordinary course of a railway, cuttings and embankments would be necessary, the George Bennie Railplane System of Transport offers the special advantage in that the foundation can be brought to a uniform level or gradient. The land is not further disturbed, but is left to its usual purpose. Roads, railways, canals and the average streams are passed over without special provision having to be made.

The cost of construction for the complete track for average country is at the rate of £19,000 per mile complete with foundations. These figures are based on designs carried out to British standard specifications for railway bridges.

The above cost shows a remarkable economy when compared with railways, tramways, and tube railways. The cost of these methods are as follows: –

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>Cost Range</th>
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<tbody>
<tr>
<td>Double Line Railway</td>
<td>£45,000 to £60,000 per mile</td>
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<tr>
<td>Double Track Tramway System</td>
<td>£25,000 to £30,000 per mile</td>
</tr>
<tr>
<td>Double Line Tube Railway</td>
<td>£800,000 per mile</td>
</tr>
<tr>
<td>Double Track George Bennie Railplane</td>
<td>£19,000 per mile</td>
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</tbody>
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Passengers seeing Railplane Car off from Station over L.N.E.R. line at Milngavie
View showing L.N.E.R. Goods Train underneath the Railplane Car at Milngavie
General view of L.N.E.R. Goods Train underneath Railplane construction at Milngavie
General View of Model Scale 1 inch to foot
Model of Railplane Turntable (Open)