



Promoting Britain's Railway for Passengers and Freight

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## **UNDERSTIMATING RAIL DEMAND**

***A personal view by Railfuture member Robin Whittaker***

Robin Whittaker, who has worked in the rail industry in Britain and is acquainted with railways in other countries, asserts that underestimating rail traffic is partly the result of a failure to take into account network effects. Wellington's Law, he points out, was "discovered" in the 19th century, but many modern-day economists seem unable to understand it, in his opinion.

According to Wellington's Law, potential traffic is related to the multiple and not the sum of the points served.

It is set out in chapter XX1 of A M Wellington's *The Economic Theory of the Location of Railways*, published in New York in 1887 and in sixteen subsequent editions.

One way of explaining the idea, he says, is to think of yourself as a revenue accountant, where only single tickets are sold.

If your station serves five destinations, you need  $5 \times 4 = 20$  different tickets.

If there are 10 stations on the system, you need  $10 \times 9 = 90$  different tickets.

The number of stations has doubled but the potential for trips has more than quadrupled. There is an exponential relationship, and therefore because the number of journey possibilities grows the potential patronage is magnified.

Of course, planners must take into account the distance decay effect (gravity model) and the tendency for towns to fall in size as the network expands. But the end result will still be a steadily rising total traffic curve.

In recent times, researchers showed that such a curve existed on Nottinghamshire's Robin Hood Line, which reopened in the 1990s and attracted more than one million passengers a year, many more than expected.

In America and other parts of the world, there is a tendency to overestimate. This often happens in the United States, where the politics of, and data for, new services are often difficult, given that the prevailing transport network morphology is overwhelmingly car orientated.

Some Americans, he believes, have a visceral objection to new railways, and attempts are sometimes made to defeat this attitude by over-egging the advantages of a new line.

British economists, many of whom do not understand railways, read the literature on this, and often assume that similar overestimating mistakes are made here, according to Mr Whittaker. It's a mistake that rail campaigners need to challenge wherever it is put forward.

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