

Railroaded?

Have Britain's Motorways Finally Run out of Road, and the Tipping Point in Favour of Rail-Freight been Reached?

Ask transport managers about what keeps them awake at night and they will probably tell you that the cost of fuel and the problems generated by road congestion are their biggest concern.

In this paper we discuss the growth of rail and water transport, and whether these now deserve consideration by those who have steadfastly aligned their operations with lorry transport – and are now looking for an alternative.

The prognosis takes us forward to examine some of the proposals and trends that are emerging and the courses of action that are being supported by the FTA and CILT to underpin multi-modal policy.

Sweating the Motorway Network Assets – But no New Highways

Motorway Congestion Costs £3bn per annum – Approximately £250 per Household

The UK has the lowest motorway density in Europe (least miles of highway per vehicle) and has experienced an increase of 37% in motorway traffic and only a 1% increase in capacity in the last ten years. As a result our highways have become overcrowded, and motorway congestion alone are estimated to cost the UK economy £3bn per annum. Further motorway traffic is forecast to increase by at least a further 40% by 2015.

<http://www.dailymail.co.uk/news/article-411708/Minister-calls-congestion-charges-busy-motorways.html>

In response, the cash strapped government is seeking to sweat its existing motorway assets by introducing a package of measures targeted at improving traffic flow. including controlling lorry speeds, making HGV vehicles larger and extending hard-shoulder running particularly in key congestion areas, namely, the M42, M6, M1 (North), M4 (South) and M25 motorways. Also the Highways Agency has imposed harsh service levels on private sector maintainers, to ensure that they clear obstructions super-quickly, in order to keep the traffic moving.

The government has asked the tax payer to spend only £6bn on road infrastructure by 2016, whilst pledging a heftier £17bn on the first section of HS2 to the Midlands and £32.7bn on extensions further north. This is in conjunction with £8bn planned spending on passenger rail networks and new rolling stock up to 2016, much of which is earmarked for the South East.

The Winners and the Losers

True, the HS2 will halve journey times from London to the East Midlands to 57mins and to Manchester to 1hour 11mins, undoubtedly bringing benefits and investment to the boundary regions, spurring economic growth. Also it is estimated that it will create 40,000 new jobs to staff its services, and at our business and entertainment destination points such as the NEC and Birmingham Airport.

However the return on investment case has been criticised, not least that users will not pay the extra to travel faster, particularly as commuters use trains as mobile offices, and the M6 toll road (build it and they will pay) has seen a decline in traffic volumes and eight price increases in nine years.

HS2 – Money Well Spent? – Consider This

But could further investment in the combined road-rail-goods transport project that links distribution points, strategic corridors, and ports, achieve a better return all round?; particularly as HGV transport accounts for 40% of current carbon emissions, and one train or barge load equates to a saving of 70% in carbon emissions and replaces 30 trips with a 40 tonner?

UK port investors are driven by tough competition to attract traffic from other national rivals and European competitors, each determined to take custom from each other and provide a faster turnaround, lower cost, better multi-modal links, improved reliability, higher security and modern information systems.

It is the private sector that is continuing to plough massive investment into new port projects, such as DP World's project that will accommodate 2mil sq. ft. of new shed space at Thurrock on the banks of the Thames (with planning permission for another 7 mil) DP World plans to risk £1.5bn on their project, which is funded by money from the Middle East and will create 30,000 jobs in the UK, and excellent example of how the private sector funds are achieving high 'bangs for its buck'.

This, together with other planned improvements at our key multi modal hubs, including Felixstowe, Liverpool, Medway, Teesside and Southampton, will upgrade our port network which currently handles 95% of Britain's trade along with the other 300+ ports and waterway facilities.

Rail-Freight - Has the Tipping Point has been Reached?

The rail network transports approximately 24% of our freight , and links our ports, waterways and roads with the large metropolises via a network of approximately 30 rail connection depots, which have seen growth in freight traffic of 56%* in the last eight years.

UK's Prospects for Use of Rail Goods Transport

In the UK, rail freight transport has increased 16.6% (2010-2011), and is predicted to increase by 140% over the next decade. This growth has been fuelled by rising road transport costs and the increase in large scale container port traffic which is ideally suited to rail transport.

Although considered a more expensive mode of transport, advocates maintain that Rail is distinctly more reliable. Its' prospects have attracted heavyweight private sector investment from large retailers, such as Tesco and B & Q, who maintain their own depots, and rail freight train operators such as Stobart Rail, DB Schenker, Colas Rail, GB Railfreight, and Freightliner.

However, freight train depots are expensive to establish and to maintain, and networks must support slick loading and unloading operations. Therefore large-scale handling equipment and crainage is required to handle heavy loads and minimise delays as, like HGV's, rail-freight must not wait. Capital 'heavy' investment is also required for facilities such as engine sheds, train washing, and maintenance and serious volume is needed to ensure investment is repaid.

Heavy private capital investment continues to be made in depots such as Daventry's International Rail Freight Terminal (opened in 1997), one of the first multi-modal hubs in the UK, is a major artery for organisations such as Tesco and Jaguar Landover, and Birmingham's Inter modal Freight Terminal (BIFT), an example of a more recent rail-freight facility which is handling eight trains per day.

Rail – Made More Reliable by Sustainable Investment

Rail is being increasingly used by large transporters of consumer goods and parcels as well as its traditional bulk transport products such as steel, containerised deep sea freight, waste, automotive products, petrochemicals, forest products, coal and aggregates.

For example, **Tesco** has recently announced that they are taking 72,000 journeys a year off the road by expanding use of their rail depots sited at Daventry, Thurrock, Magor and Mossend, saving around 24,000 tonnes of CO2 emissions per annum.

Also the recent **Thames Estuary Airport Scheme** incorporated the integration of a rail, road and freight hub as well as a four track orbital utilities spine to a new Thames Crossing Barrier.

The USA – Probably the Most Successful Rail Freight Network

The US runs the best rail-freight network in the world, and it can be argued that it needs to because of the vast distances that need to be transversed. However some states, like California, have highly developed localised plans for high speed freight rail connecting San Diego, Sacramento, Los Angeles, and San Francisco by 2020 at a cost of \$42bn. (Economist July 2010).

The US multi-modal revival has been spurred by the building of rail-freight corridors, new track and depots the introduction of high horse power engines and lighter rolling stock. As the US improves its port network it will, in turn, generate new demand for rail capacity, and therefore huge new investments are necessary to align rail-freight capacity.

Water Freight – A Low Maintenance Natural Corridor

The Water Freight market is more fragmented and made-up of many smaller companies and its main use is restricted to larger waterways that support 750 tonne barges such as the Humber, Thames, Severn and the Manchester Ship Canal. It is also slow and not suitable to transport perishable goods. There are also the natural constraints to consider such as tidal patterns and weather events, which may affect operations.

It is however well suited to the transportation of bulk goods, such as aggregates and soil etc. where unit transport costs per tonne are low. Also waterways create a natural corridor and are, literally 'by nature', low maintenance.

Road miles can be wiped out by using port to port coastal transfer, or redirecting imports to facilities close to distribution routes. **ASDA** found that its delivery times from southern ports to RDC's in the North was unreliable, and created a £20mil import centre in Teesport, which now accommodates over 70% of ASDA's import containers from the Far East. ASDA estimates that it has saved over 2 million road miles per year by re-directing imports by sea to Teesport. (Source FTA – Freight by Water).

Also using the waterways for bulk shipments is very efficient. For example, major construction work in London, such as the Jubilee Line, Canary Warf and work for the Olympic Games have used barges to remove millions of tonnes of soil and delivery of construction materials by water vessels. A single barge of 300-400 tonnes removed 15-20 lorry journeys and UMA (United Marine Aggregates) saves 16-20,000 lorry trips a year which would otherwise have to move through central London, by utilising river barge transport. (Source FTA - Freight by Water)

Government Research – Cost Differences can be Marginal

In 2009 research by Leeds University (Freight Modal Choice Strategy) identified a number of potential product classes that could be targeted for rail transport; these include containers, automotive, aggregates, non-perishable foodstuffs, manufactured goods and metals. Their researchers also identified a number of strategic corridors of waterways and freight-rail routes that could be improved to accommodate the extra traffic. Its research also concluded that the cost difference between road and non-road transport in some cases was marginal.

Decision Points that Change the Balance

The report highlighted the decision points that could now be a major factor in changing transport modal decisions in favour of rail and water freight. The major considerations were:

1. Capability to store product and ship large consignments to take full advantage of bulk carrying economies of scale.
2. Taking confidence in continued investment in the rail/water-freight network and provide assurances that performance targets could be met.
3. Inter company cooperation (e.g. to jointly ship large loads) to achieve critical mass.
4. Re-positioning depots to maximise the sea/water leg and minimise the road leg.
5. Trying new modes of transport and having a positive experience.

Overall the report highlights that 'non bulk' thinking (geared around the use of Lorries) has to change, and buyers should 're-gear their operations away from the non-bulk mentality that has been developed over the years, that are associated with the restrictions of the lorry.

Conclusion

Whether the decision to build HS2 was entirely political is a point that will be argued for decades, and it will in any rate take years to complete and display significant economic benefit. Shifting road to rail and waterways is a trend that will accelerate in the next ten years in line with increasing transport costs, degradation of our motorways, regulation and improved service levels provided by increased multi-modal investment.

Rail freight is more carbon friendly, more effective at removing road transport and a better (often cheaper) bulk carrier. In the UK pressure is growing to re-examine the UK's freight strategy, not least by the Society of Mechanical Engineers (Back to Freight 2011) which has called for a holistic government review, including the establishment of high speed freight links and hub and spoke rail networks that will interlink with ports and waterways and road transport services.

The CILT in its initiative 'Vision 2035' has called for open debate of all stakeholders to promote cohesive multi-modal planning. Among its themes it calls for consideration of road charging, support for localised supply chains (to reduce the need to transport large distances by road) and the establishment of a 'freight exchange' to eliminate empty running. Above all it promotes a call to government to lay down a cohesive multi-modal policy, and the industry to debate a common approach.