Memorandum of Evidence To All Party Parliamentary Group For High Speed Rail from Siemens Rail Systems

The Inquiry

The Inquiry is seeking answers that focus upon four questions, relating to:
(a) The current capacity situation on UK railways
(b) What capacity will UK railways require in future?
(c) What is the best way of providing capacity and "future-proofing" the network?
(d) What will the effects of extra capacity be (beyond addressing journey supply) and what would be risked by failure to provide that capacity?

(a) The current capacity situation on UK railways

1. Transport infrastructure, in particular, is critical to the functioning of a modern economy. The most successful locations (countries, regions or cities) have the transport infrastructure to move goods, services and people quickly and efficiently. Inter- and intra-location connectivity is important and intermodal links are critical to facilitate greater economies of specialisation and agglomeration. They facilitate face-to-face communication, supplementing communication through the information and communications technologies (ICT) or 'virtual infrastructure''. Importantly, the corollary is that the lack of, or comparatively poor standard of, transport infrastructure will constrain future performance and productivity improvements.

2. In the UK, the transport has been subject to a disproportionate level of government underinvestment. Other major economies invest about 1percent of GDP each year on transport infrastructure over the past two decades. By comparison, the UK has invested about 30percent less than this per capita.

3. This underinvestment in transport has occurred at a time when there has been a general growth in transport by all modes, particularly in passenger transport. The result is that transport infrastructure is now operating close to, at, or often technically even in excess of, capacity.

4. There is growing congestion, especially in the road network, and the quality and reliability of various modes of transport it supports have been deteriorating. This is currently being reflected in the poor rating of the UK in international comparisons on survey-based measures regarding the quality of transport infrastructure.

5. This under-investment was recognised in the then Labour government's Ten-Year Plan for Transport published in 2000. This forecast more investment by 2010/11. However, many of its original targets have now been now been dropped or downgraded.

6. Transport investment has been increasing over the past five years and there have been some improvements. The 2004 Spending Review provided for a further £0.5 billion permanent annual uplift to the 10 Year Plan from 2006-07.

7. New rolling stock has eventually come along having overcome gauging and EMC issues but where infrastructure improvement has been necessary to take full advantage of the new stock, it has then proved difficult and costly to implement whilst keeping the railway operational. The West Coast Route Modernisation is but one example of a project upgrading existing rail infrastructure that took longer, cost more than planned and in that process inconvenienced hundreds of thousands of passengers. But a project of such scope and scale - some 1,660 track miles, 2,800 signals including 13 major junctions and 10,000 bridge spans, is not without its obstacles. Set against a backdrop of ensuring the continuation of an operational railway, engineers were severely constrained by the restrictive possession regime in place, with works largely limited to weekends and evenings. Not only was this inefficient (approximately 50% of time taken setting up and then closing down the site), but it also impeded the timely delivery of the scheme, with the introduction of a 125mph railway unavailable until winter 2006.

8. Upgrading signalling infrastructure with modern electronic systems found elsewhere, on more up-to-date networks across Europe and other parts of the world, is also fraught with difficulties. Interfacing with existing systems and again implementing a changeover whilst keeping the railway operational adds up to passenger inconvenience and time and cost overruns

9. We have a legacy of underinvestment in transport infrastructure. Our existing infrastructure constrains capacity. Upgrading is inefficient, too costly, too invasive, too time consuming and too difficult to cost accurately. We need new infrastructure to deliver the capacity requirements of the future

(b) What capacity will UK railways require in future?

10. We believe that, following the sustained growth in passenger traffic since privatisation, and the marked growth of some sectors of freight traffic, notably domestic intermodal and maritime containers, a growing capacity crisis has developed and continues to develop, on the rail network.

11. Passenger and some freight sector growth have continued right through recent years of recession. We firmly believe that this will intensify the rail "capacity crunch" in the coming decades, particularly as businesses and the public wants to see more traffic switch to rail. This perspective is borne out by the detailed and well-sourced work of Network Rail's Route Utilisation Strategies, together with other forecasts from private-sector freight analysts such as MDS Transmodal.

12. The conflict between stopping passenger trains, fast passenger trains and rail freight is now particularly acute, and this will result in new business being refused. It is already unacceptable to have to choose between
    - refusing additional access to passenger operators or
    - refusing new timetable paths to freight operators, or
    - cutting out station stops to increase route capacity, or
    - slowing down the fastest services.

13. All these options are negative, and directly contradict national and local transport policies of encouraging road traffic to switch to rail where appropriate and efficient. Major cities should not have to choose between seeking additional commuter services, better intercity services or additional heavy freight trains.

14. Implementing HS2 will in itself stimulate additional rail usage – not just siphon premium fares from existing services on the “classic” network. Inward investment and leisure travel will grow as a result of decreased journey times between major conurbations particularly if there is a connection to an international airport on the new high-speed network
15. It is also expected that when the high-speed network is in its final form greater benefits would ensue by it linking any two of our major UK economic centres. For example the decreased journey time from Birmingham to Manchester would effectively combine the strengths of both cities to compete more powerfully in the global economy. A compelling precedent springs from Scandinavia, where a strategic infrastructure intervention – the fixed link between Copenhagen and Malmö – has combined major cities in two countries into a new European metropolis of a population of 3.6 million. Independent studies have identified a very significant increase in inward investment into the area

(c) What is the best way of providing capacity and "future-proofing" the network?

16. The most cost-effective and least disruptive means of providing additional long distance fast passenger capacity is by removing fast passenger trains from the existing "classic" network and operating them over new dedicated High Speed track s. Within the UK, HS1 has paved the way for the recent Government approval of HS2, demonstrating that constructing new dedicated high speed tracks and permitting improved services both on the new and the existing "classic" lines, is the way forward. This has also been demonstrated by the work of High Speed 2 Co and in evidence to the Inquiry of the House of Commons Transport Committee. For the past three decades, this approach had already been adopted in Japan, France, Germany, Italy and most recently Spain.

17. Due to their traffic potential, the great majority of the future focus of rail investment needs to address the passenger flows into and between the major conurbations and the freight routes between the main ports and Channel Tunnel, London and the Midlands, North and Scotland. As stated, the most effective means of dealing with these challenges is therefore to invest in a new basic High Speed Rail network serving the major cities, to release capacity on the existing network. It also means implementing schemes such as the Northern Hub, in full and the very welcome North West Triangle and Trans-Pennine electrification projects.

18. High Speed Rail with greatly-shortened journey times is in itself a major benefit, offering an immense timesaving spin-off from investment in new routes built primarily on capacity grounds. We believe that the effects of High Speed Rail will be transformational. And it would cost almost as much and be as controversial in terms of local opposition to build new conventional-speed alignments.

19. As well as significantly assisting provision of extra commuting capacity the construction of HS2 should release a very large amount of trunk main-line capacity between the North, the Midlands and London and this will greatly assist provision of additional trains to serve the planned massive growth areas such as Milton Keynes South Midlands. speeding journeys, offering improved frequencies and providing greater comfort. These advantages were initially underplayed by Government in the recent HS2 debate.

20. Today's strategic transport investment will also deliver its benefit over a decades-to-century horizon, with the Public Private Partnerships (PPP) that pay for it presumably aligned with at least the front-end of this timescale. Over this extended time period, the whole-lifecycle cost of operating and maintaining the project will be more important than the capital cost of building the system (both in a providing a firm operational underpinning to a PPP and in ensuring the sustainable commercial viability of operation which will attract sound operating partners into long term PPP commitment in the first place).

21. It is therefore imperative that whole-lifecycle costs are evaluated rigorously when assessing a projects' viability. A key measure is whole-system maintenance costs per Available Seat Kilometre (ASK) - i.e. the costs of maintaining all infrastructure and vehicles per seat-km of available capacity created by the system.

22. Over and above this, the costs of ongoing fleet refurbishments etc should be also accounted for.

23. Another useful measure – which provides a ready evaluation of the underlying operational efficiency and hence cost-effective PFI-ability of any proposed system – is the total O&M costs as a percentage of total traffic revenue. Genuine figures for UK rail are impossible to produce, given the complex system of inter-charging between TOCs, ROSCOs, Network Rail and Government.

24. Finally another metric to consider is the 'availability for service'. This measure is especially vital in a PFI structure which is based on 'availability payments', where the franchisee (or Nominated Undertaking in Hybrid Bill terms) receives a pre-determined, fixed and predictable payment in return for constructing the system to given schedules and standards and the operating to a tightly defined operational regime.

25. Ensure whole-lifecycle costing of the *whole* system is fully evaluated in assessing major infrastructure schemes - i.e. the entire costs of maintaining in normative operational condition for a desired overall duration for the entire infrastructure, the vehicles that use it and ICT which controls both. By also ensuring operational efficiency is fully evaluated, using income/cost and availability measures as well as whole life costs a benchmark will be established. It will become evident when the network or parts of it have degraded to the extent that renewal or upgrade is required. The difference with this project is that it should be viewed as a holistic network rather than a jumble of systems and technologies to be patched and mended as finances allow. This does not guarantee future proofing but it is far more effective in delivering results than applying the sticking plaster solutions successive governments have used since Nationalisation in 1948

(d) What will the effects of extra capacity be (beyond addressing journey supply) and what would be risked by failure to provide that capacity?

26. Providing a more effective rail network will assist the regional and national economy as well as aid the re-balancing of the economy. A system that was able to offer more attractive frequencies and a greater number of through journey opportunities (or. at worst. journeys that required only a single change of train) will assist distributional efficiency, reduce wasted time and delays, reduce accidents, cut carbon emissions and help to encourage regional development away from London and the South East.

27. But the additional rail network capacity must be created in advance of demand if this is to occur successfully. High Speed Rail will form one key part of this strategy.

28. Despite the clear success of high-speed rail in increasing ridership and improving market share, even a good story can be oversold. High-speed projects have rarely met the full ridership forecasts asserted by their promoters, and in some cases have fallen woefully short (such as the forecasts for the Eurostar services between London and Paris and Brussels). A whole new area of behavioural research has been generated by the phenomenon of over-forecasting in transport, known as “optimism bias". But a brief
29. reading of the early days of railway development in Europe would quickly reveal that optimism bias is actually an inherited trait, handed down over generations, which tends to emerge whenever the recessive gene of optimism becomes over-stimulated by the dominant gene of self-interest. One should not interpret this experience as an indication of permanent under utilisation as every congestion busting transport scheme (road, light rail or rail) eventually exceeds its capacity after a “quiet” start. We have not built much in the way of new heavy rail infrastructure in recent years. CTRL and Chiltern’s Evergreen Project are relatively recent and are still undergoing the transition with capacity increases but

as yet no constraints. We have however with London Underground in the 1960s (Victoria Line) and with light rail schemes built in the 1990s a situation where they started with far fewer passengers than predicted. All are now at capacity craving either new technology, rolling stock or additional infrastructure.

30. In 2008 London Underground were predicting 4 million passengers a day by 2016. They hit 4 million a day in 2011; so what now perhaps 5 million passengers a day by 2016?

31. The rule is if you build in extra capacity into any transport network the likelihood is that that capacity will be taken up at a rate that planners are unable to forecast

32. Failure to provide additional rail network capacity would, in contrast:
    - result in under-used potential on the existing network
    - in new passenger services being refused, and frequency enhancements forgone
    - create growing discomfort, with more and more passengers having to stand for longer and longer journeys (we already have long-distance standing at certain times of the week)
    - mean that future freight growth would have to be accommodated almost entirely on an already-congested highway network
    - mean that the transformational time-advantages of High Speed Rail would have to be forgone, indefinitely

33. Strategic infrastructure has a strategic lifespan. The railways of the 1830s to 1870s are still with us today: the original capital cost of their being put into service is now but a small proportion of the entire cost of *keeping* them in service, maintaining them and upgrading them over time.