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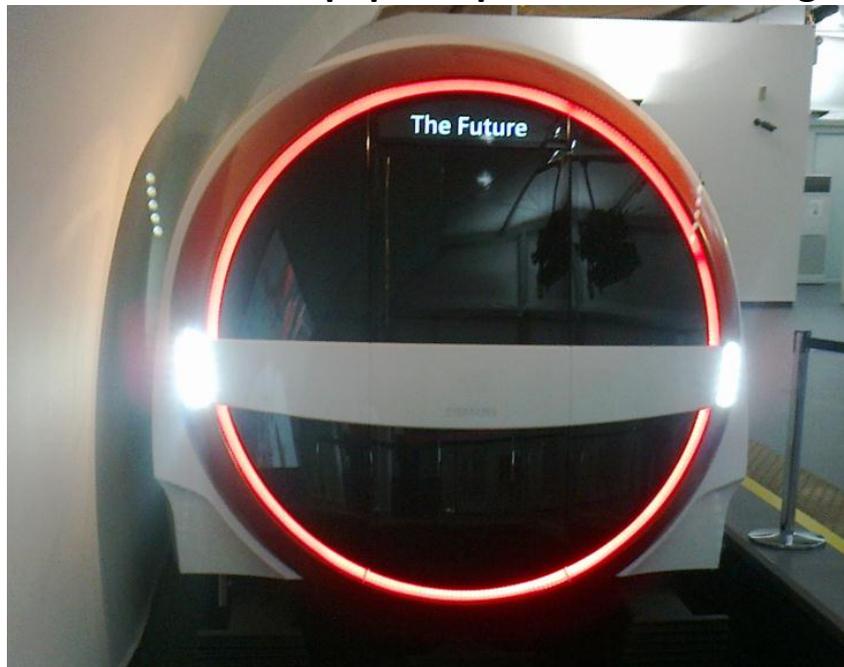
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GROWING THE RAIL NETWORK

A discussion paper by Mike Crowhurst

Railfuture Chairman 2004-2012

This document was originally published in 2005.
Clearly a lot has changed since then, but a lot is still relevant too.
The content of the paper is presented unchanged.



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1. *Why grow the Network?*

Why not? Ok, it's not that simple. So let's just step back a few years, to the Ten-Year Plan for Transport, which was John Prescott's great contribution to the debate in Labour's first term.

Among other things, this proposed an increase of 50% in rail passenger usage, 80% in rail freight, and an end to overcrowding. This was to be part of an overall plan for sustainable, integrated transport. The obvious implications for rail capacity were not explored. But within a year or so we had first the fuel tax protests, when a small but vociferous interest-group succeeded in overturning the government's good intentions at a stroke. Ironically at first this actually increased rail usage, but then came Hatfield. Until Hatfield the privatised railway had in effect been living on borrowed time. Restructuring, fragmentation, competitive franchising, and profit maximisation dominated the scene, distracting attention from years of underinvestment especially in infrastructure, which eventually led to disaster.

The Hatfield crash brought home the consequences of this with a vengeance, and the system virtually collapsed. Ironically we were on course before Hatfield to achieve the 50% passenger & 80% freight growth targets within eight years. This was probably a bit too optimistic, but now we are back to "predict and provide" on the most environmentally damaging modes - road and air, but stagnation on the railways. Indeed we now have "promote and provide" for airports, judging by the 2003 White Paper on Aviation, and "predict and overprovide" for motorways if the latest proposals for the M6 are anything to go by. There is no sign of the equivalent long-term investment planning needed throughout the rail system if it is to take a greater share of the load.

Restraining demand for air travel, even just by fair taxation, is not contemplated. Instead, every bit of demand generated by absurdly low fares and "air-miles" promotions has to be accommodated by yet more runway construction especially in the South East. Admittedly some tentative steps are being taken to restrain demand for road travel, notably the London Congestion Charge (opposed by the Government until TfL proved it works!) and the proposed lorry vignette scheme. Motorway charging is seen only as a trade-off for extra capacity rather than as a tool for restraining demand, -flying in the face of the conclusions of the Multi-modal study for the M6 corridor. Road building and motorway widening continue apace, and airport plans grow ever more horrifying.

It is not as if there is any shortage of demand for rail travel, with both London Underground and "National Rail" reportedly breaking through the billion passenger barrier in 2003. Why then is no comparable "predict and provide" policy applied to rail? Of course we need the existing network to work reliably first, but that should not preclude some serious longer-term thinking about new rail capacity. That simply is not happening.

This strategic planning should have been the job of the Strategic Rail Authority during that body's short life. Not only did its senior managers eschew this task in favour of detailed hands-on regulation, but they actively discouraged any Train Operating Company or franchise bidder that dared to look beyond the artificially short horizon of the franchising process and do any long-term planning themselves. So the mode of transport that offers potentially the least environmentally damaging option to cater for medium and longer distance travel demand, languishes in limbo whilst the most damaging modes are allowed -even encouraged, to grow apace. This makes no sense!

The Government should get back to the excellent principles of the Ten Year Plan. It should stop building ever more roads, motorways and airports. It should change the way we pay for motoring, replacing flat-rate charges such as VED with distance-based as-you-go charging

such as fuel tax, area congestion charges and motorway tolls, as well as lowering speed limits and enforcing motoring laws. It should restrain air travel (especially short-haul) with reasonable taxation on aviation fuel. It should also get serious about integration between all public transport modes -something which other countries take for granted. Government should actively help the railways to become yet more sustainable by promoting further electrification, and by utilising renewable power sources. As demand for rail travel grows, it should give as much encouragement to growing the rail network as it has previously given to growing the road/motorway network or the aviation networks. It should start by reaffirming the growth targets for rail in the Ten Year Plan, albeit the target date needs to be revised. Since we have already largely wasted the first five years (thanks partly to Hatfield), perhaps 25 years (2030) would now be more realistic given the ponderous pace at which things happen in this country.

2. "Open Access" - the White Hope of Privatisation

Logically the first step towards increasing the role of rail is to make better use of the network we already have. Indeed, prompted by a European Directive (91/440), this was one of the vowed objectives of the 1993 Railways Act. In a gradual process controlled by the Regulator, the network was to be opened up to innovative train operators running new services where capacity was available. On the freight side it should be said, this policy has had some modest success.

But on the passenger side, despite some brave attempts, very little enduring benefit has been achieved. There is one clear success, coincidentally the first in the field, Hull Trains, a venture by GB Rail, then Anglia franchise-holder, to link that city regularly to London. They now have five daily trains each way, which are well supported. The same company's second venture beyond their home territory was less happy. Anglia CrossRail was a brave attempt to give their customers a direct link to places on the far side of London including Heathrow airport. It failed largely because the chosen route through West London necessarily involved fitting between frequent all-stops services on two-track lines, with the result that cross-London transfers were faster and in most cases no less convenient. Hopefully the real CrossRail will one day meet this need rather more effectively.

Other imaginative ideas fell foul of SRA policy. Wales & West (and later Wessex) trains sought to connect points as far afield as West Wales and Manchester with the South Coast and Waterloo (for Eurostar) via Bristol. This did not fit with SRA tidy-mindedness on single-franchises in London termini. It survives only in attenuated form as a SWT service to Bristol. The same company laid the foundations for a new East-West corridor by trialling an Oxford-Bristol service. Although this had some limited success, it was killed off by the SRA on totally spurious grounds of line capacity. The real reason was that the SRA wanted the stock used more profitably elsewhere. A similar fate befell the Leeds-Glasgow through service (via Carlisle) reinstated by Arriva after many years' pleading by users. In this case the excuse for the axe was the even more preposterous allegation of unreliable units delaying West Coast mainline services (a classic case of pot calling kettleblack!). Also in the north of England, Grand Central's plans for a new TransPennine service failed to pass the Regulator's scrutiny, more because of fears of revenue abstraction from established services than lack of capacity.

But perhaps the saddest lost opportunity was the refusal to allow Midland Mainline either to continue their service to Manchester instigated during West Coast engineering blockades nor provide their long-sought Leeds service.

The Manchester service has proved very popular, and both would have taken Midland beyond the limit of their present franchise territory at Sheffield, back to major cities once served by their predecessors. But again the SRA had other ideas, so not only elderly HSTs but also some new Turbos (these admittedly soon reallocated) went back to the Rolling Stock

companies to keep the accountants happy. The lack of rolling stock is regularly used as an excuse not to introduce new services, when in reality perfectly serviceable older stock is readily available but withheld by the ROSCOs purely to avoid "depressing the market". Not exactly an encouraging precedent, but at least these examples demonstrate that there is an appetite for innovative services on the existing network on the part of both operators and passengers if bureaucratic hurdles can be overcome, but the scope may initially be limited by available capacity.

3. Where to grow the Network -what has been achieved so far

Growing the network can take many forms, some quite modest, for example, simply adding new or reopened stations. Around 300 stations have been added to the network since 1960, the peak years being 1986, 87 and 88 with two dozen each, but since privatisation the rate has declined considerably. Nevertheless adding stations on existing lines remains one of the simplest ways of growing the network.

Next comes restoring passenger services to lines used only for freight. This usually brings several more stations into service at once. Recent examples include lines to Aberdare, Bathgate, Cannock, Clitheroe, Maesteg, Mansfield, and lines linking Halifax to Huddersfield, Walsall to Wolverhampton. Many of these have produced results that far exceeded expectations. The achievements of independent and Heritage lines, such as Wensleydale, in providing low-cost transport also deserve to be recognised.

Thirdly, completely abandoned lines can sometimes be restored, such as the branch to Larkhall in the Clyde valley (currently underway), and part of the "Robin Hood" line in Nottinghamshire. Just occasionally brand new lines do still get built. The biggest and best known is the Channel Tunnel Rail Link, but other examples include links to Heathrow, Stansted and Manchester airports.

In major cities growing the network can take several forms, from the Victoria and Jubilee tube lines in London, to reopened "mainline" routes such as Thameslink in London, the Argyle Line in Glasgow or the occasional completely new link like the cross-harbour link in Belfast. Light rail also has a part to play, either replacing local services with more convenient trams or metros such as the Tyne-Wear system, or bringing rapid transit to places heavy rail cannot reach (as in Sheffield). In practice most light rail systems are a mixture of replaced rail lines, reused rail formations and new alignments.

Finally, new or restored freight lines do also get built -usually fairly short branches to serve particular traffic such as mines or quarries, and sometimes with a fairly short life, but of immense value during that time in removing heavy lorry traffic from unsuitable roads. Occasionally more ambitious proposals emerge for reinstating through routes for freight, such as the Peak Forest or Woodhead routes. Railfuture publishes **Britain's Growing Railway** "A to Z of Rail Reopenings" which catalogues the achievements to date and lists some current proposals. Together with Friends of the Earth and Transport 2000 they have also published a "How-to-win Guide" for rail campaigners (2003). In 2004 the Countryside Agency published a "Rail Reopenings Toolkit" and the SRA "Guidance for Promoters of New Stations". These publications are recommended for further information

4. Where to grow the network in the future

At present the focus is mainly on removing pinch points in the network that cause bottlenecks and prevent available capacity being used effectively, such as: the reinstatement of the viaduct at Nuneaton, which will remove many conflicting movements from the West Coast Mainline, the new down (westbound) platform at Swindon, which saves

crossing movements on the Gt Western mainline, and the Allington curve near Grantham, which will remove some local trains from a short section of East Coast mainline that currently block service enhancements on the main line.

Network Rail reportedly has a list of some 110 critical locations where simple measures such as these, or changes to track layouts, can add capacity for relatively little outlay. Obviously these must be high on the priority list. Sometimes the problems date from ill-advised "rationalisation" in earlier decades, such as track singling or single-turn-out junctions.

Singling on many routes around the country now inhibits service development. Some are already being redoubled, such as parts of the Chiltern line and the Gt Western mainline in Cornwall. In other locations all that is required is re-signalling, to increase capacity by reducing the separation required between trains, or more or longer passing loops, such as on the South Western main line between Salisbury and Exeter.

Eventually, when all the "quick wins" have been dealt with, further capacity enhancement requires building new lines. Most often this arises in major urban areas. In London there is no shortage of proposals, but alas little progress on the ground. Cross-town lines such as CrossRail and Thameslink 2000 have been debated for years and still not implemented, and the picture is little better on orbital links like the East London Line extension. Often quite short links would enable existing services to be used more effectively, such as the Croxley link near Watford, the St. Johns curve in Glasgow, or the cross Bradford link.

The other major generators of demand for new connections (ironically) are airports. Birmingham and Gatwick led the way here, but it is incredible that the country's biggest airport -Heathrow, only got its tube service in 1977 and its mainline connection in 1998. Most of the country's main airports now have rail services of some sort (in one case light rail) but some, including Bristol, East Midlands, Edinburgh, Glasgow, Leeds-Bradford, still have no rail link, and others (Cardiff, Liverpool) are in the pipeline. Additional rail connections are proposed or will be required at Heathrow, Manchester and Stansted.

Nor should the shires and rural areas be forgotten. Proposals abound to restore rail services to Caernarfon, Ebbw Vale, Okehampton, Keswick, Ripon, the Scottish Border towns and many others. In a few cases (Dunstable, St.Ives) the picture has been confused by busway proposals, which, while they would at least safeguard the rail formation, represent a far inferior solution to conventional or even light rail. In others (Dornoch, Newquay) the proposals involve diversion of an existing line which would not only shorten the route length but also make better use of the service.

One major scheme outside the big cities deserves particular mention -the "East-West corridor" scheme which would use some existing lines, some mothballed and a short reinstated section, to provide a major new cross-country route from Severnside to East Anglia via Oxford, Bedford and Cambridge. It would also offer the possibility of connecting growing cities like Milton Keynes, Northampton, Peterborough Swindon and possibly Aylesbury, saving many journeys via London or by road. It has widespread strong support among the local authorities in the corridor, but surprisingly, like many others, still lacks government endorsement

On the freight side, proposals must follow the business, but one important area is the need for good rail links to ports. As with airports, it is essential that the rail network responds to new developments as they happen, not decades later.

One problem with freight expansion is the limited loading gauge of the UK rail network, which inhibits carriage of larger loads and "piggyback" operations. Wholesale conversion of the network is unlikely, but major freight routes can be (and some are already being) cleared for larger stock. Some fear this will undermine the remaining network by encouraging "railheading" to the higher capacity routes. A more imaginative proposal (although open to the same criticism) has come

from two rival promoters - "Central Railway" and "Direct Link North" for purpose-built freight routes to large loading gauge linking the Channel Tunnel with main centres beyond London by various routes. The former would largely re-use old rail formations, nevertheless like high-speed railways, these proposals often generate local opposition along the route and worries in government about the political and financial implications.

5. High Speed - the Big One!

It is clear that there is still plenty of scope for small and medium sized schemes for growing the network. But to make a real impact, sooner or later major new lines, designed for speed from the outset, are going to be needed.

The sooner we start thinking about them the better! Unfortunately this is the point at which most politicians switch off, mindful of their budgets, which is very short-sighted. We have only to look across the Channel to see what can be achieved by some very similar countries. France and Japan led the way with the TGV and the ShinKanSen, and have since been joined by Germany, Italy, Spain and Korea, with several others (including a number of developing countries) not far behind. If they can find ways to do it, why cannot Britain?

The logic behind high-speed lines is twofold. Firstly, by providing new capacity for mainline passenger services they free up capacity on the parallel classic routes for local/regional services and freight. This was the trigger for the original French TGV line to Lyon. Secondly, by speeding up journey times to the main provincial cities, they enable rail to provide a more attractive alternative to internal air services and to road transport, thereby restraining demand for new motorways and airports. It is often objected that they generate more travel. Yes, any new transport infrastructure will generate some new demand, it will also divert some from existing routes and attract some from other modes. The key question is how much it does of each? In any event if we never built anything that generated new traffic we would never have built the motorway network or anything else!

In Britain the worst problems are on the main intercity approach routes into London. The SRA realised that the rail growth targets in the Ten Year Plan could most easily be met by concentrating on South East England, which was, unsurprisingly, seen as unfair to the Regions. (In reality the capital investment tends to go to the south east and the revenue support to the regions.) But by addressing the capacity problems on the main intercity routes out of London, everybody would benefit, especially if at the same time capacity in the big termini is correspondingly freed up by construction of cross-town lines to take the commuter services where they need to go. Conflicting demands of fast and slow services are reduced, local commuter services are increased and long distance services speeded up.

One major new line has already been built -the Channel Tunnel Rail Link. Similar lines are needed on the East Coast route from Kings Cross, the West Coast route from Euston (possibly also helping the Midland mainline out of St.Pancras) and the Gt Western line from Paddington; Heathrow services could then be expanded on the existing route. Only after these should consideration be given to extending the new routes further towards the North West on the WCML, to the NE and Scotland on the ECML, and the West Country on the GW mainline. In many places the problem further afield is more one of poor alignment (e.g. on the mainline to the south west) rather than shortage of capacity.

Not all these routes would need massive new tunnelling to traverse the London suburbs as has been required for the CTRL. The easiest would be the new Western, which could use the almost abandoned line parallel to Western Avenue. The East coast route could follow the Lea Valley, only taking to tunnel south of Tottenham, and the West coast route could perhaps use spare track alongside the M1 and Midland mainline for part of the way, tunnelling only under Hampstead as present lines do.

6. How to grow the network: paying for it

The first step towards paying for expansion is to ensure that rail enjoys a level playing field. It certainly does not at present. Under BR, local services and freight were allocated only "marginal costs" – i.e. only costs which would be avoided if these services were not operated. Prime user costs were borne by the more profitable InterCity and SouthEast sectors.

This ensured that marginal traffic which covered its marginal costs would be carried, and that local authorities or PTEs that supported local services were only charged the avoidable costs of these services. Following privatisation however, all passenger services were allocated shared costs, which massively increased costs to PTEs of supporting rail services at a stroke, and constitutes a major disincentive to expansion of local services. Following the Rail Review it looks as if the same principle will now be applied to freight operations -albeit in exchange for "guaranteed access" on key freight routes. On the basis of experience with passenger services, this will very probably prove to be a retrograde step.

Cost escalation of nearly all engineering projects is becoming an increasingly endemic problem, especially in infrastructure work, and not only rail. But rail seems to have suffered more than other modes, in part as a result not so much of privatisation per se, but of the fragmentation that came with it. Roger Ford's 2003 study for Transport 2000, "The Rising costs of Britain's Railways" concluded that we are now getting about a third of the value for money that we could reasonably expect, based on past experience and European comparisons, especially in maintenance and renewal, and most of this escalation has taken place since Hatfield. Among contributory factors he identifies are bureaucracy regulatory controls, safety legislation, subcontracting chains, margins-on-margins, and fragmentation. Some of these (safety, subcontracting) are now being addressed, others remain to be tackled. One area where fragmentation had undoubtedly caused costs to escalate is insurance costs. Before privatisation BR were big enough to carry their own insurance risks, which was clearly very cost-effective. After 1994 however, all the hundred-or-so pieces which replaced BR had to arrange their own separate cover in an increasingly litigious and risk-averse environment. Inevitably insurance costs have escalated.

Another area of cost escalation which derives directly from the 1994 structure is rolling stock leasing charges. The legislation provided that Train Operators would pay access charges to Railtrack (now Network Rail) for infrastructure, and leasing charges to Rolling Stock companies (ROSCOs) for stock. Unfortunately whilst access charges are regulated by the Rail Regulator, no such arrangements were made to regulate stock leasing charges, with the result that the ROSCOs have proved to be the biggest money-spinners in the rail industry (most of them have ended up owned by banks), and reinvestment in new stock has not always lived up to expectation. The accountant-led approach of these companies has also had the result that older stock is prematurely written off to avoid "depressing the market", rather than being made available at reduced cost for marginal or experimental services, as BR regularly did. This inhibits service expansion. Similar criticisms of excess profits in the case of Railtrack led to its replacement by not-for-dividend Network Rail, and a similar change may be required for the ROSCOs. As a first step rolling stock leasing charges should be brought within the regulatory régime.

An equally artificial factor is the arbitrary application of current Treasury rules on "Optimism bias" in project cost-benefit analyses. This is excused on the basis of a few notorious major projects such as the West Coast upgrade, disregarding the fact that many smaller schemes such as re-openings have often proved far more successful than anticipated yet no allowance is required for this. 10% to 15% "contingency" has always been regarded as good practice in costings, but twice these amounts are now demanded, without any similar allowance on the benefit side. Worse, it is now reported that even higher rates are going to be demanded

of rail projects alone. This will further militate against rail schemes. There is no clear justification for these figures, which themselves contribute to the cost-escalation they are supposed to reflect, and therefore have a cumulative adverse effect that could effectively block all rail projects. This has already happened with the cancellation of all current light rail schemes in Britain. Cost escalation has to be addressed by tackling the causes, especially the arbitrary, bureaucratic ones, not simply by cancelling projects. Rail should have a "fair crack-of-the-whip" financially before being judged and found wanting

Devolving decision-making in transport to local authorities such as PTEs, -or better still to Regional bodies where these exist, is certainly a good thing in principle, but if they are left to choose between modes how to spend from a single budget, then here too it is essential that there is a level playing field. In addition to the factors already mentioned, it is now proposed that these authorities be offered "Quality Bus Contracts" if they remove support from "expensive" rail services, something which the PTEs themselves strongly oppose. This is yet another loading of the dice against rail, and effectively removes the freedom of choice which is supposedly being given to the local bodies. The reasons for the high cost of the rail services should be tackled first, with Government help, then "Quality Rail Contracts" offered where costs are successfully controlled.

Ideally Regional bodies should have full autonomy not only in spending but also in revenue raising. There is a variety of revenue-raising instruments available and in use in other countries to fund public transport. These are not available in Britain due largely to entrenched Treasury rules about public spending and ideological objections to increasing taxation through charges or indirect taxes. This handicaps many desirable public works in this country, not only in transport, and must be challenged. Local or regional transport authorities should have powers to raise funds through congestion charges on motorists, workplace parking charges etc. LAs could then spend these on public transport in their area, promote integration between modes, and if necessary top up these funds with municipal payroll levies or residential levies specifically approved by referendum to fund particular projects (as happens in the USA). Ideological objections to "cross subsidy" should be rejected in the interest of achieving a transfer to sustainable modes, mindful of the proven willingness of the public to pay charges specifically to fund projects which they perceive as desirable, including better public transport.

Funding for the biggest schemes, including of course High-speed lines, must be found nationally, and similar principles should apply. Fuel tax and the proposed lorry "vignette" charges should not be spent purely on roads, aviation fuel should be fairly taxed Europe-wide, and spending diverted from airports & motorways towards new strategic rail routes. It is essential that funding for regional/local and national rail expansion should be funded from separate budgets, and in no circumstances should high-speed lines be seen as an alternative to grassroots rail development, let alone other modes such as buses, cycling and walking. Passengers should contribute through fares within reason, but premium fares should be used sparingly as they deter use of new infrastructure (as do motorway tolls). Fares policy should always maintain a balance between higher-cost free access fares and highly restricted book-ahead heavily discounted "apex" fares, by protecting middle-range Saver-type fares, and penalty fares should never be imposed if a passenger has not had a reasonable opportunity to pay in advance. Any instruments to encourage prepayment through area-wide cards, travelcards and discount cards including a National Railcard, should be utilised to encourage patronage especially outside peak times.

Appendix: A Case Study - the East Coast Main Line

The East Coast Main Line, between London King's Cross and Edinburgh Waverley (with branches), is -or was prior to the CTRL, the nearest thing in Britain to a High Speed Line. It was not built as such, rather it was built by three different companies: Great Northern (London to Doncaster), North Eastern (Doncaster to Berwick) and North British (Berwick to

Edinburgh). Only with Grouping in 1922 did it come under the ownership of a single company -London & North Eastern Railway (LNER). The inter-war period was probably its heyday with some of the fastest steam locomotives ever built hauling prestige Anglo-Scottish expresses.

This tradition continued after the war under BR, albeit perhaps less flamboyantly, and despite a bizarre proposal in the Beeching Report to close or downgrade the Newcastle-Edinburgh section, it weathered the transition from steam to equally prestigious diesel services. It was only electrified throughout in 1991, some 18 years later than its West Coast rival. Privatisation followed a couple of years later with GNER taking on the InterCity operation, including both the newly electrified (225) services and the residual HST services to points off the wires in the North of Scotland and elsewhere. This bargain basement electrification continues to give problems with exposed sections prone to de-wiring in severe weather (prompting GNER boss Chris Garnett occasionally to suggest de-electrification north of Newcastle), but generally GNER is widely regarded as one of the success stories of privatisation.

As one might expect from its disparate origins, the infrastructure is a mixed bag. Much of it outside the main centres is only two track, except at the London end. There are some very well aligned sections, notably the almost dead straight section between York and Darlington (4-track south of Northallerton), and the section past Selby (Doncaster-York) built anew in the mid 1980s to avoid the subsidence-prone Selby coalfield. Beyond Darlington, and to a lesser extent between Doncaster and Peterborough, the route tends to be sinuous. The most notorious curve is at Morpeth (the site of at least one disastrous accident) but only one other short section has been realigned -at Penmanshiel in Scotland following a tunnel collapse. It is surprising that the opportunity was not taken when the A1M Darlington bypass was built, to straighten the line north of that town and save two new motorway bridges, although the opportunity to build a Newton Aycliffe Parkway in the future would have been lost.

Apart from Morpeth, some of the most curvaceous locations -and most complex junctions, are in the main station areas, notably York, Newcastle and to a lesser degree Doncaster. There are a number of parallel routes available, including the Hertford loop, the "joint line" through Lincolnshire, the route via Ferrybridge in Yorkshire, the Durham Coast line and the Pelaw - Ferryhill - Stockton line in Co Durham, but of these only Hertford is electrified (and heavily used by local commuter services), two are normally only used for freight and one (Pelaw) is virtually mothballed.

GNER services are by no means the only users of this infrastructure. It is shared with one other intercity operator (Virgin Cross Country), several regional operators (Central, Northern, ScotRail, TransPennine), one open access operator (Hull trains), a major London commuter network (WAGN), not to mention freight and a good few charter trains. Of these only WAGN is all-electric, and apart from GNER the only other electric operations are two local services: Leeds - Doncaster and Edinburgh - North Berwick. So a very mixed railway operating on distinctly mixed infrastructure!

Debate about the future of the route was triggered first by Virgin in the context of a bid for the East coast franchise. Essentially they proposed a new high-speed line from south of Peterborough to north of Doncaster, running west of the present route with a connection to Sheffield, plus more intensive use of several parallel routes for local services and freight, and in the case of Ferryhill-Pelaw for the main high-speed services. These parallel routes would be electrified. Unfortunately it soon became clear that such long-term thinking was beyond the comprehension of either the Government or the "Strategic" Rail Authority, and Virgin's bid failed. GNER, who retained the franchise, put forward a number of more modest proposals, a few of which actually survived SRA scrutiny. Meantime the two authors of the Virgin proposals left to join the SRA, where they set about discouraging any such radical ideas on the part of bidders for any other franchises! But at least the debate had been opened.

Current short-term plans still include a number of the GNER proposals. First is the Allington curve near Grantham, which as already mentioned, removes some local services and frees a path almost hourly for the long-promised augmented Leeds service. There are plans for extra platforms in several key stations, including Kings Cross, where a new platform on the east side is planned, and if-&-when Thameslink 2000 goes ahead, many WAGN commuter services will be removed from the mainline station. GNER should then have the main station almost to itself. There are also plans (as yet unclear) for more platforms at Edinburgh Waverley, where through platforms in particular are at a premium.

In Hertfordshire two longstanding and much debated schemes would make an enormous difference. One is a flying junction at Hitchin, taking Cambridge-bound services over the mainlines either north or south of the station. This is perfectly do-able and would be worthwhile even if only local services used this section of route. The other is doubling the two track section at Welwyn, which unfortunately includes two tunnels, a station, and a majestic viaduct. Sadly this now looks impractical as no land has been safeguarded and residential development presses tight up against the viaduct on both sides. It was deferred when four-tracking reached Welwyn Garden after the war, and would involve massive cost and major environmental damage today. Installation of passing loops on the parallel route through Hertford could offer some more modest relief at much lower cost

Another opportunity was lost at Stevenage when the station was relocated but no through tracks were provided. To move the platforms apart now could be done, but would cause much disruption. Similarly, in North London, some improvements to Finsbury Park station have been suggested; to get maximum benefit on the six-track section to Alexandra Palace some rebuilding at three other suburban stations is required. Back at Peterborough there are plans for a sixth platform on the west side for east-to-west trains, giving GNER a clearer run on the main northbound platform 4. The east side of the station could perhaps benefit from some further platform reorganisation.

From Hitchin as far as Doncaster parts of the route are already 4-track, and the remaining sections could usefully be widened without difficulty at least to Peterborough. But at Grantham, tunnels north and south of the station (the only ones between Stevenage and Scotland) make this difficult. At Newark there is a different problem -a flat crossing over the Nottingham-Lincoln line, unique in Britain. A flyover for the east-west line remains possible, as does a curve connecting Northgate and Castle stations, which would help make more connections at Northgate.

At Doncaster flying junctions have also been discussed north of the station, linked with an additional island platform for east-west trains, but this has now been made difficult by a road bridge above and a river below, and seems to have gone on indefinite hold. Once again, roads go ahead and rail loses out!

Once clear of the junctions at Skelton north of York, the superb 4-track route is capable of great speed, but at Northallerton the 4-tracking ends, and unlike Thirsk (-the only intermediate station, which has platforms only on the outer tracks), Northallerton funnels all passenger services through the two platform tracks (at which more trains call than at Thirsk). Only freight can bypass the station if using the route via Yarm and Teesside. The first step to easing this bottleneck ought to be a platform on the northbound freight line for Stockton / Middlesbrough trains, enabling these to use the underpass. (This is not needed southbound and would inconveniently split York-bound services.) Second should be to extend the four-tracking through the station to provide platform loops, set back the down (northbound) main platform, and probably remove the crossovers north of the station currently used by Teesside bound services. Provision for Wensleydale and possibly Ripon services to terminate clear of the main running lines should also be incorporated.

Four tracking the main line to Darlington and Ferryhill would be useful but perhaps not essential so long as most freight goes via Stockton. But at Darlington station, despite the

generous track provision, southbound services wishing to call at the station cause a conflict as they must cross both fast lines to gain access to the station. This could easily be resolved by constructing a new platform on the east side of the line, on a loop which already exists, with booking and waiting facilities on land now part of the car park. This would remove most conflicting movements except those to & from the Stockton line.

North of Ferryhill the route through Durham is 2-track and curvaceous, but the alternative (to Pelaw) would not be a lot better, and although it would serve Washington (badly) it would miss Durham. The extra capacity would be useful, but it is debatable which route should be the primary one. There are also junction implications at the Newcastle end, with increased conflicting movements likely. An alternative might be just to bypass Durham, re-joining the present line north of the city. Widening through the city is not possible as the line is on a huge viaduct. Beyond Newcastle the main priorities would be a cutoff to Morpeth, some passing loops at intervals (for an upgraded local service) and some realignments in the Scottish Borders. Complete four-tracking is probably not necessary but would be useful on the approaches to Edinburgh to accommodate more local services, e.g. to Dunbar.

So do we need a high-speed East Coast line at all, if all these improvements were implemented? Probably yes, in two places. Firstly, south of Peterborough, peeling off west of Huntingdon then crossing east and heading for the Lea Valley SE of Ware, which it would follow as far as a point near Tottenham Hale, then tunnelling to Holloway and using the vacant trackbeds into King's Cross. This would bypass all the pinch points including Welwyn and Hitchin, freeing capacity for suburban services. A Parkway station at Enfield Lock near the M25 would be an option, and a better site than the GNER scheme at Potters Bar / Hadley Wood. Spurs to Stansted Airport, Royston and Cambridge are options.

Secondly, as lower priority, the Peterborough-Doncaster section, but (unlike Virgin) beginning north of Peterborough (before Stoke Tunnel), ending south of Doncaster (just past Bawtry) and probably running east of the present route over flatter terrain than the westerly Virgin route. This bypasses the three intermediate stations, the two tunnels, the Newark crossing and all the two-track sections. The main reason for Virgin choosing to go west seems to be the Sheffield link. This has implications for the future of the Midland Mainline which they did not address, but could still be incorporated.

The main nodal points between London and Edinburgh could all be bypassed quite easily - Peterborough (to the west), Doncaster (to the east), York (to the west) and even in theory Newcastle (to the east, from Pelaw with a long tunnel under the Tyne to Benton). But as most trains call at York and all at Newcastle, and the others have non-platform tracks, there seems little point. Perhaps Doncaster would have the best case, being on a curve (not as severe as York), while at Peterborough the through tracks are straight and well aligned. These options should be retained for future needs.

It is worth just considering a fundamentally different strategy. This would assume a High-speed line in the M1 corridor linking London with Rugby and Leicester. This could be extended through or round Leicester then over the Erewash Valley line past Chesterfield and Rotherham to Leeds and York. This would raise several questions: whether one line could handle all the traffic, how the traffic could be distributed to the appropriate termini in London (as it is unlikely any one terminal could handle it all now that St.Pancras has to serve the CTRL) and how the existing London - Doncaster route would be served. On balance it looks like a better plan to keep East Coast services to the present corridor, let the M1 corridor line serve the West Coast and Midland line (from Rugby & Leicester) and use the Erewash Valley route (and the existing routes further south) for freight. This would achieve much the same as the Central Railway proposals without the need for construction of new freight routes

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