



INQUIRY INTO THE POTENTIAL BENEFITS OF HIGH-SPEED RAIL SERVICES

Submission to Scottish Parliament Transport, Infrastructure and Climate Change Committee

Friday 17th October 2008

1. Introduction

- 1.1 Transform Scotland is the national sustainable transport alliance.¹ Our membership includes train operating companies (including those providing the existing long-distance rail routes to/from Scotland) and most of the key rail campaign groups. We welcome this opportunity to submit our views to the Inquiry.
- 1.2 Scotland faces the twin threats of climate change and oil depletion – both of which are due to our over-dependence on fossil fuels as an energy source. As such, we believe that it is imperative for Scotland to reduce the transport sector's reliance on oil.² We see high-speed rail (hereafter "HSR") as an opportunity to reduce dependence on the most unsustainable mode of transport, aviation, for longer-distance trips, and deliver a significant shift in transport away from oil dependence and towards electric power.

2. The case for investment in Anglo-Scottish rail links

- 2.1 It is environmentally unsustainable for aviation to have 80% of the market for travel between central Scotland and London. We want to see a programme of investment in Anglo-Scottish rail links with the specific aim of making substantial reductions in the number of flights between the Central Scotland airports and London.
- 2.2 We take the view that this can be accomplished through a programme of incremental improvements, but that there should also be consideration of the merits of high-speed rail from London northwards, providing journey time improvements for trips from Scotland to the south of England and onwards to the continent.
- 2.3 Airport expansion at Edinburgh and Glasgow Airports would not be necessary if the vast majority of internal flights between the central Scotland airports to London (in the order of 100 flights per day) were switched to rail. A programme of air-rail substitution would in itself remove much of the necessity for expansion of these airports.

3. We are in favour of Anglo-Scottish HSR

- 3.1 We are in support of Anglo-Scottish HSR so long as the express purpose is to remove unnecessary levels of short-haul aviation. We believe that new high-speed rail lines should divert travel demand from air and road, and not simply increase overall demand for travel.
- 3.2 We acknowledge that HSR is more energy intensive and therefore potentially less sustainable than conventional rail.³ However, HSR could be powered by renewable energy sources: this is not an option available to air transport. With around 80% of transport between Central Scotland and the London area

¹ Transform Scotland is the national sustainable transport alliance. We campaign for a more sensible transport system, one less dependent on unsustainable modes such as the car, the plane and road freight, and more reliant on sustainable modes like walking, cycling, public transport, and freight by rail or sea. We are a membership organisation bringing together rail, bus and shipping operators; local authorities; national environment and conservation organisations; local environment and transport campaign groups; and individual supporters.

² Transport is a key energy issue as it is the sector that is the primary consumer of oil supplies. The UK transport sector is particularly vulnerable to oil security issues as it is so deeply dependent on oil as its power source: 74% of oil consumption is used for transport, while around 98% of the fuel used for transport is oil.

³ This was the theme of David Spaven's discussion paper 'Are High Speed Railways Good for the Environment?', published by Transform Scotland in 2006. See <<http://www.transformscotland.org.uk/GetFile.aspx?ItemId=92>>.

being currently undertaken by air, improvements to Scotland - London rail routes has to be seen as a possible way of shifting the balance of travel away from this most unsustainable of modes, as evidenced by the recent changes to the London - Paris travel market following the opening of High Speed 1.

4. Development of HSR should not prejudice development of the existing network

- 4.1 We do not want to see high-speed lines (hereafter “HSLs”) developed at the expense of the existing rail network. HSR should only be developed in addition to improvements to the local, regional and conventional inter-city networks.
- 4.2 Progress on HSR shouldn’t deter incremental improvements to the existing network. At Appendix 1, we highlight a set of demand management and sustainable transport investment proposals initially made by David Spaven in his discussion paper ‘Are High-Speed Railways Good for the Environment?’; we do not endorse the anti-HSR line taken by the author, but are happy to be associated with the set of proposals set out in the Appendix.

5. Delivery of HSR services does not require HSLs on the entire route length from London to Scotland

- 5.1 We would like to draw attention to the German experience, and specifically to its InterCity Express (ICE) network. The ICE network delivers an outstanding passenger experience, and covers virtually all major population centres in Germany. Yet despite being nominally a high-speed network, only a fraction of the route network (perhaps 10%) is new-build,⁴ and much of the network retains a top speed of 100mph. (This is, in essence, not different from the operation of Britain’s own High-Speed Trains (HSTs) - a.k.a. InterCity 125s - which operate from London to Edinburgh on the East Coast Main Line at speeds up to 125mph, and which may then run on to Aberdeen and Inverness at speeds of up to 100mph.)
- 5.2 The lesson is that Germany has been able to deliver an exemplar high-speed rail network without the need for all route mileage to be constructed to current high-speed aspirations (e.g. 186mph+). We would contend that a uniformly high-quality rail service is of greater importance than line speed alone.⁵

6. We do not support HSR solely within Scotland

- 6.1 We do not support the development of an internal Scottish high-speed rail network. We do not believe that the need to travel between Glasgow and Edinburgh in, say, 15 minutes is pressing, in particular when improvements to existing infrastructure could give journey times of just over 30 minutes.
- 6.2 Specifically, we support the Scottish Government / Transport Scotland ‘Edinburgh-Glasgow Improvement Programme’ announced by the Scottish Government in September 2006.⁶ However, we would like to see this programme of improvements extended in order to deliver a high-quality inter-city rail network across Scotland, delivering significant passenger quality and journey time improvements across the rest of the route network (in particular to and between Aberdeen, Dundee, Perth and Inverness).

⁴ Hannover-Wurzburg 327km, Mannheim-Stuttgart 99km, Cologne-Frankfurt 177km, Oebisfelde-Berlin Spandau (on the Hannover-Berlin line) 148km, Nuremberg-Ingolstadt 90km. Ebensfeld-Erfurt is under construction. Our calculations.

⁵ This would suggest that greater attention might usefully be paid to the DfT’s Intercity Express Programme (IEP); this intends to provide a replacement fleet for the 125s and 225s, but is likely to deliver trains not capable of running at higher speeds.

⁶ EGIP will deliver, inter alia, electrification of the E&G Line (via Falkirk High) and other routes in Central Scotland.

7. We consider maglev to be an irrelevant distraction

- 7.1 We do not consider "gee-whizz" technology such as maglev worthy of consideration. The key advantage of HSR is the opportunity to operate over existing 'conventional' railways in order to access city centres and other areas (such as north of the Central Belt). Maglev would require entirely new infrastructure throughout, with extensive construction right into the hearts of cities - and would require levels of demand not present in Scotland. We note that despite the main promoters of maglev being German, there appears to be no movement towards maglev in that country.

8. Some suggested priorities

- 8.1 The existing services on the ECML give an average journey time of 4 hours 30 minutes between Edinburgh and London, while the new timetable from early 2009 on the WCML will give best times between Glasgow and London of 4 hours 10 minutes. These are both close to the four-hour threshold established as the 'tipping point' for railways to be competitive with short flights.⁷ In addition, the existing ECML rolling stock was designed for 140mph operation, while the west coast Pendolinos are capable of 135mph. Both lines currently operate at a maximum of 125mph. Targeted improvements and tweaking of timetables could bring both cities within four-hours of London and this should be a clear objective for both routes.
- 8.2 Shifting demand from air (and road) onto rail will, however, bring additional need for capacity. Clearly, given the much higher population levels in England, the greatest needs will exist at the southern ends of an Anglo-Scottish HSL. A HSL from London to the Midlands, connecting to the improved WCML, would be a welcome start – as long as it is part of a coherent strategy that would also bring benefit to Scotland. Although representing a relatively small part of the total Scotland - London journey, new HSLs in the south/midlands of England would accrue the same time benefits to Anglo-Scottish trains, and could knock perhaps a further 30 minutes from journey times.
- 8.3 There are other areas such as the Warrington/Wigan/Preston area or south-east Glasgow where capacity requirements could justify new infrastructure, and where high speed standards could be built in. With the other improvements mentioned above, this could bring journeys between Glasgow/Edinburgh and London towards a competitive three and a half hours.⁸

9. Conclusions

- 9.1 We support the development of Anglo-Scottish high-speed rail contingent on the specific aim being to reduce levels of short-haul aviation between Central Scotland and London.
- 9.2 The delivery of high-speed rail services to and from Scotland is not contingent on the construction of a new high-speed line across the whole route length from London to Scotland. Indeed, we contend that the insistence that a high-speed line be constructed for the whole route is likely to delay, not improve, the chances of high-speed rail services being delivered to Scotland at the earliest opportunity.
- 9.3 The development of high-speed rail services should not be allowed to hinder incremental improvements to the existing network, nor should it being allowed to damage the prospects of investment in the Scottish inter-city network – something that we consider to be of fundamentally higher priority.
- 9.4 We do not support proposals for high-speed lines entirely within Scotland, or proposals for maglev. We consider these to be a distraction.

⁷ Research collated by Transform Scotland in the report 'The Railways Mean Business' indicated that tipping points for choice of rail over air lie between (rail) journey times of three-and-a-half and four hours for business travellers, but could be up to six hours for leisure travellers. See <<http://www.transformscotland.org.uk/GetFile.aspx?Itemid=37>>.

⁸ It is also of interest that the current best advertised journey time from Glasgow to Paris is just under 8 hours and we are led to believe that this has apparently increased through traffic from Glasgow to Paris significantly. Eliminating the hour-and-a-half needed to change trains in London by a through service would bring this journey perilously close to the six-hour threshold.

Appendix 1: Section 10 of 'Are High-Speed Railways Good for the Environment?' (2006):

SUSTAINABLE TRANSPORT INVESTMENT:

A key element of the package would be to **upgrade the ECML** through measures such as:

- Raising line speed to 140 mph (the capability of the existing 225 electric trains), as in the successful DB upgrade of the Hamburg-Berlin line
- Doubling the busiest double-track sections to four-track
- Providing by-passes of the most sharply curved pinchpoints, where the terrain would enable this to be done cost-effectively, e.g. Morpeth, but not Penmanshiel
- Providing improved local ScotRail feeder services, for example through implementing the Network Rail Route Utilisation Strategy recommendation⁴¹ that Fife calls on Aberdeen-Edinburgh services should be transferred to a separate hourly Dundee-Edinburgh service, with Perth-Edinburgh via Fife also becoming hourly
- Providing enhanced through ticketing from Scottish stations to London and mainland Europe
- Further improving existing stations such as Edinburgh Waverley (which is often compared unfavourably with Edinburgh Airport) and Motherwell
- Constructing new parkway stations (or perhaps 'hub and spoke' stations) only at carefully selected locations where public transport access can be maximised, local car growth minimised and worsened end-to-end journey times avoided e.g. Musselburgh, and in the longer term Livingston/Midcalder.

In parallel, would be a **WCML upgrade** through measures such as:

- Raising line speed to 135 mph (the capability of the existing Pendolino tilting electric trains within the existing signalling system)
- Doubling the busiest double-track sections to four-track (this is already happening in the Trent Valley area)
- Providing bypasses of Stafford, etc.
- Providing improved local ScotRail feeder services (with enhanced through ticketing).

To complement and facilitate ECML and WCML upgrades, a cross-country **EuroRail freight route, or variant** would be provided to shift long-haul freight off these inter-city routes, freeing up capacity for higher speed passenger trains and securing major modal switch of freight from road to rail.

To spread the benefits of rail investment more widely and sustainably than HSR, a **major programme of rail electrification** would improve speeds, capacity and environmental performance on the key internal Scottish inter-city routes, linking Edinburgh, Glasgow, Dundee, Aberdeen and Inverness.

MANAGEMENT OF UNSUSTAINABLE DEMAND:

If transport is to make a fair contribution towards deep cuts in the UK's CO₂ emissions, and if we are to prepare ourselves wisely for Peak Oil, then serious action is required to constrain the unsustainable growth of demand for transport.

A number of action areas are possible, with **aviation taxation** to internalise external costs (in line with European Union objectives) being a key potential tool, albeit one which is fraught with problems of achieving international agreement.

As George Monbiot as noted, an obvious area where Government can manage the growth in air travel demand without recourse to international agreement is by placing a **moratorium on airport expansion** in London, Edinburgh, etc.

Given that the objectives of managing unsustainable demand are to secure overall reductions in transport CO₂, action will be required across all modes. A key element of any national policy will have to be either **road user charging** or **increased fuel taxation**.

Clearly there is a role for the use of **alternative fuels** and **more fuel-efficient vehicles**, but such 'techno-fix' measures are often invoked as a means of avoiding taking the fundamental action that is required to constrain and reduce unsustainable demand. If nothing serious is done to cut demand in line with global and local environmental imperatives, then techno-fix benefits will quickly be swamped by the overall growth in traffic.

Transform Scotland is the national sustainable transport alliance, campaigning for a more sustainable and socially-just transport system. Our membership includes bus, rail and shipping operators; local authorities; national environment and conservation groups; consultancies; and local transport campaigns.

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