

At the proposed operating speed of 250mph HS2 trains will operate over 60mph faster than existing HS1 services from London to France. Proposed service frequency will be 18 trains per hour in each direction in peak periods, and 576 per day between 5am and midnight, according to latest HS2Ltd figures. The business case demands these operational statistics, yet with no overhead-powered train service currently in operation anywhere above 220mph, the HS2 trains, their signalling systems, safe evacuation procedures and maintenance regime remains unproven. Risks are much higher than with existing technology

Concorde, a super-fast innovation in air travel never recovered its development costs and had to be scrapped following the disastrous Paris crash. Is it right to take a similar high risk approach with HS2 to addressing the WCML capacity deficit before holding a proper public inquiry into the technology and business case? WCML tilting Pendolinos took a long time to operate efficiently without failing. Some of the issues which need to be considered relative to the construction and operation of HS2 are set out below.

1. The Proposed Train & Service Operation

- “Classic compatible trains” will run on both HS2 tracks and the existing network north of Birmingham in phase 1, requiring a design variant to be manufactured, whilst Eurostar services via HS1 to Europe will require three different power sources for travel in UK and mainland Europe.
- Unless incorporating tilting technology, journey times north of Birmingham are likely to be slower than with existing pendolinos.
- In the event of a train on fire in a tunnel, with no service tunnels proposed for evacuation HS2 Ltd’s assumption is for passengers to be evacuated into adjacent tunnel, (or separate compartment in single bore tunnels), whilst in tunnels less than 2km long, trains will pass straight through without stopping. With several kilometres to stop serious questions are raised on the proposed frequencies and design speeds, even if they are theoretically achievable.
- In phase 1, successfully integrating HS2 and classic compatible trains services at such frequencies is further questionable.
- Proposed speeds and frequencies will lead to average daily noise levels substantially higher than those currently experienced in Kent on HS1. High UK Noise regulations mean that substantial numbers of people will experience noise levels many times louder from HS2 than they are currently used to, even if entitled to insulation, especially late at night and early morning. Without binding specifications on new train operators to mitigate noise levels in sensitive residential areas sleep patterns will be disturbed and enjoying evenings outside or inside with windows open will be threatened according to World Health Organisation guidelines.
- As rails wear down trains may not run to time and noise levels may increase.
- Will freight be permitted on HS2 given that the design loading gauge will cater for it?

2. The proposed route and alignment

- Adopting tilting technology or minimal banking of track could significantly reduce the HS2 minimum curve radius, permitting possible route realignment away from sensitive areas, whilst allowing lower speeds without excessive loss of journey time.
- The proposed route through the Chilterns AONB creates a precedent for infringement of other AONB’s, National Parks and National Trust estates on routes north of Birmingham and Manchester in HS2 phase 2.
- The recent HS2 Ltd route mitigation reports fail to provide criteria for balancing the cost of additional tunnelling against noise mitigation. Route criteria seems to be minimum journey time and minimum cost. Will the forthcoming Environmental Statement be a whitewash?

3. The Construction Process

- In the absence of detailed ground investigation to date the actual composition of the Chiltern chalk may be less sound for tunnelling and earthworks operations than currently envisaged and costed, hence risk of substantial increased cost.
- Working hours need to be restricted, but tunnelling could be 24 hours. Site compounds will blight the countryside for years in advance of trains coming into service
- Noise and vibration, dust, and construction traffic on existing roads will all be subject to increase for some years during construction, requiring mitigation
- The effect on local businesses, schools, existing roads and footpaths could be catastrophic, with disruption to traffic and community life and threats to the local economy including tourism.