Train types

High Speed Two is the Government's planned new high speed railway. HS2 Ltd is the company responsible for designing and building the railway, and for making recommendations to the Government.

This factsheet is to update you about the operating requirements of HS2, such as speed, capacity and hours of operation, as well as the types of train that would run on the HS2 network.

HS2 guiding principles

To make sure that the UK reaps the full benefits of HS2, we have adopted the following guiding principles when designing the railway:

- HS2 would be used by high speed passenger trains only
- HS2 rail services would serve long-distance, city-to-city journeys
- benefits would be extended by running HS2 trains beyond the Phase Two network to existing stations further north
- HS2 must be well integrated with other transport networks ensuring door-to-door journeys are as fast and convenient as possible

For questions about HS2, call our Helpdesk on 08081 434 434

July 2013-January 2014

HS2 Ltd consulted the public on the proposed route and stations for Phase Two of HS2, from the West Midlands to Manchester and Leeds.

In November 2015

The Government announced its intention to bring forward the delivery of the Phase Two route between Crewe and the West Midlands (Phase 2a).

In November 2016

The Government announced the majority of the Phase Two route, and consulted on seven significant changes made since the 2013 consultation.

In July 2017

The Government confirmed the remainder of the Phase 2b route and launched separate consultations on a Crewe Hub, an Eastern Leg RSD, and draft EIA and EQIA* scope and methodology reports.

* Rolling Stock Depot, Environmental Impact Assessment and Equality Impact Assessment

HS2 key operating requirements

Speed: To deliver quicker and more reliable journeys, we need to maintain high speeds wherever possible. The proposed scheme has been designed to enable speeds of up to 250mph (400kph), although the maximum speed on opening will be 225mph (360kph), which is consistent with current technology. In practice, services would operate at variable speeds – often lower than 225mph – along sections of the route, particularly when approaching stations and urban areas. This has been taken into account when calculating journey times. Trains in Europe and Asia already operate at up to 200mph (320kph). Operation at speeds above 225mph (360kph) is possible in the future, depending on assessments of the operational benefits and the suitability of the technology.

Capacity: The HS2 network would provide high-frequency, high-capacity services for passengers only. The HS2 network is expected to carry more than 300,000 people every day.

Hours of operation: We expect HS2 services would operate between 05:00 and 24:00 from Monday to Saturday, and between 08:00 and 24:00 on Sunday. Maintenance and engineering work would normally take place outside of these hours, unless it can be performed without affecting services.

Train types

To maximise the number of trains that can run on the HS2 network, all trains would be designed for high speed and have the same operational characteristics such as maximum speed, rate of acceleration and braking. The maximum length of trains would be 400m, typically formed of two 200m units. However, single shorter train lengths would be deployed on some services depending on demand. The trains would be designed to include technologies which reduce noise emissions and also meet the European Technical Specifications for Interoperability (TSIs). 'Interoperability' is the ability of different systems to work together.

Two basic types of train are expected to operate on HS2:

Captive trains: 'Captive' trains would only be able to run on the newly built HS2 lines, and could be either single- or double-deck. They would be built to European dimensions, so they would be slightly taller and wider than typical UK mainline trains. These types of train are similar to the standard high speed trains already running in many parts of Europe.

Classic compatible trains: 'Classic compatible' trains would be built to fit existing UK railway infrastructure. This would allow them to be used as high speed services and continue beyond the HS2 network to existing rail destinations such as Sheffield, Liverpool, Newcastle, Glasgow and Edinburgh. They would be similar in performance to captive trains, but not be as tall or as wide. The Southeastern Javelin and original Eurostar trains used on High Speed One (HS1) are examples of high speed trains that are adapted to fit UK railway infrastructure.

A 'captive' high speed TGV train operating in France as an example of how a 'captive' fleet might appear.

A 'classic compatible' high speed Javelin train operating in the UK as an example of how a 'classic compatible' fleet might appear.

Contact us at HS2

If you have any questions about this leaflet, please get in touch. You can contact our helpdesk on:

T: 08081 434 434

E: hs2enquiries@hs2.org.uk

Minicom: 08081 456 472

For the latest documents including route plans and profile maps visit: www.gov.uk/hs2

Next steps

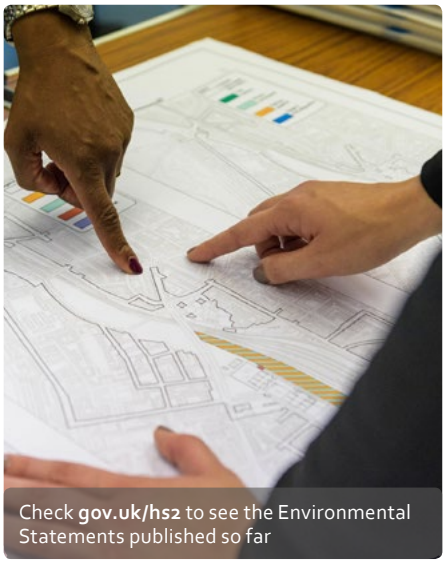
This graphic shows what would happen between now and when trains start running on Phase Two.

- **July 2017** — Phase 2b route announced and consultations launched
- **2017-2019** — Carry out Environmental Impact Assessment (EIA) and produce Environmental Statement
- **2019** — Deposit hybrid Bill for the Phase 2b route
- **2022** — Royal Assent for the Phase 2b route hybrid Bill
- **2023** — Commence construction
- **2033** — Commence train services on the Phase 2b route

Presenting a hybrid Bill to Parliament is how the Government gets permission to build the railway, and provides the opportunity for everyone's comments to be heard. Construction can only begin with Parliament's approval.

We will also carry out an Environmental Impact Assessment (EIA) to understand how the project would affect the environment and local communities, and what we can do about it. Further work will be done to mitigate the impact of the railway as the design develops.

To find out more about the documents and timescales mentioned in this factsheet, visit **www.gov.uk/hs2**



Check **gov.uk/hs2** to see the Environmental Statements published so far

Who are HS2 Ltd?

We are the company set up by the Government to deal with the design, engineering and technical requirements of building the railway.

We also have an important role in making sure that if you're affected by the Government's plans, you understand what to expect (and when), and how we can help.

Keeping you informed

We are committed to keeping you informed via various channels

Residents' Charter and Commissioner

The Residents' Charter is our promise to communicate as clearly as we possibly can with people who live along or near the HS2 route. You can read it by visiting:

www.gov.uk/government/publications/hs2-residents-charter

We also have an independent Residents' Commissioner whose job is to make sure we keep to the promises we make in the Charter and to keep it under constant review. The Residents' Commissioner's reports are published at:

https://www.gov.uk/government/collections/hs2-ltd-residents-commissioner

You can contact the Commissioner at:

residentscommissioner@hs2.org.uk

Project updates

For more information about Phase Two, visit

www.gov.uk/government/collections/hs2-phase-2b-crewe-to-manchester-and-the-west-midlands-to-leeds

And for details of events in your area, visit

www.gov.uk/government/collections/hs2-events

Property and compensation

You can find out all about HS2 and properties along the line of route by visiting:

www.gov.uk/government/collections/hs2-property

You can also find out if you're eligible for compensation at:

www.gov.uk/claim-compensation-if-affected-by-hs2

Jobs and skills

To see what jobs are available on HS2 at the moment, check our careers page:

http://careers.hs2.org.uk

If you're a student wondering what careers in STEM subjects are like, check out articles and have a look around our Plotr World:

www.plotr.co.uk/careers/worlds/hs2

And if you're a business wondering how to get involved with HS2, have a look at our guides and updates on:

www.gov.uk/hs2 – search for *HS2 business*

If you have any questions or you'd like to find out more, you can get in touch with our helpdesk (open 24/7).

You can contact us if you'd like a free copy of this leaflet in: **Large print • Braille • Audio • Easy Read**

You can also contact us for help and information in a different language.

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