Lessons from Great Britain’s HSR Plans

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We Have Upgraded Classic Rail

- Up to 160kph end to end journey times from London
- Dominant mode for city centre travel to Central London (80%+)
- Market share between other cities very low
- At maximum capacity by 2025
- Further upgrading extremely disruptive
HS2 Study

• London – West Midlands and then a future network
  – Demand modelling
  – Operational and technical specification
  – Station selection
  – The optimum route
  – Strategic environmental assessment
  – Carbon and Energy assessment
  – Costs
  – Full business case
  – Funding and risk assessment
HSR is High Capacity Rail

- Trains up to 440yds long
- 1000+ seats per train
- Up to 18 train paths per hour
- Capacity 18,000 seats per hour each way
- Equals 2 new 8-lane highways
Detailed Multi-Modal Demand Modelling

- No premium on fares
- "New railway" market effect discounted
- Include agglomeration benefits but on a conservative basis
- Journey times based on 360kph trains
- Gives 145,000 journeys a day at opening in 2025
- A jumbo jet into Central London every 60 seconds
2032 Network

• London to
  – West Midlands 1-24 to 0-49
  – Manchester 2-08 to 1-13
  – Leeds 2-15 to 1-20
  – Scotland 4-20 to 3-30

• Birmingham to
  – Manchester 1-34 to 0-40
  – Leeds 2-05 to 1-05

• Heathrow to
  – Manchester 1-15
  – Paris 2-40
The System Design Hierarchy

- Business Requirements
- Operational Specification
- Engineering Specification
- Sub-Systems Specifications
Positioning of Stations in Cities

City A

Urban Centre

Suburbs

City B
Integration with Urban Mobility
2 London Stations Give Passenger Dispersal East-West and North-South
Route Challenges – Urban and Rural

1/6th is Urban London

1/6th is Statutorily Protected Countryside

1/6th is Urban W Midlands
Sensitive Design
Some Lessons

• Create your own high speed rail strategy to meet your own needs

• Be absolutely clear what the problem is that you want high speed rail to solve!

• Start with the Commercial / Business Requirements
  – Don’t focus on the technology

• Be wary of assuming premium fares
  – Even small premiums choke off demand

• Stick to established world standards
  – Proven, affordable products

• Do provide for macro risks as well the obvious project ones
Some Lessons

• Integration with complementary transport essential
  – People travel door to door!

• HSR won’t save the planet alone
  – Balance of lower carbon travel with new journeys

• Every route impact is precious to someone with immediate access to social media

• Consult early and often
  – Myths, once established, live on

• Do worry about forging solid, very long lasting political and public support!
It’s the work of generations

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