

# HS2 Mk2 Route Loadings

## *Introduction*

Deriving the route loadings for a given service plan can be a difficult and tedious matter, and very prone to error. Furthermore, understanding what a given loading consists of can be problematic at a later time, requiring effectively as much effort to interpret as it originally took to produce (the only way reliably to work it out is effectively to regenerate it).

HS2 Mk2 has 2 phases. HS2 Mk2.1 is the Coventry Variant (HS2-CV). This assumes that HS3 Mk2 has already been, or is simultaneously being, implemented, since several of HS2-CV's services pass to and from HS3 and assume the Mk2 developments are present. HS2 Mk2.2 is the Scottish extension.

For my own convenience as much as anything else, the present article elucidates the route loadings corresponding to service plans 4, 5 and 6. Service Plan 4 is the full service plan for HS2 at its initial, full extent, SP5 covers the Coventry Variant, and SP6 adds the Scottish services. (The loadings corresponding to earlier service plans are significantly simpler, and easily understood by a process of working back from SP4.)

The present article, though really of no interest to anyone but myself, will nonetheless be published on the website, just in case anyone feels moved to challenge my figures, in which case they will be able to see how I derived them, without having to pester me personally.

The service plans are given in full, since otherwise the information would not be self-contained, and would require consulting the original Route and Service Plans article also.

## Service Plan 4

- 4tphGG [HS1 Maidstone →] Euston Cross – Old Oak Common – Birmingham Interchange – Birmingham HS
- 4tphGG [HS1 Dover →] Euston Cross – Old Oak Common – Manchester Interchange – Manchester HS
- 2tphGG [HS1 Hastings →] Euston Cross – Old Oak Common – Crewe – Liverpool Lime St.
- 2tphGG [HS1 Hastings →] Euston Cross – Old Oak Common – Crewe – Preston
- 2tphC Euston – Old Oak Common – Calvert – Birmingham Interchange – Rugeley Trent Valley – Stafford – Stone – Stoke on Trent – Macclesfield – Stockport – Manchester Piccadilly
- 2tphC Euston – Old Oak Common – Calvert – Birmingham Interchange – Crewe – Warrington Bank Quay – Wigan North Western – Preston (splits/joins) – :  
– Kirkham – Poulton le Fylde – Blackpool  
– Lancaster – Oxenholme – Kendal – Windermere
- 1tphC Euston – Old Oak Common – Crewe – Chester – Flint – Rhyl – Llandudno Junction – Bangor – Holyhead
- 2tphGG Birmingham HS – Crewe – Manchester Interchange – Manchester HS
- 1tphC Birmingham HS – Crewe – Chester – Flint – Rhyl – Llandudno Junction – Bangor – Holyhead
- 1tphC Birmingham HS – Crewe – Preston (splits/joins) – :  
– Oxenholme – Carlisle – Lockerbie – Haymarket – Edinburgh Waverley  
– Lancaster – Penrith – Carlisle – Lockerbie – Glasgow Central
- 1tphC Liverpool Lime St. – Preston (splits/joins) – :  
– Oxenholme – Carlisle – Lockerbie – Haymarket – Edinburgh Waverley  
– Lancaster – Penrith – Carlisle – Lockerbie – Glasgow Central

Representative Hourly Cross-Platform Interchange Pattern at Birmingham Interchange:

- 00C Euston – Manchester Piccadilly  
G HS7 Bristol Temple Meads HS (later from Plymouth) – York (later to Newcastle)
- 15C Euston – Preston – Blackpool / Windermere  
G HS4/HS7 Cardiff HS (later from Swansea) – Nottingham (later to Norwich)

– repeating at 30 and 45 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Birmingham HS (paired by HS2 and HS7):

- 00GG Euston Cross – Birmingham HS  
GG Birmingham HS – Manchester HS  
G HS7 Bristol Temple Meads BT – Birmingham HS  
G HS7 Birmingham HS – York
- 15GG Euston Cross – Birmingham HS  
C Birmingham HS – Edinburgh / Glasgow OR Birmingham HS – Holyhead (at 45 minutes past)  
G HS4/HS7 Cardiff HS – Birmingham HS  
C HS7 Birmingham HS – Cleethorpes

– repeating at 30 and 45 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Crewe:

00C Euston – Preston – Blackpool / Windermere

C Euston – Holyhead

30C Euston – Preston – Blackpool / Windermere

C Birmingham HS – Holyhead

The following loadings are imposed on HS2:

• Euston Cross	– Old Oak Common North Junction	12tph
• [Euston – ] Queens Park Junction	– Old Oak Common North Junction	5tph
• Old Oak Common North Junction	– Water Orton South Junction	17tph
• Water Orton South Junction	– Water Orton West Junction	4tph
• Water Orton West Junction	– Birmingham HS	8tph
• Water Orton West Junction	– Water Orton North Junction	4tph
• Water Orton South Junction	– Water Orton North Junction	13tph
• Water Orton North Junction	– Streethay Junction	17tph
• Streethay Junction	– Handsacre Junction	2tph
• Streethay Junction	– Crewe HS South Junction	15tph
• Crewe HS South Junction	– Crewe HS North Junction	4tph
• Crewe HS South Junction	– Crewe station	11tph
• Crewe station	– Crewe HS North Junction	7tph
• Crewe HS North Junction	– Rostherne South Junction	11tph
• Rostherne South Junction	– Manchester HS	6tph
• Rostherne East Junction	– Rostherne North Junction	0tph
• Rostherne South Junction	– Kenyon South Junction	5tph
• Kenyon South Junction	– Kenyon West Junction [ – Livpl]	2tph
• [Livpl – ] Kenyon West Junction	– Kenyon North Junction	1tph
• Kenyon South Junction	– Kenyon North Junction	3tph
• Kenyon North Junction	– Gibb Farm Junction [ – Preston]	4tph

## Elucidation of the loadings:

1. Euston Cross – Old Oak Common North Junction (HS2 only; there are also 6tph for HS4)  
4tphGG Maidstone – Birmingham HS  
4tphG Dover – Manchester HS  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
= 12tph
2. (Euston – ) Queens Park Junction – Old Oak Common North Junction  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splits/joins) – Blackpool North / Windermere  
1tphC Euston – Holyhead  
= 5tph
3. Old Oak Common North Junction – Water Orton South Junction  
4tphGG Maidstone – Birmingham HS  
4tphG Dover – Manchester HS  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splits/joins) – Blackpool North / Windermere  
1tphC Euston – Holyhead  
= 17tph
4. Water Orton South Junction – Water Orton West Junction  
4tphGG Maidstone – Birmingham HS  
= 4tph
5. Water Orton East Junction – Birmingham HS  
4tphGG Maidstone – Birmingham HS  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 8tph
6. Water Orton West Junction – Water Orton North Junction  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 4tph
7. Water Orton South Junction – Water Orton North Junction  
4tphG Dover – Manchester HS  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splits/joins) – Blackpool North / Windermere

1tphC Euston – Holyhead  
= 13tph

8. Water Orton North Junction – Streethay Junction

4tphG Dover – Manchester HS  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splits/joins) – Blackpool North / Windermere  
1tphC Euston – Holyhead  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 17tph

9. Streethay Junction – Handsacre Junction

2tphC Euston – Manchester Piccadilly via Stoke  
= 2tph

10. Streethay Junction – Crewe HS South Junction

4tphG Dover – Manchester HS  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphC Euston – Preston (splits/joins) – Blackpool North / Windermere  
1tphC Euston – Holyhead  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 15tph

11. Crewe HS South Junction – Crewe HS North Junction

4tphG Dover – Manchester HS  
= 4tph

12. Crewe HS South Junction – Crewe station

2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphC Euston – Preston (splits/joins) – Blackpool North / Windermere  
1tphC Euston – Holyhead  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 11tph

13. Crewe station – Crewe HS North Junction

2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphGG Birmingham HS – Manchester HS

- 1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 7tph
14. Crewe HS North Junction – Rostherne South Junction  
4tphG Dover – Manchester HS  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 11tph
15. Rostherne South Junction – Manchester HS  
4tphG Dover – Manchester HS  
2tphGG Birmingham HS – Manchester HS  
= 6tph
16. Rostherne South Junction – Kenyon South Junction  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 5tph
17. Kenyon South Junction – Kenyon West Junction (– Liverpool)  
2tphG Hastings – Liverpool Lime St.  
= 2tph
18. Kenyon West Junction – Kenyon North Junction  
1tphC Liverpool – Preston (splits/joins) – Glasgow / Edinburgh  
= 1tph
19. Kenyon South Junction – Kenyon North Junction  
2tphG Hastings – Preston  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 3tph
20. Kenyon North Junction – Gibb Farm Junction (– Preston)  
2tphG Hastings – Preston  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
1tphC Liverpool – Preston (splits/joins) – Glasgow / Edinburgh  
= 4tph

## Service Plan 5

- 4tphGG [HS1 Maidstone →] Euston Cross – Old Oak Common – Rugby HS – Coventry HS – Birmingham Interchange – Birmingham HS
- 2tphGG [HS1 Dover →] Euston Cross – Old Oak Common – Birmingham Interchange – Birmingham HS
- 2tphGG [HS1 Dover →] Euston Cross – Old Oak Common – Manchester Interchange – Manchester HS
- (also 2tphGG [HS5 Tunbridge Wells →] HS3/HS8 Pancras Cross – Sheffield HS – Manchester HS – Manchester Victoria (LL) – Liverpool Lime St.)
- 2tphGG [HS1 Hastings →] Euston Cross – Old Oak Common – Crewe – Liverpool Lime St.
- 2tphGG [HS1 Hastings →] Euston Cross – Old Oak Common – Crewe – Preston
- 2tphC Euston – Old Oak Common – Calvert – Birmingham Interchange – Rugeley Trent Valley – Stafford – Stone – Stoke on Trent – Macclesfield – Stockport – Manchester Piccadilly
- 2tphC Euston – Old Oak Common – Calvert – Birmingham Interchange – Crewe – Warrington Bank Quay – Wigan North Western – Preston (splits/joins) – :  
– Kirkham – Poulton le Fylde – Blackpool  
– Lancaster – Oxenholme – Kendal – Windermere
- 1tphC Euston – Old Oak Common – Crewe – Chester – Flint – Rhyl – Llandudno Junction – Bangor – Holyhead
- 2tphGG Birmingham HS – Crewe – Manchester Interchange – Manchester HS
- 1tphC Birmingham HS – Crewe – Chester – Flint – Rhyl – Llandudno Junction – Bangor – Holyhead
- 1tphC Birmingham HS – Crewe – Preston (splits/joins) – :  
– Oxenholme – Carlisle – Lockerbie – Haymarket – Edinburgh Waverley  
– Lancaster – Penrith – Carlisle – Lockerbie – Glasgow Central
- 1tphC Liverpool Lime St. – Preston (splits/joins) – :  
– Oxenholme – Carlisle – Lockerbie – Haymarket – Edinburgh Waverley  
– Lancaster – Penrith – Carlisle – Lockerbie – Glasgow Central
- 2tphC Pancras Cross – Luton Airport Parkway – Northampton – Rugby HS – Coventry HS – Birmingham International – Birmingham New Street – Wolverhampton (splits/joins) – :  
1) – Stafford – Crewe – Runcorn – Liverpool South Parkway – Liverpool Lime Street  
2) – Telford – Wellington – Shrewsbury – Wrexham – Chester
- 2tphC Pancras Cross – Luton Airport Parkway – Northampton – Rugby HS – Coventry HS – Birmingham International – Birmingham New Street – University – Bromsgrove – Droitwich Spa – Worcester Shrub Hill.
- 2tphC Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – LHR Interchange – Slough – Maidenhead – Bourne End (connections to and from Marlow) – High Wycombe – Princes Risborough – Calvert – Brackley – Rugby (GC ?) – Leicester – Melton Mowbray
- 2tphC (XC) Bournemouth – Brockenhurst – Southampton – Southampton Airport Parkway – Winchester – Basingstoke – Reading (reverse) – Oxford – Banbury – Rugby (GC ?) – Leicester – Nottingham – Chesterfield – Sheffield – South Yorkshire (Meadowhall) – Rotherham – Wakefield Westgate – Leeds City – Micklefield – York

Representative Hourly Cross-Platform Interchange Pattern at Birmingham HS (paired by HS2 and HS7):

00GG Euston Cross – Birmingham HS (HS Metro)

- C Birmingham HS – Edinburgh / Glasgow OR Birmingham HS – Holyhead (at 30 minutes past)
- G HS7 Bristol Temple Meads BT – Birmingham HS
- G HS7 Birmingham HS – York

15GG Euston Cross – Birmingham HS (HS Metro)

- GG Birmingham HS – Manchester HS
- G HS4/HS7 Cardiff HS – Birmingham HS
- C HS7 Birmingham HS – Cleethorpes

– repeating at 30 and 45 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Crewe:

00C Euston – Preston – Blackpool / Windermere

- C Euston – Holyhead

30C Euston – Preston – Blackpool / Windermere

- C Birmingham HS – Holyhead



Route loadings are given separately for the main lines (Euston Cross / Euston to Ashenden Junction, and above Streethay Junction, and the HS2-orig tracks between those locations) and for the relief lines (HS2-CV between Ashenden Junction and Streethay / Handsacre Junctions via Rugby, also for the HS7 tracks, where separate, around Birmingham). Understanding these loadings will certainly require reference to the track diagrams for the sections between Grandon Underwood and Brackley junctions and between Mount Pleasant and Streethay junctions, and around Coventry station; these are contained in appendix A.

The following loadings are imposed on the main lines of HS2:

• Euston Cross	– Old Oak Common North Junction	12tph
• [Euston – ] Queens Park Junction	– Old Oak Common North Junction	5tph
• Old Oak Common North Junction	– Grendon Underwood Junctions	17tph
• Grendon Underwood Junctions	– Chetwode Junctions	9tph
• Chetwode Junctions	– Mount Pleasant Junctions	13tph
• Mount Pleasant Junctions	– Streethay Junction	7tph
• Streethay Junction	– Crewe HS South Junction	13tph
• Crewe HS South Junction	– Crewe HS North Junction	2tph
• Crewe HS South Junction	– Crewe station	11tph
• Crewe station	– Crewe HS North Junction	7tph
• Crewe HS North Junction	– Rostherne South Junction	9tph
• Rostherne South Junction	– Rostherne East Junction	4tph
• Rostherne East Junction	– Manchester HS	4tph
• Rostherne East Junction	– Rostherne North Junction	0tph
• Rostherne North Junction	– Kenyon South Junction	5tph
• Kenyon South Junction	– Kenyon West Junction [ – Livpl]	2tph
• [Livpl – ] Kenyon West Junction	– Kenyon North Junction	1tph
• Kenyon South Junction	– Kenyon North Junction	3tph
• Kenyon North Junction	– Gibb Farm Junction [ – Preston]	4tph

The following loadings are imposed on the relief lines of HS2, and the distinct tracks of HS7:

• Ashendon Junction	– Grendon Underwood Junctions	2tph
• Grendon Underwood Junctions	– Chetwode Junctions direct	6tph
• Grendon Underwood Junctions	– Chetwode Junctions via Calvert	4tph
• Chetwode Junctions	– Culworth Junction	6tph
• Banbury Junction	– Culworth Junction	2tph
• Culworth Junction	– Onley Junction	8tph
• Watford Gap Junction (HS3)	– Onley Junction	4tph
• Onley Junction	– Rugby HS Junction	12tph
• Rugby HS Junction	– Cotesbach Junction (HS3)	4tph
• Rugby HS Junction	– Warwick Road Junction	8tph
• Warwick Road Junction	– Mount Pleasant Junctions	4tph
• Mount Pleasant Junctions	– Birmingham Interchange station	10tph
• Birmingham Interchange station	– Water Orton South Junction (inner)	8tph
• Birmingham Interchange station	– Water Orton South Junction (outer)	10tph
• Water Orton South Junction (outer)	– Water Orton West Junction (HS2)	6tph
• Water Orton South Junction (outer)	– Water Orton West Junction (HS7)	4tph
• Birmingham HS	– Water Orton West Junction (HS2)	10tph
• Birmingham HS	– Water Orton West Junction (HS7)	8tph
• Water Orton West Junction (HS7)	– Marston Junction (HS7)	4tph
• Water Orton South Junction (inner)	– Marston Junction (HS7)	4tph
• Marston Junction (HS7)	– Derby	8tph
• Water Orton West Junction (HS2)	– Streethay Junction (relief lines)	8tph
• Streethay Junction (relief lines)	– Handsacre Junction	2tph
• Streethay Junction (relief lines)	– Streethay Junction (main lines)	6tph

Elucidation of the Main Line loadings:

1. Euston Cross – Old Oak Common North Junction  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro+  
2tphG Dover – Birmingham HS (UHS)  
2tphG Dover – Manchester HS (UHS)  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
= 12tph
2. [Euston – ] Queens Park Junction – Old Oak Common North Junction  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splis/joins) – Blackpool / Windermere  
1tphC Euston – Holyhead  
= 5tph
3. Old Oak Common North Junction – Grendon Underwood Junctions(\*)  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro+  
2tphG Dover – Birmingham HS (UHS)  
2tphG Dover – Manchester HS (UHS)  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splis/joins) – Blackpool / Windermere  
1tphC Euston – Holyhead  
= 17tph
4. Grendon Underwood Junctions(\*) – Chetwode Junctions(\*)  
2tphG Dover – Birmingham HS (UHS)  
2tphG Dover – Manchester HS (UHS)  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
1tphC Euston – Holyhead  
= 9tph
5. Chetwode Junctions(\*) – Mount Pleasant Junctions(\*)  
2tphG Dover – Birmingham HS (UHS)  
2tphG Dover – Manchester HS (UHS)  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splis/joins) – Blackpool / Windermere  
1tphC Euston – Holyhead  
= 13tph

6. Mount Pleasant Junctions(\*) – Streethay Junction
  - 2tphG Dover – Manchester HS (UHS)
  - 2tphG Hastings – Liverpool Lime St.
  - 2tphG Hastings – Preston
  - 1tphC Euston – Holyhead
  - = 7tph
  
10. Streethay Junction – Crewe HS South Junction
  - 2tphG Dover – Manchester HS (UHS)
  - 2tphG Hastings – Liverpool Lime St.
  - 2tphG Hastings – Preston
  - 2tphC Euston – Preston (splis/joins) – Blackpool / Windermere
  - 1tphC Euston – Holyhead
  - 2tphGG Birmingham HS – Manchester HS
  - 1tphC Birmingham HS – Holyhead
  - 1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh
  - = 13tph
  
11. Crewe HS South Junction – Crewe HS North Junction
  - 2tphG Dover – Manchester HS
  - = 2tph
  
12. Crewe HS South Junction – Crewe station
  - 2tphG Hastings – Liverpool Lime St.
  - 2tphG Hastings – Preston
  - 2tphC Euston – Preston (splits/joins) – Blackpool North / Windermere
  - 1tphC Euston – Holyhead
  - 2tphGG Birmingham HS – Manchester HS
  - 1tphC Birmingham HS – Holyhead
  - 1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh
  - = 11tph
  
13. Crewe station – Crewe HS North Junction
  - 2tphG Hastings – Liverpool Lime St.
  - 2tphG Hastings – Preston
  - 2tphGG Birmingham HS – Manchester HS
  - 1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh
  - = 7tph
  
14. Crewe HS North Junction – Rostherne South Junction
  - 2tphG Dover – Manchester HS
  - 2tphG Hastings – Liverpool Lime St.
  - 2tphG Hastings – Preston
  - 2tphGG Birmingham HS – Manchester HS
  - 1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh
  - = 9tph

15. Rostherne South Junction – Manchester HS  
2tphG Dover – Manchester HS  
2tphGG Birmingham HS – Manchester HS  
= 4tph
16. Rostherne South Junction – Kenyon South Junction  
2tphG Hastings – Liverpool Lime St.  
2tphG Hastings – Preston  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 5tph
17. Kenyon South Junction – Kenyon West Junction (– Liverpool)  
2tphG Hastings – Liverpool Lime St.  
= 2tph
18. Kenyon West Junction – Kenyon North Junction  
1tphC Liverpool – Preston (splits/joins) – Glasgow / Edinburgh  
= 1tph
19. Kenyon South Junction – Kenyon North Junction  
2tphG Hastings – Preston  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
= 3tph
20. Kenyon North Junction – Gibb Farm Junction (– Preston)  
2tphG Hastings – Preston  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
1tphC Liverpool – Preston (splits/joins) – Glasgow / Edinburgh  
= 4tph

(\*) The junctions at the ends of a station loop are in different locations, depending on direction of travel, hence the plural, since XX North/South (or East/West) junctions are geographically separate locations.

## Elucidation of the Relief Line loadings:

1. Ashenden Junction – Grendon Underwood Junctions  
2tphC Paddington – Melton Mowbray  
= 2tph
2. Grendon Underwood Junctions – Chetwode Junctions direct  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
2tphC Paddington – Melton Mowbray  
= 6tph
3. Grendon Underwood Junctions – Chetwode Junctions via Calvert Station  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (split/join) – Blackpool / Windermere  
= 4tph
4. Chetwode Junctions – Culworth Junction  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
2tphC Paddington – Melton Mowbray  
= 6tph
5. Banbury Junction – Culworth Junction  
2tphC Bournemouth – Newcastle  
= 2tph
6. Culworth Junction – Onley Junction  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
2tphC Bournemouth – Newcastle  
2tphC Paddington – Melton Mowbray  
= 8tph
7. Watford Gap Junction (HS3) – Onley Junction  
2tphC HS3 St. Pancras West – Wolverhampton (splits/joins) – Liverpool / Chester  
2tphC HS3 St. Pancras West – Worcester Shrub Hill  
= 4tph
8. Onley Junction – Rugby HS Junction  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
2tphC Bournemouth – Newcastle  
2tphC Paddington – Melton Mowbray  
2tphC HS3 St. Pancras West – Wolverhampton (splits/joins) – Liverpool / Chester  
2tphC HS3 St. Pancras West – Worcester Shrub Hill  
= 12tph
9. Rugby HS Junction – Cotesbach Junction (HS3)  
2tphC Bournemouth – Newcastle  
2tphC Paddington – Melton Mowbray  
= 4tph

10. Rugby HS Junction – Warwick Rd. Junction  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
2tphC HS3 St. Pancras West – Wolverhampton (splits/joins) – Liverpool / Chester  
2tphC HS3 St. Pancras West – Worcester Shrub Hill  
= 8tph
11. Warwick Rd. Junction – Mount Pleasant Junctions  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
= 4tph
12. Mount Pleasant Junctions – Birmingham Interchange Station  
2tphG Dover – Birmingham HS (UHS)  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (split/join) – Blackpool / Windermere  
= 10tph
13. Birmingham Interchange Station – Water Orton South Junction (inner tracks)  
2tphG HS7 Plymouth – Newcastle  
2tphG HS7 Swansea – Norwich  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (split/join) – Blackpool / Windermere  
= 8tph
14. Birmingham Interchange Station – Water Orton South Junction (outer tracks)  
2tphG Dover – Birmingham HS (UHS)  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
2tphG HS7 Bristol Temple Meads (BT) – Birmingham HS  
2tphG HS7 Cardiff HS – Birmingham HS  
= 10tph
15. Water Orton South Junction (outer tracks) – Water Orton West Junction (HS2 tracks)  
2tphG Dover – Birmingham HS (UHS)  
4tphGG Maidstone – Birmingham HS via Coventry (HS Metro)  
= 6tph
16. Water Orton South Junction (outer tracks) – Water Orton West Junction (HS7 tracks)  
2tphGG HS7 Bristol Temple Meads (BT) – Birmingham HS  
2tphGG HS7 Cardiff HS – Birmingham HS  
= 4tph
17. Birmingham HS – Water Orton West Junction (HS2 tracks)  
2tphG Birmingham HS – Dover (UHS)  
4tphGG Birmingham HS – Maidstone (HS Metro)  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
10tph

18. Birmingham HS – Water Orton West Junction (HS7 tracks)  
2tphGG HS7 Birmingham HS – Bristol Temple Meads (BT)  
2tphGG HS7 Birmingham HS – Cardiff HS  
2tphGG HS7 Birmingham HS – York HS  
2tphC HS7 Birmingham HS – Cleethorpes  
= 8tph
19. Water Orton West Junction (HS7 tracks) – Marston Junction (HS7)  
2tphGG HS7 Birmingham HS – York HS  
2tphC HS7 Birmingham HS – Cleethorpes  
= 4tph
20. Water Orton South Junction (inner tracks) – Marston Junction (HS7)  
2tphG HS7 Plymouth – Newcastle  
2tphG HS7 Swansea – Norwich  
= 4tph
21. Marston Junction (HS7) – Derby  
2tphG HS7 Plymouth – Newcastle  
2tphG HS7 Swansea – Norwich  
2tphGG HS7 Birmingham HS – York HS  
2tphC HS7 Birmingham HS – Cleethorpes  
= 8tph
22. Water Orton West Junction (HS2 tracks) – Water Orton North Junction  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
4tph
23. Water Orton North Junction – Streethay Junction (relief lines)  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (split/join) – Blackpool / Windermere  
= 8tph
24. Streethay Junction (relief lines) – Handsacre Junction  
2tphC Euston – Manchester Piccadilly via Stoke  
= 2tph
25. Streethay Junction (relief lines) – Streethay Junction (main lines)  
2tphGG Birmingham HS – Manchester HS  
1tphC Birmingham HS – Holyhead  
1tphC Birmingham HS – Preston (splits/joins) – Glasgow / Edinburgh  
2tphC Euston – Preston (split/join) – Blackpool / Windermere  
= 6tph



## Service Plan 6

- 4tphGG [HS1 Maidstone →] Euston Cross – Old Oak Common – Rugby HS – Coventry HS – Birmingham Interchange – Birmingham HS
- 2tphGG [HS1 Dover →] Euston Cross – Old Oak Common – Birmingham Interchange – Birmingham HS
- 2tphGG [HS1 Dover →] Euston Cross – Old Oak Common – Manchester Interchange – Manchester HS
- 2tphGG [HS1 Hastings →] Euston Cross – Old Oak Common – Crewe – Liverpool Lime St.
- 2tphG [HS1 Hastings →] Euston Cross – Old Oak Common – Preston – Carlisle – Hawick – Edinburgh Waverley HS – Haymarket – Edinburgh Airport – Bellgrove – Glasgow St. Enoch
- 2tphGG Birmingham HS – Crewe – Manchester Interchange – Manchester HS
- 2tphG Birmingham HS – Crewe – Preston – Carlisle – Hawick – Edinburgh Waverley HS – Haymarket – Edinburgh Airport – Bellgrove – Glasgow St. Enoch
- 2tphG Liverpool Lime St. – Preston – Carlisle – Hawick – Edinburgh Waverley HS – Haymarket – Edinburgh Airport – Bellgrove – Glasgow St. Enoch
- 2tphC Euston – Old Oak Common – Preston – Lancaster – Carnforth – Oxenholme – Kendal – Penrith – Carlisle (split/join) –:  
– Motherwell – Glasgow Central  
– Lockerbie – Haymarket – Edinburgh Waverley
- 2tphC Birmingham HS – Crewe – Preston – Lancaster – Carnforth – Oxenholme – Kendal – Penrith – Carlisle (split/join) –:  
– Haymarket – Edinburgh Waverley  
– Lockerbie – Motherwell – Glasgow Central
- 2tphC Euston – Old Oak Common – Calvert – Birmingham Interchange – Rugeley Trent Valley – Stafford – Stone – Stoke on Trent – Macclesfield – Stockport – Manchester Piccadilly
- 2tphC Euston – Old Oak Common – Calvert – Birmingham Interchange – Crewe – Warrington Bank Quay – Wigan North Western – Preston (split/join)  
– Kirkham – Poulton le Fylde – Blackpool  
– Lancaster – Morecambe
- 1tphC Euston – Old Oak Common – Crewe – Chester – Flint – Rhyl – Llandudno Junction – Bangor – Holyhead
- 1tphC Birmingham HS – Crewe – Chester – Flint – Rhyl – Llandudno Junction – Bangor – Holyhead
- 2tphR Euston – Watford Junction – Bletchley – Milton Keynes – Wolverton – Northampton – Long Buckby – Rugby – Nuneaton – Atherstone – Polesworth – Tamworth (LL) – Lichfield Trent Valley (LL) – Rugeley Trent Valley – Stafford – Crewe
- 2tphR Manchester Airport – Manchester Piccadilly – Manchester Oxford Rd. – Bolton – Horwich Parkway – Chorley – Preston – Lancaster – Carnforth – Silverdale – Arnside – Grange-over-Sands – Cark and Cartmel – Ulverston – Dalton – Roose – Barrow in Furness
- 2tphR Leeds City – Bradford Central – Shipley – Keighley – Skipton – Gargrave – Hellifield – Long Preston – Giggleswick – Clapham – Bentham – Wennington – Carnforth (reverse) – Silverdale – Arnside – Grange-over-Sands – Cark and Cartmel – Ulverston – Dalton – Roose – Barrow in Furness

Representative Hourly Cross-Platform Interchange Pattern at Birmingham Interchange:

- 00C Euston – Manchester Piccadilly
- G HS7 Plymouth – Newcastle
- 15C Euston – Preston – Blackpool / Windermere
- G HS4/HS7 Swansea –Norwich

– repeating at 30 and 45 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Birmingham HS (paired by HS2 and HS7):

- 00GG Euston Cross – Birmingham HS
- GG Birmingham HS – Manchester HS
- G HS7 Bristol Temple Meads BT – Birmingham HS
- G HS7 Birmingham HS – York
- 15GG Euston Cross – Birmingham HS
- G Birmingham HS – Edinburgh – Glasgow
- G HS4/HS7 Cardiff HS – Birmingham HS
- C HS7 Birmingham HS – Cleethorpes

– repeating at 30 and 45 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Crewe:

- 00C Euston – Preston – Blackpool / Morecambe
- C Euston – Holyhead
- 15C Birmingham HS – Carlisle – Edinburgh / Glasgow
- R Euston – Crewe via Trent Valley
- 30C Euston – Preston – Blackpool / Morecambe
- C Birmingham HS – Holyhead
- 45C Birmingham HS – Carlisle – Edinburgh / Glasgow
- R Euston – Crewe via Trent Valley

Representative Hourly Cross-Platform Interchange Pattern at Preston:

- 00G Euston Cross – Edinburgh
- GG HS8 Norwich – Preston
- 07C Euston – Glasgow / Edinburgh
- C HS9 Hull – Preston
- 15G Birmingham HS – Edinburgh
- GG HS3/HS8 Pancras Cross – Preston
- 23C Birmingham HS – Edinburgh / Glasgow
- C HS9 Scarborough – Preston

– repeating at 30, 37, 45 and 53 minutes past.

#### Representative Hourly Non-Cross-Platform Interchange Pattern at Carnforth:

00C Euston – Carlisle – Glasgow / Edinburgh

R Manchester Airport – Barrow in Furness

15C Birmingham HS – Carlisle – Edinburgh / Glasgow

R Leeds City – Barrow in Furness

– repeating at 30 and 45 minutes past.

The loadings imposed on the relief lines below Birmingham (specifically below Water Orton West Junction (HS2 lines), likewise on the specifically HS7 lines, are unchanged from SP5, so are not repeated here. The section Between Birmingham HS (HS2 lines) and Streethay (main lines) Junction does have new services, so this section is included in the table below.

The following loadings are imposed on HS2:

• Euston Cross	– Old Oak Common North Junction	12tph
• [Euston – ] Queens Park Junction	– Old Oak Common North Junction	7tph
• Old Oak Common North Junction	– Grendon Underwood Junction	19tph
• Grendon Underwood Junction	– Chetwode Junction	11tph
• Chetwode Junction	– Mount Pleasant South Junction	15tph
• Mount Pleasant Junction	– Streethay (main lines) Junction	9tph
• Birmingham HS	– Water Orton West Junction (HS2)	13tph
• Water Orton West Junction (HS2)	– Water Orton North Junction	7tph
• Water Orton North Junction	– Streethay (relief lines) Junction	11tph
• Streethay (relief lines) Junction	– Handsacre Junction	2tph
• Streethay (relief lines) Junction	– Streethay (main lines) Junction	9tph
• Streethay (main lines) Junction	– Crewe HS South Junction	18tph
• Crewe HS South Junction	– Crewe HS North Junction	4tph
• Crewe HS South Junction	– Crewe station	14tph
• Crewe station	– Crewe HS North Junction	10tph
• Crewe HS North Junction	– Rostherne South Junction	14tph
• Rostherne South Junction	– Manchester HS	4tph
• Rostherne East Junction	– Rostherne North Junction	0tph
• Rostherne South Junction	– Kenyon South Junction	10tph
• Kenyon South Junction	– Kenyon West Junction (– Livpl )	2tph
• (Livpl –) Kenyon West Junction	– Kenyon North Junction	2tph
• Kenyon South Junction	– Kenyon North Junction	8tph
• Kenyon North Junction	– Gibb Farm Junction	10tph
• Gibb Farm Junction	– Preston station	22tph
• Preston station	– Galgate Junction	10tph
• Galgate Junction	– Riccarton North Junction	6tph
• Riccarton North Junction	– Hawick	10tph
• Hawick	– Edinburgh Waverley station	12tph

## Elucidation of Main Line Loadings:

1. Euston Cross – Old Oak Common North Junction  
2tphG Hastings – Glasgow  
2tphG Hastings – Liverpool  
2tphG Dover – Manchester HS  
2tphG Dover – Birmingham HS (UHS)  
4tphGG Maidstone – Birmingham HS (HS Metro)  
= 12tph
2. {Euston – } Queens Park Junction – Old Oak Common North Junction  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splits/joins) – Blackpool / Morecambe  
1tphC Euston – Holyhead  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
= 7tph
3. Old Oak Common North Junction – Grendon Underwood Junctions  
2tphG Hastings – Glasgow  
2tphG Hastings – Liverpool  
2tphG Dover – Manchester HS  
2tphG Dover – Birmingham HS (UHS)  
4tphGG Maidstone – Birmingham HS (HS Metro)  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splits/joins) – Blackpool / Morecambe  
1tphC Euston – Holyhead  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
= 19tph
4. Grendon Underwood Junctions – Chetwode Junctions  
2tphG Hastings – Glasgow  
2tphG Hastings – Liverpool  
2tphG Dover – Manchester HS  
2tphG Dover – Birmingham HS (UHS)  
1tphC Euston – Holyhead  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
= 11tph
5. Chetwode Junctions – Mount Pleasant Junctions  
2tphG Hastings – Glasgow  
2tphG Hastings – Liverpool  
2tphG Dover – Manchester HS  
2tphG Dover – Birmingham HS (UHS)  
2tphC Euston – Manchester Piccadilly via Stoke  
2tphC Euston – Preston (splits/joins) – Blackpool / Morecambe  
1tphC Euston – Holyhead

2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
= 15tph

6. Mount Pleasant Junctions – Streethay Junction (main lines)

2tphG Hastings – Glasgow

2tphG Hastings – Liverpool

2tphG Dover – Manchester HS

1tphC Euston – Holyhead

2tphC Euston – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 9tph

7a. Birmingham HS – Water Orton West Junction (HS2 tracks)

2tphG Birmingham HS – Dover (UHS)

4tphGG Birmingham HS – Maidstone (HS Metro)

2tphG Birmingham HS – Manchester HS

2tphG Birmingham HS – Glasgow

1tphC Birmingham HS – Holyhead

2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
13tph

7b. Water Orton West Junction (HS2 tracks) – Water Orton North Junction

2tphG Birmingham HS – Manchester HS

2tphG Birmingham HS – Glasgow

1tphC Birmingham HS – Holyhead

2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
7tph

7c. Water Orton North Junction – Streethay Junction (relief lines)

2tphG Birmingham HS – Manchester HS

2tphG Birmingham HS – Glasgow

1tphC Birmingham HS – Holyhead

2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh

2tphC Euston – Manchester Piccadilly via Stoke

2tphC Euston – Preston (split/join) – Blackpool / Morecambe  
= 11tph

7d. Streethay Junction (relief lines) – Handsacre Junction

2tphC Euston – Manchester Piccadilly via Stoke  
= 2tph

7e. Streethay Junction (relief lines) – Streethay Junction (main lines)

2tphG Birmingham HS – Manchester HS

2tphG Birmingham HS – Glasgow

1tphC Birmingham HS – Holyhead

2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh

2tphC Euston – Preston (split/join) – Blackpool / Morecambe  
= 9tph

8. Streethay Junction (main lines) – Crewe HS South Junction  
2tphG Hastings – Glasgow  
2tphG Hastings – Liverpool  
2tphG Dover – Manchester HS  
2tphG Birmingham HS – Manchester HS  
2tphG Birmingham HS – Glasgow  
2tphC Euston – Preston (splits/joins) – Blackpool / Morecambe  
1tphC Euston – Holyhead  
1tphC Birmingham HS – Holyhead  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 18tph
9. Crewe HS South Junction – Crewe HS North Junction  
2tphG Hastings – Glasgow  
2tphG Dover – Manchester HS  
= 4tph
10. Crewe HS South Junction – Crewe Station  
2tphG Hastings – Liverpool  
2tphG Birmingham HS – Manchester HS  
2tphG Birmingham HS – Glasgow  
2tphC Euston – Preston (splits/joins) – Blackpool / Morecambe  
1tphC Euston – Holyhead  
1tphC Birmingham HS – Holyhead  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 14tph
11. Crewe Station – Crewe HS North Junction  
2tphG Hastings – Liverpool  
2tphG Birmingham HS – Manchester HS  
2tphG Birmingham HS – Glasgow  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 10tph
12. Crewe HS North Junction – Rostherne South Junction  
2tphG Hastings – Glasgow  
2tphG Hastings – Liverpool  
2tphG Dover – Manchester HS  
2tphG Birmingham HS – Manchester HS  
2tphG Birmingham HS – Glasgow  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 14tph

13. Rostherne South Junction – Manchester HS  
2tphG Dover – Manchester HS  
2tphG Birmingham HS – Manchester HS  
= 4tph
14. Rostherne South Junction – Kenyon South Junction  
2tphG Hastings – Glasgow  
2tphG Hastings – Liverpool  
2tphG Birmingham HS – Glasgow  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 10tph
15. Keynon South Junction – Kenyon West Junction [– Liverpool]  
2tphG Hastings – Liverpool  
= 2tph
16. [Liverpool –] Kenyon West Junction – Kenyon North Junction  
2tphG Liverpool – Glasgow  
= 2tph
17. Kenyon South Junction – Kenyon North Junction  
2tphG Hastings – Glasgow  
2tphG Birmingham HS – Glasgow  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 8tph
18. Kenyon North Junction – Gibb Farm Junction  
2tphG Hastings – Glasgow  
2tphG Birmingham HS – Glasgow  
2tphG Liverpool – Glasgow  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 10tph
19. Gibb Farm Junction – Preston Station  
2tphG Hastings – Glasgow  
2tphG Birmingham HS – Glasgow  
2tphG Liverpool – Glasgow  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
2tphG HS3 Tunbridge Wells – Preston (UHS)  
2tphGG HS3 Brighton – Preston (HS Metro)  
2tphGG HS8 Norwich – Preston  
2tphC HS8 Cleethorpes – Preston  
2tphC HS9 Hull – Preston

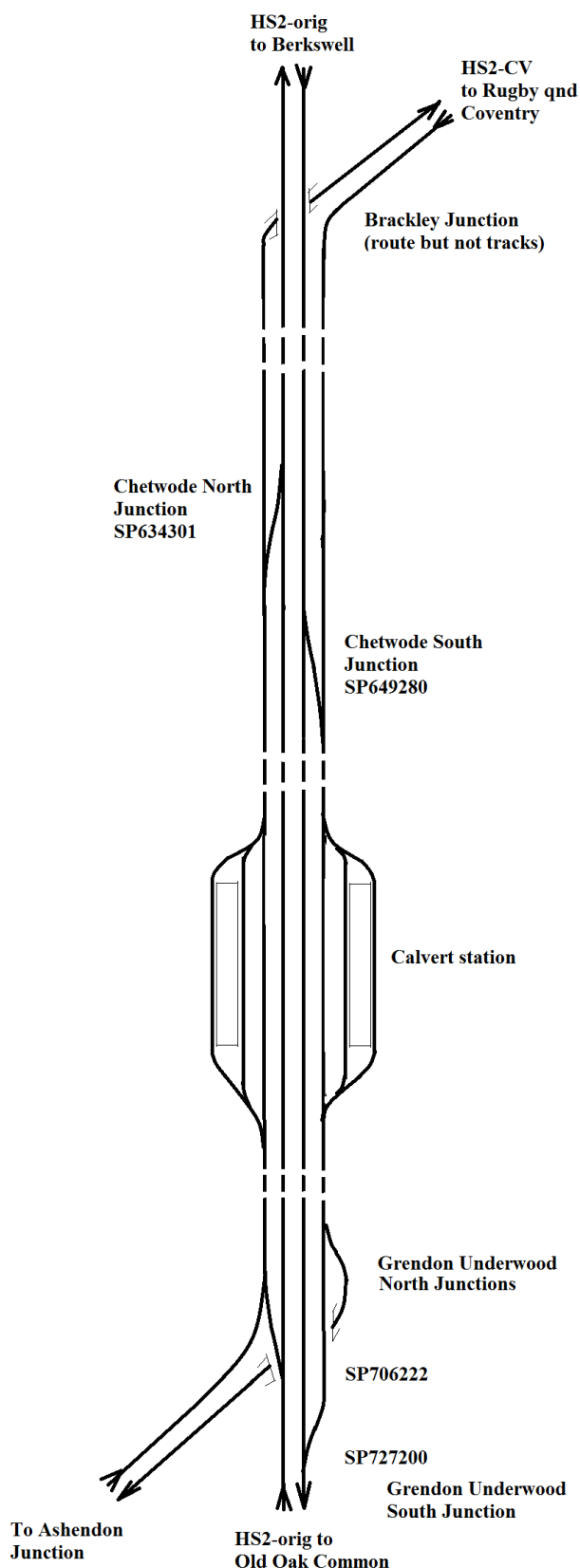
2tphC HS9 Scarborough – Preston  
= 22tph

20. Preston Station – Galgate Junction  
2tphG Hastings – Glasgow  
2tphG Birmingham HS – Glasgow  
2tphG Liverpool – Glasgow  
2tphC Euston – Carlisle (splis/joins) – Glasgow / Edinburgh  
2tphC Birmingham HS – Carlisle (splits/joins) – Glasgow / Edinburgh  
= 10tph
21. Galgate Junction – Riccarton North Junction  
2tphG Hastings – Glasgow  
2tphG Birmingham HS – Glasgow  
2tphG Liverpool – Glasgow  
= 6tph
22. Riccarton North Junction – Hawick  
2tphG Hastings – Glasgow  
2tphG Birmingham HS – Glasgow  
2tphG Liverpool – Glasgow  
2tphG HS3 Eastbourne – Glasgow  
2tphG HS3 Newcastle – Glasgow  
= 10tph
23. Hawick – Edinburgh  
2tphG Hastings – Glasgow  
2tphG Birmingham HS – Glasgow  
2tphG Liverpool – Glasgow  
2tphG HS3 Eastbourne – Glasgow  
2tphG HS3 Newcastle – Glasgow  
2tphC HS14 Hawick – Inverness  
= 12tph



# Appendix A – Track Diagrams

## Track Diagrams 1: Grendon Underwood Junction – Brackley Junction



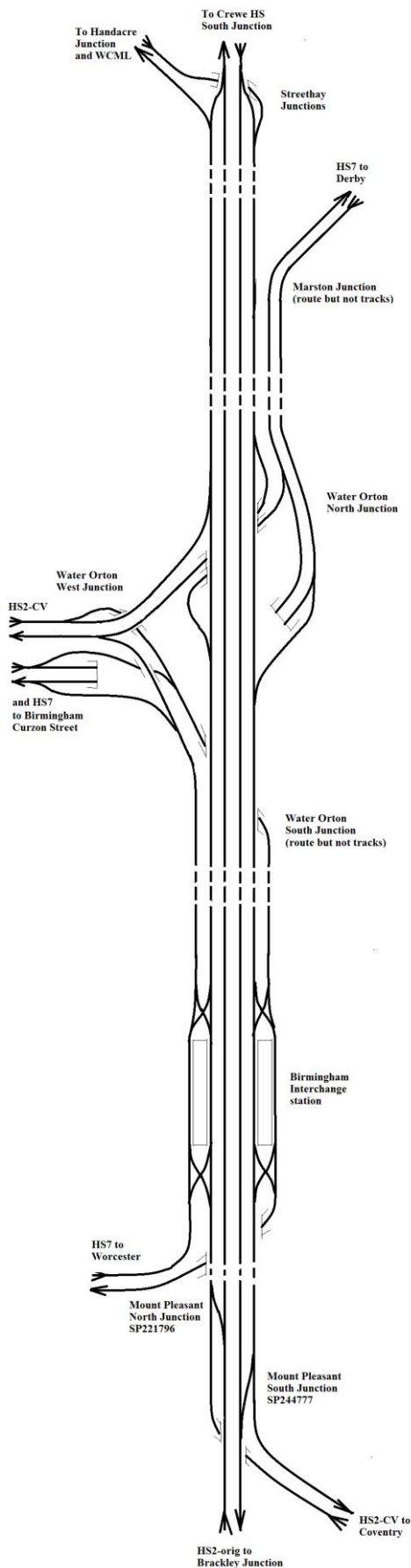
The article Same Speed Railways, Appendix B, gives extensive information on HS Junctions, layout of stations, acceleration and deceleration distances and times. The following track diagrams, while purely topological, follow the above conventions exactly.

HS2-CV begins at Grendon Underwood, where there are several track junctions. The northbound track of HS2-CV diverges from HS2-orig at map reference SP706222, and the southbound track joins HS2-orig further south at SP727200. These locations are prescribed by the requirement to come to a standstill in Calvert station, northbound, and to accelerate from standstill at Calvert station, southbound, diverging from / joining the main line at the turnoff limit speed of 230kph. (Deceleration actually begins / line speed is reached, some way further south, yet. These details are all in the above reference.) Chetwode junctions, north of Calvert, allow stopping services to regain / diverge from HS2-orig.

Calvert station and Brackley Junction are less than 18.5km, 11.6miles, apart (c.10miles, actually) so the station loops are continued between them, as recommended in the above reference; after Brackley Junction they become the lines of HS2-CV. There are 4 tracks through the middle of Calvert station, avoiding the platforms, since the HS2-CV services, while also using Grendon Underwood Junction, do not stop at Calvert, but pass through at high speed. I consider it very bad practice to allow a non-stop HS train to pass through a platform line.

Directly after Brackley station, the HS2-CV and HS2-orig routes diverge. Brackley Junction is a route junction but not a track junction, since there are no connections between the tracks. Indeed, after the connections at Grendon Underwood and Chetwode, the tracks do not have a further connection until Birmingham Interchange, for HS2-orig to HS2-CV, or, finally, Streethay Junction, for HS2-CV to HS2-orig.

## Track Diagrams 2: Mount Pleasant – Streethay Junctions



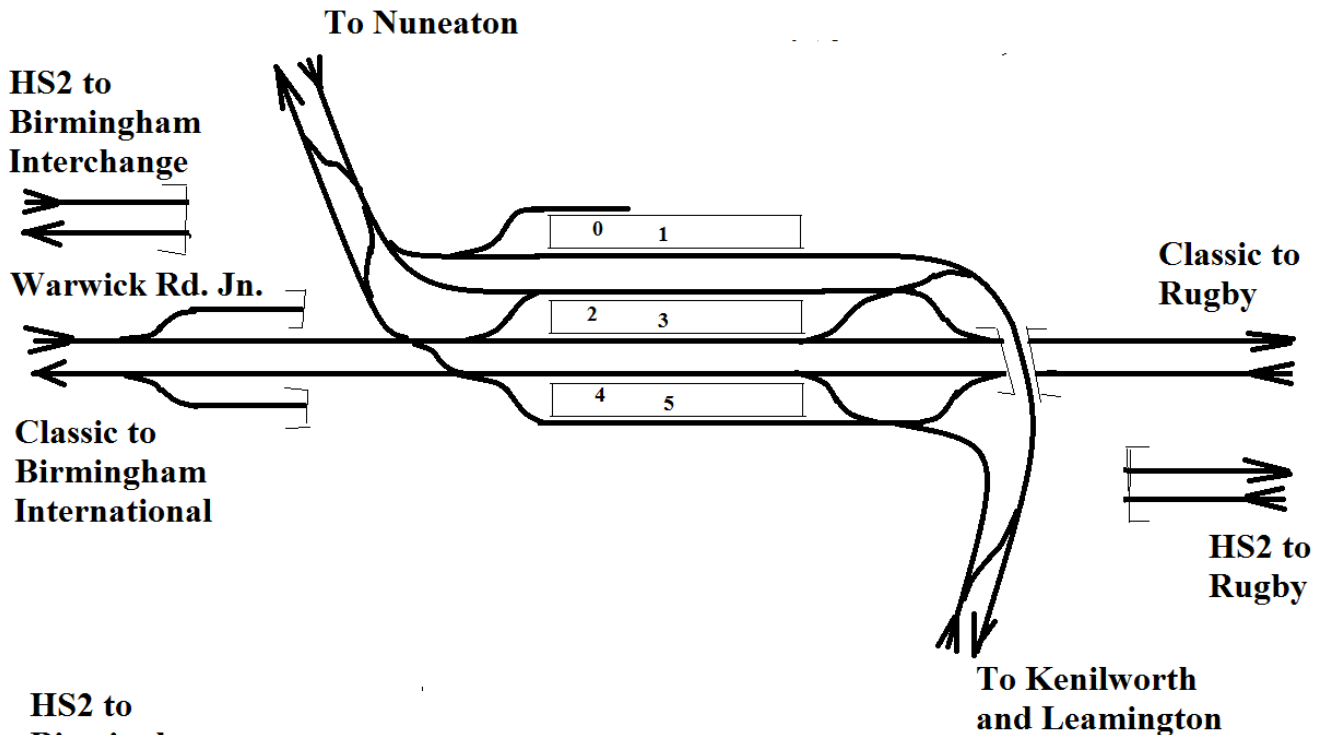
HS2-CV rejoins the route, but not the tracks, of HS2-orig at Mount Pleasant Junction, near Berkswell. Services on HS2-orig which stop at Birmingham Interchange, are, however able to switch to HS2-CV at Mount Pleasant North Junction, or join HS2-orig from HS2-CV at Mount Pleasant South Junction. By great good fortune, Mount Pleasant South Junction is just before the routes diverge (going south). HS2-CV occupies the outer two tracks of a 4-track, parallel arrangement. The 4-track section continues all the way to Streethay Junction, but over much of this section, where HS7 is also involved, there are effectively six tracks.

HS7 and HS2-CV have separate tracks, but with several connections between them. HS7 joins the route immediately south of Birmingham Interchange station. There are six tracks thence to Water Orton South Junction. There are scissors crossovers immediately south and north of Birmingham Interchange. Those to the south are for operational convenience, and not used in normal service, services switching between the outer pairs of tracks north of the station. The convention is that HS7 services use the two outermost platform faces, and HS2-CV the inner two. Services switch between tracks immediately north of the station, the arrangement being that services to and from Birmingham Curzon Street use the outermost of the six tracks, and those to and from Water Orton North Junction the inner tracks of the outer pairs.

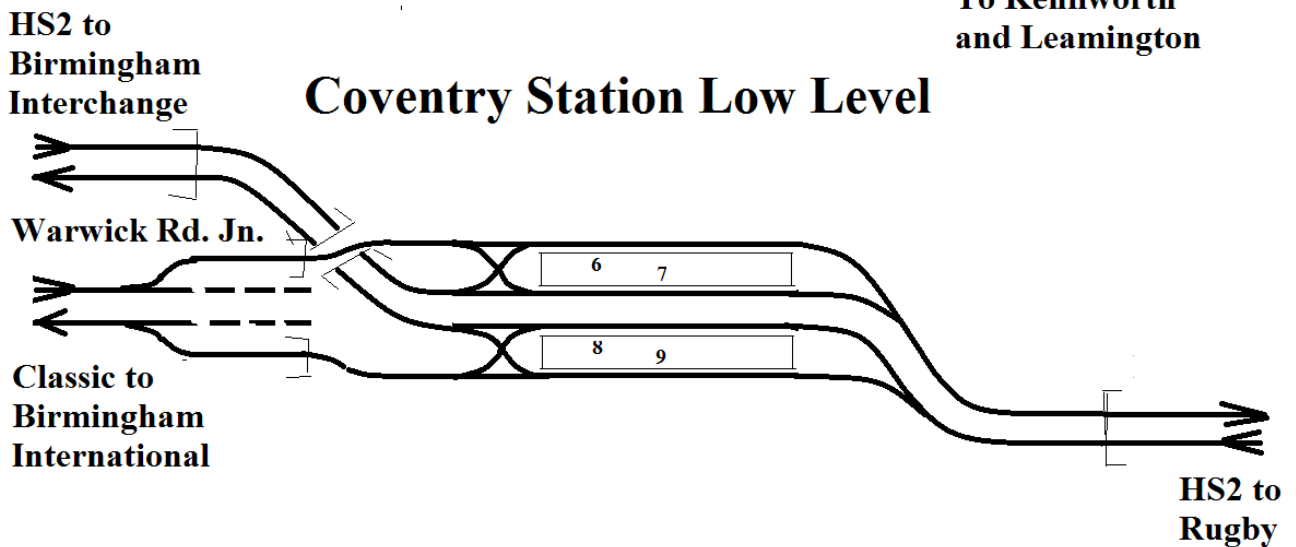
There are four tracks between Water Orton West Junction and Curzon Street, arranged as alternating pairs, the north pair for HS2 services and the south pair for HS7. Northbound HS7 services from Curzon Street do not make connection with HS2, but pass beneath the HS2 tracks and diverge from the alignment at Marston Junction (a route but not a track junction). There are connections at Water Orton North Junction from the HS2 to the HS7 tracks, to enable the HS7 services not calling at Curzon Street to regain the HS7 route.

There are several track junctions at Streethay. The HS2-CV tracks finally merge with those of HS2-orig, for services to the North West via Crewe. But, immediately before that, there is a connection between the HS2-CV tracks and the WCML at Handsacre Junction. This is used only by the CC service from Euston to Manchester via Stoke. Note that there is no connection from the HS-orig tracks to Handsacre Junction.

## Coventry Station, Ground Level



## Coventry Station Low Level



The above diagrams are intended to be largely self-explanatory.

The HS station is directly below the classic station, platforms 6, 7 directly below 2, 3 and 8, 9 below 4, 5, allowing stair, lift and escalator connections between them.

Platform 0 is for local services to Nuneaton. Platform 1 is reversible, and intended for services, in both directions, between Nuneaton and Leamington, perhaps to more distant destinations. It is possible for Nuneaton services to access the main lines, but this is not foreseen as normal.

It is expected that CC services will use platforms 6, 9 to ensure no conflict with GC-gauge services using 7, 8. The scissors crossovers at the west ends of these platforms are for operational convenience, but not used in normal service.