WHY ROUTE FUTURE FREIGHT TRAFFIC VIA DIGGLE?

There are several routes over the north Pennines of which that via Stalybridge and Huddersfield ('the Diggle route') is the one chosen by government for significant upgrade. In deciding how to route future heavy and intermodal freight traffic over these increasingly congested rail routes the following criteria have been considered and accepted into the current DfT/Network Rail work for Diggle (the Transpennine Route Upgrade - TRU) although it is noted that Network Rail has only currently been remitted to see what the add-on infrastructure costs/feasibility would be.

- The key stretch of the route - that between Ravensthorpe and the summit at Diggle - is a two track railway on a former four track formation allowing easier adding of infrastructure.

- The generous formation width allows for higher speed entry to and exit from long 'slow lines'/loops* and for these to be long enough to be of practical value in faster trains being able to pass slower passenger and freight trains. *known as 'dynamic loops'

- The route is the only transpennine route being addressed for electrification. Electrifying a route allows for hi-cube (W10/12) container gauge clearance at marginal/nil further cost.

- The route is the shortest between the main points of freight origin and its destination as well as directly feeding terminals via Manchester Victoria or Piccadilly.

- Two freight paths an hour have been identified in each direction (both capable of supporting either heavy bulk or lighter intermodal trains) but only one is planned for use by freight, leaving the one on the other half hour empty as a performance buffer.

- The additional track (at Huddersfield, Stalybridge and Marsden) which has been identified by the TOCs/FOCs but not yet adopted by Network Rail, would not be 'freight-only' but would benefit all users (vital given that the passenger PPM MAA needs to rise by no less than seven percentage points to meet the DfT's stated TRU output target)

- There are a few current Firm Rights for freight over the route which prevent the sought-for clockface passenger timetable from being operable. These may need to be adjusted however they are contracted in FOCs' Track Access Contracts up until December 2026.

- The Network Rail announcement (19.12.17) that all 750 freight locomotives would be fitted with ETCS 'by 2022' places freight in the vanguard of compatible trains via Diggle, a route now identified by Network Rail for early conversion to ETCS.

- DfT has identified, and is keen to include, benefits to the TRU business case that will arise from freight use.

Note 1 : The planned tonnage maxima for the freight trains is 2600t (bulk) and 1800t (intermodal) with the latter at up to 775m length. The heaviest trains would have two locomotives to allow higher velocity amongst the passenger traffic sharing the route. A summary is overleaf.

Note 2 : A separate Rail Freight Group paper "TRU Freight Requirements" covers commercial drivers for the increase in freight traffic and includes views from a wide spectrum of stakeholders

Eastbound

Farington Junction to Colne @		Gannow Junction to Hall Royd Junction ('Copy Pit' Route)		Rochdale to Heaton Lodge ('Calder Valley' Route)		Stalybridge to Huddersfield ('Diggle' Route)		
Locomotive Class	Authorised Tonnage	Locomotive Class	Authorised Tonnage	Locomotive Class	Authorised Tonnage	Locomotive Class	Authorised Tonnage	Notes
60	2290	60	1870	60	2575	60	3145	1
66	1955	66	1385	66	2519	66	2350	2
66 H	2230	66 H	1725	66 H	2519	66 H	2915	3
66/6	2355	66/6	1795	66/6	2645	66/6	3010	4
70	NA	70	NA	70	NA	70	NA	5

Westbound

Colne to Farington Junction @		Hall Royd Junction to Gannow Junction ('Copy Pit' Route)		Heaton Lodge to Rochdale ('Calder Valley' Route)		Huddersfield to Stalybridge ('Diggle' Route)		
Locomotive Class	Authorised Tonnage	Locomotive Class	Authorised Tonnage	Locomotive Class	Authorised Tonnage	Locomotive Class	Authorised Tonnage	Notes
60	3030	60	1795	60	3785	60	2080	1
66	2275	66	1325	66	2840	66	1955	2
66 H	2820	66 H	1655	66 H	3510	66 H	2030	3
66/6	2915	66/6	1720	66/6	3615	66/6	2140	4
70	NA	70	NA	70	NA	70	NA	5

Notes :

@ Tonnages in this left hand tabulation are for west of Colne. The two miles at 1 in 141 up from Skipton North Junction towards Elslack on the closed railway en route to Colne, whilst not as severe as the eastbound gradient up from Preston to Accrington, would reduce the tonnages shown here were the train coming from Skipton.

1. Class 60 is a bulk freight locomotive with maximum 60mph speed

2. Class 66 is the UK standard freight locomotive, 75mph maximum speed

3. '66 H' refers not to a type of locomotive but to the higher load which is authorised for Class 66 (only) on some routes at the Freight Operating Company's discretion. The higher tonnage will normally be in recognition that the ruling (steepest) gradients are relatively short in length, thus mitigating potential over-stressing of the engine unit.

4. Class 66/6 is a small sub-fleet of Class 66s with changed gearing which provides greater haulage capability though with lower maximum speed (65mph vice 75mph)

5. Class 70 is more powerful than Class 66 but there are as yet no published loads for them for the routes in question. 75mph maximum speed.

The alternative routes over the Pennines have the following adverse characteristics:

- Calder Valley: a longer route than Diggle and, key, not being electrified. Costs of gauge clearance for intermodal trains estimated by Network Rail as higher than Diggle route. Capacity limits due to passenger train service aspirations. Requires new loops at Castleton and possibly elsewhere. Has better westbound trailing tonnages than Diggle but other factors listed mitigate against route.
- Copy Pit: Severe haulage limits due to significant gradients particularly westbound. Shares part of non-gauge cleared route with Calder Valley. Traffic would have to pass via congested stretch of WCML to serve Liverpool and regional terminals in northwest.
- Colne: Closed though aspirations to re-open. Same WCML challenges as Copy Pit. Routes via Leeds West and no capacity there for the lengths of freight train required. Not gauge cleared.
- Hope Valley: Too far south for the traffic and anyway route full with a need to divert freight due to passenger aspirations and HS2 clash at Sheffield end. Not being electrified. Not gauge cleared.
- Woodhead: closed and tunnels re-used for national grid. Too far south.

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