



Heathrow Airport Ltd – Rail Timetable Planning Rules

TPR 2023

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Timetable Planning Rules

Final Principal and Final Proposal for Subsidiary Change Timetable 2023

Heathrow Airport Limited -
Rail

Version 4.0

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1 Introduction and General Notes

Heathrow Airport provide the Timetable Planning Rules document to Train Operators and other interested parties to set out the rules which are applicable to Access Requests for scheduling of train paths on the Heathrow Rail network. The Rules are determined as part of the Network Rail Western Route and are prepared; and subject to the same National Timetable Planning Rules document for the Western Route, which set out procedures to be followed and other nationally applicable rules.

Network Rail, on behalf of Heathrow Airport, will determine the contents of Timetable Planning Rules through consultation with Train Operators with the primary aim of achieving the optimal balance between access to both networks for train operations and performance robustness of the resulting train plan. This consultation is in line with Part D of the Heathrow Airport Ltd – Rail Network Code, and Train Operators have a right of appeal to Timetabling Dispute Panel against the contents of the Final Timetable Planning Rules.

Final Timetable Planning Rules are issued with timetable Access Request information before the commencement of the development period for the Principal Change timetable to which the Rules apply and cover a 12-month period. Revised Timetable Planning Rules are issued with timetable Access Request information before the commencement of the Subsidiary Change timetable development period and show changes applicable to the Subsidiary Change timetable periods which have been agreed since the issue of the annual Timetable Planning Rules.

Timetable Planning Rules may be changed only through this twice-yearly process or by the change procedure described in the National Timetable Planning Rules.

Train Operators' Access Requests for train paths must be compliant with Timetable Planning Rules. If a Train Operator wishes to submit an Access Request for a train path which is not compliant with Timetable Planning Rules, it should consult Heathrow Airport at Rail@heathrow.com and the Network Rail Capacity Planning team to establish whether an amendment to Timetable Planning Rules is likely to be agreed and, if appropriate, submit an amendment proposal which will be considered by HAL Rail in accordance with the Change Procedure set out in the Heathrow Network Code, Part D. The Timetable Planning Rules amendment proposal should be submitted to Heathrow Rail as early as possible and certainly no later than the time of submission of the Access Request. If the proposed change is likely to involve the calculation of new sectional running times or a physical investigation, then the Train Operator should liaise with Heathrow Rail to establish a realistic timescale for evaluation of the proposed change before submission of the Access Request.

1.1 Index of Routes

Information arranged on a line of route basis in this document is presented in the following order:

GW180	Heathrow Airport Junction to Heathrow Terminals 4 & 5
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1.2 Sectional Appendices and Rule Book

1.2.1 Sectional Appendix

The Sectional Appendix to the Working Timetable and Books of Rules and Regulations shall be used. The Sectional Appendix is the sole source of information regarding the following:

- Electrification limits refer to relevant Table 'A'
- Permissive Working refers to relevant Table 'A', then see below.
- Route Clearance refer to 'tab' associated with relevant Table 'A'

To identify the type of Permissive Working that applies at a given location refer to the appropriate Sectional Appendix Table A for that location. If there is authority for Permissive Working, this will appear in the Signaling and Remarks.

There are different authorities that depend upon the signaling and layout of the location. The following table identifies the types of Permissive Working that will appear in the Sectional Appendix.

Type	Description
PP	Permissive Working – full use for class 1, 2, 3 ECS, and 5 trains
PP – A	Permissive Working – Attaching and Detaching use only for class 1, 2, 3 ECS, and 5 trains,
PP – C	Permissive Working – Contingency use only for class 1, 2, 3 ECS, and 5 trains
PP – S	Permissive Working – Platform Sharing use only for class 1, 2, 3 ECS, and 5 trains

Source: Sectional Appendix – General Instructions – National – Explanation of Table A terms and symbols

1.2.2 Rule Book

The following Modules of the Rule Book GE/RT8000 affects all sections unless specified. The sections listed affect railway operations and train movements. The listed section does not apply to Train Planning directly, but its application will affect how trains operate, and it is for that reason the item appears here.

RULE BOOK MODULE	SECTION	NOTES
G1 General safety responsibilities and personal track safety for non-track workers	5.5 Using the phonetic alphabet;	Operational principles
OTM Working of on-track machines (OTM)	2.2 Before starting a journey	TPR Section 4.6
	5.6 Carrying out a running brake test	TPR Section 5.1.2
P1 Single line working	6.5 Warning anyone working on or near the line used for single line working	When planning Single Line Working
	9.3 Right-direction movements	
	9.4 Wrong-direction movements	
S1 Signals and indicators controlling train movements		Operational principles
SP Speeds	2.4 Differential permissible speed indicators	TPR Section 5.1.2
	2.5 Permissible speed indicators with letters	TPR Section 5.1.2
	2.6 Enhanced permissible speed (EPS) indicators	TPR Section 5.1.2
T11 Movement of engineering trains and on-track plant under T3 arrangements	3 Movements entering the possession	When planning trains entering possessions
	7 Instructing the driver or machine controller	When planning trains entering possessions
TW1 Preparation and movement of trains General	7.1 Authority and arrangements for movements (Hauling dead traction units)	Operational principles
Rule Book Handbook 5 Handsignalling Duties	Section 5.2 Entrance signal	When planning Temporary Block Working (TBW)
	5.3 Exit signal	When planning Temporary Block Working (TBW)
	5.4 Where TBW is divided into two sections	When planning Temporary Block Working (TBW)

1.3 Definitions

1.3.1 Train Classification

The list below is not an exhaustive one but is intended to give readers an understanding of some of the terminology as used for the purposes of this document.

If any term in Timetable Planning Rules is unclear please contact Heathrow Airport at Rail@heathrow.com

Train Classification

Classification	Description
1	Express passenger train; or Nominated postal or parcels train; or Breakdown or overhead line equipment train going to clear the line or returning from there (1Z99); or Traction unit going to assist a failed train (1Z99) Snow plough going to clear the line (1Z99)
2	Ordinary passenger train; or Breakdown or overhead line equipment train not going to clear the line (2Z99)
3	Empty coaching stock train if specially authorised ; or a Network Rail Infrastructure Monitoring Train (3Qxx)
5	Empty coaching stock train
9	Class 9 ordinary passenger trains (used by MTR Elizabeth line on HAL infrastructure)

Source: The Rule Book GE/RT8000/TW1 Preparation and Movement of Trains General Section 2
Classification and speed of trains

1.3.2 Days of Operation

The following abbreviations are used to identify the day or days that a train operates.

Abbreviation	Description
M	Monday
T	Tuesday
W	Wednesday
Th	Thursday
F	Friday
S	Saturday
Su	Sunday
EWD	Every Week Day (Monday to Saturday)
Daily	Every day - there must be a separate entry for Sundays due to Network Rail timetabling system design.
Suffixes	
O	Adding this indicates that the train will run only on that day or those days shown
X	Adding this indicates that the train will not run on that day or those days shown
General	
BHX	Denotes that this train does not run on a bank holiday

1.3.3 Traction and Rolling Stock

Abbreviation	Description
EMU	Any electric multiple unit
ECS	Empty Coaching Stock includes empty diesel and electric multiple units.

1.3.4 Line Codes

Abbreviation	Description
-	Default Line Code as indicated in Section 2.1
DH	Down Airport (Heathrow Airport Jn to T 1, 2, 3 and Down T5, Heathrow T1, 2, 3 to Heathrow T5 (both for Up direction working))
DHR	Down Airport Relief (Heathrow Airport Jn to Heathrow Tunnel Jn)
UH	Up Airport (Up T5, Heathrow T5 to T1, 2, 3 and Up Airport Heathrow T1, 2, 3 to Heathrow Tunnel Jn (both for Down direction working))

1.3.5 Activity and Other Codes

Abbreviation	Description
-D	Train stops to detach vehicles
-T	Train stops to attach and detach vehicles
-U	Train stops to attach vehicles
C	Train stops to change train crew
N	Stop not advertised to the public
OP	Train stops for other operating reasons
S	Trains for railway personnel only
TB	Train begins (Origin)
TF	Train finishes (Destination)

Activity Codes – Notes

1. Any passenger train that stops at a location automatically generates a T Activity unless it is suppressed.
2. If an Activity is required that removes the 'passenger stop' Activity (T, D, U and R), then the 'passenger stop' Activity must always appear in the first Activity field (e.g. T -D would be correct, -D T would not). This is because the National Rail Timetable (NRT) extract program only considers the first Activity field. If it does not find a 'passenger stop' Activity in the first field the time will not be extracted to appear in the NRT.
3. Up to 6 Activities may be shown for each event.
4. No two Activities may be duplicated at the same event.
- At any one event, the following groups are mutually exclusive:
 - a) D, U, T, N, S, TW, OP.
 - b) -D, -U, -T.
 - c) TB, TF.
 - d) KC, KE.
6. N, R, G, D and U are only valid with Train Categories XC, XD, XI, XX, XZ, OO, OW, OL, BS, BR and blank (i.e. 'advertised' services).
7. K, KC, KE, KF, KS are only valid with Train Categories starting X or O.
8. If TF is present then none of K, KC, KE, KF, KS can be present.
9. Activity T indicates that a train stops to pick up and set down. This normally refers to passengers. Activity -T indicates that the train stops to attach and detach vehicles. At any location where a 'stop' time is shown, TPS or a similar system will assume a default Activity is required unless otherwise specified. These default Activities are as follows: T for trains with a Train Category starting in X or O, OP for trains with a Train Category starting in Z or E, and -T for all other trains (but see below). The default Activity will be generated when the upload file is created.
10. If Activities U, D, N, R, OP, S, TW, -U or -D are specified then this overrides the defaults and only the specified Activities will be included in the upload file.

2 Route Description

2.1 Planning Geography

Heathrow Airport maintains the planning geography for Heathrow infrastructure and provides this to Network Rail to issue it to Train Operators using the BPlan system. BPlan data is to be regarded as the master geography and it is the responsibility of Train Operators, Heathrow Rail and nominated Network Rail users to ensure that data in their train planning systems reflects the master geography.

It is essential that all locations, times and full details such as platforms, running lines, activities, etc. comply fully with all of the following rules. All data used by a specifier must be that supplied by Network Rail: use of estimated times added or amended locally will cause the trains concerned to fail validation.

In order to avoid the creation of unnecessary journey legs and associated point-to-point timings, all passing times must conform to these rules.

Locations in bold type are mandatory timing points.

GW180 HEATHROW AIRPORT JUNCTION TO HEATHROW TERMINALS 4 & 5				
TIMING POINT	DOWN	UP	CODE	NOTES
Heathrow Airport Jn	ML RL URL	ML RL DML		<i>To/from Southall – GW103</i>
Stockley Junction	-	ML RL DH♥		Mandatory timing point for Up trains. ♥ Line Code only applies during reversible line working operation.
Heathrow Tunnel Junction	- ♣UH	- ♣DH ♣DHR		♣ Line codes are only required when running bi-directionally.
Heathrow Terminals 2 and 3	- ♥UH	- ♣DH		Platform detail must be shown ♥ Line code only required when running bi-directionally to T5
Heathrow Terminal 4	-	-		Platform detail must be shown.
Heathrow Terminal 5		- ♣DH		Platform detail must be shown ♣ Line code only required when running bi-directionally.

2.2 Route Opening Hours

Subject to constraints imposed by the Engineering Access Statement Route GW180 is open continuously.

3 **Electrification**

3.1 Electrification Limits

Limits of the 25 kV AC and 750V DC electrification systems are contained in Table A of the Sectional Appendix to the Working Timetables, issued by, Network Rail. Refer to Table A for the given location to identify the type of electrification that applies.

3.2 Electrification Supply Restrictions

Under normal conditions, the electrification power supplies will not place any restrictions on the use of approved electric traction. However, the Route Clearance sections of the Sectional Appendix to the Working Timetables, issued by, Network Rail do tabulate restrictions on the movement of electric trains. Refer to Table A and select Route Clearance.

Under maintenance conditions, certain sections of the electrified network may be blocked to electric traction. These restrictions are contained within the Network Rail and Heathrow Rail Engineering Access Statements for the appropriate year. Additional restrictions may also arise in connection with engineering possessions requested through the Engineering Access Statement amendment procedure.

4 **Rolling Stock Restrictions**

4.1 Locomotive Route Availability

For Route clearance, consultation in the first instance is with Heathrow Airport at Rail@heathrow.com . Once route clearance is achieved the details will be incorporated within the applicable Route Clearance table for the given location in Sectional Appendix to the Working Timetables, issued by Network Rail. Refer to Table A, and select Route Clearance.

4.2 Passenger Stock Restrictions

For Passenger Stock Restrictions, consultation in the first instance is with Heathrow Airport at Rail@heathrow.com . Once Passenger Stock Restrictions are agreed the details will be incorporated within the applicable Route Clearance table for the given location in Sectional Appendix to the Working Timetables, issued by Network Rail. Refer to Table A and select Route Clearance.

5 Running Times, Margins and Allowances

5.1 Sectional Running Times

The definition for Sectional Running Times (SRTs) is listed in Section 6.4 of the National TPRs published by Network Rail

5.1.1 Source of Current SRTs

The definitive catalogue of SRTs is BPlan.

5.1.2 Method of Calculation

Sectional running times (SRTs) are agreed between Train Operators, Heathrow Airport and Network Rail as part of the agreement of Timetable Planning Rules, normally they will not change from one timetable to the next. Network Rail on Heathrow's behalf will, however, re-calculate SRTs for particular train/route combinations in the following circumstances:

- Where a Train Operator anticipates using a train/route combination for which no suitable SRTs exist;
- Where Network Rail anticipates a change to route data, e.g. line speed changes;
- Where there is evidence that the SRTs in current use do not adequately represent real train performance;
- Where it is cost-effective to re-calculate all SRTs on a route at the same time as a re-calculation for a particular train type.

Timetable Planning Rules values can be calculated in a number of legitimate ways including:

- Through actual timing of trains
- Use of On Train Monitoring Recorder (OTMR) systems
- Use of computer system actual values
- Use of computer simulation tools
- By any other agreed methodology

On certain routes a 5% allowance is included in the calculation to take account of the lack of explicit engineering allowances in Timetable Planning Rules.

Heathrow Airport and Network Rail carries out rounding of the calculated SRTs to obtain values in half minutes. Rounding is carried out cumulatively over a route, with intermediate times being rounded down and arrival at final destination being rounded up. However, during this process the accumulative value of the SRTs should never be more than +/- half-a-minute from the accumulative value of the 'raw' data at important locations such as junctions and major stations.

Heathrow Rail and Network Rail carries out other adjustments to the rounded SRTs, e.g. to remove obvious anomalies where differences in rounding cause a train to have a longer SRT than that of another train with poorer performance. On intensively used, slow speed route sections, Heathrow Rail and Network Rail may adjust SRTs for different train types to show the same numeric values in order to make maximum use of available line capacity.

5.1.3 New and Revised Sectional Running Times

New and revised SRTs are agreed between Train Operators, Heathrow Rail and Network Rail on an individual basis and are supplied by the method agreed in each instance.

5.2 Headways

5.2.1 Headway Values

All times are in minutes. All routes are shown.

Track circuit block (TCB) signalling applies.

GW180 HEATHROW AIRPORT JUNCTION TO HEATHROW TERMINALS 4 & 5			
TIMING POINT	DOWN	UP	NOTES
Heathrow Airport Jn to Heathrow Tunnel Jn	2	2	
Heathrow Tunnel Jn to Heathrow Terminals 2-3	2	2	
Heathrow Terminals 2-3 to Heathrow Terminal 4	4	4	Heathrow Terminal 4 exclusive and Heathrow Terminals 2 and 3 exclusive single line
Heathrow Terminals 2-3 to Heathrow Terminal 5	2	2	

5.3 Junction Margins and Station Planning Rules

All times shown are in minutes. Where adjustments to sectional running times are shown, the value must be added to the normal SRTs shown in B Plan. Negative adjustments are specially identified.

Minimum station allowances are the minimum practical for the particular type of stock. These are shown with exceptions being listed by line of route where applicable.

STANDARD VALUES – MINIMUM

Attachment of Units EMU (345, 387)	7 Minutes
Connectional Allowance	5 Minutes

STANDARD VALUES – DETACHMENTS OF UNITS

EMU (345, 387)	7 Minutes
Reversal – EMU (345,387)	5 Minutes

GW180 HEATHROW AIRPORT JUNCTION TO HEATHROW TERMINALS 4 & 5			
Not Network Rail property from 12m 30c (tunnel portal), but controlled by Thames Valley Signaling Centre (TVSC)			
Heathrow Tunnel Junction			
adj			
Junction Margin	2		
Adjustment to sectional running times (shown approaching this location)			
Movement	Reason	T/Load	Value
Down trains crossing from the Down Airport to the Up Airport	Approach Control	345, 387	{1}

Heathrow Terminals 2 and 3	
Connectional Allowance	2 Minutes
Dwell Time	
EMU (345, 387)	2 Minutes
Platform Re-occupation	

Heathrow Terminals 2 and 3		
Platform 1 or 2, same direction	2	
Platform 1 or 2, depart to Terminal 5 via DH/arrive from Terminal 4	3½	
Platform 1, depart to Terminal 4/arrive from Terminal 5 via DH	3½	
Platform 2 only, depart to Terminal 4 or 5 via DH/arrive from Terminal 5 via UH	2	
Turnaround allowances		
	345, 387	345, 387
From Paddington	7	
From Terminal 4 or 5		7
Reversal		
EMU 8 or 9 cars	7	

Heathrow Terminal 4		
Turnaround allowances		
	345, 387	345, 387
From Paddington	7	
From Terminal 5 or Terminals 2,3		7
Platform End Conflict Margin		
First Movement	Second Movement	Margin
Down arrival in Platform 2	Up departure from Platform 1	0
Down arrival in Platform 1	Up departure from Platform 2	0

Heathrow Terminal 5			
Turnround allowances			
	345, 387	345, 387	345, 387
From Paddington	7		
From Terminal 4 or Terminals 2,3		7	5
Platform Re-occupation			
	2		
Platform End Conflict Margin			

First Movement	Second Movement	Margin
Up departure from Platform 3	Down arrival into Platform 4	2

5.4 Platform Lengths

The table below shows the maximum length of train that may use each of the platforms at the following passenger stations. All lengths are in meters. The quoted lengths are the usable lengths for passenger sliding doors from ramp to ramp unless specified. The measurements take no account of the need for signal sighting. Trains longer than the quoted lengths will not be accepted.

STATION	PLATFORM	USABLE LENGTH	NOTES
Heathrow Terminal 2,3	1 (Down)	204	Trains longer than quoted length will not be accepted by Heathrow Airport
Heathrow Terminal 2,3	2 (Up)	204	
Heathrow Terminal 4	1 & 2	200	
Heathrow Terminal 5	3 & 4	217	

5.5 Timing Allowances

All allowances shown are in minutes.

SX Daytime allowances apply at all times except where specified differently in Sections 5.5.2, 5.5.3, 5.5.4, 5.5.5 and 5.5.6

All allowances are indicative for the Final Principle Rules and are subject to change.

E refers to engineering allowance, **P** refers to performance allowances.

5.5.1 SX Daytime (See routes for applicable times)

GW180 HEATHROW AIRPORT JUNCTION TO HEATHROW TERMINALS 4 & 5					
Timing Section	Type				Remarks
Down – Daily					
Approaching Heathrow Tunnel Junction	E	1			

6 Timetabling Considerations

6.1 Advertised and Working Times

It is not permissible for trains to be specified to be advertised to arrive before or depart after the booked times stated in the working timetable (WTT).

It is permissible for trains to be specified to be advertised to depart before the booked times stated in the working timetable in the following circumstances;

- i. Where the WTT departure time is delayed to achieve the required headway behind a preceding train or margin following a conflicting move.
- ii. As an aid to punctual departure where this practice has been agreed between the Train Operator and Network Rail.

By agreement between the Train Operator, Heathrow Rail and Network Rail, trains may be specified to be advertised to arrive after the booked times stated in the WTT. This agreement is used instead of engineering/performance allowances.

6.2 Timing of Light Locomotives

It is a general principle that all light locomotive movements will be timed.

6.3 Two-Track Timetable Railway

For the section of line between Ladbroke Grove and Heathrow Tunnel Jn the timetable can be planned such that it operates over two lines only. This may affect the running times on Heathrow infrastructure. The times for this are shown in the Network Rail Engineering Access Statement.

Additional Timing Loads for “Two - Track timetable” London Paddington to Heathrow Tunnel Jn.

EMU (2T)

These contain Relief Line Sectional Running Times (SRTs), which can be line-coded ML or RL, without corrupting the existing differential four-track SRTs and should be used for all trains, which run during the weeknight and weekend engineering periods defined in Engineering Access Statement. These trains should be pathed for 2-track operation.