	Level Two Standard
	C/OP/OS/05/2002
	November 2013

# HS1 Sectional Appendix

## Front sheet

The HS1 Sectional Appendix is being completely re-written and updated in a modular format as follows:

**A – Route information** – (Published in May 2013).

**B – General instructions** – (Not used).

**C – Local instructions** – (Refer to parts 1 to 20 of this appendix).

**D – Interface instructions** – (Refer to parts 1 to 20 of this appendix).

**E – TOC and rolling stock specific instructions** – (Not used)

**F – Forms.** - Divided into five separate parts:

- **Part A – Forms used in connection with train working** (Published November 2013)
- **Part B – Forms used in response to/following an incident** (Published May 2013)
- **Part C – Forms used in connection with engineering work** - (Published May 2013)
- **Part D – Forms used in connection with train working in the HS1/Eurotunnel interface at Cheriton** (Published May 2013)
- **Part E – Forms used between the AFC and adjacent infrastructure managers' control centre** – (Not used).

Updated documents relating to this re-issue of the sectional appendix are listed on the next page:

<b>C/OP/OS/05/2002</b>	<b>HS1 Sectional Appendix</b>
Front sheet	Dated November 2013 (CCMS 9100748)
Module A	Route Information, dated May 2013 (CCMS 8976486)
Module F	Forms, dated May 2013 (CCMS 8979650)
Module F, Part A	Forms used in connection with train working, dated November 2013 (CCMS 63838797)
Module F, Part B	Forms used in response to/following an incident, dated May 2013 (CCMS 8232844)
Module F, Part C	Forms used in connection with engineering work, dated May 2013 (CCMS 8232844)
Module F, Part D	Forms used in connection with train working in the HS1/Eurotunnel interface at Cheriton, dated May 2013 (CCMS 8232844)
Parts 1 - 20	Dated May 2013 (CCMS 9100747)
Part 16d	Local Instructions – Ashford West and East chords, dated July 2003. (CCMS 2413343)
Part 16f	Local Instructions – Dollands Moor freight chord, dated July 2003. (CCMS 2413341)
Part 16g	Local Instructions – CTRL/Eurotunnel/Network Rail interface at Cheriton, dated June 2003. (CCMS 2413340)
<b>C/OP/OS/05/2005</b>	Isolation of the OHLE Procedures Eurotunnel/CTRL/Network Rail Interfaces, dated July 2004. (CCMS 2421911)
<b>C/OP/OS/05/2006</b>	Isolation of the OHLE Procedures CTRL/Network Rail Interfaces, dated February 2005. (CCMS 2377568)
<b>C/OP/OS/05/2007</b>	Procedures for taking possessions CTRL/Network Rail Interfaces, dated March 2005. (CCMS 2377569)
<b>C/OP/OS/05/2008</b>	Interface procedures between CTRL and EUKL for the Stratford/Temple Mills International depot link line, dated June 2007. (CCMS 4141784)
<b>C/02//OS/05/2030</b>	Procedures for taking isolations of the traction power supply at the HS1 (section 2) / Network Rail interface dated November 2013 (CCMS 64128583) – <u>Supersedes C/OP/OS/05/2010, dated June 2007</u>
<b>C/OP/OS/05/2011</b>	Procedures for taking possessions CTRL/Network Rail Interfaces on the North Kent Line connection, dated November 2008. (CCMS 8066465).
<b>C/OP/OS/05/2012</b>	Procedures for taking possessions CTRL/Network Rail Interface on the East Coast Main Line connection, dated September 2007. (CCMS 5231023).
<b>C/OP/OS/05/2013</b>	Procedures for taking possessions CTRL/Network Rail Interfaces on the Ripple Lane chords, dated July 2008. (CCMS 6298511).
<b>C/OP/OS/05/2014</b>	Procedures for taking possessions CTRL/Network Rail Interfaces on the North London Line connection and Silo Curve, dated July 2008. (CCMS 7259448).
<b>C/OP/OS/05/2018</b>	Procedures for taking isolations of the AC traction power supply at the HS1/Network Rail interfaces near St. Pancras International station, dated November 2013. (CCMS 63221435)

Prepared by



.....  
**Stephane Riverain**  
**Operations Standards Manager, Network Rail (High Speed) Ltd.**

Authorised By:




.....  
**Simon Lejeune**  
**Head of High Speed Operations, Network Rail (High Speed) Ltd.**

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	HS1 Level Two Standard
	C/OP/OS/05/2002
	May 2013

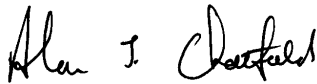
# HS1 Sectional Appendix (Previously the CTRL Sectional Appendix)

## Module A

### Route information

This module gives the route information for HS1 for use by drivers (and others). It amends Module A of the CTRL Sectional Appendix, dated March 2012.

Prepared by



.....  
**Alan Chatfield**  
**Operations Standards Manager, Network Rail (High Speed) Ltd.**

Authorised by:



.....  
**Simon Lejeune**  
**Head of High Speed Operations, Network Rail (CTRL) Ltd.**

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(CCMS 8976486)

## Table of Contents

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|----------------------------|------------------|
| <b>1. Table A</b>          | Pages A4 to A26  |
| <b>2. Gradient profile</b> | Pages A27 to A36 |

<b>REVISION HISTORY</b>	
December 2008	Initial issue. Replaces Part 1 of the CTRL Sectional Appendix, dated July 2007
June 2009	Table A diagrams updated as a result of the commencement of Southeastern commercial services. Details of signals equipped with AWS equipment included.
December 2009	Table A diagrams further updated as a result of the commencement of Southeastern commercial services.
January 2012	Table A diagrams updated as a result of the commencement of freight services and the transfer of the signalling control of the North London Line from Camden Road Jn signal box to Upminster (NLL) workstation and the transfer of AC electrical control from Rugby Electrical Control Room to Romford Electrical Control Room.
May 2013	Table A diagrams updated to refer to HS1 where appropriate and that the signalling on the North London Line Connection and Silo Curve is commissioned.

Amended Table A pages are indicated by a side-line in the margin. Details of the amendments are explained on page A3.

<b>Page</b>	<b>Line Seq</b>	<b>Amendment</b>
A7	001	Platforms 5-10 to be used by class 9 international services only (even in emergencies).
A8	002	North London Line (NLL) Connection and Silo Curve now available for use. Class 4 & 6 freight trains permitted to use the North London Line Connection.
A9	003	North London Line (NLL) Connection now available for use.
A11	005	Platforms 1 & 4 at Stratford not open for public use except in emergencies.
A26	020	Addition of Dollands Moor Yard Jn. Junction Up Fast/Up CTRL and Junction Down CTRL/Down Fast amended to read: Cheriton Up CTRL Jn and Cheriton Down CTRL Jn respectively. CTRL/Eurotunnel Boundary amended to read: HS1/Eurotunnel Maintenance Boundary.

## Explanation of Table A terms and symbols

### General

The running lines of HS1 are represented in diagrammatic format. All information is shown with the 'Down' direction being down the page and the 'Up' direction being up the page, unless indicated otherwise. The Line of Route Reference (LOR) and appropriate Engineer's Line Reference(s) (ELR) is shown at the top of each page.

The main HS1 route is shown continuous from St. Pancras International station on page A7 through to the HS1/Eurotunnel interface on page A26. The various connecting and chord lines are shown adjacent to the main route on the appropriate pages.

All HS1 running lines are bi-directional and equipped with Overhead Line Equipment (OHLE) at 25,000 kV AC, unless indicated otherwise.

### Location column

Station names are shown thus: "**ST. PANCRAS INTERNATIONAL**"

Tunnel and viaduct names are shown thus: "PEPPER HILL TUNNEL" together with the length in metres.

Other locations, points of reference, etc. are shown thus: "Regents Canal Jn."

Locations shown thus: (Cedar Jn.) or [Signal AF041] are not on the main HS1 route but on a connecting or chord line, as shown either in the Location or Remarks column.

Overhead Line Equipment Neutral Section locations are shown thus: "OHNS".

Vehicle Health Monitoring Equipment locations are shown thus: "VHME".

A numeric symbol, e.g. '①' against a location indicates that additional information can be found in the Remarks column.

### Kilometerage (Km) column

Distances on the main HS1 route are shown in kilometres and metres based on a '0' datum point at St. Pancras International station. Kilometerages shown thus (20.253) or [0.643] are not on the main HS1 route but on a connecting or chord line, as indicated either in the Location or Remarks column.

Where the kilometerage datum point changes at a junction, the entry is shown thus:

$$\frac{0.901}{(0.000)}$$

### Running lines column

This contains a diagrammatic representation of all running lines and associated connections, but is not to scale.

The symbols are explained in diagrammatic format on page A6.

The maximum permitted speed for each running line is shown in kilometres per hour (km/h).

In those areas controlled by the cab signalling system, the maximum permitted speed is displayed to the driver by the indication in the driving cab. This may be lower than the maximum permitted speed shown in this Table A. The maximum permitted speed displayed to the driver by the cab signalling system takes into account the physical characteristics of the traction unit concerned, e.g. suspension, braking rate, acceleration rate, length of train, etc. The driver must **not** exceed the speed displayed by the cab signalling indication, even though this Table A may show a higher maximum permitted speed.

In those areas controlled by the lineside colour light signalling system, the maximum permitted speed is displayed to the driver by means of the Permissible Speed Indicators shown in Module S3 of the HS1 Rule Book. At those locations that interface with Network Rail, the Permissible Speed Indicators display the maximum permitted speed in both km/h and mph. These dual speeds are shown in this Table A as follows:

40  
(25)  
(mph)

The location where the maximum permitted speed changes is indicated by a \* symbol, and the kilometrage shown in the Km column with a further \* symbol.

Lines controlled by an adjacent infrastructure manager are shown for information purposes only. For full details, refer to the documentation of the infrastructure manager concerned. Lines controlled by Network Rail have the appropriate Table A page in the Network Rail Sectional Appendix referenced.

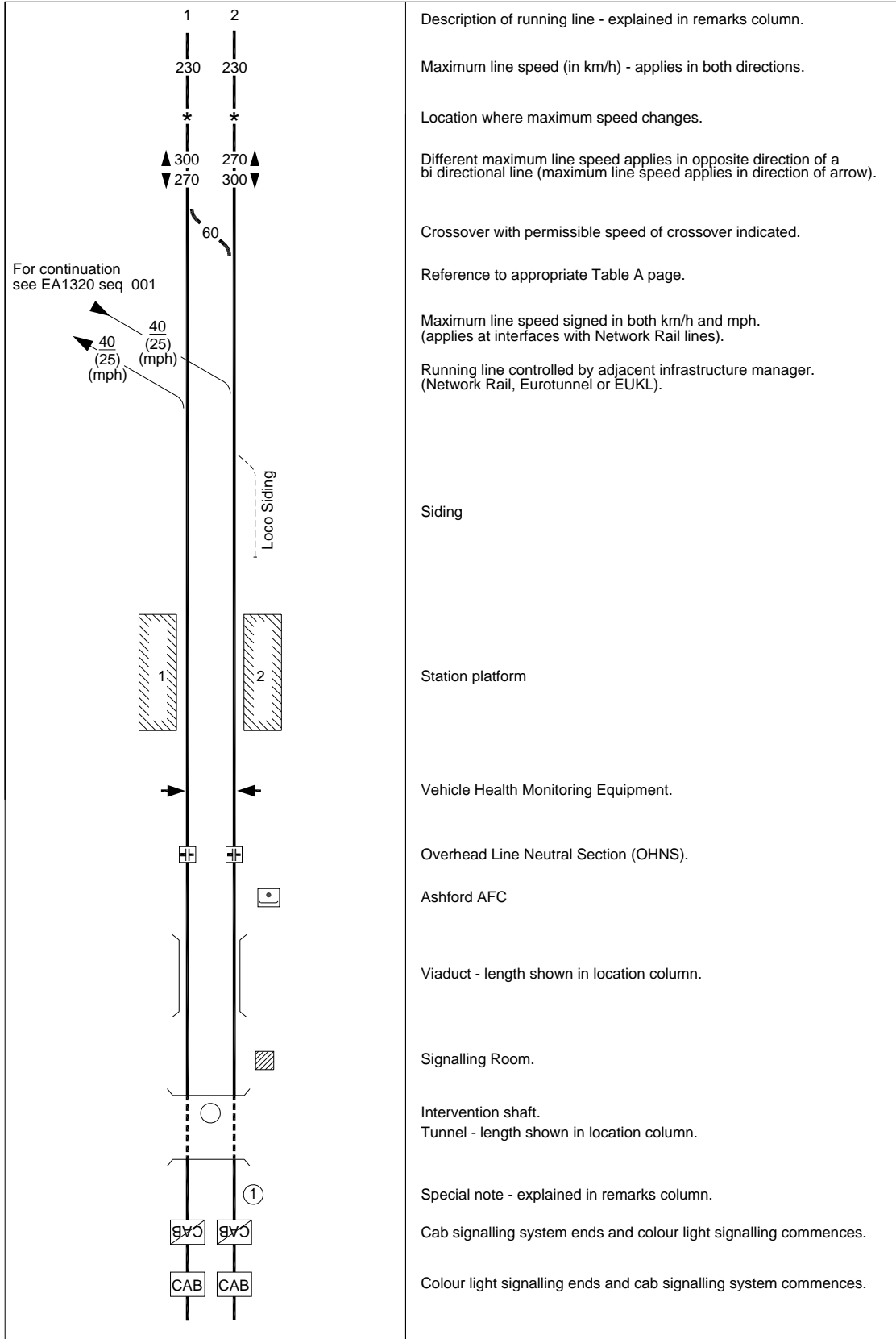
### Remarks column

The remarks column contains the following information on each page:

- Controlling signalling centre plus mode of signalling.
- Type of electrification plus electrical control responsible (AC = 25,000v AC OHLE or OLE) (DC = 750v conductor rail, where applicable).
- Descriptions of running lines.

And, where appropriate:

- Restrictions on the routing of trains.
- Special authorities.
- Reference to other modules of this Sectional Appendix, where more detailed information may be obtained.
- Other information.



LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	001	St Pancras International to Eurotunnel Interface	TRL1 RDO1	HS1	01/05/13
Location	Km	Running lines		Remarks	
<b>ST PANCRAS INTERNATIONAL</b> Platform 5-10 buffer stops  Limit of Barlow train shed Platform 11-13 buffer stops  Platform 5-10 limits Platform 11-13 limits	0 00			HS1 Colour light signalling Ashford AFC Electrification AC: Ashford AFC CSR 	
	0 214 0 228			Midland Mainline (MML) Signalling West Hampstead SB Electrification AC: York	
Platform 5-10 limits Platform 11-13 limits	0 433 0 523			Platforms 5-10 To be used by class 9 International services only.  Platforms 11-13 To be used by classes 1, 2 & 5 domestic services only. Permissive working authorised.	
Regents Canal Jn	0 790	40 40 40 (25) (mph) 3  4 5 For continuation see LN3201 Seq 1		Works trains/OTMs/OTPs are authorised to work on all platform lines subject to the restrictions shown in Module C of this Sectional Appendix.  Class 4 & 6 freight trains are prohibited from all HS1 lines in this area.  1 CTRL Relief 2 Up CTRL 3 Down CTRL 4 Up Fast (MML) 5 Down Fast (MML)	

LOR	Seq.	Line of Route Description	ELR				Route	Last Updated		
SO400	002	St Pancras International to Eurotunnel Interface	TRL1	ISL1	ISL2	TRL9	HS1	01/05/13		
Location		Km	Running lines				Remarks			
Regents Canal Jn		0 790 *					<b>HS1</b> Colour light signalling Ashford AFC Electrification AC: Ashford AFC <div style="float: right; border: 1px solid black; padding: 2px;">                     CSR                      92                 </div>			
⑤ Signal AF019 - Up CTRL		0 849					Midland Mainline (MML)		Signalling West Hampstead SB Electrification AC: York	
⑤ Signal AF017 - Down CTRL		0 859					⑤ Telephones not provided at these signals (Rule Book, Module S3, Clause 2.1.3 refers)		Kilometrages shown ( ) are on the Silo Curve. Locations and kilometrages shown [ ] are on the NLL Connection.	
OHNS ECML Connection		0 901 (0 000) 0 973					Cedar Jn ① Camden Road Incline Jn ② and Camden Road Central Jn ③ are controlled by Upminster (NLL) Workstation.		NLL Connection, Silo Curve & ECML Connection not in regular use. Instructions shown in Module D of this Sectional Appendix to be applied.	
(Signal AF026 - Silo Curve)		(0 175)					Note NLL Connection is Up Direction from Cedar Jn ① to Camden Road Incline Jn,		④ AWS equipment provided at these signals.	
Signal AF028 - ECML Connection		1 080					AC electrification on North London Incline and ECML Connection controlled by Romford ECO.		Class 4 & 6 Freight Trains are prohibited from all HS1 lines in this area, with the exception of the NLL Connection.	
④ (Signal NL1119 - Silo Curve)		(0 195)					1 CTRL Relief 2 Up CTRL 3 Down CTRL 4 East Coast Mainline (ECML) Connection 5 North London Line (NLL) Connection 6 North London Incline 7 Up North London Line (NLL) 8 Down North London Line (NLL) 9 Up & Down Slow (MML) 10 Up Fast (MML) 11 Down Fast (MML)			
④ [Signal NL1117 - NLL Connection]		[0 461]								
① (Cedar Jn)		(0 305)								
[OHNS NLL Connection]		[0 522] [0 643]								
② [Camden Road Incline Jn]		[0 705]								



LOR	Seq.	Line of Route Description	ELR		Route	Last Updated		
SO400	003	St Pancras International to Eurotunnel Interface	TRL1	TRL2	TRL9	ISL1	HS1	01/05/13
Location	Km	Running lines			Remarks			
	1 250 *	<p>The diagram shows a vertical track layout. At the top, tracks 1, 2, 3, 4, and 5 are shown. Track 1 has a speed limit of 80 mph. Track 2 has a speed limit of 40 (25) mph. Track 3 has a speed limit of 80 mph. Track 4 has a speed limit of 40 (25) mph. Track 5 is a single line. Tracks 10 and 11 are shown as single lines. A hatched area is shown between tracks 1 and 2. A signal box is shown between tracks 2 and 3. A signal box is shown between tracks 4 and 5. A signal box is shown between tracks 6 and 7. A signal box is shown between tracks 8 and 9. A signal box is shown between tracks 10 and 11. A signal box is shown between tracks 1 and 2. A signal box is shown between tracks 3 and 4. A signal box is shown between tracks 5 and 6. A signal box is shown between tracks 7 and 8. A signal box is shown between tracks 9 and 10. A signal box is shown between tracks 11 and 12. A signal box is shown between tracks 1 and 2. A signal box is shown between tracks 3 and 4. A signal box is shown between tracks 5 and 6. A signal box is shown between tracks 7 and 8. A signal box is shown between tracks 9 and 10. A signal box is shown between tracks 11 and 12.</p>			<p><b>HS1</b></p> <p>Colour light signalling Ashford AFC Electrification AC: Ashford AFC</p> <p><b>East Coast Mainline (ECML)</b></p> <p>Signalling Kings Cross SB Electrification AC: York</p> <p><b>North London Line (NLL)</b></p> <p>Signalling Upminster (NLL) Workstation Electrification AC: Romford DC: Romford</p> <p>① York Way North Jn Is controlled by Kings Cross signal box</p> <p>② AWS equipment provided at these signals.</p> <p>Locations and kilometers shown ( ) are on the ECML Connection. Kilometers shown [ ] are on the NLL Connection.</p> <p>NLL Connection &amp; ECML Connection not in regular use. Instructions shown in Module D of this Sectional Appendix to be applied.</p> <p>AC electrification on North London Incline and ECML Connection controlled by Romford ECO.</p> <p>1 Up CTRL (line parity 1) 2 North London Line (NLL) Connection 3 Down CTRL (line parity 2) 4 East Coast Main Line (ECML) Connection 5 North London Incline 6 No 1 Slow (ECML) 7 No 2 Slow (ECML) 8 No 1 Fast (ECML) 9 No 2 Fast (ECML) 10 Down North London Line (NLL) 11 Up North London Line (NLL)</p>			
② (Signal K259 - ECML connection)	(1 265)							
② [Signal AF041 - NLL Connection]	[0 153]							
St Pancras Signalling Room (SR10)	1 350							
① (York Way North Jn)	(1 382)							
York Way South Jn	1 409 [0 000]							
ECML Bridge (covered) portal	1 425							
Signal AF047 - Up Line	1 501							
Signal AF045 - Down Line	1 522							
Gifford Street Portal - Up Line (signal AF048 + CAB)	1 540							
Gifford Street Portal - Down Line (signal AF046 + CAB)	1 562							
LONDON TUNNEL 1 (7538m)	1 600 *							

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	004	St Pancras International to Eurotunnel Interface	TRL2	HS1	01/05/13
Location		Km	Running lines		Remarks
<del>CB</del> boards - both lines ① AWS boards ① <del>CB</del> boards - both lines Corsica Street Emergency Response Location (ERL) OHNS - both lines  Corsica Street Intervention Shaft  LONDON TUNNEL 1 (7538m)  Graham Road Intervention Shaft Graham Road Emergency Response Location (ERL)   Stratford Portal Stratford International West Jn Stratford Signalling Room (SR12)		1 830 * 1 990 2 095 2 255 2 686 2 950 3 059  3 130  4 386 *  5 897 5 973 6 373   9 078 9 095 9 135   9 381			HS1 TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC  High Meads Loop Signalling Liverpool Street IECC Electrification AC: Romford  ① Applicable to trains routed to/from the North London Line Connection at York Way South Jn. (See Module C of this Sectional Appendix)
			1 Up CTRL (line party 1) 2 Down CTRL (line party 2) 3 Up International (line party 1) 4 Up RDO (line party 1) 5 Temple Mills Link Line (line party 2) 6 Down RDO (line party 2) 7 Down International (line party 2) 8 Down High Meads Loop 9 Up High Meads Loop		CSR 

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	005	St Pancras International to Eurotunnel Interface	TRL2 TMD1	HS1	01/05/13
Location		Km	Running lines	Remarks	
Platform 2 & 3 limits		9 381		<p>HS1</p> <p>TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC</p> <p>Temple Mills Lines</p> <p>Signalling Liverpool Street IECC Electrification AC: Romford</p> <p>Platforms 2 &amp; 3 Are to be used by classes 1, 2 &amp; 5 domestic services only. Class 9 international services may be routed through these platforms (see Module C of this Sectional Appendix). Class 4 &amp; 6 freight trains are prohibited Platforms 1 &amp; 4 are not open for public use except in emergencies (see Module C of this Sectional Appendix). ② Telephones are not provided at these markers (Rule Book, Module S2, Clause 3.2.4 refers)</p> <p>Temple Mills Link Line Locations and kilometerages shown ( ) are on the Temple Mills Link Line. Trains conveying passengers are prohibited from entering Temple Mills International Depot. (this does not include EIL staff travelling as pass) Temple Mills International Depot is controlled by the EIL Operations Controller - See EIL Rule Book, Section 6, ① Hidden Marker AF718 - refer to Module D of this Sectional Appendix.</p> <p>1 Up CTRL (line parity 1) 2 Down CTRL (line parity 2) 3 Up International (line parity 1) 4 Up RDO (line parity 1) 5 Temple Mills Link Line (line parity 2) 6 Down RDO (line parity 2) 7 Down International (line parity 2) 8 Down Temple Mills Line 9 Up Temple Mills Line</p>	
Platform 1 & 4 limits		9 426			
<b>STRATFORD INTERNATIONAL</b>		9 631			
② Marker AF073/AF079 - Down/Up CTRL		9 668			
Platform 2 & 3 limits		9 671			
② Marker AF070/AF076 - Up/Down CTRL		9 708			
(Temple Mills Tunnel Portal)		9 834			
Platform 1 & 4 limits		9 836			
(TEMPLE MILLS TUNNEL) (300m)					
Stratford International East Jn		10 130			
(Temple Mills Tunnel Portal)		(10 134)			
(Hidden marker AF718) ①		(10 155)			
CAB board		(10 311)			
CAB board		(10 497)*			
(Signal TM5)		(10 551)*			

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	006	St Pancras International to Eurotunnel Interface	TRL2 TRL4	HS1	01/05/13
Location	Km	Running lines	Remarks		
Stratford Portal	10 150		<p>HS1</p> <p>TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC</p> <p>CSR 92</p> <p>Tilbury Lines</p> <p>Signalling Upminster IECC (UR) Electrification AC; Romford</p> <p>CSR 03</p> <p>Locations and kilometerages shown ( ) are on the Ripple Lane Chords.</p> <p>Trains conveying passengers are prohibited from entering Ripple Lane Exchange Sidings except in emergencies.</p> <p>Ripple Lane Exchange Sidings and FMC connecting line are controlled by Upminster IECC (UR). Electrification (AC) is controlled by Romford ECO.</p> <p>① Hidden Markers AF095/AF101 - refer to Module D of this Sectional Appendix.</p> <p>② AWS equipment provided at these signals.</p> <p>1 Up CTRL (line party 1) 2 Down CTRL (line party 2) 3 Up Tilbury Main 4 Down Tilbury Main 5 FMC connecting line</p>		
Woodgrange Road Emergency Response Location (ERL)	11 451 11 790				
Woodgrange Road Intervention Shaft	11 897				
Barrington Road Emergency Response Location (ERL)	14 361 14 764				
Barrington Road Intervention Shaft	14 827				
LONDON TUNNEL 2 (10120m)					
Wayside Intervention Shaft	17 769				
Wayside Emergency Response Location (ERL)	17 875 18 250				
② (Signal UR834 + CAB - Down chord)	(20 071)				
Ripple Lane Portal Intervention Shaft	20 081				
CAB board - Down chord	(20 200)*				
Dagenham Signalling Room (SR13)	20 200				
② (Signal UR832 + CAB - Up chord)	(20 253)				
Ripple Lane Portal	20 270				
(OHNS - Down chord)	(20 300)*				
CAB board - Up chord	(20 394)*				
(Hidden Marker AF095 - Down chord) ①	(20 482)				
(OHNS - Up chord)	(20 744)*				
Dagenham Junction - Down line	20 829				
(Hidden Marker AF101 - Up chord) ①	21 186				
Dagenham Junction - Up line	21 699				

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	007	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location		Km	Running lines		Remarks
London End		23 541			<b>HS1</b> TVM430 cab signalling Ashford AFC Electrification AC; Ashford AFC
RAINHAM CREEK V/aduct (529m)					<b>CSR</b> 
Brussels End		24 070			
Wheel Impact Detector (WID) - both lines		24 447			
Wennington Crossovers		25 585 25 858			
Wennington Signalling Room (SR14)		25 940			
		26 021 26 294			
London End		27 215			
AVELEY V/aduct (679m)					
Brussels End		27 894			
VHME - Down CTRL VHME - Up CTRL		29 723 29 739			
					1 Up CTRL (line partly 1) 2 Up CTRL (line partly 2) 3 Up Tilbury Main 4 Down Tilbury Main

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	008	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location	Km	Running lines		Remarks	
London End	30 550	<p>Manor Sidings</p> <p>For continuation see EA1390 Seq 4</p>		<b>HS1</b> TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC <div style="float: right; border: 1px solid black; padding: 2px;">                         CSR  <span style="border: 1px solid black; padding: 2px;">92</span> </div>	
THURROCK Viaduct (1024m)				<b>Tilbury Lines</b> Signalling Upminster IECC Electrification AC: Romford	
Brussels End	31 574				
Essex Portal	32 060				
Essex Portal Intervention Shaft	32 272				
THAMES Tunnel (3115m)					
Kent Portal (Intervention location)	35 175				
				1 Up CTRL (line party 1) 2 Down CTRL (line party 2) 3 Up Tilbury Main 4 Down Tilbury Main 5 Up International (line party 1) 6 Up RDO (line party 1) 7 Down International (line party 2)	

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	009	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location	Km	Running lines		Remarks	
North Kent Line Connection Jn	35 555 35 762 * (35 999)*	<p>For continuation see SO310 Seq 6</p>		<p><u>HS1 &amp; North Kent Line Connection</u></p> <p>TVM430 cab signalling Ashford AFC Electrification AC; Ashford AFC</p> <p><b>CSR</b> 92</p> <p><u>North Kent Line</u></p> <p>Signalling Ashford IECC (NK) Electrification DC; Lewisham</p> <p>Kilometerages shown ( ) are on the North Kent Line Connection.</p> <p><u>Platforms 1 &amp; 4</u> Are to be used by class 9 International services only. Class 1, 2 &amp; 5 domestic services, and class 4 &amp; 6 freight trains may be routed through these platforms (see Module C of this Sectional Appendix).</p> <p><u>Platforms 2 &amp; 3</u> Are to be used by classes 1, 2 &amp; 5 domestic services only. Class 9 International services may be routed through these platforms (see Module C of this Sectional Appendix).</p> <p>Class 4 &amp; 6 freight trains are prohibited on the Up &amp; Down RDO Lines and the Up &amp; Down North Kent Line Connections</p> <p>1 Up CTRL (line parity 1) 2 Down CTRL (line parity 2) 3 Up International (line parity 1) 4 Up RDO (line parity 1) 5 Down International (line parity 2) 6 Down North Kent Line Connection (line parity 2) 7 Up North Kent Line Connection (line parity 1) 8 Down RDO (line parity 2) 9 Down North Kent Main 10 Up North Kent Main</p>	
Ebbsfleet Signalling Room (SR15)	36 160 36 229 * (36 249)*				
Platforms 1 & 4 limits	36 348				
Platforms 2 & 3 limits	36 479				
<b>EBBSFLEET INTERNATIONAL (LOW LEVEL)</b>	36 550				
Platforms 1 - 4 limits	37 757				

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	010	St Pancras International to Eurotunnel Interface	TRL3 TRL5	HS1	01/05/13
Location	Km	Running lines	Remarks		
	36 832 *		<p><b>HS1</b></p> <p>TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC</p> <p><b>CSR</b> </p>		
<p>North Kent Line Connection shown in ( )</p> <p> boards</p> <p>(Platforms 5 &amp; 6 limits)</p> <p>① (Signals AF150 / AF152 + )</p> <p>(Limit of DC conductor rail)</p> <p><b>(EBBSFLEET INTERNATIONAL) (HIGH LEVEL)</b></p> <p>(Platforms 5 &amp; 6 limits)</p> <p>① (Signals AF181 / AF183)</p> <p>① (Signal AF182)</p> <p>(Up line Viaduct (113m))</p> <p>(Limits of AC OHLE - Up line)</p> <p>(Springhead Road Jn - Up line)</p> <p>(Limit of AC OHLE - Down line + signal NK477) ①</p> <p>(Springhead Road Jn - Down line)</p>	<p>(36 300)</p> <p>(36 348)</p> <p>(36 741)</p> <p>(36 755)</p> <p>(36 995)</p> <p>(37 108)</p> <p>(37 221)</p> <p>(37 229)</p> <p>(37 373)</p> <p>(37 398)</p> <p>(37 581)</p>		<p><b>North Kent Line Connection</b></p> <p>Colour light signalling Ashford AFC Electrification AC: Ashford AFC DC: Lewisham</p> <p><b>North Kent Line</b></p> <p>Signalling Ashford IECC (NK) Electrification DC: Lewisham</p> <p>North Kent Line Connections bi-directional from junction with CTRL as far as connection to Church Path Pit Sidings.</p> <p>Electrified (AC) from junction with CTRL as far as Springhead Road Jn (exclusive).</p> <p>Electrified (DC) from Springhead Road Jn to St Pancras end of platforms 5 &amp; 6.</p> <p>Permissive working authorised in platforms 5 &amp; 6.</p> <p>① NR AWS equipment provided at these signals.</p> <p>Class 4 &amp; 6 freight trains are prohibited on the Up &amp; Down RDO Lines and the Up &amp; Down North Kent Line Connections.</p> <p><b>CSR</b> </p>		
<p>Portal</p> <p>PEPPER HILL TUNNEL (515m)</p> <p>Portal</p>	<p>38 235</p> <p>38 750</p>		<p>1 Up CTRL (line party 1)</p> <p>2 Down CTRL (line party 2)</p> <p>3 Up International (line party 1)</p> <p>4 Up RDO (line party 1)</p> <p>5 Down International (line party 2)</p> <p>6 Down RDO (line party 2)</p> <p>7 Up North Kent Line connection</p> <p>8 Down North Kent Line connection</p> <p>9 Down North Kent Main</p> <p>10 Up North Kent Main</p>		



LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	011	St Pancras International to Eurotunnel Interface	TRL3 FJS1	HS1	01/05/13
Location		Km	Running lines	Remarks	
Waterloo Connections shown in ( ) (Fawkham Jn)		(200 091)		<b>HS1</b> TVM430 cab signalling Ashford AFC Electrification AC; Ashford AFC <div style="float: right; border: 1px solid black; padding: 2px;">                         CSR  <span style="border: 1px solid black; padding: 2px;">92</span> </div>	
(Up line) (Down line)		(200 761)* (201 024)*		<b>Waterloo Connections</b> TVM430 cab signalling Ashford AFC Electrification AC; Ashford AFC DC; Paddock Wood <div style="float: right; border: 1px solid black; padding: 2px;">                         CSR  <span style="border: 1px solid black; padding: 2px;">91</span> </div>	
(Limit of AC OHLE)		(201 308)		<b>Chatham Lines</b> Signalling Victoria ASC (VS) Electrification DC; Paddock Wood	
(Signal AF185 + CAB - Down line)		(202 170)		The Waterloo Connections are NOT bi-directional. Electrified (AC) from Southfleet Jn as far as KP 201,308 - Both lines, Electrified (DC) from Fawkham Jn to KP 202,170 - Both lines.	
(Limit of DC conductor rail - both lines)		(202 598)		(2) NR AWS equipment provided at these signals. Class 4 & 6 freight trains are prohibited on the Up & Down Waterloo Connections.	
(Signal VS296 + CAB - Up line)		(203 617)* (204 446)*		(1) Applicable to trains routed into the Up loop for examination - Drivers to stop with front of train at this board.	
Up & Down CTRL		39 900 *			
Southfleet Jn		40 150			
Southfleet Crossover		(206 012) 40 552 40 839			
WROTHAM ROAD Viaduct (83m)		40 944			
Loop points - both lines		41 027 41 169			
EXAM board - Up Loop (1)		41 684			
SINGLEWELL LOOPS					
Loop points - Up CTRL		42 690			
Loop point - Down CTRL		42 783			

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	012	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location	Km	Running lines		Remarks	
Singlewell Crossover Singlewell Signalling Room (SR21) OHNS - both lines ① Portal HALFPENCE LANE TUNNEL (170m) Portal  London end Medway Vladoct (1261m) Brussels end  Nashenden Crossovers VHME - Down CTRL Nashenden Signalling Room (SR22) VHME - Up CTRL	[ 42 594 43 008 43 081 43 320 45 015 45 185  49 967  51 228  [ 52 230 52 517 52 617 52 864 52 904 52 930 52 995			HS1 TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC  Chatham Lines Signalling Rochester SB Electrification DC: Paddock Wood  Medway Valley Lines Signalling Cuxton SB Electrification DC: Paddock Wood  ① Neutral section can be reconfigured. (Rule Book, Module TW1, Clause 5.7.1 refers)  1 Up CTRL (line party 1) 2 Down CTRL (line party 2) 3 Down Chatham Main 4 Up Chatham Main 5 Up Medway Valley 6 Down Medway Valley	

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	013	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location		Km	Running lines		Remarks
Portal		54 437			TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC 
NORTH DOWNS TUNNEL (3199m)					
Portal		57 636			
Portal		60 130			
BOXLEY TUNNEL (325m)					
Portal		60 455			
OHNS - both lines ①		63 700			① Neutral section can be reconfigured. (Rule Book, Module TW1, Clause 5.7.1 refers)
			1 Up CTRL (line parity 1) 2 Down CTRL (line parity 2)		

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	014	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location	Km	Running lines	Remarks		
Crismill Crossovers	65 600 65 887		<b>HS1</b> TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC CSR		
Crismill Signalling Room (SR23)	66 569 66 595 66 855		<b>Maldstone Line</b> Signalling Maldstone East SB Electrification DC: Paddock Wood		
Portal	67 618				
EYHORNE TUNNEL (360m)					
Portal	67 978				
Portal	71 218				
HARRIETSHAM TUNNEL (150m)					
Portal	71 368				
		1 2 ↑ 300 270 ↓ ↓ 270 300 ↑ 1 2	1 Up CTRL (line party 1) 2 Down CTRL (line party 2) 3 Down Maldstone 4 Up Maldstone		

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated	
SO400	015	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13	
Location		Km	Running lines		Remarks	
Portal SANDWAY TUNNEL (170m)		74 176			TVM430 cab signalling Ashford AFC Electrification AC; Ashford AFC	CSR 
Portal		74 346				
Lenham Crossover		75 592 75 878				
Loop points - both lines		77 090				
Lenham Signalling Room (SR24)		77 260				
LENHAM LOOPS						
Loop points - Up CTRL		79 380				
Loop points - Down CTRL		79 473				
Charing Crossover		79 484				
VHME - Up CTRL		79 731				
VHME - Down CTRL		79 769 79 822				
			1 Up CTRL (line party 1) 2 Down CTRL (line party 2)			

LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	016	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location	Km	Running lines	Remarks		
Portal WESTWELL LEACON - LANE TUNNEL (120m) Portal	80 064 *		HS1 & Ashford West chords TVM430 cab signalling Ashford AFC Electrification AC; Ashford AFC CSR		
	82 440		Maldstone Lines Signalling Ashford IECC (AD) Electrification DC; Paddock Wood CSR		
Tutt Hill Viaduct (127m)	83 732				
	83 859				
Ashford West Signalling Room (SR25)	88 225				
Ashford West Junction	88 311				
Portal - Up & Down CTRL	88 610				
Ashford West chords shown in ( ) (Portals)	(88 684)		For continuation see SO140 seq 8		
(Portals)	(89 150)				
① (Signal AF312 + CAB - Up chord)	(89 269)				
① (Signal AF318 + CAB - Down chord)	(89 322)				
(CAB boards - Both chords)	(89 365)*		ASHFORD CUT AND COVER TUNNEL (1562m)		
① (Signals AD947/AD949)	(89 635)		① NR AWS equipment provided at these signals.  1 Up CTRL (line party 1) 2 Down CTRL (line party 2) 3 Up Ashford West chord (line party 1) 4 Down Ashford West chord (line party 2) 5 Up Maldstone 6 Down Maldstone 7 Maldstone Relief		

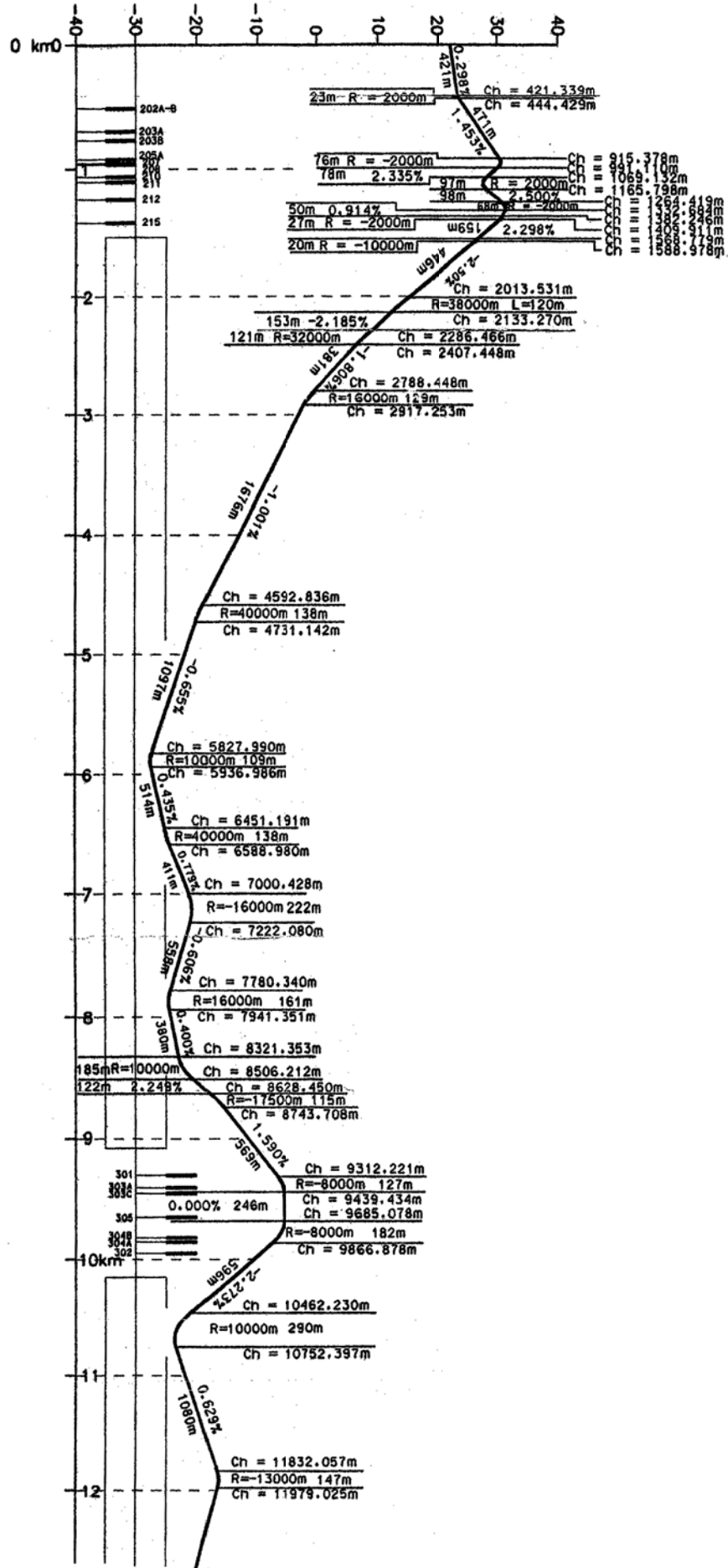
LOR	Seq.	Line of Route Description	ELR	Route	Last Updated		
SO400	017	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13		
Location	Km	Running lines		Remarks			
Portal	89 564 *	3	4	5	1	2	HS1 TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC CSR 91
London end of Viaduct	90 172	<p>For complete details of Ashford station area see SO130 Seq 25/26/27</p> <p>ASHFORD VIADUCT (1430m)</p>		Ashford station area Signalling Ashford IECC (AD) Electrification AC: Paddock Wood DC: Paddock Wood CSR 86			
<b>ASHFORD INTERNATIONAL</b>	90 391			1 Up CTRL (line party 1) 2 Down CTRL (line party 2) 3 Up CTRL chord 4 Down CTRL chord 5 Maldstone Relief 6 Down Canterbury 7 Up Canterbury			
Ashford AFC	90 550	3	4	1	2		

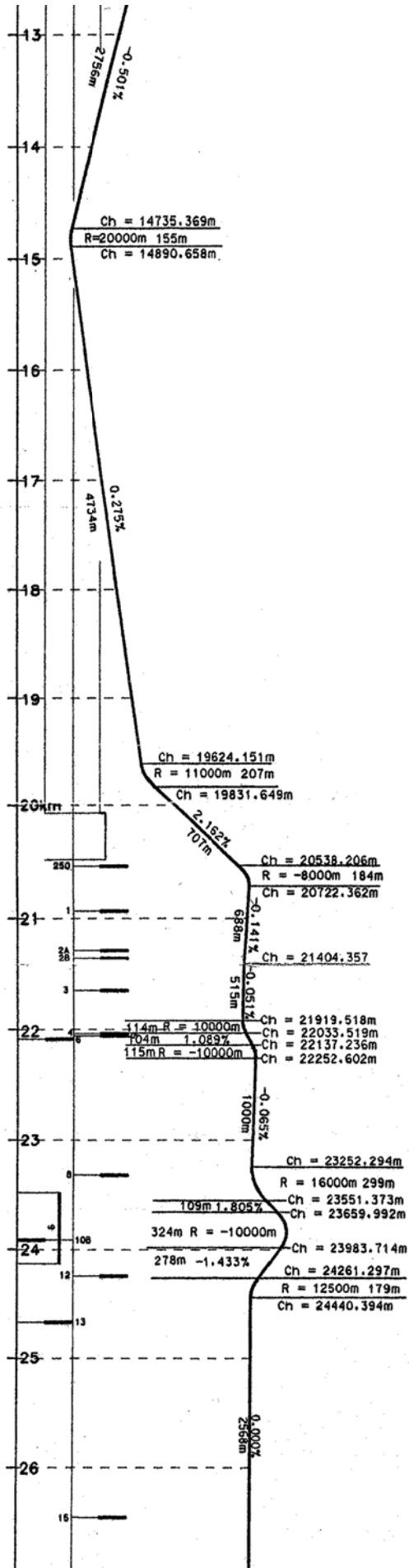
LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	018	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location		Km	Running lines		Remarks
Ashford East chords shown in ( )					<p>HS1 &amp; Ashford East chords</p> <p>TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC</p> <p>South Eastern Main Lines</p> <p>Signalling Ashford IECC (AD) Electrification DC: Paddock Wood</p>
② (Signals AD954/AD956)	(91 360)				<p>② AWS equipment provided at these signals.</p>
② (Signals AF313/AF319 + CAB)	(91 476)				
(CAB boards)	(91 617)				
Brussels end of Viaduct	91 821				
Ashford East Junction	92 696				
VHME - Both lines	92 771				
Ashford East Signalling Room (SR26)	92 895				
Portal	95 116				
MERSHAM TUNNEL (160m)					
Portal	95 276				
①	101 905				<p>① OHLE system change location for International passenger trains routed direct to/from Eurotunnel. (Not applicable to class 4 &amp; 6 freight trains).</p>
			<p>For continuation see see SO130 seq 28</p>		<p>1 Up CTRL (line parity 1) 2 Down CTRL (line parity 2) 3 Up CTRL chord 4 Down CTRL chord 5 Up Main 6 Down Main</p>

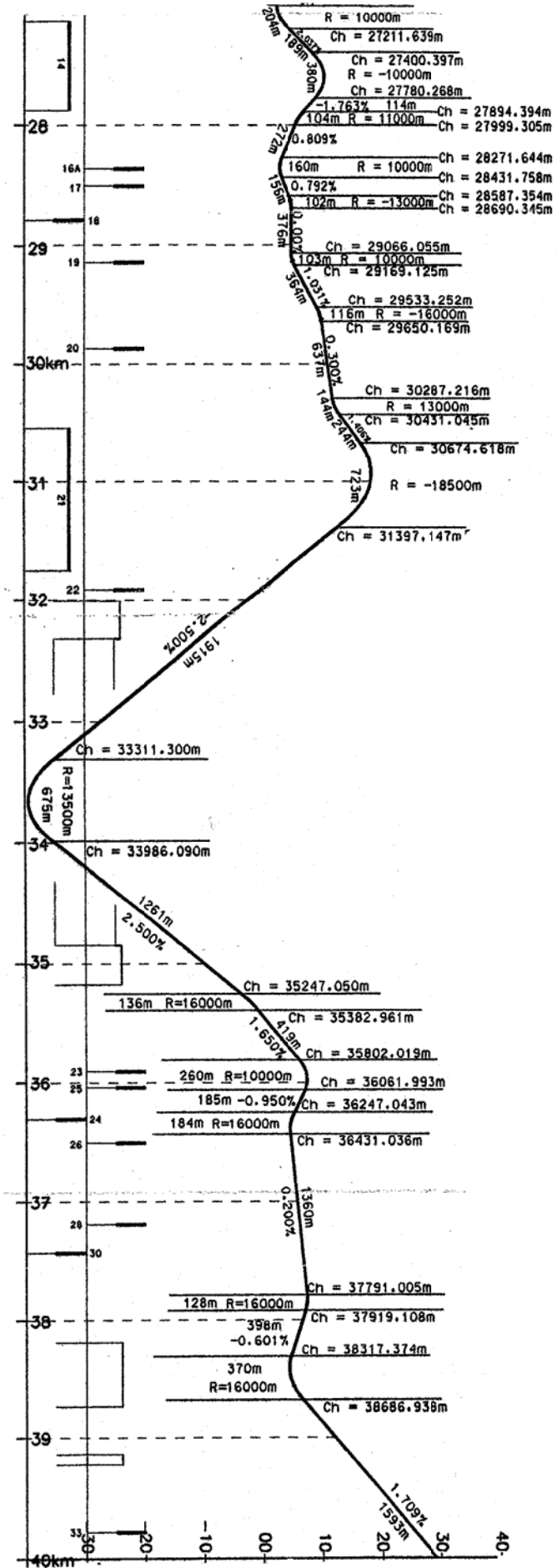


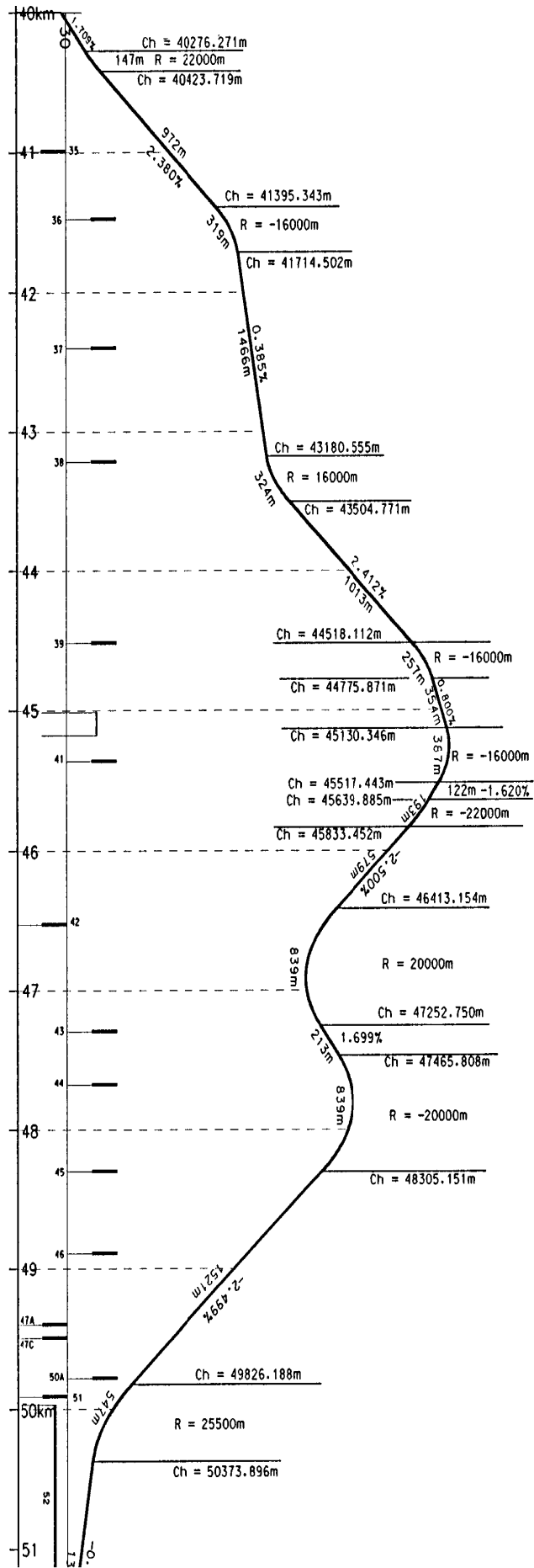
LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	019	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location		Km	Running lines	Remarks	
Westenhanger Signalling Room (SR27)		103 280 103 415 103 557	<p>For continuation see SO130 seq 29</p> <p>For complete details of Dollands Moor Yard area see SO130 seq 30</p>	<u>HS1 &amp; Dollands Moor Freight chord</u> TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC CSR	
Westenhanger Crossovers		103 667 103 954		<u>South Eastern Main Lines and Dollands Moor Yard area</u> Signalling Ashford IECC (AD) Electrification AC: Paddock Wood DC: Paddock Wood CSR	
Wheel Impact Detector (WID) - Both Lines		104 300		Trains conveying passengers are prohibited from entering Dollands Moor yard, except in an emergency.	
SANDLING TUNNEL		104 526 104 618 104 637 *		Locations and kilometerages shown ( ) are on the Dollands Moor Freight chord.	
Dollands Moor West Junction - Up line - Down line - chord		105 557 105 674 105 892		① Hidden Marker AF342 - refer to Module D of this Sectional Appendix. ② AWS equipment provided at this signal.	
① (Hidden Marker AF342) (CAB board)		(106 075) (106 410)		③ Automotive Power Control (APC) magnets not provided at this neutral section.	
② (Signal AD759 + CAB) London end of viaduct (OHNS) ③		(106 829) 106 914 (106 955)		1 Up CTRL (line party 1) 2 Down CTRL (line party 2) 3 Up Main 4 Down Main 5 Through Passenger Loop 6 Up Dover 7 Down Dover	
Grange Alders Viaduct (Up CTRL) (526m)					
Brussels end of viaduct		107 373 * 107 440			

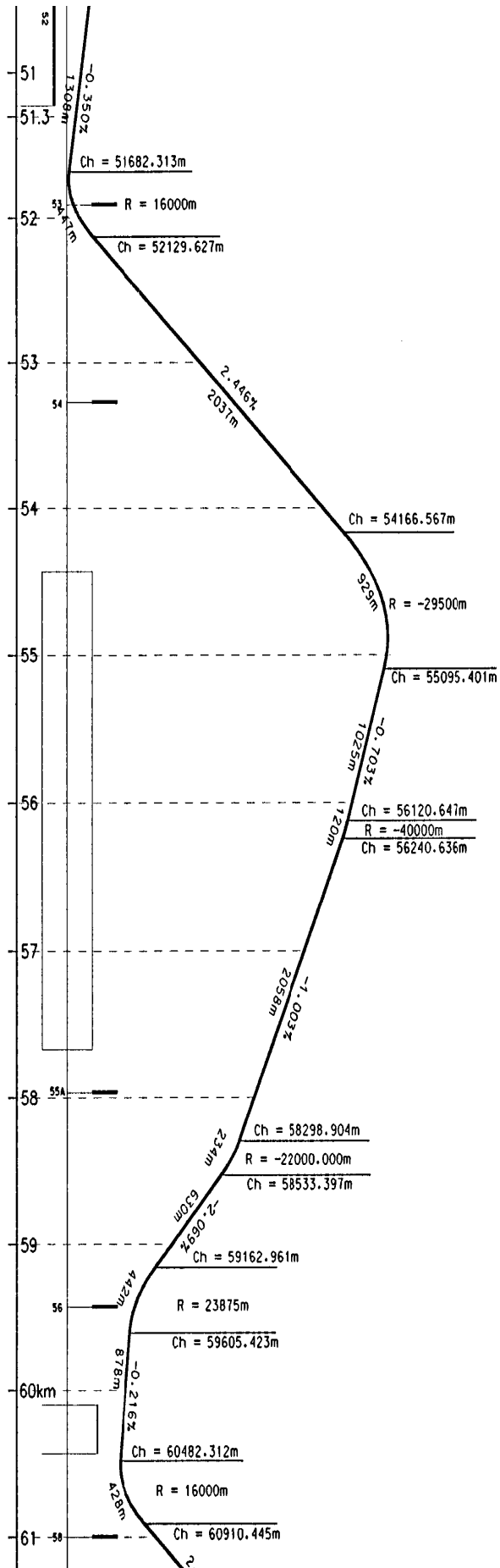
LOR	Seq.	Line of Route Description	ELR	Route	Last Updated
SO400	020	St Pancras International to Eurotunnel Interface	TRL3	HS1	01/05/13
Location	Km	Running Lines	Remarks		
OHNS Down CTRL	108 166 * 108 300	<p>9 10 1 3 4 5 2</p> <p>For complete details of Dollands Moor Yard see SO130 Seq 31</p> <p>Dollands Moor Freight Yard</p> <p>For continuation See SO130 Seq, 32</p> <p>(108.367)</p> <p>M20/A20 viaducts on Up CTRL/Up Slow/Down Fast (296m)</p> <p>65 (40) (mph)</p> <p>65 (40) (mph)</p> <p>(108.517)</p> <p>M20/A20 viaducts on Down CTRL (321m)</p> <p>(7.281)</p> <p>130 (80) (mph)</p> <p>120 (75) (mph)</p> <p>160</p> <p>160</p> <p>160</p> <p>100</p> <p>100</p> <p>100</p> <p>100</p> <p>160 7 100 160</p> <p>6 8</p> <p>For continuation see Eurotunnel publications</p>	<p><b>HS1</b></p> <p>TVM430 cab signalling Ashford AFC Electrification AC: Ashford AFC</p> <p><b>Dollands Moor Yard area</b></p> <p>Signalling Ashford IECC (AD) Electrification AC: Paddock Wood DC: Paddock Wood</p> <p>Conductor rall on Down Fast from Dollands Moor Yard to connection with Down CTRL (exclusive).</p> <p>Location and mileage shown ( ) are on the Up and Down Main lines.</p> <p>① Change of line designation.</p> <p>② Hidden Markers AF363 / AF365 - refer to Module D of this Sectional Appendix.</p> <p>③ AWS equipment provided at these signals.</p>	<p>CSR</p> <p>91</p> <p>CSR</p> <p>87</p>	
(Dollands Moor Yard Change of kilometrage Jn) (HS1) (ET) Up CTRL	(67m 35c) 108 582 7 000				
③ Signals AD830/AD832 + CAB - Cheriton Signalling Room (SR28) OHNS Up CTRL	7 198 * 7 281 7 329				
CAB boards - Up Slow / Down Fast	7 440				
② Hidden Markers AF363/AF365 Up Slow/Down Fast	7 753				
Limit of conductor rall on Down Fast Cheriton Up CTRL Jn	7 969				
Cheriton Down CTRL Jn	8 203				
HS1 / Eurotunnel Maintenance Boundary (Up & Down Fast)	8 366 *				
			<p><b>Eurotunnel</b></p> <p>TVM430 cab signalling Eurotunnel RCC Electrification AC: Eurotunnel RCC</p> <p>1 Up CTRL (line parity 1) 2 Down CTRL (line parity 2) 3 Up Main 4 Down Main 5 Through Passenger Loop 6 Up Fast 7 Up Slow 8 Down Fast 9 Up Dover 10 Down Dover</p>	<p>CSR</p> <p>12</p>	

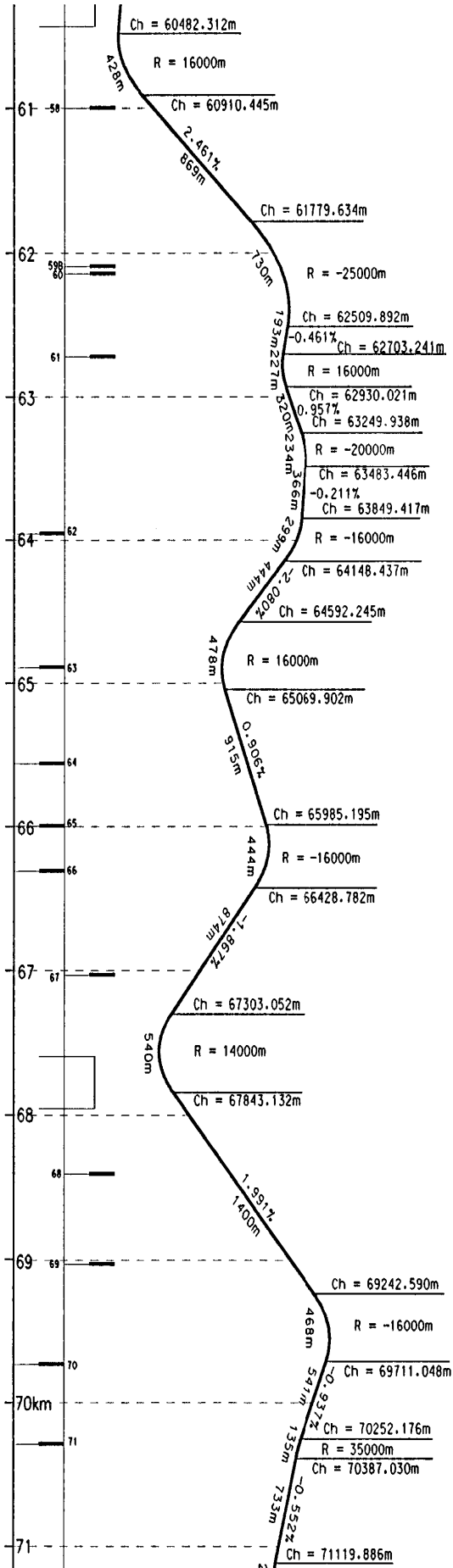




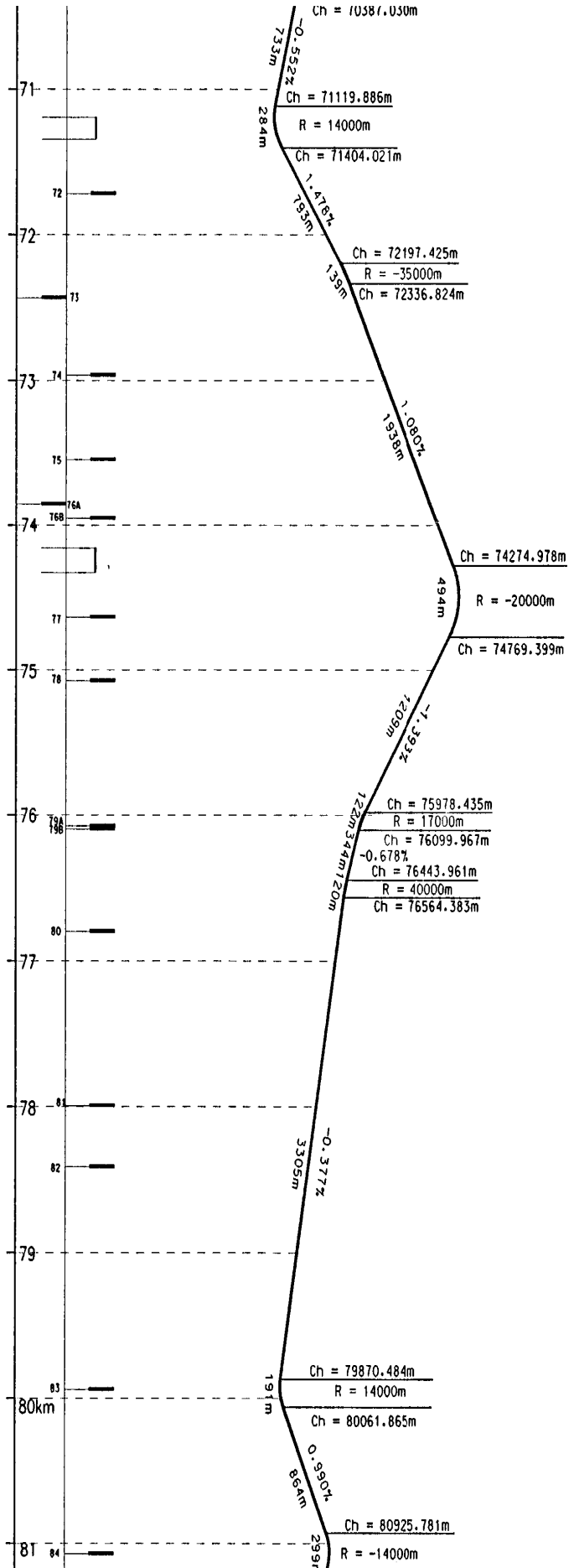


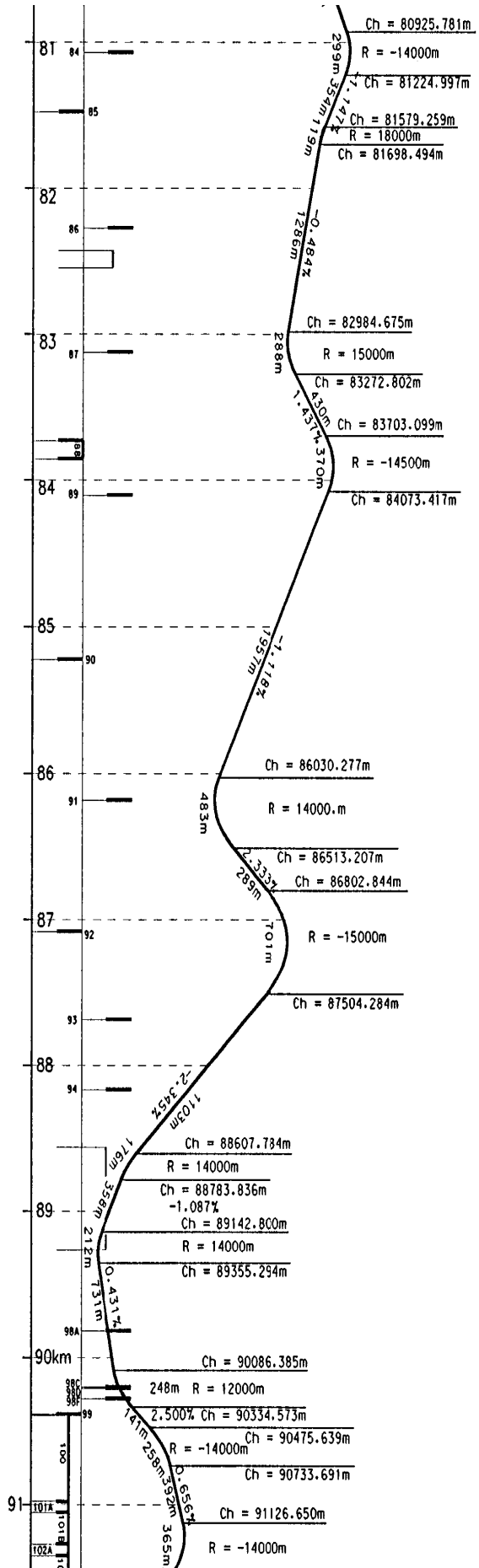


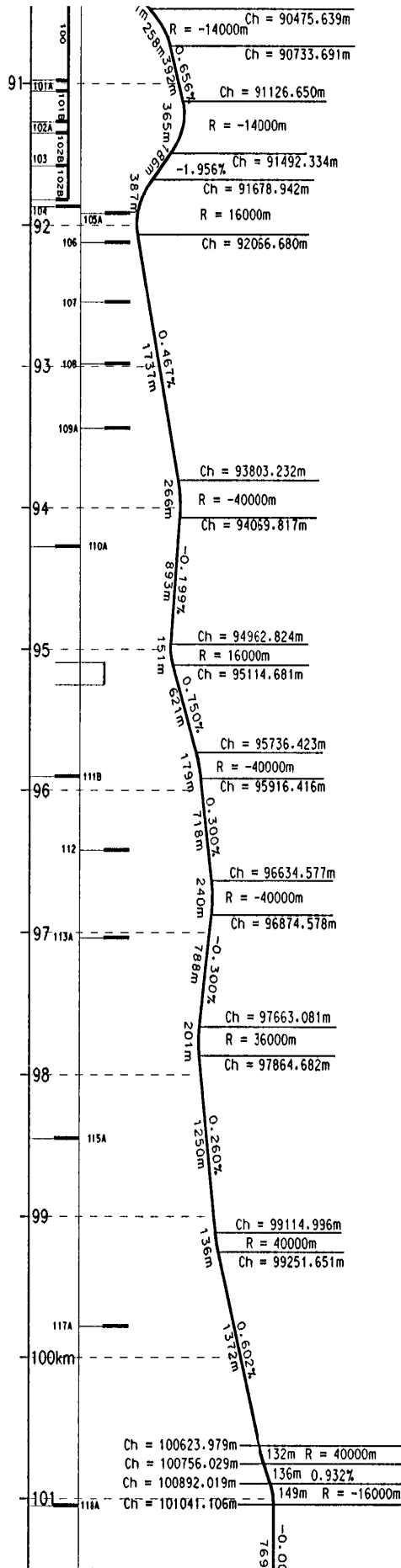


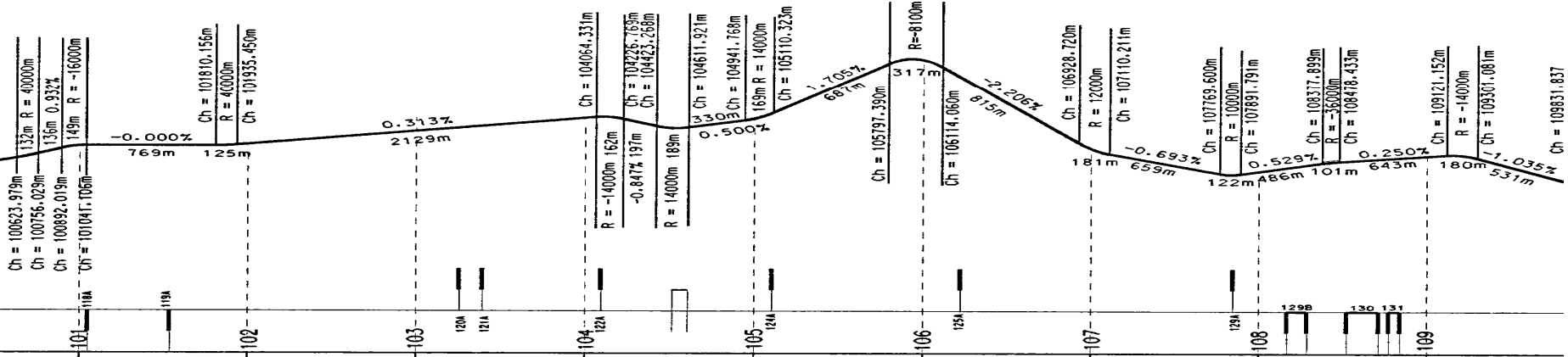













	HS1 Level Two Standard
	C/OP/OS/05/2002
	May 2013

# HS1 Sectional Appendix (Previously the CTRL Sectional Appendix)

## Module F

### Forms

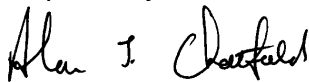
This module details the forms that are specified in the Rule Book, Sectional Appendix, Signalling Regulations, EMMIS controller's instructions, etc. to be used on HS1.

It is divided into five parts:

- Part A** Forms used in connection with train working
- Part B** Forms used in response to/following an incident
- Part C** Forms used in connection with engineering work
- Part D** Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton
- Part E** Forms used between the AFC and adjacent infrastructure managers' control centres

**Staff must apply the instructions shown in Section 18 of Module G of the HS1 Rule Book when carrying out safety critical communications.**

Prepared by



.....  
**Alan Chatfield**  
**Operations Standards Manager, Network Rail (High Speed) Ltd.**

Authorised by:



.....  
**Simon Lejeune**  
**Head of High Speed Operations, Network Rail (High Speed) Ltd.**

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(CCMS 8979650)

Network Rail Infrastructure Ltd Registered Office Kings Place 90 York Way London N1 9AG


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## Table of Contents

<b>Part A Forms used in connection with train working</b>	Pages FA1 to FA55
<b>Part B Forms used by staff in response to/following an incident</b>	Pages FB1 to FB21
<b>Part C Forms used in connection with engineering work</b>	Pages FC1 to FC52
<b>Part D Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton</b>	Pages FD1 to FD29
<b>Part E Forms used between the AFC and adjacent infrastructure managers' control centres</b>	To be published

December 2008	Initial issue. Parts A and B
June 2009	Part A - Form PRUD amended
December 2009	Part A - Forms BAPO, BEST, MAVU, PROD4, PRUD, VECA, VEVO & VILI amended. Part B - Forms ATRA, MAIL, PROD5, VAIG & VEVO amended and Form IMPR2690 included.
January 2012	Part A - Forms BAPO, FREP, REFO, STREV & XCAB amended. Part B - Forms CTRL3188, CTRL3189, MAIL (not driver), PROD5 (not driver) & PROD5 (Station staff) amended. Parts C & D - Initial issue
May 2013	Part A - Forms FASI, FREP & XCAB amended. Forms MAIL & VAIG withdrawn. Part B - Forms IMPR2690, MAIL & VAIG amended. Part C - Forms ISOL & OLPE amended. Part D - Form MAIL (ET) withdrawn.

This document is a complete re-issue of the HS1 Sectional Appendix, Module F, dated March 2012.

	HS1 Level Two Standard
	C/OP/OS/05/2002
	November 2013

# HS1 Sectional Appendix

## Module F (Part A)

### Forms used in connection with train working

The forms in this part to be used for safety communications between signallers and drivers. The format of these forms is not definitive but each form contains the agreed minimum information that is required to be published by Network Rail (High Speed) Ltd and the Train Operating Companies for the use of their respective personnel.

**Note:** Forms used in the HS1/Eurotunnel interface area at Cheriton are shown in Part D of this Module F.

**Staff must apply the instructions shown in Section 18 of Module G of the HS1 Rule Book when carrying out safety critical communications.**

Prepared by



.....  
**Stephane Riverain**  
**Operations Standards Manager, Network Rail (High Speed) Ltd.**

Authorised by:



.....  
**Simon Lejeune**  
**Head of High Speed Operations, Network Rail (High Speed) Ltd.**

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<b>REVISION HISTORY</b>	
December 2008	Initial issue.
June 2009	Form PRUD amended
December 2009	Forms BAPO, BEST, MAVU, PROD4, PRUD, VECA, VEVO & VILI amended.
January 2012	Forms BAPO, FREP, REFO, STREV & XCAB amended.
May 2013	Forms FASI, FREP & XCAB amended. Forms MAIL & VAIG withdrawn.
November 2013	Form REMA amended

Amendments to the text are indicated by a side-line in the margin. (Not shown on the actual form). Details of the amendments are explained below:

<b>Page</b>	<b>Form</b>	<b>Amendment</b>
FA42	REMA	Amended as per Rules Working Group agreement to include an additional verification to check that the TVM is armed before restarting, when in a cab signalled area.



## Table of Contents

<b>Form</b>	<b>Description</b>	<b>Latest version</b>	<b>Pages</b>
ACAB	Arm cab signalling	06-12-08	FA6/FA7
ARPI	Stop order	06-12-08	FA8/FA9
ATRA (Driver)	Cancel routing	06-12-08	FA10/FA11
BAPO	Lower pantographs	17-12-11	FA12/FA13
BEST	Roaming animals	14-12-09	FA14/FA15
CHEX	Change ends	06-12-08	FA16/FA17
FASI	Pass designated signal(s)	01-05-13	FA18 - FA21
FREP	Pass designated closed 'N' Block Section Marker(s)	01-05-13	FA22/FA23
JAMA	Pass designated Shunt Marker	06-12-08	FA24/FA25
MATA	Carry out shunting movement	06-12-08	FA26/FA27
MAVU	Proceed on sight	14-12-09	FA28/FA29
PROD1	Request for assistance	06-12-08	FA30/FA31
PROD2	Cancel request for assistance	06-12-08	FA32/FA33
PROD4	Report of signalling irregularity	14-12-09	FA34/FA35
PROD5 (Driver)	Personal protection (Driver)	06-12-08	FA36/FA35
PRUD	Proceed at reduced speed	14-12-09	FA38/FA39
REFO	Setting back	28-01-12	FA40/FA41
REMA	Restart journey	15-11-13	FA42/FA43
SECO	Assist failed train	06-12-08	FA44/FA45
STREV	Movement authority for track recording/test train	28-01-12	FA46/FA47
VECA	Examine catenary	14-12-09	FA48/FA49
VEVO (Driver)	Verify line is clear	14-12-09	FA50/FA51
VILI	Limit speed	14-12-09	FA52/FA53
VITA	Examine train	06-12-08	FA54/FA55
XCAB	Movement authority for train not fitted with CTRL cab signalling	01-05-13	FA56/FA57

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## **Part A - Forms used in connection with train working**

### **ACAB - Arm Cab signalling**

#### **Reason for use**

Used when the signaller is required to order the driver to manually arm the cab signalling system in the driving cab of the train.

#### **Outcome**

Signaller receives confirmation from the driver that the cab signalling is armed and what indication is displayed in the driving cab.

#### **Points to note:**

1. Can only be used in those areas of HS1 controlled by the cab signalling system.
2. The parity of the Up Line is '1' and the Down Line is '2'.

Signal box: <i>Ashford AFC</i>	Time : ..... <small>(hh/mm)</small>	Date : ..... <small>(dd/mm/yy)</small>
<b>ARM CAB SIGNAL</b>		
Order is given to driver of train ..... <small>(number)</small> to arm the cab signalling for the ..... line <small>(name)</small> and report back for further instructions.		
XX		
<b>Order</b> .....(number)		
XX		
Drivers report procedure <b>ACAB</b>		Time : .....
Train ..... <small>(number)</small>		
- arming carried out for the ..... line <small>(name)</small>		
- indication presented.		
	Red	Speed
	VL	Announce
	Execute	Flashing
Indication		
<input type="checkbox"/> No indication presented		

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CCMS 6516476 (Version date: 06-12-08)

## **Part A - Forms used in connection with train working**

### **ARPI – Stop order**

#### **Reason for use**

Used when the signaller requires the driver to stop their train at a specific unscheduled location.

#### **Outcome**

Signaller receives confirmation from the driver that the train is stopped at the specified location.

#### **Points to note:**

1. May be used by the signaller to request the driver to stop additionally at a location outside the HS1 control area, e.g. Ashford station. In this case the driver will not report back to the AFC signaller.

ARPI

Signal box: <i>Ashford AFC</i>	Time : ..... <small>(hh/mm)</small>	Date : ..... <small>(dd/mm/yy)</small>
<b>STOP ORDER</b>		
Order is given to driver of train ..... to stop at: <small>(number)</small>		
<input type="checkbox"/> Station ..... <small>(name)</small>		
<input type="checkbox"/> Colour light stop signal ..... <small>(number)</small> at km .....		
<input type="checkbox"/> Block Section Marker ..... <small>(number)</small> at km .....		
<input type="checkbox"/> Shunt Marker ..... <small>(number)</small> at km .....		
<input type="checkbox"/> Km..... located between ..... & ..... <small>(easily recognisable locations)</small>		
Reason.....		
<input type="checkbox"/> and report back.		
XX		
Order ..... <small>(number)</small>		
XX		
Drivers report procedure <b>ARPI</b>		Time : .....
Train ..... <small>(number)</small>		
Stop carried out at:		
<input type="checkbox"/> Station ..... <small>(name)</small>		
<input type="checkbox"/> Colour light stop signal ..... <small>(number)</small> at km .....		
<input type="checkbox"/> Block Section Marker ..... <small>(number)</small> at km .....		
<input type="checkbox"/> Shunt Marker ..... <small>(number)</small> at km .....		
<input type="checkbox"/> Km..... located between ..... & ..... <small>(easily recognisable locations)</small>		

CCMS 6552648 (Version date 06-12-08)

## Part A - Forms used in connection with train working

### ATRA (Driver) – Cancel routing

#### Reason for use

Used when the signaller requires the driver to operate the local release unit to release the signalling controls if a track circuit shows occupied, resulting in a route being locked or preventing points being operated.

#### Outcome

Signaller receives confirmation from the driver that the local release unit is operated.

#### Points to note:

1. The reason that the track circuit is showing occupied may be because it is occupied by a stationary 'trapped' train that requires the points in front of it to be operated to an alternative route.
2. If the track circuit is showing occupied because of a suspected track circuit failure, Procedure VEVO 'Verify line is clear' must be carried out first before Form ATRA is dictated.
3. If Procedure ATRA is to be carried out after Form VEVO has been dictated the Personal Protection arrangements already granted to be transferred to Form ATRA **before** Form VEVO is cancelled.
4. If a train has been authorised to pass a closed 'N' Block Section Marker for the driver to carry out Procedure ATRA and all is now in order for the train to proceed, the signaller must dictate Form REMA to instruct the driver to restart.
5. Procedure ATRA also gives personal protection, if required.

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<i>Signal box: Ashford AFC</i>	<i>Time : .....</i> <i>(hh/mm)</i>	<i>Date : .....</i> <i>(dd/mm/yy)</i>
<b>CANCEL ROUTING</b>		
Order is given to driver of train ..... <i>(number)</i>		
to cancel the routing ..... located ..... <i>(number)</i> <i>(km)</i>		
and to report back.		
<b>Personal Protection</b>		
<input type="checkbox"/> Transferred from form VEVO at ..... <i>(time)</i>		
<input type="checkbox"/> Traffic stopped on line(s) ..... / ..... / ..... <i>(names)</i>		
<input type="checkbox"/> Traffic limited to ..... on line(s) ..... / ..... <i>(km/h)</i> <i>(names)</i>		
XX		
<b>Order</b> ..... <i>(number)</i>		
XX		
Drivers report procedure <b>ATRA</b>		Time : .....
Train ..... <i>(number)</i>		
Routing ..... cancelled <i>(number)</i>		
Lamp <input type="checkbox"/> lit		
<input type="checkbox"/> extinguished		
<b>Personal protection may be removed</b>		Time : .....

CCMS 6554232 (Version 06-12-08)



## Part A - Forms used in connection with train working

### BAPO – Lower pantographs

#### Reason for use

Used when the signaller requires the driver to either:

- (a) lower the pantograph(s), **or**
- (b) travel over a specified portion of line with the pantograph(s) lowered because of defective OHLE.

#### Outcome

- (a) Signaller receives confirmation that the pantograph(s) are lowered, **or**
- (b) The train proceeds over the specified portion of line with the pantograph(s) lowered and then the driver raises them and continues the journey, unless the signaller requires the driver to make a report.

#### Points to note:

1. If the signaller orders the driver to lower the pantograph(s), a separate order must be made to raise them again. This second order is made using the same Form BAPO. The order to raise pantograph(s) does **not** mean that the driver can apply traction power and move. Authority to move is given by other means, i.e. opening of the Block Section Marker, clearance of the colour light signal, issue of Form REMA, etc.
2. If the train is to travel over a specified portion of line with the pantograph(s) lowered, the signaller must stop the train at a suitable location to dictate Form BAPO. This location must be at a sufficient distance from the affected portion of line to allow the driver to gain sufficient speed from a standing start to coast over the affected portion without stopping. The driver must make sure the rear pantograph has passed clear of the affected portion before raising the pantographs again.
3. May be used by the signaller to order the driver to travel over a specified portion of line with the pantograph(s) lowered outside the HS1 control area.

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Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>LOWER PANTOGRAPHS</b>		
Order is given to driver of train ..... (number)		
<input type="checkbox"/> to lower pantographs  <input type="checkbox"/> to pass through the following zone with all pantographs lowered: line ..... from km ..... as far as km ..... located between ..... & ..... (easily recognisable locations)  Reason .....  <input type="checkbox"/> Report back  <input type="checkbox"/> Do not report back		
XX		
<b>Order</b> .....(number)		
XX		
Drivers report procedure <b>BAPO</b> <span style="float: right;">Time : .....</span>  Train ..... (number)  Lowering of pantographs completed		
XX		
Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
Order is given to driver of train ..... (number) to raise pantographs  - <b>Do not move</b> - Await permission to restart		
XX		
<b>Order</b> .....(number)		

CCMS 6555356 (version; 17-12-11)

## **Part A - Forms used in connection with train working**

### **BEST – Roaming animals**

#### **Reason for use**

Used when the signaller requires to caution the driver over a specified portion of line because of a report of large animals straying onto the operational railway.

#### **Outcome**

Signaller receives confirmation from the driver that animals are present.

#### **Points to note:**

1. May be used by the signaller to caution the driver because of a report of animals outside the HS1 control area. In this case the driver will not report back to the AFC signaller.

Signal box: Ashford AFC		Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>ROAMING ANIMALS</b>			
Order is given to driver of train ..... (number) to proceed on sight from km ..... as far as km ..... located between ..... & ..... (easily recognisable locations) and to report back any observations.			
XX			
Order .....(number)			
XX			
Drivers report procedure <b>BEST</b>		Time : .....	
Train ..... (number)			
Stop carried out at km .....			
<input type="checkbox"/> animals observed at/between* km ..... and km .....			
<input type="checkbox"/> no animals seen			
<b>* delete as necessary</b>			

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CCMS 6555941 (Version 14-12-09)

## Part A - Forms used in connection with train working

### CHEX – Change ends

#### Reason for use

Used when the signaller requires the driver to make an unscheduled change of direction on a running line, e.g. a train is required to reverse because the line ahead is obstructed.

It is not used when the change of direction is advised to the driver in advance and they are expecting it, e.g. because of planned engineering work, a passenger train is scheduled to terminate at Stratford International station and start its next journey in the opposite direction.

#### Outcome

Signaller receives confirmation from the driver that they have changed ends and the train is ready to commence its next movement in the opposite direction. If the train is in an area controlled by cab signalling, the driver must confirm the cab signalling system in the driving cab in direction of travel is armed.

#### Points to note:

1. Normally the driver will change ends within the train/traction unit. If this has to be done outside the train/traction unit, the driver must proceed along the side of the train/traction unit where there is **no** adjacent running line. If this is not possible, the driver must request personal protection by using the PROD 5 procedure.
2. Form CHEX is not required to be used when making shunting movements controlled by auxiliary or colour light signals.
3. After the driver confirms they have changed ends, the signaller must dictate Form REMA to instruct the driver to restart.
4. When arming the cab signalling, the parity of the Up Line is '1' and the Down Line is '2'.
5. If, after the signaller has instructed the driver to change ends by dictation of Form CHEX, circumstances change and the train is **not** required to change direction, the signaller may cancel Form CHEX provided the driver has not reported back that changing ends has been completed. If the driver has reported back that changing ends has been completed, the signaller must dictate a new Form CHEX to instruct the driver to return to the original driving cab ready for movement in the original direction. The signaller must dictate Form REMA to instruct the driver to restart.

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Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)					
<b>CHANGE ENDS</b>							
Order is given to driver of train ..... (number)							
to change ends							
and report back.							
XX							
<b>Order</b> .....(number)							
XX							
Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)					
Order is given to driver of train ..... (number)							
to cancel the <b>CHEX</b> procedure							
and report back.							
XX							
<b>Order</b> .....(number)							
XX							
Drivers report procedure <b>CHEX</b> <span style="float: right;">Time : .....</span>							
Train ..... (number)							
Ends <input type="checkbox"/> changed <input type="checkbox"/> not changed (procedure cancelled)							
<input type="checkbox"/> I have armed the cab signalling for the ..... line <span style="margin-left: 150px;">(name)</span>							
- the cab signalling indication is:							
Indication	None	Red	Speed	VL	Announce	Execute	Flashing
<input type="checkbox"/> line controlled by lineside colour light signals							
<b>I undertake not to move my train until I receive Form REMA</b>							

CCMS 6581108 (Version 06-12-08)

## Part A - Forms used in connection with train working

### FASI – Pass designated signal(s)

#### Reason for use

Used when the signaller has to authorise a driver to pass colour light stop signal(s) when they are displaying a DANGER aspect in the following circumstances:

- the colour light stop signal(s) is defective or disconnected,
- there is a failure of signalling equipment, e.g. track circuit failure,
- a diesel powered train is required to pass the colour light stop signal protecting an OHLE isolation,
- a works train is required to pass the colour light stop signal protecting a Protected Area,
- an assisting movement is required to pass the colour light stop signal protecting a failed train in order to assist.

#### Outcome

The driver passes the colour light stop signal(s) displaying a DANGER aspect and proceeds under 'Proceed on Sight' conditions.

#### Points to note:

1. Form FASI is an authorisation for a driver to pass a colour light stop signal(s) when it is displaying a DANGER aspect.
2. Authorisation may be given to pass a maximum of four consecutive colour light stop signals displaying a DANGER aspect in the line of route when dictating the Form FASI. There must not be any intermediate colour light stop signals displaying a proceed aspect. If there is, a separate Form FASI must be dictated for the subsequent colour light stop signal(s) displaying a DANGER aspect.
3. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to pass the colour light stop signal displaying a DANGER aspect before dictating Form FASI. This may mean:
  - having the route confirmed as being correctly set by the shift manager or another signaller in the AFC,
  - liaising with the adjacent Network Rail signaller when the colour light stop signal is at an interface with Network Rail.
4. The dictation of the 'Authorisation Number' on Form FASI authorises the driver to operate the KVB button "BP-FS" (or TPWS override, where TPWS equipment is provided) in order to pass the colour light stop signal(s) displaying a DANGER aspect. If Form FASI has to be dictated to a driver in order to pass a platform starting signal displaying a DANGER aspect at St. Pancras International station, depending on the position of the train in the platform, the driver may have to operate the KVB button "BP-FS" more than once before reaching the signal. The authorisation given by dictation of Form FASI applies to all the KVB interventions applicable to the colour light stop signal(s) specified on the form.
5. The signaller must only dictate the Form FASI to the driver when the train is stopped at the first colour light stop signal displaying a DANGER aspect.
6. If another form (e.g. Form SECO) has to be dictated to the driver before authorising the train to pass the colour light stop signal displaying a DANGER aspect, the other form must be dictated to the driver before Form FASI is dictated.

7. Form FASI is also used to authorise the driver of a train to restart when it has stopped **after** passing a colour light stop signal displaying a DANGER aspect without authority.
8. However, if a train passes a colour light stop signal displaying a proceed aspect and then stops with the driving cab beyond that signal, the instruction to restart to be given by dictation of Form REMA as the driver has received authorisation to pass the signal.
9. If a colour light stop signal cannot be cleared because a train movement which has reversed is then required to start with the driving cab beyond that signal, the instruction to start to be given by dictation of Form REMA.



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Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>PASS DESIGNATED SIGNAL(S)</b>		
<p>Authorisation is given to driver of train ..... (number)</p> <p>to pass colour light stop signal ..... at danger, and to proceed on sight. (number)</p> <p><input type="checkbox"/> to pass the following consecutive colour light stop signals at danger, and to proceed on sight. (number)</p> <p>(1) <input style="width: 100px; height: 20px;" type="text"/></p> <p>(2) <input style="width: 100px; height: 20px;" type="text"/></p> <p>(3) <input style="width: 100px; height: 20px;" type="text"/></p> <p>(4) <input style="width: 100px; height: 20px;" type="text"/></p> <p><input type="checkbox"/> Route set for:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Line ..... (name)</li> <li><input type="checkbox"/> Platform ..... (number)</li> <li><input type="checkbox"/> Colour light stop signal ..... (number)</li> <li><input type="checkbox"/> Block Section Marker ..... (number)</li> <li><input type="checkbox"/> Siding ..... (name)</li> <li><input type="checkbox"/> Rear of failed train ..... (number)</li> <li><input type="checkbox"/> Worksite Marker Boards</li> </ul> <p><input type="checkbox"/> Arm the cab signalling for the ..... line. (name)</p>		
XX		
<p><b>Authorisation</b> .....(number)</p>		
<p><input type="checkbox"/> transmitted by telephone      <input type="checkbox"/> transmitted by radio</p>		

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## Part A - Forms used in connection with train working

### FREP – Pass designated closed ‘N’ Block Section Marker(s)

#### Reason for use

Used when the signaller has to authorise a driver to pass closed ‘N’ Block Section Marker(s) when it is not possible to open the associated auxiliary signal(s).

#### Outcome

The driver passes the closed ‘N’ Block Section Marker(s) and proceeds under ‘Proceed on Sight’ conditions.

#### Points to note:

1. Form FREP is an authorisation for a driver to pass a closed ‘N’ Block Section Marker(s) and any Shunt Markers in the route between that ‘N’ Block Section Marker and the next Block Section Marker in the line of route.
2. Authorisation may be given to pass a maximum of four closed ‘N’ Block Section Markers in the line of route when dictating the Form FREP. There must not be any intermediate open ‘N’ Block Section Marker(s) or ‘P’ Block Section Marker(s). If there is, a separate Form FREP must be dictated for the subsequent closed ‘N’ Block Section Marker(s).
3. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to pass the closed ‘N’ Block Section Marker before dictating Form FREP. This may mean:
  - having the route confirmed as being correctly set by the shift manager or another signaller in the AFC,
  - liaising with the adjacent Network Rail signaller when the colour light stop signal is at an interface with Network Rail,
  - liaising with the Operations Controller if the ‘N’ Block Section Marker is at the interface with Temple Mills International Depot.
4. The dictation of the ‘Authorisation Number’ on Form FREP authorises the driver to operate the KVB button “BP-FS” in order to pass the closed ‘N’ Block Section Marker(s). The authorisation given by dictation of Form FREP applies to all the KVB interventions applicable to the ‘N’ Block Section Marker(s) specified on the form.
5. The signaller must only dictate the Form FREP to the driver when the train is stopped at the first closed Block Section Marker.
6. Sometimes another form (e.g. Form VILI) has to be dictated to the driver before authorising the train to pass the ‘N’ Block Section Marker. The other form must be dictated to the driver before Form FREP is dictated.
7. Form FREP is also used to authorise the driver of a train to restart when it has stopped **after** passing a closed ‘N’ Block Section Marker without authority.
8. However, if a train passes an open ‘N’ Block Section Marker and then stops with the driving cab beyond that marker, the instruction to restart to be given by dictation of Form REMA as the driver has received authorisation to pass the marker.

Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>PASS DESIGNATED CLOSED 'N' BLOCK SECTION MARKER(S)</b>		
Authorisation is given to driver of train ..... (number)		
to pass the closed 'N' Block Section Marker ..... (number)		
<input type="checkbox"/> to pass the following consecutive closed 'N' Block Section Markers		
(Number)		
(1) <input style="width: 100px;" type="text"/>		
(2) <input style="width: 100px;" type="text"/>		
(3) <input style="width: 100px;" type="text"/>		
(4) <input style="width: 100px;" type="text"/>		
XXX		
<b>Authorisation</b> .....(number)		
<input type="checkbox"/> transmitted by telephone <input type="checkbox"/> transmitted by radio		

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CCMS 63719495 (Version 01-05-13)

## Part A - Forms used in connection with train working

### JAMA – Pass designated Shunt Marker

#### Reason for use

Used when the signaller has to authorise a driver to pass a closed Shunt Marker when it is not possible to open the associated auxiliary signal.

#### Outcome

The driver passes the closed Shunt Marker and proceeds under 'Proceed on Sight' conditions.

#### Points to note:

1. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to pass the Shunt Marker before dictating Form JAMA.
2. The dictation of the 'Authorisation Number' on Form JAMA authorises the driver to operate the KVB button "BP-FS" in order to pass the closed Shunt Marker.
3. Form JAMA is also used to authorise the driver of a train to restart when it has stopped **after** passing a closed Shunt Marker without authority.

<i>Signal box: Ashford AFC</i>	<i>Time : .....</i> <i>(hh/mm)</i>	<i>Date : .....</i> <i>(dd/mm/yy)</i>
<b>PASS DESIGNATED SHUNT MARKER</b>		
Authorisation is given to driver of train ..... <i>(number)</i> to act as if the auxiliary signal of Shunt Marker ..... was illuminated. <i>(number)</i>		
XX		
Authorisation ..... <i>(number)</i>		
<input type="checkbox"/> transmitted by telephone	<input type="checkbox"/> transmitted by radio	

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CCMS 6586083 (Version 06-12-08)

## **Part A - Forms used in connection with train working**

### **MATA – Carry out shunting movement**

#### **Reason for use**

Used when the signaller requires a driver to carry out an unscheduled shunting movement.

#### **Outcome**

Signaller receives confirmation from the driver that the shunting movement has been carried out and the location where the train is now stopped.

#### **Points to note:**

1. Used in those areas of HS1 controlled by the cab signalling system where there is not a Shunt Marker to authorise the movement.
2. The signaller stops the train at an 'N' Block Section Marker and dictates Form MATA instructing the driver to where the train is required to be moved. This may be a Shunt Marker in the line of route or some other location.
3. The signaller may use Form MATA to draw the train forward past an 'N' Block Section Marker as far as the first set of points in the line of route, so that the driver may attend to an infrastructure defect, i.e. carry out Procedure ATRA/MAIL/VAIG/VEVO, if the distance to be walked would cause excessive delay.
4. If the auxiliary signal associated with the 'N' Block Section Marker cannot be opened, then the signaller must authorise the driver to pass the closed 'N' Block Section Marker by dictation of Form FREP. Form MATA must be dictated to the driver before dictation of Form FREP.

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Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>CARRY OUT SHUNTING MOVEMENT</b>		
Order is given to driver of train ..... (number) to draw forward as far as: <ul style="list-style-type: none"> <li><input type="checkbox"/> Block Section Marker ..... (number)</li> <li><input type="checkbox"/> Colour light signal..... (number)</li> <li><input type="checkbox"/> Points ..... (number)</li> <li><input type="checkbox"/> Shunt Marker..... (number)</li> <li><input type="checkbox"/> Km .....</li> </ul> and report back.		
XX		
Order .....(number)		
XX		
Drivers report procedure <b>MATA</b>		Time : .....
Train ..... (number)		
Movement carried out. Stopped at:		
<ul style="list-style-type: none"> <li><input type="checkbox"/> Block Section Marker ..... (number)</li> <li><input type="checkbox"/> Colour light signal..... (number)</li> <li><input type="checkbox"/> Points ..... (number)</li> <li><input type="checkbox"/> Shunt Marker..... (number)</li> <li><input type="checkbox"/> Km .....</li> </ul>		

CCMS 6586418 (Version 06-12-08)



## **Part A - Forms used in connection with train working**

### **MAVU – Proceed on sight**

#### **Reason for use**

Used when the signaller requires the driver to carry out an examination of a specific portion of line to ascertain whether there is an obstruction or not.

#### **Outcome**

Driver proceeds over the specific portion of line under 'Proceed on Sight' conditions and reports to the signaller the state of the line.

#### **Points to note:**

1. May be used to examine the line at an interface between HS1 and Network Rail/Eurotunnel/Temple Mills International Depot. In this case the driver will not report back to the AFC signaller.

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Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>PROCEED ON SIGHT</b>		
Order is given to driver of train ..... (number)		
to proceed on sight:		
<input type="checkbox"/> from km ..... as far as km .....		
located between ..... & ..... (easily recognisable locations)		
<input type="checkbox"/> as far as Block Section Marker .....(number)		
<input type="checkbox"/> as far as colour light stop signal .....(number)		
<input type="checkbox"/> and report back		
<input type="checkbox"/> do not report back		
XX		
<b>Order</b> .....(number)		
XX		
Drivers report procedure <b>MAVU</b>		Time : .....
Train ..... (number)		
Movement at proceed on sight completed		
Stopped at		
<input type="checkbox"/> km .....		
<input type="checkbox"/> Block Section Marker .....(number)		
<input type="checkbox"/> Colour light stop signal .....(number)		
Observations .....		

CCMS 6598366 (Version 14-12-09)

## **Part A - Forms used in connection with train working**

### **PROD 1 – Request for assistance**

#### **Reason for use**

Used when the driver declares to the signaller that their train is a failure and that assistance is required.

#### **Outcome**

Assistance is organised and sent to the failed train.

#### **Points to note:**

1. Once this form is acknowledged by the signaller, the driver must not attempt to move the train. If the failure is remedied and the train can move under its own power, the driver may cancel the request for assistance by dictation of Form PROD 2. The driver must receive instruction from the signaller to re-start by dictation of Form REMA.
2. The assistance provided may not always be another train/traction unit but could be the provision of a Rolling Stock Technician at site to assist the driver.
3. If there are any technical reasons preventing the failed train being assisted at one end, e.g. defective coupler, this must be declared by the driver when dictating Form PROD 1.

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<i>Signal box: Ashford AFC</i>		<i>Time : .....</i> <small>(hh/mm)</small>	<i>Date : .....</i> <small>(dd/mm/yy)</small>
<b>REQUEST FOR ASSISTANCE</b>			
Train .....	Weight .....	Length .....	
<small>(number)</small>	<small>(tonnes)</small>	<small>(metres)</small>	
I request assistance			
The front of the train is located at:			
Line .....	Km .....	Station .....	
<small>(name)</small>		<small>(name)</small>	
<input type="checkbox"/> Block Section Marker ..... <small>(number)</small>			
<input type="checkbox"/> Colour light stop signal ..... <small>(number)</small>			
<input type="checkbox"/> Shunt Marker ..... <small>(number)</small>			
assistance required <input type="checkbox"/> Front <input type="checkbox"/> Rear			
<input type="checkbox"/> re-railing equipment required			
<input type="checkbox"/> other .....			
<b>XX</b>			
<b>I undertake not to move my train without authority</b>			
Message sent			
<i>Date : .....</i>		<i>Time : .....</i>	
<small>(dd/mm/yy)</small>		<small>(hh/mm)</small>	

CCMS 6599734 (Version 06-12-08)

## **Part A - Forms used in connection with train working**

### **PROD 2 – Cancel request for assistance**

#### **Reason for use**

Used when the driver declares to the signaller that their train that was previously declared a failure by dictation of Form PROD 1 'Request for assistance' is now able to move under its own power and that assistance is no longer required.

#### **Outcome**

Assistance is cancelled and train restarts under its own power.

#### **Points to note:**

1. The driver must receive instruction from the signaller to re-start by dictation of Form REMA.
2. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to restart before dictating Form REMA. If an assisting train/traction unit has already been authorised to proceed to the front of the failed train by dictation of Form SECO, the failed train must not be authorised to re-start until the assisting train/traction unit is stopped and Form SECO cancelled.

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Signal box: <i>Ashford AFC</i>	Time : ..... <i>(hh/mm)</i>	Date : ..... <i>(dd/mm/yy)</i>
<b>CANCEL REQUEST FOR ASSISTANCE</b>		
<p>Train ..... stopped <i>(number)</i></p> <p>The front of the train is located at:</p> <p>Line ..... Km ..... Station ..... <i>(name)</i> <i>(name)</i></p> <p><input type="checkbox"/> Block Section Marker .....<i>(number)</i></p> <p><input type="checkbox"/> Colour light stop signal .....<i>(number)</i></p> <p><input type="checkbox"/> Shunt Marker .....<i>(number)</i></p> <p>I cancel my request for assistance</p> <p>Transmitted at ..... on ..... <i>(hh/mm)</i> <i>(dd/mm/yy)</i></p> <p>I request permission to continue the journey.</p>		
<b>XX</b>		
<b>I undertake not to move my train until I receive Form REMA</b>		
<p>Message sent</p> <p>Date : ..... Time : ..... <i>(dd/mm/yy)</i> <i>(hh/mm)</i></p>		

CCMS 6600425 (Version 06-12-08)

## **Part A - Forms used in connection with train working**

### **PROD 4 – Report of signalling irregularity**

#### **Reason for use**

Used when the driver has to report to the signaller that an irregularity or failure of the signalling system has been observed. This can be an irregularity or failure of the cab signalling system, colour light signals KVB, AWS or TPWS systems.

#### **Outcome**

The irregularity or failure is reported to the Infrastructure Maintainer and repaired.

#### **Points to note:**

1. Items shown in sub-section 2.2 of Module S4 of the Rule Book must be reported to the signaller immediately. Other items to be reported at the earliest opportunity.
2. On receiving a report of an irregularity or failure of the signalling system, the signaller must, if necessary, protect the failure and/or advise other drivers.
3. In the event of a TPWS activation, the signaller to also complete Form CTRL3188 obtaining the necessary information from the driver before authorising the train to proceed.

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<b>REPORT OF SIGNALLING IRREGULARITY</b>	
<i>Date : ..... (dd/mm/yy)</i>	<i>Time of incident : ..... (hh/mm)</i>
Driver ..... (name)	Depot .....(name)
Reported to Ashford AFC	Time Reported .....(hh/mm)
Train Number .....	Traction unit no. .... (number)
Approaching <input type="checkbox"/> Block Section Marker .....(number)	
<input type="checkbox"/> Shunt Marker .....(number)	
<input type="checkbox"/> Colour Light Signal .....(number)	
<input type="checkbox"/> Speed restriction at km ..... on the .....line (name)	
<input type="checkbox"/> Location ..... (name)	
XX	
<b>Report of Signal/Marker imperfectly shown or not shown</b>	
1. <input type="checkbox"/> Not lit    2. <input type="checkbox"/> Obscured by foliage/bright sunlight/lineside sign*    3. <input type="checkbox"/> Other#	
<b>Report of Irregular Signal Aspect</b>	
4. <input type="checkbox"/> Reverted to a more restrictive aspect#    5. <input type="checkbox"/> White light showing*	
6. <input type="checkbox"/> Aspects changed randomly#    7. <input type="checkbox"/> More than one aspect together#	
Did the aspect/indication change on approach? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Report of TVM/KVB/AWS/TPWS Irregularity or Failure</b>	
<b>TVM</b>	<b>KVB</b> 13. <input type="checkbox"/> "panne sol" illuminated
8. <input type="checkbox"/> failed to arm	<b>TPWS</b>
9. <input type="checkbox"/> failed to disarm	14. <input type="checkbox"/> OSS approaching signal no .....
10. <input type="checkbox"/> failed during running	15. <input type="checkbox"/> TSS at signal no .....
11. <input type="checkbox"/> failed to display pictograms	<b>AWS</b>
12. <input type="checkbox"/> irregular display#	16. <input type="checkbox"/> Any AWS irregularity or failure#
<b>Report of Speed Restriction Irregularity</b>	
<b>Indicator type</b>	17. <input type="checkbox"/> Warning Board    18. <input type="checkbox"/> Speed    19. <input type="checkbox"/> Termination
<b>Fault type</b>	20. <input type="checkbox"/> Missing    21. <input type="checkbox"/> No spot data balise/AWS magnet
<i>Notes: * - delete as appropriate    # - put details on reverse</i>	

CCMS 6698542 (Version 14-12-09)



## **Part A - Forms used in connection with train working**

### **PROD 5 – Personal protection (driver)**

#### **Reason for use**

Used when the driver requires the signaller to provide protection from moving trains in accordance with Module G of the Rule Book.

#### **Outcome**

The signaller stops/slows trains on adjacent lines so that the driver can safely enter the Danger Zone.

#### **Points to note:**

1. If personal protection is provided as part of another form procedure, the use of this form is not required.

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Signal box: <i>Ashford AFC</i>	Time : ..... <i>(hh/mm)</i>	Date : ..... <i>(dd/mm/yy)</i>
<b>PERSONAL PROTECTION (Driver)</b>		
<b>1. REQUEST</b>		
<p>I am the driver of train ..... My name is .....</p> <p style="text-align: center;"><i>(number)</i> <span style="margin-left: 150px;"><i>(name)</i></span></p> <p>I request personal protection <span style="float: right;"><i>(Delete as appropriate)</i></span></p> <p>Line ..... between ..... and ..... Stop trains / 160 km/h / 80 km/h.</p> <p>Line ..... between ..... and ..... Stop trains / 160 km/h / 80 km/h.</p> <p>Line ..... between ..... and ..... Stop trains / 160 km/h / 80 km/h.</p> <p>Line ..... between ..... and ..... Stop trains / 160 km/h / 80 km/h.</p> <p>Likely duration .....</p> <p>For the following reason .....</p> <p>.....</p> <p>.....</p>		
<b>2. NOTIFICATION</b>		
<p>Signal box: <i>Ashford AFC</i></p> <p style="text-align: center;">Time : ..... <span style="margin-left: 50px;">Date : .....</span></p> <p style="text-align: center;"><i>(hh/mm)</i> <span style="margin-left: 100px;"><i>(dd/mm/yy)</i></span></p> <p>From <b>AFC signaller</b> <span style="margin-left: 150px;">To .....</span></p> <p style="text-align: right;"><i>(name of driver)</i></p> <p><b>Personal Protection Guaranteed</b></p> <p>Line ..... between ..... and ..... Stop trains / 160 km/h / 80 km/h.</p> <p>Line ..... between ..... and ..... Stop trains / 160 km/h / 80 km/h.</p> <p>Line ..... between ..... and ..... Stop trains / 160 km/h / 80 km/h.</p> <p>Line ..... between ..... and ..... Stop trains / 160 km/h / 80 km/h.</p> <p><b>Order</b> .....<i>(number)</i></p>		
<b>3. AUTHORISATION TO REMOVE PERSONAL PROTECTION</b>		
<p style="text-align: center;">Time : ..... <span style="margin-left: 50px;">Date : .....</span></p> <p style="text-align: center;"><i>(hh/mm)</i> <span style="margin-left: 100px;"><i>(dd/mm/yy)</i></span></p> <p>From ..... Train ..... <span style="margin-left: 50px;">To <b>AFC signaller</b></span></p> <p style="text-align: center;"><i>(name of driver)</i> <span style="margin-left: 100px;"><i>(number)</i></span></p> <p><b>Authority is given to remove personal protection</b></p> <p><b>Order</b> .....<i>(number)</i></p>		

## **Part A - Forms used in connection with train working**

### **PRUD – Proceed at reduced speed**

#### **Reason for use**

Used when the signaller requires to caution the driver over a specific portion of line because of a report of a minor incident which requires the train to pass the location at reduced speed.

It is not used when the signaller requires the driver to carry out an examination of the line. In this eventuality, Form MAVU must be used.

#### **Outcome**

Driver proceeds over the specific portion of line at a speed appropriate to the circumstances.

#### **Points to note:**

1. May be used by the signaller to caution the driver because of a report of a minor incident outside the HS1 control area. In this case the driver will not report back to the AFC signaller.

Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>PROCEED AT REDUCED SPEED</b>		
<p>Order is given to driver of train ..... (number)</p> <p>to proceed at reduced speed from:</p> <p><input type="checkbox"/> km .....</p> <p><input type="checkbox"/> colour light signal ..... (number)</p> <p><input type="checkbox"/> Block Section Marker ..... (number)</p> <p>as far as <input type="checkbox"/> km .....</p> <p style="padding-left: 150px;"><input type="checkbox"/> colour light signal ..... (number)</p> <p style="padding-left: 150px;"><input type="checkbox"/> Block Section Marker .....(number)</p> <p>located between ..... &amp; ..... (easily recognisable locations)</p> <p>Reason .....</p> <p><input type="checkbox"/> and report back</p> <p><input type="checkbox"/> do not report back</p>		
XX		
Order .....(number)		
XX		
<p>Drivers report procedure <b>PRUD</b> <span style="float: right;">Time : .....</span></p> <p>Train ..... (number)</p> <p>Movement at reduced speed completed</p> <p>Stopped at</p> <p><input type="checkbox"/> km .....</p> <p><input type="checkbox"/> Colour light signal .....(number)</p> <p><input type="checkbox"/> Block Section Marker .....(number)</p> <p>Observations .....</p>		

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CCMS 6701229 (Version 14-12-09)

## Part A - Forms used in connection with train working

### REFO – Setting back

**NOTE: This form is only to be used either:**

- a) at Cheriton for the specific purpose of setting back a freight train that has been wrongly routed.**

#### Reason for use

Used when the signaller requires the driver of a freight train from France to Dollands Moor that has been wrong routed to set back behind Block Section Marker AF362 (Up Fast line) or Block Section Marker AF366 (Down Fast line) in order to reset the route.

#### Outcome

Driver sets back and stops Eurotunnel side of Block Section Marker AF362 (Up Fast line) or Block Section Marker AF366 (Down Fast line).

#### Points to note:

1. The freight train must **not** have completely passed Block Section Marker AF482 (Up CTRL line) or Block Section Marker AF484 (Down CTRL line). If it has, a setting back movement cannot be authorised.
2. The signaller must make sure the route is correctly set and the conditions are safe to allow the freight train to set back. This will necessitate receiving an assurance from the RCC controller that the route to be taken is protected from other movements, and that the location designated as the limit of the setting back movement is protected from movements approaching from the opposite direction.
3. If setting back on the Up CTRL line, the signaller must instruct the driver, to open the circuit breaker at km 7.308 and to close it at km 7.340.
4. The signaller must remain in radio contact with the driver of the setting back movement and must repeat "Set back, Set back, *Refoulez, Refoulez*, etc." until the train has reached the designated limit of the setting back movement. If this contact is lost, the driver must stop the train immediately.
5. The speed of the setting back movement must not exceed 30 km/h.

or

- b) at Dagenham for the specific purpose of setting back a freight train**

#### Reason for use

Used when the signaller requires the driver of either:

- a) a down direction freight train from Ripple Lane Exchange Sidings, whose cab signalling system fails to arm to set back behind Block Section Marker AF095 (Down Ripple Lane chord) or Block Section Marker AF101 (Up Ripple Lane chord) in order to return to Ripple Exchange Sidings, **or**
- b) a up direction freight train for Ripple Lane Exchange Sidings that has been wrong routed to set back behind Shunt Marker AF512 (Up CTRL line) or Shunt Marker AF514 (Down CTRL line) in order to reset the route.

#### Outcome

Driver sets back and stops either:

Ripple Exchange Sidings side of Block Section Marker AF095 (Down Ripple Lane chord) or Block Section Marker AF101 (Up Ripple Lane chord), **or**

Wennington side of Shunt Marker AF512 (Up CTRL line) or Shunt Marker AF514 (Down CTRL line)

**Points to note:**

1. A down direction freight train must **not** have completely passed Block Section Marker D021 (Down CTRL line) or Block Section Marker U022X (Up CTRL line). If it has, a setting back movement cannot be authorised.
2. An up direction freight train must **not** have completely passed Block Section Marker AF740 (Up CTRL line) or Block Section Marker AF836 (Down CTRL line). If it has, a setting back movement cannot be authorised
3. The signaller must make sure the route is correctly set and the conditions are safe to allow the freight train to set back. In the case of a down direction freight train, this will necessitate receiving an assurance from the Upminster IECC signaller that the route is set into the Ripple Lane Exchange Sidings and protected from other movements.
4. The signaller must remain in radio contact with the driver of the setting back movement and must repeat "Set back, Set back" until the train has reached the designated limit of the setting back movement. If this contact is lost, the driver must stop the train immediately.
5. The speed of the setting back movement must not exceed 30 km/h.

Signal box: <i>Ashford AFC</i>	Time : ..... <i>(hh/mm)</i>	Date : ..... <i>(dd/mm/yy)</i>
<b>SETTING BACK</b>		
Order is given to driver of train ..... <i>(number)</i> to execute a setting back movement		
<input type="checkbox"/> to open the circuit breaker at km 7.308 and to close it at km 7.340.		
<input type="checkbox"/> to stop at Block Section Marker ..... <i>(number)</i>		
<input type="checkbox"/> to stop at Shunt Marker ..... <i>(number)</i>		
and report back.		
XX		
<b>Order</b> ..... <i>(number)</i>		
XX		
Drivers report procedure <b>REFO</b>		Time : .....
Setting back movement of train ..... performed. <i>(number)</i>		
<input type="checkbox"/> Stopped at Block Section Marker ..... <i>(number)</i>		
<input type="checkbox"/> Stopped at Shunt Marker ..... <i>(number)</i>		

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CCMS 8211214 (Version 26-01-12)

## Part A - Forms used in connection with train working

### REMA – Restart journey

#### Reason for use

Used when the signaller tells a driver they can recommence movement in the following circumstances:

#### General

- (a) the driver has stopped the train because of an unusual occurrence, e.g. the unexpected display of the 'Red - Proceed on Sight' indication on the cab signalling display, or a fault on the train, and it is now safe for it to proceed.
- (b) the signaller has stopped the train because of an emergency and it is now safe for it to proceed.
- (c) a train has had to make an unscheduled change of direction on a running line (Form CHEX has been dictated to the driver) and is now ready to proceed.
- (d) assistance has been provided to a failed train and the combined trains are now ready to proceed.
- (e) the driver of a failed train has cancelled their request for assistance (Form PROD 2 has been dictated to the signaller) and is now ready to proceed.
- (f) the signaller has stopped an assisting movement on route to a failed train as it is no longer required (Form SECO has been dictated to the driver, but has been cancelled) and it is now safe for the assisting movement to proceed.
- (g) a works train/OTM is left on a running line following the giving up of a Protected Area and it is safe for it to proceed.
- (h) the SRPOS has authorised a works train/OTM to exit a Protected Area (Form ETPA has been dictated to the signaller) and it is safe for it to proceed.

#### Additionally in an area controlled by cab signalling

- (i) a train has been authorised past a closed 'N' Block Section Marker to attend to check/cancel the route (Form ATRA/VEVO has been dictated to the driver) and is now ready to proceed.
- (j) a train has had to stop to entrain/detrain passengers and/or staff following an incident and is now ready to proceed (does not apply if the train is stopped at a station platform, when the normal departure procedures will apply).

#### Additionally in an area controlled by colour light signalling

- (k) a train movement has reversed and is then required to start with the driving cab beyond the colour light stop signal.

#### Outcome

Driver recommences the movement obeying the indication displayed by the cab signalling system or the aspect displayed by the colour light signal and complying with any other instructions received.

**Points to note:**

1. The dictation of Form REMA is not necessary if the train has stopped at a closed 'N' Block Section Marker or colour light stop signal because of the normal signalling arrangements. The driver to proceed when the 'N' Block Section Marker opens or colour light stop signal shows a proceed aspect. If the signaller cannot open the 'N' Block Section Marker, or its associated Auxiliary signal or clear the colour light stop signal, authorisation to pass the marker/signal will be by the dictation of either Form FREP/FASI, as appropriate. The dictation of Form REMA is only necessary if any of the circumstances shown above **also** apply.
2. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to proceed before dictating Form REMA.
3. If in the area controlled by cab signalling, the driver must make sure the cab signalling is armed and an indication displayed in the driving cab before proceeding.
4. Sometimes another form (e.g. Form MAVU) has to be dictated to the driver before authorising the train to proceed. The other form must always be dictated to the driver before Form REMA is dictated. This includes the dictation of either Form FREP/FASI, if the train is also required to pass a closed 'N' Block Section Marker or colour light stop signal. (see Note 1 above)

Signal box: <i>Ashford AFC</i>	Time : ..... <i>(hh/mm)</i>	Date : ..... <i>(dd/mm/yy)</i>
<b>RESTART JOURNEY</b>		
Authorisation is given to driver of train ..... <span style="margin-left: 300px;"><i>(number)</i></span>  Check that TVM is armed (if in a cab signalled area) and, to restart with:  <input type="checkbox"/> no special conditions  <input type="checkbox"/> special conditions  ..... ..... .....		
<b>XX</b>		
<b>Authorisation</b> ..... <i>(number)</i>		

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CCMS 6706030 (Version 15-11-13)



## Part A - Forms used in connection with train working

### SECO – Assist failed train

#### Reason for use

Used when the signaller requires the driver of an assisting train/traction unit to attach to a failed train and to assist it to a specified location.

#### Outcome

Signaller receives confirmation from the driver of the assisting train/traction unit that it is attached to the failed train and the combined trains are ready to proceed.

#### Points to note:

1. Form SECO does not give personal protection. If the driver is required to go into the Danger Zone to make the attachment, they must request personal protection by using the PROD 5 procedure.
2. After the driver of the assisting train/traction unit confirms they have coupled to the failed train and the combined trains are ready to proceed, the signaller must dictate Form REMA to instruct the driver at the head of the movement in direction of travel to proceed.
3. If, after the signaller has instructed the driver to assist by dictation of Form SECO, circumstances change and assistance is **not** required, the signaller may cancel Form SECO provided the driver has not reported back that the trains have coupled. The signaller must dictate Form REMA to instruct the driver to restart.

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Signal box: Ashford AFC	Time : ..... <small>(hh/mm)</small>	Date : ..... <small>(dd/mm/yy)</small>
<b>ASSIST FAILED TRAIN</b>		
<p>Order is given to driver of train .....: <small>(number)</small>                  to assist train .....: <small>(number)</small>                  which has failed on the ..... line at km .....  <small>(name)</small>                  located between ..... &amp; .....  <small>(easily recognisable locations)</small>                  and assist to:</p> <p><input type="checkbox"/> station ..... <small>(name)</small></p> <p><input type="checkbox"/> the loop at..... <small>(name)</small></p> <p><input type="checkbox"/> other location ..... <small>(name)</small></p> <p>Report back when the attachment is completed.</p>		
XX		
Order .....: <small>(number)</small>		
XX		
<p>Drivers report procedure <b>SECO</b> <span style="float: right;">Time : .....</span></p> <p>Train .....  <small>(number)</small></p> <p><input type="checkbox"/> attachment made, ready to move</p> <p><input type="checkbox"/> not attached, reason .....</p>		
<b>CANCELLATION OF SECO PROCEDURE</b>		
Signal box: Ashford AFC	Time : ..... <small>(hh/mm)</small>	Date : ..... <small>(dd/mm/yy)</small>
<p>Order is given to driver of train .....: <small>(number)</small>                  Assistance of train .....:is cancelled  <small>(number)</small></p>		
<p>Drivers report cancellation procedure <b>SECO</b> <span style="float: right;">Time : .....</span></p> <p>Train .....  <small>(number)</small></p> <p style="text-align: center;"><b>I undertake not to move my train until I receive Form REMA</b></p>		

CCMS 6706753 (Version 06-12-08)

## **Part A - Forms used in connection with train working**

### **STREV – Movement authority for track recording/test train**

#### **Reason for use**

Used in connection with Part 11 of Module B of this Sectional Appendix when the signaller authorises the driver (or conductor driver) of a test train not fitted with cab signalling equipment to proceed over a specified portion of line at a speed greater than 31 km/h (maximum 100 km/h).

#### **Outcome**

Train proceeds over the portion of line in accordance with the conditions specified on the form.

#### **Points to note:**

1. The signaller must have received confirmation from the Designated Competent Person (DCP) that the warning and stopping protections are in place at the limit of the run and the route is set correctly before issuing Form STREV to the driver (or conductor driver).
2. The infrastructure recording/test train may not proceed to the full limit of the route set. The driver (or conductor driver) to report back to the signaller from the location the train has stopped at.
3. If the destination is a colour light stop signal, the driver is to obey the aspect of the signal and not report back to the signaller.
4. Form STREV applies from the location where the infrastructure recording/test train is stood which may be before the starting point of the recording/test run shown in the Daily Notice or Special Operating Instruction.

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Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>MOVEMENT AUTHORITY FOR TRACK RECORDING/TEST TRAIN</b>		
To driver of train ..... (number)		
Reference run ..... (number) from ..... to .....		
Authorisation is given to pass all 'N' Block Section Markers without stopping <b>but to obey the aspect of all colour light signals</b>		
Route set for: <input type="checkbox"/> Block Section Marker.....(number)		
<input type="checkbox"/> Colour light stop signal .....(number)		
<input type="checkbox"/> There are no speed restrictions		
<input type="checkbox"/> Not to exceed a speed of ..... km/h from km ..... to km ..... located between ..... & ..... (easily recognisable locations)		
<input type="checkbox"/> and report back		
<input type="checkbox"/> obey the signal aspect and do not report back		
XX		
<b>Authorisation</b> .....(number)		
XX		
Drivers report procedure <b>STREV</b>		Time : .....
Train ..... (number)		
Run completed		
Stopped at		
<input type="checkbox"/> km .....		
<input type="checkbox"/> Colour light stop signal .....(number)		
<input type="checkbox"/> Block Section Marker .....(number)		
<input type="checkbox"/> transmitted by telephone <input type="checkbox"/> transmitted by radio		

CCMS 6710246 (Version 28-01-12)

## **Part A - Forms used in connection with train working**

### **VECA – Examine catenary**

#### **Reason for use**

Used when the signaller requires the driver to carry out an examination of a specific portion of catenary to ascertain whether there is an obstruction or not.

#### **Outcome**

Driver proceeds over the specific portion of line under 'Proceed on Sight' conditions and reports to the signaller the state of the catenary.

#### **Points to note:**

1. May be used to examine the catenary at an interface between HS1 and Network Rail/Eurotunnel/Temple Mills International Depot. In this case the driver will not report back to the AFC signaller.

Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>EXAMINE CATENARY</b>		
Order is given to driver of train ..... (number)		
to proceed on sight and check the catenary: from km ..... as far as km ..... line(s) ..... (name)		
and to report findings Reason .....		
<b>XX</b>		
<b>Order</b> .....(number)		
<b>XX</b>		
Drivers report procedure <b>VECA</b>		Time : .....
Train ..... (number)		
<input type="checkbox"/> catenary checked		
from km ..... as far as km ..... line(s) ..... (name)		
<input type="checkbox"/> no fault found		
<input type="checkbox"/> Fault at ..... Passage of trains		<input type="checkbox"/> Possible
		<input type="checkbox"/> Not possible

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CCMS 6710247 (Version 14-12-09)

## **Part A - Forms used in connection with train working**

### **VEVO (Driver) – Verify line is clear**

#### **Reason for use**

Used when the signaller requires the driver to verify there is not an obstruction on the line because a track circuit is showing occupied for no apparent reason.

#### **Outcome**

Signaller receives report from the driver as to the state of the line.

#### **Points to note:**

1. Procedure ATRA 'Cancel routing' may be required to be carried out after the driver reports back Procedure VEVO. If the driver remains at site to cancel the route on the local control panel, Form VEVO may be closed and the personal protection transferred directly to Form ATRA.
2. If a train has been authorised to pass a closed 'N' Block Section Marker for the driver to carry out Procedure VEVO and all is now in order for the train to proceed, the signaller must dictate Form REMA to instruct the driver to restart.
3. Procedure VEVO also gives personal protection, if required.

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Signal box: Ashford AFC	Time : ..... <small>(hh/mm)</small>	Date : ..... <small>(dd/mm/yy)</small>
<b>VERIFY LINE IS CLEAR</b>		
Order is given to driver of train ..... <small>(number)</small>  <input type="checkbox"/> to check track circuit ..... line ..... <small>(number) (name)</small>  <input type="checkbox"/> to check line ..... <small>(name)</small> from ..... as far as ..... located between ..... & ..... <small>(km) (km) (easily recognisable locations)</small> and report back. <b>Personal Protection</b>  <input type="checkbox"/> Traffic stopped on line(s) ..... / ..... / ..... <small>(names)</small>  <input type="checkbox"/> Traffic limited to ..... on line(s) ..... / ..... <small>(km/h) (names)</small>		
XX		
<b>Order</b> ..... <small>(number)</small>		
XX		
Drivers report procedure <b>VEVO</b> <span style="float: right;">Time : .....</span>  Train ..... <small>(number)</small>  <input type="checkbox"/> track circuit checked..... line ..... <small>(number) (name)</small>  <input type="checkbox"/> line checked ..... <small>(name)</small> from ..... as far as ..... <small>(km) (km)</small>  <input type="checkbox"/> Clear  <input type="checkbox"/> Blocked		
<input type="checkbox"/> <b>Personal protection may be removed</b>  <input type="checkbox"/> <b>Personal protection transferred to Form ATRA</b> <span style="float: right;">Time : .....</span>		

CCMS 6716306 (Version 14-12-09)



## Part A - Forms used in connection with train working

### VILI – Limit speed

#### Reason for use

Used when the signaller requires the driver to proceed over a specified portion of line at a reduced speed, when drivers cannot receive the information via the cab signalling system or lineside signs.

#### Outcome

Train proceeds over the specified portion of line not exceeding the maximum speed indicated on the form.

#### Points to note:

1. In a cab signalled area, to always be used to give advice of a emergency speed restriction of less than 80 km/h. The ERS switches covering the portion of line to be traversed at a reduced speed must also be operated.
2. In addition to be used to give advice of a temporary maximum speed of less than 80 km/h when the lineside signs and associated equipment have not been provided.
3. In a colour light signalling area, to always be used to give advice of a emergency speed restriction
4. In addition, to be used to give advice of a temporary speed restriction when the lineside signs and associated equipment have not been provided.
5. There is no need to stop the train at the protecting colour light stop signal or Block Section Marker if the signaller can dictate Form VILI to the driver at a convenient location where the train is already stopped before the speed restriction, e.g. a station platform. However, before the signaller sets the route through the affected area and opens the protecting colour light stop signal or Block Section Marker, he/she must receive confirmation from the driver that they are in possession of the completed Form VILI.
6. Where possible the identities of Block Section Markers or colour light signals should be used as the '*easily recognisable locations*' to specify the location of a speed restriction.

Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>LIMIT SPEED</b>		
Order is given to driver of train ..... (number)		
- not to exceed a speed of ..... km/h		
- from km ..... as far as km .....		
- located between ..... & ..... (easily recognisable locations)		
XX		
Order.....(number)		

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CCMS 676677 (Version 14-12-09)

## **Part A - Forms used in connection with train working**

### **VITA – Examine train**

#### **Reason for use**

Used when the signaller requires the driver to examine their train after receiving a report of a suspected defect. This report may come from someone, physically observing the train, e.g. the driver of another train, lineside staff, or it may come from track located monitoring equipment, i.e. VHME.

#### **Outcome**

Driver examines their train and reports to the signaller the results of the examination.

#### **Points to note:**

1. Procedure VITA also gives personal protection, if required.

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Signal box: <i>Ashford AFC</i>	Time : ..... <small>(hh/mm)</small>	Date : ..... <small>(dd/mm/yy)</small>
<b>EXAMINE TRAIN</b>		
Order is given to driver of train ..... to examine the train for <small>(number)</small>		
<input type="checkbox"/> hot axle box ..... <small>(number)</small>	<input type="checkbox"/> left side	<input type="checkbox"/> right side
<input type="checkbox"/> emission of smoke	<input type="checkbox"/> front of train	<input type="checkbox"/> middle of train
	<input type="checkbox"/> rear of train	<input type="checkbox"/> loco/power car
<input type="checkbox"/> other fault .....		
and report back.		
<b>Personal Protection</b>		
<input type="checkbox"/> Traffic stopped on line(s) ..... / ..... / ..... <small>(names)</small>		
<input type="checkbox"/> Traffic limited to ..... on line(s) ..... / ..... <small>(km/h) (names)</small>		
XX		
<b>Order</b> ..... <small>(number)</small>		
XX		
Drivers report procedure <b>VITA</b>		Time : .....
Train ..... <small>(number)</small>		
<input type="checkbox"/> Examination completed	<input type="checkbox"/> action taken	
<input type="checkbox"/> hot axle box ..... confirmed <small>(number)</small>	<input type="checkbox"/> left side	<input type="checkbox"/> right side
<input type="checkbox"/> smoke confirmed	<input type="checkbox"/> front of train	<input type="checkbox"/> middle of train
	<input type="checkbox"/> rear of train	<input type="checkbox"/> loco/power car
<input type="checkbox"/> other fault ..... measures to be taken ..... measures taken .....		
<input type="checkbox"/> no fault found.....		
<b>Personal protection may be removed</b>		Time : .....

CCMS 7439944 (Version 06-12-08)

## **Part A - Forms used in connection with train working**

### **XCAB – Movement authority for trains not fitted with HS1 cab signalling**

#### **Reason for use**

Used when the signaller has to authorise the driver of a train not fitted with cab signalling equipment to proceed over a portion of HS1 that is controlled by the cab signalling system in accordance with the instructions shown in Module UF of the Rule Book.

#### **Outcome**

Driver proceeds over the portion of HS1 under 'Proceed on Sight' conditions at a maximum speed of 30 km/h (20 mph) to the specified destination.


#### **Points to note:**

1. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to proceed before dictating Form FASI. This may mean having the route confirmed as being correctly set by the shift manager or another signaller in the AFC.
2. Form XCAB does not give authority to pass a 'N' Block Section Marker. This is given by the opening of the associated Auxiliary Signal or the signaller dictating Form FREP.
3. Form XCAB does not give authority to pass a colour light stop signal displaying a DANGER aspect. This is given by the display of a proceed aspect or the signaller dictating Form FASI.
4. If the destination is a colour light stop signal, the driver is to obey the aspect of the signal and not report back to the signaller.

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Signal box: <i>Ashford AFC</i>	Time : ..... <small>(hh/mm)</small>	Date : ..... <small>(dd/mm/yy)</small>
<b>MOVEMENT AUTHORITY FOR TRAINS NOT FITTED WITH CAB SIGNALLING</b>		
<b>NOTE: THIS FORM DOES NOT AUTHORISE A DRIVER TO PASS A 'N' BLOCK SECTION MARKER. THIS IS GIVEN BY EITHER THE SIGNALLER OPENING THE ASSOCIATED AUXILIARY SIGNAL OR DICTATING FORM FREP</b>		
Authorisation is given to driver of unfitted train .....( <i>number</i> ) To proceed without cab signalling indications under "Proceed on Sight" conditions for the following reason: <input type="checkbox"/> in connection with assistance to a failed train <input type="checkbox"/> in connection with the Worksite located at km ..... on the ..... line <input type="checkbox"/> other reason ..... You must proceed to: <input type="checkbox"/> Block Section Marker ..... ( <i>number</i> ) <input type="checkbox"/> colour light signal ..... ( <i>number</i> ) Where you must: <input type="checkbox"/> Stop and report back <input type="checkbox"/> Obey the signal aspect and <b>not</b> report back <b>MAXIMUM SPEED not to exceed 30 km/h (20 mph)</b> XX		
<b>Authorisation</b> ..... ( <i>number</i> )		
XXX		
Drivers report procedure <b>XCAB</b>	Time .....	
Train .....( <i>number</i> ) Stopped at:		
<input type="checkbox"/> Block Section Marker ..... ( <i>number</i> ) <input type="checkbox"/> colour light signal ..... ( <i>number</i> ) and I am waiting further instructions		

CCMS 7440384 (Version 01-05-13)

	HS1 Level Two Standard
	C/OP/OS/05/2002
	May 2013

# HS1 Sectional Appendix (Previously the CTRL Sectional Appendix)

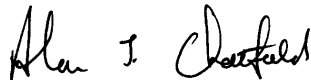
## Module F (Part B)

### Forms used in response to/following an incident

The forms in this part are used for safety communications between signallers and drivers/other staff in response to/following an incident.

**Staff must apply the instructions shown in Section 18 of Module G of the HS1 Rule Book when carrying out safety critical communications.**

Prepared by



.....  
**Alan Chatfield**  
Operations Standards Manager, Network Rail (High Speed) Ltd.

Authorised by:



.....  
**Simon Lejeune**  
Head of High Speed Operations, Network Rail (High Speed) Ltd.

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(CCMS 8232844)

Network Rail Infrastructure Ltd Registered Office Kings Place 90 York Way London N1 9AG

Registered in England and Wales No. 2904587 www.networkrail.co.uk

<b>REVISION HISTORY</b>	
December 2008	Initial issue.
December 2009	Forms ATRA, MAIL, PROD5, VAIG & VEVO amended.
January 2012	Forms CTRL3188, CTRL3189, MAIL, PROD5 (not driver) & PROD5 (station staff) amended.
May 2013	Forms MAIL & VAIG amended.

Amendments to the text are indicated by a side-line in the margin. (Not shown on the actual form). Details of the amendment are explained below:

<b>Page</b>	<b>Form</b>	<b>Amendment</b>
FB8	CTRL3189	Text page, "CTRL shift manager" amended to read: "shift manager".
FB10/FB11	IMPR2690	Text page and form amended to reflect change from CTRL to HS1. Text page, "CTRL shift manager" amended to read: "shift manager"
FB12/FB13	MAIL	Competent Persons now only use Form MAIL. Form amended to indicate the direction of the points as "normal" or "reverse"
FB16	PROD5 (station staff)	Text page, Additional point to note (3) - Form also to be used when retrieving an object from the track using a hand-held device.
FB18/FB10	VAIG	Competent Persons now only use Form VAIG. Form amended to indicate the direction of the points as "normal" or "reverse"



## Table of Contents

Form	Description	Latest version	Pages
ATRA (Not driver)	Cancel routing	14-12-09	FB4/FB5
CTRL3188	Activation of TPWS	28-01-12	FB6/FB7
CTRL3189	Closed Marker Passed Without Authority (CMPWA)/Signal Passed At Danger (SPAD)	28-01-12	FB8/FB9
IMPR2690	Setting back between Eurotunnel and CTRL	14-12-09	FB10/FB11
MAIL	Operate designated points	01-05-13	FB12/FB13
PROD5 (Not driver)	Personal protection	28-01-12	FB14/FB15
PROD5 (Station staff)	Personal protection	17-12-11	FB16/FB17
VAIG	Examine points	01-05-13	FB18/FB19
VEVO (Not driver)	Verify line is clear	14-12-09	FB20/FB21

## Part B - Forms used in response to/following an incident

### ATRA (Not driver) – Cancel routing

#### Reason for use

Used when the signaller requires a competent person to operate the local release unit to release the signalling controls if a track circuit shows occupied, resulting in a route being locked or preventing points being operated.

#### Outcome

Signaller receives confirmation from the competent person that the local release unit is operated.

#### Points to note:

1. The reason that the track circuit is showing occupied may be because it is occupied by a stationary 'trapped' train that requires the points in front of it to be operated to an alternative route.
2. If the track circuit is showing occupied because of a suspected track circuit failure, Procedure VEVO 'Verify line is clear' must be carried out first before Form ATRA is dictated.
3. If Procedure ATRA is to be carried out after Form VEVO has been dictated the Personal Protection arrangements already granted to be transferred to Form ATRA **before** Form VEVO is cancelled.
4. Procedure ATRA also gives personal protection, if required.



## **Part B - Forms used in response to/following an incident**

### **CTRL3188 – Activation of TPWS other than when a colour light stop signal has been passed at danger (SPAD)**

#### **Reason for use**

Used for the signaller to obtain information from the driver following a TPWS activation.

#### **Outcome**

Signaller receives the information and confirmation that the driver is fit to proceed.

#### **Points to note:**

1. If the TPWS has activated and stopped a train when it has passed a colour light stop signal displaying a DANGER aspect, Form CTRL3188 must not be used. The incident must be dealt with as a Signal Passed at Danger (SPAD) and Form CTRL3189 used.
2. If the TPWS has activated and stopped a train for no apparent reason, the driver will report the incident as a Signalling Irregularity by dictating Form PROD4. The compilation of Form CTRL 3188 is to obtain further information to assist the Signalling Department in its investigations.

<b>CTRL3188</b>
<b><u>ACTIVATION OF TPWS</u></b> <b><u>Other than when a signal has been passed at danger (SPAD)</u></b>
<b>PART 1 General information</b> <i>(all details must be completed)</i>
Date ..... and time ..... of TPWS activation. Location of TPWS activation .....
Train involved <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> ..... hrs. From ..... To .....
Driver's Name ..... Driver's Company ..... Home depot .....
Traction unit number ..... Vehicle/cab number driving from .....
<b>PART 2 Questions to ask driver</b>
Where did the brakes apply? ..... ..... .....
Train Stop at signal number..... <input type="checkbox"/>
Train Stop before signal number..... <input type="checkbox"/>
What speed were you doing when the brakes applied? ..... mph/km/h* <i>(* delete as appropriate)</i>
Do you consider the train fit to continue? <input type="checkbox"/> YES <input type="checkbox"/> NO
Do you consider yourself fit to continue? <input type="checkbox"/> YES <input type="checkbox"/> NO
Is it necessary to isolate the TPWS? <input type="checkbox"/> YES <input type="checkbox"/> NO
<b>PART 3 Authorisation for train to proceed</b>
Driver of Train <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> is authorised to proceed normally <b><u>Or</u></b> is authorised to proceed to ..... <i>(location)</i>
Signaller ..... AFC Ashford Given to shift manager

CCMS 8205459

## **Part B - Forms used in response to/following an incident**

### **CTRL3189 – Signal Passed at Danger/Closed Marker Passed Without Authority (Category A only)**

#### **Reason for use**

Used for the signaller to obtain information from the driver following a Signal Passed at Danger/Closed Marker Passed Without Authority incident.

#### **Outcome**

Signaller receives the information and informs the shift manager. |

#### **Points to note:**

1. The signaller must protect the incident in accordance with the Signalling Regulations before compilation of Form CTRL 3189.
2. The signaller must not allow the train to proceed until authorised by the shift manager. |

<b>CTRL3189</b>
<b><u>SIGNAL PASSED AT DANGER/CLOSED MARKER PASSED WITHOUT AUTHORITY (Category A only)</u></b>
<b>PART 1 General information</b> <i>(all details must be completed)</i>
Date ..... and time ..... of incident. SPAD or CMPWA identification number or location ..... Type of signal or marker ..... Train involved <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> ..... hrs. From ..... To ..... Driver's Name ..... Driver's Company ..... Home depot ..... Traction unit number ..... Vehicle/cab number driving from .....
<b>PART 2 Questions the signaller must ask the driver</b>
Are you the driver of train no? <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="checkbox"/> YES <input type="checkbox"/> NO
Are you aware that you have passed signal at danger/closed marker no ..... without authority? <input type="checkbox"/> YES <input type="checkbox"/> NO
Do you dispute you have passed the signal at danger/closed marker without authority? <input type="checkbox"/> YES <input type="checkbox"/> NO
If yes, why is it disputed? ..... .....
Was the train stopped by an ATP/KVB/TPWS intervention? <input type="checkbox"/> YES <input type="checkbox"/> NO
Did you receive the correct signal/in cab signalling indication during your approach to the signal/marker? <input type="checkbox"/> YES <input type="checkbox"/> NO
If the answer is no, what indications did you get? ..... .....
What were the weather conditions at the location of the incident? .....
By how far has the leading cab passed the marker/signal? .....m
What in your view caused the incident? ..... .....
Are you accompanied in the driving cab? <input type="checkbox"/> YES <input type="checkbox"/> NO
If yes, by whom? .....
Do you consider the train fit to continue? <input type="checkbox"/> YES <input type="checkbox"/> NO
Do you consider yourself fit to continue? <input type="checkbox"/> YES <input type="checkbox"/> NO
Signaller ..... AFC Ashford
Given to shift manager

**SIGNALLER MUST REMIND DRIVER NOT TO MOVE UNTIL AUTHORITY TO DO SO HAS BEEN GIVEN**

CCMS 8205460

## **Part B - Forms used in response to/following an incident**

### **IMPR2690 – Setting back between Eurotunnel and HS1**

#### **Reason for use**

Used to record the requests and authorisations exchanged between the signaller and Eurotunnel RCC supervisor when it is necessary to set back a train at the interface of the Eurotunnel and HS1 signalling control areas in accordance with the procedure shown in Part 16.8 of the Sectional Appendix.

#### **Outcome**

The necessary protection measures are put in place and the signaller/RCC controller authorises the driver to set back using form REFO.

#### **Points to note:**

1. The RCC supervisor and shift manager must remain in contact by telephone while the setting back movement is being carried out and be prepared to order the other to stop the movement if they become aware of a dangerous situation arising.



## Form IMPR 2690

### Setting back between Eurotunnel and HS1

#### 1/ RCC to AFC Signaller

Request permission to set back train .....in rear of marker ..... on the ..... line.  
Apply AFC measures to protect the setting back movement.

Time : ..... Date : ..... Message HS1 n° ..... ET n° .....

#### 2/ AFC Signaller to RCC

Reference your message n° ..... , permission given to set back train ..... in rear of  
marker ..... on the ..... line. AFC protection measures are in place.

Time : ..... Date : ..... Message HS1 n° ..... ET n° .....

#### 3/ RCC to AFC Signaller

Reference your message n° ....., train .....has stopped in rear of marker .....  
on the ..... line. AFC measures to protect the setting back movement can be removed.

Time : ..... Date : ..... Message HS1 n° ..... ET n° .....

### Setting back between HS1 and Eurotunnel

#### 4/ AFC Signaller to RCC

Request permission to set back train .....in rear of marker ..... on the ..... line.  
Apply RCC measures to protect the setting back movement.

Time : ..... Date : ..... Message HS1 n° ..... ET n° .....

#### 5/ RCC to AFC Signaller

Reference your message n° ..... , permission given to set back train ..... in rear of  
marker ..... on the ..... line. RCC protection measures are in place.

Time : ..... Date : ..... Message HS1 n° ..... ET n° .....

#### 6/ AFC Signaller to RCC

Reference your message n° ....., train .....has stopped in rear of marker .....  
on the ..... line. RCC measures to protect the setting back movement can be removed.

Time : ..... Date : ..... Message HS1 n° ..... ET n° .....

CCMS 63730349

## Part B - Forms used in response to/following an incident

### MAIL – Operate designated points

#### Reason for use

Used when the signaller requires a competent person to manually operate failed power operated points (and associated swing nose crossing).

#### Outcome

Signaller receives confirmation from the competent person that the points (and associated swing nose crossing) have been manually operated.

#### Points to note:

1. If Procedure MAIL is to be carried out after Form VAIG has been dictated the Personal Protection arrangements already granted to be transferred to Form MAIL **before** Form VAIG is cancelled.
2. The points in the St Pancras area are the HPSS type.
  - a. There are no swing nose crossings associated with these points.
  - b. The points must always be secured using the special securing device provided. This applies if the points are in the correct position originally or are required to be operated to a new position. The competent person must confirm this to the signaller when reporting back Form MAIL.
3. Procedure MAIL also gives personal protection, if required.

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Signal box: *Ashford AFC* Time : .....  
(hh/mm) Date : .....  
(dd/mm/yy)

---

**OPERATE DESIGNATED POINTS**

---

Order is given to Competent person ..... to move  
(name)

points ..... km .....  
(number)

swing nose crossing ..... km .....  
(number)

To              Normal      Reverse

Leave the handle in position      motor      manual  
and report back.

**Personal Protection**

Transferred from form VAIG at ..... (time)

Traffic stopped on line(s) ..... / ..... / .....  
(names)

Traffic limited to ..... on line(s) ..... / .....  
(km/h) (names)

---

**Order** ..... (number)

---

Competent person's report procedure **MAIL** Time : .....

..... (name)

points ..... km ..... moved to      Normal      Reverse  
(number)

swing nose crossing ..... km ..... moved to      Normal      Reverse  
(number)

The handle is in position      motor      manual

Points secured

**Personal protection may be removed** Time : .....

CCMS 8205461

## **Part B - Forms used in response to/following an incident**

### **PROD 5 – Personal protection (Not driver)**

#### **Reason for use**

Used when a competent person requires the signaller to provide protection from moving trains in accordance with Module G of the HS1 Rule Book.

#### **Outcome**

The signaller stops trains on the requested line and stops/slows trains on adjacent lines so that the competent person can safely enter the Danger Zone.

#### **Points to note:**

1. If personal protection is provided as part of another form procedure, the use of this form is not required.
2. Station staff (not trained in Personal Track Safety) to use Form PROD5 (Station staff).
3. The PROD5 number is the time plus the initials of the competent person requesting protection, e.g. 1245AC.

<b>PROD 5</b> (not train driver)					
To:	Ashford Control Centre	Date:	..... DD/MM/YY	Time:	..... HH:MM
<b>Part 1.</b>		<b>Personal Protection Request</b>			
I am	..... (Name) ..... (position)	My contact number is:		.....	
I request personal protection at the following location(s):					<i>(delete as appropriate)</i>
Line	.....	between	.....	and	.....
					Stop trains / 160km/h / 80km/h
Line	.....	between	.....	and	.....
					Stop trains / 160km/h / 80km/h
Line	.....	between	.....	and	.....
					Stop trains / 160km/h / 80km/h
Line	.....	between	.....	and	.....
					Stop trains / 160km/h / 80km/h
The likely duration is		..... (time)			
For the following reason: .....					
.....					
					Prod 5 Number: .....
<b>Part 2.</b>		<b>Notification</b>			
From	AFC Signaller				
<i>(date) (time)</i>					
To	..... (name)	For Prod 5 number:		.....	
Personal protection is guaranteed for the following locations:					<i>(delete as appropriate)</i>
Line	.....	between	.....	and	.....
					Stop trains / 160km/h / 80km/h
Line	.....	between	.....	and	.....
					Stop trains / 160km/h / 80km/h
Line	.....	between	.....	and	.....
					Stop trains / 160km/h / 80km/h
Line	.....	between	.....	and	.....
					Stop trains / 160km/h / 80km/h
Order Number:		AF _____			
<b>Part 3.</b>		<b>Authorisation to Remove Personal Protection</b>			
From	..... (name)	To	AFC Signaller		
Authority is given to remove personal protection given by Prod 5 No:			.....	Order No:	.....
Line side switches have been returned to their original positions					

CCMS 8205462

## Part B - Forms used in response to/following an incident

### PROD 5 – Personal protection (Station staff)

#### Reason for use

Used when station staff (not trained in Personal Track Safety) requires the signaller to provide protection from moving trains in accordance with Module SS1 of the HS1 Rule Book.

#### Outcome

The signaller stops trains on the requested and adjacent lines so that the station staff can safely enter the Danger Zone.

#### Points to note:

1. Form PROD5 (station staff) may also be used by EIL Rolling Stock Technicians (RST) at St. Pancras International station for personal protection to attend to a defect either:
  - (a) on the front or rear of a train that requires the RST to go onto the track of the same platform line as the train, **and/or**
  - (b) on the off-side of a train that requires the RST to have train movements on the adjacent platform line stopped.
2. The PROD5 number is the time plus the initials of the competent person requesting protection, e.g. 1245AC.
3. Form also to be used when retrieving an object from the track using a hand-held device.

Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>FORM PROD 5 (Station staff)</b> <b>PERSONAL PROTECTION</b>		
<b>1. REQUEST</b>		
Time : .....      Date : ..... (hh/mm)                      (dd/mm/yy)		
I am ..... (name)    (position)    (location)		
My contact number is:.....		
I request personal protection at .....(station name)		
Platform line No ..... Stop trains		
Platform line No ..... Stop trains		
The likely duration is ..... (time)		
For the following reason .....		
<b>PROD 5 Number</b> .....		
<b>2. NOTIFICATION</b>		
Signal box: Ashford AFC      Time : .....      Date : ..... (hh/mm)    (dd/mm/yy)		
From <b>AFC signaller</b> To ..... (name of station staff)		
for PROD 5 number .....		
<b>Personal Protection Guaranteed</b> for .....(station name)		
Platform line No ..... Stop trains		
Platform line No ..... Stop trains		
<b>Order number</b> .....		
<b>3. AUTHORISATION TO REMOVE PERSONAL PROTECTION</b>		
From .....      To <b>AFC signaller</b> (name of station staff)		
<b>Authority is given to remove personal protection</b> given by PROD 5 no.....		
<b>Order number</b> .....		
Time : .....      Date : ..... (hh/mm)    (dd/mm/yy)		

CCMS 8205463

## Part B - Forms used in response to/following an incident

### VAIG – Examine points

#### Reason for use

Used when the signaller requires a competent person to check the position of power operated points (and associated swing nose crossing).

#### Outcome

Signaller receives report from the competent person as to the position of the points (and associated swing nose crossing).

#### Points to note:

1. Procedure MAIL 'Operate designated points' may be required to be carried out after the driver reports back Procedure VAIG. If the competent person remains at the site of the points, Form VAIG may be closed and the personal protection transferred directly to Form MAIL.
2. Procedure VAIG also gives personal protection, if required.



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Signal box: Ashford AFC	Time : ..... (hh/mm)	Date : ..... (dd/mm/yy)
<b>EXAMINE POINTS</b>		
Order is given to Competent person ..... (name) to check, at location ..... line ..... points ..... (km) (name) (number) <input type="checkbox"/> the point blade <input type="checkbox"/> the swing nose crossing and report back. <b>Personal Protection</b> <input type="checkbox"/> Traffic stopped on line(s) ..... / ..... / ..... (names) <input type="checkbox"/> Traffic limited to ..... on line(s) ..... / ..... (km/h) (names)		
XX		
Order .....(number)		
XX		
Competent person's report procedure <b>VAIG</b>		Time : .....
..... (name)		
<b>1. Points</b> ..... checked km ..... line ..... (number) (name) Direction <input type="checkbox"/> Normal <input type="checkbox"/> Reverse		
<b>2. Swing nose crossing</b> ..... checked km ..... line ..... (number) (name) Direction <input type="checkbox"/> Normal <input type="checkbox"/> Reverse		
<input type="checkbox"/> Personal protection may be removed <input type="checkbox"/> Personal protection transferred to Form MAIL      Time : .....		

CCMS 63730125

## **Part B - Forms used in response to/following an incident**

### **VEVO (not driver) – Verify line is clear**

#### **Reason for use**

Used when the signaller requires a competent person to verify there is not an obstruction on the line because a track circuit is showing occupied for no apparent reason.

#### **Outcome**

Signaller receives report from the competent person as to the state of the line.


#### **Points to note:**

1. Procedure ATRA 'Cancel routing' may be required to be carried out after the driver reports back Procedure VEVO. If the competent person remains at site to cancel the route on the local control panel, Form VEVO may be closed and the personal protection transferred directly to Form ATRA.
2. Procedure VEVO also gives personal protection, if required.

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O**

Signal box: Ashford AFC	Time : ..... <small>(hh/mm)</small>	Date : ..... <small>(dd/mm/yy)</small>
<b>VERIFY LINE IS CLEAR</b>		
Order is given to Competent person ..... <small>(name)</small>		
<input type="checkbox"/> to check track circuit ..... line ..... from ..... to ..... <small>(number) (name) (km) (km)</small>		
<input type="checkbox"/> to check line ..... from ..... to ..... <small>(name) (km) (km)</small>		
located between ..... & ..... <small>(easily recognisable locations)</small>		
and report back.		
<b>Personal Protection</b>		
<input type="checkbox"/> Traffic stopped on line(s) ..... / ..... / ..... <small>(names)</small>		
<input type="checkbox"/> Traffic limited to ..... on line(s) ..... / ..... <small>(km/h) (names)</small>		
XX		
<b>Order</b> .....(number)		
XX		
Competent person's report procedure <b>VEVO</b>		Time : .....
..... (name)		
<input type="checkbox"/> track circuit checked..... line ..... from ..... to ..... <small>(number) (name) (km) (km)</small>		
<input type="checkbox"/> line checked ..... from ..... to ..... <small>(name) (km) (km)</small>		
<input type="checkbox"/> Clear		
<input type="checkbox"/> Blocked		
<input type="checkbox"/> <b>Personal protection may be removed</b>		
<input type="checkbox"/> <b>Personal protection transferred to Form ATRA</b>		Time : .....

CCMS 8205465

	HS1 Level Two Standard
	C/OP/OS/05/2002
	May 2013

# HS1 Sectional Appendix (Previously the CTRL Sectional Appendix)

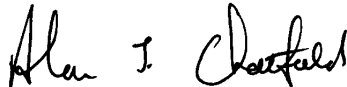
## Module F (Part C)

### Forms used in connection with engineering work

The forms in this part are used for safety communications between signallers, EMMIS Controllers and maintenance staff in connection with the protection arrangements, etc. to enable staff to carry out maintenance work on the infrastructure safely.

**Staff must apply the instructions shown in Section 18 of Module G of the HS1 Rule Book when carrying out safety critical communications.**

Prepared by



.....  
**Alan Chatfield**  
**Operations Standards Manager, Network Rail (High Speed) Ltd.**

Authorised by:



.....  
**Simon Lejeune**  
**Head of High Speed Operations, Network Rail (CTRL) Ltd.**

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(CCMS2 62700626)  
Network Rail Infrastructure Ltd Registered Office Kings Place 90 York Way London N1 9AG  
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<b>REVISION HISTORY</b>	
January 2012	Initial issue.
May 2013	Forms ISOL & OPLE amended.

Amendments to the text are indicated by a side-line in the margin. (Not shown on the actual form). Details of the amendment are explained below:

<b>Page</b>	<b>Form</b>	<b>Amendment</b>
FC8	ETPA	Text page, Additional point to note (3) - The SRPOS must tell the signaller if the works train or OTM is equipped with cab signalling equipment or not.
FC10/FC11	IMPR2690	Text page and form amended to reflect change from CTRL to HS1. Text page, "CTRL shift manager" amended to read: "shift manager"
FC21-FC23	ISOL	Text page, Reference to Network Rail (High Speed) Standard "Procedures for taking isolations of the AC traction power supply at the HS1/Network Rail interfaces near St. Pancras International station" (C/OP/OS/05/2018) included. Form completely revised to include references to switches closed for continuity of earth and the checking that switches have been operated correctly.
FC26-FC28	OLPE	Text page, Reference to Network Rail (High Speed) Standard "Procedures for taking isolations of the AC traction power supply at the HS1/Network Rail interfaces near St. Pancras International station" (C/OP/OS/05/2018) included. Form completely revised to include reference to equipment still live.
FC29	OLSE	Text page, Reference to Network Rail (High Speed) Standard "Procedures for taking isolations of the AC traction power supply at the HS1/Network Rail interfaces near St. Pancras International station" (C/OP/OS/05/2018) included.

## Table of Contents

Form	Description	Latest version	Pages
ATPA (Driver)	Admission of works trains and on-track machines into Protected Areas	28-01-12	FC4/FC5
ATPA (Signaller)	Admission of works trains and on-track machines into Protected Areas	29-01-11	FC6/FC7
ETPA	Exit of works trains and on-track machines from Protected Areas	28-01-12	FC8/FC9
F010	OCS Local Protection Arrangements	14-12-10 (5)	FC10-FC12
F021	Task Supervisor - Site Assessment & Pre-Start Briefing Form	04-11-09 (4b)	FC13-FC15
F034	Multiple Workgroup Briefing Form	04-11-09 (2)	FC16/FC17
F062	Local Protection Arrangements - Track Safety	14-12-10 (5)	FC18-FC20
ISOL	Record of OHLE isolation arrangements	17-04-13 (2)	FC21-FC23
NR/L3/OCS3091	Conductor Rail Permit	28-01-12	FC24-FC25
OLPE	Overhead Line Permit	01-05-13	FC26-FC28
OLSE	Record of OLE switching and earthing arrangements	Dec 2010 (3)	FC29-FC31
POSS	Record of Protected Area arrangements	18-04-11	FC32-FC36
PTIS	Work Schedule for Work on Railway Safety Critical Equipment	20-04-10 (AB)	FC37-FC39
SET	Record of request for signaller to create a route/move points in a Worksite	28-01-12	FC40/FC41
SIGA	Signal Engineering Work Permit	01-10-07	FC42/FC43
VENT	Record of Ventilation Isolation arrangements	28-07-10	FC44-FC46
VEPE	Permit to Enter a Ventilation Shaft Chamber	28-07-10	FC47-FC49
WORK	Authority to create a Worksite	18-04-11	FC50-FC52

## **Part C - Forms used in connection with engineering work**

### **ATPA (Driver) – Admission of works trains and on-track machines into Protected Areas**

#### **Reason for use**

Used by the SRPOS to give the driver of a works train or OTM information regarding the Protected Area and the location where the train is required to stop within it.

#### **Rule Book/Standard/Procedure reference**

Rule Book, Module T4, Section 6.1.

#### **Points to note:**

1. The SRPOS may issue/dictate Form ATPA (Driver) to the driver at any suitable point prior to its admission to the Protected Area, e.g. Singlewell IMD.
2. Form ATPA (Driver) does not authorise the driver to enter the Protected until the signaller has cleared the Auxiliary signal or dictated either Form FREP or Form FASI, as appropriate.

**ADMISSION OF WORKS TRAINS AND ON TRACK MACHINES  
INTO PROTECTED AREAS**

**Form ATPA (Driver)  
(Rule Book Module T4)**

**Instruction to Driver ( SRPOS contacts Driver)**

To the driver in charge of works train/OTM (number)

When your works train or OTM is admitted to the Protected Area associated with

Operation No.

You must not proceed until the signaller:-

- opens the Auxiliary Signal associated with the Block Section Marker No., **or**
- issues form FREP at Block Section Marker No., **or**
- issues form FASI at colour light stop signal No., **or**
- verbally instructs you at colour light stop signal No.

to kilometrage    •

On arrival at that point shown above, you must stop your works train/OTM and wait instructions from the STS (*name*) .....

Tel. No.

**You must only enter or leave the Worksite when authorised by the STS**

**The limits of the Protected Area are as shown below:-**

Line	km	to	Line	km
	•			•
	•			•
	•			•
	•			•
	•			•
	•			•
	•			•

SRPOS (*name*) .....

Tel. No

Dictated at     *hh:mm*     *dd/mm/yy*

(CCMS2 61014004)



## **Part C - Forms used in connection with engineering work**

### **ATPA (Signaller) – Admission of works trains and on-track machines into Protected Areas**

#### **Reason for use**

Used by the SRPOS to authorise the signaller to admit a works train or OTM into the Protected Area they are responsible for.

#### **Rule Book/Standard/Procedure reference**

Rule Book, Module T4, Section 6.1.

#### **Points to note:**

1. The SRPOS may dictate Form ATPA (Signaller) to the signaller prior to its arrival at the protecting Block Section Marker/colour light stop signal.
2. The SRPOS to specify the route required/position of points when dictating Form ATPA (Signaller).

<p><b>ADMISSION OF WORKS TRAINS AND ON TRACK MACHINES TO PROTECTED AREAS</b></p> <p><b>Form ATPA (Signaller)</b></p> <p><b>(Rule Book Module T4)</b></p>			
<b>INSTRUCTION TO SIGNALLER</b> ( SRPOS contacts signaller)			
To the signaller at Ashford AFC			
In connection with Operation No <input style="width: 40px;" type="text"/> you are authorised by me to admit the following works trains/OTMs into the Protected Area shown below :			
Order	Works Train/OTM	Location admitted at	Protecting Marker /signal
1.			
Route to be set from ..... to .....			
The following points are required to be in the position shown:			
..... N/R	..... N/R	..... N/R	..... N/R
..... N/R	..... N/R	..... N/R	..... N/R
2.			
Route to be set from ..... to .....			
The following points are required to be in the position shown:			
..... N/R	..... N/R	..... N/R	..... N/R
..... N/R	..... N/R	..... N/R	..... N/R
SRPOS ( <i>name</i> ).....			
Tel. No. <input style="width: 100px;" type="text"/>			
<i>hh:mm</i> <input style="width: 40px;" type="text"/> <i>dd/mm/yy</i> <input style="width: 60px;" type="text"/>			

(CCMS2 61014005)

## **Part C - Forms used in connection with engineering work**

### **ETPA– Exit of works trains and on-track machines from Protected Areas**

#### **Reason for use**

Used by the SRPOS to tell the signaller that a works train or OTM is ready to leave the Protected Area they are responsible for.

#### **Rule Book/Standard/Procedure reference**

Rule Book, Module T4, Section 8.

#### **Points to note:**

1. Before the SRPOS dictates Form ETPA to the signaller, he/she must make sure that the route from where the works train or OTM is standing to the end of the Protected Area, i.e. there is no Worksite in place.
2. Once the SRPOS dictates Form ETPA to the signaller, responsibility for authorising the movement of the works train or OTM is transferred to the signaller, who will authorise the driver of the works train or OTM to start moving by dictating Form REMA.
3. The SRPOS must tell the signaller if the works train or OTM is equipped with cab signalling equipment or not.

<p><b>EXIT OF WORKS TRAINS AND ON TRACK MACHINES FROM PROTECTED AREAS</b></p> <p><b>Form ETPA</b></p> <p><b>(Rule Book Module T4)</b></p>			
<b>INSTRUCTION TO SIGNALLER ( SRPOS contacts signaller)</b>			
To the signaller at Ashford AFC			
In connection with Operation No <input style="width: 20px; height: 15px;" type="text"/> <input style="width: 20px; height: 15px;" type="text"/> <input style="width: 20px; height: 15px;" type="text"/> <input style="width: 20px; height: 15px;" type="text"/> <input style="width: 20px; height: 15px;" type="text"/> <input style="width: 20px; height: 15px;" type="text"/> <input style="width: 20px; height: 15px;" type="text"/>			
The following works train/OTM is required to exit the Protected Area and proceed to .....			
Identity	Line	Location (k.p./signal/marker)	TVM fitted/unfitted
<p>I confirm that the line is clear between the above location and the..... end of the Protected Area and that there are no Worksites in place.</p> <p>SRPOS (<i>name</i>).....</p> <p>Tel. No. <input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/></p> <p><i>hh:mm</i> <input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/> <i>dd/mm/yy</i> <input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/><input style="width: 20px; height: 15px;" type="text"/></p>			

(CCMS2 61014007)

## **Part C - Forms used in connection with engineering work**

### **F010 – OCS Local Protection Arrangements**

#### **Reason for use**

Used by the NPOS to delegate to the Authorised Person certain of their duties regarding the operation of the overhead line disconnectors and the application/removal of earths.

#### **Rule Book/Standard/Procedure reference**

Instruction for the use of OCS Form F010: Local Protection Arrangements (EMT/CTRL/407).



**OCS LOCAL PROTECTION ARRANGEMENTS**

<b>NPOS(s)</b>		<b>Isolation Number:</b>	
Name		Contact No.	

CATENARY SWITCH OPERATION					
Authorised Person Name	Contact No.		SWITCHES	LOCAL	REMOTE
Relief A.P. Name	Contact No.	Time			

CATENARY SWITCH OPERATION					
Authorised Person Name	Contact No.		SWITCHES	LOCAL	REMOTE
Relief A.P. Name	Contact No.	Time			

CATENARY SWITCH OPERATION					
Authorised Person Name	Contact No.		SWITCHES	LOCAL	REMOTE
Relief A.P. Name	Contact No.	Time			

CATENARY SWITCH OPERATION					
Authorised Person Name	Contact No.		SWITCHES	LOCAL	REMOTE
Relief A.P. Name	Contact No.	Time			

CATENARY SWITCH OPERATION					
Authorised Person Name	Contact No.		SWITCHES	LOCAL	REMOTE
Relief A.P. Name	Contact No.	Time			

Form F010

(CCMS2 60859093).....Issue 5 (Front)



**OCS LOCAL PROTECTION ARRANGEMENTS**

CATENARY EARTH LOCATION									
A.P. Name	Contact No.		Structure No.	Track	Catenary	Neg Feed	Pan ID	APPLIED	REMOVED
Relief A.P. Name	Contact No.	Time							
<b>Comments :-</b>									

CATENARY EARTH LOCATION									
A.P. Name	Contact No.		Structure No.	Track	Catenary	Neg Feed	Pan ID	APPLIED	REMOVED
Relief A.P. Name	Contact No.	Time							
<b>Comments :-</b>									

CATENARY EARTH LOCATION									
A.P. Name	Contact No.		Structure No.	Track	Catenary	Neg Feed	Pan ID	APPLIED	REMOVED
Relief A.P. Name	Contact No.	Time							
<b>Comments :-</b>									

CATENARY EARTH LOCATION									
A.P. Name	Contact No.		Structure No.	Track	Catenary	Neg Feed	Pan ID	APPLIED	REMOVED
Relief A.P. Name	Contact No.	Time							
<b>Comments :-</b>									

<b>Completed by</b> _____				<b>Date</b> /    /					
<b>Issued by NPOS:</b> _____			<b>Signed:</b> _____			<b>Date:</b> _____			
<b>NPOS Relief Name</b> _____			<b>Signed:</b> _____			<b>Time</b> _____			
<b>Received by AP:</b> _____			<b>Signed:</b> _____			<b>Date:</b> _____			

Form F010

(CCMS2 60859093)..... Issue 5 (Back)

## **Part C - Forms used in connection with engineering work**

### **F021 – Task Supervisor - Site Assessment & Pre-Start Briefing Form**

#### **Reason for use**

Used by the (S)TS or person in charge to brief all the members of his/her working group about the protection arrangements in place and other safety arrangements.


#### **Rule Book/Standard/Procedure reference**

Rule Book Modules AC, T3, T4 and T7. Network Rail Company Standard “DC Electrified Lines Working Instructions” (NR/WI/ELP/3091).

#### **Points to note:**

1. Details of the safety arrangements in connection with an isolation of the OHLE to be briefed from the relevant Form OLPE.
2. Details of the safety arrangements in connection with an isolation of the DC conductor rail equipment to be briefed from the relevant Conductor Rail Permit.



	<h2 style="margin: 0;">CTRL</h2> <h3 style="margin: 0;">Task Supervisor – Site Assessment &amp; Pre-Start Briefing Form</h3>
<b>Section 1 - General Information</b>	
Name of Task Supervisor (TS)	
Method Statement Title & No.	
Daily Notice WPP No.	
Nature of Work	
Site Access / Egress Points	
SACC Reference Numbers	Access Ref: <input type="text"/> Egress Ref: <input type="text"/>
Route to Worksite	
*Emergency Arrangements	
Name of qualified First Aider	
Location of First Aid box	
Nearest A & E Unit	
<b>Section 2 - Protection Arrangement</b>	
Worksite limits	Line <input type="text"/> From <input type="text"/> To <input type="text"/>
	Line <input type="text"/> From <input type="text"/> To <input type="text"/>
	Line <input type="text"/> From <input type="text"/> To <input type="text"/>
	Line <input type="text"/> From <input type="text"/> To <input type="text"/>
	Line <input type="text"/> From <input type="text"/> To <input type="text"/>
	Line <input type="text"/> From <input type="text"/> To <input type="text"/>
Protection arrangements applied (✓ all relevant boxes)	<input type="checkbox"/> T3 (all lines) <input type="checkbox"/> T3 (other - multi lines) <input type="checkbox"/> T3 (single line) <input type="checkbox"/> Fencing <input type="checkbox"/> Site Warden
Name of Site Warden (if appointed)	
Details of TSR applied (if applicable)	
OHLE isolation limits	Yes / No    Form No: <input type="text"/> Limits to be briefed from appropriate form
3 <sup>rd</sup> Rail isolation limits	Yes / No    Form No: <input type="text"/> Limits to be briefed from appropriate form
<b>Section 3 - Other safety information</b>	
Additional hazards from the surrounding environment are: (Consider noise, underfoot conditions, weather)	
Questions	Answers
Has everyone been briefed on the hazards and risks associated with the task as detailed within the method statement?	Yes / No / NA
Has everyone been briefed on hazards from the surrounding environment?	Yes / No / NA
Has everyone been briefed about any OTP / OTM movements?	Yes / No / NA
<b>Section 4 - Personnel Checks</b>	
I confirm that I have checked all in my work group for the following: <ul style="list-style-type: none"> <li>Fitness for work (not appearing to be under influence of alcohol &amp; drugs, or fatigued)</li> <li>Possession of a valid CTRL Licence or PTS dispensation</li> <li>In possession of appropriate Personal Protective Equipment (PPE) which is in good condition</li> <li>Correct machine / tool / plant certification</li> <li>Other competency certification as required</li> <li>Possession equipment (e.g. marker boards) checked for visual signs of any defect</li> </ul>	
By signing below, I confirm that I have given those persons that have signed overleaf a safety briefing covering all the items detailed above within this form and have carried out the checks detailed within Section 4:	
TS Signature _____	Date _____

Form F021

(CCMS2 60861931)..... Issue 4b (Front)



## **Part C - Forms used in connection with engineering work**

### **F034 – Multiple Workgroup Briefing Form**

#### **Reason for use**

Used by the (S)TS to brief the person in charge of another working group about the protection arrangements in place and to authorise them to start work within the Worksite the (S)TS is responsible for.

#### **Rule Book/Standard/Procedure reference**

Rule Book Modules AC, T3, T4 and T7. Network Rail Company Standard “DC Electrified Lines Working Instructions” (NR/WI/ELP/3091).

#### **Points to note:**

1. Details of the safety arrangements in connection with an isolation of the OHLE to be briefed from the relevant Form OLPE.
2. Details of the safety arrangements in connection with an isolation of the DC conductor rail equipment to be briefed from the relevant Conductor Rail Permit

Message No. (WPP ref/WS ref/group): \_\_\_\_\_



## MULTIPLE WORKGROUP BRIEFING FORM

TS Name: \_\_\_\_\_ Date: \_\_\_\_\_ WPP No.: \_\_\_\_\_

**Briefing to include, but not be limited to:**

- |   |                          |  |                          |
|---|--------------------------|--|--------------------------|
| Limits of the worksite  | <input type="checkbox"/> | Any hazards within worksite            | <input type="checkbox"/> |
| Status of AC/DC   | <input type="checkbox"/> | Means of communication in an emergency | <input type="checkbox"/> |
| NB: If OCS isolation is in place, each team leader must obtain Form OLPE from the NPOS.<br>If a DC isolation is in place, Form D must be obtained from the Authorised Person. |                          |  |                          |
| Nature of work  | <input type="checkbox"/> | Applicable Method Statements available | <input type="checkbox"/> |
| Check all staff certificates  | <input type="checkbox"/> | OTP Movements                          | <input type="checkbox"/> |
| Site Warden requirements  | <input type="checkbox"/> | Specific site hazards                  | <input type="checkbox"/> |

I, the undersigned have received and fully **UNDERSTOOD** the brief given by the TS and **accept this as written authority to commence work within the TS's worksite.**  
 I confirm that there is sufficient competency within my group to undertake the task concerned.  
 I will communicate this to my team via the pre-start briefing form (F021).

No.	NAME	SIGNATURE

**HANDBACK:**

I, the undersigned certify that all work in my work area has been completed with / without (delete as appropriate) any operational restrictions

No.	NAME	SIGNATURE	SHOWN BELOW OPERATIONAL RESTRICTIONS	COUNTER SIGNATURE OF TS

Form F034

(CCMS2 60863858).....Issue 2

## **Part C - Forms used in connection with engineering work**

### **F062 – Local Protection Arrangements - Track Safety**

#### **Reason for use**

Used by the (S)RPOS/(S)TS to delegate to the Competent Person certain of their duties regarding the operation of local protection switches, erection of Worksite Marker Boards/Portable Stop Boards, placing/removal of detonator protection and the application/removal of temporary speed restrictions.

#### **Rule Book/Standard/Procedure reference**

Rule Book Modules T3 and T4. Procedures for taking possessions - CTRL/Network Rail interfaces (C/OP/OS/05/2007), Procedures for taking possessions - CTRL/Network Rail interfaces on the North Kent Line connection (C/OP/OS/05/2011), Procedures for taking possessions - CTRL/Network Rail interface on the East Coast Main Line connection (C/OP/OS/05/2012), Procedures for taking possessions - CTRL/Network Rail interfaces on the Ripple Lane chords (C/OP/OS/05/2013), Procedures for taking possessions - CTRL/Network Rail interfaces on the North London Line connection and Silo Curve (C/OP/OS/05/2014), Sectional Appendix, Module D.



**LOCAL PROTECTION ARRANGEMENTS - TRACK SAFETY**

<b>DAILY OPERATING NOTICE</b>		<b>No. WPP</b>	<b>Date:</b> /    /			
<b>RPOS / TS</b>						
Name		Contact No.				
Name		Contact No.				
<b>ERS / EZP SWITCH OPERATION</b>						
<b>Name</b>		<b>Contact No.</b>		<b>ERS/EZP</b>	<b>APPLIED</b>	<b>REMOVED</b>
<b>Relief Name</b>		<b>Contact No.</b>		<b>Time</b>		
<b>Comments</b>				<b>TSR:</b>		
<b>ERS / EZP SWITCH OPERATION</b>						
<b>Name</b>		<b>Contact No.</b>		<b>ERS/EZP</b>	<b>APPLIED</b>	<b>REMOVED</b>
<b>Relief Name</b>		<b>Contact No.</b>		<b>Time</b>		
<b>Comments</b>				<b>TSR:</b>		
<b>ERS / EZP SWITCH OPERATION</b>						
<b>Name</b>		<b>Contact No.</b>		<b>ERS/EZP</b>	<b>APPLIED</b>	<b>REMOVED</b>
<b>Relief Name</b>		<b>Contact No.</b>		<b>Time</b>		
<b>Comments</b>				<b>TSR:</b>		
<b>ERS / EZP SWITCH OPERATION</b>						
<b>Name</b>		<b>Contact No.</b>		<b>ERS/EZP</b>	<b>APPLIED</b>	<b>REMOVED</b>
<b>Relief Name</b>		<b>Contact No.</b>		<b>Time</b>		
<b>Comments</b>				<b>TSR:</b>		
<b>ERS / EZP SWITCH OPERATION</b>						
<b>Name</b>		<b>Contact No.</b>		<b>ERS/EZP</b>	<b>APPLIED</b>	<b>REMOVED</b>
<b>Relief Name</b>		<b>Contact No.</b>		<b>Time</b>		
<b>Comments</b>				<b>TSR:</b>		

CTRL Form F062

(CCMS2 60890558).....Issue 5 (Front)



**LOCAL PROTECTION ARRANGEMENTS - TRACK SAFETY**

WORKSITE MARKER BOARDS / STOP BOARDS / DETONATORS							
Name:	WSMB	SB	Dets	Track	KP	Applied	Removed
Contact No.							
Relief Name:							
Contact No.							
Contact No.							
Time							
Name:	WSMB	SB	Dets	Track	KP	Applied	Removed
Contact No.							
Relief Name:							
Contact No.							
Contact No.							
Time							
Name:	WSMB	SB	Dets	Track	KP	Applied	Removed
Contact No.							
Relief Name:							
Contact No.							
Contact No.							
Time							
Name:	WSMB	SB	Dets	Track	KP	Applied	Removed
Contact No.							
Relief Name:							
Contact No.							
Contact No.							
Time							
Completed by:				Date:     /     /			
RPOS/TS Issued by				Signed:			
Relief RPOS/TS				Signed:		Time	
Received by:				Signed:		Time	

(CCMS2 60890558)..... CTRL Form F062 Issue 5 (Back)

## **Part C - Forms used in connection with engineering work**

### **ISOL - Record of OHLE isolation arrangements**

#### **Reason for use**

Used by the NPOS to request an isolation of the OHLE from the EMMIS controller. It is also used by the NPOS to record the details of all Forms OLPE issued under this isolation.

#### **Rule Book/Standard/Procedure reference**

Rule Book, Module AC, Sections 4 - 8. Isolation of the OHLE Procedures - CTRL/Network Rail interfaces (C/OP/OS/05/2006), Procedures for taking isolations of the traction power supply at the CTRL (Section 2)/Network Rail interfaces (C/OP/OS/05/2010), Procedures for taking isolations of the AC traction power supply at the HS1/Network Rail interfaces near St. Pancras International station (C/OP/OS/05/2018).



HS1 RECORD OF OHLE ISOLATION ARRANGEMENTS Form ISOL [front]						
<b>Lead Person</b>	<b>PART 1</b>	<b>ISOLATION REQUEST</b>				
<b>NPOS</b>	From NPOS ..... (print name), mobile ..... GSMR .....					
	To the EMMIS controller. I request isolation of the following section(s) or sub-section(s):					
	Using the following switchgear to provide points of isolation:					
With the following switchgear closed to provide continuity of earth:						
Isolation times from ..... hours on ..... (date), to ..... hours on ..... (date)						
Isolation No. ....						
	<b>PART 2</b>	<b>ACCEPTANCE OF THE ISOLATION REQUEST</b>				
<b>EMMIS controller</b>	Request No. .... for isolation No. .... is issued at ..... hours on ..... (date)					
<b>ISOLATION VERIFICATION</b> <span style="float: right;">[AFC use only]</span>						
The switchgear requested in Part 1 has been demonstrated to me to be in the operational state requested by the NPOS and has been inhibited against remote operation prior to granting Part 3.						
Verified by ..... (print name), signed ..... on ..... (date)						
	<b>PART 3</b>	<b>GRANTING OF THE ISOLATION</b>				
<b>EMMIS controller</b>	From the EMMIS controller to NPOS ..... (print name)					
	Isolation No. .... is granted for the section(s) or sub-section(s) requested in Part 1.					
	The isolation to be given up by ..... hours on ..... (date)					
	Granting No. .... Time of granting ..... hours on ..... (date)					
	<b>PART 4</b>	<b>CHANGE OF NPOS</b>				
<b>NPOS</b>		1	2	3	4	5
	Name of relieving NPOS					
	Mobile					
	GSMR					
	Signature of relieving NPOS					
	Name of NPOS being relieved					
	Signature of NPOS being relieved					
	Authorisation No.					
Date and time						
	<b>PART 5</b>	<b>GIVING UP THE ISOLATION</b>				
<b>NPOS</b>	From NPOS ..... (print name) to the EMMIS controller. Overhead Line Permits (form OLPE) have been handed back and earthing has been removed.					
	The section(s) or sub-section(s) isolated for Isolation No. .... are fit for the passage of electric trains to operate *normally *with the following restrictions. (*delete as required)					
	Giving up No. .... Given up at ..... hours on ..... (date)					

**HS1  
RECORD OF OHLE ISOLATION ARRANGEMENTS  
Form ISOL [back]**

PART 6		RECORD OF FORM OLPE ISSUE / CANCELLATION			
<b>NPOS</b>	Issued in connection with form ISOL for isolation No. .... are:				
	OLPE No.	Issued to	Contact No.	Issue time / date	Handed back time / date

SAFETY CRITICAL MESSAGES				
Your Number	Transmitted to	Message Text	Received from	Number

**Notes to assist completion**

- All messages must be recorded in ink on the log pages in full, without abbreviation, in chronological order of transmission and receipt.
- Every line of log must be used.
- A single line must be drawn through any error and the correction shown clearly above.
- The text of a message can only be cancelled by another message.
- When to classify a message as safety critical: When the content has any safety implications (e.g. carrying out a switching operation, reporting safety equipment as defective or out of use). If in doubt, pass a safety critical message.

**Sending a message**

1. Prepare your message if appropriate and then contact the proposed recipient.
2. Confirm the requirement to pass a safety critical message and who you are speaking to (this may be the EMMIS controller or a named person) [Transmitted to column].
3. Identify yourself.
4. Pass the text of the message [Message text column].
5. Ask the recipient of your message to repeat back the content of the message.
6. When you are satisfied that what has been repeated back is correct give your order number (format is based on date and time but may be prefixed and suffixed if the originator is the EMMIS controller) [Your number column].
7. Ensure the order number is repeated back.
8. Take a message number from the recipient and repeat back [Number column].

**Receiving a message**

1. You are contacted and requested to take a safety critical message.
2. Confirm when you are ready to receive the message.
3. Ensure the originator has been identified [Received from column].
4. Write down the content of the message [Message text column].
5. Repeat back the message to ensure that it has been clearly understood.
6. Receive the order number [Number column] and repeat it back and then give your message number [Your number column].
7. If applicable carry out any instructions given in the message and confirm they have been completed by passing another safety critical message.

## **Part C - Forms used in connection with engineering work**

### **NR/L3/OCS3091 - Conductor Rail Permit**

#### **Reason for use**

Issued by the Authorised Person to the (S)TS to show the safe working limits in connection with the isolation of a DC conductor rail.

#### **Rule Book/Standard/Procedure reference**

Network Rail Company Standard “DC Electrified Lines Working Instructions” (NR/WI/ELP/3091). Procedures for taking isolations of the traction power supply at the CTRL (Section 2)/Network Rail interfaces (C/OP/OS/05/2010, Sectional Appendix, Module D.

#### **Points to note:**

1. A Conductor Rail Permit does **not** give personal protection from moving trains. This must be obtained by other means.
2. The Authorised Person must check that all Conductor Rail Permits have been handed back before the isolation of a DC conductor rail is given up



CONDUCTOR RAIL PERMIT – Form – NR/L3/OCS3091

Conductor Rail Permit No.	
---------------------------	--

WARNING:- THE ISSUE OF THIS PERMIT DOES NOT MEAN TRAIN MOVEMENTS HAVE BEEN STOPPED ON THE LINES CONCERNED AND WHERE NECESSARY SUCH ARRANGEMENTS MUST BE MADE

**Part 1 – Issue**

Worksite Location.	
--------------------	--

Issued To (Task Supervisor name)	
----------------------------------	--

For the purpose of carrying out the following work:

This Permit is due to be cancelled not later	Time:		Date:	
--	-------	--	-------	--

The conductor rail is isolated and short circuiting devices have been applied.

**WORKING LIMITS**

LINE	FROM KP	TO KP

<b>POSITION OF LIVE CONDUCTOR RAILS AND EQUIPMENT ADJACENT TO OR WITHIN THE WORKSITE ARE:</b>

ALL OTHER CONDUCTOR RAILS MUST BE REGARDED AS LIVE AND DANGEROUS AND MUST NOT BE TOUCHED

Issued By: (Authorised Person)	Name:		Signature:	
	Time		Date	
Received By (Task Supervisor)	Name:		Signature:	

**Part 2 - Relief**

I am now in charge of the work under this Conductor Rail Permit

Date & Time of Change	Name of Relief (Task Supervisor)	Signature of Relief (Task Supervisor)	Signature of Relieved

**Part 3 - Cancellation**

The Work for which this conductor rail permit was issued is now complete. All personnel, Tools and Materials are clear of the conductor rail and all Personnel have been instructed that the conductor rail must be regarded as **LIVE AND DANGEROUS**. I hereby return my conductor rail Permit.

Returned By: (Task Supervisor)	Name:		Signature:	
	Time		Date	
Received By (Authorised Person)	Name:		Signature:	

This Form, when completed shall be processed in compliance with CTRL Procedures

## Part C - Forms used in connection with engineering work

### OLPE - Overhead Line Permit

#### Reason for use

Issued by the NPOS to the Competent Person to show the safe working limits in connection with the isolation of a AC OHLE.

#### Rule Book/Standard/Procedure reference

Rule Book, Module AC, Sections 5 - 8. Isolation of the OHLE Procedures - CTRL/Network Rail interfaces (C/OP/OS/05/2006), Procedures for taking isolations of the traction power supply at the CTRL (Section 2)/Network Rail interfaces (C/OP/OS/05/2010). Procedures for taking isolations of the AC traction power supply at the HS1/Network Rail interfaces near St. Pancras International station" (C/OP/OS/05/2018).

#### Points to note:

1. Form OLPE does **not** give personal protection from moving trains. This must be obtained by other means.
2. The NPOS must check that all Forms OLPE have been handed back before the isolation of the OHLE is given up

<b>HS1 OVERHEAD LINE PERMIT FORM OLPE</b>				
<b>OVERHEAD LINE PERMIT NUMBER _____ (NPOS to input)</b>				
Lead Person	<b>PART 1</b>	ISSUING THE OVERHEAD LINE PERMIT		
<b>NPOS</b>	This form OLPE is Issued to _____ (Name) of _____ (employer)			
	For the purpose of carrying out the following work:-			
	_____			
	_____			
	_____			
	the following equipment is isolated and earthed and is safe to work on:			
	Type of Equipment	Line(s)	Limit From	Limit To
The following equipment shall be deemed as <b>LIVE</b> and <b>DANGEROUS</b> at all times (2.75m safe working distance rule applies at all times):-				
_____				
_____				
_____				
_____				
_____				
This OLPE is to be handed back no later than _____ (hours) on _____ (date)				
Issued by NPOS _____ ( name) _____ (signature)				
Contact Number(s) _____ (Mob/GSMR)				
Issued at _____ hours on _____ (date)				

FORM OLPE (back)						
<b>PART 2</b>		<b>ACCEPTING THE OVERHEAD LINE PERMIT</b>				
<b>Competent person</b>	I undertake to ensure that all persons from whom I am responsible fully understand the extent of the working limits before the work commences.					
	Accepted by _____ (print name) (signature)					
At _____ hours on _____ (date)						
<b>PART 3</b>		<b>RECORD OF CHANGE OF OVERHEAD LINE PERMIT HOLDER</b>				
<b>Competent person</b>	I am now in charge of the work under this Permit to Work and fully understand the conditions, and have notified the issuer (NPOS).					
		1	2	3	4	5
	Name and Signature of Relieving Permit Holder					
	Name and Signature of Relieved Permit Holder					
	Authorisation Number					
Date and Time						
<b>PART 4</b>		<b>CANCELLATION OF THE OVERHEAD LINE PERMIT</b>				
<b>Competent person</b>	From _____ (name) of _____ (employer)					
	To NPOS _____ (name)					
	The work for which this permit was issued has been completed. All materials are clear of the OHLE equipment, all personnel for whom I am responsible have been instructed that the OHLE must now be regarded as LIVE AND DANGEROUS					
	I hereby return and cancel my Overhead Line Permit at a time of _____ (hours) on _____ (date)					
_____ (signed by Permit to work holder)						
<b>NPOS</b>	Received and accepted by NPOS _____ (signature)					

(CCMS2 63731381)

## **Part C - Forms used in connection with engineering work**

### **OLSE – Record of OCS Switching and Earthing Arrangements**

#### **Reason for use**

Used by the NPOS to record details of isolation switches operated, testing arrangements and earths applied. It is also used by the NPOS to record the details of all Forms OLPE issued under this isolation.

#### **Rule Book/Standard/Procedure reference**

Rule Book, Module AC. Sections 4 - 8. Isolation of the OHLE Procedures - CTRL/Network Rail interfaces (C/OP/OS/05/2006), Procedures for taking isolations of the traction power supply at the CTRL (Section 2)/Network Rail interfaces (C/OP/OS/05/2010). Procedures for taking isolations of the AC traction power supply at the HS1/Network Rail interfaces near St. Pancras International station" (C/OP/OS/05/2018).



<b>OLSE</b>	
<b>RECORD OF OLE SWITCHING AND EARTHING ARRANGEMENTS</b>	
Form prepared by: .....	(NPOS) Date: .....
NPOS responsible for issuing permits: .....	(NPOS) Date: .....
Isolation Number: .....	
<b>Part 1</b>	<b>ISOLATION</b>
The following disconnectors have been secured in position and warning notices applied:	
*	Disconnectors effecting the isolation:
Secured in position and warning notice applied:	
*	Disconnectors not in normal position:
<b>Part 2</b>	<b>TESTING</b>
The overhead line has been tested at the following locations:	
Main conductors (quote structure number):	Auxiliary feeder (quote structure number):

.....Issue 3(Front)

<b>Part 3</b>			<b>EARTHING</b>								
The following earths have been applied: (D = Duplicate S = Single)											
* Earths to be applied to overhead line equipment at:			Earths applied to overhead line equipment at:			* Earths to be applied to auxiliary feeder at:			Earths applied to auxiliary feeder at:		
D/S	Structure No.	Line	D/S	Structure No.	Line	D/S	Structure No.	Line	D/S	Structure No.	Line

<b>Part 4</b>		<b>PERMITS</b>			
Permit Number	Time of Issue	Issued to (name)	Time of Cancellation		

<b>Part 5</b>		<b>CHANGE OF NOMINATED PERSON ON SITE</b>				
I am now in charge of the Isolation Number: .....						
	1	2	3	4	5	
Signature of NPOS:						
Signature of NPOS being relieved:						
Authorisation Number:						
Date and Time:						

<b>Part 6</b>		<b>RESTORING THE SYSTEM</b>	
All permits to work for isolation number ..... detailed on the Form ISOL have been cancelled:		(Tick)	
All earths detailed in Part 3 have been removed:		(Tick)	
All security devices and warning notices have been removed:		(Tick)	
The isolation has been given up in accordance with Form ISOL, Part 5		(Tick)	

**Note:** \* These fields shall be prepared in advance of the planned isolation. Signed by NPOS:

## **Part C - Forms used in connection with engineering work**

### **POSS - Record of Protected Area arrangements**

#### **Reason for use**

Used by the (S)RPOS to request a Protected Area using EAMs or from the signaller and to assist with its management.

#### **Rule Book/Standard/Procedure reference**

Rule Book Module T3 and T4. Procedures for taking possessions - CTRL/Network Rail interfaces (C/OP/OS/05/2007), Procedures for taking possessions - CTRL/Network Rail interfaces on the North Kent Line connection (C/OP/OS/05/2011), Procedures for taking possessions - CTRL/Network Rail interface on the East Coast Main Line connection (C/OP/OS/05/2012), Procedures for taking possessions - CTRL/Network Rail interfaces on the Ripple Lane chords (C/OP/OS/05/2013), Procedures for taking possessions - CTRL/Network Rail interfaces on the North London Line connection and Silo Curve (C/OP/OS/05/2014), Sectional Appendix, Module D.

#### **Points to note:**

##### **PART 1 - PROTECTED AREA REQUEST**

1. The Operation No. is either the 'WPP' number shown in the Daily Notice or the 'SGP' number allocated by the signaller.
2. Planned Protected Areas are shown in the Daily Notice and are in EAMs. They must be requested by that system as specified in the notice. When the operation has not been pre-planned, the request must be dictated to the signaller.
3. If the Protected Area is in the CTRL/Eurotunnel interface area, the identities of any Eurotunnel ZEP(s) or Network Rail Track Protection Zone(s) required must be recorded and their protection requested from the signaller.
4. "Blockage of the following interface lines" applies to Protected Areas at CTRL/Network Rail interfaces where the adjacent Network Rail signaller is required to provide signal protection.
5. If the signaller refuses the Protected Area request, the form must be endorsed as 'CANCELLED'.

##### **PART 2 - GRANTING OF PROTECTED AREA**

1. The (S)RPOS must check that the EZP(s) granted by EAMs or the signaller is the same as that requested in Part 1.
2. "Signal protection provided for the following interface lines" applies to Protected Areas at HS1/Network Rail interfaces where the adjacent Network Rail signaller is required to provide signal protection.
3. If the Protected Area is granted by EAMS, the (S)RPOS must re-input the 'Granting Number' and check that it turns green. This confirms that the EZP(s) granted by EAMS are correct. The Protected Area is not applied until this is done.

##### **PART 3 - APPLICATION OF TEMPORARY SPEED RESTRICTIONS**

1. This part is applicable when the Safe System of Work requires the speed on any adjacent line that is open to traffic to be reduced to 160 km/h. Normally the temporary speed restriction is to be applied by the (S)RPOS in the Signalling Room, although in exceptional circumstances the signaller may apply it.

**PART 4 - RECORD OF ISSUE OF FORM(S) WORK**

1. This part is to be used by the (S)RPOS to record details of all the Forms WORK issued or dictated in connection with this Protected Area. These details are not advised to the signaller or EAMs.

**PART 5 - CHANGE OF (S)RPOS.**

1. This part is applicable if there is a change of (S)RPOS.

**PART 6 - GIVING UP THE PROTECTED AREA**

1. If applicable, the SRPOS must give the signaller the details of any works trains/OTM stopped in the Protected Area before completing the Giving Up procedure. Once the SRPOS dictates Form POSS to the signaller, responsibility for authorising the movement of the works train or OTM is transferred to the signaller, who will authorise the driver of the works train or OTM to start moving by dictating Form REMA.
2. If only part of the Protected Area can be given up, the (S)RPOS must request and be granted a new Protected Area covering the EZP(s) concerned before completing the Giving Up procedure.
3. The (S)RPOS must check with the signaller if any local protection switch is still showing operated when it should not. Arrange for the switch to be normalised before completing the Giving Up procedure.
4. "and detonator protection removed" applies to Protected Areas at CTRL/Network Rail interfaces in which works trains, OTM or OTP operating.
5. If the Protected Area can only be given up with restrictions, e.g. speed restriction is in place, points restricted to one route, etc., the (S)RPOS must make sure the restriction has been applied and tell the signaller before completing the Giving Up procedure.
6. The (S)RPOS must arrange for any temporary speed restriction applied on an adjacent line in connection with the Safe System of Work to be removed.

CTRL RECORD OF PROTECTED AREA ARRANGEMENTS FORM POSS (Front)																																									
<b>PART 1</b>	<b>PROTECTED AREA REQUEST</b>																																								
(S)RPOS to EAMs or signaller	From (S)RPOS ( <i>name</i> )..... to AFC Signaller																																								
	Tel No. ....																																								
	Requests Operation No. ....																																								
	Protection to be provided by the EZP(s) shown below:																																								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																																								
and the blockage of the following interface lines:																																									
EAMs or signaller to (S)RPOS	Request No. .... given at..... Time ( <i>hh:mm</i> ) ..... Date ( <i>dd:mm:yy</i> )																																								
(S)RPOS to EAMs	Request No. .... input to EAMs at..... Time ( <i>hh:mm</i> ) ..... Date ( <i>dd:mm:yy</i> )																																								
<b>PART 2</b>	<b>GRANTING OF PROTECTED AREA</b>																																								
signaller to SRPOS only	<b>Notification of Works Train/OTM</b> From AFC signaller to SRPOS ( <i>name</i> ) .....																																								
	A Works train/OTM is stopped at the following location:																																								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Train Identity.</td> <td>Line.</td> <td>kp/marker/signal*</td> <td>TVM fitted/unfitted*</td> </tr> <tr> <td>Train Identity</td> <td>Line</td> <td>kp/marker/signal*.</td> <td>TVM fitted/unfitted*</td> </tr> <tr> <td>Train Identity</td> <td>Line</td> <td>kp/marker/signal*</td> <td>TVM fitted/unfitted*</td> </tr> </table>	Train Identity.	Line.	kp/marker/signal*	TVM fitted/unfitted*	Train Identity	Line	kp/marker/signal*.	TVM fitted/unfitted*	Train Identity	Line	kp/marker/signal*	TVM fitted/unfitted*																												
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* Delete as necessary																																									
EAMs or signaller to (S)RPOS	From AFC signaller to (S)RPOS ( <i>name</i> ) .....																																								
	Request No. ....																																								
	Protection is provided by the operation of the EZP(s):																																								
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Signal protection is provided for the following interface lines																																									
Protected Area now GRANTED at..... Time ( <i>hh:mm</i> ) ..... Date ( <i>dd:mm:yy</i> )																																									
Granting No. ....																																									
(S)RPOS to EAMs	Granting No. .... input to EAMs at..... Time ( <i>hh:mm</i> ) ..... Date ( <i>dd:mm:yy</i> )																																								
<b>Note: Confirm that the Granting Number has turned Green.</b>																																									

(CCMS2 61013885)

FORM POSS (Back)				
<b>PART 3</b>	<b>APPLICATION OF TEMPORARY SPEED RESTRICTIONS (if required)</b>			
<b>(S)RPOS in Signalling Room</b>	<b>(S)RPOS applied temporary speed restriction</b>			
	Line	From (kp)		To (kp)
		:		:
		:		:
				Time applied (hh:mm)
<b>(S)RPOS to signaller signaller to (S)RPOS</b>	<b>AFC signaller applied temporary speed restriction</b>			
	Request a temporary speed restriction of 160 km/h is applied on the ..... line between ..... (kp) and ..... (kp)			
	I confirm a temporary speed restriction of 160 km/h is applied on the ..... line between ..... (kp) and ..... (kp) Authorisation No. AF.....			
<b>PART 4</b>	<b>RECORD OF ISSUE OF FORM(s) WORK</b>			
<b>(S)RPOS only</b>	FORM WORK No.	Date & time issued or dictated (dd:mm:yy) (hh:mm)	Issued to: (name and employer)	Date & time handed back (dd:mm:yy) (hh:mm)
	/1			
	/2			
	/3			
	/4			
<b>PART 5</b>	<b>CHANGE OF (S)RPOS</b>			
<b>(S)RPOS to EAMs or signaller</b>	(S)RPOS (name)..... is now replaced as (S)RPOS for Granting No. ....			
	by (S)RPOS (name) ..... Tel. No. .... Authorisation No .....			
<b>PART 6</b>	<b>GIVING UP THE PROTECTED AREA</b>			
<b>SRPOS to signaller</b>	<b>Notification of Works Train/OTM</b> From SRPOS (name) ..... to AFC signaller			
	A Works train/OTM is stopped at the following location:			
	Train Identity.	Line.	kp/marker/signal*	TVM fitted/unfitted*
	Train Identity	Line.	kp/marker/signal*	TVM fitted/unfitted*
	Train Identity	Line.	kp/marker/signal*	TVM fitted/unfitted*
* Delete as necessary				
<b>(S)RPOS to EAMs or signaller</b>	From (S)RPOS (name) ..... to AFC signaller			
	The Protected Area taken in accordance with Granting No..... is safe and fit to run on and is now given up. I confirm that all local protection switches have been normalised (and detonator protection removed*) * Delete as necessary			
	The Protected Area provided by the operation of EZP(s) shown in Part 2 may now be removed: (a) Without restriction* (b) With the following restriction* (state nature of restriction) * Delete as necessary			
Giving Up No..... given at..... Time (hh:mm) ..... Date (dd:mm:yy)				

(CCMS2 61013885)

## **Part C - Forms used in connection with engineering work**

### **PTIS - Work Schedule for Work on Railway Safety Critical Equipment**

#### **Reason for use**

Used by the engineering departments to manage work affecting railway safety critical equipment, e.g. signalling, so that the safety of train movements is guaranteed.

#### **Rule Book/Standard/Procedure reference**

Carrying out Works on Rail Safety Equipment - PTIS (C06-SS-48-2001).

## Work Schedule for Work on Railway Safety Critical Equipment



Rev. AB

PTIS Title:

Originating Department: _____	
Name of person responsible for PTIS: _____	
Contact Number: _____	
Contractor Doc. Decall Number: _____	Internal No: _____
Title: _____	
NR (CTRL) PTIS No. : _____	
Date: _____	Time: _____
Duration of Work: _____	
AFC, Signalling or C&C Room Affected: _____	
<i>Note: Any works affecting or potentially affecting railway operations must be planned through the NR (CTRL) planning process and have an entry on the appropriate daily notice.</i>	
Location: N/A	From (PK): _____ To (PK): _____
Railway Disciplines Involved:	Approval for works to proceed:
Signalling	<input type="checkbox"/> NR (CTRL) Sig Eng: _____
	NR (CTRL) Sig Del: _____
Track	<input type="checkbox"/> NR (CTRL) Track Eng: _____
	NR (CTRL) Track Del: _____
OHLE/Plant	<input type="checkbox"/> NR (CTRL) OHLE Eng: _____
	NR (CTRL) OHLE Del: _____
Plant	<input type="checkbox"/> NR (CTRL) E&P Eng: _____
	NR (CTRL) E&P Del: _____
General Description of Work:          	
Reference Documents <i>(These must be available on site)</i> :          	
Attachments and Worksheets:          	
Number of pages: 3	
Distribution:          	



PTIS Title:

Rev. AB



**Detailed Schedule of Work**

<p><b>Work to be carried out:</b> <i>A valid and appropriate method statement and signed PTIS must be available on site. This PTIS is used for Works Approval and Handover/Handback of systems. Authorisation to start work must be sought from the Signaller / EMMIS controllers and NR(CTRL) Engineer before any works start. You must inform them when the work is complete and sign the "Completion of work" section of this form.</i></p>
<p><b>Effect on Safety Critical Equipment (Including any alarms generated):</b></p>
<p><b>Technical Measures Imposed to protect operational railway and equipment:</b></p>
<p><b>Measures to be taken by Signaller or EMMIS Controller in AFC:</b> <i>If it becomes apparent during the execution of the nights planned works and there is a likelihood that the works may overrun, cause degradation to any system or affect Eurostar traffic. The EMMIS and the Signaller must be informed at the latest by 04:00 and requested to call the Duty Operations Manager &amp; Internal On Call Manager.</i></p>
<p><b>Description of Modified Rail Safety Critical Equipment:</b></p>

PTIS Title:

Rev. AB

**Completion of Work:**



<p><b>Certification from person in charge of work:</b>                  Complete first page to list any attached documentation.                  Sign-off and mark-up last page to indicate "WORK COMPLETED".                  Sign-off last page with NR(CTRL) for Handback.                  Leave original with NR(CTRL).                  Return signed-off copy to Originating Doc.Control for record and process close out.</p>		
<p><b>Details of incomplete work:</b></p>		
<p><b>Follow up work required:</b></p>		
<p><b>Installation Tested</b></p>	<p>Time: .....</p>	<p>Name/Signature .....</p>
<p><b>Work Checked</b></p>	<p>Time: .....</p>	<p>Name/Signature .....</p>
<p><b>Work Complete</b></p>	<p>Time: .....</p>	<p>Name/Signature .....</p>
<p><b>Sign Off:</b></p>		
<p style="text-align: center;">Originating Manager: .....</p>		
<p style="text-align: center;">NR (CTRL) Signalling Engineer: .....</p>		
<p><b>Commissioning Report</b></p>		
<p>If Railway Safety Critical Equipment is newly introduced, or commissioned, this dossier must be forwarded to the NR(CTRL) Signalling Engineer for the schedule to be closed.</p>		
<p>NR (CTRL) Signalling Engineer</p>		
<p style="text-align: right;">Date: .....</p>		
<p style="text-align: right;">Name: .....</p>		
<p style="text-align: right;">Signature: .....</p>		

## **Part C - Forms used in connection with engineering work**

### **SET – Record of request for signaller to create a route/move points in a Worksite**

#### **Reason for use**

Used by the STS to request the signaller to create a route or move points within a Worksite to allow the movement of a works train, OTM or OTP.

#### **Rule Book/Standard/Procedure reference**

Rule Book, Module T4, Section 7.

#### **Points to note:**

##### **GENERAL**

1. The STS is responsible for making sure the points and associated swing nose crossings are in the correct position for the movement.
2. If the works train, OTM or OTP is stood on a track circuit that prevents points being controlled remotely, then the works train, OTM or OTP must be moved clear of the track circuit or the points concerned must be operated manually.
3. When the movement has been completed and a new route is required to be created or the points moved, the STS must cancel the Form SET for the original movement and dictate a new Form SET specifying the new route or position of points.

##### **IN AN AREA CONTROLLED BY THE CAB SIGNALLING SYSTEM**

1. If the points are already in the correct position, the STS need not use Form SET before authorising the movement.
2. If the points are not in the correct position, the STS may ask for a route to be created from point 'A' to point 'B', identifying the commencement and terminating point by some easily identifiable name, e.g. Block Section Marker XXX to Block Section Marker XXX. Alternatively the STS may ask the signaller to move each set of points in the line of route to the required position by specifying their number and the position required, even if they are already in the correct position.
3. Depending on circumstances the signaller may create the requested route by setting a route from a N Block Section Marker or Shunt Marker or placing each set of points in the line of route to the required position and applying a reminder. If the second option is used, the signaller must have the position of the points confirmed as being correct by another competent person in the AFC before confirming their position to the STS by dictation of Form SET.
4. If possible, the signaller may open an Auxiliary signal associated with an N Block Section Marker or Shunt Marker to prove that the route has been set.

##### **IN AN AREA CONTROLLED BY COLOUR LIGHT SIGNALS**

1. Even if the points are already in the correct position, the STS must dictate Form SET requesting each set of points in the line of route be placed in the required position by specifying their number and the position required.
2. The signaller must place each set of points in the line of route to the required position, apply a reminder and have the position of the points confirmed as being correct by another competent person in the AFC before confirming their position to the STS by dictation of Form SET.

- Once the position of the points are confirmed by the signaller by dictation of Form SET, the STS may authorise other movements over the points in the line of route until the STS cancels the Form SET with the signaller.

**CTRL**  
**Record of request for signaller to create a route/move points in a Worksite**  
**Form SET**

---

Operation Number:.....  
 Time/Date:.....  
 STS Name:.....

---

**Either** Create route from ..... to .....

**Or** Place the following points to the required position

Point Number	Required Position <small>(delete N or R )</small>	Advised Position <small>(enter N or R)</small>
2	N      R	
2	N      R	
2	N      R	
2	N      R	
2	N      R	
2	N      R	
2	N      R	
2	N      R	
2	N      R	
2	N      R	
2	N      R	

---

**The route is now set as requested/points placed in position shown**  
**Authorisation Number:** ..... (Given by Signaller to STS)  
 (**Note:** When the works train/OTM/OTP has completed its movement and a new route is required, this form must be cancelled and a new form SET issued)  
**This form is cancelled at** .....(hh:mm)  
**Authorisation Number:** ..... (Given by STS to Signaller)

(CCMS2 61013892)

## **Part C - Forms used in connection with engineering work**

### **SIGA - Signal Engineering Work Permit**

#### **Reason for use**

Used by the signalling technician when maintenance or repair work will affect the normal operation of signalling equipment. It specifies how the signalling equipment will be affected.

#### **Rule Book/Standard/Procedure reference**

Rule Book, Module T1, Section 6.

#### **Points to note:**

1. Form SIGA does **not** give personal protection from moving trains. This must be obtained by other means.
2. Form SIGA is not required if the work is being carried out within a Worksite.

FORM <b>SIGA</b> Signal Engineering Work Permit		
THE ISSUE OF THIS PERMIT DOES NOT MEAN THAT TRAIN MOVEMENTS ARE STOPPED ON THE LINES CONCERNED AND WHERE NECESSARY YOU MUST ARRANGE PERSONAL PROTECTION IN ACCORDANCE WITH THE INSTRUCTIONS CONTAINED IN MODULE G OF THE CTRL RULE BOOK.		
<b>PART A</b>	<b>Contact Details</b>	
	Signal ..... Technician ( <i>name</i> )	Tel ..... ( <i>number</i> )
Date (dd/mm/yy)..... Time (hh/mm) .....		
<b>PART B</b>	<b>Details of Work to be carried out – delete (i) or (ii) as necessary</b>	
	(Bi) This work is in connection with the failure of.....which occurred at ( <i>time</i> ).....( <i>hh/mm</i> ). Fault No. .... applies.	
	(Bii) This work is pre-planned (Planned Work No. .... applies). A Worksite as described in Module T3 of the Rule Book is not required.	
	Location of work .....	
	<b>Description of Work to be carried out</b> .....	
	.....	
	<b>Equipment to be considered out of use</b> .....	
	.....	
<b>Arrangements for passing trains</b> .....		
.....		
<b>Work will start at (<i>time</i>) .....(<i>hh/mm</i>)   Work will finish at (<i>time</i>).....(<i>hh/mm</i>)</b>		
<b>PART C</b>	<b>Authorisation</b>	
	Signaller at Ashford AFC authorises signal technician.....( <i>name</i> ) to begin work. Authority Number.....given at ( <i>time</i> ).....( <i>hh/mm</i> ). on ( <i>date</i> ).....( <i>dd/mm/yy</i> )..	
<b>PART D</b>	<b>Completion of Work</b>	
	Signal technician ( <i>name</i> ).....tells the signaller at Ashford AFC that :-	
	(Di) The following signalling equipment can be returned to normal operation .....	
	.....	
	(Dii) The following signalling equipment remains out of use .....	
	.....	
	(Diii) The work is being handed over to technician ( <i>name</i> ) ..... at ( <i>time</i> ) .....( <i>hh/mm</i> ) on ( <i>date</i> ) .....( <i>dd/mm/yy</i> ).	
(Div) Work is now complete at ( <i>time</i> ).....( <i>hh/mm</i> ) on ( <i>date</i> ) .....( <i>dd/mm/yy</i> )		
(Dv) Work is not completed. The responsible manager for this work is ( <i>name</i> ) ..... Tel. No. ....		
.....		

## **Part C - Forms used in connection with engineering work**

### **VENT - Record of Ventilation Isolation Arrangements**

#### **Reason for use**

Used by the VNOM to request an isolation of the ventilation equipment in the Long Tunnels from the EMMIS controller in order to access a ventilation shaft. It is also used by the VNOM to record the details of all Forms VEPE issued under this isolation.

#### **Rule Book/Standard/Procedure reference**

Rule Book, Module LT, Section 5. Assessing a Tunnel Ventilation Shaft (C-03-EP-48-3001).

#### **Points to note:**

1. A Worksite must be in place in the running tunnel below the ventilation shaft and the (S)TS must have issued or dictated a Form WORK to the VNOM.

CTRL	Record of Ventilation Isolation Arrangements Form VENT	
Lead Person	<b>Part 1</b>	<b>Ventilation Isolation Request</b>
VNOM	Ventilation Isolation No..... From VNOM.....(Name).....(Tel No).....(GSMR) To the EMMIS Controller Permission shall be granted to enter air side chambers within the following vent shaft detailed below once appropriate safety measures are in place. Vent Shaft / Portal..... Works Area (Chambers)..... From ..... (Hours) ..... (Date) To..... (Hours) ..... (Date)	
	<b>Part 2</b>	<b>Confirmation of Form Work</b>
Record of Form WORK	TS.....(Name).....(Tel No).....(GSMR) Has advised VNOM.....that Form WORK No .....is in place Time.....Date.....	
	<b>Part 3</b>	<b>Permission to Carry Out Isolation</b>
EMMIS Controller	From the EMMIS Controller permission to carry out the ventilation isolation is granted at. Time.....Date.....	
	<b>Part 4</b>	<b>Isolated Equipment Not Available for Control</b>
VNOM	From VNOM.....(Name) to the EMMIS Controller. The following equipment has been isolated and locked off and is not available for remote control. VSD's isolated and locked off..... Dampers isolated and locked off.....	
	<b>Part 5</b>	<b>Confirmation of Equipment Not Available For Control and Safe Haven Available</b>
EMMIS Controller	From the EMMIS Controller I can confirm that the stated equipment in Part 4 is not available for control and Safe Haven is/is not* available Time.....Date:..... <i>*Delete as appropriate</i>	
	<b>Part 6</b>	<b>Cancellation</b>
VNOM	From VNOM.....to the EMMIS Controller The following equipment under the authority of Ventilation Isolation No..... has been brought back into service. VSD's returned to service..... Dampers returned to service..... The following restrictions apply.....	
	<b>Part 7</b>	<b>Confirmation From EMMIS Controller</b>
EMMIS Controller	From the EMMIS controller I can confirm that the stated equipment in Part 6 is now available for control. Time.....Date.....	

(Front)



	<b>Part 8</b>	<b>Change of VNOM</b>
VNOM	Ventilation Isolation No.....	
	Change of VNOM.	
	Signed By.....Time..... Date.....	
	VNOM	
	Signed By.....(Name).....(Tel No).....(GSMR)	
	<small>Relieving VNOM</small>	

Record of Permits Issued

Works Supervisor Name	Location	Permit No

(Back)

## **Part C - Forms used in connection with engineering work**

### **VEPE - Permit to enter a Ventilation Shaft Chamber**

#### **Reason for use**

Issued by the VNOM to the Works Supervisor as authorisation to enter a Ventilation Shaft Chamber.

#### **Rule Book/Standard/Procedure reference**

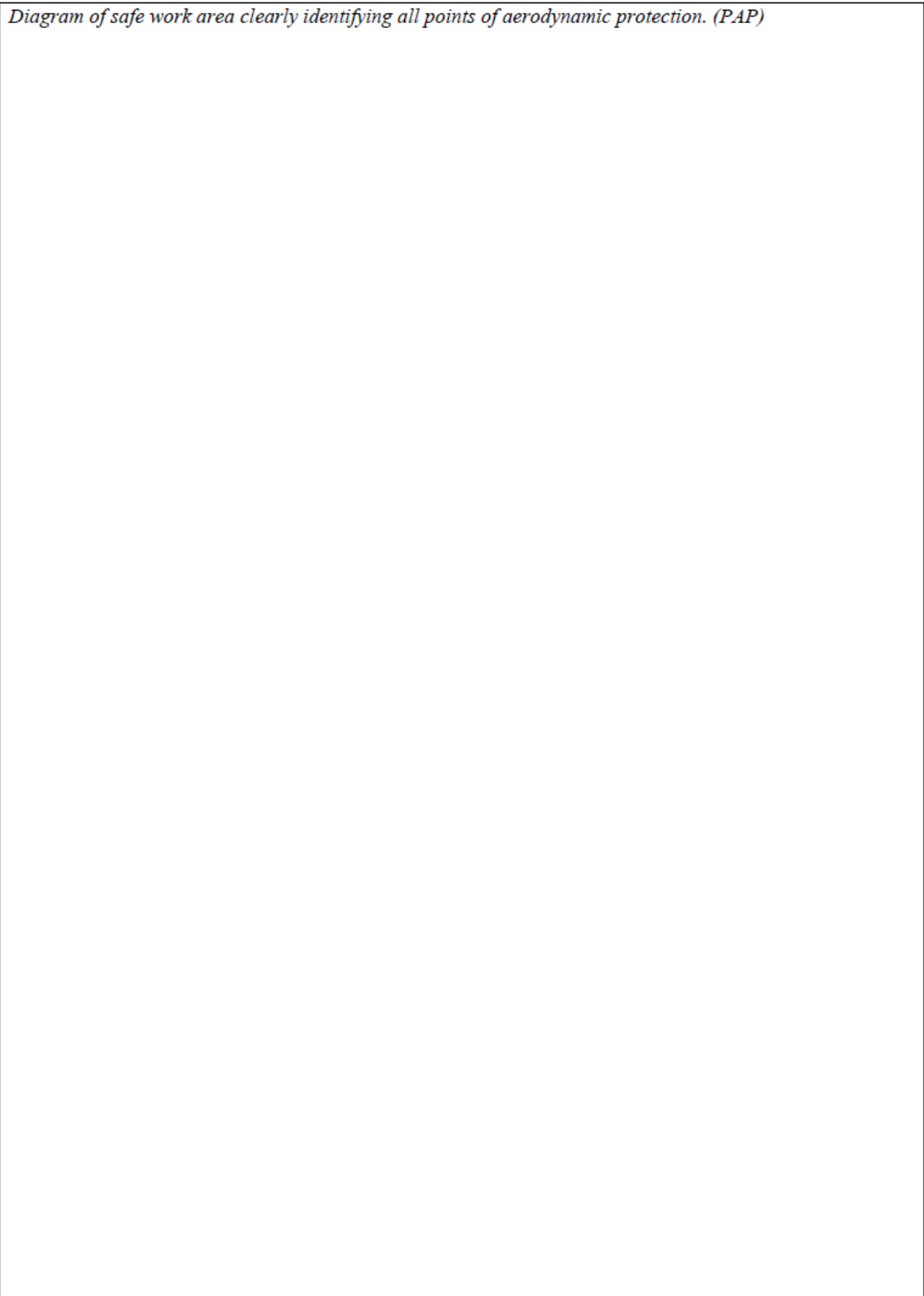
Rule Book, Module LT, Section 5. Assessing a Tunnel Ventilation Shaft (C-03-EP-48-3001).

#### **Points to note:**

1. Form VEPE does not give authorisation to work on the equipment.
2. The VNOM must check that all Forms VEPE have been handed back before the isolation of the ventilation system is given up

<b>CTRL</b>	<b>Permit to Enter a Ventilation Shaft Chamber Form VEPE</b>		No.....
Lead Person	<b>Part 1</b>	<b>Permit issue</b>	
VNOM	Issue of Permit to Works Supervisor.....(Name).....(Tel No).....(GSMR) The following chamber/s are safe to enter..... ..... Points of aerodynamic protection are LV / VSD rooms: Inverters isolated and locked off..... ..... Fan Control Rooms: Dampers isolated and locked off..... ..... <i>A sketch of the safe work area must be provided on the reverse of this document which shall form part of the briefing.</i> This document must be cancelled by: Time.....Date..... Issued by VNOM.....(Name).....(Signature) Time.....Date.....		
	<b>Part 2</b>	<b>Permit Acceptance</b>	
Works Supervisor	I undertake to ensure that all persons for whom I am responsible fully understand the extent of the Safe area limits prior to entry to the chamber. Received by Works Supervisor .....(Name).....(Signature) Time.....Date.....		
	<b>Part 3</b>	<b>Change of Works Supervisor</b>	
Works Supervisor	I have briefed the relieving Works Supervisor of the safe work area detailed within this permit and hand over responsibility to the relieving Works Supervisor. Signed by.....Time.....Date..... Works Supervisor I have been briefed on the safe work area and work being undertaken and take responsibility for all persons under my charge. Signed by.....Name.....Tel No.....(GSMR) Relieving Works Supervisor		
	<b>Part 4</b>	<b>Hand Back of Permit</b>	
Works Supervisor	From .....(Works Supervisor) To VNOM.....(Name) I confirm that all staff under my charge have been withdrawn and instructed that it is no longer safe to enter the chambers detailed within this document. Signed by.....(Works Supervisor) Time.....Date..... <b>Remaining issues at hand back:</b> ..... .....		
VNOM	Received by VNOM.....(Name).....(Signature)		

(Front)



(Back)

## **WORK - Authority to create a Worksite**

### **Reason for use**

Issued by the (S)RPOS to the (S)TS as authorisation to enter a Ventilation Shaft Chamber.

### **Rule Book/Standard/Procedure reference**

Rule Book Module T3 and T4. Procedures for taking possessions - CTRL/Network Rail interfaces (C/OP/OS/05/2007), Procedures for taking possessions - CTRL/Network Rail interfaces on the North Kent Line connection (C/OP/OS/05/2011), Procedures for taking possessions - CTRL/Network Rail interface on the East Coast Main Line connection (C/OP/OS/05/2012), Procedures for taking possessions - CTRL/Network Rail interfaces on the Ripple Lane chords (C/OP/OS/05/2013), Procedures for taking possessions - CTRL/Network Rail interfaces on the North London Line connection and Silo Curve (C/OP/OS/05/2014), Sectional Appendix, Module D.

### **Points to note:**


1. If required, when the Worksite is in a Long Tunnel, the (S)RPOS must ask the EMMIS Controller to re-configure the ventilation system before issuing Form WORK
2. The (S)RPOS must check that all Forms WORK have been handed back or the handing back dictated before the Protected Area is given up.

(Front of form WORK) <span style="float: right;"><b>CTRL</b></span> <b>AUTHORITY TO CREATE A WORKSITE</b> <b>Form WORK No. ....(Operation Number) 1 / 2 / 3 / 4</b>																															
<b>PART 1</b>	<b>AUTHORITY TO CREATE A WORKSITE</b>																														
<b>(S)RPOS to (S)TS</b>	From (S)RPOS (name)..... Tel No. .... to (S)TS (name).....Tel No. .... In connection with the above Operation No., I confirm that remote protection is in place																														
	<b>Applicable to London and Thames Tunnels only</b> I confirm the ventilation system is configured as shown below: (tick as appropriate)																														
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">East to West</td> <td style="width: 25%;"></td> <td style="width: 25%;">West to East</td> <td style="width: 25%;"></td> <td style="width: 25%;">Not configured</td> <td style="width: 25%;"></td> </tr> </table>	East to West		West to East		Not configured																									
	East to West		West to East		Not configured																										
	<b>Applicable if there is an open line adjacent to the Worksite with a line speed greater than 160 km/h</b> I confirm a temporary speed restriction of 160 km/h has been applied on the following lines:																														
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<b>SRPOS to STS only</b>	<b>Applicable if stationary works trains or OTM present</b> A Works train/OTM is stopped at the following location(s): <span style="float: right;">* Delete as necessary</span>																														
	Train Identity. <table border="1" style="width:100%; border-collapse: collapse;"><tr><td style="width: 30%;"></td><td style="width: 30%;">Line.</td><td style="width: 40%;">kp/marker/signal*</td></tr></table>		Line.	kp/marker/signal*																											
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<b>(S)RPOS to (S)TS</b>	You may create your Worksite as agreed and shown below																														
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This Form WORK to be returned by .....Time (hh:mm) ..... Date (dd:mm:yy)																															
Delivered/dictated* at .....Time (hh:mm) ..... Date (dd:mm:yy) <span style="float: right;">* Delete as necessary</span>																															
<b>PART 2</b>	<b>RECORD OF LOCAL PROTECTION OF WORKSITE</b>																														
<b>(S)TS</b>	The Worksite is protected by the operation of the local protection switch(es) shown below:																														
	EZP <table border="1" style="width:100%; border-collapse: collapse;"><tr><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td></tr></table>																														
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	and, if applicable, the provision of the Worksite Marker Board(s) and Portable Stop Board(s) shown below:																														
Worksite Marker Boards <table border="1" style="width:100%; border-collapse: collapse;"><tr><td style="width: 30%;">Line</td><td style="width: 20%;">kp</td><td style="width: 30%;">Line</td><td style="width: 20%;">kp</td></tr></table>	Line	kp	Line	kp																											
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Permission to start work given at .....Time (hh:mm) ..... Date (dd:mm:yy)																															

(CCSM2 61013698)

<b>Form WORK (Back)</b>																															
<b>PART 3</b>	<b>CHANGE OF WORKSITE LIMITS (To be completed if the Worksite is reduced)</b>																														
<b>(S)TS to (S)RPOS</b>	To (S)RPOS (name) ..... in respect of Form Work No..... The Worksite has been reduced. The new limits are:																														
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<b>PART 4</b>	<b>CHANGE OF (S)RPOS</b>																														
<b>(S)RPOS to (S)TS</b>	(S)RPOS (name)..... is now replaced as (S)RPOS for Operation No. .... by (S)RPOS (name) ..... Tel. No. .... ..... Time (hh:mm) ..... Date (dd:mm:yy)																														
<b>PART 5</b>	<b>CHANGE OF (S)TS</b>																														
<b>(S)TS to (S)RPOS</b>	(S)TS (name)..... is now replaced as (S)TS for Form WORK No. .... by (S)TS (name) ..... Tel. No. .... ..... Time (hh:mm) ..... Date (dd:mm:yy)																														
<b>PART 6</b>	<b>GIVING UP THE WORKSITE</b>																														
<b>(S)TS</b>	All personal and materials clear of the line at..... Time (hh:mm) ..... Date (dd:mm:yy) All Worksite Marker Board(s) and Portable Stop Board(s), if applicable, removed and all local protection switches returned to normal at: ..... Time (hh:mm) ..... Date (dd:mm:yy)																														
<b>STS to SRPOS only</b>	<b>Applicable if stationary works trains or OTM present</b>																														
	A Works train/OTM is stopped at the following location(s): ..... * Delete as necessary:																														
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Train Identity	Line.	kp/marker/signal*																													
Train Identity	Line.	kp/marker/signal*																													
<b>(S)TS to (S)RPOS</b>	To (S)RPOS (name) ..... in respect of Form Work No..... I confirm that: the work is completed, the line is safe and fit to run on all personal and materials are clear of the line (all Worksite Marker Boards and Portable Stop Boards removed*) all local protection switches have been normalised The Worksite is given up: (a) Without restriction* (b) With the following restriction* (state nature of restriction)  (S)TS (name) ..... delivered/dictated* ..... Time (hh:mm) ..... Date (dd:mm:yy)																														

(CCMS 61013698)

	HS1 Level Two Standard
	C/OP/OS/05/2002
	May 2013

# HS1 Sectional Appendix (Previously the CTRL Sectional Appendix)

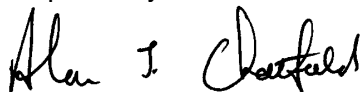
## Module F (Part D)

### Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton

The forms in this part to be used for safety communications between Ashford AFC signallers and drivers in the HS1/Eurotunnel interface area at Cheriton as shown in Part 16g of this Sectional Appendix where Eurotunnel Rules & Procedures apply. These forms are based on the ones used between RCC controllers and drivers and published in the Eurotunnel principle document 'Printed Procedures Forms Manual' (ORCC/3084), but delimited for use in the interface area by Ashford AFC signallers.

**Staff must apply the instructions shown in Section 18 of Module G of the HS1 Rule Book when carrying out safety critical communications.**

Prepared by



.....  
**Alan Chatfield**  
Operations Standards Manager, Network Rail (High Speed) Ltd.

Authorised by:



.....  
**Simon Lejeune**  
Head of High Speed Operations, Network Rail (High Speed) Ltd.

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(CCMS2 62700687)

Network Rail Infrastructure Ltd Registered Office Kings Place 90 York Way London N1 9AG

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<b>REVISION HISTORY</b>	
January 2012	Initial issue.
May 2013	Form MAIL withdrawn.

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ATRA (ET)	Check zone and cancel route setting	28-01-12	FD4/FD5
BAPO (ET)	Lower pantographs	28-01-12	FD6/FD7
CHEX (ET)	Changing ends	28-01-12	FD8/FD9
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## Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton

### ATRA (ET) – Check zone and cancel route setting

#### Reason for use

Used when the signaller requires the driver to verify there is not an obstruction on the line and operate the local release unit to release the signalling controls as a track circuit is showing occupied, resulting in a route being locked or preventing points being operated.

#### Outcome

Signaller receives confirmation from the driver that the local release unit is operated.

#### Points to note:

1. The reason that the track circuit is showing occupied may be because it is occupied by a stationary 'trapped' train that requires the points in front of it to be operated to an alternative route. In this case there is no requirement to check the zone first.
2. If a train has been authorised to pass a closed Block Section Marker (*repère*) for the driver to carry out Procedure ATRA and all is now in order for the train to proceed, the signaller must dictate Form REMA to instruct the driver to restart.
3. Procedure ATRA also gives personal protection, if required. Aerodynamic Protection is always guaranteed as the location is **not** in the Channel Tunnel.

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Signal box: Ashford AFC	Date:..... (dd/mm/yy)	Time: ..... (hh/mm)
<b>CHECK ZONE AND CANCEL ROUTE SETTING</b>		
<p><b>Instruction</b> is given to driver of train ..... (number)</p> <p><input type="checkbox"/> <b>To check</b></p> <p>The zone ..... track ..... located between ..... &amp; ..... (number) (easily recognisable locations)</p> <p><b>and report</b> back.</p> <hr/> <p><input type="checkbox"/> <b>To cancel route setting</b> ..... located at..... (ATR number) (geographic location)</p> <p><b>and report</b> back.</p> <hr/> <p><input type="checkbox"/> <b>Aerodynamic protection</b> guaranteed at km .....</p> <p><input type="checkbox"/> <b>Personal protection</b> guaranteed for route(s) used for zone checking and/or ATR point.</p>		
XX		
<b>Message</b> .....(number)		
XX		
<p><b>Report back on zone check</b> <span style="float: right;">Time : ..... (hh/mm)</span></p> <p><b>Zone</b> ..... track ..... located between ..... &amp; ..... (number) (letter or number) (easily recognisable locations)</p> <p><input type="checkbox"/> Zone free of any vehicle or obstruction.</p> <p><input type="checkbox"/> Zone occupied by a vehicle or obstruction with fouling point free.</p> <p><input type="checkbox"/> Zone occupied by a vehicle or obstruction with occupied fouling point.</p> <hr/> <p><b>Report back on the cancellation of route setting</b> <span style="float: right;">Time : ..... (hh/mm)</span></p> <p>Cancel route setting equipment ..... activated (number)</p> <p><input type="checkbox"/> Light on</p> <p><input type="checkbox"/> Light off</p> <hr/> <p><input type="checkbox"/> <b>Aerodynamic protection can be withdrawn</b></p> <p><input type="checkbox"/> <b>Personal protection can be withdrawn</b></p>		

CCMS2 62412302

## **Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton**

### **BAPO (ET) – Lower pantographs**

#### **Reason for use**

Used when the signaller requires the driver to either:

- (a) lower the pantograph(s), **or**
- (b) travel over a specified portion of line with the pantograph(s) lowered because of defective OHLE.

#### **Outcome**

- (a) The driver lowers the pantograph(s), **or**
- (b) The train proceeds over the specified portion of line with the pantograph(s) lowered and then the driver raises them and continues the journey.

#### **Points to note:**

1. If the train is to travel over a specified portion of line with the pantograph(s) lowered, the signaller must stop the train at a suitable location to dictate Form BAPO. This location must be at a sufficient distance from the affected portion of line to allow the driver to gain sufficient speed from a standing start to coast over the affected portion without stopping. The driver must make sure the rear pantograph has passed clear of the affected portion before raising the pantographs again.

Signal box: Ashford AFC	Date:..... (dd/mm/yy)	Time:..... (hh/mm)
<b>LOWER PANTOGRAPHS</b>		
<b>Instruction</b> is given to driver of train ..... (number)		
<input type="checkbox"/> To lower pantographs		
<input type="checkbox"/> To pass through the following zone with all pantographs lowered: Track ..... from km ..... to km ..... located between ..... & ..... (easily recognisable locations)		
XX		
<b>Message</b> .....(number)		

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## Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton

### CHEX (ET) – Changing ends

#### Reason for use

Used when the signaller requires the driver to make an unscheduled change of direction on a running line, e.g. a train is required to reverse because the line ahead is obstructed.

It is not used when the change of direction is advised to the driver in advance and they are expecting it, e.g. because of planned engineering work.

#### Outcome

Signaller receives confirmation from the driver that they have changed ends and the train is ready to commence its next movement in the opposite direction. The driver must confirm the cab signalling system in the driving cab in direction of travel is armed.

#### Points to note:

1. Normally the driver will change ends within the train/traction unit. If this has to be done outside the train/traction unit, the driver must proceed along the side of the train/traction unit where there is **no** adjacent running line. If this is not possible, the driver must request personal protection. Procedure CHEX gives personal protection, if required. Aerodynamic Protection is always guaranteed as the location is **not** in the Channel Tunnel.
2. After the driver confirms they have changed ends, the signaller must dictate Form REMA to instruct the driver to restart.
3. When arming the cab signalling, the parity of the Up Line is '1' and the Down Line is '2'.

Signal box: Ashford AFC	Date: ..... (dd/mm/yy)	Time: ..... (hh/mm)
<b>CHANGING ENDS</b>		
<p><b>Instruction</b> is given to driver of train ..... (number) to change ends and report back.</p> <p><input type="checkbox"/> <b>Aerodynamic protection</b> guaranteed at km .....</p> <p><input type="checkbox"/> <b>Personal protection</b> guaranteed.</p>		
XX		
<p><b>Message</b>.....(number)</p>		
XX		
<p><b>Instruction</b> is given to driver of train ..... (number)      Time : ..... (hh/mm)</p> <p>To cancel the <b>CHEX</b> procedure</p> <p>To report back once you have returned to the initial driver's cab.</p>		
XX		
<p><b>Message</b> .....(number)</p>		
XX		
<p><b>Drivers report CHEX procedure or cancellation of the CHEX procedure</b></p> <p><input type="checkbox"/> Change of end completed Time : ..... (hh/mm)</p> <hr/> <p><input type="checkbox"/> Change of end cancelled, return to the initial driver's cab Time : ..... (hh/mm)</p> <hr/> <p><input type="checkbox"/> <b>Aerodynamic protection can be withdrawn</b></p> <p><input type="checkbox"/> <b>Personal protection can be withdrawn</b></p>		

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## Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton

### FREP (ET) – Passing a designated closed *repère* (marker)

#### Reason for use

Used when the signaller has to authorise a driver to pass a closed *repère* when it is not possible to open the associated proceed light (*feu de franchissement*).

#### Outcome

The driver passes the closed *repère* and proceeds under 'Proceed on Sight' conditions.

#### Points to note:

1. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to pass the closed *repère* before dictating Form FREP. This may mean liaising with the RCC controller or the Ashford IECC signaller.
2. The dictation of the 'Message Number' on Form FREP authorises the driver to operate the KVB button "BP-FS" in order to pass the closed *repère*.
3. Sometimes another form (e.g. Form VILI) has to be dictated to the driver before authorising the train to pass the *repère*. The other form must be dictated to the driver before Form FREP is dictated.
4. Form FREP is also used to authorise the driver of a train to restart when it has stopped **after** passing a closed *repère*.
5. However, if a train passes an open *repère* and then stops with the driving cab beyond that *repère*, the instruction to restart to be given by dictation of Form REMA as the driver has received authorisation to pass the *repère*.

<i>Signal box: Ashford AFC</i>	<i>Date : .....</i> <i>(dd/mm/yy)</i>	<i>Time : .....</i> <i>(hh/mm)</i>
<b>PASSING A DESIGNATED CLOSED REPERE</b>		
<b>Instruction</b> is given to driver of train ..... <i>(number)</i> to pass the closed <i>repère</i> ..... <i>(number)</i> <b>and obey cab signalling</b>		
XX		
<b>Message</b> ..... <i>(number)</i>		

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## Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton

### PASS (ET) – Give assistance

#### Reason for use

Used when the signaller requires the driver of an assisting train/traction unit to attach to a failed train and to assist it to a specified location.

#### Outcome

Signaller receives confirmation from the driver of the assisting train/traction unit that it is attached to the failed train and the combined trains are ready to proceed.

#### Points to note:

1. Form PASS also gives authorisation to the driver of an assisting train/traction unit to pass the closed *repère* protecting the failed train.
2. The signaller must make sure the route is correctly set and the conditions are safe to allow the assisting train/traction unit to pass the closed *repère* before dictating Form PASS. This may mean liaising with the RCC controller or the Ashford IECC signaller.
3. The dictation of the 'Message Number' on Form PASS authorises the driver to operate the KVB button "BP-FS" in order to pass the closed *repère*.
4. After the driver of the assisting train/traction unit confirms they have coupled to the failed train and the combined trains are ready to proceed, the signaller must dictate Form REMA to instruct the driver at the head of the movement in direction of travel to proceed. However, if the head of the movement in direction of travel is in the signalling responsibility area of the RCC controller or the Ashford IECC signaller, that person is responsible for authorising the train to proceed. Procedure MAIL also gives personal protection, if required. Aerodynamic Protection is always guaranteed as the location is **not** in the Channel Tunnel.
5. Procedure PASS also gives personal protection, if required. Aerodynamic Protection is always guaranteed as the location is **not** in the Channel Tunnel.

Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
<b>GIVE ASSISTANCE</b>		
<p><b>Instruction</b> is given to driver of train .....: (number)</p> <p><input type="checkbox"/> to pass the closed <i>repère</i> .....(number)</p> <p>In order to give assistance to failed train .....: (number)</p> <p><input type="checkbox"/> to couple up</p> <p><input type="checkbox"/> to change ends</p> <p>Report back before starting the movement.</p> <p><input type="checkbox"/> Presence of Dangerous Goods</p> <p><input type="checkbox"/> <b>Aerodynamic protection</b> guaranteed at km .....</p> <p><input type="checkbox"/> <b>Personal protection</b> guaranteed.</p>		
XX		
<b>Message</b> .....(number)		
XX		
<p>Drivers report <b>PASS</b></p> <p><input type="checkbox"/> coupling completed with failed train .....(number)</p> <p><input type="checkbox"/> ends changed</p> <p><input type="checkbox"/> <b>Aerodynamic protection measures may be cancelled</b></p> <p><input type="checkbox"/> <b>Personal protection measures may be cancelled</b></p>		

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## **Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton**

### **PRUD (ET) – *MARCHE PRUDENTE* (Proceed at reduced speed)**

#### **Reason for use**

Used when the signaller requires to caution the driver over a specific portion of line because of a report of an incident which requires the train to pass the location at reduced speed.

#### **Outcome**

Driver proceeds over the specific portion of line at a speed appropriate to the circumstances.

#### **Points to note:**

1. May be used by the signaller to caution the driver because of a report of a minor incident outside the HS1 control area. In this case the driver will not report back to the AFC signaller.

Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
<b>MARCHE PRUDENTE</b>		
<b>Instruction</b> is given to driver of train ..... (number) to proceed in " <b>marche prudente</b> " in the zone from: from ..... to ..... <input type="checkbox"/> km ..... <input type="checkbox"/> km ..... <input type="checkbox"/> repère ..... (number) <input type="checkbox"/> repère ..... (number) <input type="checkbox"/> signal..... (number) located between ..... & ..... (easily recognisable locations) Reason ..... ..... and report back <input type="checkbox"/> yes <input type="checkbox"/> no		
XX		
<b>Message</b> .....(number)		
XX		
Drivers report <b>PRUD</b> Proceeded in <i>marche prudente</i> from ..... to ..... <input type="checkbox"/> km ..... <input type="checkbox"/> km ..... <input type="checkbox"/> repère ..... (number) <input type="checkbox"/> repère ..... (number) <input type="checkbox"/> signal..... (number) Observations ..... .....		

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## Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton

### REMA (ET) – Restart

#### Reason for use

Used when the signaller tells a driver they can recommence movement in the following circumstances:

#### General

- (a) the driver has stopped the train because of an unusual occurrence, e.g. the unexpected display of the 'Red - Proceed on Sight' indication on the cab signalling display, or a fault on the train, and it is now safe for it to proceed.
- (b) the signaller has stopped the train because of an emergency and it is now safe for it to proceed.
- (c) a train has had to make an unscheduled change of direction on a running line (Form CHEX has been dictated to the driver) and is now ready to proceed.
- (d) assistance has been provided to a failed train and the combined trains are now ready to proceed.
- (e) the driver of a failed train has cancelled their request for assistance (Form PROD 2 has been dictated to the signaller) and is now ready to proceed.
- (f) a train has been authorised past a closed *repère* to attend to an infrastructure defect (Form ATRA/VEVO has been dictated to the driver) and is now ready to proceed.

#### Outcome

Driver recommences the movement obeying the indication displayed by the cab signalling system and complying with any other instructions received.

#### Points to note:

1. The dictation of Form REMA is not necessary if the train has stopped at a closed *repère* because of the normal signalling arrangements. The driver to proceed when the *repère* opens or. If the signaller cannot open the *repère*, or its associated proceed light (*feu de franchissement*), authorisation to pass the *repère* will be by the dictation of Form FREP. The dictation of Form REMA is only necessary if any of the circumstances shown above **also** apply.
2. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to proceed before dictating Form REMA.
3. The driver must make sure the cab signalling is armed and an indication displayed in the driving cab before proceeding.
4. Sometimes another form (e.g. Form PRUD) has to be dictated to the driver before authorising the train to proceed. The other form must always be dictated to the driver before Form REMA is dictated. This includes the dictation of Form FREP, if the train is also required to pass a closed *repère* . (see Note 1 above)

Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
<b>RESTART</b>		
<b>Authorisation</b> is given to driver of train ..... (number) to proceed as far as ..... (destination point) in accordance with cab signalling indications		
XX		
<b>Message</b> .....(number)		

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## **Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton**

### **VEVO (ET) – Check designated zone**

#### **Reason for use**

Used when the signaller requires the driver to verify there is not an obstruction on the line because a track circuit is showing occupied for no apparent reason.

#### **Outcome**

Signaller receives report from the driver as to the state of the line.

#### **Points to note:**

1. Procedure VEVO also gives personal protection, if required. Aerodynamic Protection is always guaranteed as the location is **not** in the Channel Tunnel.

Signal box: Ashford AFC	Date:..... (dd/mm/yy)	Time: ..... (hh/mm)
<b>CHECK DESIGNATED ZONE</b>		
<p><b>Instruction</b> is given to driver of train ..... (number)</p> <p><b>To check</b> zone ..... from km ..... to km .....</p> <p><b>and report</b> back.</p> <p><input type="checkbox"/> <b>Aerodynamic protection</b> guaranteed at km .....</p> <p><input type="checkbox"/> <b>Personal protection</b> guaranteed</p>		
XX		
<b>Message</b> .....(number)		
XX		
<p><b>Driver's report VEVO</b></p> <p><b>Zone</b> ..... checked (number)</p> <p><input type="checkbox"/> clear.</p> <p><input type="checkbox"/> blocked</p> <p><input type="checkbox"/> other</p> <p>.....</p> <p>.....</p> <p>..... (description)</p> <p><input type="checkbox"/> <b>Aerodynamic protection measures may be cancelled</b></p> <p><input type="checkbox"/> <b>Personal protection measures may be cancelled</b></p>		

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## **Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton**

### **VILI (ET) – Speed restriction inferior to 30 km/h (20 mph)**

#### **Reason for use**

Used when the signaller requires the driver to proceed over a specified portion of line at a speed less than 30 km/h (20 mph), when drivers cannot receive the information via the cab signalling system.

#### **Outcome**

Train proceeds over the specified portion of line not exceeding the maximum speed indicated on the form.

#### **Points to note:**

1. A speed restriction of 30 km/h can be imposed via the cab signalling system.
2. Lineside signs and associated equipment are **not** used.

Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
<b>SPEED RESTRICTION INFERIOR TO 30 KM/H (30 MPH)</b>		
Instruction is given to driver of train ..... (number)		
not to exceed the speed limit of <input type="checkbox"/> ..... km/h		
<input type="checkbox"/> ..... mph		
from km ..... to km .....		
situated between ..... & ..... (easily recognisable locations)		
XX		
<b>Message</b> .....(number)		

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## **Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton**

### **VITA (ET) – Examine train**

#### **Reason for use**

Used when the signaller requires the driver to examine their train after receiving a report of a suspected defect. This report may come from someone, physically observing the train, e.g. the driver of another train, lineside staff, or it may come from the RCC Controller or Ashford IECC signaller.

#### **Outcome**

Driver examines their train and reports to the signaller the results of the examination.

#### **Points to note:**

1. Procedure VITA also gives personal protection, if required. Aerodynamic Protection is always guaranteed as the location is **not** in the Channel Tunnel.

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Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
<b>EXAMINE TRAIN</b>		
<p><b>Instruction</b> is given to driver of train ..... (number) to examine the train for</p> <p><input type="checkbox"/> hot axle box on axle .....(number)    <input type="checkbox"/> left side    <input type="checkbox"/> right side</p> <p><input type="checkbox"/> non released brake, axle .....(number)</p> <p><input type="checkbox"/> smoke    <input type="checkbox"/> at the front of the train    <input type="checkbox"/> in the middle of the train</p> <p style="padding-left: 100px;"><input type="checkbox"/> at the rear of the train    <input type="checkbox"/> on the locomotive/power car</p> <p><input type="checkbox"/> derailment or dragging/missing equipment    <input type="checkbox"/> other fault</p> <p>.....</p> <p>and <b>report back.</b></p> <p><input type="checkbox"/> <b>Aerodynamic protection</b> guaranteed at km .....</p> <p><input type="checkbox"/> <b>Personal protection</b> guaranteed</p>		
XX		
<b>Message</b> .....(number)		
XX		
<p>Drivers report <b>VITA - Examination completed</b></p> <p><input type="checkbox"/> hot axle box on axle .....(number)    <input type="checkbox"/> left side    <input type="checkbox"/> right side</p> <p><input type="checkbox"/> non released brake, axle .....(number)</p> <p><input type="checkbox"/> smoke    <input type="checkbox"/> at the front of the train    <input type="checkbox"/> in the middle of the train</p> <p style="padding-left: 100px;"><input type="checkbox"/> at the rear of the train    <input type="checkbox"/> on the locomotive/power car</p> <p><input type="checkbox"/> vehicle is derailed    <input type="checkbox"/> equipment    <input type="checkbox"/> dragging    <input type="checkbox"/> missing</p> <p><input type="checkbox"/> other fault .....</p> <p><input type="checkbox"/> no fault found</p> <p>Measures to be taken .....</p> <p>Measures taken .....</p> <p><input type="checkbox"/> <b>Aerodynamic protection measures may be cancelled</b></p> <p><input type="checkbox"/> <b>Personal protection measures may be cancelled</b></p>		

CCMS2 62412336

## **Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton**

### **Form 1 (ET) – Request for assistance**

#### **Reason for use**

Used when the driver declares to the signaller that their train is a failure and that assistance is required.

#### **Outcome**

Assistance is organised and sent to the failed train.

#### **Points to note:**

1. Once this form is acknowledged by the signaller, the driver must not attempt to move the train. If the failure is remedied and the train can move under its own power, the driver may cancel the request for assistance by dictation of Form 2. The driver must receive instruction from the signaller to re-start by dictation of Form REMA.
2. The assistance provided may not always be another train/traction unit but could be the provision of a Rolling Stock Technician at site to assist the driver.
3. If there are any technical reasons preventing the failed train being assisted at one end, e.g. defective coupler, this must be declared by the driver when dictating Form 1.
4. If a train is split and part of it is left at the incident location, this form is used to request assistance for the remaining part. Form 1 must be dictated before the first part of the train departs the incident location.

Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
<b>REQUEST FOR ASSISTANCE</b>		
Train ..... (number)                      Traction unit .....(number)		
Length ..... (metres)                      Weight .....(tonnes)		
Failed on track ..... at km .....		
<input type="checkbox"/> between ..... & ..... (easily recognisable locations)		
<input type="checkbox"/> stopped at repère .....(number)		
<b>I request assistance</b>		
Reason .....		
Particular circumstances .....		
<input type="checkbox"/> TVM not available		
<input type="checkbox"/> re-railing equipment required		
<input type="checkbox"/> train must be assisted from <input type="checkbox"/> Front <input type="checkbox"/> Rear		
<input type="checkbox"/> presence of Dangerous Goods		
I guarantee that I will not proceed without authority		

1  
(ET)

**OR**

<b>Second part of train</b> ..... (number)		
Length ..... (metres)                      Weight .....(tonnes)		
Left behind on track ..... at km .....		
<input type="checkbox"/> between ..... & ..... (easily recognisable locations)		
<input type="checkbox"/> stopped at repère .....(number)		
<b>I request assistance</b>		
Reason .....		
Particular circumstances .....		
<input type="checkbox"/> TVM not available		
<input type="checkbox"/> re-railing equipment required		
<input type="checkbox"/> train must be assisted from <input type="checkbox"/> Front <input type="checkbox"/> Rear		
<input type="checkbox"/> presence of Dangerous Goods		

CCMS2 62412294



## **Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton**

### **Form 2 (ET) – Cancellation of request for assistance. Request for authorisation to proceed**

#### **Reason for use**

Used when the driver declares to the signaller that their train that was previously declared a failure by dictation of Form 1 'Request for assistance' is now able to move under its own power and that assistance is no longer required.

#### **Outcome**

Assistance is cancelled and train restarts under its own power.

#### **Points to note:**

1. The driver must receive instruction from the signaller to re-start by dictation of Form REMA.
2. The signaller must make sure the route is correctly set and the conditions are safe to allow the train to restart before dictating Form REMA.

Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
<b>CANCELLATION OF REQUEST FOR ASSISTANCE REQUEST FOR AUTHORISATION TO PROCEED</b>		
Driver of train ..... (number) stopped on track .....		
At km .....		
I <b>cancel</b> the request for assistance transmitted		
on ..... at .....		
(dd/mm) (hh/mm)		
I <b>request authorisation to proceed.</b>		

**2  
(ET)**

CCMS2 62412297

## **Part D - Forms used in connection with train working in the HS1/Eurotunnel interface area at Cheriton**

### **Form 5 (ET) – Request for Aerodynamic/personal protection**

#### **Reason for use**

Used when the driver requires the signaller to provide protection from moving trains in accordance with Module G of the HS1 Rule Book.

#### **Outcome**

The signaller stops/slows trains on adjacent lines so that the driver can safely enter the Danger Zone.


#### **Points to note:**

1. If personal protection is provided as part of another form procedure, the use of this form is not required.
2. Aerodynamic Protection is always guaranteed as the location is **not** in the Channel Tunnel.

**5  
(ET)**

Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
<b>1. REQUEST FOR AERODYNAMIC/PERSONAL PROTECTION</b>		
M ..... (name)	Title .....	
Train .....(number)		
<input type="checkbox"/> Request for aerodynamic protection		
<input type="checkbox"/> Request for personal protection		
Km .....		
Probable length of time .....		
For ..... (reason)		
<b>2. NOTIFICATION</b>		
Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
M ..... (name)	Title .....	
Train .....(number)		
<input type="checkbox"/> Aerodynamic protection guaranteed		
<input type="checkbox"/> Personal protection guaranteed		
Km .....		
Message.....(number)		
<b>3. AUTHORISATION TO CEASE PROTECTION</b>		
Signal box: Ashford AFC	Date : ..... (dd/mm/yy)	Time : ..... (hh/mm)
M ..... (name)	Title .....	
Train .....(number)		
Authorises the lifting of protection measures as notified by		
Message.....(number in section 2)		

CCMS2 62412300

	HS1 Level Two Standard
	C/OP/OS/05/2002
	May 2013

# HS1 Sectional Appendix (Previously the CTRL Sectional Appendix)

## Parts 1 - 20

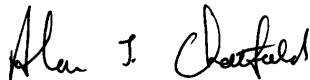
This document is a complete re-issue of the CTRL Sectional Appendix, Parts 1-20 dated March 2012 and includes the amendments published in the following Special Operating Instructions:

SOI-12-27 "Access to an intervention shaft by maintenance staff using a Southeastern train or the MPVs", dated 13<sup>th</sup> August 2012.

SOI-12-35 "Amendments to the CTRL Sectional Appendix, Parts 15.4 & 16.1", dated 23<sup>rd</sup> April 2013.

Amendments to the text are indicated by a side-line in the margin and are explained in the table on the next pages.

Prepared by



.....  
**Alan Chatfield**  
**Operations Standards Manager, Network Rail (High Speed) Ltd.**

Authorised by:



.....  
**Simon Lejeune**  
**Head of High Speed Operations, Network Rail (High speed) Ltd.**

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(CCMS 9100747)

Part	Title	Summary of amendments
5.1	<b>Track defects - broken rails</b>	"CTRL Head of Track Engineering" amended to read: "Head of Track Engineering". "CTRL Rule Book" amended to read: "Rule Book".
9.1	<b>Stabling of trains - General</b>	"CTRL Rule Book" amended to read: "Rule Book". "Any wheel scotches used must be of a type approved for use on the CTRL and identified accordingly." amended to read: "Any wheel scotches used must be of a type approved for use on HS1 and identified accordingly." Two red lights must be provided at each end of the failed train." amended to read: "At least one red light must be provided at each end of the failed train."
10.2	<b>VHME - Provision of ladders to assist drivers in the examination of their trains</b>	"CTRL Rule Book" amended to read: "Rule Book".
11	<b>Operation of trains not fitted with CTRL cab signalling in an area controlled by cab signalling at speeds between 31 km/h and 100 km/h</b>	"the CTRL" amended to read "HS1" "CTRL Rule Book" amended to read: "Rule Book". CTRL Head of Track Engineering" amended to read: "Head of Track Engineering". "CTRL Personal Track Safety" amended to read: "HS1 (CTRL) Personal Track Safety". "Special Operating Instruction produced, if necessary." amended to read: "Special Operating Instruction produced."
12	<b>Additional instructions in connection with maintenance work</b>	"the CTRL" amended to read "HS1" "CTRL Rule Book" amended to read: "Rule Book". Sections 12.6 - 12.8 renumbered to 12.2 - 12.4.
13	<b>Access to an intervention shaft by maintenance staff using a Southeastern train or the MPVs</b>	New section previously published in Special Operating Instruction SOI-12-27
15.1	<b>Location specific instructions – St. Pancras International station</b>	Sub-section 15.1.1, "International platforms 5 - 10". "CTRL Rule Book" amended to read: "Rule Book". Sub-section 15.1.2 "Locomotives, works trains and maintenance vehicles" "CTRL Head of Track Engineering" amended to read: "Head of Track Engineering". Sub-section 15.1.3 "Isolations of the OHLE in platform 5 and the Down CTRL line". "CTRL OHLE" amended to read: "HS1 OHLE". "CTRL personnel" amended to read: "HS1 personnel" Sub-section 15.1.5 "Use of Form PROD 5 (Station staff)". "CTRL Rule Book" amended to read: "Rule Book".

Part	Title	Summary of amendments
15.2	<b>Location specific instructions – St. Pancras maintenance siding</b>	<p>Sub-section 15.2.1 “Description”. “the CTRL” amended to read “HS1”.</p> <p>Sub-section 15.2.2 “General principles”. “CTRL Rule Book” amended to read: “HS1 Rule Book”.</p> <p>Sub-section 15.2.5 Title “Principles applicable to CTRL Protected Areas” amended to read: “Principles applicable to HS1 Protected Areas” “CTRL Rule Book” amended to read: “HS1 Rule Book”.</p> <p>Sub-section 15.2.7 “Isolations of the OLE on the adjacent Midland Main Line”. “CTRL personnel” “HS1 personnel”</p>
15.3	<b>Location specific instructions – St. Pancras colour light signal controlled area</b>	<p>Sub-section 15.3.3: “AWS arming at the exit from London Tunnel 1”. Additional paragraph detailing the driver’s actions in the event of a train routed towards Camden Road Jn. not receiving the ‘warning indication’.</p> <p>Sub-section 15.3.5 Titles “Movement of trains not fitted with KVB equipment into/out of the St. Pancras colour light signal controlled area” amended to read: “Movement of trains not fitted with KVB equipment into/out St. Pancras International station”. 15.3.5.1 “Into the St. Pancras colour light signal controlled area” amended to read: “Into St. Pancras International station”. 15.3.5.2 “From the St. Pancras colour light signal controlled area” amended to read: “From St. Pancras International station”.</p> <p>Sub-section 15.3.6 “Manual operation of HPSS points”. “CTRL Rule Book” amended to read: “Rule Book”. 15.3.6.1 “which position the points are required to be moved to and/or secured” amended to read: which position the points are required to be moved to (even if they are already in that position)</p>
15.4	<b>Location specific instructions – Stratford</b>	<p>Section amended as the Up and Down International Platform Lines have been re-gauged to UIC loading gauge. (Previously published in Special Operating Instruction SOI-12-35.).</p>

Part	Title	Summary of amendments
		<p>Sub-section 15.4.1 Title: "Up and Down International Platform lines (Platforms 1 &amp; 4) and Up and Down Domestic Platform lines (Platforms 2 &amp; 3)" amended to read "Platform 1 (Up International platform)"</p> <p>Sub-section re-written for instructions specific to platform 1.</p>
		<p>New sub-section 15.4.2 "Platforms 2 &amp; 3 (Up &amp; Down Domestic platforms)" detailing the instructions specific to platforms 2 &amp; 3.</p> <p>New sub-section 15.4.3 "Platform 4 (Down International platform)" detailing the instructions specific to platform 4.</p> <p>Sub-section 15.4.4 "Restrictions on the signalling of the STRAMM DU94B" re-written to make the instructions specific to platforms 2 &amp; 3.</p>
15.5	<b>Location specific instructions – Dagenham to Thames Tunnel</b>	<p>Sub-section 15.5.1 "Isolations of the OHLE". "CTRL OHLE" amended to read: "HS1 OHLE". "CTRL personnel" amended to read: "HS1 personnel"</p>
15.7	<b>Location specific instructions – Singlewell</b>	<p>Sub-section 15.7.1 Title: "Siding" amended to read: "Country end siding"</p>
15.8	<b>Location specific instructions – Singlewell Infrastructure Maintenance Depot (IMD) yard</b>	<p>"the CTRL route" amended to read "the HS1 route" "CTRL Rule Book" amended to read: "Rule Book".</p>
16.1	<b>Interface instructions - Silo Curve, North London Line and East Coast Main Line connections</b>	<p>Sub-section 16.1.1 "Silo Curve and North London Line connection" Sub-section replaced by the instructions previously published in Special Operating Instruction SOI-12-35.</p> <p>Sub-section 16.1.2 "East Coast Main Line connection". "CTRL" amended to read: "HS1" where appropriate. "Upminster IECC" amended to read: "Upminster SCC".</p>
16.2 - 16.7	<b>Interface instructions - Stratford to Temple Mills International depot link line Ripple Lane chords North Kent Line connection Waterloo connection Ashford West and East chords Dollands Moor freight chord</b>	<p>"CTRL" amended to read: "HS1" where appropriate. "CTRL Shift Manager" amended to read "Shift Manager". "CTRL Rule Book" amended to read: "HS1 Rule Book".</p>



Part	Title	Summary of amendments
16.8	<b>Interface instructions – HS1/Eurotunnel/Network Rail interface at Cheriton</b>	Title amended - previously “CTRL/Eurotunnel/Network Rail interface at Cheriton”. “CTRL Shift Manager” amended to read “Shift Manager”.
17	<b>Rolling stock authorised to operate on HS1</b>	Title amended - previously “Rolling stock authorised to operate on the CTRL”.
18	<b>Working of freight trains</b>	<p>“CTRL” amended to read: “HS1” where appropriate.</p> <p>Sub-section 18.2 “Limits of operation” Note reference the use of Stratford International station to clear the line amended as the Up or Down International Platform lines (Platforms 1 &amp; 4) may be used.</p> <p>Sub-section 18.3 “Principles”. Instruction regarding the Wheel Impact Detector at Westenhanger withdrawn as equipment not for use in a ‘live’ situation.</p>
19	<b>Protocol for use of GSM-R on HS1</b>	Title amended - previously “Protocol for use of GSM-R on the CTRL”. CTRL” amended to read: “HS1” where appropriate. “CTRL Rule Book” amended to read: “HS1 Rule Book”.
20.2	<b>Additional procedures in connection with Class 373 (Eurostar) trains Degraded traction mode</b>	Sub-section 20.2.2 “ECS movements from St. Pancras International station to Temple Mills International Depot” amended so that the signaller does not allow the train to start until an assurance is received from the Operations Controller that colour light stop signal TM5 is showing a proceed aspect.

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## 1. Not used

## 2. Not used

## 3. Access to the Danger Zone by the Rail Incident Officer

### 3.1 Authorisation

Rail Incident Officers (RIOs) are authorised to access the **Danger Zone** without first operating the local protection switches **but only when the emergency services are waiting to render assistance and it is necessary to allow them immediate access to the incident location.**

### 3.2 Principles

RIO must:

- use Form PROD 5 to communicate the request for personal protection to the signaller,
- advise the signaller that it is impracticable to operate the local protection switches and that remote protection in accordance with Part 3 of the Sectional Appendix is required,
- **not** enter the **Danger Zone** until the signaller has confirmed that the remote protection has been applied,
- operate the local protection switches as soon as it is practicable and tell the signaller when this has been done.

Signaller must:

- be told by the RIO that it is impracticable to operate the local protection switches and that remote protection in accordance with Part 3 of the Sectional Appendix is required,
- apply the remote protection as requested by the Form PROD 5,
- have the remote protection checked by another competent person in the AFC, i.e. Shift Manager, another signaller.
- confirm to the RIO that the remote protection has been applied.

## 4. Not used

## 5. Track defects

### 5.1 Broken rails

When a broken rail is found the signaller must stop trains on the affected line and advise the Shift Manager. No train may be allowed to pass over the broken rail until a person certified as competent to examine the rail and to authorise movements has examined it.

The Shift Manager must advise the Mobile Operations Manager (MOM).

If the competent person authorises trains to pass over the broken rail they will advise the signaller the maximum speed allowed.

If the allowable speed is not provided for in the cab signalling system, or the broken rail is in an area controlled by colour light signals, the signaller must dictate Form VILI to the driver advising the maximum speed allowed and the location of the broken rail.

A higher speed can only be allowed on the authority of a representative of the Head of Track Engineering after the condition of the rail has been examined or repairs have been completed.

A higher speed must not be allowed to operate until any necessary speed restriction has been applied in accordance with Modules SR1 or SR2 of the Rule Book.

## **5.2 Point defects**

These instructions apply to both facing and trailing points.

### **5.2.1 Actions of competent track department staff**

Competent track department staff to apply their maintenance instructions.

### **5.2.2 Actions of other than track department staff**

If staff who are **not** competent track department staff discover a missing, broken or damaged point stretcher bar or associated fittings on any set of points, they must report the following to the signaller **immediately**.

- The identification number of the points,
- The exact point end and the line which is affected,
- The exact nature of the defect, i.e. missing stretcher bar, broken stretcher bar, etc.

giving their name, job title, employer and contact number.

### **5.2.3 Actions of signaller**

When advised of a missing, broken or damaged point stretcher bar or associated fittings the signaller must:

- establish the identification number of the affected points
- establish the exact point end and line which is affected
- establish the nature of the defect i.e. missing stretcher bar, broken stretcher bar, etc.
- establish the name, job title and contact number of the person reporting the defect
- arrange for the attendance of competent track department staff

Until advised by competent track department staff, the signaller must tell the driver of every train which will pass over the affected points, not to exceed a maximum speed of 30 km/h when passing over the affected point end by dictating Form VILI.

When the points have been inspected by competent track department staff, they must advise the signaller of any restrictions that must be applied or that the defect has been rectified and normal working can be resumed.

## **6. Not used**

## **7. Exceptional rail head conditions**

The use of both manual and automatic sanding equipment is authorised.

## **8. Manually setting up the track-to train radio**

The manual setting up of the track-to-train radio system may only be carried out at an N Block Section marker (Non-Passable) or colour light stop signal. The driver must input the three digit identity number of the marker or signal with a '9' prefix as the location code. For example, the driver of train stopped at marker AF342 must input a location code of '9342'.

## 9. Stabling of trains

### 9.1 General

Normally, trains must only be stabled in sidings. Exceptionally trains may be stabled in loops when it is absolutely necessary to do so. Trains must **not** be stabled on running lines except in an emergency (e.g. train failure, complete loss of traction current, obstruction).

**Note:** Trains may be stabled in platform lines at St. Pancras, Stratford and Ebbsfleet International stations as shown in Section 5.4 of Module TW2 of the Rule Book.

If a train is stabled in a loop, the signaller set the points at either end of the train to the siding/trap position to protect the running line until the train is required to be moved.

A failed train must be treated as a stabled train if it requires assistance from another train or locomotive(s).

When it is necessary for a failed train (or part of a train) to be left on a running line the following procedures must be carried out:

If possible the train should be moved to a section of the line where the gradient is less than 2% either rising or falling.

All available parking brakes and/or handbrakes must be applied in accordance with the traction specific instructions.

A sufficient number of wheel scotches must be put in place including the first and last axles of the train to ensure that the train cannot move if for any reason the parking brake ceases to be effective.

Any wheel scotches used must be of a type approved for use on HS1 and identified accordingly.

'Not to be moved' boards (where provided) must be applied to the outside of the train at each end of the train and a written record left in each of the end driving cabs showing the location where scotches have been placed.

At least one red light must be provided at each end of the failed train.

The driver must give the signaller an assurance that these arrangements have been put in place.

The signaller must not allow any train to approach a failed train on the same line, including any assisting train or locomotive, until an assurance has been given by the driver of the failed train that the arrangements shown above have been put in place.

### 9.2 Additional instructions for works trains

Works trains must not be divided outside a worksite except in an emergency.

At all times a sufficient number of handbrakes must be applied to both locomotives and vehicles to ensure that they are properly secured at all times.

Any vehicle that has defective brakes or where for any reason the brakes are not available must have wheel scotches applied to it and 'Not to be moved' boards clearly displayed to be readily visible from the lineside.

## 10. Vehicle Health Monitoring Equipment (VHME)

### 10.1 Hot wheel detector

The hot wheel detector equipment is **not** applicable to Class 373 (Eurostar) and Class 395 trains. The receipt of an alarm from this equipment for a Class 373 (Eurostar) or Class 395 train does **not** require it to be stopped for examination.

## 10.2 Provision of ladders to assist drivers in the examination of their trains

With reference to clause B10.2.7 of Module TW5 of the Rule Book, short lightweight aluminium ladders are provided at the Block Section Markers shown below to assist the driver in the examination of the axle (high ballast shoulder). This ladder is secured by means of a locking device which requires a Berne key to release it. When the examination is complete, the driver must return the ladder to the location where they found it and make sure that it is secured.

Line	Block Section Marker
Up	AF266
Up	AF253 (Down direction )
Up	AF337 (Down direction )
Up	AF463 (Down direction)
Down	AF251
Down	AF335
Down	AF461
Down	AF438 (Up direction)

**Note:** A ladder is also located at Lenham Up Loop, Country End siding (km 79.740)

## 11. Operation of trains not fitted with cab signalling equipment in an area controlled by cab signalling at speeds between 31km/h and 100 km/h

### 11.1 Scope

This instruction must only be applied to the operation of the following types of trains **not** fitted with a working cab signalling system in order for them to travel at speeds in excess of 31 km/h.

- Infrastructure recording trains – details of which must be published in the Daily Notice and associated movements plan.
- Test trains – details of which and the specific application of the requirements of this instruction must be published in a Special Operating Instruction.

### 11.2 Persons responsible

**Competent person** (travelling on the train) – must hold a Certificate of competency in HS1 (CTRL) Personal Track Safety and is responsible for authorising and making the safety arrangements for the on-board train staff in the event that they need leave the train for a technical inspection of the track/train. The competent person must accompany the on-board train staff and remain with them at all times when on the track. **Note:** On a track recording train the competent person will normally be a representative of the Head of Track Engineering.

**Conductor driver** – responsible for conducting the driver over HS1 and for giving them all necessary instructions concerning the route and the application of HS1 rules and regulations. In the event of an incident involving the train, the conductor driver is responsible for arranging its protection and for the evacuation of passengers in accordance with the Rule Book.

**Designated Competent Person (DCP)** – responsible for requesting the EMMIS Controller to prohibit access to the operational railway, making sure that the warning and stopping protections as defined in appendices 1 and 2 of this instruction are in place and for checking that the signaller has correctly set the route for the train.

**Driver** – responsible for driving the train following the instructions given by the conductor driver. **Note:** On those occasions when the provision of a conductor driver is not necessary, the driver must carry out the instructions shown for the conductor driver in this Part 11 instruction.

**EMMIS Controller** – responsible for prohibiting access to the operational railway when requested by the DCP by liaising with the Site Access Control Centre (SACC).

**Other on-board train staff** – will **not** have certificates of competency in CTRL Personal Track Safety and must be considered as passengers. They must carry out the instructions given by the competent person in the event that they need leave for a technical inspection of the infrastructure/train. In the event of an incident involving the train, they must carry out the instructions given by the conductor driver.

**Responsible Person On Site (RPOS)** – responsible for arranging the provision and placement of the warning and stopping protections as defined in appendices 1 and 2 of this instruction and confirming this to the DCP.

**Signaller** – responsible for setting routes for the train as required by the movements plan, to authorise the passing of all block section markers without stopping and for authorising it to commence its run.

### 11.3 Principles

- Module UF of the Rule Book will not apply.
- A Designated Competent Person (DCP) must be appointed who is responsible for:
  - managing access to the Danger Zone for the placing and removal of the warning and stopping protections, **and**
  - making sure the warning and stopping protections are in place, **and**
  - making sure the signaller has set the routes correctly as specified in the movements plan for the train.

The DCP must be located in the AFC and be either a:

- Shift Manager, **or**
- competent person appointed by the Operations Manger.

Their name must be published in the Daily Notice.

- The arrangements must be pre-planned and published in the Daily Notice and a Special Operating Instruction produced. A movements plan describing the runs to be made must be produced and issued to the DCP and signaller.
- Warning and stopping protections to be provided as shown in appendices 1 or 2 of this Part 11 instruction to indicate to the driver of the train the limit of a run. They consist of the placing of Worksite Marker Boards, an emergency speed warning indicator and portable AWS magnets at specified points on the approach to the point at which the driver must stop.
- Warning and, if applicable, stopping protections must always be in place at the limit of the run before a train is authorised to proceed. The train may not be required to reach this limit, but the route must always be set throughout and the warning and stopping protections must always be in place for a movement towards this limit.
- The DCP may authorise the granting of Protected Areas to allow the placing of the warning and stopping protections for a subsequent run once it is confirmed that the train is either stopped or has passed the EZP(s) concerned on its previous run and is travelling **away** from the location concerned.
- No other Protected Areas in accordance with Module T3 to be authorised on the line during the time the train is operating (except those specified in this instruction).
- No other train movement to be authorised, except as shown in appendix 3 of this Part 11 instruction, during the time the train is operating.



- The driver must stop at all worksite marker boards, portable stop boards and colour light signals displaying a red (DANGER) aspect.
- The signaller must set routes for the train in accordance with the movements plan and must have them confirmed as correct by the DCP before authorising the train to proceed.
- The signaller must be able to communicate directly with the conductor driver in order to give authorisation to pass all N Block Section Markers without stopping and for the train to proceed. This authorisation to be given by dictation of Form STREV.
- Only one movement of the train to be authorised at a time. A separate Form STREV to be dictated for each movement.
- The train must not change direction without authorisation of the signaller.
- The speed of the train must not exceed 100 km/h (62 mph) at any time.
- Nobody to be allowed access to the operational railway during the operation of the train, other than personnel required to place additional warning and stopping protections. The EMMIS Controller will be the only point of contact for permission to access. They must be contacted and will advise whether or not access can be given. Under **no** circumstances is access to be attempted until the EMMIS Controller has given their permission.
- When the train is making its final run and there is no possibility of it being required to return, the DCP may authorise access to resume and Protected Areas to be granted on that part of the operational railway it has left.
- The Shift Manager is the only person who may authorise a modification to the movements plan.

## 11.4 Method of working

### 11.4.1 Before the train enters HS1

**Signaller** must:

- place or maintain the first colour light signal at danger, if possible, or maintain closed the first N Block Section Marker giving access to HS1.
- make sure no Protected Areas are in place on the lines to be used by the train (other than those required to put the warning and stopping protections in place).
- make sure all train movements have stopped and confirm this to the DCP.

**RPOS** must:

- arrange for the warning and stopping protections to be put in place as shown in appendix 1 of this instruction where the limit of a run is at a designated Block Section Marker or as shown in appendix 2 where the limit is at a colour stop light signal. **Note:** when placing the protection on the line, a worksite must be created in accordance with the instructions shown in Module T3 of the Rule Book.
- confirm to the DCP that the warning and stopping protections are in place.

**DCP** must:

- confirm with the signaller that all train movements have stopped.
- receive confirmation from the RPOS that the warning and stopping protections are in place.
- request the EMMIS Controller to prohibit access to the operational railway.

**EMMIS** Controller must:

- advise anyone accessing the operational railway that they must have left by the time the train commences its runs.
- receive request from the DCP to prohibit access to the operational railway.

- request the Site Access Control Centre (SACC) to prohibit access to the operational railway to anyone that requests it.
- check that everybody has left the operational railway (other than any personnel required to place warning and stopping protections for subsequent runs). If somebody has not left, contact them and instruct them to leave immediately and to confirm that they have left.

#### 11.4.2 First run

**Conductor driver** must, on arrival at the first colour light stop signal (regardless of aspect displayed) or Block Section Marker:

- instruct the driver to stop and remain stopped until further instructed,
- tell the signaller:
  - the identity of the train,
  - that it is stopped,
  - the identity of the colour light stop signal or Block Section Marker that it is stopped at.

**Signaller** must:

- be told by the conductor driver:
  - the identity of the train,
  - that it is stopped,
  - the identity of the colour light stop signal or Block Section Marker that it is stopped at.
- receive confirmation from the DCP that the warning and stopping protections are in place at the limit of the run.
- set the route for the complete movement throughout to the limit of the run. Auxiliary signals not to be used. Any colour light signal between the one the train is stopped at and the area controlled by cab signalling to show a proceed aspect.
- request the DCP to check that the route is set correctly.
- receive confirmation from the DCP that the route is set correctly.

**DCP** must:

- confirm to the signaller that the warning and stopping protections are in place at the limit of the run.
- receive request from the signaller to check that the route is set correctly,
- check the route against the movements plan,
- confirm to the signaller that the route is set correctly.

**Signaller** must:

- give the following to the conductor driver by dictating Form STREV:
  - information where the route is set to (identity of colour light stop signal or Block Section Marker at the limit of the run),
  - information on the location and maximum speed of any temporary speed restrictions of less than 100 km/h in place on the line,
  - authorisation to pass all N Block Section Markers without stopping,
  - authorisation to proceed.
- clear the colour light stop signal, if not already showing a proceed aspect, or open the Block Section Marker.

**Conductor driver** must:

- reach a clear understanding of the instructions given by the signaller concerning the movement authority and location of the stopping point at the limit of the run.

- receive the following from the signaller by dictation of Form STREV:
  - information where the route is set to (identity of colour light stop signal or Block Section Marker at the limit of the run),
  - information on the location and maximum speed of any temporary speed restrictions of less than 100 km/h in place on the line,
  - authorisation to pass all N Block Section Markers without stopping,
  - authorisation to proceed.
- when the colour light stop signal shows a proceed aspect, or the Block Section Marker opens, instruct the driver to:
  - proceed not exceeding 100 km/h at any time,
  - pass all N Block Section Markers without stopping.
  - comply with any temporary speed restrictions of less than 100 km/h in place on the line,
  - be prepared to stop at the Worksite Marker Boards (appendix 1) or colour light stop signal (appendix 2) when passing the emergency speed warning indicators.
- when stopped at the Worksite Marker Boards, colour light stop signal, or at any other location where the train is required to reverse, tell the driver to secure the train.
- tell the signaller:
  - the train is stopped,
  - its location,
  - that the driver and conductor driver are changing ends.

**Signaller must:**

- be told by the conductor driver:
  - that the train is stopped,
  - the location that it is stopped at,
  - that the driver and conductor driver are changing ends.

**If the warning and stopping protections for a subsequent run have not already been placed before the previous run has commenced, the following additional instructions may require to be implemented by the DCP:**

**DCP must:**

- confirm with the RPOS as to what is required to be done and what EZP(s) will be necessary to be taken in order to place the warning and stopping protections for a subsequent run,
- inform the signaller that the RPOS will be requesting a Protected Area in order to place the warning and stopping protections for a subsequent run when it is confirmed the previous run has passed the EZP(s) concerned.
- receive confirmation from the signaller that the train has commenced its previous run and has passed clear of the EZPs concerned,
- confirm to the RPOS that the train has commenced its previous run, has passed clear of the EZPs concerned and that a Protected Area may now be requested in order to place the warning and stopping protections for a subsequent run,
- receive confirmation from the RPOS that the warning and stopping protections are in place.

**Signaller must:**

- receive information from the DCP that the RPOS will be requesting a Protected Area in order to place the warning and stopping protections for a subsequent run when it is confirmed the previous run has passed the EZP(s) concerned,
- by observation of the track circuits, confirm to the DCP that the train has commenced its previous run and has passed clear of the EZPs concerned,

**RPOS** must:

- confirm with the DCP as to what is required to be done and what EZP(s) will be necessary to be taken in order to place the warning and stopping protections for a subsequent run,
- receive confirmation from the DCP that the train has commenced its previous run, has passed clear of the EZPs concerned and that a Protected Area may now be requested in order to place the warning and stopping protections for a subsequent run,
- arrange for the warning and stopping protections to be put in place as shown in appendix 1 of this Part 11 instruction where the limit of the run is at a designated marker or as shown in appendix 2 where the limit is at a colour light stop signal. **Note:** when placing the protection on the line, a work site must be created in accordance with the instructions shown in Module T3 of the Rule Book.
- confirm to the DCP that the warning and stopping protections are in place.

**11.4.3 Subsequent runs****Conductor driver** must:

- with the driver, change ends and prepare for the next run,
- tell the signaller that the train is ready for its next run.

**Signaller** must:

- when the driver and conductor driver have changed ends, be told by the conductor driver that the train is ready for its next run.
- receive confirmation from the DCP that the warning and stopping protections are in place at the limit of the run.
- set the route for the complete movement throughout to the limit of the run. Auxiliary signals not to be used.
- request the DCP to check that the route is set correctly.
- receive confirmation from the DCP that the route is set correctly.

**DCP** must:

- confirm to the signaller that the warning and stopping protections are in place at the limit of the run.
- receive request from the signaller to check that the route is set correctly,
- check the route against the movements plan,
- confirm to the signaller that the route is set correctly.

**Signaller** must:

- give the following to the conductor driver by dictating Form STREV:
  - information where the route is set to (identity of colour light stop signal or Block Section Marker at the limit of the run),
  - information on the location and maximum speed of any temporary speed restrictions of less than 100 km/h in place on the line,
  - authorisation to pass all N Block Section Markers without stopping,
  - authorisation to proceed.

**Conductor driver** must:

- reach a clear understanding of the instructions given by the signaller concerning the movement authority and location of the stopping point at the limit of the run.

- receive the following from the signaller by dictation of Form STREV:
  - information where the route is set to (identity of colour light stop signal or Block Section Marker at the limit of the run),
  - information on the location and maximum speed of any temporary speed restrictions of less than 100 km/h in place on the line,
  - authorisation to pass all N Block Section Markers without stopping,
  - authorisation to proceed.
- instruct the driver to:
  - proceed not exceeding 100 km/h at any time,
  - pass all N Block Section Markers without stopping.
  - comply with any temporary speed restrictions of less than 100 km/h in place on the line,
  - be prepared to stop at the Worksite Marker Boards (appendix 1) or colour light stop signal (appendix 2) when passing the emergency speed warning indicators.
- when stopped at the Worksite Marker Boards, colour light stop signal, or at any other location where the train is required to reverse, tell the driver to secure the train.
- tell the signaller
  - the train is stopped,
  - its location,
  - that the driver and conductor driver are changing ends.

**Signaller must:**

- be told by the conductor driver:
  - that the train is stopped,
  - the location that it is stopped at,
  - that the driver and conductor driver are changing ends.

**11.4.4 Final run (when the train is to exit HS1)**

**Conductor driver** must confirm with the signaller when it is the final run.

**Signaller must:**

- confirm with the conductor driver that the train is making its final run.
- tell the DCP that the train is making its final run and is exiting HS1.
- be told by the DCP to resume the granting of Protected Areas for EZPs that the train has already passed, if requested.

**DCP must:**

- receive confirmation from the signaller that the train is making its final run and is exiting the CTRL.
- tell the RPOS that the train is exiting HS1 and that the warning and stopping protections behind the train may be removed.
- tell the EMMIS Controller to resume access to those areas of the operational railway that the train has already passed.
- tell the Signaller that the granting of Protected Areas may be resumed for EZPs that the train has already passed, if requested.

**RPOS must:**

- arrange for the warning and stopping protections to be removed when told by the DCP that the train is exiting HS1. **Note:** when removing the protection, a worksite must be created in accordance with the instructions shown in Module T3 of the Rule Book.
- confirm to the DCP that the warning and stopping protections are removed.

**EMMIS** Controller must:

- be told by the DCP to resume access to those areas of the operational railway that the train has already passed.
- resume access to those areas of the operational railway that the train has already passed to anyone that requests it, liaising with the Site Access Control Centre (SACC), as necessary.

**Driver** must on arrival at the colour light stop signal, obey its aspect and proceed in accordance with the Railway Group Standard Rule Book (GE/RT8000).

#### **11.4.5 When the train has exited HS1**

**Signaller** must:

- tell the DCP that the train has exited HS1.
- receive confirmation from the DCP that all the warning and stopping protections are removed.

**DCP** must:

- receive confirmation from the signaller that the train has exited HS1.
- tell the RPOS that the train has exited HS1 and that all the warning and stopping protections may be removed.
- receive confirmation from the RPOS that all the warning and stopping protections are removed
- tell the Signaller that all the warning and stopping protections are removed.

**RPOS** must:

- arrange for all the warning and stopping protections to be removed when told by the DCP that the train has exited HS1. **Note:** when removing the protection, a worksite must be created in accordance with the instructions shown in Module T3 of the Rule Book.
- confirm to the DCP that all the warning and stopping protections are removed.

**Appendix 1 to Part 11      Warning and stopping protection arrangements approaching a Block Section Marker**

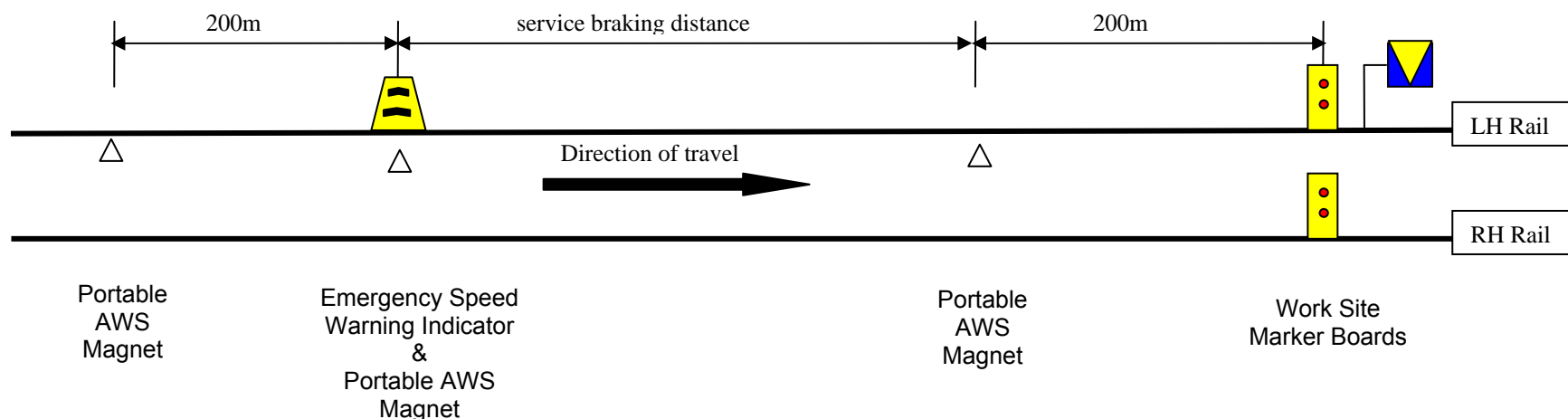
**Principles for stopping when approaching a designated marker**

At designated marker, place two Worksite Marker Boards (i.e. one on each rail) with red lights facing the driver. [driver must stop at Worksite Marker Boards]

At 200 metres on approach to designated marker, place a portable AWS magnet.

At service braking distance, place an Emergency Speed Warning Indicator (yellow & black with strobe lights - needs power supply or batteries) and portable AWS magnet. The Emergency Speed Warning Indicator may be placed in either the cess or 6-foot depending on which gives the driver the best view of it.

At a further 200 metres on approach, place a portable AWS magnet.



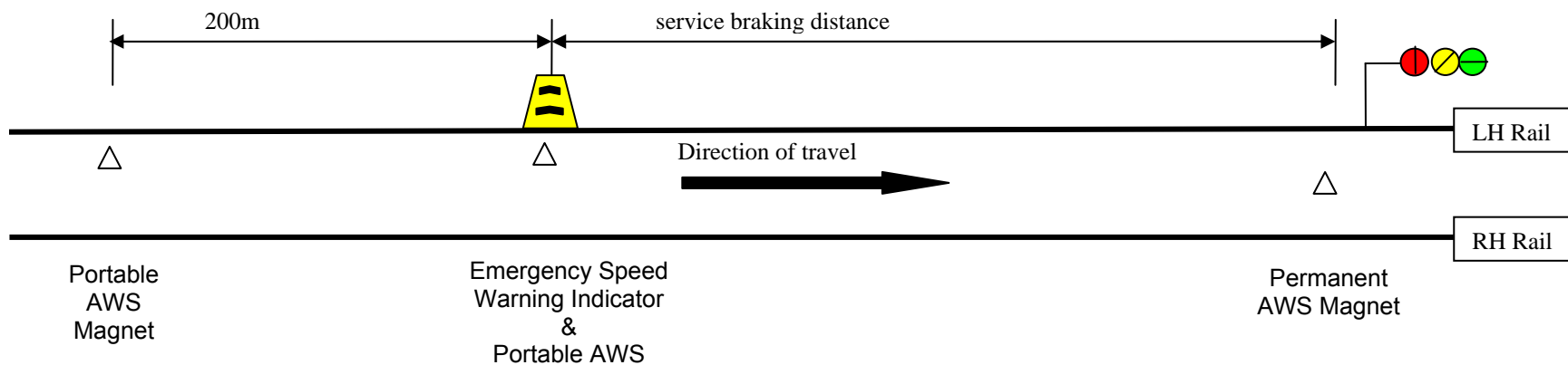
**Appendix 2 to Part 11**

**Warning protection arrangements approaching a colour light signal**

**Principles for stopping when approaching any colour light signal**

At service braking distance from Permanent AWS magnet on approach to any colour light signal, place an Emergency Speed Warning Indicator (yellow & black with strobe lights - needs power supply or batteries) and a portable AWS magnet. The Emergency Speed Warning Indicator may be placed in either the cess or 6-foot depending on which gives the driver the best view of it.

At a further 200m on approach, place a portable AWS magnet.





**Appendix 3 to Part 11**

**Routes over which movements can be authorised during runs being carried out in accordance with this instruction**

<b>Train accessing/exiting CTRL at</b>	<b>Routes over which movements can be authorised (Note 1)</b>
St. Pancras area	Dollands Moor Yard and Eurotunnel. (Freight trains only)
Ripple Lane chords	St. Pancras to Stratford provided routes at Dagenham Jn. are set to/from Ripple Lane chords. Dollands Moor Yard and Eurotunnel. (Freight trains only)
North Kent Line connection (Note 2)	Cheriton to Fawkham Jn. provided routes are set to/from North Kent Line connection.
Fawkham Jn.	St. Pancras to Ebbsfleet provided routes at Southfleet Jn. are set to/from Waterloo connection. Dollands Moor Yard and Eurotunnel. (Freight trains only)
Ashford West chord	Cheriton to Ashford East chord provided routes at Ashford West Jn. are set to/from Ashford station.
Ashford East chord	St. Pancras to Ashford West chord provided routes at Ashford East Jn. are set to/from Ashford station.
Dollands Moor Freight chord	Dollands Moor Yard and Eurotunnel. (Freight trains only)

**Notes:**

1. Assumes that train will travel over the whole route between point of access and end of CTRL (Cheriton or St. Pancras). If the train exits at a point before the end, authorisations for this point to be considered as well.
2. Movements between Springhead Road Jn. and Ebbsfleet High Level under the control of colour light signals.

## 12. Additional instructions in connection with maintenance work

### 12.1 Protected Areas and Worksites at the end of the line (St. Pancras area) and sidings

With reference to Clauses 3.4.5 and 3.5.6 of Module T3 of the Rule Book, at the locations listed below Protected Areas and Worksites may be created without all the EZPs being remotely protected and all the local protection switches being operated:

**St. Pancras area** - Between York Way South Jn. (including the exit from London Tunnel 1) and St. Pancras International station platforms 5 -13.

**Ebbsfleet High Level** - Church Path Pit Sidings 1 & 2.

**Singlewell Up Loop** - Country end siding.

**Lenham Up Loop** - London & Country end sidings.

The following conditions are to apply:

- Details of the Protected Area and Worksite, including the EZP(s) and local protection switch(es) to be remotely applied and locally operated, to be published in the Daily Notice.
- The Worksite must include the buffer stops of the platform line(s)/siding(s) concerned.
- The EZP(s) and local protection switch(es) at the end of the Worksite farthest from the buffer stops must be remotely applied and locally operated.
- If there are points within the Worksite that lead to/from other line(s) which are open to traffic, then the EZP(s) and local protection switch(es) covering the location of the points must be remotely applied and locally operated.
- A Worksite Marker Board must be placed at the end of the Worksite farthest from the buffer stops on each line.
- Portable Stop Boards must be placed in front of any train stabled in a platform line/siding.  
**Note:** Not necessary if the stabled train is formed of vehicles that are not capable of being driven under their own power, i.e. they do not have a driving cab.

### 12.2 Maintenance of TPWS and AWS track located equipment

The following principles to be applied when it is necessary for Signalling Technicians to maintain the AWS and TPWS track located equipment in the following areas controlled by colour light signals:

Module T3 of the Rule Book to apply modified as shown below:

- The RPOS must act as the TS for the worksite and be a Signal Technician with the competence to disconnect track circuits.
- Local protection switches not to be operated.
- Must disconnect the track circuit(s) for the area the maintenance work is to be carried out.
- Must write the track circuit(s) that are disconnected in place of the local protection switches operated on form WORK.

The following lists the track circuits that must be disconnected when maintenance is to be undertaken on the associated TPWS/AWS equipment:-

**Note:** Maintenance to equipment on track circuits shown with (NR) must be arranged with the appropriate Network Rail department.

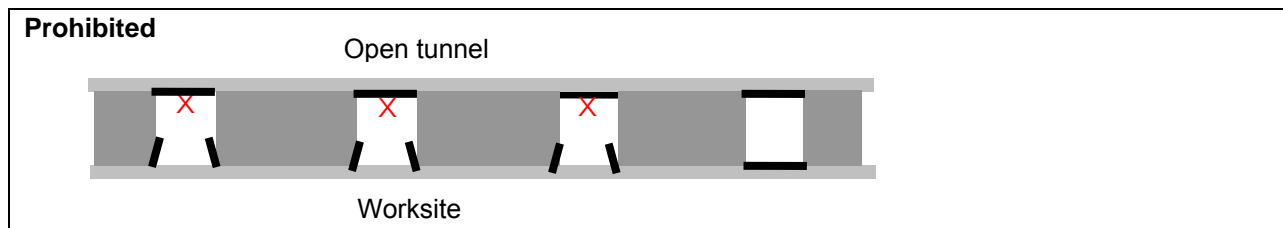
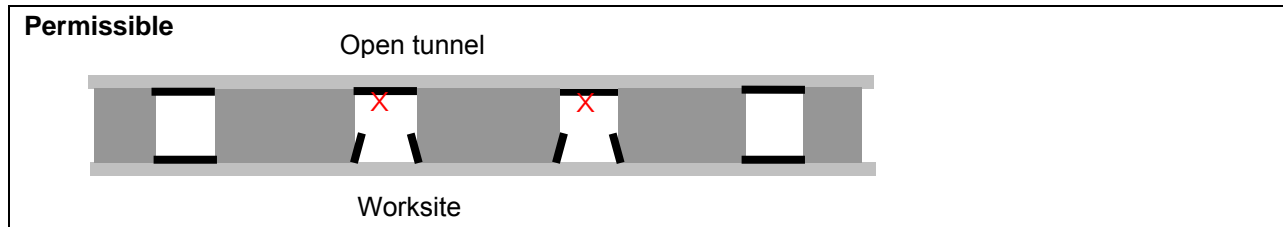
<b>St Pancras area</b>			
<b>Signal</b>	<b>Equipment</b>	<b>Track Circuit</b>	<b>EZP</b>
AF026	AWS	T1240 (NR)	
AF036	AWS	XNC (NR)	
AF041	AWS	PVC1	PN38
AF041	TPWS - TSS	PVC1	PN38
AF041	TPWS - OSS	PVC1	PN38
AF042	TPWS - TSS	PVB	PD42
AF045	TPWS - TSS	PAK	PD47
AF047	TPWS - TSS	PRC	PU48
AF046	TPWS - TSS	PAM	PD49
AF048	TPWS - TSS	PRB	PU50
AF048	TPWS - OSS	PRB	PU50
NL1117	AWS	PVC1	PN38
NL1117	TPWS - TSS	PVC2	PN38
NL1117	TPWS - OSS	PVC1	PN38
NL1119	AWS	PBC	PS35
NL1119	TPWS - TSS	PCD	PS35
NL1119	TPWS - OSS	PCE	PS35
K259	AWS	PBE	PE39
K259	TPWS - TSS	PBE	PE39
K259	TPWS - OSS	PBE	PE39
<b>Ripple Lane</b>			
<b>Signal</b>	<b>Equipment</b>	<b>Track Circuit</b>	<b>EZP</b>
UR834	AWS	RBA (NR)	RD21
UR832	AWS	RSD (NR)	RU22
<b>North Kent Line connection</b>			
<b>Signal</b>	<b>Equipment</b>	<b>Track Circuit</b>	<b>EZP</b>
AF150	AWS	ETC	EU44
	TPWS - TSS	ETE	EU44
	TPWS - OSS	ETC	EU44
AF152	AWS	ECF	ED43
	TPWS - TSS	ECD	ED43
	TPWS - OSS	ECF	ED43
AF181	AWS	ECE	ED43
	TPWS - TSS	ECF	ED43
	TPWS - OSS	ECE/ECF	ED43
AF183	AWS	ETD	EU44
	TPWS - TSS	ETC	EU44
	TPWS - OSS	ETD/ETC	EU44
AF182	AWS	NJB (NR)	
	TPWS - OSS3	NJC (NR)	
	TPWS - OSS2	NJB (NR)	
	TPWS - OSS1	NNJ (NR)	
	TPWS - TSS	NJC (NR)	
NK477	AWS	ECM1 (NR)	ED49

Waterloo connection			
Signal	Equipment	Track Circuit	EZP
VS296	AWS	YTF (NR)	YU04
AF185	AWS	WDB2 (NR)	
Ashford West			
Signal	Equipment	Track Circuit	EZP
AF312/AD949	AWS	FVB (NR)	FU14
AF318	AWS	FBF (NR)	FD13
AD947	AWS	FBE (NR)	FD13
Ashford East			
Signal	Equipment	Track Circuit	EZP
AD956	AWS	FDB (NR)	FD19
AD954	AWS	FSD (NR)	FU18
AF313	AWS	AAF ( NR )	
AF319	AWS	ARD ( NR )	
Dollands Moor Freight Chord			
Signal	Equipment	Track Circuit	EZP
AF342	TPWS - TSS	WBB/WBC (NR)	WU32/WU30
AD759	AWS	WBE (NR)	WU30

### 12.3 Maintenance works in the Long Tunnels

These instructions amplifies those shown in Section 5 of Module LT of the Rule Book:

When there is maintenance work in one running tunnel the cross passage doors to the open tunnel should remain unlocked provided there is nobody working in the cross passage itself. If somebody is working in the cross passage, the doors giving access to the running tunnel must be locked. However no more than two consecutive sets of cross passage doors (excluding intervention cross-passages) may be locked at the same time all the time one running tunnel remains open to traffic.



### 12.4 Tamping HS1

#### 12.4.1 Introduction

When a tamping machine and/or regulator are required to tamp one line on HS1, with the adjacent line remaining open to traffic, the following principles must be applied.

#### 12.4.2 Principles

- Full details of the Protected Areas, worksites and associated movements of the tamping machine and regulator must be published in the Daily Notice.

- The tamping operations must be carried out within the protection of a Protected Area and associated Worksite in accordance with the instructions shown in Module T3 and T4 of the Rule Book.
- The speed of train movements on the 'open' line must be restricted to a maximum speed of 80 km/h by operation of the appropriate switch(es) in the signalling room in accordance with the instructions shown in Module SR1 of the Rule Book.
- Staff will follow the regulator on foot (at least 50 metres behind) to clear any loose ballast. They are authorised to use shovels to clear ballast from the sleeper ends in the '6 foot' adjacent to the 'open' line provided they remain within the 'four foot' of the line under possession. A Site Warden must be provided to make sure these staff do not step over the '6 foot' rail. If staff have to cross the '6 foot' rail to clear an excess of ballast, train movements on the adjacent 'open' line must be stopped using the PROD 5 procedure. An appropriate local protection switch must be operated.
- A Site Warden must travel with the tamping machine and regulator to make sure the operators do not exit the worksite on the 'open' line side. If the operators require to attend to the machines on the 'open' line side, train movements on that line must be stopped using the PROD 5 procedure. An appropriate local protection switch must be operated.

## 13. Access to an intervention shaft by maintenance staff using a Southeastern train or the MPVs

### 13.1 Introduction

Usually maintenance staff access equipment located in the intervention/ventilation shafts via the head houses. However, it may be quicker to access the equipment by using a Southeastern train or the MPVs to convey the staff to the appropriate intervention shaft cross-passage door and for them to use the intervention shaft. If this is necessary, the arrangements shown in this instruction must be applied.

**Notes:** On completion of the work, the maintenance staff must exit via the head house at the top of a ventilation shaft. The department concerned to arrange road transport to pick up the maintenance staff at the head house.

### 13.2 Persons responsible

**Balfour Beatty Rail Plant driver** – responsible for:

- allowing the maintenance staff to access the driving cab of the MPVs.
- driving the MPVs in accordance with the colour light signal aspects and cab signalling indications displayed.
- stopping the MPVs at the intervention shaft cross-passage door specified on Form ARPI.
- not restarting until authorised by the signaller dictating Form REMA.

**KICC controller** – responsible for agreeing with the shift manager:

- that maintenance staff can travel on a Southeastern train to access an intervention shaft,
- the most suitable Southeastern train to be used.

**Maintenance staff** – responsible for:

- requesting the Shift Manager to arrange for conveyance to an intervention shaft cross-passage door, stating:
  - their location and when they will be available to catch the Southeastern train or MPVs,
  - which intervention shaft cross-passage they want to go to.
- telling the signaller that they are at the station to catch the specified Southeastern train.
- asking the Southeastern driver or Balfour Beatty Rail Plant driver for permission to access the driving cab of the Southeastern train or the MPVs.

- transferring from the Southeastern train or MPVs to the intervention shaft cross-passage as quickly as possible and confirming to the signaller that everybody is in the cross-passage and the door is closed.

**Shift manager** – responsible for:

- Deciding:
  - if there is an urgent requirement to use a Southeastern train or the MPVs to convey maintenance staff to an intervention shaft cross-passage, **and**
  - depending on the location of the maintenance staff, whether a Southeastern train or the MPVs should be used
- if a Southeastern train is to be used, agreeing with the KICC controller,
  - that maintenance staff can travel on a Southeastern train to access an intervention shaft,
  - the most suitable Southeastern train to be used.
- if the MPVs are to be used, agreeing with the Balfour Beatty Rail Plant driver that maintenance staff can travel on the MPVs to access an intervention shaft, stating which intervention shaft cross-passage they are to go to.
- telling the signaller that it is agreed that maintenance staff can travel in the driving cab of a Southeastern train or the MPVs to access an intervention shaft, stating:
  - if the maintenance staff will be travelling in the driving cab of the MPVs from Singlewell IMD,
  - if the maintenance staff will be travelling in the driving cab of a Southeastern train, at which station the maintenance staff will join the train, when they will be there and which Southeastern train is to be used,
  - which intervention shaft cross-passage they are to go to.
- telling the maintenance staff that it is agreed that they can travel on a Southeastern train or the MPVs to access an intervention shaft and, if a Southeastern which one.

**Signaller** – responsible for:

- if the maintenance staff are to travel in the driving cab of a Southeastern train, telling the driver or that it is agreed that maintenance staff can travel on his/her train to access an intervention shaft, stating:
  - at which station the maintenance staff wish to catch the train and when they will be there.
  - which intervention shaft cross-passage they want to go to.
- instructing the Southeastern or Balfour Beatty Rail Plant driver to stop at the specified intervention shaft cross-passage door by dictation of Form ARPI.
- signalling the train or MPVs in accordance with the Rule Book and Signalling Regulations.
- receiving confirmation from the maintenance staff that everybody is in the cross-passage and the door is closed.
- authorising the Southeastern or Balfour Beatty Rail Plant driver to restart by dictation of Form REMA.

**Southeastern train driver** – responsible for:

- allowing the maintenance staff to access the driving cab of their train.
- driving the train in accordance with the colour light signal aspects and cab signalling indications displayed.
- stopping the train at the intervention shaft cross-passage door specified on Form ARPI.
- not restarting until authorised by the signaller dictating Form REMA.

### 13.3 Principles

- only Southeastern trains (either loaded or empty) or the MPVs are to be used to convey maintenance staff to an intervention shaft cross-passage.
- maintenance staff can only travel on a Southeastern train if agreed by the shift manager and the KICC controller.
- a maximum of four maintenance staff are authorised to travel in the driving cab of the Southeastern train or the MPVs.
- instruction to the Southeastern or Balfour Beatty Rail Plant driver to stop at the intervention shaft cross-passage door to be by dictation of Form ARPI.
- the Southeastern or Balfour Beatty Rail Plant driver must stop with the driving cab door adjacent to the specified intervention shaft cross-passage door and confirm that is the correct door before allowing the maintenance staff to exit the Southeastern train or MPVs.
- once stopped, the Southeastern or Balfour Beatty Rail Plant driver must not move the Southeastern train or MPVs until authorised by the signaller dictating Form REMA.
- the maintenance staff must exit the Southeastern train or MPVs on the evacuation walkway side via the driving cab door being aware of the large gap between the train and the platform.
- the maintenance staff must transfer from the Southeastern train or MPVs to the intervention shaft cross-passage as quickly as possible and confirm to the signaller that everybody is in the cross-passage and the door is closed. Whilst on the evacuation walkway, nobody must go beyond the extremities of the Southeastern train or MPVs.
- the signaller must have received confirmation from the maintenance staff signaller that everybody is in the cross-passage and the door is closed before authorising the Southeastern or Balfour Beatty Rail Plant driver to commence movement by dictation of Form REMA.

### 13.4 Instructions

#### 13.4.1 General

**Maintenance staff** must request the Shift Manager to arrange for conveyance to an intervention shaft cross-passage door, stating:

- their location and when they will be available to catch the Southeastern train or MPVs.
- which intervention shaft cross-passage they want to go to.

**Shift manager** must:

- receive request from the maintenance staff to arrange for conveyance to an intervention shaft cross-passage door.
- decide:
  - if there is an urgent requirement to use a Southeastern train or the MPVs to convey maintenance staff to an intervention shaft cross-passage, **and**
  - depending on the location of the maintenance staff, whether a Southeastern train or the MPVs should be used

#### 13.4.2 Southeastern train is to be used

**Shift manager** must:

- agree with the KICC controller,
  - that maintenance staff can travel on a Southeastern train to access an intervention shaft,
  - the most suitable Southeastern train to be used.

- tell the signaller that it is agreed that maintenance staff can travel on a Southeastern train to access an intervention shaft, stating:
  - at which station the maintenance staff wish to catch the Southeastern train and when they will be there.
  - which intervention shaft cross-passage they are to go to.
  - which Southeastern train is to be used.
- tell the maintenance staff that it is agreed that they can travel on a Southeastern train to access the intervention shaft and which train is to be used.

**KICC controller must:**

- agree with the shift manager:
  - that maintenance staff can travel on a Southeastern train to access an intervention shaft,
  - the most suitable Southeastern train to be used.
- arrange for the traincrew of the Southeastern train to be advised that it is agreed that maintenance staff can travel on their train to access an intervention shaft.

**Maintenance staff must:**

- be told by the shift manager that it is agreed that they can travel on a Southeastern train to access the intervention shaft and which train is to be used.
- make their way to the station and tell the signaller they have arrived.
- make their way to the specified Southeastern train and request the driver's permission to access the driving cab.

**Signaller must:**

- be told by the shift manager that it is agreed that maintenance staff can travel on a Southeastern train to access an intervention shaft, and receive the following information:
  - at which station the maintenance staff wish to catch the Southeastern train and when they will be there.
  - which intervention shaft cross-passage they are to go to.
  - which Southeastern train is to be used.
- contact the driver of the specified Southeastern train and tell them that it is agreed that maintenance staff can travel on his/her train to access an intervention shaft, stating:
  - at which station the maintenance staff wish to catch the train and when they will be there.
  - which intervention shaft cross-passage they are to go to.

**Southeastern driver must:**

- be told by the KICC controller and the signaller that it is agreed that maintenance staff can travel on his/her train to access an intervention shaft, receiving the following information:
  - at which station the maintenance staff wish to catch the train and when they will be there.
  - which intervention shaft cross-passage they are to go to.
- wait at the specified station for the arrival of the maintenance staff.
- tell the on-board manager that it is agreed that maintenance staff can travel on his/her train to access an intervention shaft.
- allow the maintenance staff to access the driving cab when they ask for permission.
- tell the signaller that the maintenance staff are in the driving cab and the train is ready to proceed.

**Signaller must:**

- be told by the Southeastern driver that the maintenance staff are in the driving cab and the train is ready to proceed.



- instruct the Southeastern driver to stop at the specified intervention shaft cross-passage door by dictating Form ARPI.
- set the route and open the Block Section Markers and colour light signals.

**Southeastern driver must:**

- receive instruction from the signaller to stop at the specified intervention shaft cross-passage door by dictation of Form ARPI.
- when the Block Section Marker or colour light signal at the platform exit opens, proceed in accordance with the cab signalling indications and colour light signal aspects displayed.
- stop the train with the driving cab door adjacent to at the specified intervention shaft cross-passage door.
- confirm that it is the correct intervention shaft cross-passage door as specified on Form ARPI
- tell the signaller that:
  - the train has stopped by dictation of Form ARPI,
  - the maintenance staff are detraining,
  - no movement of the train will be made until authorisation is received from the signaller.
- tell the maintenance staff that it is safe to leave the train and open the driving cab door on the evacuation walkway side.

**Maintenance staff must:**

- be told by the Southeastern driver that it is safe to leave the train.
- make their way to intervention shaft cross-passage and close the door once everybody is inside.
- tell the signaller that everybody is in the intervention shaft cross-passage and the door is closed.

**Signaller must:**

- be told by the Southeastern driver that
  - the train is stopped by dictation of Form ARPI,
  - the maintenance staff are detraining,
  - no movement of the train will be made until authorisation is received from the signaller.
- be told by the maintenance staff that everybody is in the intervention shaft cross-passage and the door is closed.
- authorise the Southeastern driver to restart by dictating Form REMA.

**Southeastern driver must:**

- receive authorisation from the signaller to restart by dictation of Form REMA.
- proceed in accordance with the cab signalling indications displayed.

**13.4.3 MPVs are to be used**

**Shift manager must:**

- agree with the Balfour Beatty Rail Plant driver that maintenance staff can travel on the MPVs to access an intervention shaft and which intervention shaft cross-passage they are to go to,
- tell the signaller that it is agreed that maintenance staff can travel on the MPVs from Singlewell IMD to access an intervention shaft, stating which intervention shaft cross-passage they are to go to.
- tell the maintenance staff that it is agreed that they can travel on the MPVs to access the intervention shaft and which train is to be used.

**Balfour Beatty Rail Plant driver** must agree with the shift manager that maintenance staff can travel on the MPVs to access an intervention shaft.

**Maintenance staff** must:

- be told by the shift manager that it is agreed that they can travel on to the access the intervention shaft.
- make their way to the Krupp locomotives and request the Balfour Beatty Rail Plant driver's permission to access the driving cab.

**Signaller** must be told by the shift manager that it is agreed that maintenance staff can travel on the MPVs from Singlewell IMD to access an intervention shaft, and which intervention shaft cross-passage they are to go to.

**Balfour Beatty Rail Plant driver** must:

- allow the maintenance staff to access the driving cab when they ask for permission.
- tell the signaller that the maintenance staff are in the driving cab and the MPVs are ready to proceed.

**Signaller** must:

- be told by the Balfour Beatty Rail Plant driver that the maintenance staff are in the driving cab and the MPVs are ready to proceed.
- instruct the Balfour Beatty Rail Plant driver to stop at the specified intervention shaft cross-passage door by dictating Form ARPI.
- set the route and open the Block Section Markers.

**Balfour Beatty Rail Plant driver** must:

- receive instruction from the signaller to stop at the specified intervention shaft cross-passage door by dictation of Form ARPI.
- when the Block Section Marker opens, proceed in accordance with the cab signalling indications displayed.
- stop with the driving cab door adjacent to at the specified intervention shaft cross-passage door.
- confirm that it is the correct intervention shaft cross-passage door as specified on Form ARPI
- tell the signaller that:
  - the MPVs have stopped by dictation of Form ARPI,
  - the maintenance staff are detraining,
  - no movement of the MPVs will be made until authorisation is received from the signaller.
- tell the maintenance staff that it is safe to leave the MPVs on the evacuation walkway side.

**Maintenance staff** must:

- be told by the driver that it is safe to leave the MPVs.
- make their way to intervention shaft cross-passage and close the door once everybody is inside.
- tell the signaller that everybody is in the intervention shaft cross-passage and the door is closed.

**Signaller** must:

- be told by the Balfour Beatty Rail Plant driver that
  - the MPVs have stopped by dictation of Form ARPI,
  - the maintenance staff are detraining,
  - no movement of the MPVs will be made until authorisation is received from the signaller.

- be told by the maintenance staff that everybody is in the intervention shaft cross-passage and the door is closed.
- authorise the Balfour Beatty Rail Plant driver to restart by dictating Form REMA.

**Balfour Beatty Rail Plant driver must:**

- receive authorisation from the signaller to restart by dictation of Form REMA.
- proceed in accordance with the cab signalling indications displayed.

## 14. Assistance to failed trains

This part will be issued separately.

## 15. Location specific instructions

### 15.1 St. Pancras International station

#### 15.1.1 International platforms 5 - 10

The only trains in passenger service permitted to use these platforms are international trains and their associated ECS movements.

An international train being hauled by a locomotive is permitted to enter these platforms subject to the conditions shown in clause 15.1.2.

A failed Class 373 (Eurostar) train being assisted by another Class 373 (Eurostar) should be routed to arrive on platform 10, if possible.

If a Class 373 (Eurostar) train is required to be shunted from one platform to another, it must be sent to Stratford in order to reverse direction and return.

#### **Cancellation of the 'CD' indicator**

When the person in charge of the platform operates the 'CD' indicator to inform the driver of an ECS movement that the station duties are complete as shown in sub-section 7.3 of Module SS1 of the Rule Book, the indicator will remain illuminated until the 'RA' indicator is illuminated. If the ECS movement is not to proceed immediately, the following procedure must be applied in order to extinguish the 'CD' indicator.

#### **Person in charge of the platform must:**

- make sure the driver, if in the driving cab, knows the 'CD' indicator is to be cancelled and that a 'Not to be moved' board is to be placed on the train.
- place a 'Not to be moved' board on the driving cab nearest the platform exit signal.
- tell the signaller that
  - the 'CD' indicator requires to be extinguished,
  - the driver is aware,
  - a 'Not to be moved' board has been placed on the train.
- ask the signaller to provide a proceed aspect on the platform exit signal.

#### **Signaller must:**

- be told by the person in charge of the platform that
  - the 'CD' indicator requires to be extinguished,
  - the driver is aware,
  - a 'Not to be moved' board has been placed on the train.
- receive request to provide a proceed aspect on the platform exit signal.

- set a route from the platform and clear the platform exit signal.

**Person in charge of the platform must:**

- see that the platform exit signal displays a proceed aspect,
- operate the 'RA' indicator.
- tell the signaller that the platform exit signal can be replaced to danger.

**Signaller must:**

- be told by the person in charge of the platform that the platform exit signal can be replaced to danger.
- close the signal and cancel the route. (**Note:** This will extinguish the 'RA' indicator).

**Person in charge of the platform must:**

- see that the platform exit signal displays a danger aspect,
- remove the 'Not to be moved' board.
- tell the driver in the driving cab, if present.

**15.1.2 Locomotives, works trains and maintenance vehicles.**

Locomotives, works train and OTM may enter any platform without restriction, but they may only enter the Barlow Train Shed (kp 0.214) end of platforms 5 - 10 if the axle loading of any vehicle exceeds 18 tonnes in accordance with the following conditions:

Platform that train is to enter	Platform to be empty of trains	Platforms to be cleared of passengers
<b>PLATFORM 5 PROHIBITED (Note 1)</b>		
<b>6 (Note 2)</b>	7	5 & 6
<b>7 (Note 2)</b>	6	7 & 8
<b>8 (Note 2)</b>	9	7 & 8
<b>9 (Note 2)</b>	8	9 & 10
<b>10 (Note 2)</b>	-	9 & 10

**Notes:**

1. If a works train/OTM is required to enter a Protected Area involving platform 5, the SRPOS must arrange for a Portable Stop Board to be placed at the entrance to the Barlow Train Shed (kp 0.214) before authorising the works train/OTM to enter the Protected Area. The STS of the worksite to confirm with the driver that the axle load limit of 18 tonnes has not been exceeded before removing the Portable Stop Board. In the event that a vehicle with an axle load in excess of 18 tonnes inadvertently enters the Barlow Train Shed portion of Platform 5, all movements into, within or out of that platform must be stopped until a representative of the Head of Track Engineering has inspected the deck structure. The Head of Track Engineering must tell the signaller and SRPOS (if a Protected Area is in place) the result of the inspection and if any restrictions on operation must be put in place.
2. Train reception personnel, platform trolleys, etc. may remain on the platforms. The signaller must confirm with the platform supervisor that these conditions have been met before allowing the locomotive or works train to pass colour light signal AF014/AF016/AF018/AF020. The maximum axle loading within the Barlow Train Shed end of platforms 6 – 10 is 22.5 tonnes. The driver must confirm to the signaller that the axle load limit of 22.5 tonnes has not been exceeded.

The STRAMM is prohibited from entering platforms 11 – 13 unless within a Protected Area.

### 15.1.3 Isolations of the OHLE in platform 5 and the Down CTRL line

Although there is no direct interface between the HS1 OHLE in platform 5/Down CTRL line and the Network Rail Overhead Line Equipment (OLE) in the adjacent platform 4/Up Midland Main Line, it does come into close proximity to each other which may necessitate the Network Rail OLE being isolated in order to carry out maintenance work safely. The Network Rail publication: "Working on or about 25kV A.C. Electrified Lines" (NR/SP/ELP/29987) to apply to all isolations of the Network Rail OLE.

If HS1 personnel require a permit in order to carry out work on or near the adjacent Network Rail infrastructure, a Nominated Person must be in attendance to request the isolation, and carry out local switching, testing and earthing. Work must not start until an Overhead Line Permit (Form C) has been issued.

### 15.1.4 Emergency in platform 4 (Midland Main Line)

If an accident or incident occurs in platform 4 that may cause platform 5 to be obstructed, the West Hampstead signaller will send the emergency alarm to the signaller. The signaller must protect platform 5 in accordance with the Signalling Regulations and advise the Shift Manager, who must arrange for the attendance of a Rail Incident Officer (RIO).

Normal working must not be resumed in platform 5 until it is confirmed that the line is not obstructed.

### 15.1.5 Use of Form PROD 5 (Station staff)

With reference to the instructions shown in Module SS1 of the Rule Book, platforms lines 5, 10 and 11 have a fence separating them from the adjacent platform line. The issue of Form PROD 5 (Station staff) allows a member of station staff or rolling stock technician to go onto the platform line as far as the fence. There is no requirement for the signaller to block the adjacent platform line to train movements (or arrange for it to be blocked). The member of station staff or rolling stock technician must not go beyond the limit of the fence.

## 15.2 St. Pancras Maintenance siding

### 15.2.1 Description

The siding is 160 metres in length and connects HS1 with the Midland Main Line (MML). Trains are signalled into and out from the St Pancras end by the AFC signaller. Trains are signalled into and out of the MML end by the West Hampstead signaller after receiving authorisation from the AFC signaller.

A road rail access point (RRAP) is provided within the siding.

### 15.2.2 General principles

Except when Network Rail personal take a possession of the siding (sub-section 15.2.6), the HS1 Rule Book applies with the following modifications:

- access to the Danger Zone is permitted provided a vehicle is stabled in the siding and will not be moved.
- works train/OTM/OTP drivers are responsible for authorising their own movements within the siding.

Trains formed of passenger rolling stock are prohibited from entering this siding except works trains or infrastructure testing trains containing passenger rolling stock in departmental use.

### 15.2.3 Movements into, within and out of siding

#### 15.2.3.1 General

All movements must be made at walking pace - maximum speed 8 km/h (5 mph) with drivers proceeding under 'Proceed on sight' conditions being prepared to stop short of any obstruction.

Before a movement is made towards colour light signals AF502 or WH385, the driver must request permission from the signaller.

### 15.2.3.2 Trains entering the siding

Drivers must be prepared to stop short of any Portable Stop Boards.

Drivers must stop their train in a position which allows sufficient distance for another works train/OTM/OTP to be signalled into the siding.

If there is insufficient distance for a second works train/OTM/OTP to be signalled into the siding, the driver must advise the signaller

### 15.2.3.3 Trains departing the siding

Drivers must request permission from the signaller for their works train/OTM/OTP to move towards the exit signal and advise the signaller that the train is ready to start.

If the movement is to leave to the Midland Main Line, the signaller will advise the West Hampstead signaller.

### 15.2.4 Maintenance or loading/unloading of works trains/OTM/OTP stabled in the siding

Before undertaking any maintenance work on a works train/OTM/OTP, or loading/unloading vehicles, the person in charge of the work, in addition to placing not to be moved boards on the vehicle, must place a Portable Stop Board each side of the works train/OTM/OTP. The Portable Stop Boards must be removed when work is complete.

### 15.2.5 Principles applicable to HS1 Protected Areas

Module T3 of the HS1 Rule book applies with the following modification:

- Worksite Marker Boards must always be provided on both sides of the worksite.

**Note:** The signaller does not require permission from the West Hampstead signaller to apply EZP PM37.

### 15.2.6 Principles applicable to Network Rail possessions

When a Network Rail possession requires the maintenance siding to be blocked, the following principles must be applied:

- the siding must only be blocked in accordance with Handbook 13 of the Railway Group Standard Rule Book (GE/RT8000/HB13),
- the PICOS to request signal protection from the West Hampstead signaller,
- The West Hampstead signaller must request the signaller to apply protection, who must apply EZP PM37.
- A Possession Limit Board (PLB) to be placed on the maintenance siding side of colour light signal AF502

### 15.2.7 Isolation of the OLE on the adjacent Midland Main Line

Although the siding is not equipped with OHLE, it does come into close proximity to the Network Rail Overhead Line Equipment (OLE) on the Up Midland Main Line which may necessitate the Network Rail OLE being isolated in order to carry out maintenance work or loading/unloading safely. The Network Rail publication: "Working on or about 25kV A.C. Electrified Lines" (NR/SP/ELP/29987) to apply to all isolations of the Network Rail OLE.

Therefore if HS1 personnel require a permit in order to carry out work near the adjacent Network Rail infrastructure, a Nominated Person must be in attendance to request the isolation, and carry out local switching, testing and earthing. Work must not start until an Overhead Line Permit (Form C) has been issued.

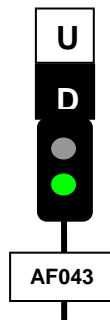
### 15.3 St. Pancras colour light signal controlled area

#### 15.3.1 Operation of local protection switches to create a Safe Area

Some of the local protection switches in the St. Pancras colour light signal controlled area are in locations that are inaccessible from the Safe Zone and entail crossing a line in order to operate. Where these switches are required to be operated to create a Safe Area, the RPOS is authorised to use form PROD 5 to block the line with the signaller in order to cross. A line must not be blocked for more than 20 minutes before the RPOS ensures they are in the Safe Zone and gives up the form PROD 5.

#### 15.3.2 Line identifying signs

The colour light signals shown in the following tables have an additional sign above the main aspect (and route indicator, if provided) identifying the line to which the signal applies. The sign consists of a black letter “C”, “D”, “N” or “U” on a white background.



Signal	Letter	Line
<b>Regents Canal Jn</b>		
AF014	C	East Coast Main Line Connection
AF015	C	East Coast Main Line Connection
AF016	D	Down CTRL
AF017	D	Down CTRL
AF018	U	Up CTRL
AF019	U	Up CTRL
AF020	R	CTRL Relief
AF021	R	CTRL Relief

Signal	Letter	Line
<b>York Way South Jn</b>		
AF037	D	Down CTRL
AF038	D	Down CTRL
AF041	N	North London Line Connection
AF042	N	North London Line Connection
AF043	U	Up CTRL
AF044	U	Up CTRL

#### 15.3.3 AWS arming at the exit from London Tunnel 1

When up direction trains equipped with AWS equipment pass the AWS boards at kp 1.990 (Up CTRL line) or kp 2.095 (Down CTRL line), the on-board AWS equipment should automatically arm and a ‘warning’ indication received in the cab to advise the driver. The receipt of AWS indications is only required by trains routed to the North London Line connection at York Way South Jn.

If the driver of a train routed towards St. Pancras International station does not receive the 'warning' indication, there is no requirement to stop specially and report it as a signalling irregularity. The driver must report it to the signaller on arrival at St. Pancras International station by means of Form PROD4.

If the driver of a train routed onto the North London Line Connection does not receive the 'warning indication', then the driver must report this failure to the Upminster (NLL) signaller at colour light stop signal NL1117.

### **15.3.4 TPWS equipment at York Way South Jn.**

Colour light signals AF045/AF046/AF047/AF048 at York Way South Jn. are equipped with Train Protection and Warning System (TPWS) equipment. This equipment is provided for train movements to/from Camden Road Jn.

### **15.3.5 Movement of trains not fitted with KVB equipment into/out of St. Pancras International station**

#### **15.3.5.1 Into St. Pancras International station**

The driver must stop the train at Block Section Marker AF050/AF052 and tell the signaller that the train is not equipped with KVB equipment.

**Signaller must:**

- set the route throughout to the buffer stops,
- make sure all the signals in the route are showing a proceed aspect, if possible,
- if there is a temporary speed restriction between Block Section Marker AF050/AF052 and the buffer stops, advise the driver by means of Form VILLI,
- authorise the driver to proceed, obeying all colour light signals, by issuing Form REMA.
- open the Block Section Marker AF050/AF052.

#### **15.3.5.2 From St. Pancras International station**

**Signaller must:**

- set the route throughout to the cab signalled area,
- make sure all the signals in the route are showing a proceed aspect,
- if there is a temporary speed restriction before the cab signalled area, advise the driver by means of Form VILLI,
- authorise the driver to proceed, obeying all colour light signals, by dictation of Form REMA.
- clear the colour light stop signal.

### **15.3.6 Manual operation of HPSS points**

#### **15.3.6.1 Introduction**

The power operated points in the St. Pancras colour light signal controlled area are the HPSS type. If these points fail, they must always be manually secured before trains are authorised to pass over them (even if they are already set in the required position). Therefore Sections 3 and 4 of Module T5 of the Rule Book are replaced by the following procedure:

**Signaller must:**

- consider a set of points to have failed if they do not respond to the signalling controls or the correct detection is not displayed.
- tell the Shift Manager.
- arrange for the signalling technician to be told.



- arrange for a competent person to attend.

**Competent person** must:

- attend the location of the failed points.
- remain in the **Safe Zone**.
- tell the signaller that you have arrived.

**Signaller** must:

- be told by the competent person that they have arrived at the location of the failed points.
- apply the Signalling Regulations.
- tell the competent person by dictation of Form MAIL:
  - which points require to be operated manually,
  - which position the points are required to be moved to (even if they are already in that position),
  - what the arrangements are for their personal safety.

**Competent person** must:

- be told by the signaller dictating Form MAIL:
  - which points require to be operated manually,
  - which position the points are required to be moved to (even if they are already in that position),
  - what the arrangements are for their personal safety.
- go to the affected points.
- make sure they are at the correct points by checking the point number.
- operate the points to the position requested by the signaller, if they are not already in that position.
- secure the points using the special securing device,
- return to the **Safe Zone**.
- tell the signaller by dictation of Form MAIL:
  - the number of the points operated manually,
  - the position the points are now in,
  - that the points have been secured,
  - that the competent person is now in the **Safe Zone**.

**Signaller** must:

- be told by the competent person dictating Form MAIL:
  - the number of the points operated manually,
  - the position the points are now in,
  - that the points have been secured,
  - that the competent person is now in the **Safe Zone**.
- check that the correct detection is obtained.
- if the correct detection is not obtained, apply the Signalling Regulations.

## 15.4 Stratford

### 15.4.1 Up International Platform line (Platform 1)

This platform is not open to the public. However Class 373 (Eurostar) and Class 395 trains may be routed via this platform line. If a train conveying passengers stops in the platform the driver must not release the doors except in an emergency. The authorisation of the Station Controller must first have been obtained and the necessary arrangements for dealing with the passengers put in place, before the driver releases the doors.

Class 4 & 6 freight trains may be routed via this platform line subject to the following signalling restriction:

Before the signaller opens the Block Section Marker to allow a freight train to enter the platform line (either direction), they must set the exit route from the platform line. This route must remain set until either: the freight train has passed the Block Section Marker at the exit from the platform and is proceeding, or, the driver confirms to the signaller that it is stopped.

#### **15.4.2 Up and Down Domestic Platform lines (Platforms 2 & 3)**

Class 373 (Eurostar) trains may be routed via these platform lines. If a train stops in the platform the driver must not release the doors except in an emergency. The authorisation of the Station Controller must first have been obtained and the necessary arrangements for dealing with the passengers put in place, before the driver releases the doors.

Class 4 & 6 freight trains and Eurotunnel Krupp locomotives are prohibited from entering these platform lines.

#### **15.4.3 Down International Platform line (Platform 4)**

Because of rust on the rail head surface, all the main class of routes through this platform line have been signed out of use. The signaller must signal all movements into, through, and out of this platform line by means of Auxiliary routes and signals.

This platform is not open to the public. However Class 373 (Eurostar) and Class 395 trains may be routed via this platform line. If a train conveying passengers stops in the platform the driver must not release the doors except in an emergency. The authorisation of the Station Controller must first have been obtained and the necessary arrangements for dealing with the passengers put in place, before the driver releases the doors.

Class 4 & 6 freight trains may be routed via this platform line subject to the following signalling restriction:

Before the signaller opens the Block Section Marker to allow a freight train to enter the platform line (either direction), they must set the exit route from the platform line. This route must remain set until either: the freight train has passed the Block Section Marker at the exit from the platform and is proceeding, or, the driver confirms to the signaller that it is stopped.

#### **15.4.4 Restrictions on the signalling of the STRAMM DU94B**

The STRAMM is prohibited from entering the Up or Down Domestic Platform lines (Platforms 2 & 3) unless a Protected Area and worksite has been created.

The STRAMM is prohibited from entering the Stratford/Temple Mills International Depot Link line.

### **15.5 Dagenham to Thames Tunnel**

#### **15.5.1 Isolations of the OHLE**

Although there is no direct interface between the HS1 OHLE and the Network Rail Overhead Line Equipment (OLE) on the Network Rail (Tilbury lines), it does come into close proximity to each other which may necessitate the Network Rail OLE being isolated in order to carry out maintenance work safely. The Network Rail publication: "Working on or about 25kV A.C. Electrified Lines" (NR/SP/ELP/29987) to apply to all isolations of the Network Rail OLE.

Therefore if HS1 personnel require a permit in order to carry out work on or near the adjacent Network Rail infrastructure, a Nominated Person must be in attendance to request the isolation, and carry out local switching, testing and earthing. Work must not start until an Overhead Line Permit (Form C) has been issued.

#### **15.5.2 Aveley and Thurrock viaducts**

Detrainment of passengers must be to the six foot side of the train to enable the evacuation ladders to be used.

## 15.6 Ebbsfleet

### 15.6.1 Platforms 1 & 4 (Up & Down International platforms)

Class 395 trains may be routed via these platform lines. If a train stops in the platform, the driver must not release the doors except in an emergency. The authorisation of the Station Controller must first have been obtained and the necessary arrangements for dealing with the passengers put in place, before the driver releases the doors.

### 15.6.2 Platforms 2 & 3 (Up & Down low level domestic platforms)

Class 373 (Eurostar) trains may be routed via these platform lines. If a train stops in the platform the driver must not release the doors except in an emergency. The authorisation of the Station Controller must first have been obtained and the necessary arrangements for dealing with the passengers put in place, before the driver releases the doors.

The STRAMM is prohibited from entering platforms 2 & 3 unless a Protected Area and worksite has been created.

The maximum line speed through the Down Domestic Platform line (Platform 3) is 100 km/h. Between points 2124 (exclusive) and 2127 (exclusive) the distance between **Danger Zone** and **Safe Zone** is reduced to 1.25 metres from the nearest running rail.

## 15.7 Singlewell

### 15.7.1 Country end siding

Works trains/OTM stabled in the country end siding must be left clear of the Road Rail Access Point (RRAP).

### 15.7.2 Propelling movements between Singlewell Down loop and Singlewell IMD

When required a single MPV or a traction unit with one vehicle is authorised to propel between Singlewell Down Loop and Singlewell IMD (either direction) when the Auxiliary signal associated with Block Section Marker AF220/AF221 opens.

## 15.8 Singlewell Infrastructure Maintenance Depot (IMD) yard

### 15.8.1 Description of Singlewell Yard

The yard comprises the following sidings:

Name	Length (metres)
Refueling siding	145
Berthing siding	144
West siding	70
East siding	42
Maintenance shed	27

It is connected to the HS1 route by a facing connection in the Singlewell Down Loop controlled by Ashford AFC. A “shunters acceptance panel” is provided to authorise the access of works trains/OTM/OTP into the yard.

All points within the yard are hand operated.

The maintenance shed is protected by a de-railing device and a stop board.

The boundary between the yard and the operational railway is Block Section Marker AF220 controlling the exit to Singlewell Down Loop.

A fence is provided between the operational railway and the yard and between the yard and the car parking/accommodation areas.

The yard is under the control of the Designated Person (DP). This function is carried out by the Balfour Beatty Rail Plant Duty Team Leader.

### 15.8.2 Personal safety in the yard.

Module G of the Rule Book applies modified as shown below:

All the yard area is considered to be the **Danger Zone**.

PPE must be worn, with the following additions:

- Safety goggles/spectacles
- Appropriate safety gloves
- Any other PPE as required for the task being undertaken

Persons must not enter the yard unless their duties require them to do so and they are authorised by the DP.

**DP** must:

- make sure all rail movements have stopped before authorising anybody to enter the yard area.
- record the names of all persons who have been authorised to enter the yard area.

Persons who have been authorised to enter the yard area do not need to advise the Site Access Control Centre (SACC).

On completing work and/or exiting the yard area at the end of the shift, all authorised persons must inform the DP and confirm that all items being worked on have been left in a safe condition and the location and state of any items left on site.

### 15.8.3 Train movements

Modules OTM, OTP, TW1, TW3 and TW5 of the Rule Book apply modified as shown below:

#### 15.8.3.1 General

All movements within the yard must be authorised and controlled by the DP.

All movements must be made at walking pace - maximum speed 8km/h (5mph) with drivers proceeding under 'Proceed on sight' conditions being prepared to stop short of any obstruction.

Before authorising any movement, the DP must make sure all hand points are set to the correct position for the movement to be made. (This authorisation may be delegated to the competent driver in charge of the movement).

On approaching facing hand points, the driver must physically check that the points are set correctly and confirm the blade is fully applied in the correct position.

Only one movement at a time may be authorised.

The DP can authorise OTP to operate, as required, within the yard, but must, as a minimum, make sure a safe system of work and suitable protection is in place.

#### 15.8.3.2 Works trains/OTM entering the yard

**Driver** must:

- stop at Block Section Marker AF221 (Singlewell Down Loop),
- confirm to the signaller that the works train/OTM is stopped and requires to enter Singlewell yard,
- wait for the Auxiliary Signal associated with Block Section Marker AF221 to open.

**Signaller** must tell the DP that a Works Train/OTM is stopped at Block Section Marker AF221 and requires to enter Singlewell yard.

**DP** must:

- make sure there is nobody in the yard danger zone,
- make sure there is room to accommodate the works train/OTM,
- make sure no other movement has been authorised within the yard,
- make sure the hand points are set correctly for the movement,
- if it safe to do so, operate the “shunters acceptance panel” switch to the ‘accept’ position.

Once the “shunters acceptance panel” switch is set to the ‘release’ position, the route can be set for the works train/OTM to enter the yard.

**Signaller** must:

- set the route,
- open the Auxiliary Signal associated with Block Section Marker AF221.

**Driver** must:

- when the Auxiliary Signal associated with Block Section Marker AF221 opens, proceed under ‘Proceed on Sight’ conditions,
- stop the works train/OTM when inside the yard clear of the Down Loop,
- manually disarm the cab signalling system,
- not move until instructed to do so by the DP.

### 15.8.3.3 Works Trains/OTMs leaving the yard

**Driver** must contact the DP and request authorisation to move towards Block Section Marker AF220.

**DP** must:

- make sure there is nobody in the yard Danger zone,
- make sure no other movement has been authorised to enter the yard,
- make sure the hand points are set correctly for the movement,
- if it safe to do so, authorise the movement.

**Driver** must:

- on being given authorisation, proceed under ‘Proceed on Sight’ conditions,
- stop at Block Section Marker AF220,
- manually arm the cab-signalling system,
- confirm to the signaller that the cab-signalling system is armed and the works train is ready to depart,
- wait for the Auxiliary Signal associated with Block Section Marker AF220 to open.
- when the Auxiliary Signal associated with Block Section Marker AF220 opens, proceed in accordance with Module S6 of the Rule Book.

**Note:** An “Arm cab-signalling” sign is provided at the exit of the yard to remind the driver.

### 15.8.4 Stabling of Works Trains/OTM/OTP in the yard

On the completion of a Works Train/OTP/OTM movement within the yard.

**DP** must make sure:

- the rail vehicle is not left foul of any other line or points,
- the vehicle parking brake is applied,
- the appropriate marker lights are displayed on the vehicle end to which other movements may approach,
- the vehicle is shut down in accordance with the appropriate vehicle specific instructions,
- the vehicle is left in a condition that, if required, may allow a competent person to haul it with another suitable vehicle in the absence of a driver i.e. final drive disengaged, brake pipe connections available, parking/handbrake accessible, etc.

**Driver** must:

- not leave the rail vehicle foul of any other line or points,
- apply the vehicle parking,
- display the appropriate marker lights on the vehicle end to which other movements may approach,
- shut down the vehicle in accordance with the appropriate vehicle specific instructions,
- leave the vehicle in a condition that, if required, may allow a competent person to haul it with another suitable vehicle in the absence of a driver i.e. final drive disengaged, brake pipe connections available, parking/handbrake accessible, etc.

### **15.8.5 Maintenance shed movements and protection**

When the maintenance shed is in use or required to be used by any personnel, the movement of all rail vehicles into, out of and within the maintenance shed must only take place under the control of the DP.

Staff working within the maintenance shed are protected from rail movements by a de-railing device and stop board which must padlocked by the DP.

On approach to the maintenance shed, the driver of the OTP/OTM must stop at the stop board and contact the DP.

**DP** must:

- make sure the shed is clear for the rail vehicle to enter
- remove the de-railer and stop board,
- switch on the shed movement klaxon,
- give instructions to the driver of the OTP/OTM to proceed.

**Driver of the OTP/OTM**, under the instruction of the DP, must:

- sound the horn,
- restart the movement and enter the maintenance shed not exceeding 3km/h (2 mph),
- at anytime, be prepared to immediately stop the vehicle and inform the DP,
- stop short of the shed buffers,
- on leaving the vehicle make sure it is secured.

Once the OTP/OTM is stopped within the shed the DP must replace the de-railer and stop board.

Prior to any work taking place on the OTP/OTM, the technician/maintenance staff responsible for the work must:

- make sure the shed protection is in place,

- place a 'Not to be Moved' board on the vehicle,
- scotch the wheels.

Each member of staff is issued with an identity tag which they shall attach to the 'Not to be Moved' board relating to the vehicle in which they are working.

Identity tags can only be removed by the person to whom it belongs and should be removed on the completion of their work on the vehicle.

**Note: Under no circumstances must a vehicle be moved that has a 'Not to be Moved' board on with an identity tag attached.**

When work is completed the technician/maintenance staff responsible for the work must:

- make sure no identity tags are left on the 'Not to be Moved' board,
- remove the 'Not to be Moved' board,
- remove the wheel scotches,
- tell the DP that the vehicle is available to be moved.

**DP** must, before allowing any rail vehicle to exit the maintenance shed:

- make sure a competent driver is available,
- make sure there is nobody in the yard danger zone,
- make sure no other movement has been authorised within the yard,
- make sure the hand points are set correctly for the movement,
- remove the de-railer and stop board,
- switch on the shed movement klaxon
- give instructions to the driver of the OTP/OTM to proceed.

**Driver** must, before moving any rail vehicle:

- make sure the vehicle is fit to move (see pre-start checks),
- not move until instructed to do so by the DP,
- sound the machine warning horn,

When instructed by the DP to exit from the maintenance shed the driver must proceed, not exceeding 3km/h (2 mph) until the whole vehicle has moved clear of the shed and de-railer.

On completion of the rail vehicle movements, the DP must replace the stop board and de-railer.

### **15.8.6 Protection Arrangements for Track Inspection and Maintenance**

**Note:** EZP YD43 applies to yard protections. There is not a line side switch associated with this EZP.

The RPOS must liaise with the DP to make arrangements for the Protected Area.

Before authorising the RPOS to create a Protected Area, the DP must give an assurance that the "shunters acceptance panel" switch is in the 'normal' position and that no acceptance will be given until the Protection Area is given up and handed back.

The RPOS must close and lock the cover of the "shunters acceptance panel" using their personal tagged padlock.

The DP must not authorise any rail movements within the Protected Area.

The RPOS must enter on form WORK that the "shunters acceptance panel" switch is in the 'normal' position.

Before giving up the Protected Area, the RPOS must remove their personal tagged padlock from the cover of the "shunters acceptance panel" and tell the DP the Protected Area is being given up.

### **15.9 Medway viaduct**

Detrainment of passengers must be to the six foot side of the train to enable the evacuation ladders to be used.

### **15.10 North Downs Tunnel**

#### **15.10.1 Tunnel Lighting**

The North Downs Tunnel and exterior assembly areas are provided with lighting which is controlled by the signaller. The lighting should normally be off. When required, the signaller must be requested to switch the lights on and informed when they are no longer required. In an emergency, the lighting can also be switched on by means of local emergency plungers. If these are used, arrangements must be made to switch off the lighting locally, the signaller cannot do so remotely.

Before any evacuation of a passenger train starts, the driver must arrange for the tunnel lighting to be switched on.

**Note:** In the event of a traction current isolation, the lighting will be switched on automatically. When the traction current has been restored, the lighting will remain on. The signaller will not be able to switch it off until five minutes after the traction current has been restored.

#### **15.10.2 Passenger train evacuation**

Modules M5 and M6 of the CTRL Rule Book apply with the following modification:

With reference to clause 3.2.3 of Module M5, if the RIO is told that the emergency services are attending, they must proceed to the Forward Incident Control Point (FICP) and manage the incident from there in liaison with the Incident Officer of the emergency services."

### **15.11 Lenham**

Works trains/OTM stabled in the country end siding must be left clear of the Road Rail Access Point (RRAP).

### **15.12 Ashford tunnel**

Before any evacuation of a passenger train starts, the driver must arrange for the tunnel lighting to be switched on.

### **15.13 Ashford viaduct**

Detrainment of passengers must be to the six foot side of the train to enable the evacuation ladders to be used

## **16. Interface instructions with Network Rail, Eurostar International Ltd. (EIL) and Eurotunnel**

### **16.1 Silo Curve, North London Line and East Coast Main Line connections**

#### **16.1.1 Silo Curve and North London Line connection**

Routes from HS1 to Camden Road Jn. (Upminster SCC) via the North London Line Connection and Silo Curve are commissioned but have **not** been brought into use. The routes are signed out of use in Signalling Room 10.

All train movements over the North London Line Connection and Silo Curve are prohibited unless authorised in a Special Operating Instruction or both an HS1 Protected Area and a Network Rail possession are in place.



### 16.1.1.1 Protection arrangements

- All signalling routes between HS1 and Camden Road Jn. are 'barred' in Signalling Room 10.
- The AFC signaller to maintain points 2031, 2042 and 2044 in the normal (N) position and apply reminders: **Note:** The AFC signaller is authorised to remove the reminder and operate the points in connection with maintenance work provided EZP PS35 or PN38, as appropriate, is applied. The points must be restored to the normal (N) position and reminders applied before the protection of EZP PS35 or PN38 is removed.

### 16.1.1.2 Maintenance principles

- Maintenance work must be carried out in accordance with the instructions shown in the CTRL Standard: "Procedures for taking possessions CTRL/Network Rail interfaces on the North London Line connection and Silo Curve" (C/OP/OS/05/2014) with the following amendments:
  1. Reference to Camden Road Jn. signal box to read Upminster Signalling Control Centre (North London Line workstation).
  2. The identities of colour light stop signals CR1117 and CR1119 to read NL1117 and NL1119.
- Isolations of the OHLE must be carried out in accordance with the instructions shown in the CTRL Standard "Procedures for taking isolations of the traction power supply at the CTRL (Section 2)/Network Rail interfaces" (C/OP/OS/05/2010) with the following amendments:
  1. Reference to Rugby Electrical Control Room to read: Romford Electrical Control Room.
  2. Reference to Camden Road Jn. signal box to read: Upminster Signalling Control Centre (North London Line workstation)
  3. Reference to North London Line Route Controller to read: Signalling Shift Manager, Upminster SCC.

### 16.1.2 East Coast Main Line connection

Routes from HS1 to Copenhagen Jn. (Kings Cross signal box) via the East Coast Main Line connection are commissioned but have **not** been brought into use. The routes are "barred" in Signalling Room 10.

All train movements over the East Coast Main Line connection are prohibited unless authorised in a Special Operating Instruction or both a HS1 Protected Area and a Network Rail possession are in place.

Procedures for taking HS1 Protected Areas and Network Rail possessions are published in the Standards "Procedures for taking possessions CTRL/Network Rail interface on the East Coast Main Line connection" (C/OP/OS/05/2012) with the following amendments:

1. Detonator protection for HS1 Protected Areas only required when there are works trains/OTM/OTP working within the Protected Area.
2. Delete reference to Form POSSI.

Procedures for taking OHLE isolations are published in the Standard "Procedures for taking isolations of the traction power supply at the CTRL (Section 2) / Network Rail interfaces" (C/OP/OS/05/2010) with the following amendments:

1. Reference to Rugby Electrical Control Room to read Romford Electrical Control Room.
2. Reference to Camden Road Jn. signal box to read Upminster (North London Line workstation)
3. Reference to North London Line Route Controller to read Signalling Shift Manager, Upminster SCC.

### 16.2 Stratford to Temple Mills International depot link line

The instructions to be applied are published in the Standard "Interface procedures between HS1 and EUKL for the Stratford/Temple Mills International depot link line", dated June 2007, (C/OP/OS/05/2008) with the following amendment to Section 8:

Worksite Marker Boards only required when there are works trains/OTM/OTP present within the Worksite.

## **16.3 Ripple Lane chord lines**

### **16.3.1 Signalling**

#### **16.3.1.1 General**

Because of rusty rails, the main class of route is 'signed out of use'. Trains to be signalled by auxiliary routes and signals.

#### **16.3.1.2 Signalling of trains from HS1 to Ripple Lane Exchange Sidings.**

Before allowing a train to proceed from HS1 to Ripple Lane Exchange Sidings, the AFC signaller must:

- maintain Block Section Marker AF092/AF094 closed.
- receive confirmation from the Upminster IECC signaller that the previous train over the Up/Down Ripple Lane chord has arrived complete within Ripple Lane Exchange Sidings.
- set the route and open the Auxiliary signal associated with Block Section Marker AF092/AF094.

#### **16.3.1.3 Signalling of trains from Ripple Lane Exchange Sidings to HS1**

When a train is routed over the Down or Up Ripple Lane chord from Ripple Lane Exchange Sidings to HS1, the AFC signaller must tell the Upminster IECC signaller when it has passed clear of RAB (Down Ripple Lane chord)/RRC (Up Ripple Lane chord) track circuit at Dagenham Jn.

#### **16.3.1.4 Points 2507, 2508 and 2509 in Ripple Lane Exchange Sidings**

In the normal position these points provide a "trapping" facility and prevent run-away vehicles from Ripple Lane Exchange Sidings entering HS1. They "self-restore" after the passage of a train to maintain the "trapping" facility. If the Upminster IECC Signaller is required to set the route by means of the Individual Point Switches, he/she will ensure these points are returned to the normal position as soon as possible after the passage of a train.

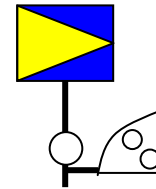
**16.3.1.5 Description of ‘N’ Block Section Markers AF095 and AF101 “Hidden Markers”**

These ‘N’ Block Section Markers are the first markers controlled from the AFC applicable to movements from Ripple Lane Exchange Sidings to the CTRL (down direction). Block Section Marker AF095 is located on the Down Ripple Lane chord and Block Section Marker AF101 on the Up Ripple Lane chord.

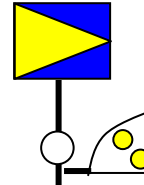
These Block Section Markers can display:

- a marker formed by the illumination of LEDs, **or**
- a marker formed by the illumination of LEDs with an illuminated auxiliary signal, **or**
- a fixed red aspect.

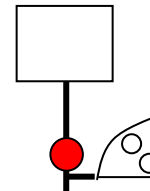
The red aspect is illuminated when the marker is **not** open. The illumination of both the marker and the red aspect must be treated as an abnormal aspect.



Display with main route open



Display with auxiliary route open



Display with route closed

**16.3.1.7 Passing diesel powered trains through isolations of HS1 OHLE electrical sub-sections 1709S and 1710B**

When either of the electrical sub-sections 1709S (Up Ripple Lane chord) or 1710B (Down Ripple Lane chord) is isolated, the Upminster IECC signaller will be unable to clear signals UR823/UR825/UR827 for the route to HS1. If a diesel powered train is required to be routed to HS1, the Upminster IECC signaller will request authorisation from the AFC signaller for the train to enter the isolated area.

The AFC signaller must check that the previous train has passed clear of RAB (Down Ripple Lane chord)/RRC (Up Ripple Lane chord) track circuit at Dagenham Jn., before giving authorisation to the Upminster IECC to allow the train to enter the isolated area.

**16.3.2 Failure of signalling equipment**

**16.3.2.1 Principles**

When a failure of points, track circuits, train describers, or route direction arrows occurs that prevents the normal signalling of trains between HS1 and Ripple Lane Exchange Sidings, the AFC signaller and Upminster IECC signaller must advise each other the extent of the failure.

The AFC Signaller must advise the Shift Manager and EMMIS Controller as to the nature of the failure and record the details accordingly.

The AFC Signaller and Upminster IECC signaller must reach a clear understanding with each other and agree a method by which train movements will be made.

The AFC signaller or Upminster IECC signaller must check the conditions for opening the marker/clearing the signal, requesting, when required, information from the other signaller concerning the state of the line within their area, e.g. position of points, before authorising a train to pass a closed marker/signal at danger.

If a track circuit is showing occupied, the AFC signaller or Upminster IECC signaller must arrange for an examination of the line to be carried out, if necessary using the first affected train over the line concerned.

#### **16.3.2.2 Failure of direction of flow indicators**

The AFC Signaller or Upminster IECC signaller must not attempt to set a route that conflicts with a Direction of Flow Arrow for a route already set by the other signaller.

If however, a “Direction of Flow Arrow” is not illuminated, the AFC signaller and Upminster IECC signaller must agree with each other the direction of flow for each line. This should always follow the primary direction for each line, i.e. down direction on the Down Ripple Lane chord, up direction on the Up Ripple Lane chord.

#### **16.3.2.3 Failure of a cab signalling arming beacon associated with Block Section Marker AF095/AF101**

When the AFC signaller receives a failure indication for the cab signalling arming beacon associated with either Block Section Marker AF095 or Block Section Marker AF101, he/she must advise the Upminster IECC signaller and request that the drivers of trains routed to the Up Ripple Lane chord/Down Ripple Lane chord (as appropriate) be advised.

The driver must manually arm the traction unit cab signalling equipment when passing the **CAB** board on the approach to Block Section Marker AF095 or Block Section Marker AF101 (as appropriate).

### **16.3.3 Train working**

#### **16.3.3.1 Provision of cab signalling equipment in driving cabs of traction units**

All traction units proceeding beyond signals UR823/UR825/UR827 and routed to either the Up or Down Ripple Lane chord must be fitted with working cab signalling equipment in the leading driving cab in the direction of travel (in which the driver is located) except in the following circumstances:

- it is a works train or on-track machine (OTM) being authorised to enter a HS1 Protected Area, **or**,
- it is a works train or on-track machine (OTM) working within a Network Rail T3 possession, **or**,
- it has been planned and authorised by the CTRL Operations Manager or nominated representative and the arrangements published, **or**,
- it is authorised by the Shift Manager to assist a failed train as shown in Module UF of the HS1 Rule Book.

#### **16.3.3.3 Restrictions on use of the Ripple Lane chords**

Trains conveying passengers are prohibited from entering Ripple Lane Exchange Sidings except in an emergency situation that requires the train to be removed from HS1.

Class 373 ‘Eurostar’ trains or Class 395 multiple units are prohibited from entering Ripple Lane Exchange Sidings under their own power. They may only be transferred between HS1 and the exchange sidings hauled ‘dead’ with their pantographs lowered.

Shunting movements from Ripple Lane Exchange Sidings are prohibited from using the Down or Up Ripple Lane chords.

#### 16.3.3.4 Train failure on the Ripple Lane chords

If a train fails on the Ripple Lane chords, or is in any way unable to continue, the following principles to apply:

- The signaller who is initially advised by the driver becomes the 'lead' signaller and is responsible for initiating the course of action required to assist the failed train.
- The AFC signaller and the Upminster IECC signaller must come to a clear understanding as to what is required, e.g.
  - where the assistance is coming from,
  - where the train is to be assisted to,
  - who is in contact with the driver and managing the movement,
  - who is authorising the assistance to proceed towards the failed train.
- The signaller that the driver originally contacts and declares his train a failure, is responsible for authorising the onward movement. In the case of a down direction train that has to reverse direction, e.g. an assisting locomotive is attached to the rear of the train to haul it back into Ripple Lane Exchange Sidings, this responsibility is transferred to the Upminster IECC signaller in the new direction of travel. The driver must be advised of this transfer of responsibility.
- The rules applicable to the signalling control area in the direction of movement to be applied.

#### 16.3.3.5 Examination of trains following the activation of the VHME at Wennington.

When the Vehicle Health Monitoring Equipment (VHME) at Wennington initiates a 'Danger Alarm' for a train travelling in the up direction, it automatically stops the train concerned at Block Section Marker AF092 (Up CTRL line) or Block Section Marker AF844 (Down CTRL line). The following arrangements to apply to allow examination of the train to take place:

##### Passenger and ECS trains

Train stopped at Block Section Marker AF092 (Up CTRL line) – either to be examined at that location or the AFC signaller may authorise the driver to proceed to Block Section Marker AF784 on the Up Ripple Lane chord at a maximum speed of 20 km/h in order to clear the Up CTRL line. The AFC signaller to set the auxiliary route and open the Auxiliary signal associated with Block Section Marker AF092.

Train stopped at Block Section Marker AF844 (Down CTRL line) – either to be examined at that location or the AFC signaller may authorise the driver to proceed to Block Section Marker AF880 on the Down Ripple Lane chord at a maximum speed of 20 km/h in order to clear the Down CTRL line. The AFC signaller to set the auxiliary route and open the Auxiliary signals associated with Block Section Markers AF844 and AF094. **Note:** This option is only applicable to a single Class 395 multiple unit (6 car) due to insufficient distance between the junction with the Down CTRL line and the OHLE neutral section on the Down Ripple Lane chord.

Class 373 'Eurostar' trains or Class 395 multiple units must **not** proceed past the OHLE neutral sections on the Ripple Lane chords with the pantographs raised.

Depending on the driver's examination any further movement of the train to be in accordance with Module TW5 of the HS1 Rule Book and the train operator's contingency plan.

##### Freight trains and 'light' locomotives

Either line – either to be examined at the location stopped or the AFC signaller may authorise the driver to proceed to Ripple Lane Exchange Sidings at a maximum speed of 20 km/h in order to clear the line.

##### All situations

No other train movement to be authorised on an adjacent line past the incident train whilst it is moving.

### 16.3.4 Maintenance procedures

Procedures for taking HS1 Protected Areas and Network Rail possessions are published in the Standard “Procedures for taking possessions CTRL/Network Rail interfaces on Ripple Lane chords” (C/OP/OS/05/2013) with the following amendment:

Worksite Marker Boards only required when there are works trains/OTM/OTP present within the Worksite.

Procedures for taking OHLE isolations are published in the Standard “Procedures for taking isolations of the traction power supply at the CTRL (Section 2)/Network Rail interfaces” (C/OP/OS/05/2010) with the following amendment:

Reference to North London Line Route Controller to read Signalling Shift Manager, Upminster IECC.

### 16.3.5 Temporary and emergency speed restrictions

#### 16.3.5.1 General principles

When a temporary or emergency speed restriction has to be imposed on the Ripple Lane chords, the person responsible for planning the restriction must liaise with the maintenance department of the other infrastructure manager regarding the provision of lineside boards and indicators.

The HS1 and Network Rail maintenance planning departments must make arrangements for all temporary speed restrictions to be planned and published in accordance with the HS1 Rule Book and Railway Group Standard Rule Book (GE/RT8000).

Lineside equipment as shown in Module SP of the Railway Group Standard Rule Book and SR2 of the HS1 Rule Book to be used.

Warning boards and speed indicators positioned between signals UR823/UR825/UR827 and the CAB boards on the Ripple Lane chords (both directions) to show the speeds in both mph and km/h as shown:

5 mph	= 10 km/h	20 mph	= 30 km/h
10 mph	= 20 km/h	30 mph	= 45 km/h

Differential speed restrictions are not permitted.

AWS not provided for temporary and emergency speed restrictions.

#### 16.3.5.2 Emergency speed restrictions

Drivers to be advised of an emergency speed restriction in accordance with the following principles.

Before the lineside equipment is in place, the AFC signaller to stop trains at Block Section Markers AF092/AF094 and advise drivers using Form VILI in accordance with Module SR2 of the HS1 Rule Book. The Upminster IECC signaller will advise drivers at signals UR823/UR825/UR827 in accordance with Module SP of the Railway Group Standard Rule Book.

##### Down direction signage

If the warning board is on the Ripple Lane Exchange Sidings side of the CTRL/NR rules change board, an associated emergency indicator to be placed 200 metres in rear.

If the warning board is on the HS1 side of the CTRL/NR rules change board, an emergency indicator is not provided. (If the emergency speed restriction is 40 km/h or less, the AFC signaller to stop trains at Block Section Markers AF095/AF101 and advise drivers using Form VILI in accordance with Module SR2 of the HS1 Rule Book.)

##### Up direction signage

If the warning board is on the HS1 side of the NR/CTRL rules change board, an associated emergency indicator is not provided. If the warning board is on the Ripple Lane Exchange Sidings side of the NR/CTRL rules change board, an associated emergency indicator to be provided.

## 16.4 North Kent Line connection

### 16.4.1 TPWS equipment

Colour light signals AF150/AF152/AF182/AF182/AF183 are equipped with Train Protection and Warning System (TPWS) equipment.

### 16.4.2 Failure of signalling equipment

#### 16.4.2.1 Principles

When a failure of points, track circuits, train describers, etc. occurs that prevents the normal signalling of trains between HS1 and Network Rail, the AFC signaller and North Kent signaller must advise each other the extent of the failure.

The AFC Signaller must advise the Shift Manager and EMMIS Controller as to the nature of the failure and record the details accordingly.

The AFC Signaller and North Kent signaller must reach a clear understanding with each other and agree a method by which train movements will be made.

The AFC signaller or North Kent signaller must check the conditions for clearing the signal, requesting, when required, information from the other signaller concerning the state of the line within their area, e.g. position of points, before authorising a train to pass a signal at danger.

If a track circuit is showing occupied, the AFC signaller or North Kent signaller must arrange for an examination of the line to be carried out, if necessary using the first affected train over the line concerned.

#### 16.4.2.2 Failure of TPWS (OSS1) overspeed sensor for colour light stop signal AF182

The TPWS (OSS1) overspeed sensor for colour light signal AF182 is located on the Up North Kent Line between colour light signal NK430 and 2131 points at Springhead Road Jn. When 2131 points are in the 'normal' position, i.e. set for the Gravesend to Dartford route direction, this overspeed sensor is de-energised so that the driver of a train signalled over this route does not get a brake application. If this overspeed sensor fails, i.e. it remains energised when 2131 points are in the 'normal' position, the AFC signaller will get a failure alarm indicated on the workstation. The North Kent signaller does **not** receive an indication of the failure, neither is colour light signal NK430 maintained at/reverts to danger and the driver of an up Gravesend to Dartford route train may receive an incorrect brake application. Therefore when an AF182OSS1 failure indication is received in the AFC, the AFC signaller must advise the North Kent signaller.

### 16.4.3 Signage

The following sign is provided in the cess to indicate to maintenance staff the limits on the Up and Down North Kent Line Connection to which they may proceed when applying the rules and procedures shown in the Rule Book of the infrastructure manager they are in. If required to proceed past these signs they must either:

- a) hold a current certificate of competency in the Personal Track Safety rules of the infrastructure manager they are about to enter, **or**
- b) be accompanied by a person who does and is appointed responsible for their safety in accordance with the appropriate standard for temporary visitors to the infrastructure they are about to enter; **or**
- c) be working within the arrangements described in the standard "Procedures for taking possessions – CTRL/Network Rail interface on the North Kent Line connection" (C/OP/OS/05/2011)".



The sign also states either: (depending on direction) “You are entering CTRL infrastructure - different rules apply” or “You are entering NR infrastructure - different rules apply”.

**Note:** These signs are **not** applicable to drivers. The signs that inform drivers where the rules change at the interfaces between HS1 and Network Rail are shown in the HS1 Rule Book, Module TW1, Section 11.

#### **16.4.4 Train working (degraded operation)**

##### **16.4.4.1 Train failure**

If a train fails within the interface between the North Kent and AFC signalling control, or is in any way unable to continue, the driver will contact either the North Kent signaller or AFC signaller depending on where the train has stopped. The signaller who is initially advised by the driver becomes the ‘lead’ signaller and is responsible for initiating the course of action required to assist the failed train.

##### **16.4.4.2 Isolation of the OHLE**

When OHLE electrical sections 1709Q (Up North Kent Line connection) and/or 1710J (Down North Kent Line connection) is isolated, electric trains may continue to operate on DC traction power from the North Kent signal controlled area as far as the limit of the conductor rail in Ebbsfleet station (colour light signals AF150/AF152). The AFC signaller must:

- tell the North Kent signaller if electrical section 1709Q and/or 1710J is isolated.
- make sure that the driver of any train requiring to enter/leave isolated OHLE electrical section 1709Q and/or 1710J has the pantographs lowered before clearing colour light signals AF182/AF183.

##### **16.4.4.3 Isolation of the conductor rail**

When the conductor rail electrical section L133 (Up North Kent Line connection) and/or L134 (Down North Kent Line connection), is isolated, electric trains may continue to operate on AC traction power from HS1 as far as Ebbsfleet station (colour light signals AF181/AF183) and to/from Church Path Pit Sidings. The North Kent signaller is responsible for arranging the signal protection for conductor rail isolations when requested by the Lewisham ECO and advising the AFC signaller.

The AFC signaller must confirm with the driver of any train requiring to enter/leave the isolated conductor rail section that the train has no collector shoes or that (if fitted) they are raised before clearing colour light signals AF182/AF183/AF190/AF192.

#### **16.4.5 Maintenance procedures**

Procedures for taking HS1 Protected Areas, and Network Rail possessions are published in the standard “Procedures for taking possessions – CTRL/Network Rail interface on the North Kent Line connection” (C/OP/OS/05/2011) with the following amendment:

Worksite Marker Boards only required when there are works trains/OTM/OTP present within the Worksite.

Module AC of the HS1 Rule Book (C/02/OS/05/1000) to apply for all isolations of the OHLE. If an isolation is required, a NPOS must be in attendance to request the isolation, and carry out local switching, testing and earthing. Work must not start until an Overhead Line Permit has been issued.

Procedure ‘B’ in the Network Rail publication “D.C. electrified lines working instructions” (NR/WI/ELP/3091), to apply to all isolations of the conductor rail. If HS1 personnel (including maintenance contractors) require an isolation of the conductor rail to carry out work, a Conductor Rail Permit must be issued.

#### **16.4.6 Temporary and emergency speed restrictions**

##### **16.4.6.1 General principles**

When a temporary or emergency speed restriction has to be imposed on the Up or Down North Kent Line connections, the person responsible for planning the restriction must liaise with the maintenance department of the other infrastructure manager regarding the provision of lineside boards and indicators.



The HS1 and Network Rail maintenance planning departments must make arrangements for all temporary speed restrictions to be planned and published in accordance with the HS1 Rule Book and Railway Group Standard Rule Book (GE/RT8000).

Lineside equipment as shown in Module SP of the Railway Group Standard Rule Book and SR2 of the HS1 Rule Book to be used.

Warning boards and speed indicators positioned between Springhead Road Jn. and the **CAB** boards on the Up and Down North Kent Line connections (both directions) to show the speeds in both mph and km/h as shown:

5 mph	= 10 km/h	20 mph	= 30 km/h	40mph	= 60 km/h
10 mph	= 20 km/h	30 mph	= 45 km/h	50 mph	= 80 km/h

Differential speed restrictions are not permitted.

AWS to be provided for temporary and emergency speed restrictions.

#### 16.4.5.2 Emergency speed restrictions

##### Down North Kent Line connection

Emergency speed restriction that commences between colour light signals AF181/AF183 and colour light signal NK477 - the AFC signaller to stop trains at colour light signals AF181/AF183 and advise drivers using Form VILI in accordance with Module SR2 of the HS1 Rule Book.

Emergency speed restriction that commences on the Gravesend side of colour light signal NK477 - lineside equipment to be provided in accordance with Module SP of the Railway Group Standard Rule Book. If the warning board is on the HS1 side of the **NR/CTRL** rules change board, an emergency indicator not to be provided. (The North Kent signaller to stop trains at colour light signal NK477 and advise drivers).

##### Up North Kent Line connection

Emergency speed restriction that commences between Springhead Road Jn. and colour light signal AF182 - lineside equipment (including emergency indicator) to be provided in accordance with Module SP of the Railway Group Standard Rule Book. (Before the lineside equipment is in place, the North Kent signaller to stop trains at colour light signal NK430 and advise drivers.)

Emergency speed restriction that commences on the Ebbsfleet side of colour light signal AF182 - the AFC signaller to stop trains at colour light signal AF182 and advise drivers using Form VILI in accordance with Module SR2 of the HS1 Rule Book.

### 16.5 Waterloo connection

#### 16.5.1 Signalling

##### 16.5.1.1 Provision of cab signalling equipment in driving cabs of traction units

All traction units proceeding beyond colour light signal VS269 and routed to the Down Waterloo connection must be fitted with working cab signalling equipment in the leading driving cab in the direction of travel (in which the driver is located) except in the following circumstances:

- it is a works train or on-track machine (OTM) being authorised to enter a HS1 Protected Area, **or**,
- it is a works train or on-track machine (OTM) working within a Network Rail possession, **or**,
- it has been planned and the arrangements published, **or**,
- it is authorised by the Shift Manager to assist a failed train as shown in Module UF of the HS1 Rule Book.

### 16.5.1.2 Auxiliary Signal on Block Section Marker AF410

The AFC signaller must not open the Auxiliary Signal associated with Block Section Marker AF410 (Up Waterloo connection) unless it is:

- in connection with a track circuit failure (after the application of the provisions of clause 16.5.2), **or**,
- to authorise an assisting train to go to the rear of a failed train.

### 16.5.1.3 Restrictions on the signalling of trains operated by Class 92 locomotives

Before the AFC signaller opens Block Section Marker AF206 to allow a train operated by a Class 92 locomotive or a light locomotive(s) to proceed onto the Up Waterloo connection, they must have received confirmation from the Victoria ASC signaller that the route is set through Fawkham Jn. and that colour light signal VS292 is showing a proceed aspect. This route must remain set until either: the train or light locomotive(s) have passed colour light signal VS292 and is proceeding, or, the driver confirms to the AFC signaller that it is stopped.

## 16.5.2 Failure of signalling equipment - principles

When a failure of track circuits, train describers, etc. occurs that prevents the normal signalling of trains between HS1 and Network Rail, the AFC signaller and Victoria ASC signaller must advise each other the extent of the failure.

The AFC signaller must advise the Shift Manager and EMMIS controller as to the nature of the failure and record the details accordingly.

The AFC signaller and Victoria ASC signaller must reach a clear understanding with each other and agree a method by which train movements will be made.

The AFC signaller or Victoria ASC signaller must check the conditions for opening the Block Section Marker/clearing the signal, requesting, when required, information from the other signaller concerning the state of the line within their area, before authorising a train to pass the closed Block Section Marker/signal at danger.

If a track circuit is showing occupied, the AFC signaller or Victoria ASC signaller must arrange for an examination of the line to be carried out, if necessary using the first affected train over the line concerned.

## 16.5.3 Train working - degraded operation

### 16.5.3.1 Train failure

If a train fails at the interface of the Victoria ASC and Ashford AFC signalling control areas, or is in any way unable to continue, the following principles to apply:

- The signaller who is initially advised by the driver becomes the 'lead' signaller and is responsible for initiating the course of action required to assist the failed train.
- The AFC signaller and the Victoria ASC signaller must come to a clear understanding as to what is required, e.g.
  - where the assistance is coming from,
  - where the train is to be assisted to,
  - who is in contact with the driver and managing the movement,
  - who is authorising the assistance to proceed towards the failed train.
- The signaller that the driver originally contacts and declares his train a failure, is responsible for authorising the onward movement.
- The rules applicable to the signalling control area in the direction of movement to be applied.

### 16.5.3.2 Wrong direction movements in connection with engineering works

#### From Southfleet Jn to the Down Waterloo connection

Because the Down Waterloo connection is only signalled in one direction, there are no signalled routes from either the Down CTRL line or Down Singlewell loop to admit works trains or OTM into Protected Areas on this line.

If a works train or OTM is required to be admitted to a Protected Area on the Down Waterloo connection from the Southfleet Jn. end.

#### AFC signaller must:

- maintain Block Section Markers AF205, AF207, AF214 and AF216 closed, **and**
- make sure the works train or OTM is stopped at either Block Section Marker AF214 or AF216, **and**
- make sure a Protected Area of EZP YD09 has been granted to the SRPOS, **and**
- receive authorisation from the SRPOS to admit the works train or OTM into the Protected Area by means of dictation of form ATPA (Signaller), **and**
- set the route from Block Section Marker AF205 to the location of the works train or OTM and make sure the white route indicator is illuminated, **and**
- authorise the driver of the works train or OTM to pass closed Block Section Marker AF214 or AF216 and to proceed into the Protected Area by dictation of form FREP.

#### Driver of works train or OTM must;

- stop at either closed Block Section Marker AF214 or AF216,
- receive authorisation from the AFC signaller to pass closed Block Section Marker AF214 or AF216 and to proceed into the Protected Area by dictation of form FREP.
- proceed under 'Proceed on Sight' conditions at a maximum speed of 30 km/h.
- stop at the Worksite Marker Board and receive authorisation to enter the Worksite.

When the works train or OTM has entered the Protected Area, the AFC signaller may resume normal working over the Down CTRL line and Down Singlewell loop.

#### From the Up Waterloo connection to Southfleet Jn.

Because the Up Waterloo connection is only signalled in one direction, there are no signalled routes to exit works trains or OTM from Protected Areas on this line to the Up CTRL line.

If a works train or OTM is required to exit a Protected Area on the Up Waterloo connection at the Southfleet Jn. end.

#### AFC signaller must:

- either:
  - receive the giving up of the Protected Area from the SRPOS by dictation of Form POSS, or,
  - be told by the SRPOS that a works train or OTM is required to exit the Protected Area by dictation of Form ETPA
 together with confirmation of the location of the works train or OTM and that it is stopped.
- set the auxiliary routes from Block Section Marker AF210 to Block Section Marker AF206 and from Block Section Marker AF206 to the location of the works train or OTM.
- authorise the driver of the works train or OTM to proceed by dictation of form REMA.

#### Driver of works train or OTM must;

- be told by the SROS that the Protected Area is being given up or the works train or OTM is being authorised to exit the Protected Area.

- remain stopped.
- ask the AFC signaller for authorisation to proceed.
- receive authorisation from the AFC signaller to proceed by dictation of form REMA.
- proceed under 'Proceed on Sight' conditions at a maximum speed of 30 km/h.
- stop at Block Section Marker AF215.

The works train or OTM is to be signalled normally from Block Section Marker AF215.

#### 16.5.4 Maintenance procedures

Procedures for taking HS1 Protected Area and Network Rail possessions are published in the Standard "Procedures for taking possessions CTRL/Network Rail interfaces" (C/OP/OS/05/2007) with the following amendments:

1. Detonator protection for CTRL Protected Areas only required when there are works trains/OTM/OTP working within the Protected Area.
2. Delete reference to Form POSSI.

Procedures for taking OHLE isolations are published in the Standard "Isolation of the OHLE Procedures CTRL/Network Rail Interfaces" (C/OP/OS/05/2006).

Procedure 'B' in the Network Rail publication "D.C. electrified lines working instructions" (NR/WI/ELP/3091), to apply to all isolations of the conductor rail.

#### 16.5.5 Temporary and emergency speed restrictions

##### 16.5.5.1 General principles

When a temporary or emergency speed restriction has to be imposed on the Up or Down Waterloo connections, the person responsible for planning the restriction must liaise with the maintenance department of the other infrastructure manager regarding the provision of lineside boards and indicators.

The HS1 and Network Rail maintenance planning departments must make arrangements for all temporary speed restrictions to be planned and published in accordance with the HS1 Rule Book and the Railway Group Standard Rule Book (GE/RT8000).

Lineside equipment as shown in Module SP of the Railway Group Standard Rule Book and SR2 of the HS1 Rule Book to be used.

Warning boards and speed indicators positioned between Fawkham Jn. (exclusive) and colour light signal AF185 on the Down Waterloo connection and between the CAB board and colour light signal VS294 on the Up Waterloo connection to show the speeds in both mph and km/h as shown:

5 mph = 10 km/h	30 mph = 45 km/h	60 mph = 100 km/h
10 mph = 20 km/h	40 mph = 60 km/h	70 mph = 110 km/h
20 mph = 30 km/h	50 mph = 80 km/h	80 mph = 130 km/h

Differential speed restrictions are not permitted.

AWS to be provided at Warning boards located on the Fawkham Jn. side of the AWS board (Down Waterloo connection) and AWS board (Up Waterloo connection).

KVB balises to be provided at Warning boards and speed indicators located on the Southfleet Jn. side of the AWS board (Down Waterloo connection) and AWS board (Up Waterloo connection).

##### 16.5.5.2 Additional requirements in connection with emergency speed restrictions

Drivers to be advised of an emergency speed restriction in accordance with the following principles.

##### Down Waterloo connection

Warning boards and speed indicators to be provided.

If the warning board is on the Fawkham Jn side of the **NR/CTRL** rules change board, an associated emergency indicator to be provided.

If the warning board is on the Southfleet Jn. side of the **NR/CTRL** rules change board, an emergency indicator is not provided. (If the emergency speed restriction is 40 km/h or less, the AFC signaller to stop trains at colour light signal AF185 and advise drivers using Form VILI in accordance with Module SR2 of the HS1 Rule Book.)

Before the lineside equipment is in place, drivers to be advised as follows:

- If the emergency speed restriction commences on the Fawkham Jn. side of colour light signal AF185, the Victoria ASC signaller to stop trains at an appropriate colour light signal and advise drivers in accordance with the Railway Group Standard Rule Book (GE/RT8000).
- If the emergency speed restriction commences on the Southfleet Jn. side of colour light signal AF185, the AFC signaller to stop trains at colour light signal AF185 and advise drivers using Form VILI in accordance with Module SR2 of the HS1 Rule Book.

### **Up Waterloo connection**

Warning boards and speed indicators to be provided.

If the Warning board is on the Fawkham Jn. side of the **CTRL/NR** rules change board, an associated emergency indicator to be placed 183 metres in rear.

If the warning board is on the Southfleet Jn. side of the **CTRL/NR** rules change board, an emergency indicator is not provided. (If the emergency speed restriction is 40 km/h or less, the AFC signaller to stop trains at Block Section Marker AF206 and advise drivers using Form VILI in accordance with Module SR2 of the HS1 Rule Book.)

Before the lineside equipment is in place, drivers to be advised as follows:

- If the emergency speed restriction commences on the Southfleet Jn. side of colour light signal VS296, the AFC signaller to stop trains at Block Section Marker AF206 and advise drivers using Form VILI in accordance with Module SR2 of the HS1 Rule Book.
- If the emergency speed restriction commences on the Fawkham Jn. side of colour light signal VS296, the Victoria ASC signaller to stop trains at colour light signal VS296 and advise drivers in accordance with the Railway Group Standard Rule Book (GE/RT8000).

## **16.6 Ashford West and East chords**

### **16.6.1 Maintenance procedures**

The instructions to be applied are published in the HS1 Sectional Appendix, Part 16d as amended in the Standards "Isolation of the OHLE Procedures CTRL/Network Rail Interfaces", dated February 2005, (C/OP/OS/05/2006) and "Procedures for taking possessions CTRL/Network Rail interfaces", dated March 2005, (C/OP/OS/05/2007) with the following amendments:

1. Detonator protection for HS1 Protected Areas only required when there are works trains/OTM/OTP working within the Protected Area.
2. Delete reference to Form POSSI.

### **16.6.2 Operation of local protection switch D89.6 to create a Safe Area**

When local protection switch D89.6 is required to be operated to create a **Safe Area**, the RPOS is authorised to use form PROD 5 to block the Up and Down Ashford West chords with the signaller in order to cross. They must not be blocked for more than 20 minutes before the RPOS ensures they are in the Safe Zone and gives up the form PROD 5.

When a Protected Area of the Down Ashford chord is required to carry out maintenance of AWS and TPWS track located equipment as shown in Part 12 of this Sectional Appendix, the RPOS is authorised to use form PROD 5 to block the Up Ashford West chords with the signaller in order to create the **Safe Area**.

## 16.7 Dollands Moor freight chord

### 16.7.1 Maintenance procedures

The instructions to be applied are published in the HS1 Sectional Appendix, Part 16f as amended in the Standards “Isolation of the OHLE Procedures CTRL/Network Rail Interfaces”, dated February 2005, (C/OP/OS/05/2006) and “Procedures for taking possessions CTRL/Network Rail interfaces”, dated March 2005, (C/OP/OS/05/2007) with the following amendments:

1. Detonator protection for HS1 Protected Areas only required when there are works trains/OTM/OTP working within the Protected Area.
2. Delete reference to Form POSSI.

### 16.7.2 Movement of traction units not fitted with AWS or TPWS equipment

Certain traction units authorised to operate on HS1 are not fitted with AWS or TPWS equipment. Before setting the route (either main or auxiliary from Block Section Markers AF335/AF337 to colour light signal AD759, the AFC signaller must have received confirmation from the Ashford IECC signaller that the route has been set throughout to a siding in Dollands Moor Yard.

## 16.8 HS1/Eurotunnel/Network Rail interface at Cheriton

The instructions to be applied are published in the HS1 Sectional Appendix, Part 16g as amended in the Standard “Isolation of the OHLE Procedures Eurotunnel/CTRL/Network Rail Interfaces”, dated July 2004, (C/OP/OS/05/2005), with the following additional procedure:

### 16.8.1 Setting back trains at the HS1/Eurotunnel interface

The propelling of trains at the Eurotunnel/HS1 interface is prohibited with the exception of the following “Setting Back” movements:

- The RCC controller may authorise a UK → France train to set back in rear of *repère* 0968 (Down Fast line) or *repère* 0951 (Up Fast line).  
**Note:** If the train has to return to Dollands Moor Yard once it has stopped on the London side of the above *repères*, a locomotive must be attached at the head of the movement in the new direction of travel and the train hauled to destination.
- The RCC controller may authorise a UK → France train to set back in rear of *repère* 0834 (Down Fast line) or *repère* 0833 (Up Fast line).
- The AFC signaller may authorise a France → UK train to set back in rear of Block Section Marker AF362 (Up Fast line) or Block Section Marker AF366 (Down Fast line).

In all other instances trains must have a driver at the head of the movement in the direction of travel, with **both** the following:

- reception of orders and indications given by the signalling system,
- ability to stop the train in an emergency.

If the train does not have a suitable driving cab at the head of the movement in the direction of travel, a suitable traction unit must be attached and the train hauled in accordance with the normal signalling rules and regulations.

The following principles must be applied in order to set back a train:

- Before authorising the setting back movement of a UK → France train, the RCC supervisor must first obtain the permission of the AFC signaller using Form IMPR 2690.

- Before giving permission, the AFC signaller must ensure the following:
  - The route to be taken is clear of obstruction and will remain so.
  - Any points situated on the route to be taken are, and will remain, set correctly to allow the movement.
  - The route to be taken is protected from other movements, and that the location designated as the limit of the setting back movement is protected from movements approaching from the opposite direction.
  - The train will not pass beyond the designated limit of the setting back movement.
- Before authorising the setting back movement of a France → UK train, the AFC signaller must first obtain the permission of the RCC supervisor using Form IMPR 2690.
- The RCC controller/AFC signaller must give the order to the driver to set back using Form REFO.
- The RCC supervisor and Shift Manager must remain in contact by telephone while the setting back movement is being carried out and be prepared to order the other to stop the movement if they become aware of a dangerous situation arising.

### 16.8.2 Auxiliary Signal on Block Section Marker AF481

The AFC signaller must not open the Auxiliary Signal associated with Block Section Marker AF481 (Down CTRL) unless it is:

- in connection with a track circuit failure, **or**,
- a diesel powered train authorised to enter an isolated section of the OHLE, **or**,
- a works train authorised to enter a Protected Area, **or**,
- an assisting train authorised to go to the front/rear of a failed train.

### 16.8.3 Movement of traction units not fitted with AWS or TPWS equipment

Certain traction units authorised to operate on HS1 are not fitted with AWS or TPWS equipment. Before setting the route from Block Section Markers AF362/AF364/AF366 to colour light signals AD830/AD832, the AFC signaller must have received confirmation from the Ashford IECC signaller that the route has been set throughout to a siding in Dollands Moor Yard.

### 16.8.4 Track-to-train radio

The track-to-train radio system does not automatically change from the HS1 radio channel area to the Eurotunnel radio channel area for trains travelling in the UK to France direction of travel until **after** the train has passed Eurotunnel Block Section markers 0834 (Down Fast line) or 0833 (Up Fast line). Therefore drivers of trains stopped at markers 0834 or 0833 must change the channel manually in order to contact Eurotunnel RCC.

If a driver of a train stopped at these markers contacts the AFC signaller in error, the AFC signaller must instruct the driver to change the channel manually and contact Eurotunnel RCC. In the event of an **emergency** situation and the driver requires to report an obstruction, requires an emergency isolation, etc. the AFC signaller must record the details of the incident and transmit them to the RCC Controller as a safety message

## 17. Rolling stock authorised to operate on HS1

See the specific Vehicle Acceptance Certificate for the vehicle concerned.

## 18. Working of freight trains

DB Schenker and Europorte commercial freight services between the continent and Barking operate on HS1 in accordance with Module TW3 of the HS1 Rule Book.

### 18.1 Details of trains

Classification	4 (as shown in the HS1 Rule Book, Module TW1, Section 3)
Maximum length (including locomotives):	730 metres
Maximum trailing weight:	1600 tonnes
Brake force:	In accordance with the ME120 brake table shown on pages 62 and 63 of this Sectional Appendix.
Maximum speed	120 km/h
KVB equipment	<b>Not</b> fitted
Gauge	GB2

### 18.2. Limits of operation

#### Frèthun/Dollands Moor Yard to Ripple Lane Exchange sidings service

The Eurotunnel/HS1 interface at Cheriton and Ripple Lane Exchange sidings via the Up or Down CTRL lines (or Dollands Moor Yard and the Dollands Moor Freight chord), Lenham loops, Singlewell loops, Ebbsfleet International platforms lines (Platforms 1 & 4) and the Up or Down Ripple Lane chords.

#### Ripple Lane Exchange sidings to Dollands Moor Yard service

Ripple Lane Exchange sidings and Dollands Moor Yard via the Down Ripple Lane chord, Down CTRL line, Wennington crossovers, the Up or Down CTRL lines, Ebbsfleet International platforms lines (Platforms 1 & 4), Singlewell loops, Lenham loops and the Dollands Moor Freight chord.

**Not** to be routed via the Ebbsfleet domestic platform lines (platforms 2 & 3),

**Not** to be diverted to Springhead Road Jn. via the North Kent Line connection

**Not** to be diverted to Fawkham Jn. via the Waterloo connection.

**Not** to be diverted via Ashford station.

**Note:** In an emergency, in order to clear the line, the Frèthun/Dollands Moor Yard to Ripple Lane Exchange sidings service may be extended to Stratford International station. **Not** to use the Up or Down Domestic Platform lines (platforms 2 & 3) although the Class 92 may use these lines to run round the train in accordance with the instructions shown in sub-section 15.4 of this Sectional Appendix.

### 18.3. Principles

- Must be hauled by Class 92 locomotives equipped with cab signalling equipment parameterised for the HS1 cab signalling system.
- With reference to Section 4 of Module TW3, the trains may convey Dangerous Goods as authorised by Eurotunnel to pass through the Channel Tunnel in its document "Safety Arrangements, Volume F - Carriage of Dangerous Goods" (INFR/0020/4). The trains will be input into the TOPS system and the drivers will be in possession of a train document - Frèthun to Ripple Lane Exchange sidings service a '*Bulletin de Composition*' and the Ripple Lane Exchange sidings to Dollands Moor Yard service a 'Train List'.
- If the Class 92 locomotive fails on HS1, the Shift Manager to request DB Schenker control at Doncaster or GB Railfreight (Europorte) control at Peterborough to provide a suitable assisting locomotive as shown in clause 11.5.2 of the AFC Manual.



- Services from Ripple Lane Exchange sidings to the continent must be routed via Dollands Moor Yard for customs/security checks.

Loads that are “exceptional” and are not covered by the above will be subject to a special instruction published as necessary. This special instruction must state the details of the load that makes it “exceptional” and the operating restrictions that are to be applied.

**BRAKING TABLE FOR ME120 TRAINS (in tonnes)**

Hauled weight	Necessary braked weight depending on the length of the train			Hauled weight	Necessary braked weight depending on the length of the train		
	≤ 550 m	> 550 m ≤ 650 m	> 650 m		≤ 550 m	> 550 m ≤ 650 m	> 650 m
20	16			550	424	446	
30	24			560	432	454	
40	31			570	439	462	
50	39			580	447	470	
60	47			590	454	478	
70	54			600	462	486	
80	62			610	470	495	
90	70			620	478	503	
100	77			630	486	511	
110	85			640	490	519	
120	93			650	501	527	553
130	101			660	509	535	561
140	108			670	516	543	570
150	116			680	524	551	578
160	124			690	532	559	587
170	131			700	539	567	595
180	139			710	547	576	604
190	147			720	555	584	612
200	154			730	563	592	621
210	162			740	570	600	629
220	170			750	578	608	638
230	178			760	586	616	646
240	185			770	593	624	655
250	193			780	601	632	663
260	201			790	609	640	672
270	208			800	616	648	680
280	216			810	624	657	689
290	224			820	632	665	697
300	231			830	640	673	706
310	239			840	647	681	714
320	247			850	655	689	723
330	255			860	663	697	732
340	262			870	670	705	740
350	270			880	678	713	748
360	278			890	686	721	757
370	285			900	690	729	765
380	293			910	701	738	774
390	301			920	709	746	782
400	308			930	717	754	791
410	316			940	724	762	799
420	324			950	732	770	808
430	332			960	740	778	816
440	339			970	747	786	825
450	347			980	755	794	833
460	355			990	763	802	842
470	362			<b>Continued on next page</b>			
480	370						
490	378						
500	385	405					
510	393	414					
520	401	423					
530	409	430					
540	416	438					

**BRAKING TABLE FOR ME120 TRAINS (in tonnes) (continued)**

Hauled weight	Necessary braked weight depending on the length of the train			Hauled weight	Necessary braked weight depending on the length of the train		
	≤ 550 m	> 550 m ≤ 650 m	> 650 m		≤ 550 m	> 550 m ≤ 650 m	> 650 m
1000	770	810	850	1520	1170	1231	1292
1010	778	819	859	1530	1178	1239	1301
1020	786	827	867	1540	1186	1247	1309
1030	794	835	876	1550	1194	1256	1318
1040	801	843	884	1560	1201	1264	1326
1050	809	851	893	1570	1209	1272	1335
1060	817	859	901	1580	1217	1280	1343
1070	824	867	910	1590	1224	1288	1352
1080	832	875	918	1600	1232	1296	1360
1090	840	883	927				
1100	847	891	935				
1110	855	900	944				
1120	863	908	952				
1130	871	916	961				
1140	878	924	969				
1150	886	932	978				
1160	894	940	986				
1170	901	948	995				
1180	909	956	1003				
1190	917	964	1012				
1200	924	972	1020				
1210	932	981	1029				
1220	940	989	1037				
1230	948	997	1046				
1240	955	1005	1054				
1250	963	1013	1063				
1260	971	1021	1071				
1270	978	1029	1080				
1280	985	1037	1088				
1290	994	1045	1097				
1300	1001	1053	1105				
1310	1009	1062	1114				
1320	1017	1070	1125				
1330	1025	1078	1131				
1340	1032	1086	1139				
1350	1040	1094	1148				
1360	1048	1102	1156				
1370	1055	1110	1165				
1380	1063	1118	1173				
1390	1071	1126	1182				
1400	1078	1134	1190				
1410	1086	1143	1199				
1420	1094	1151	1207				
1430	1102	1159	1215				
1440	1109	1167	1224				
1450	1117	1175	1233				
1460	1125	1183	1241				
1470	1132	1191	1250				
1480	1140	1199	1258				
1490	1148	1207	1267				
1500	1155	1215	1275				
1510	1163	1223	1284				

## 19. Protocol for use of GSM-R on HS1

### 19.1 Description

GSM-R provides a dedicated digital satellite communication network for HS1 which functions throughout the length of the operational railway.

Communication is provided by mobile handsets allocated to all HS1 functions and three dispatcher terminals on the Shift Manager's, signaller's and EMMIS Controller's workstations at Ashford AFC.

Functions include:

- Voice Broadcast function.
- Voice Group Call function.
- Railway Emergency Call function.

#### 19.1.1 Voice Broadcast function

Enables a person to broadcast calls on HS1 to any of the groups selected. This function only allows the broadcaster to transmit a voice call and does not allow any other person to talk. It can be used for communicating general information regarding, for example:

- Train running.
- Maintenance work.
- Potential hazards along the trace.
- Incidents.

#### 19.1.2 Voice Group Call function

Enables a group of people to create a dedicated back-to-back radio facility. This function can be used for communications during the following:

- Incidents when a Rail Incident Officer (RIO) is appointed and the Emergency Plan is invoked
- Shunting operations within a worksite
- General group communication

#### 19.1.3 Railway Emergency Call function

Enables a person to send an immediate emergency general call throughout the length of the operational railway. This call will also be transmitted to the dispatcher terminals in Ashford AFC.

### 19.2 General Use

Use of the GSM-R facility is mandatory on CTRL, when it is available, and GSM-R contact details must be given to the Site Access Control Centre (SACC) when accessing the operational railway.

When using GSM-R, the requirements of the Section 18 of Module G of the Rule Book "Giving and receiving safety messages", must be complied with at all times.

### 19.3 Voice Group Calls using 'Press to Talk' (PTT) function

#### 19.3.1 Rail Incidents

When it is necessary to invoke the Command Structure protocol as detailed in the Emergency Plan, the following communications procedure must be followed when using GSM-R.

The appointed RIO will assume the lead and initiate the setting up of the Rail Incident Function number which can be selected from the list of available Group Function numbers.

The RIO must advise the EMMIS Controller that the Command Structure is to be implemented and that the Rail Incident Function number selected by the RIO will be used for Rail Incident Group Calls (RIGC). This information must be sent out on general paging message.

Only personnel appointed by the RIO shall allocate themselves the appropriate RIGC number. They must advise the RIO when set up on the appropriate RIGC number.

The Rail Incident Commander, when appointed, must set up on the appropriate RIGC number and advise the RIO.

If any member of the group is relieved during the incident, they must advise the RIO. The incoming member of the group must ensure that they are properly registered into the appropriate RIGC number.

When using the Voice Group Call facility it is mandatory to use safety critical protocol as specified in the Rule Book when passing safety related messages.

It is important that only the Rail Incident Commander and those people appointed by the RIO use the RIGC number allocated. Normally, the dispatcher terminals in Ashford AFC will automatically be assigned access to all Voice Group Calls.

The following call signs must be used by the members of the group during communications:

- Rail Incident Commander** - *'Gold 1'*
- Rail Incident Officer** - *'Silver1'*
- Site Co-ordinator** - *'Bronze 1'*
- Site Safety Manager** - *'Bronze 2'*
- Environmental Manager** - *'Bronze 3'*
- Recovery engineer** - *'Bronze 4'*
- Evidence co-ordinator** - *'Bronze 5'*

### 19.3.2 Shunting within a worksite

This procedure is to be used when using Voice Group Calls using 'Press to Talk' (PTT) facility whilst shunting works trains, OTM and OTP within a worksite, when it is necessary for the STS to communicate with any driver for the purpose of authorising a movement.

The Works Planner must allocate a three digit Voice Group Function number to any works which require movements within a worksite and publish it in the Daily Notice. A different number must be allocated for each worksite. This will be referred to as the 'Shunting function' number.

Before a movement takes place within a worksite, the STS must ensure that he/she is registered into the appropriate 'Shunting function' number as published in the Daily Notice.

Before any movement takes place, the STS must ensure that all works trains, OTMs and OTP drivers are registered into the same 'Shunting function' number by making a test call to the other members of the group.

All communications using the Voice Group Function must be made between the STS and the drivers using safety critical protocol as specified in the Rule Book when passing safety related messages.

The following call signs must be allocated. The STS must ensure that all drivers are advised of their call signs before any movement takes place.

- Senior Task Supervisor** - *'Sierra Tango Sierra (TS) 1'*
- Works Train Driver no 1** - *'Works Train Alpha'*
- Works Train Driver no. 2** - *'Works Train Bravo'*
- Works Train Driver no. 3** - *'Works Train Charlie'*
- etc.

## 19.4 GSM-R Railway Emergency Call function

The GSM-R Emergency Call function must be used to give warning when an emergency occurs which may endanger any person within a worksite.

The Railway Emergency Call is a group call throughout the length of the operational railway so the Voice Group Call procedure is applied for voice arbitration and 'Press to Talk' (PTT) use.

If you become aware of an incident which may endanger any person within a worksite, a GSM-R Railway Emergency Call must be made using the handset facility and followed up with an emergency broadcast announcing the reason for the emergency call.

If you are within a worksite and you receive a GSM-R Railway Emergency Call you must:

- If in the Danger Zone** immediately return to the **Safe Zone**,
- If in the Safe Zone** remain in the **Safe Zone**,

Until the person sending the Railway Emergency Call announces that the situation is safe.

## 20. Additional procedures in connection with Class 373 (Eurostar) trains

### 20.1 Eurostar personnel travelling on ECS movements between St. Pancras International Station and Temple Mills International Depot

Eurostar personnel are authorised to travel on designated ECS trains between St. Pancras International Station and Temple Mills International Depot subject to the following conditions:

Personnel must:

- report to the driver before departure,
- be trained in the London Tunnels environment,
- access the train via the leading driving cab door,
- travel in the leading passenger vehicle only.

The driver must tell the signaller (if starting from St. Pancras International Station) or the operations controller (if starting from Temple Mills International Depot) that there are personnel in the train and their number.

The signaller and operations controller must tell each other.

### 20.2 Degraded traction mode

#### 20.2.1 Trains terminating at St. Pancras International Station

A Class 373 (Eurostar) train terminating at St. Pancras International Station with three or more motor blocks (out of six) inactive may be unable to restart if stopped at Block Section Markers AF050/AF052 or lineside colour light stop signals AF046/AF048 in London Tunnel 1.

If the signaller is told that a train is in degraded traction mode, they must:

- route it into the Up or Down International platform line (platform 1 or 4) at Stratford.
- maintain Block Section Marker AF058/AF066 closed.
- set the route throughout to lineside colour light signals AF016/AF018/AF020.
- open Block Section Marker AF050/AF052.
- make sure colour light signal AF046/AF048 is showing a proceed aspect.

- open Block Section Marker AF058/AF066.

When Block Section Marker AF058/AF066 opens, the driver must proceed normally obeying the indications given by the cab signalling equipment, the colour light signals and information given by lineside signs.

### **20.2.2 ECS movements from St. Pancras International Station to Temple Mills International Depot**

A Class 373 (Eurostar) ECS movement from St. Pancras International Station to Temple Mills International Depot with three or more motor blocks (out of six) inactive may be unable to restart if stopped on the steep gradients between the station and the entrance to London Tunnel 1 or on the Stratford/Temple Mills International Depot Link line.

If the signaller is told that a train is in degraded traction mode, they must:

- liaise with the operations controller at Temple Mills International Depot to ensure that a clear route can be set to colour light signal TM5 and that colour light signal TM5 is showing a proceed aspect.
- set the route throughout to colour light signal TM5.
- make sure all Block Section Markers in the route are open.
- make sure all colour light signals are showing a proceed aspect.
- clear the platform starting colour light signal.

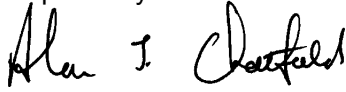
When the platform starting colour light signal shows a proceed aspect, the driver must proceed normally obeying the indications given by the colour light signals, the cab signalling equipment and information given by lineside signs.

<b>CTRL</b>	CTRL Level Two Standard
	C/OP/OS/05/2002
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## **CTRL Sectional Appendix Part 16d**

### **Local instructions - Ashford West and East chords**

Prepared by



.....  
**Alan Chatfield**  
**Rules & Procedures Manager CTRL**

Authorised By:



.....  
**Andy Verrall**  
**Production Manager, CTRL**

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# **LOCAL INSTRUCTIONS ASHFORD WEST AND EAST CHORDS**

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## 1. Scope of this section

This section applies to the interface between Network Rail controlled infrastructure and CTRL controlled infrastructure on the West and East Ashford chords.

It details:

- The principles for the operation of trains between Network Rail and CTRL in both normal and degraded situations.
- Arrangements for the execution of work on the infrastructure over the interface between Network Rail, and CTRL.
- Arrangements for controlling the traction current supply, including the arrangements necessary for taking isolations.

## 2 Operational Control Centres and the boundaries of their control

### 2.1 Signalling

The CTRL cab signalling system is controlled from its Ashford Control Centre (AFC)

The Track Circuit Block signalling system is controlled from the Network Rail Ashford signalling control centre (IECC).

The boundary between their areas of control is as follows.

	Down direction	Up direction
<b>Ashford West chord</b>		
<b>Ashford Control Centre (AFC)</b>		
Down	As far as IECC signal AD947 (exclusive)	From CTRL signal AF318 (inclusive)
Up	As far as IECC signal AD949 (exclusive)	From CTRL signal AF312 (inclusive)
<b>Ashford Signalling Centre (IECC)</b>		
Down	From IECC signal AD947 (inclusive)	As far as CTRL signal AF318 (exclusive)
Up	From IECC signal AD949 (inclusive)	As far as CTRL signal AF312 (exclusive)
<b>Ashford East chord</b>		
<b>Ashford Control Centre (AFC)</b>		
Down	From CTRL signal AF313 (inclusive)	As far as IECC signal AD956 (exclusive)
Up	From CTRL signal AF319 (inclusive)	As far as IECC signal AD954 (exclusive)
<b>Ashford Signalling Centre (IECC)</b>		
Down	As far as CTRL signal AF313 (exclusive)	From IECC signal AD956 (inclusive)
Up	As far as CTRL signal AF319 (exclusive)	From IECC signal AD954 (inclusive)

### 2.2 Traction power supply

The CTRL 25kv AC system is controlled from its Ashford Control Centre (AFC)

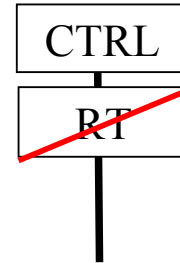
The Network Rail 25kv AC system is controlled from its Electrical Control Room (ECR) located at Paddock Wood.

The boundary between their areas of control is the isolation transformers at kilometrage 089.465 (west chord) and kilometrage 091.110 (west chord).

### 3 Application of rules, regulations, and instructions

The signs published in clause 4.5 of module S1 of the CTRL Rule Book are in the style shown:

These signs indicating the change in applicable rules only apply to traincrews. Other employees working on the operational railway to apply the rules and procedures of the infrastructure controller they are working for and to contact the control centres defined in those rules and procedures.



### 4 Instructions

#### 4.1 Personal safety when on the operational railway





##### 4.1.1 Access to the AFC signalled controlled area

Employees entering the AFC signalled controlled area must have been passed as competent in the Personal Track Safety Rules of the infrastructure controller they are working for and carry the current relevant certificate of competence with them.

#### 4.2 Signalling

##### 4.2.1 Description of lineside signals AF312, AF313, AF318 and AF319

Lineside signals AF312, AF313, AF318 and AF319 are colour light signals controlled by the AFC and are identified by a signal post plate showing the signal number in white letters on a black background. They control entry to the cab-signalled area and display the following indications:

Description of Aspect	Colour of aspect	Meaning
 DANGER	Red light	STOP Contact the AFC Signaller
 CAUTION	One yellow light	PROCEED: Be prepared to find '000 warning – STOP' indication when the cab signalling arms.
 PRELIMINARY CAUTION	Two yellow lights ( <i>vertically displayed</i> )	PROCEED: Be prepared to find 'Warning – Speed Restriction' displayed when cab signalling arms.
 CLEAR	Green light	PROCEED: Be prepared to find appropriate movement authority displayed when the cab signalling arms

#### 4.2.2 Auxiliary signals on markers AF453, AF455, AF462 and AF464

The AFC Signaller must only open the auxiliary signal on these markers to allow the movement of Works trains in connection with a Protected Area or an OHLE isolation.

#### 4.2.3 Provision of cab signalling equipment in driving cabs

All traction units proceeding beyond signals AF312, AF313, AF318 and AF319 must be fitted with working cab signalling equipment in the driving cab in which the driver is situated, unless specially authorised as shown in Module UF of the CTRL Rule Book. Drivers of traction units not fitted with working cab signalling equipment must stop at signals AF312, AF313, AF318 and AF319 and contact the AFC Signaller for instructions.

The AFC Signaller must stop any train routed towards the CTRL and **not** described as a class 9 at signal AF185 and ascertain from the driver if the train is fitted with working cab signalling equipment.

### 4.3 Failure of Signalling Equipment

#### 4.3.1 Principles

When a failure of points, track circuits or train describers occurs that prevents the normal signalling of trains between the IECC and AFC, the AFC Signaller and IECC Signaller must advise each other the extent of the failure.

The AFC Signaller must advise the AFC Shift Manager and EMMIS Controller as to the nature of the failure and record the details accordingly.

The AFC Signaller and IECC Signaller must reach a clear understanding with each other and agree a method by which train movements will be made.

#### 4.3.2 Failure of signal to clear or marker to open at signalling interface

If the failure of signalling equipment in the interface of the AFC and VASC signalling control area prevents:

- the IECC Signaller clearing signals:
  - West chord (up direction) – AD672, AD674, AD676, AD678
  - East chord (down direction) – AD665, AD667, AD669, AD671
- the AFC Signaller opening markers (main route or auxiliary route):
  - West chord (down direction) – AF301, AF303, AF453, AF455
  - East chord (up direction) – AF326, AF328, AF462, AF464

the following procedure must be observed:

- The AFC Signaller or IECC Signaller must check the conditions for clearing the signal/opening the marker, requesting, when required, information from the other Signaller concerning the state of the line within their area.
- If a track circuit is showing occupied, the AFC Signaller or IECC Signaller must arrange for an examination of the line to be carried out, if necessary using the first affected train over the line concerned in accordance with the International Forms Procedure.
- The AFC Signaller or VASC Signaller must use the International Forms Procedure to authorise the drivers of trains to pass the signal at danger/closed marker.
- The AFC Signaller or VASC Signaller must inform the other Signaller when the movement has passed clear of the affected section and, if the line has been examined, the driver's remarks.

#### 4.3.3 Failure of signals AF312, AF313, AF318 and AF319 to open

If the failure of signalling equipment prevents the AFC Signaller opening signals AF312, AF313, AF318 or AF319, the AFC Signaller must dictate the form FASI from the International Forms Procedure to instruct the drivers of trains to pass them closed.

The failure of the cab signalling arming device at the entrance to the cab signalling area will prevent signals AF312, AF313, AF318 or AF319 being opened. When instruction drivers to pass these signals closed, the AFC Signaller must instruct drivers to manually arm the cab signalling equipment when dictating form FASI.

#### 4.3.4 Failure of direction of flow indicators

The AFC Signaller or IECC Signaller Controller must not attempt to set a route that conflicts with a Direction of Flow Arrow for a route already set by the other Signaller.

If however, after setting a route, a "Direction of Flow Arrow" is not illuminated or if a failure occurs that causes the indicators for both directions to be shown, the AFC Signaller and IECC Signaller must agree with each other the direction of flow for each line. This should always follow the primary direction for each line, i.e.. down direction on the Down line, up direction on the Up line. The method of working will be as in point 4.3.2.

#### 4.4 Train working (degraded operation)

##### 4.4.1 Train failure

If a train fails within the interface between the IECC and AFC signalling control, or is in any way unable to continue, the driver will contact either the IECC or AFC depending on where the train has stopped. The Signaller who is initially advised by the driver becomes the 'lead' Signaller and will be responsible for initiating the course of action required to assist the failed train.

#### 4.5 Protection arrangements for engineering works, etc.

##### 4.5.1 Principles

1. Each infrastructure controller's personnel (including maintenance contractors) to apply the rules and procedures of the infrastructure controller that they are working for.
2. Each infrastructure controller's personnel to request track protection/isolations of the OHLE from the control centre defined in the rules and procedures of the infrastructure controller that they are working for.
3. When work in the Danger Zone is required to take place, the arrangements contained in this section will apply. In all cases the line concerned will be blocked to all normal train movements.

##### 4.5.2 Track possessions

###### 4.5.2.1 Method

###### 4.5.2.1.1 CTRL initiates the protection request

Module T3 of the CTRL Rule Book applies with the following additional requirements:

- The RPOS must request the Protected Area from the AFC Signaller using the Forms Process, quoting the identities of the required EZP(s) and, the blockage of the required line(s) on the Ashford west or east chords. *(Part 1 of Form POSS)*
- The AFC Signaller must protect the required EZP(s) in accordance with clause 5.2 of module T3 of the CTRL Rule Book. If EZPs FD13 or FU14 (west chord) or FD19 or FU18 (east chord) are required to be protected, without a blockage of the line, the AFC Signaller must first request permission of the IECC Signaller.
- **Blockage of the west or east chord**
  - The AFC Signaller must request the IECC Signaller to block the required line(s) on the west or east chord.
  - The IECC Signaller will confirm to the AFC Signaller when the required line(s) on the Waterloo connection are blocked.
  - The AFC Signaller must confirm to the RPOS that signal protection has been provided.
  - The RPOS must operate the required EZP switches and place detonator protection and a Possession Limit Board as described in Section T3 of the Network Rail Rule Book at the following locations:

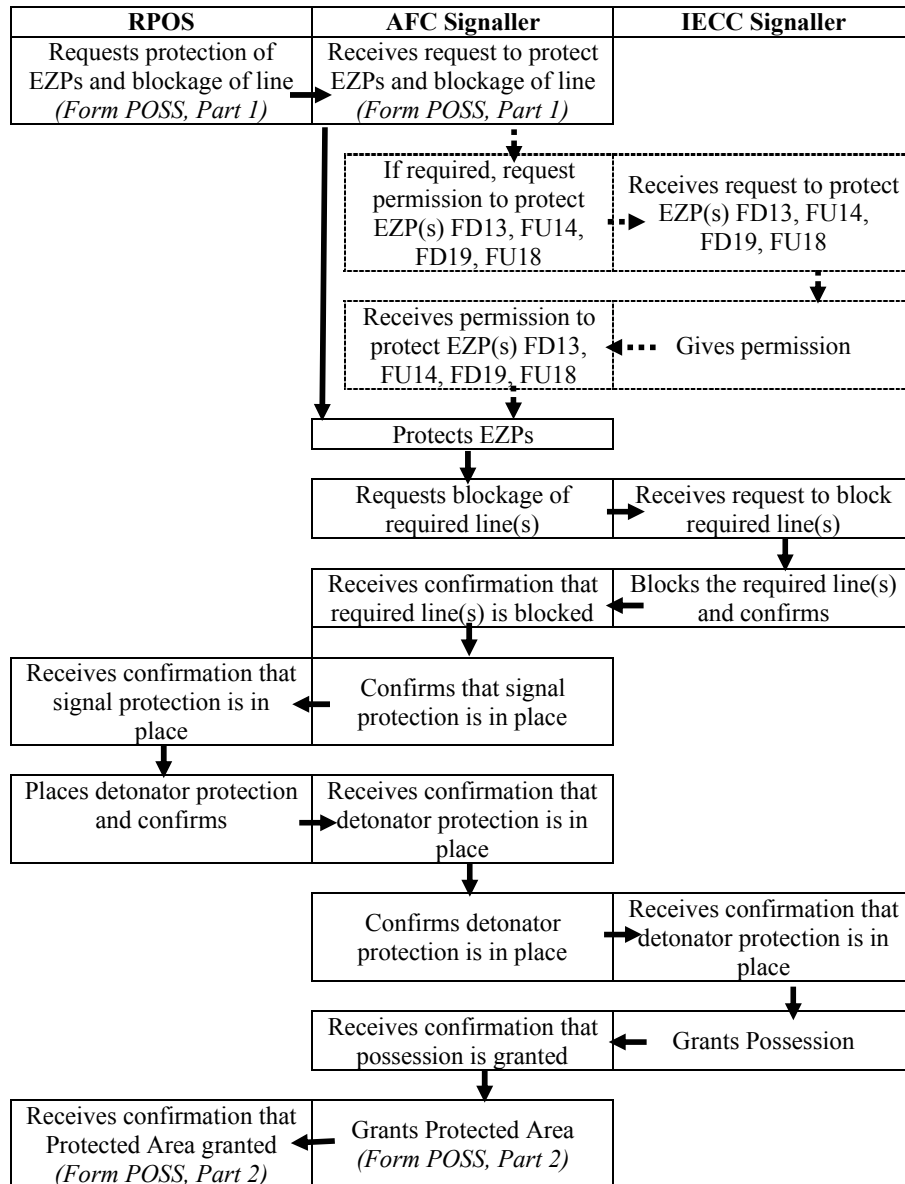
<b>West chord</b>	
Down line	Clear of 1247 points at Ashford West Jn.
Up line	Clear of 1247 points at Ashford West Jn.
<b>East chord</b>	
Down line	Clear of 1298 points at Ashford East Jn.
Up line	Clear of 1299 points at Ashford East Jn.

and confirm to the AFC Signaller when this is done.

- The AFC Signaller must confirm to the IECC Signaller that detonator protection is in place.
- The IECC Signaller will grant the possession to the AFC Signaller in accordance with Section T3 of the Network Rail Rule Book.

- The AFC Signaller must only grant the Protected Area request to the RPOS in accordance with clause 5.2 of module T3 of the CTRL Rule Book, when **all** the requested EZP(s) have been protected **and** the IECCC Signaller has granted the possession.

### Summary of process



#### 4.5.2.1.2 Network Rail initiates the protection request

- The IECC Signaller will request the AFC Signaller to provide protection.
- The AFC Signaller to protect EZP(s) FD13, FU14, FD19, FU18, as required, and confirm to the IECC Signaller when protected.

#### 4.5.2.2 Giving up a Protected Area

##### 4.5.2.2.1 CTRL initiated the protection request

- The RPOS must operate the required EZP switches, remove detonator protection Possession Limit Board(s) and confirm to the AFC Signaller that the line is clear and safe for trains to run on.
- The AFC Signaller must advise the IECC Signaller that the possession has been given up and that the line is clear and safe for trains to run on.

**4.5.2.2 Network Rail initiated the protection request**

- The IECC Signaller will advise the AFC Signaller that the possession has been given up and that protection is no longer required.
- The IECC Signaller may then remove the protection and signal trains normally.

**4.5.2.3 Movements of works trains from/to the IECC signalled controlled area**

With reference to clause 8.1 of module T3 of the CTRL Rule Book, the form ATPA (Driver) is NOT issued to drivers of works trains entering the Protected Area from the IECC signalled controlled areas.

**4.5.2.3.1 If the Ashford west or east chord has been blocked****Movements into the Protected Area**

- If a works train requiring to enter the Protected Area arrives at signal AD672, AD674, AD676, AD678, AD665, AD667, AD669 or AD671, the IECC Signaller will request permission of the AFC Signaller to allow the train to proceed.
- The AFC Signaller must obtain permission from the RPOS that the train can proceed and confirm to the IECC Signaller when permission is given.
- When the AFC Signaller has given permission, the IECC Signaller will set the route, instruct the driver to pass the signal at danger and to proceed cautiously to the detonator protection.
- The RPOS must arrange for the detonator protection to be removed and instruct the driver to proceed cautiously to the worksite marker boards.
- When the works train has passed clear, the RPOS must replace the detonator protection and advise the AFC Signaller that the works train has passed clear of the detonator protection.
- The AFC Signaller must advise the IECC Signaller that the works train has passed clear of the detonator protection

**Movements from the Protected Area**

- When a works train is ready to leave the Protected Area, it must be stopped at the detonator protection and the RPOS advise the AFC Signaller that the train is ready to leave.
- Before allowing a works train to leave the Protected Area towards the IECC signalled controlled area, the AFC Signaller must request permission from the IECC Signaller.
- When the VASC Signaller has given permission, the AFC Signaller must instruct the RPOS to authorise the works train to proceed cautiously to the first IECC controlled signal.
- The RPOS must arrange for the detonator protection to be removed and instruct the driver to proceed cautiously to the first IECC controlled signal.
- When the works train has passed clear, the RPOS must replace the detonator protection.

**4.5.2.3.2 If EZP FD13, FU14, FD19 or FU18 has been protected without a blockage of the Down Line**

- If a works train requiring to enter the Protected Area arrives at signal AD672, AD674, AD676, AD678, AD665, AD667, AD669 or AD671, the IECC Signaller will request permission of the AFC Signaller to allow the train to proceed.
- The AFC Signaller must confirm to the IECC Signaller when permission is given.
- When the AFC Signaller has given permission, the IECC Signaller will set the route, instruct the driver to pass the signal at danger and to proceed to signal AF312, AF318, AF313 or AF319.
- On arrival at signal AF312, AF313, AF318 or AF319, the AFC Signaller to instruct the driver to pass the signal at danger and to enter the Protected Area.

**4.5.3 OHLE isolations in connection with engineering work****4.5.3.1 Protection arrangements for electrical sections/Sels**

The OHLE controlled by the AFC and Paddock Wood ECR is divided into separate electrical sections as shown in the isolation diagrams, appropriate copies of which are held in these controls and Ashford IECC.

These instructions apply to the isolation of electrical sections 715A, 715J 716A, & 716L (controlled by the AFC) and electrical sections 715B, 715C, 715F, 715G, 715H, 716B, 716C, 716D, 716J & 716K (controlled by Paddock Wood ECR).

The protecting signals/markers for each electrical section are detailed in figure 1. Before any electrical section is isolated, the Electrical Control Room Operator (ECRO) or EMMIS Controller arranging the isolation must have received an assurance that the required electrical section(s) has been blocked to electric train movements in accordance with the arrangements specified in the following points.

The AFC Signaller to record details of messages with the IECC in connection with signal protections for isolations on Form F shown in figure 2.

#### **4.5.3.2 Isolation of electrical section(s) 715A, 715J, 716A or 716L**

##### **4.5.3.2.1 CTRL initiates the isolation request**

Module T3 of the CTRL Rule Book applies.

##### **4.5.3.2.2 Network Rail initiates the isolation request**

- Nominated Person requests ECRO to isolate the electrical section(s) concerned.
- ECRO requests EMMIS Controller to isolate the electrical section(s) concerned.
- EMMIS Controller to agree with AFC Signaller that the electrical section(s) concerned can be isolated.
- EMMIS Controller to isolate the electrical section(s) concerned in accordance with his control room instructions.
- EMMIS Controller confirms to ECRO that the electrical section(s) concerned are isolated.
- ECRO confirms to Nominated Person that the electrical section(s) concerned are isolated.

When the isolation is no longer required, the ECRO to request EMMIS Controller to re-energise the electrical section(s) concerned.

#### **4.5.3.3 Isolation of electrical sections 715B, 715C, 715F, 715G, 715H, 716B, 716C, 716D, 716J or 716K**

##### **4.5.3.3.1 Network Rail initiates the isolation request**

- Nominated Person requests ECRO to isolate the electrical section(s) concerned.
- ECRO requests IECC Signaller to block to electric trains the electrical section(s) concerned.
- IECC Signaller requests AFC Signaller to block to electric trains the electrical section(s) concerned.  
*(Part 4 of Form F)*
- AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- AFC Signaller confirms to IECC Signaller that block to electric trains is in place. *(Part 5 of Form F)*
- IECC Signaller confirms to ECRO that block to electric trains is in place.
- ECRO carries out the switching instructions in order to isolate the electrical section(s) concerned.
- ECRO confirms to Nominated Person that the electrical sections concerned are isolated.



**Figure 1 - Electrical sections – Signalling Protection arrangements**

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
715A	Up East chord	Switch 713A/715A at catenary mast Y92/26 Switch 715/1 at catenary mast Y92/24	AF326 – AF462	AF319 – AF329	
715B	Up East chord	Switch 715/2 at catenary mast Y92/19 Switch 715/3 at catenary mast Y91/13	AF326 – AF462	AD665 – AF319 AD667 – AF319 AD669 – AF319 AD671 – AF319	
715C	Up East chord	Switch 715/4 at catenary mast Y91/12 Switch 715/5 at catenary mast YA2/62	AD954 – AD672 AD954 – AD674 AD954 – AD786 AD954 – AD788 AF462 – AD954	AD665 – AF319 AD667 – AF319 AD669 – AF319 AD671 – AF319	
715F	Up West chord	Switch 715/9 at catenary mast YA1/48 Switch 715/10 at catenary mast YA1/20	AD672 – AD854 AD672 – AD856 AD672 – AF312 AD672 – AF318 AD674 – AD854 AD674 – AD856 AD674 – AF312 AD676 – AD660 AD676 – AD662X AD676 – AD854 AD676 – AD856 AD676 – AF312 AD678 – AD660 AD678 – AD662X AD678 – AD854 AD678 – AD856 AD678 – AF312 AD672 – AF312 AD674 – AF312 AD676 – AF312 AD678 – AF312 AF312 – AF302	AD847 – AD671 AD949 – AD669 AD949 – AD671 AD949 – AD783 AF453 – AD949	Dual – voltage trains may operate through this isolation on DC traction power
715G	Up West chord	Switch 715/10 at catenary mast YA1/20 Switch 715/11 at catenary mast YA1/07		AF453 – AD949	

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
715H	Up West chord	Switch 715/12 at catenary mast YA1/06 Switch 715/13 at catenary mast Y88/18	AF312 – AF302	AF303 – AF453	
715J	Up West chord	Switch 715/14 at catenary mast Y88/16 Switch 713C/715J at catenary mast Y88/15	AF312 – AF302	AF303 – AF453	
716A	Down West chord	Switch 714E/716A at catenary mast Y88/15 Switch 716/1 at catenary mast Y88/16	AF318 – AF308	AF301 – AF451	
716B	Down West chord	Switch 716/2 at catenary mast Y88/18 Switch 716/3 at catenary mast YA1/06	AF318 – AF308	AF301 – AF451	
716C	Down West chord	Switch 716/4 at catenary mast YA1/07 Switch 716/5 at catenary mast YA1/20	AD672 – AF318 AD674 – AF318 AD676 – AF318 AD676 – AF318 AF318 – AF308	AF451 – AD947	
716D	Down West chord	Switch 716/5 at catenary mast YA1/20 Switch 716/8 at catenary mast YA1/47	AD672 – AF318 AD674 – AF318 AD676 – AF318 AD676 – AF318 AF318 – AF308	AD947 – AD669 AD947 – AD671 AD947 – AD781 AD947 – AD783 AF451 – AD947	
716J	Down East chord	Switch 716/12 at catenary mast YA2/55 Switch 716/13 at catenary mast Y91/12	AD956 – AD672 AD956 – AD674 AD956 – AD786 AD956 – AD788 AF464 – AD956	AD665 – AF313 AD667 – AF313 AD669 – AF313 AD671 – AF313	
716K	Down East chord	Switch 716/14 at catenary mast Y91/13 Switch 716/15 at catenary mast Y92/19	AF328 – AF464	AD665 – AF313 AD667 – AF313 AD669 – AF313 AD671 – AF313	
716L	Down East chord	Switch 716/16 at catenary mast Y92/24 Switch 714G/716L at catenary mast Y92/26	AF328 – AF464	AF313 – AF323	

Figure 2: Form F

<b>Form F – Signalling protection procedure for OHLE isolations at the IECC/AFC Interface</b>		
<b>Record of messages between the AFC and IECC</b>		
<b>CTRL initiates the protection request</b>		
<b>Part 1 Arranging Block to Electric Trains</b>		
<u><b>AFC to IECC</b></u>		
Block to electric trains, electrical section(s) .....		
Time.....	Date.....	Message No.....
<b>Part 2 Confirming Block to Electric Trains</b>		
<u><b>IECC to AFC</b></u>		
Reference your message no.....electrical section(s) .....are blocked to electric trains		
Time.....	Date.....	Message No.....
<b>Part 3 Removing Block to Electric Trains</b>		
<u><b>AFC to IECC</b></u>		
Reference your message no.....you may remove the block to electric trains for electrical section(s) .....		
Time.....	Date.....	Message No.....
<b>Network Rail initiates the protection request</b>		
<b>Part 4 Arranging Block to Electric Trains</b>		
<u><b>IECC to AFC</b></u>		
Block to electric trains, electrical section(s) .....		
Time.....	Date.....	Message No.....
<b>Part 5 Confirming Block to Electric Trains</b>		
<u><b>AFC to IECC</b></u>		
Reference your message no.....electrical section(s) .....are blocked to electric trains		
Time.....	Date.....	Message No.....
<b>Part 6 Removing Block to Electric Trains</b>		
<u><b>IECC to AFC</b></u>		
Reference your message no.....you may remove the block to electric trains for electrical section(s) .....		
Time.....	Date.....	Message No.....

**4.5.3.3.2 CTRL initiates isolation request**

- NPOS requests EMMIS Controller to isolate the electrical section(s) concerned. *(Form ISOL)*
- EMMIS Controller requests AFC Signaller to block to electric trains the electrical section(s) concerned.
- AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- AFC Signaller requests IECC Signaller to block to electric trains the electrical section(s) concerned. *(Part 1 of Form F)*
- IECC Signaller confirms to AFC Signaller that block to electric trains is in place. *(Part 2 of Form F)*
- AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.
- EMMIS Controller requests ECRO to isolate the electrical section(s) concerned.
- ECRO confirms to EMMIS Controller that the electrical section(s) concerned is isolated.
- EMMIS Controller confirms to NPOS that the electrical section(s) concerned are isolated. *(Form ISOL)*
- NPOS carries out local protection measures and issues Overhead Line Permit(s).

**4.5.3.4 Re-energisation of electrical sections 715B, 715C, 715F, 715G, 715H, 716B, 716C, 716D, 716J or 716K****4.5.3.4.1 Network Rail initiated the isolation request**

- Nominated Person cancels isolation with ECRO.
- ECRO carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- ECRO advises IECC Signaller that signal protection for the electrical section(s) concerned can be removed.
- IECC Signaller advises AFC Signaller that signalling protection for the electrical section(s) concerned can be removed. *(Part 6 of Form F)*
- AFC Signaller removes signalling protection for the electrical section(s) concerned.

**4.5.3.4.2 CTRL initiated the isolation request**

- NPOS cancels isolation with EMMIS Controller. *(Form ISOL)*
- EMMIS Controller requests ECRO to re-energise the electrical section(s) concerned.
- ECRO carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- ECRO informs EMMIS Controller that the electrical section (s)concerned is re-energised.
- EMMIS Controller advises AFC Signaller that signal protection for the electrical section(s) concerned can be removed.
- AFC Signaller removes signalling protection for the electrical section(s) concerned.
- AFC Signaller advises IECC Signaller that the block to electric trains for the electrical section(s) concerned can be removed. *(Part 2 of Form F)*

## 4.6 Temporary speed restrictions

### 4.6.1 Principles

To cover the transition between the lineside and cab signalling systems, the principles shown below must be complied with:

- All temporary lineside warning boards and indicators erected in the IECC signalled areas to show the speeds in both mph and km/h.  
The upper indicator to show the speed in mph with black letters on a yellow background  
The lower indicator to show the speed in km/h with yellow letters on a black background
- Differential temporary speed restrictions are not permitted.
- Any lineside warning board erected in the IECC signalled areas to have an AWS magnet as shown in Section U(i) of the Network Rail Rule Book except where agreed with the Train Operating Companies.
- Any lineside warning board erected in the AFC signalled area to have a spot data device as shown in Module SR2 of the CTRL Rule Book
- When a temporary speed restriction has to be imposed in the interface between the IECC and AFC signalling control areas, the person responsible for planning the restriction must consult with the maintenance contractor of the adjacent infrastructure controller regarding the provision of lineside warning boards and indicators and/or the operation of the switches within the lineside signalling room.
- Arrangements must be made for all temporary speed restrictions to be planned and published in accordance with the Network Rail and CTRL Rule Books. The necessary calculations required in Railway Group Standard GK/RT0038 must be carried out by a competent, licensed person approved by the infrastructure controllers and employed by either the maintenance contractor or project works contractor. Use should be made, where possible, of the facilities provided by the cab signalling system to avoid use of lineside warning boards and indicators within the cab signalled area.

### 4.6.2 Application of temporary speed restrictions

#### 4.6.2.1 West chord

##### 4.6.2.1.1 Down direction

In the down direction, drivers are advised of temporary speed restrictions by means of the cab signalling system and, if necessary, lineside warning boards and indicators in accordance with Modules SR1 and SR2 of the CTRL Rule Book as far as the **CAB** board and thence by lineside warning boards and indicators in accordance with Section U(i) of the Network Rail Rule Book.

Temporary speed restrictions that are required to cross the transition of the cab to lineside signalling systems, i.e. applies both sides of the **CAB** board, to comply with the table shown below:

Speed limit applied on the CTRL controlled infrastructure in km/h	Speed limit applied on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside warning boards & indicators)	25	40
80 (by cab signalling display)	50	80

A lineside indicator to show the speed to be applied on the Network Rail controlled infrastructure to be placed at the **CAB** board in order that the driver has a visual reminder of the speed once the cab signalling system has disarmed.

Temporary speed restrictions that commence London side of the **CAB** board, to comply and be advised in accordance with the table below:

Speed required and displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure		Speed limit displayed on the CTRL controlled infrastructure in km/h
mph	km/h	
25	40	40 (by lineside warning boards)
50*	80*	80 (by cab signalling display)

\* A lineside warning board or indicator (as appropriate) to be placed at the **CAB** board in order that the driver has a visual reminder of the speed to be applied once the cab signalling system has disarmed.

#### Special case of temporary speed restrictions of less than 25 mph (40 km/h)

If a temporary speed restriction of less than 25 mph (40 km/h) is imposed that would require a lineside warning board to be positioned before the **CAB** board, the lineside warning boards and indicators on the Network Rail controlled infrastructure are to display the following equivalent speeds in mph and km/h:

Temporary speed restriction in km/h	Speed limit displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
10	5	10
20	10	20
30	20	30

A lineside warning board or indicator (as appropriate) to be placed at the **CAB** board

In addition the AFC Signaller must:

- stop trains at markers AF453/AF455,
- advise the driver (using the International Forms procedure), indicating:
  - the location and length of the restriction,
  - the speed limit in force.
- open the marker with the cab signalling system displaying a speed of 80 km/h

#### 4.6.2.1.2 Up direction

In the up direction, drivers are advised of temporary speed restrictions by means of lineside warning boards and indicators in accordance with Section U(i) of the Network Rail Rule Book upto and including signals AF312/AF318 and thence by the cab signalling system and, if necessary, lineside indicators in accordance with Modules SR1 and SR2 of the CTRL Rule Book.

Temporary speed restrictions that are required to cross the transition of the lineside to cab signalling systems, i.e. applies both sides of signals AF312/AF318, to comply with the table shown below:

Speed limit applied on the CTRL controlled infrastructure in km/h	Speed limit applied and displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside indicators)	25	40
80 (by cab signalling display)	50	80

Temporary speed restrictions that commence London side of signals AF312/AF318 to be advised in accordance with the table shown below:

Speed limit applied on the CTRL controlled infrastructure in km/h	Speed limit displayed by lineside warning boards on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside indicators)	25	40

**Special case of temporary speed restriction of less than 40 km/h that applies both sides of signals AF312/AF318**

If a temporary speed restriction of less than 40 km/h is imposed that extends beyond signals AF312/AF318 the lineside warning boards and indicators on the Network Rail controlled infrastructure are to display the following equivalent speeds in mph:

Temporary speed restriction in km/h	Speed limit displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
10	5	10
20	10	20
30	20	30

In addition, the AFC Signaller must:

- stop trains at signals AF312/AF318,
- advise the driver (using the International Forms procedure), indicating:
  - the location and length of the restriction,
  - the speed limit in force.
- open the signal

**4.6.2.2 Ashford East chord****4.6.2.2.1 Down direction**

In the down direction, drivers are advised of temporary speed restrictions by means of lineside warning boards and indicators in accordance with Section U(i) of the Network Rail Rule Book upto and including signals AF313/AF319 and thence by the cab signalling system and, if necessary, lineside indicators in accordance with Modules SR1 and SR2 of the CTRL Rule Book.

Temporary speed restrictions that are required to cross the transition of the lineside to cab signalling systems, i.e. applies both sides of signals AF313/AF319, to comply with the table shown below:

Speed limit applied on the CTRL controlled infrastructure in km/h	Speed limit applied and displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside indicators)	25	40
80 (by cab signalling display)	50	80
100 (by lineside indicators)	60	100

Temporary speed restrictions that commence Channel Tunnel of signals AF313/AF319 to be advised in accordance with the table shown below:

Speed limit applied on the CTRL controlled infrastructure in km/h	Speed limit displayed by lineside warning boards on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside indicators)	25	40
100 (by lineside indicators)	60	100

**Special case of temporary speed restriction of less than 40 km/h that applies both sides of signals AF313/AF319**

If a temporary speed restriction of less than 40 km/h is imposed that extends beyond signals AF313/AF319 the lineside warning boards and indicators on the Network Rail controlled infrastructure are to display the following equivalent speeds in mph:

Temporary speed restriction in km/h	Speed limit displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
10	5	10
20	10	20
30	20	30

In addition, the AFC Signaller must:

- stop trains at signals AF313/AF319,
- advise the driver (using the International Forms procedure), indicating:
  - the location and length of the restriction,
  - the speed limit in force.
- open the signal.

**4.6.2.2.2 Up direction**

In the up direction, drivers are advised of speed restrictions by means of the cab signalling system and, if necessary, temporary lineside warning boards and indicators in accordance with Modules SR1 and SR2 of the CTRL Rule Book as far as the **CAB** board and thence by lineside warning boards and indicators in accordance with Section U(i) of the Network Rail Rule Book.

Temporary speed restrictions that are required to cross the transition of the cab to lineside signalling systems, i.e. applies both sides of the **CAB** board, to comply with the table shown below:

Speed limit applied on the CTRL controlled infrastructure in km/h	Speed limit applied on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside warning boards & indicators)	25	40
80 (by cab signalling display)	50	80
100 (by lineside warning boards & indicators)	60	100

A lineside indicator to show the speed to be applied on the Network Rail controlled infrastructure to be placed at the **CAB** board in order that the driver has a visual reminder of the speed once the cab signalling system has disarmed

Temporary speed restrictions that commence Ashford side of the **CAB** board, to comply and be advised in accordance with the table below:

Speed required and displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure		Speed limit displayed on the CTRL controlled infrastructure in km/h
mph	km/h	
25	40	40 (by lineside warning boards)
50*	80*	80 (by cab signalling display)
60	100	100 (by lineside warning boards)

\* A lineside warning board or indicator (as appropriate) to be placed at the **CAB** board in order that the driver has a visual reminder of the speed to be applied once the cab signalling system has disarmed.



**Special case of temporary speed restrictions of less than 25 mph (40 km/h)**

If a temporary speed restriction of less than 25 mph (40 km/h) is imposed that would require a warning board to be positioned before the **CAB** board, the warning boards and indicators on the Network Rail controlled infrastructure are to display the following equivalent speeds in mph and km/h:

Temporary speed restriction in km/h	Speed limit displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
10	5	10
20	10	20
30	20	30

A lineside warning board or indicator (as appropriate) to be placed at the **CAB** board

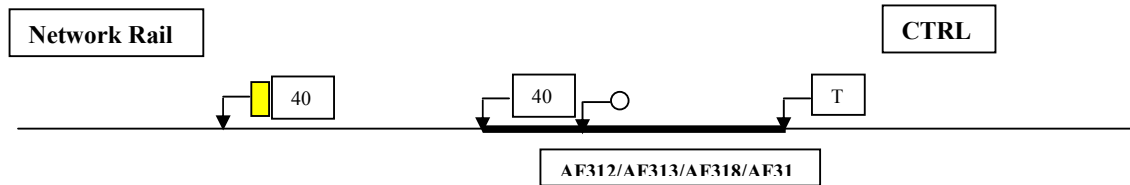
In addition, the AFC Signaller must:

- stop trains at markers AF462/AF464,
- advise the driver (using the International Forms procedure), indicating:
  - the location and length of the restriction,
  - the speed limit in force.
- open the marker with the cab signalling system displaying a speed of 80 km/h

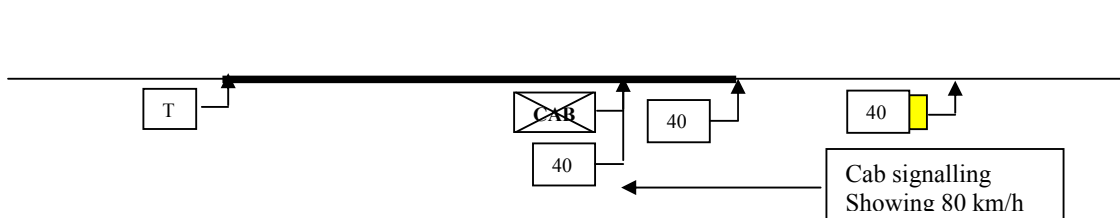
**4.6.3 Examples of the application of temporary speed restrictions**

The speeds indicated are in km/h.

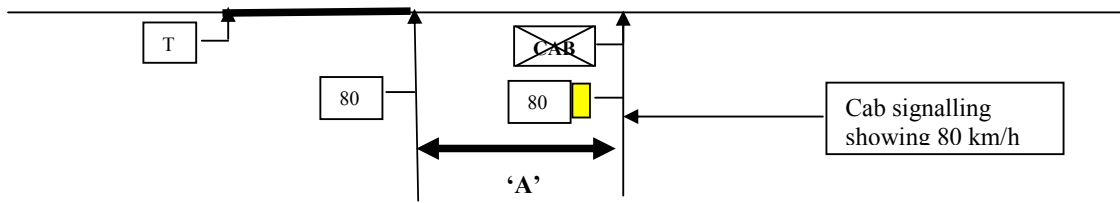
**Speed restriction is both sides of an AFC controlled signal**



**Speed restriction is both sides of the **CAB** board**



Speed restriction is completely on the Network Rail side of the **CAB** board



**Note:** If the above example, as the distance “A”, is less than the required braking distance, the lineside warning board will be placed at the **CAB** board and the cab signalling system to show 80 km/h. If the speed restriction commences at or just on the Network Rail side of the **CAB** board, a lineside warning board will not be provided but the lineside indicator will be placed at the **CAB** board and the advice will be given by the cab signalling system showing 80 km/h.

#### 4.7 Emergency speed restrictions

##### 4.7.1 Principles

Lineside indicators are to be erected in accordance with point 4.6.2. However, because a lineside emergency indicator cannot be placed before the **CAB** board in the up direction, there may not be a space to erect one before its associated warning board. In these cases the function of the lineside emergency indicator is to be carried out by the cab signalling system.

##### 4.7.2 Imposition

If an emergency speed restriction becomes necessary, the person responsible for imposing the restriction to advise the IECC Signaller, the speed limit to be applied, stating the kilometre points at its extremities and the estimated duration of the restriction. Arrangements must also be made to erect temporary lineside indicators.

The IECC Signaller to advise the AFC Signaller details of the temporary speed, who must enter it into the cab signalling system, if applicable. Where the speed does not accord with that available to the AFC Signaller, the next lowest cab signalled speed to be used.

##### 4.7.2.1 Network Rail to CTRL direction

Until such time that the lineside indicators are erected, if any part of the emergency speed restriction is in rear of the first AFC controlled signal/marker, then the IECC Signaller must stop trains at the signal in rear of the restriction and advise drivers its location and speed in accordance with the International Forms procedure.

##### 4.7.2.2 CTRL to Network Rail direction

Until such time that the lineside indicators are erected, if any part of the emergency speed restriction is between the **CAB** board and the first IECC signal, then the AFC Signaller must stop trains at the last marker and advise drivers its location and speed in accordance with the International Forms procedure.

<b>CTRL</b>	CTRL Level Two Standard
	C/OP/OS/05/2002
	Date: July 2003

## **CTRL Sectional Appendix Part 16f**

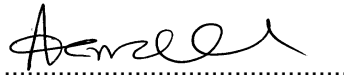
### **Local instructions - Dollands Moor freight chord**

Prepared by



**Alan Chatfield**  
**Rules & Procedures Manager CTRL**

Authorised By:



**Andy Verrall**  
**Production Manager, CTRL**

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R-SA-UA-00024-08-URO-AA

# **LOCAL INSTRUCTIONS DOLLANDS MOOR FREIGHT CHORD**

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## 1. Scope of this section

This section applies to the interface between the EWS controlled infrastructure (signalling and traction power supply controlled by Network Rail) and CTRL controlled infrastructure on the Dollands Moor freight chord.

It details:

- The principles for the operation of trains between the Network Rail signalled control area and CTRL in both normal and degraded situations.
- Arrangements for the execution of work on the infrastructure over the interface.
- Arrangements for controlling the traction current supply, including the arrangements necessary for taking isolations.

## 2 Operational Control Centres and the boundaries of their control

### 2.1 Signalling

The CTRL cab signalling system is controlled from its AshFord Control Centre (AFC)

The Track Circuit Block signalling system is controlled from the Network Rail Ashford signalling control centre (IECC).

The boundary between their areas of control is as follows.

	Down direction	Up direction
<b>Ashford Control Centre (AFC)</b>		
Single	As far as IECC signal AD759 (exclusive)	From CTRL marker AF342 (inclusive)
<b>Ashford Signalling Centre (IECC)</b>		
Single	From IECC signal AD759 (inclusive)	As far as CTRL marker AF342 (exclusive)

### 2.2 Traction power supply

The CTRL 25kv AC system is controlled from its AshFord Control Centre (AFC)

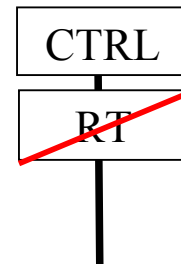
The Network Rail 25kv AC system is controlled from its Electrical Control Room (ECR) located at Paddock Wood.

The boundary between their areas of control is the isolation transformers at kilometrage 106.075.

## 3 Application of rules, regulations, and instructions

The signs published in clause 4.5 of module S1 of the CTRL Rule Book are in the style shown:

These signs indicating the change in applicable rules only apply to traincrews. Other employees working on the operational railway to apply the rules and procedures of the infrastructure controller they are working for and to contact the control centres defined in those rules and procedures.



## 4 Instructions

### 4.1 Personal safety when on the operational railway

#### 4.1.1 Access to the AFC signalled controlled area

Employees entering the AFC signalled controlled area must have been passed as competent in the Personal Track Safety Rules of the infrastructure controller they are working for and carry the current relevant certificate of competence with them.

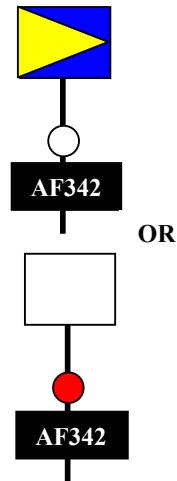
## 4.2 Signalling

### 4.2.1 Description of marker AF342 “Hidden Marker”

This route origin marker is located on the freight chord for movements in the up direction. The marker is provided with TPWS in addition to the normal cab signalling controls. It can display:

- a marker formed by the illumination of LEDs, **OR**
- a fixed red light

The red light is illuminated when the marker is closed and is provided as a limit for shunting movements onto the freight chord from Dollands Moor Yard. The illumination of both the marker and the red aspect must be treated as an abnormal aspect. When the marker is opened for movements onto the CTRL the marker will become illuminated and the red light extinguished. If neither the red light or marker is illuminated the marker must be regarded as “closed”, i.e. a stop aspect.



### 4.2.2 Auxiliary signal on marker AF471

The AFC Signaller must only open the auxiliary signal on this marker to allow the movement of Works trains in connection with a Protected Area or an OHLE isolation.

### 4.2.3 Provision of cab signalling equipment in driving cabs

All traction units proceeding beyond marker AF342 must be fitted with working cab signalling equipment in the driving cab in which the driver is situated, unless specially authorised as shown in Module UF of the CTRL Rule Book. Drivers of traction units not fitted with working cab signalling equipment must stop at marker AF342 and contact the AFC Signaller for instructions.

The AFC Signaller must stop any train routed towards the CTRL and **not** described as a class 9 at marker AF342 and ascertain from the driver if the train is fitted with working cab signalling equipment.

## 4.3 Failure of Signalling Equipment

### 4.3.1 Principles

When a failure of points, track circuits or train describers occurs that prevents the normal signalling of trains between the IECC and AFC, the AFC Signaller and IECC Signaller must advise each other the extent of the failure.

The AFC Signaller must advise the AFC Shift Manager and EMMIS Controller as to the nature of the failure and record the details accordingly.

The AFC Signaller and IECC Signaller must reach a clear understanding with each other and agree a method by which train movements will be made.

### 4.3.2 Failure of signal to clear or marker to open at signalling interface

If the failure of signalling equipment in the interface of the AFC and IECC signalling control area prevents:

- the IECC Signaller clearing signals AD808, AD814, AD816 or AD818
- the AFC Signaller opening markers AF335, AF337 or AF471 (main route or auxiliary route)

the following procedure must be observed:

- The AFC Signaller or IECC Signaller must check the conditions for clearing the signal/opening the marker, requesting, when required, information from the other Signaller concerning the state of the line within their area.
- If a track circuit is showing occupied, the AFC Signaller or IECC Signaller must arrange for an examination of the line to be carried out, if necessary using the first affected train over the line concerned in accordance with the International Forms Procedure.
- The AFC Signaller or IECC Signaller must use the International Forms Procedure to authorise the drivers of trains to pass the signal at danger/closed marker.
- The AFC Signaller or IECC Signaller must inform the other Signaller when the movement has passed clear of the affected section and, if the line has been examined, the driver's remarks.

### 4.3.3 Failure of the cab signalling arming beacon

The failure of the cab signalling arming beacon on the Dollands Moor freight chord will prevent the IECC controlled signals AD808, AD814, AD816 and AD818 being cleared. The AFC Signaller must advise the IECC Signaller that the cab signalling arming beacon has failed. When instructing drivers to pass these signals at danger, the IECC Signaller will advise them that the cab signalling equipment will not arm automatically.

## 4.4 Train working (degraded operation)

### 4.4.1 Train failure

If a train fails within the interface between the IECC and AFC signalling control, or is in any way unable to continue, the driver will contact either the IECC or AFC depending on where the train has stopped. The Signaller who is initially advised by the driver becomes the 'lead' Signaller and will be responsible for initiating the course of action required to assist the failed train.

## 4.5 Protection arrangements for engineering works, etc.

### 4.5.1 Principles

1. Each infrastructure controller's personnel (including maintenance contractors) to apply the rules and procedures of the infrastructure controller that they are working for.
2. Each infrastructure controller's personnel to request track protection/isolations of the OHLE from the control centre defined in the rules and procedures of the infrastructure controller that they are working for.
3. When work in the Danger Zone is required to take place, the arrangements contained in this section will apply. In all cases the line concerned will be blocked to all normal train movements.

## 4.5.2 Track possessions

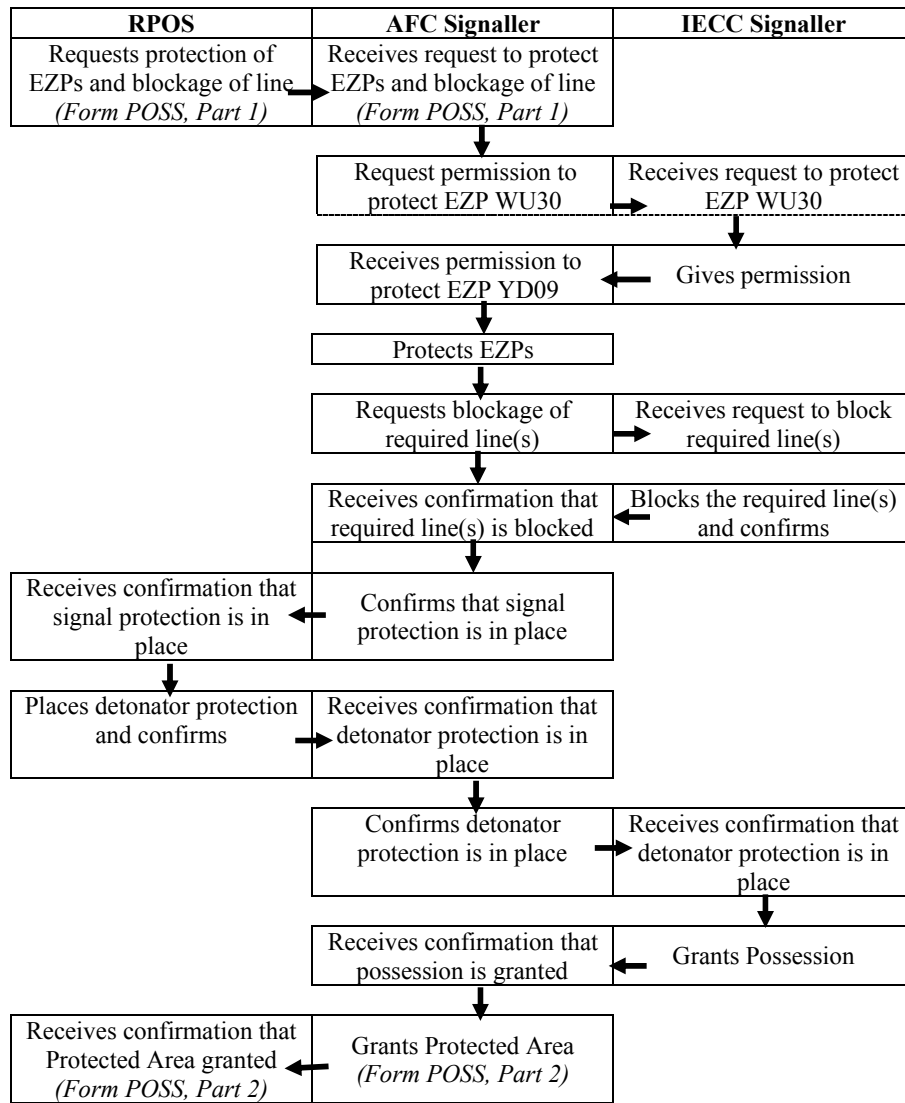
### 4.5.2.1 Method

#### 4.5.2.1.1 CTRL initiates the protection request

Module T3 of the CTRL Rule Book applies with the following additional requirements:

- The RPOS must request the Protected Area from the AFC Signaller using the Forms Process, quoting the identities of the required EZP(s) and, the blockage of the freight chord. *(Part 1 of Form POSS)*
- The AFC Signaller must protect the required EZP(s) in accordance with clause 5.2 of module T3 of the CTRL Rule Book. If EZP WU30 is required to be protected, without a blockage of the freight chord, the AFC Signaller must first request permission of the IECC Signaller.
- **Blockage of the Waterloo connection**
  - The AFC Signaller must request the IECC Signaller to block the required line(s) on the Waterloo connection.
  - The IECC Signaller will confirm to the AFC Signaller when the required line(s) on the Waterloo connection are blocked.
  - The AFC Signaller must confirm to the RPOS that signal protection has been provided.
  - The RPOS must:
    - operate the required EZP switches and place detonator protection and a Possession Limit Board as described in Section T3 of the Network Rail Rule Book clear of 1350 points at the west end of Dollands Moor Yard.
    - arrange for the AHB level crossing to be operated locally, if required
    - confirm to the AFC Signaller when this is done.
  - The AFC Signaller must confirm to the IECC Signaller that detonator protection is in place.
  - The IECC Signaller will grant the possession to the AFC Signaller in accordance with Section T3 of the Network Rail Rule Book.
- The AFC Signaller must only grant the Protected Area request to the RPOS in accordance with clause 5.2 of module T3 of the CTRL Rule Book, when **all** the requested EZP(s) have been protected **and** the IECC Signaller has granted the possession.



**Summary of process****4.5.2.1.2 Network Rail initiates the protection request**

- The IECC Signaller will request the AFC Signaller to provide protection.
- The AFC Signaller to protect EWP WU30 and confirm to the VASC Signaller when it is protected.

**4.5.2.2 Giving up a Protected Area****4.5.2.2.1 CTRL initiated the protection request**

- The RPOS must operate the required EWP switches, remove detonator protection Possession Limit Board(s) and confirm to the AFC Signaller that the line is clear and safe for trains to run on.
- The AFC Signaller must advise the IECC Signaller that the possession has been given up and that the line is clear and safe for trains to run on.

**4.5.2.2.2 Network Rail initiated the protection request**

- The VASC Signaller will advise the AFC Signaller that the possession has been given up and that protection is no longer required.
- The AFC Signaller may then remove the protection and signal trains normally.

#### 4.5.2.3 Movements of works trains from/to the IECC signalled controlled area

With reference to clause 8.1 of module T3 of the CTRL Rule Book, the form ATPA (Driver) is NOT issued to drivers of works trains entering the Protected Area from the IECC signalled controlled areas.

##### 4.5.2.3.1 Movements into the Protected Area

- If a works train requiring to enter the Protected Area arrives at signal AD808, AD814, AD816 or AD818, the IECC Signaller will request permission of the AFC Signaller to allow the train to proceed.
- The AFC Signaller must obtain permission from the RPOS that the train can proceed and confirm to the IECC Signaller when permission is given.
- When the AFC Signaller has given permission, the IECC Signaller will set the route, instruct the driver to pass the signal at danger and to proceed cautiously to the detonator protection.
- The RPOS must arrange for the detonator protection to be removed and instruct the driver to proceed cautiously to the worksite marker boards.
- When the works train has passed clear, the RPOS must replace the detonator protection and advise the AFC Signaller that the works train has passed clear of the detonator protection.
- The AFC Signaller must advise the IECC Signaller that the works train has passed clear of the detonator protection

##### 4.5.2.3.2 Movements from the Protected Area

- When a works train is ready to leave the Protected Area, it must be stopped at the detonator protection and the RPOS advise the AFC Signaller that the train is ready to leave.
- Before allowing a works train to leave the Protected Area towards the IECC signalled controlled area, the AFC Signaller must request permission from the VASC Signaller.
- When the IECC Signaller has given permission, the AFC Signaller must instruct the RPOS to authorise the works train to proceed cautiously to the first IECC controlled signal.
- The RPOS must arrange for the detonator protection to be removed and instruct the driver to proceed cautiously to the first IECC controlled signal.
- When the works train has passed clear, the RPOS must replace the detonator protection.

#### 4.5.3 OHLE isolations in connection with engineering work

##### 4.5.3.1 Protection arrangements for electrical sections/Sels

The OHLE controlled by the AFC and Paddock Wood ECR is divided into separate electrical sections as shown in the isolation diagrams, appropriate copies of which are held in these controls and Ashford IECC.

These instructions apply to the isolation of electrical sections 718E (controlled by the AFC) and electrical sections 600B & 718F (controlled by Paddock Wood ECR).

The protecting signals/markers for each electrical section are detailed in figure 1. Before any electrical section is isolated, the Electrical Control Room Operator (ECRO) or EMMIS Controller arranging the isolation must have received an assurance that the required electrical section(s) has been blocked to electric train movements in accordance with the arrangements specified in the following points.

The AFC Signaller to record details of messages with the IECC in connection with signal protections for isolations on Form F shown in figure 2.

**Figure 1 - Electrical sections – Signalling Protection arrangements**

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
600B	Sidings 3 to 6 at west end of Dollands Moor Yard	Neutral section at kilometrage 106.955	AD808 – AD756 AD808 – AD758 AD808 – AF342 AD808 to 'R' Neck AD808 to West Siding AD814 – AD756 AD814 – AD758 AD814 – AF342 AD814 to 'R' Neck AD814 to West Siding AD816 – AD756 AD816 – AD758 AD816 – AF342 AD816 to 'R' Neck AD816 to West Siding AD818 – AD756 AD818 – AD758 AD818 – AF342 AD818 to 'R' Neck AD818 to West Siding	AD759 – AD795 AD759 – AD797 AD759 – AD799 AD759 – AD803 AD759 – 2163 AD759 – 2165 2153 – AD797 2153 – AD799 2153 – AD803 2153 – 2163 2153 – 2165 2157 – AD797 2157 – AD799 2157 – AD803 2157 – 2163 2157 – 2165	Dual – voltage trains may operate through this isolation on DC traction power
718E	Freight chord	Switch 718/6 Switch 718/9	AD808 – AF342 AD814 – AF342 AD816 – AF342 AD818 – AF342 AF342 – AF334 AF342 – AF336	AF335 – AF471 AF337 – AF471 AF593 – AF471	
718F	Freight chord	Switch 718/11 Neutral section at kilometrage 106.955	AD808 – AF342 AD814 – AF342 AD816 – AF342 AD818 – AF342	AF335 – AF471 AF337 – AF471 AF593 – AF471	

Figure 2: Form F

<b>Form F – Signalling protection procedure for OHLE isolations at the IECC/AFC Interface</b>		
<b>Record of messages between the AFC and IECC</b>		
<b>CTRL initiates the protection request</b>		
<b>Part 1</b>	<b>Arranging Block to Electric Trains</b>	
<u><b>AFC to IECC</b></u>		
Block to electric trains, electrical section(s) .....		
Time.....	Date.....	Message No.....
<b>Part 2</b>	<b>Confirming Block to Electric Trains</b>	
<u><b>IECC to AFC</b></u>		
Reference your message no.....electrical section(s) .....are blocked to electric trains		
Time.....	Date.....	Message No.....
<b>Part 3</b>	<b>Removing Block to Electric Trains</b>	
<u><b>AFC to IECC</b></u>		
Reference your message no.....you may remove the block to electric trains for electrical section(s) .....		
Time.....	Date.....	Message No.....
<b>Network Rail initiates the protection request</b>		
<b>Part 4</b>	<b>Arranging Block to Electric Trains</b>	
<u><b>IECC to AFC</b></u>		
Block to electric trains, electrical section(s) .....		
Time.....	Date.....	Message No.....
<b>Part 5</b>	<b>Confirming Block to Electric Trains</b>	
<u><b>AFC to IECC</b></u>		
Reference your message no.....electrical section(s) .....are blocked to electric trains		
Time.....	Date.....	Message No.....
<b>Part 6</b>	<b>Removing Block to Electric Trains</b>	
<u><b>IECC to AFC</b></u>		
Reference your message no.....you may remove the block to electric trains for electrical section(s) .....		
Time.....	Date.....	Message No.....

**4.5.3.2 Isolation of electrical section 718E****4.5.3.2.1 CTRL initiates the isolation request**

Module T3 of the CTRL Rule Book applies.

**4.5.3.2.2 Network Rail initiates the isolation request**

- Nominated Person requests ECRO to isolate the electrical section.
- ECRO requests EMMIS Controller to isolate the electrical section.
- EMMIS Controller to agree with AFC Signaller that the electrical section can be isolated.
- EMMIS Controller to isolate the electrical section in accordance with his control room instructions.
- EMMIS Controller confirms to ECRO that the electrical section is isolated.
- ECRO confirms to Nominated Person that the electrical section is isolated.

When the isolation is no longer required, the ECRO to request EMMIS Controller to re-energise the electrical section.

**4.5.3.3 Isolation of electrical sections 600B or 718F****4.5.3.3.1 Network Rail initiates the isolation request**

- Nominated Person requests ECRO to isolate the electrical section(s) concerned.
- ECRO requests IECC Signaller to block to electric trains the electrical section(s) concerned.
- IECC Signaller requests AFC Signaller to block to electric trains electrical section 718F.  
*(Part 4 of Form F)*
- AFC Signaller consults the Isolation Instructions for electrical section 718F and inhibits the designated markers.
- AFC Signaller confirms to IECC Signaller that block to electric trains is in place. *(Part 5 of Form F)*
- IECC Signaller confirms to ECRO that block to electric trains is in place.
- ECRO carries out the switching instructions in order to isolate the electrical section(s) concerned.

ECRO confirms to Nominated Person that the electrical sections concerned are isolated.

**4.5.3.3.2 CTRL initiates isolation request**

- NPOS requests EMMIS Controller to isolate the electrical section(s) concerned. *(Form ISOL)*
- EMMIS Controller requests AFC Signaller to block to electric trains the electrical section(s) concerned.
- AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- AFC Signaller requests IECC Signaller to block to electric trains the electrical section(s) concerned.  
*(Part 1 of Form F)*
- IECC Signaller confirms to AFC Signaller that block to electric trains is in place. *(Part 2 of Form F)*
- AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.
- EMMIS Controller requests ECRO to isolate the electrical section(s) concerned.
- ECRO confirms to EMMIS Controller that the electrical section(s) concerned is isolated.
- EMMIS Controller confirms to NPOS that the electrical section(s) concerned are isolated. *(Form ISOL)*
- NPOS carries out local protection measures and issues Overhead Line Permit(s).

#### 4.5.3.4 Re-energisation of electrical sections 600B or 718F

##### 4.5.3.4.1 Network Rail initiated the isolation request

- Nominated Person cancels isolation with ECRO.
- ECRO carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- ECRO advises IECC Signaller that signal protection for the electrical section(s) concerned can be removed.
- IECC Signaller advises AFC Signaller that signalling protection for electrical section 718F can be removed. *(Part 6 of Form F)*
- AFC Signaller removes signalling protection for electrical section 718F.

##### 4.5.3.4.2 CTRL initiated the isolation request

- NPOS cancels isolation with EMMIS Controller. *(Form ISOL)*
- EMMIS Controller requests ECRO to re-energise the electrical section(s) concerned.
- ECRO carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- ECRO informs EMMIS Controller that the electrical section (s)concerned is re-energised.
- EMMIS Controller advises AFC Signaller that signal protection for the electrical section(s) concerned can be removed.
- AFC Signaller removes signalling protection for electrical section 718F.
- AFC Signaller advises VASC Signaller that the block to electric trains for the electrical section(s) concerned can be removed. *(Part 2 of Form F)*

## 4.6 Temporary speed restrictions

### 4.6.1 Principles

To cover the transition between the lineside and cab signalling systems, the principles shown below must be complied with:

- All temporary lineside warning boards and indicators erected in the IECC signalled areas to show the speeds in both mph and km/h.  
The upper indicator to show the speed in mph with black letters on a yellow background  
The lower indicator to show the speed in km/h with yellow letters on a black background
- Differential temporary speed restrictions are not permitted.
- Any lineside warning board erected in the IECC signalled areas to have an AWS magnet as shown in Section U(i) of the Network Rail Rule Book except where agreed with the Train Operating Companies.
- Any lineside warning board erected in the AFC signalled area to have a spot data device as shown in Module SR2 of the CTRL Rule Book
- When a temporary speed restriction has to be imposed in the interface between the IECC and AFC signalling control areas, the person responsible for planning the restriction must consult with the maintenance contractor of the adjacent infrastructure controller regarding the provision of lineside warning boards and indicators and/or the operation of the switches within the lineside signalling room.
- Arrangements must be made for all temporary speed restrictions to be planned and published in accordance with the Network Rail and CTRL Rule Books. The necessary calculations required in Railway Group Standard GK/RT0038 must be carried out by a competent, licensed person approved by the infrastructure controllers and employed by either the maintenance contractor or project works contractor. Use should be made, where possible, of the facilities provided by the cab signalling system to avoid use of lineside warning boards and indicators within the cab signalled area.

## 4.6.2 Application of temporary speed restrictions

### 4.6.2.1 Down direction

In the down direction, drivers are advised of temporary speed restrictions by means of lineside warning boards and indicators in accordance with Module SR2 of the CTRL Rule Book as far as the **CAB** board and thence by lineside warning boards and indicators in accordance with Section U(i) of the Network Rail Rule Book.

Temporary speed restrictions that are required to cross the transition of the cab to lineside signalling systems, i.e. applies both sides of the **CAB** board, to comply with the table shown below:

Speed limit applied on the CTRL controlled infrastructure in km/h	Speed limit applied on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside warning boards & indicators)	25	40

#### Special case of temporary speed restrictions of less than 20 mph (30 km/h)

If a temporary speed restriction of less than 25 mph (40 km/h) is imposed that would require a lineside warning board to be positioned before the **CAB** board, the lineside warning boards and indicators on the Network Rail controlled infrastructure are to display the following equivalent speeds in mph and km/h:

Temporary speed restriction in km/h	Speed limit displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
10	5	10
20	10	20

A lineside warning board or indicator (as appropriate) to be placed at the **CAB** board

In addition the AFC Signaller must:

- stop trains at marker AF471,
- advise the driver (using the International Forms procedure), indicating:
  - the location and length of the restriction,
  - the speed limit in force.
- open the marker with the cab signalling system displaying a speed of 80 km/h

### 4.6.2.2 Up direction

In the up direction, drivers are advised of temporary speed restrictions by means of lineside warning boards and indicators in accordance with Section U(i) of the Network Rail Rule Book upto marker AF342 and thence by the cab signalling system and, if necessary, lineside indicators in accordance with Modules SR1 and SR2 of the CTRL Rule Book.

Temporary speed restrictions that are required to cross the transition of the lineside to cab signalling systems, i.e. applies both sides of marker AF342, to comply with the table shown below:

Speed limit applied on the CTRL controlled infrastructure in km/h	Speed limit applied and displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside indicators)	25	40
80 (by cab signalling display)	50	80

Temporary speed restrictions that commence Ashford side of marker AF342 to be advised in accordance with the table shown below:

Speed limit applied and displayed on the CTRL controlled infrastructure in km/h	Speed limit displayed by lineside warning boards & indicators on the Network Rail controlled infrastructure	
	mph	km/h
40 (by lineside indicators)	25	40

**Special case of temporary speed restriction of less than 40 km/h that applies both sides of marker AF342**

If a temporary speed restriction of less than 40 km/h is imposed that extends beyond marker AF342 the lineside warning boards and indicators on the Network Rail controlled infrastructure are to display the following equivalent speeds in mph:

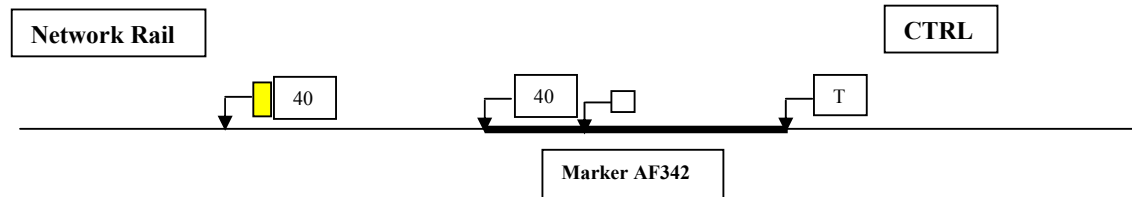
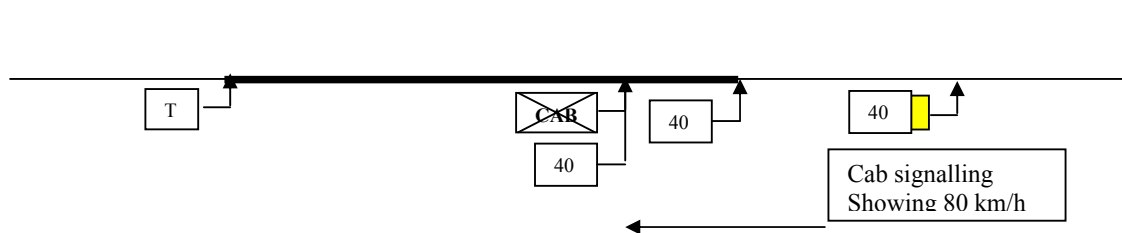
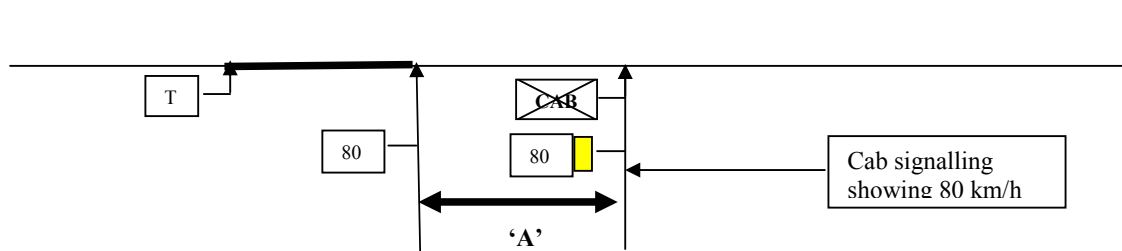
Temporary speed restriction in km/h	Speed limit displayed by temporary lineside warning boards & indicators	
	mph	km/h
10	5	10
20	10	20
30	20	30

In addition, the AFC Signaller must:

- stop trains at marker AF342,
- advise the driver (using the International Forms procedure), indicating:
  - the location and length of the restriction,
  - the speed limit in force.
- open the marker with the cab signalling system displaying a speed of 80 km/h

**4.6.3 Examples of the application of temporary speed restrictions**

The speeds indicated are in km/h.

**Speed restriction is both sides of marker AF342****Speed restriction is both sides of the CAB board****Speed restriction is completely on the Network Rail side of the CAB board**

**Note:** If the above example, as the distance “A”, is less than the required braking distance, the lineside warning board will be placed at the CAB board and the cab signalling system to show 80 km/h. If the speed restriction commences at or just on the Network Rail side of the CAB board, a lineside warning board will not be provided but the lineside indicator will be placed at the CAB board and the advice will be given by the cab signalling system showing 80 km/h.



## **4.7 Emergency speed restrictions**

### **4.7.1 Principles**

Lineside indicators are to be erected in accordance with point 4.6.2. However, because a lineside emergency indicator cannot be placed before the **CAB** board in the up direction, there may not be a space to erect one before its associated warning board. In these cases the function of the lineside emergency indicator is to be carried out by the cab signalling system.

### **4.7.2 Imposition**

If an emergency speed restriction becomes necessary, the person responsible for imposing the restriction to advise the IECC Signaller, the speed limit to be applied, stating the kilometre points at its extremities and the estimated duration of the restriction. Arrangements must also be made to erect temporary lineside indicators.

The IECC Signaller to advise the AFC Signaller details of the temporary speed, who must enter it into the cab signalling system, if applicable. Where the speed does not accord with that available to the AFC Signaller, the next lowest cab signalled speed to be used.

#### **4.7.2.1 Network Rail to CTRL direction**

Until such time that the lineside indicators are erected, if any part of the emergency speed restriction is in rear of marker AF342, then the IECC Signaller must stop trains at the signal in rear of the restriction and advise drivers its location and speed in accordance with the International Forms procedure.

#### **4.7.2.2 CTRL to Network Rail direction**

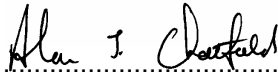
Until such time that the lineside indicators are erected, if any part of the emergency speed restriction is between the **CAB** board and signal AD759, then the AFC Signaller must stop trains at the last marker and advise drivers its location and speed in accordance with the International Forms procedure.

<b>CTRL</b>	CTRL Level Two Standard
	C/OP/OS/05/2002
	Date: June 2003

## **CTRL Sectional Appendix Part 16g**

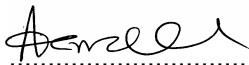
### **Local instructions - CTRL/Eurotunnel/Network Rail Interface at Cheriton**

Prepared by



.....  
**Alan Chatfield**  
**Rules & Procedures Manager CTRL**

Authorised By:



.....  
**Andy Verrall**  
**Production Manager, CTRL**

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R-SA-UA-00016-08-URO-AA

# **LOCAL INSTRUCTIONS**

## **CTRL/EUROTUNNEL/NETWORK RAIL**

### **INTERFACE AT CHERITON**

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  - 4.1 Signalling
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- 6.8 Protection arrangements for engineering works, etc.
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  - 6.8.2 Track possessions
  - 6.8.3 OHLE isolations in connection with engineering work
  - 6.8.4 Isolation of the D.C. conductor rail
- 6.9 Temporary speed restriction
  - 6.9.1 General principles
  - 6.9.2 Down direction
  - 6.9.3 Up direction
  - 6.9.4 Examples of the application of temporary speed restrictions
  - 6.9.5 Planning of temporary speed restrictions
- 6.10 Emergency speed restrictions
  - 6.10.1 Principles
  - 6.10.2 Imposition
- 6.11 Incident management
  - 6.11.1 Incident on the Concession
  - 6.11.2 Attendance of CTRL Rail Incident Officer
  - 6.11.3 Attendance of emergency services

## **Appendices**

1. Telephone numbers
2. Track Protection Zones/EZPs/ZEPs diagram

## 1. Glossary

<b>Ashford IECC</b>	Network Rail signalling control centre
<b>CCF</b>	<i>Contrôle Centre Fret</i> . – International Freight Control Centre located at Lille.
<b>COE</b>	<i>Contrôle Opérationnelle Eurostar</i> – International Eurostar Control Centre located at Lille.
<b>Concession</b>	The infrastructure owned by Eurotunnel east of the M20 bridge at pk 6.933.
<b>Concession Radio</b>	Radio facility for voice communication within cab-signalled area, chiefly in the event of failure of the international Train Radio or of incidents specified in the operating instructions.  The Concession radio can be used by members of the various other organisations operating within the cab-signalled area. It must not be used to communicate with the IECC or AFC. This radio must be carried by a driver who has to leave the train or cab.
<b>Coordinateur Travaux</b>	RCC Controller responsible for accepting track protection/OHLE isolation requests and arranging for the activation and maintenance of the required remote protection measures. He/she is the sole RCC interface with the other control centres in connection with the track protection/OHLE isolation arrangements. This function is normally carried out by the RCC Supervisor.
<b>EFOC</b>	European Freight Operations Centre at Dollands Moor
<b>Electrical Control Room Operator (ECRO)</b>	Network Rail Electrical Control Room Operator located in Paddock Wood Electrical Control Room (ECR) responsible for the supply of the traction current to the Overhead Line Equipment west of the electrical control boundary at pk 7.953 (Down Fast) and pk 7.795 (Up Slow) and to the conductor rail on the Down Fast line in its entirety.
<b>EMS Controller</b>	RCC Controller responsible for monitoring and controlling the traction power supply to the Eurotunnel controlled OHLE.
<b>IECC Signaller</b>	Network Rail signaller responsible for monitoring and controlling the signalling system for the IECC control area.
<b>Overhead Catenary System</b>	Eurotunnel term for OHLE
<b>Protection C</b>	RCC process for blocking lines to electric trains
<b>RCC</b>	Eurotunnel Railway Control Centre responsible for the safe operation of the railway within its jurisdiction, including the traction power supply.
<b>RCC Controller</b>	Eurotunnel employee qualified to operate all RCC equipment.
<b>RCC Supervisor</b>	Eurotunnel employee responsible for supervising the work of the RCC, and for transport system co-ordination when the service is disrupted.
<b>Repère</b>	Eurotunnel and SNCF/SNCB terminology for a Block Section Marker.
<b>RTM Controller</b>	RCC Controller responsible for monitoring and controlling the signalling system for the Eurotunnel controlled system
<b>SEL</b>	<i>Section élémentaire</i> – Eurotunnel term for electrical section
<b>SNCB</b>	Belgium National Railways
<b>SNCF</b>	French National Railways
<b>Track Protection Zone</b>	Defined section of line in the IECC signalled controlled area for protection purposes – each section is allocated a unique identification code.
<b>Yard Master</b>	Member of staff responsible for the current operations of Dollands Moor EFOC.
<b>ZEP</b>	<i>Zone élémentaire de protection</i> – Eurotunnel term for an EZP.

## 2. Scope of this section

This section apply within the area bordered by the following markers/signals:

(All datum points of locations shown in this document are in accordance with the Eurotunnel kilometric point (pk) system, unless otherwise specified.)

### Down direction

Marker AF481 (Down CTRL) (CTRL kilometerage 108.080)

Marker AF367 (Up CTRL) (CTRL kilometerage 108.072)

CAB boards (Down Fast and Up Slow lines) (pk7.191)

and for trains from the Ashford IECC signal controlled area routed towards markers AF363 or AF365.

### Up direction

CTRL/ET boards at pk8.490 (Up and Down Fast lines)

and for trains from the RCC signal controlled area routed towards markers AF362, AF364 or AF366.

This section details:

- The principles for the operation of trains between Network Rail, CTRL and Eurotunnel in both normal and degraded situations.
- Arrangements for the execution of work on the infrastructure over the interfaces between Network Rail, CTRL and Eurotunnel.
- Arrangements for controlling the traction current supply, including the arrangements necessary for taking isolations.
- Communications principles in the interface area.

The principles to be adopted for the management of incidents in the interface areas.

## 3 Description of interface

Refer to diagram shown in figure 1

### 3.1 General

The CTRL route from Ashford International runs parallel (on the down side) to the Network Rail route from Ashford to Folkestone/Eurotunnel as far as Sandling station, where the up and down CTRL lines diverge to pass either side of Dollands Moor Yard. The down CTRL line passes behind the north side of Dollands Moor Yard, crosses the M20 motorway (on a separate bridge), and runs parallel to the down fast line of the Network Rail route from Ashford to Eurotunnel, which it joins via a high-speed connection. The up CTRL line crosses over the top of the Network Rail route from Ashford to Folkestone/Eurotunnel (Saltwood Tunnel) and then descends on a viaduct (Grange Alders) to the level of the Network Rail route to Eurotunnel, crosses the M20 motorway and becomes the up fast line from Eurotunnel. The up slow line from Eurotunnel becomes the Network Rail up main line to Ashford. The connections to the eastern end of Dollands Moor yard are from the down fast line and up slow line.

### 3.2 Signalling

CTRL and Eurotunnel controlled lines are signalled by the TVM430 cab-signalling system which gives drivers a proceed authority and the maximum speed that can be safely achieved.

On the CTRL controlled lines outside the interface area the cab signalling systems gives speed indications in defined speed bands (parameters) up to a maximum speed of 300 km/h depending on the type of train. On Eurotunnel controlled lines the maximum speed is 160 km/h with a different set of parameters. In order to accommodate the movement of international freight trains between Eurotunnel and Dollands Moor Yard the parameters for the cab signalling on the CTRL controlled lines between Eurotunnel and the interface with Network Rail are in accordance with Eurotunnel standards.

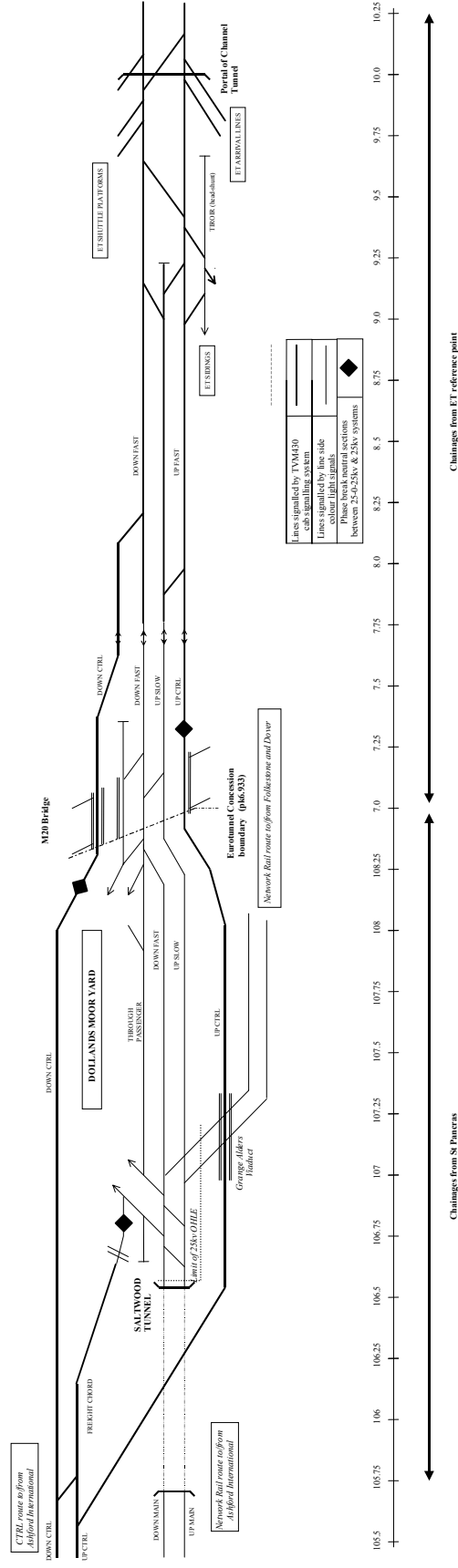
The Network Rail controlled lines from Ashford to the interface with CTRL (and within Dollands Moor Yard) are signalled by the Track Circuit Block system with lineside 3 and 4 aspect colour light signals.

### **3.3 Traction power supply**

Traction power supply to the CTRL route, on the Network Rail Ashford to Eurotunnel route east of Saltwood Tunnel, within Dollands Moor Yard and within Eurotunnel is supplied to the trains by means overhead line equipment (OHLE) energised at 25kv AC. The trains collect this supply by means of pantographs mounted on the roof.

Traction power supply to the Network Rail route from Ashford to Folkestone and Eurotunnel as far as the Network Rail/CTRL interface is supplied to the trains by means of conductor rail equipment energised at 750v DC. The trains collect this supply by means of collector shoes mounted on the bogie. Therefore part of the Network Rail route (between Saltwood Tunnel and the connections at the eastern end of Dollands Moor Yard) is equipped with both types of traction power supply systems in order to facilitate the transition of Class 373 trains from one system to the other.

Figure 1 Overview of Network Rail/CTRL/Eurotunnel interface





## 4 Operational Control Centres and the boundaries of their control

### 4.1 Signalling

The CTRL cab signalling system is controlled from its AshFord Control Centre (AFC)

The Eurotunnel cab signalling system is controlled from its Rail Control Centre (RCC)

The Network Rail line side colour light signalling system is controlled from Ashford IECC

The boundaries between their areas of control are as follows. Refer to diagram shown in figure 2.

	Down direction	Up direction
<b>AshFord Control Centre (AFC)</b>		
Down Fast line	From CTRL marker AF363 (inclusive) as far as Eurotunnel marker 0834 (exclusive)	From CTRL marker AF366 (inclusive) as far as signal AD832 (exclusive)
Up Slow line	From CTRL marker AF365 (inclusive) as far as Eurotunnel marker 0871 (exclusive)	From CTRL marker AF364 (inclusive) as far as signal AD830 (exclusive)
Up Fast line	As far as Eurotunnel marker 0833 (exclusive)	From CTRL marker AF362 (inclusive)
<b>Ashford IECC</b>		
Down Fast line	As far as CTRL marker AF363 (exclusive)	From signal AD832 (inclusive)
Up Slow line	As far as CTRL marker AF365 (exclusive)	From signal AD830 (inclusive)
<b>Rail Control Centre (RCC)</b>		
Down Fast line	From Eurotunnel marker 0834 (inclusive)	As far as CTRL marker AF366 (exclusive)
Up Slow line	From Eurotunnel marker 0871 (inclusive)	As far as CTRL marker AF364 (exclusive)
Up Fast line	From Eurotunnel marker 0833 (inclusive)	As far as CTRL marker AF362 (exclusive)

Boundary signs are provided 100 metres in advance of the first signal/marker of the signalling centre concerned to indicate to a train drivers that the rules, regulations and instructions of the infrastructure controller that the train is entering must be applied. The location of these boards are indicated on the diagram in figure 2.

### 4.2 Traction power supply

The CTRL 25kv AC system is controlled from its AshFord Control Centre (AFC)

The Eurotunnel 25kv AC system is controlled from its Rail Control Centre (RCC)

The Network Rail 25kv AC system is controlled from its Electrical Control Room (ECR) located at Paddock Wood.

The boundaries between their areas of control are as follows. Refer to diagram shown in figure 3.

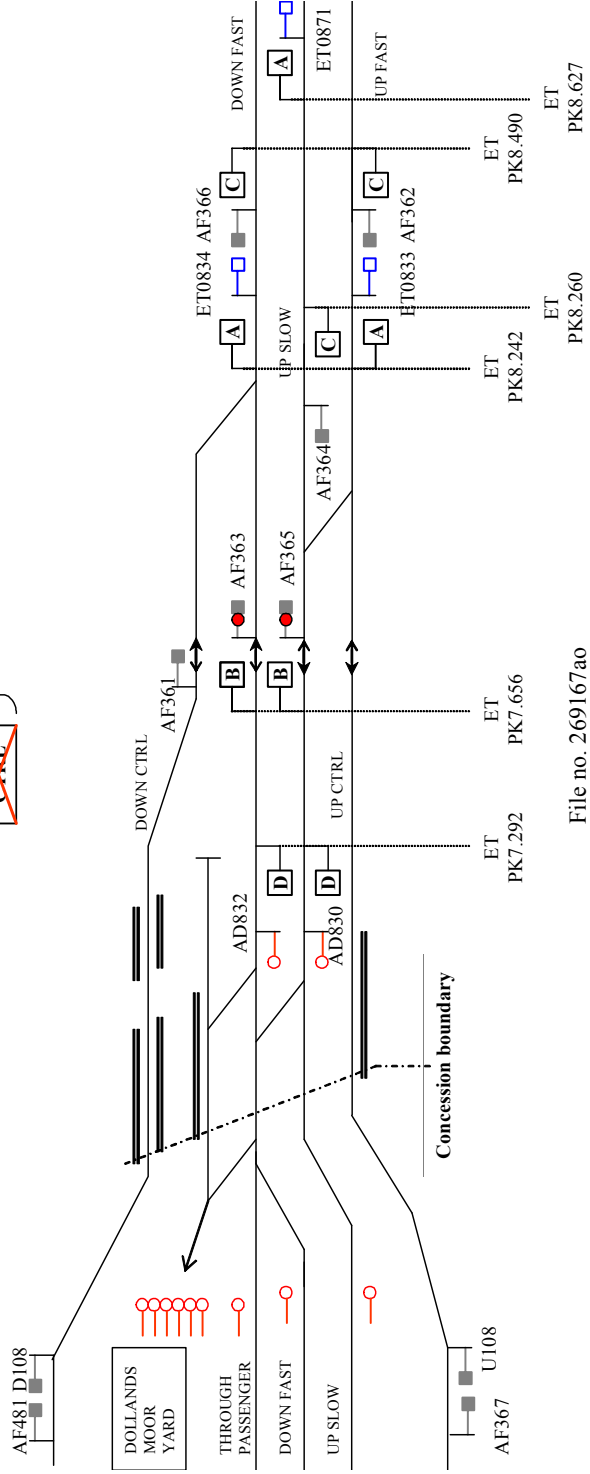
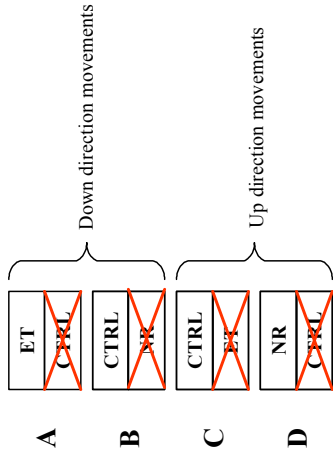
Down CTRL	Between the AFC and the RCC	Phase break neutral section at CTRL kilometerage point 108.300
Down Fast	Between Paddock Wood ECR and the RCC	Insulated overlap at pk7.935
Up Slow	Between Paddock Wood ECR and the RCC	Insulated overlap at pk7.780
Up CTRL	Between the AFC and the RCC	Phase break neutral section at pk7.329

**Note:** The Network Rail 750v DC conductor rail system in its entirety is controlled from its Electrical Control Room (ECR) located at Paddock Wood.

**Figure 2**  
**Rules change boundaries**

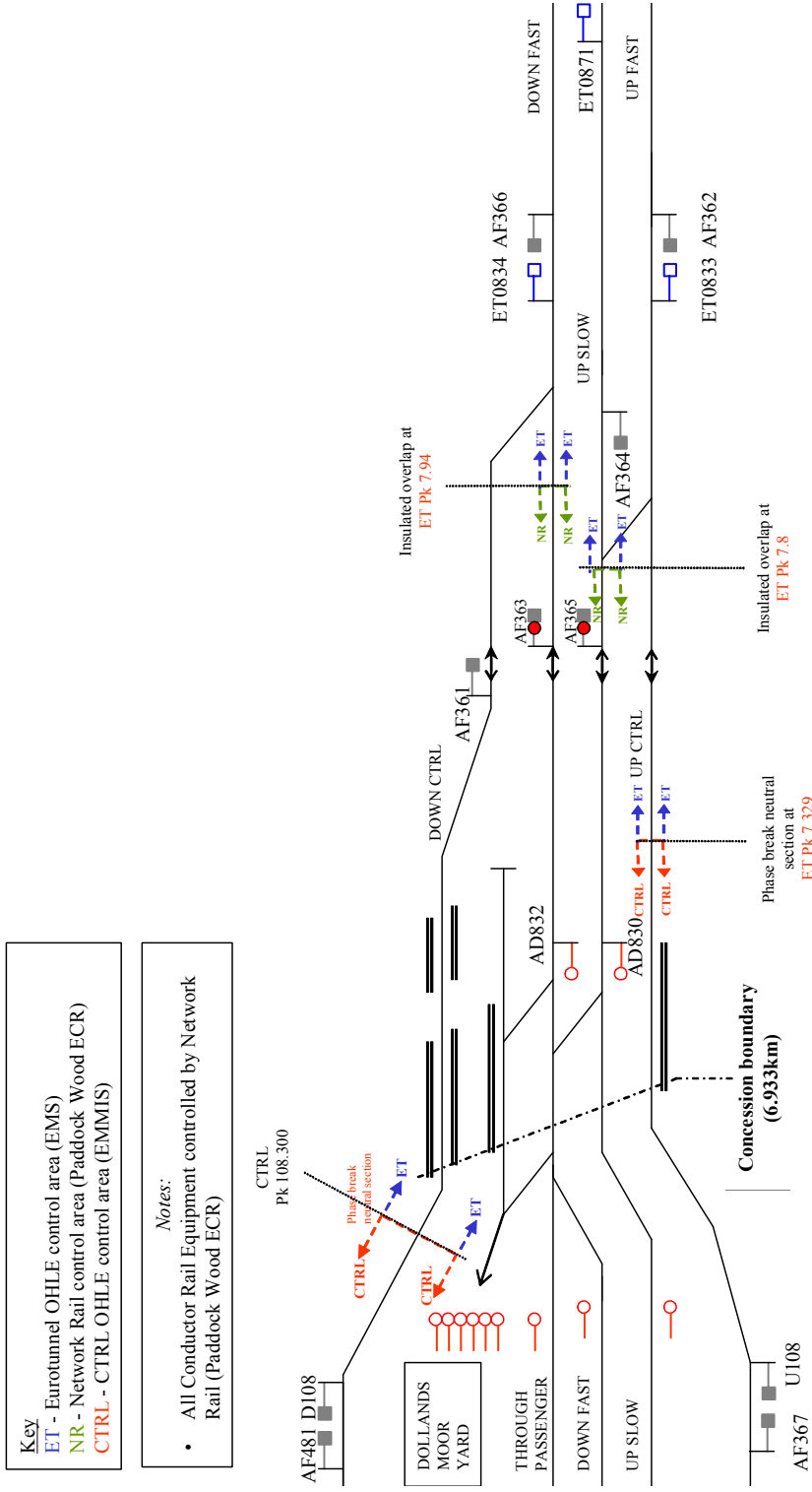
(Note - Topological representation, not shown to scale)

Boards indicating change in applicable rules



**Figure 3**  
**Electrical Control boundaries**

(Note - Topological representation, not shown to scale)



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## 5 Application and publication of rules, regulations, and instructions

The rules to be applied in the AFC signalled controlled area are contained in the CTRL Rule Book (C/02/OS/05/1000), as amended in these instructions

The signalling on the CTRL controlled lines between Eurotunnel and the interface with Network Rail complies with Eurotunnel rules. Therefore the traincrews of international trains will apply the Eurotunnel rules published in:

**EUKL and EWS traincrews** – the International Rule Book (IRB); Section 3(A)

**SNCF and SNCB traincrews** – *Prescriptions générales concernant les conducteurs des TGV et des trains de FRET transmanche circulant dans la concession Eurotunnel (LL TT 003)*

The following instruction is published in the *Livret Ligne*:

### Up direction :

The Rules shown in IRB3(A)/LL TT 003 will apply from the CTRL/ET board at pk8.490 (Up and Down Fast lines), pk8.260 (Up Slow line) to the NR/CTRL boards at pk7.292 (Down Fast and Up Slow lines), or markers AF482 (Up CTRL line ), AF 484 (Down CTRL line) except the responsible operational centre will be the AFC at Ashford.

### Down direction :

The Rules shown in IRB3(A)/LL TT 003 will apply from the CTRL/NR boards at pk7.656 (Down Fast and Up Slow lines) or markers AF361 (Down CTRL line), AF 367 (Up CTRL line) to the ET/CTRL board at pk8.242 (Up and Down Fast lines), pk8.627 (Up slow line) except the responsible operational centre will be the AFC at Ashford.

The boards shown in figure 2 indicating the change in applicable rules only apply to traincrews. Other employees working on the operational railway to apply the rules and procedures of the infrastructure controller they are working for and to contact the control centres defined in those rules and procedures.

## 6 Instructions

### 6.1 General

#### 6.1.1 Messages concerning safety

For international trains stopped in the AFC controlled area, the following forms from the Eurotunnel section of the International Forms Procedures must be used for communications between the AFC Signaller and the driver.

<b>ATRA</b>	Check zone and cancel route setting
<b>BAPO</b>	Lower pantographs
<b>CHEX</b>	Change ends
<b>FREP</b>	Passing a designated closed Block Section Marker ( <i>repère</i> )
<b>MAIL</b>	Check and operate designated point
<b>PASS</b>	Give assistance to a failed train
<b>PRUD</b>	Proceed at caution ( <i>Marche Prudente</i> )
<b>REMA</b>	Restart journey
<b>VEVO</b>	Verify line is clear
<b>VILI</b>	Speed restriction
<b>VITA</b>	Examine train
<b>PROD 1</b>	Request for assistance
<b>PROD 2</b>	Cancel request for assistance
<b>PROD 4</b>	Reporting a signal failure
<b>PROD 5</b>	Request for Personal Protection

If the AFC Signaller or IECC Signaller/RCC Controller receives a report from a Driver for a procedure authorised by the adjacent signalling control centre/RCC must dictate the report to the Signaller/Controller who originated the procedure as a safety related message.

When the IECC, AFC and the RCC quote times to each other, these must be suffixed by UKT or CET so that there is no confusion as to the actual time.

UKT = United Kingdom Time  
CET = Central European Time (Concession Time)

Drivers of international trains in this area will quote times in CET.

#### 6.1.2 Obstruction or danger on the line

If employees become aware of an obstruction, or other danger, on a line in the Concession that requires trains to be stopped immediately, the AFC Signaller, IECC Signaller or RCC Controller must be informed by the first available means, quoting the reason, the exact location and line(s) concerned.

When the AFC Signaller receives the Emergency Alarm Signal or any other advice that there is an obstruction, or other danger, on the line(s) that requires trains to be stopped immediately, the signaller must:

- send the Emergency Alarm Signal to the RCC and/or the IECC, unless this has already been received.
- close or maintain closed markers AF363, AF365, AF481, AF483, AF362, AF364 and AF365 and use reminder appliances.
- arrange for an emergency isolation of the traction current.
- broadcast a general radio call to STOP all movements.
- make an entry in the Train Register
- advise the RCC Controller and/or the IECC signaller and the AFC Shift Manager the reason for the Emergency Alarm Signal being sent and if the Emergency Services are required. If the Emergency Services are summoned directly by the AFC Shift Manager, the RCC Supervisor must be advised of this fact.

If the IECC Signaller or the RCC sent the Emergency Alarm Signal, the Signaller/RCC Controller will advise the AFC Signaller in the AFC the reason for sending the alarm.

**Note 1.** The sending of the Emergency Alarm Signal by the IECC Signaller to the AFC will automatically send the corresponding alarm to the RCC. Therefore the AFC Signaller must advise the RCC Controller the reason for the Alarm being sent.

**Note 2.** The sending of the Emergency Alarm signal by the RCC to the AFC will automatically send the corresponding alarm to the IECC signaller. Therefore the AFC Signaller must advise the IECC signaller the reason for the alarm being sent.

If the reason for the emergency alarm being sent does not prevent trains being accepted by the AFC Signaller from the RCC controlled area, then the AFC signaller must communicate this fact to the RCC Controller as soon as possible and remove the emergency alarm. This is to allow trains to exit the Channel Tunnel without being detained longer than necessary.

If the obstruction cannot be removed immediately, then the line(s) concerned must be protected in accordance with the procedure shown in point 6.8.

### **6.1.3 Security within the Concession**

For security reasons, before any employee enters the Concession on foot, the employee (or person in charge of a group) must contact the EMMIS Controller as soon as the requirement is known, and state their name, grade, company and, where applicable, number of staff in the group. On receipt of this information, the EMMIS Controller will fax to Eurotunnel Security details of the staff that are about to enter the Concession.

Employees should be beware that they may be challenged by Eurotunnel Security at any time whilst in the Concession and, if challenged, must be able to produce a current Personal Track Safety Certificate.

When the employee or group leaves the Concession, they (person in charge of a group) must inform the EMMIS Controller and state their name, grade, company and, where applicable, number of staff in the group. On receipt of this information, they will fax Eurotunnel Security details of the staff that are leaving the Concession.

If access is required by road via the Longport entrance of the Eurotunnel terminal the following must be applied additionally: The EMMIS Controller must advise both the RCC Supervisor and Eurotunnel Security the date and time access is required. Employees must report to the Longport entrance in order to be escorted by a member of Eurotunnel staff to the worksite. When employees wish to leave Eurotunnel property they are to contact the RCC Supervisor in order that an escort off the site can be arranged. Similarly employees who enter the Concession via Dollands Moor Yard can leave via the Longport entrance provided the driver of the collection vehicle carries out the above procedures.

## **6.2 Personal safety when on the operational railway**

### **6.2.1 Access to the AFC signalled controlled area**

Employees entering the AFC signalled controlled area must have been passed as competent in the Personal Track Safety Rules of the infrastructure controller they are working for and carry the current relevant certificate of competence with them. They must have access to a mobile telephone in order to contact the AFC or a Concession Radio to contact the RCC.

With reference to modules G1 and G2 of the CTRL Rule Book, the following definitions are amended:

Employees are in the **Safe Zone** if they are in between the innermost boundary fence and a point **2.2 metres** from the nearest running rail.

Employees are in the **Danger Zone** if they are within **2.2 metres** of the nearest running rail or on the line itself.

### **6.2.2 Emergency isolation of the OHLE**

A request for an emergency isolation of the traction current must be made to the EMMIS Controller, Paddock Wood ECRO or the EMS Controller (as appropriate) by the first available means. This request may be made via one of the other electrical controllers or via the AFC Signaller, IECC Signaller or the RCC Controller if this would be quicker. Because of the complexities of the electrical control interfaces in this area, the person requesting the isolation must clearly specify which lines are involved and, as far as possible, the precise location of the incident. If there is any doubt as to how much of the catenary is to be isolated, e.g. lines involved, extent of the incident, the EMMIS Controller, the Paddock Wood ECRO and the EMS Controller in the RCC must liaise with each other and switch off the electricity from all lines in the area until the actual location of the incident is established.

### 6.2.3 Conductor Rail on the Down Fast Line

The Conductor Rail on the Down Fast line is normally de-energised but may be recharged at any time without warning. Therefore it must be treated as being **ALIVE** and **DANGEROUS** at **ALL TIMES**, unless a Conductor Rail Permit has been issued or the Paddock Wood ECRO has given an assurance that it has been isolated in accordance with Instruction 6 the Network Rail D.C. Electrified Lines Instructions (GO/RT/3091).

## 6.3 Signalling

### 6.3.1 Lineside Signs – Abort board

These signs are provided on the Down Main and Up Main lines between signals AD791/AD793 and AD821/AD823 (Network Rail kilometrage point 108.304) to advise drivers of international trains that if the voltage system changeover from 750v DC to 25kv AC has not been satisfactorily completed and the driver does not have the correct indications for entry into the Channel Tunnel, the train must be stopped at markers AF363/AF365 and the AFC Signaller contacted.



### 6.3.2 Block section markers

#### 6.3.2.1 General

In order to comply with Eurotunnel rules, down direction block section markers AF361 (Down CTRL line), AF363 (Down Fast line), AF365 (Up Slow line), AF367 (Up CTRL Line) and up direction markers AF362 (Up Fast line) AF364 (Up Slow line) and AF366 (Down Fast line) are all Non-Passable but are **NOT** provide with an “N” plate. In addition, the auxiliary signal on these block section markers gives the proceed indication in the form of the illumination of a single steady white light.

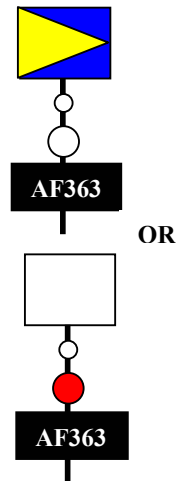
#### 6.3.2.2 Block Section Marker AF363 (Down Fast line) “Secret repère”

Block section marker AF363 can display:

- a marker formed by the illumination of LEDs, **OR**
- a marker formed by the illumination of LEDs with an illuminated auxiliary (proceed) light, **OR**
- a fixed red light

The red light is illuminated when the marker is **not** open. The illumination of both the marker and the red aspect must be treated as an abnormal aspect.

This marker is mounted on a gantry directly above the line to which it refers. (**Note** – no light showing indicates a fault).



### 6.3.2.3 Block Section Marker AF365 (Up Slow line) “Secret repère”

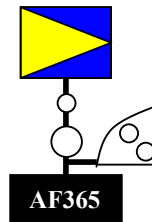
Block section marker AF365 can display:

- a marker formed by the illumination of LEDs, **OR**
- a marker formed by the illumination of LEDs with an illuminated auxiliary (proceed) light, **OR**
- a fixed red light, **OR**
- a fixed red light and the illumination of a “Network Rail” type position light signal (two white lights at 45°).

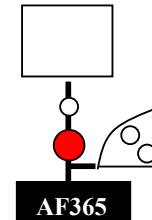
The red light is illuminated when the marker is **not** open. The illumination of both the marker and the red aspect must be treated as an abnormal aspect.

This marker is mounted on a gantry directly above the line to which it refers. (**Note** – no light showing indicates a fault).

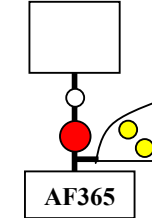
This marker is provided with a position light signal for the purpose of controlling non-cab signalled shunting movements. Clearance of the position light signal indicates that the route is set to the Up Fast line (Eurotunnel marker 0833).



Display with main route open



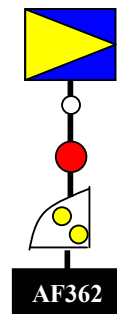
Display with route closed



Display with position light signal cleared

### 6.3.2.4 Marker AF362 (Up Fast line)

Marker AF362 is also equipped with a fixed red light and a Network Rail type position light signal (two white lights at 45°) for the purpose of controlling non-cab signalled shunting movements. The red light is **only** illuminated when shunt movements are being made. Clearance of the position light signal indicates that the route is set to signal AD830 on the Up Slow line or marker AF482 on the Up CTRL line

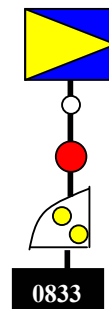


### 6.3.2.5 Marker AF482 (Up CTRL line)

Marker AF482 is also equipped with a fixed red light for the purpose of controlling non-cab signalled shunting movements. The red light is **only** illuminated when shunt movements are being made towards this marker.

### 6.3.2.6 Marker 0833 (Up Fast line)

Marker 0833 is also equipped with a fixed red light and a Network Rail type position light signal (two white lights at 45°) for the purpose of controlling non-cab signalled shunting movements. The red light is **only** illuminated when shunt movements are being made. Clearance of the position light signal indicates that the route is set towards Eurotunnel Folkestone Yard shunting neck.





### **6.3.2.7 International freight trains and light locomotives stopped at block section markers**

The AFC Signaller must advise the driver of an international freight train or light locomotive stopped at a closed block section marker when the marker is opened.

### **6.3.3 Provision of cab signalling equipment in driving cabs**

All traction units proceeding beyond markers AF363 or AF365 must be fitted with working cab signalling equipment in the driving cab in which the driver is situated, unless specially authorised as shown in Module UF of the CTRL Rule Book. Drivers of traction units not fitted with working cab signalling equipment must stop at markers AF363 or AF365 and contact the AFC Signaller for instructions.

**Note:** Traction units not equipped with working cab signalling equipment are authorised to proceed beyond marker AF365 when routed to Eurotunnel Folkestone Yard upon clearance of the associated position light signal.

Drivers of international freight trains and light locomotives must configure the cab signalling system in the driving cab with the weight and permitted speed of the train before the “Train-ready-to-start” signal is given for departure from Dollands Moor Yard.

## **6.4 Failure, Repair, Renewal and Maintenance of Signalling Equipment**

### **6.4.1 Failure of signalling equipment**

#### **6.4.1.1 Principles**

When a failure of points, track circuits, train describers, or direction of flow indicators occurs that prevents the normal signalling of trains between the IECC and AFC or the AFC and RCC, the AFC Signaller and IECC Signaller/RCC Controller must advise each other the extent of the failure.

The AFC Signaller must advise the AFC Shift Manager and EMMIS Controller as to the nature of the failure and record the details accordingly.

The AFC Signaller and IECC Signaller/RCC Controller must reach a clear understanding with each other and agree a method by which train movements will be made.

#### **6.4.1.2 Failure of train describers**

To enable the RCC to receive accurate train running information if the Train Descriptor system has failed, i.e. Train Identity Nos. are not stepping through to the RCC, the IECC Signaller must give the following information to the AFC Signaller:

- All international passenger and ECS trains must be reported when passing signal AD701 (Sevington)
- All international freight trains departing Dollands Moor Yard must be reported before the exit signal is cleared

The AFC Signaller must give the following information to the RCC Controller:

- All international passenger and ECS trains must be reported when passing Ashford East Jn. or signal AD701 (Sevington)
- All international freight trains departing Dollands Moor Yard must be reported before the exit signal is cleared

#### **6.4.1.3 Failure of Automatic Route Setting (ARS)**

If an international freight train is not ready at its booked departure time, the IECC Signaller must obtain the agreement of the AFC Signaller before clearing the exit signal.

#### 6.4.1.4 Failure of signal to clear or marker to open

If the failure signalling equipment in the interface of the AFC, IECC and RCC control area prevents:

- the IECC Signaller clearing signals AD795, AD797, AD799, AD803, AD807 AD809, AD813, AD821 or AD823
- the AFC Signaller opening markers AF361, AF362, AF363, AF364, AF365, AF366 or AF367 (main route or auxiliary route)
- the RCC Controller opening markers 0976 or 0977 (main route or auxiliary route)

the following procedure must be observed:

- The AFC Signaller or IECC Signaller/RCC Controller must check the conditions for clearing the signal/opening the marker, requesting, when required, information from the other Signaller/Controller concerning the state of the line within their area, e.g. position of points.
- If a track circuit is showing occupied, the AFC Signaller or IECC Signaller/RCC Controller must arrange for an examination of the line to be carried out, if necessary using the first affected train over the line concerned in accordance with the International Forms Procedure.
- The AFC Signaller or IECC Signaller/RCC Controller must use the International Forms Procedure to instruct the drivers of trains to pass the signal at danger/closed marker.
- The AFC Signaller or IECC Signaller/RCC Controller must inform the other Signaller/Controller when the movement has passed clear of the affected section and, if the line has been examined, the driver's remarks.

#### 6.4.1.5 Failure of direction of flow indicators

The AFC Signaller or IECC Signaller/RCC Controller must not attempt to set a route that conflicts with a Direction of Flow Arrow for a route already set by the other Signaller/Controller.

If however, a "Direction of Flow Arrow" is not illuminated, the AFC Signaller or IECC Signaller/RCC Controller must agree with each other the direction of flow for each line. This should always follow the primary direction for each line, i.e.. down direction on the Down Fast line, up direction on the Up Slow and Up Fast lines. The method of working will be as in point 6.4.1.4.

#### 6.4.1.6 Failure of points 2361/2362 (Up Fast line to Up Slow line crossover)

These points are equipped with HW type point motors. Only persons passed as competent in the manual operation of this type of motor may be required to operate them in connection with module T5 of the CTRL Rule Book. Section 4 of module T5 is modified as follows:

Clause 4.1.1 – the AFC Signaller must only arrange for persons competent to manually operate HW type point motors to attend. Drivers of trains are NOT competent to carry out this operation.

Clause 4.2.5 – does not apply. A separate procedure applies for the manual operation of these points.

#### 6.4.2 Repair or maintenance of signalling equipment that DOES NOT affect the passage of trains

The repair or maintenance of signalling equipment in the interface of the IECC and AFC control areas or AFC and RCC control areas that does not affect the passage of trains may be agreed between the Signalling Technician and the AFC Signaller or IECC Signaller/RCC Controller.

The AFC Signaller must advise the AFC Shift Manager as to the nature of the repair maintenance activity and record the details accordingly.

#### 6.4.3 Repair or maintenance of signalling equipment that DOES affect the passage of trains

##### 6.4.3.1 IECC/AFC signalling control interface

Before work commences the Infrastructure Maintainer must agree with the Network Rail and CTRL production departments any repair or maintenance work to signalling equipment in the interface of the IECC and AFC control area that does affect the passage of trains.

However, in an emergency or other exceptional circumstances, the Signalling Technician can agree with the AFC Shift Manager to carry out repair work.

### 6.4.3.2 AFC/RCC signalling control interface

Before work commences the Infrastructure Maintainer or Eurotunnel Signalling department must agree with the Eurotunnel Maintenance & Operations and CTRL Infrastructure and Production departments any repair or maintenance work to signalling equipment in the interface of the AFC and RCC control area that does affect the passage of trains.

However, in an emergency or other exceptional circumstances, the Signalling Technician can agree with the AFC Shift Manager and RCC Supervisor to carry out repair work.

## 6.5 Use of radio equipment on trains

### 6.5.1 Failure of International Train Radio (Track-to-Train radio)

Markers AF362, AF363 and AF365 are equipped with lineside telephones. However, because of limited clearances with the adjacent running lines, the driver must **not** leave the driving cab to use them (**except in an emergency**) unless he has received an assurance from the AFC Signaller that it is safe to do so. This assurance will be given via a competent person at site or via the driver of another train stopped on the adjacent line.

If the AFC Signaller receives information that the International Train Radio equipment is defective on a train travelling towards the Channel Tunnel, then he must relay this information to the RCC Supervisor.

If the AFC Signaller receives information that the International Train Radio equipment is defective on an international freight train, he must inform the IECC Signaller.

### 6.5.2 Concession radio

All international trains required to enter the Concession must have a working Concession radio in all driving cabs. In the event of a failure of the Concession radio, the train may continue to work over the Concession provided that the International Train Radio is operational.

The Concession radio **cannot** be used to contact the AFC. However, if no other means of communication is available and the driver needs to urgently report an **emergency**, he/she may use the Concession radio to make an emergency call to the RCC giving details of the incident. The driver must ensure that the RCC Controller is fully aware of the location of the train.

### 6.5.3 Failure of both the International Train Radio equipment and Concession radio

No international train must enter the Concession with both the International Train Radio equipment and the Concession Radio defective. When the Driver becomes aware that both sets of equipment have failed, he/she must stop and contact the AFC Signaller for instructions by using a lineside telephone or mobile phone

The AFC Signaller must advise the AFC Shift Manager. The train must be dealt with in accordance with the procedure shown in point 6.7

## 6.6 Train working (normal operation)

### 6.6.1 All trains

#### 6.6.1.1 Security

All international trains travelling through the Channel Tunnel must have their exterior doors locked before entering the Concession.

#### 6.6.1.2 Train classification

The following classifications amend those shown in Section 3 of module TW1 of the CTRL Rule Book:

DESCRIPTION	CLASSIFICATION
International freight train timed to run at 100 km/h (MA100) or 120 km/h (ME120)	4XXX
International light locomotive(s)	45XX

### 6.6.2 International passenger and ECS trains formed with Class 373 units (Eurostars)

Before entering the RCC controlled area, international trains formed with Class 373 units must meet the following technical requirements:

- have at least half of its total tractive power available provided that this is available in a ratio of 2 motor blocks on one power car and one motor block on the other.
- the continuous automatic brake and the rheostatic brake must be operational on all braked axles.

**Note:** Empty Class 373 units can travel through the RCC controlled area with a derogation to the above technical requirements provided the movement is agreed with the RCC and authorised in a published notice.

The Driver of an international passenger train who becomes aware that the train no longer meets the technical requirements must stop and contact the AFC Signaller for instructions.

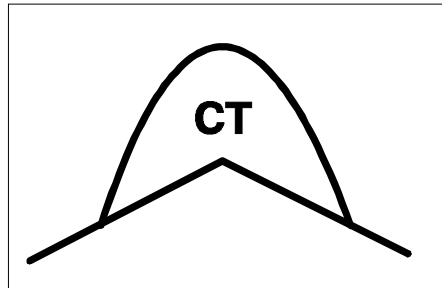
### 6.6.3 International freight trains and light locomotives

#### 6.6.3.1 Technical requirements

##### Composition of trains

International freight trains must be composed of traction units and hauled vehicles certified "Channel Tunnel".

They are marked on each side of the vehicle as follows:



- **Traction units**  
Traction units able to haul international freight trains are Class 92. A maximum of two traction units can be used to haul the train
- **Hauled vehicles**  
For each of the vehicles, the loading mass must not exceed the number against the "S" or "SS" mark indicated on the side.
- **Normal train braking**  
MA100 trains are braked with the "goods" "*marchandises*" continuous brake  
ME120 trains are braked with the "passenger" "*voyageurs*" continuous brake  
Normal train braking is achieved when all the following conditions are met:
  - (a) hauled brake weight is at least equal to the necessary braked weight indicated in the chart applicable for either MA100 or ME120 trains, against the hauled weight of the train. These charts are held by the Yard Master, Dollands Moor Yard.
  - (b) the automatic braking is operative on the last three vehicles of the train,
  - (c) the maximum number of vehicles with the automatic brake inoperative in the rear half of the train does not exceed one,
  - (d) the maximum number of successive with the automatic brake inoperative in the front half of the train does not exceed three.
- **Maximum length**  
The maximum length is 730 metres, hauling traction units not included

##### Maximum speed

The maximum speed for a MA100 train is 100 km/h

The maximum speed for a ME120 train is 120 km/h

### 6.6.3.2 Hauling conditions – locomotives hauled dead

Class 92 locomotives can be hauled dead in a MA100 or ME120 train. The dead locomotives must be marshalled directly after the hauling locomotives. The **total** number of locomotives (including hauling locomotives) must not exceed 6 on a MA100 train or 2 on a ME120 train, except in case of assistance. All the locomotives must be braked.

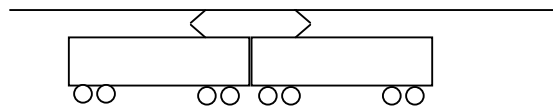
### 6.6.3.3 Light locomotives “HLP”

Light locomotives run in accordance with the conditions shown in the following table. A maximum of six locomotives may run coupled together.

Composition	Braking Capacity	Speed limit
1 or 2 locomotives	All brakes are in the “Passenger” position	ME120
3 to 6 locomotives	All brakes are in the “Passenger” position	MA100
1 to 6 locomotives	1 or more locomotives have brakes in the “Goods” position	80 km/h
	1 or more locomotives have brakes partially or totally isolated	<b>FORBIDDEN</b>

### 6.6.3.4 Use of pantographs

The rear pantograph on each locomotive must normally be used. The front pantographs only must be used when hauling trains that have cars or other road vehicles loaded on the vehicle immediately behind the locomotives. It is forbidden to use more than one pantograph on a locomotive at a time. If the pantographs are used in the following configuration on two locomotives, the speed must not exceed 100 km/h:



## 6.6.4 Operation of freight trains or light locomotives between Dollands Moor Yard and Eurotunnel Folkestone Yard

### 6.6.4.1 Trains or light locomotives from Dollands Moor Yard to Eurotunnel Folkestone Yard

When a freight train or locomotive is ready to leave Dollands Moor Yard for Eurotunnel Folkestone Yard, the IECC Signaller must advise the AFC Signaller the train’s destination. The AFC Signaller must advise the RCC Controller. On receiving permission from the RCC Controller to send the train, the AFC Signaller must give his acceptance authority to the IECC Signaller in order for the train to be routed to marker AF365 on the Up Slow line. The AFC Signaller must route the train from marker AF365 to marker 0833 on the Up Fast line and clear the position light signal associated with marker AF365.

### 6.6.4.2 Trains or light locomotives from Eurotunnel Folkestone Yard to Dollands Moor Yard

When a freight train or locomotive is ready to leave Eurotunnel Folkestone Yard for Dollands Moor Yard, the RCC Controller will advise the AFC Signaller the train’s destination. The AFC Signaller must advise the IECC Signaller. On receiving permission from the IECC Signaller to send the train, the AFC Signaller must give permission to the RCC Controller in order for the train to be routed to marker AF362 on the Up Fast line. The AFC Signaller must route the train from marker AF362 to signal AD830 on the Up Slow line and clear the position light signal associated with marker AF362.

## 6.7 Train working (degraded operation)

### 6.7.1 Advice of delays, cancellations, etc

#### 6.7.1.1 International passenger trains

If an international passenger train is delayed more than 3 minutes in the AFC controlled area, the AFC Signaller must advise the RCC Supervisor (in the case of an outbound train) and the AFC Shift Manager the reason for the delay and an estimation of its duration. The AFC Shift Manager must advise Network Rail Operations Controller and COE.

The Network Rail Operations Controller and COE will give the AFC Shift Manager advice of cancellations to international passenger trains. The AFC Shift Manager will advise the AFC Signaller.

**6.7.1.2 International freight trains**

As soon as it is known that an outbound train will be delayed the AFC Signaller must inform the RCC Supervisor.

In the event of an unscheduled cancellation of an international freight train from Dollands Moor Yard, the IECC Signaller must inform AFC the Signaller, who must immediately inform the RCC Supervisor. In the event of an unscheduled cancellation of an inbound train, the RCC Supervisor will inform the AFC Signaller, who must inform the IECC Signaller.

**6.7.1.3 All trains**

If the delay to a train within the AFC controlled area will be protracted, the AFC Shift Manager must liaise with the Network Rail Operations Controller, COE, CCF the Yard Master at Dollands Moor Yard and the RCC Supervisor in order to regulate trains.

**6.7.2 Return of outbound international trains that are unable to continue their journey****6.7.2.1 General**

Outbound international trains that are unable to continue their journey due to, technical defect, etc. must return to a suitable point where they can be dealt with.

If an international train travelling towards the Continent has to return, the AFC Signaller must inform the AFC Shift Manager. The AFC Shift Manager must liaise with:

Passenger trains	Network Rail Operations Controller and COE
Freight trains	Yard Master at Dollands Moor Yard and CCF

who will decide at which location the train will be dealt with.

**6.7.2.2 Not all of train has passed markers AF363 or AF365****6.7.2.2.1 Class 373 unit or light locomotive(s) capable of moving under own power**

The AFC Signaller and the IECC Signaller must agree the required movement and come to a clear understanding as to what is required.

The AFC Signaller must arrange for the necessary protection measures to be put in place for the driver (if required) and instruct him to change ends by means of the International Forms procedure.

When the driver reports back that he has changed ends, the AFC Signaller must instruct him to now contact the IECC Signaller.

The Driver must make contact with the IECC Signaller who will control the return of the train.

**6.7.2.2.2 Special case of Class 373 unit unable to obtain A.C. traction power supply**

If a Class 373 unit stops on the Down Fast line because its pantograph has failed to rise, or some other fault in its A.C. traction equipment, the following additional procedure must be carried out in order for the train to return to a suitable point.

The driver must contact the AFC Signaller and ask for the traction current to be restored to the conductor rail in order that the train may return to the D.C. system.

The AFC Signaller must inform the IECC Signaller that the traction current is required to be restored to the conductor rail in order that the train may return to the D.C. system.

The IECC Signaller will contact the Paddock Wood ECO, explain the circumstances, and request him to restore the traction current to the normally de-energised conductor rail.

The IECC Signaller will inform the driver that the traction current has been restored to the conductor rail when giving the instruction to start.

**6.7.2.2.3 Freight train**

Freight trains must be assisted with a locomotive at the leading end in direction of travel in accordance with the arrangements shown in point 6.7.4.

### 6.7.2.3 Not all of train has passed markers 0833, 0834 or 0871

#### Class 373 unit or light locomotive(s) capable of moving under own power

The RCC Supervisor and AFC Signaller must agree the required movement and come to a clear understanding as to what is required.

The RCC Controller will arrange for the driver to change ends by means of the International Forms procedure.

When the driver reports back that he has changed ends, the RCC Controller will instruct him to contact the AFC Signaller.

The driver must make contact with the AFC Signaller who will control the return of the train. When the AFC Signaller has set the route he will instruct the Driver to start by means of the International Forms procedure.

### 6.7.2.4 Example of the communication process

#### Outbound train stopped with part of the train still in rear of markers AF363 or AF365 – Train able to continue under own power.

Driver of train	RCC Controller	AFC Signaller	IECC Signaller
Liaise and decide necessity for train to return			
	▼ Informs and agrees course of action		
		▼ Informs and agrees course of action	
CHEX procedure carried out and Driver instructed to contact AFC Signaller			
▼ Reports to AFC Signaller and receives instruction to contact IECC Signaller		Receives report from Driver and instructs him to contact IECC Signaller	
Reports to IECC Signaller and receives instruction to start			Receives report from Driver and instructed to start

### 6.7.3 Technical fault on inbound train

#### 6.7.3.1 General

In order that trains are not delayed longer than necessary in the Channel Tunnel, certain degraded conditions are authorised in order to allow inbound trains having a fault in the RCC control area to continue.

The RCC Supervisor will advise the AFC Signaller the details of any train that is operating with a condition that affects its normal operation, e.g. reduction of speed.

#### 6.7.3.2 Class 373 unit

If a Class 373 unit has a failure of its cab signalling system, it must be diverted to run via the Network Rail route to Ashford International. The AFC Signaller must advise the IECC Signaller and the AFC Shift Manager as soon as it is known that an inbound train has a failure of its cab signalling system. The AFC Shift Manager must advise the Network Rail Operations Controller and COE.

#### 6.7.3.3 Freight train

If a freight train has a defective brake whilst passing through the RCC control area that means it no longer complies with the conditions shown in point 6.6.3.1, it will be authorised to continue as follows:

- If the brakes are isolated on either the last vehicle, or a combination of any two of the last three vehicles, or the train has the brakes isolated on more than half of the total number of vehicles, assistance will be provided in the rear.
- If the brakes are isolated on either one of the second or third vehicles from the rear (but not both), or there are two or more vehicles with brakes isolated on the rear half of the train and/or four or more vehicles in the front half, the train will be authorised to proceed at a maximum speed of 20 km/h. to Dollands Moor Yard.

#### 6.7.3.4 Light locomotives “HLP”

In the case of the total isolation of the continuous automatic brake on a light locomotive movement consisting of only one locomotive, provided the direct brake is still operative, it will be authorised to continue at a maximum speed of 20 km/h.

## 6.7.4 Train failure

### 6.7.4.1 General principles

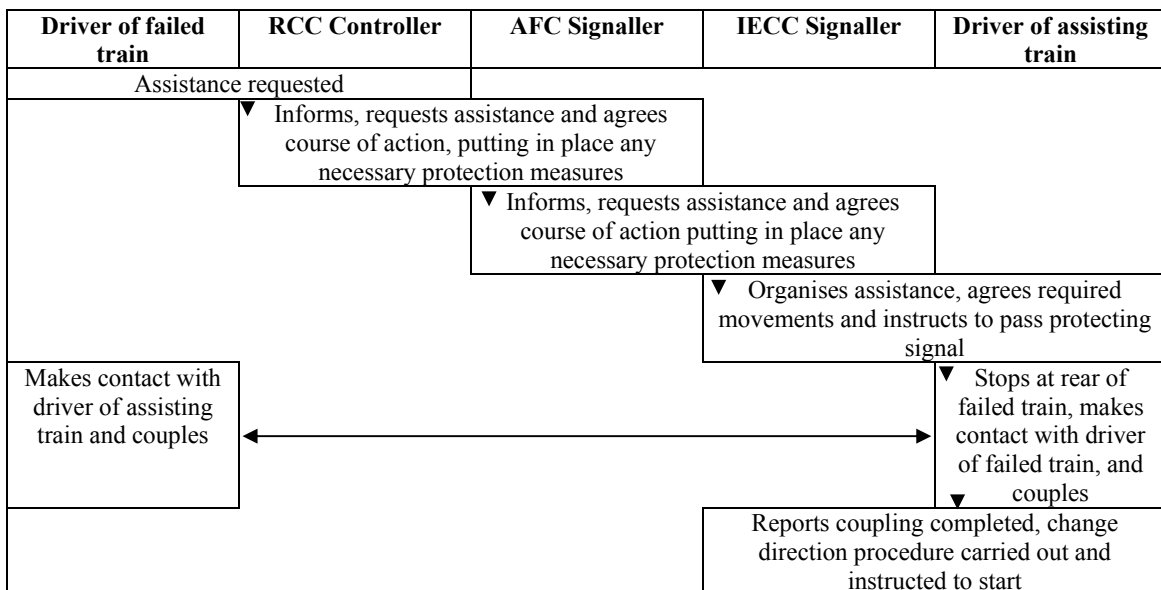
The following principles should be applied.

1. If an international train fails the AFC Signaller must inform the AFC Shift Manager, who must liaise with:
 

Passenger trains	Network Rail Operations Controller and COE
Freight trains	Yard Master at Dollands Moor Yard and CCF
2. The AFC Signaller and the IECC Signaller/RCC Controller must come to a clear understanding as to what is required, e.g.
  - where the assistance is coming from
  - where the train is to be assisted to
  - who is in contact with the driver and managing the movement
  - who is authorising the assistance to proceed towards the failed train
3. The Signaller/ Controller that the driver originally contacts and declares his train a failure to, is responsible for authorising the onward movement. If the train has to reverse direction, e.g. an assisting locomotive is attached to the rear of the train to haul it back, this responsibility is transferred to the Signaller/Controller in the new direction of travel. The driver must be advised of this transfer of responsibility.
4. The rules applicable to the signalling control area in the direction of movement to be applied.

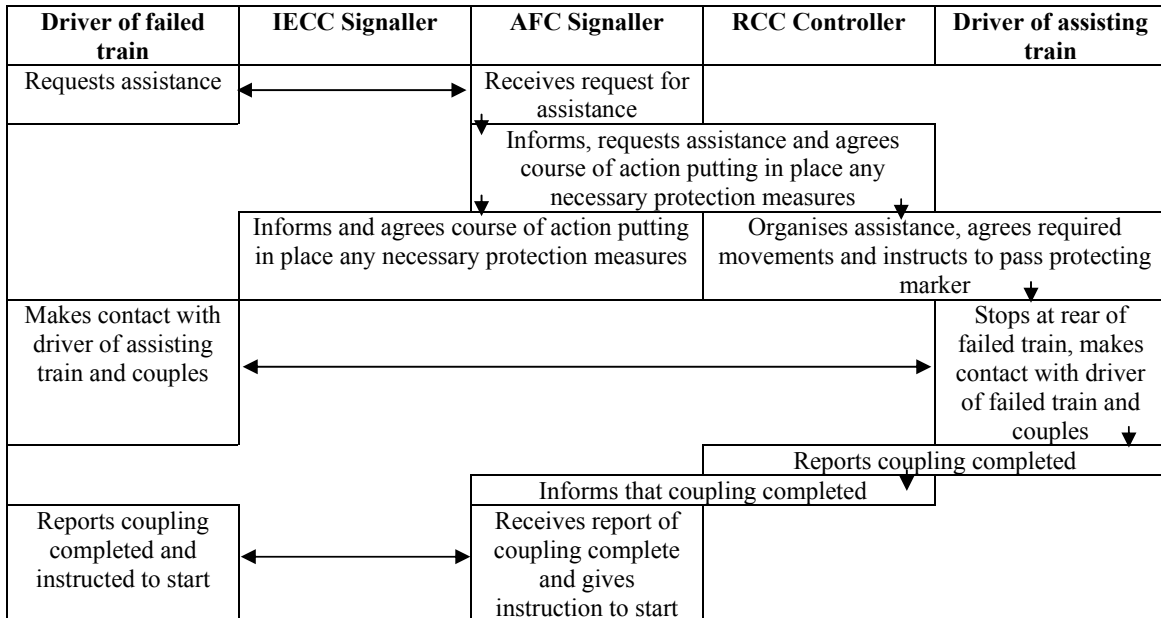
### 6.7.4.2 Example of the communication process

**Outbound train stopped with head of train past the ET/CTRL board but part of the train still in rear of markers AF363 or AF365 – Train requires assistance from rear and to be hauled back.**





**Inbound train stopped with part of the train still in rear of markers AF362, AF364 or AF366 – Train requires assistance from rear.**



**6.7.5 Failed train assisted out of the Channel Tunnel using the Eurotunnel Assistance Unit**

The RCC Supervisor will advise the AFC Signaller that a failed train is being hauled by the Assistance Unit and the condition of the failed train. When the Assistance Unit has been attached to the failed train in the RCC controlled signalling area, it will be signalled forward as far as marker AF362 or AF364. The AFC Signaller must advise the IECC Signaller the circumstances concerning the movement.

On arrival at marker AF364 or AF362, the driver of the failed train must:

- contact the AFC Signaller and request personal protection for the detachment.
- detach the Assistance Unit, ensuring that the failed train is properly secured.
- act as a conductor for the driver of the Assistance Unit and ensure that the radio is set to the correct channel for communications with the AFC Signaller.

When the detachment has been made, the driver of the failed train must advise the AFC Signaller that the Assistance Unit is now ready to proceed.

The AFC Signaller must advise the IECC Signaller that the Assistance Unit is now ready to proceed.

The AFC Signaller must set the route towards signal AD830 and open marker AF362 or AF364.

When marker AF362 or AF364 opens the driver of the failed train must conduct the driver of the Assistance Unit to a point clear of marker AF365.

Once the Assistance Unit is rear of marker AF365, the AFC Signaller must instruct the Drivers to change ends by using the International Forms procedure, set the route towards marker 0833 or 0871 and open marker AF365.

When marker AF365 opens the driver of the failed train must:

- make sure that the driver of the Assistance Unit understands that the route is set as far as marker 0833 or 0871.
- leave the Assistance Unit when alongside the driving cab of the failed train and rejoin it.

### **6.7.6 Emergency clearance of the Channel Tunnel**

In the event of an incident in the Channel Tunnel, trains may be required to exit the tunnel quickly. A light locomotive detained at markers 0833 or AF362 on the Up Fast line may be sent to the Up CTRL line in order to clear an exit route. The RCC Supervisor will advise the AFC Signaller that an incident has occurred in the Tunnel that requires the Up Fast line to be cleared. If required, the RCC Controller will advise the driver of a locomotive detained at marker 0833 to change ends in accordance with the International Forms Procedure and contact the AFC Signaller. The AFC Signaller must, if the route to the Up Slow line is not immediately available, advise the driver that the locomotive must be sent to the Up CTRL line, set the route from marker AF362 to marker AF482 and clear the position light signal associated with marker AF365.

On arrival at marker AF482 the driver must contact the AFC Signaller AFC for instructions.

Drivers of trains not fitted with a working cab signalling system must only proceed beyond marker AF362 upon clearance of the associated position light signal.

### **6.7.7 Obstruction of the Up Fast/CTRL Line**

If the Up Fast/Up CTRL line becomes obstructed between the RCC/AFC signalling control boundary and Westenhanger, the RCC Controller will route trains to the Up Slow line without first consulting the AFC Signaller.

### **6.7.8 Eurotunnel emergency siding**

The RCC will inform the AFC Signaller about maintenance work/equipment failures which will prevent operational use of the Eurotunnel emergency siding. The AFC Signaller must inform the IECC Signaller.

## **6.8 Protection arrangements for engineering works, etc.**

### **6.8.1 Principles**

1. Each infrastructure controller's personnel (including maintenance contractors) to apply the rules and procedures of the infrastructure controller that they are working for.
2. Each infrastructure controller's personnel to request track protection/isolations of the OHLE from the control centre defined in the rules and procedures of the infrastructure controller that they are working for.
3. When work in the Danger Zone is required to take place, the arrangements contained in this section will apply. In all cases the line concerned will be blocked to all normal train movements.

### **6.8.2 Track possessions**

#### **6.8.2.1 Imposing a Protected Area**

The IECC signalled controlled area is divided into separate Track Protection Zones for protection purposes, as shown in appendix 2. The protection arrangements in the IECC/AFC interface area are detailed in figure 4.

The AFC signalled controlled area is divided into separate EZPs for protection purposes as shown in appendix 1. The protection arrangements are detailed in figure 5.

The RCC signalled controlled area is divided into separate ZEPs for protection purposes as shown in appendix 1. The protection arrangements in the AFC/RCC interface area are detailed in figure 6. In addition, if any of ZEPs 2002, 2500, 4026, 4506, and 4510 are required for protection purposes, then the Coordinateur Travaux will request the AFC Signaller to send all down trains via the Up Slow or Up Fast lines. The AFC Signaller must request the IECC Signaller to send all down trains via the Up Slow line.

A protected area must consist of one or more adjacent Track Protection Zones/EZPs/ZEPs.

The AFC Signaller to record details of messages with the IECC/RCC in connection with track possessions on Form E shown in figure 7.

**Figure 4 - Track Protection Zones – Protection arrangements**

1 ZONE	2 LINE	3 LIMITS <sup>1</sup>	4 TRACK CIRCUITS <sup>2</sup>	5 PROTECTION			6 REMARKS
				Track Circuits <sup>3</sup>	Signals		
					Up dir.	Dn. Dir.	
B	'G' Neck	Ashford end (Network Rail datum point 108.469) Signal 2166	DSC	DSC	AD832	AD795	If work requires 1378 points to be maintained in reverse, Zone D to be protected additionally.
						AD797	
C	Exit from Dollands Moor Yard	<u>Ashford end</u> Clear of points 1363A <u>Eurotunnel end</u> (Network Rail datum point 108.469) Signal 2166	DPN/DSB	DPN DSB	AD830	AD795	If work requires 1376 points to be maintained in reverse, Zone E to be protected additionally.
					AD832 2166	AD797	
						AD799	
						AD803	
						AD807	
						AD809	
						AD813	
						2167	
						2171	

<sup>1</sup> Approximate limits – Limits of track circuits shown in column 4 will be the actual limits.

<sup>2</sup> Track circuits that comprise the zone shown in column 1.

<sup>3</sup> Track circuits to be shown occupied by Technician Shift Manager in Ashford IECC, which will prevent the protecting signals from opening/showing a proceed aspect.

**Figure 4 - Track Protection Zones – Protection arrangements**

1 ZONE	2 LINE	3 LIMITS <sup>4</sup>	4 TRACK CIRCUITS <sup>5</sup>	5 PROTECTION			6 REMARKS
				Track Circuits <sup>6</sup>	Up dir.	Signals Dn. Dir.	
<b>D</b>	Down Fast	Ashford end (pk7.054) Clear of points 1381A Eurotunnel end (pk7.191) Signal AD832	<b>DFR</b>	<b>DFR</b>	AD832	AD795 AD797 AD799 AD803 AD807 AD809 AD813 AD821 2167 2171	Signaller in IECC to request permission of the Signaller in AFC to protect this Zone
<b>E</b>	Down Fast	Ashford end (Network Rail datum point 108.304) Clear of points 1377 Eurotunnel end (pk7.054) Clear of points 1378B	<b>DFN/DFP</b>	<b>DFN DFP</b>	AD830 AD832	AD795 AD797 AD799 AD803 AD807 AD809 AD813 AD821 2167 2171	If work requires 1376 points to be maintained in reverse, Zone C to be protected additionally. If work requires 1381 points to be maintained in reverse, Zone J to be protected additionally.
<b>F</b>	Through Passenger Line	Ashford end (Network Rail datum point 107.210) Signal AD796 Eurotunnel end (Network Rail datum point 108.304) Clear of points 1377	<b>DJE/DJG/DJJ</b>	<b>DJE</b>	AD830 AD832 2160 2162 2164	AD755 AD757 AD807 AD809 AD813 2153 2157 2159	

<sup>4</sup> Approximate limits – Limits of track circuits shown in column 4 will be the actual limits.

<sup>5</sup> Track circuits that comprise the zone shown in column 1.

<sup>6</sup> Track circuits to be shown occupied by Technician Shift Manager in Ashford IECC, which will prevent the protecting signals from opening/showing a proceed aspect.

**Figure 4 - Track Protection Zones – Protection arrangements**

1 ZONE	2 LINE	3 LIMITS <sup>7</sup>	4 TRACK CIRCUITS <sup>8</sup>	5 PROTECTION			6 REMARKS
				Track Circuits <sup>9</sup>	Signals		
					Up dir.	Dn. Dir.	
G	Down Fast	<u>Ashford end</u> (Network Rail datum point 107.309) Signal AD794 <u>Eurotunnel end</u> (Network Rail datum point 108.304) Clear of points 1377	DFG DFL	AD830 AD832	AD755 AD757 2157 2159		
J	Up Slow	<u>Ashford end</u> (pk6.933) Clear of points 1381 <u>Eurotunnel end</u> (pk7.191) Signal AD830	DJZ	AD830	AD795 AD797 AD799 AD803 AD807 AD809 AD813 AD821 AD823 2167 2171	IECC Signaller to request permission of the AFC Signaller to protect this Zone  AFC Signaller to request the RCC Supervisor to send Up trains via the Down Fast line  If work requires 1381 points to be maintained in reverse, Zone E to be protected additionally.	
K	Up Main	<u>Ashford end</u> (Network Rail datum point 107.309) Clear of signal AD792 <u>Eurotunnel end</u> (pk6.933) Clear of points 1381	DSR DSY	AD830	AD757 2159		
N	Exit from Dollands Moor Yard	<u>Ashford end</u> Clear of signals AD795/AD797 <u>Eurotunnel end</u> Clear of points 1373	DPM	AD830 AD832 2160 2162 2164	AD795 AD797 AD799 AD803		

<sup>7</sup> Approximate limits – Limits of track circuits shown in column 4 will be the actual limits.

<sup>8</sup> Track circuits that comprise the zone shown in column 1.

<sup>9</sup> Track circuits to be shown occupied by Technician Shift Manager in Ashford IECC, which will prevent the protecting signals from opening/showing a proceed aspect.

**Figure 5 – Engineering Zones of Protection (EZP) – Protection arrangements**

EZP	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
TD11	Down Fast	Up direction – pk7.757 Down direction - pk7.192	AF366 – AD832	AD795 – AF363 AD797 – AF363 AD799 – AF363 AD803 – AF363 AD807 – AF363 AD809 – AF363 AD813 – AF363 AD821 – AF363	AFC Signaller to request permission of IECC Signaller to protect this EZP
TD13	Down CTRL/ Down Fast	Up direction – AF366 Down direction – AF361/AF363	0976 – AF366 AF366 – AD832 AF366 – AF484	AD795 – AF363 AD797 – AF363 AD799 – AF363 AD803 – AF363 AD807 – AF363 AD809 – AF363 AD813 – AF363 AD821 – AF363 AF361 – 0834 AF363 – 0834 AF481- AF361	AFC Signaller to request permission of IECC Signaller and Coördinateur Travaux to protect this EZP
TU10	Up CTRL	Up direction – pk7.829 Down direction – AF367	AF362 – AF482	AF367 – 0833 AF483 – AF367	
TU12	Up Fast/ Up CTRL	Up direction – AF362 Down direction – pk7.829	0976 – AF362 0977 – AF362 AF362 – AD830 AF362 – AF482	AF365 – 0833 AF367 – 0833	AFC Signaller to request permission of Coördinateur Travaux to protect this EZP

**Figure 5 – Engineering Zones of Protection (EZP) – Protection arrangements**

TU14	Up Slow	<p><u>Up direction</u> – AF364  <u>Down direction</u> – AF365</p>	<p>0976 – AF364            0977 – AF364            AF362 – AD830            AF364 – AD830</p>	<p>AD795 – AF365            AD797 – AF365            AD799 – AF365            AD803 – AF365            AD807 – AF365            AD809 – AF365            AD813 – AF365            AD821 – AF365            AD823 – AF365            AF365 – 0833            AF365 – 0871</p>	<p>AFC Signaller to request permission of IECC Signaller and Coordonateur Travaux to protect this EZP</p>
TU16	Up Slow	<p><u>Up direction</u> – pk7.757  <u>Down direction</u> – <u>pk7.192</u></p>	<p>AF362 – AD830            AF364 – AD830</p>	<p>AD795 – AF365            AD797 – AF365            AD799 – AF365            AD803 – AF365            AD807 – AF365            AD809 – AF365            AD813 – AF365            AD821 – AF365            AD823 – AF365</p>	<p>AFC Signaller to request permission of IECC Signaller to protect this EZP            AFC Signaller to request the RCC Controller to send Up trains for the Network Rail route to Ashford and Dollands Moor via the Down Fast line</p>

**Figure 6 – Elementary Protection zones (ZEP) – Protection arrangements**

ZEP	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
2000	Down Fast	<u>Up direction</u> – pk9.482 <u>Down direction</u> – 0834	0976 – AF366	0834 – 0968 0871 - 0968 AF361 – 0834 AF363 – 0834	Coordonateur Travaux to request permission of AFC Signaller to protect this ZEP. AFC Signaller to request IECC Signaller to send down trains via the Up Slow line
2021	Up Fast	<u>Up direction</u> – 0899 <u>Down direction</u> – 0833	0976 – AF362 0977 – AF362 112 – AF362	0833 - 0951 0833 – 0968 0833 – 112 AF365 – 0833 AF367 - 0833	Coordonateur Travaux to request permission of AFC Signaller to protect this ZEP
2023	Up Slow	<u>Down direction</u> – 0871	0976 – AF364 0977 – AF364	0871 - 0951 0871 – 0968 AF365 - 0871	Coordonateur Travaux to request permission of AFC Signaller to protect this ZEP
2039	Up Slow	<u>Up direction</u> – pk8.727 <u>Down direction</u> pk8.160	0976 – AF364 0977 – AF364	AF365 - 0871	Coordonateur Travaux to request permission of Signaller in AFC to protect this ZEP



Figure 7: Form E

Form E - Possession Management procedure for IECC/AFC/RCC Interface (front)	
<b>CTRL initiates the protection request</b> (Operation no.....)	
<b>Part 1</b>	<b>Arranging Protection</b>
<b><u>AFC to IECC*</u></b>	
*Protect Track Protection Zone(s) .....	
Time.....	Date..... Message No.....
<b><u>AFC to RCC*</u></b>	
*Protect ZEP(s) .....	
Time.....	Date..... Message No.....
<b>Part 2</b>	<b>Confirming Protection</b>
<b><u>IECC to AFC*</u></b>	
*Reference your message no..... Track Protection Zone(s) .....are protected	
Time.....	Date..... Message No.....
<b><u>RCC to AFC*</u></b>	
*Reference your message no..... ZEP(s) .....are protected	
Time.....	Date..... Message No.....
<b>Part 3</b>	<b>Removing Protection</b>
<b><u>AFC to IECC</u></b>	
*Reference your message no..... remove protection from Track Protection Zone(s).....	
Time.....	Date..... Message No.....
<b><u>AFC to RCC</u></b>	
*Reference your message no..... remove protection from ZEP(s) .....	
Time.....	Date..... Message No.....
<b>Network Rail initiates the protection request</b>	
<b>Part 4</b>	<b>Arranging Protection</b>
<b><u>IECC to AFC</u></b>	
Protect EZP(s) .....	
Time.....	Date..... Message No.....
<b>Part 5</b>	<b>Confirming Protection</b>
<b><u>AFC to IECC</u></b>	
Reference your message no..... EZP(s) .....are protected	
Time.....	Date..... Message No.....
<b>Part 6</b>	<b>Removing Protection</b>
<b><u>IECC to AFC</u></b>	
Reference your message no..... remove protection from EZP(s) .....	
Time.....	Date..... Message No.....

\*Delete as appropriate

Figure 7: Form E

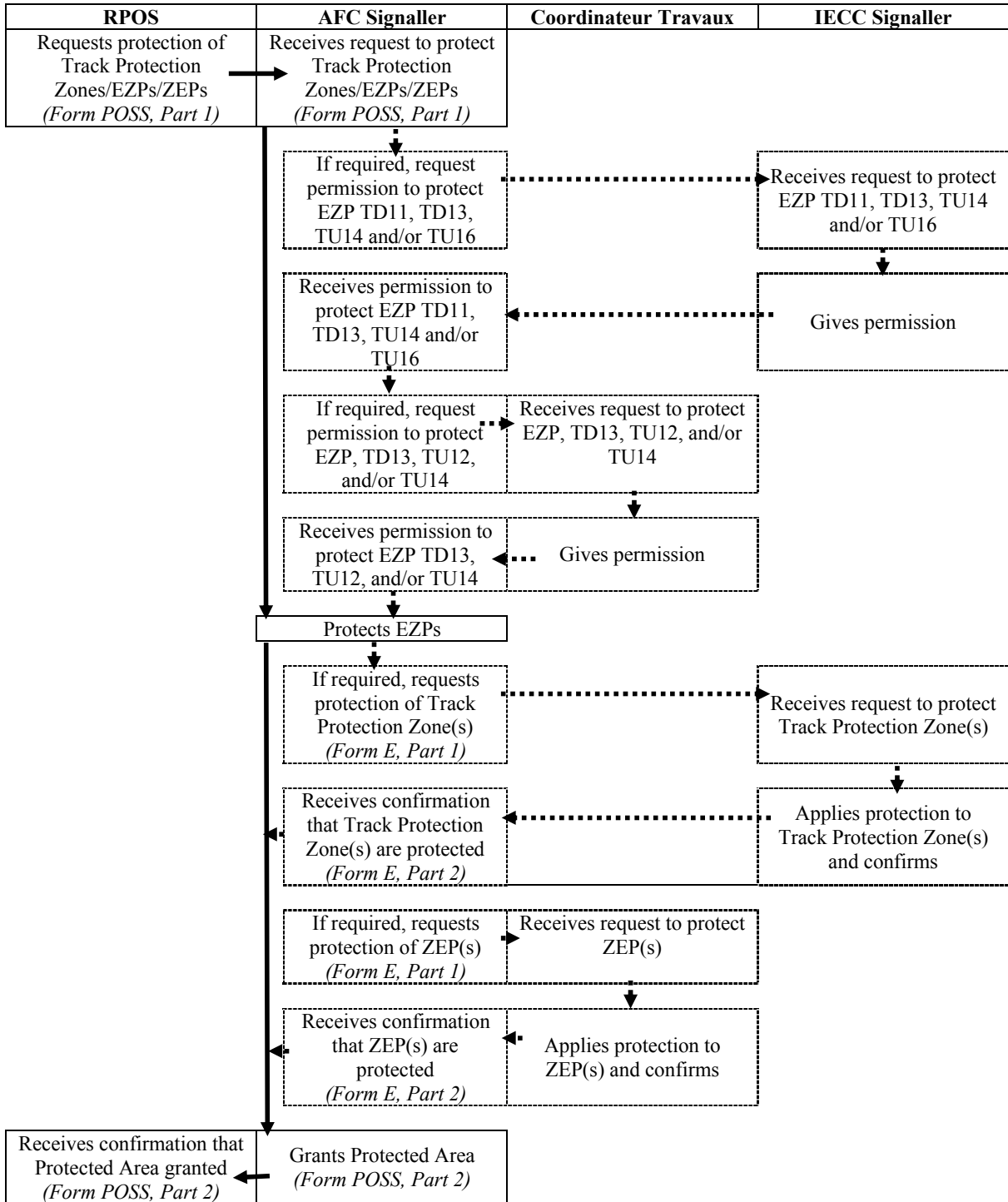
<b>Form E - Possession Management procedure for IECC/AFC/RCC Interface (back)</b>	
<b>Eurotunnel initiates the protection request</b>	
<b>Part 7</b>	<b>Arranging Protection</b>
<b><u>RCC to AFC</u></b>	
Protect EZP(s) .....	
Time.....	Date..... Message No.....
<b>Part 8</b>	<b>Confirming Protection</b>
<b><u>AFC to RCC</u></b>	
Reference your message no.....EZP(s) .....are protected	
Time.....	Date..... Message No.....
<b>Part 9</b>	<b>Removing Protection</b>
<b><u>RCC to AFC</u></b>	
Reference your message no.....remove protection from EZP(s) .....	
Time.....	Date..... Message No.....
<b>Part 10</b>	<b>Works train entering protected area/track possession</b>
<b><u>AFC/IECC/RCC* to AFC/IECC/RCC *</u></b>	
Permission required to send works train no. _____ into track possession/protected area on _____ line	
Time.....	Date.....
Permission required to send works train no. _____ into track possession/protected area on _____ line	
Time.....	Date.....
<b><u>AFC/IECC/RCC* to AFC/IECC/RCC *</u></b>	
Permission given for Works train no. _____ to pass your protecting signals/markers on _____ line	
Time.....	Date.....
Permission given for Works train no. _____ to pass your protecting signals/markers on _____ line	
Time.....	Date..... Message No.....
<b>Part 11</b>	<b>Works train leaving protected area/track possession</b>
<b><u>AFC/IECC/RCC* to AFC/IECC/RCC *</u></b>	
Permission required for Works train no. _____ to exit track possession/protected area on _____ line	
Time.....	Date.....
Permission required for Works train no. _____ to exit track possession/protected area on _____ line	
Time.....	Date.....
<b><u>AFC/IECC/RCC* to AFC/IECC/RCC *</u></b>	
Permission given for Works train no. _____ to exit track possession/protected area on _____ line	
Time.....	Date..... Message No.....
Permission given for Works train no. _____ to exit track possession/protected area on _____ line	
Time.....	Date..... Message No.....

\*Delete as appropriate

6.8.2.2 Method

6.8.2.2.1 CTRL initiates the protection request

Summary of process



- Module T3 of the CTRL Rule Book applies with the following additional requirements:
- The RPOS must request the Protected Area from the AFC Signaller using the Forms Process, quoting the identities of the required Track Protection Zone(s)/EZP(s)/ZEP(s). Any Track Protection Zone/ZEP required to be protected must be adjacent to a protected EZP, as part of the same Protected Area request.  
*(Part 1 of Form POSS)*
- The AFC Signaller must protect the required EZP(s) in accordance with clause 5.2 of module T3 of the CTRL Rule Book and the additional instructions shown in figure 5.
- **Protection of Track Protection Zones (if required)**
  - The AFC Signaller must request the IECC Signaller to protect the required Track Protection Zone(s).  
*(Part 1 of Form E)*
  - The IECC Signaller will confirm to the AFC Signaller when the required Track Protection Zone(s) are protected.  
*(Part 2 of Form E)*
- **Protection of Eurotunnel ZEPs (if required)**
  - The AFC Signaller must request the Coordinateur Travaux to protect the required ZEP(s).  
*(Part 1 of Form E)*
  - The Coordinateur Travaux will confirm to the AFC Signaller when the required ZEP(s) are protected.  
*(Part 2 of Form E)*
- The AFC Signaller must only grant the Protected Area request to the RPOS in accordance with clause 5.2 of module T3 of the CTRL Rule Book, when **all** the requested Track Protection Zone(s)/EZP(s)/ZEP(s) have been protected.
- If ZEP(s) form part of the Protected Area, the RPOS to operate the required ZEP switches, as well as the EZP switches in order to protect the Safe Area.
- The Task Supervisor must **always** provide worksite marker boards to protect the worksite. This amends clause 7.3.7 module T3 of the CTRL Rule Book.

#### 6.8.2.2.2 Network Rail initiates the protection request

##### Protection of CTRL EZPs

- The IECC Signaller will request the AFC Signaller to protect the required EZP(s). *(Part 4 of Form E)*
- The AFC Signaller must confirm to the IECC Signaller when the required EZP(s) are protected.  
*(Part 5 of Form E)*

#### 6.8.2.2.3 Eurotunnel initiates the protection request

##### Protection of CTRL EZPs

- The Coordinateur Travaux will request the AFC Signaller to protect the required EZP(s).  
*(Part 7 of Form E)*
- The AFC Signaller must confirm to the Coordinateur Travaux when the required EZP(s) are protected.  
*(Part 8 of Form E)*

#### 6.8.2.3 Giving up a Protected Area

##### 6.8.2.3.1 CTRL initiated the protection request

###### Track Protection Zones were protected

- The AFC Signaller must advise the IECC Signaller that the possession has been given up and that the protection of Track Protection Zones is no longer required.  
*(Part 3 of Form E)*

###### Eurotunnel ZEPs were protected

- The AFC Signaller must advise the Coordinateur Travaux that the possession has been given up and that the protection of ZEP(s) is no longer required.  
*(Part 3 of Form E)*

**CTRL EZPs were protected**

- After removing the protection from the EZPs TD11, TD13, TU14 and TU16 the AFC Signaller must advise the IECC Signaller.
- After removing the protection from the EZPs TD13, TU12 and TU14, the AFC Signaller must advise the Coordinateur Travaux.

**6.8.2.3.2 Network Rail initiated the protection request****Track Protection Zones D or J were protected**

- The IECC Signaller will advise the AFC Signaller that the possession has been given up and that the Track Protection Zone(s) is no longer protected.
- In addition, for Track Protection Zone J, the AFC Signaller must inform the RCC Controller that up trains for the Network Rail route to Ashford International may be sent by the normal route.

**CTRL EZPs were protected**

- The IECC Signaller will advise the AFC Signaller that the possession has been given up and that the protection of EZPs is no longer required *(Part 6 of Form E)*
- The AFC Signaller may then remove the protection and signal trains normally.

**6.8.2.3.3 Eurotunnel initiated the protection request****CTRL EZPs were protected**

- The Coordinateur Travaux will advise the IECC Signaller that the possession has been given up and that the protection of ZEP(s) is no longer required. *(Part 9 of Form E)*
- The AFC Signaller may then remove the protection and signal trains normally.

**Eurotunnel ZEPs were protected**

- The Coordinateur Travaux will advise the AFC Signaller that the possession has been given up and that the ZEP(s) is no longer protected.
- In addition for ZEP 2000, the AFC Signaller must inform the IECC Signaller that down trains may be sent by the normal route.

**6.8.2.4 Movements of works trains****6.8.2.4.1 CTRL initiated the protection request**

With reference to clause 8.1 of module T3 of the CTRL Rule Book, the form ATPA (Driver) is NOT issued to drivers of works trains entering the protected area from the IECC or RCC signalled controlled areas.

**Within the protected area**

The AFC Signaller must organise the passing of any closed markers (including RCC controlled markers) within the protected area. Works trains must NOT proceed past pk8.727 in the down direction without the Coordinateur travaux's permission. Works trains must NOT proceed past signals AD830/AD832 in the up direction without the IECC Signaller's permission.

**To/from the IECC signalled controlled area**

- If a works train requiring to enter the AFC protected area arrives at IECC controlled signals, the IECC Signaller will request permission of the AFC Signaller to allow the train to proceed. *(Part 10 of Form E)*
- The AFC Signaller must confirm to the IECC Signaller when permission is given. *(Part 10 of Form E)*
- When the AFC Signaller has given permission, the IECC Signaller will set the route, instruct the driver to pass the signal at danger and to proceed cautiously to the work site marker board.
- Before allowing a works train to leave the protected area towards the IECC signalled controlled area, the AFC Signaller must request permission from the IECC Signaller. *(Part 11 of Form E)*
- When the IECC Signaller has given permission, the AFC Signaller must instruct the driver to proceed cautiously to the first IECC controlled signal. *(Part 11 of Form E)*

**To/from the RCC signalled controlled area**

- If a works train requiring to enter the AFC protected area arrives at markers 0976/0977, the Coordinateur Travaux will request permission of the AFC Signaller to allow the train to proceed.  
*(Part 10 of Form E)*
- The AFC Signaller must confirm to the Coordinateur Travaux when permission is given.  
*(Part 10 of Form E)*
- The RCC will organise the movement of the works train past the protecting marker towards the protected area.
- Before allowing a works train to leave the protected area towards the RCC signalled controlled area, the AFC Signaller must request permission from the Coordinateur Travaux  
*(Part 11 of Form E)*
- When the Coordinateur Travaux has given permission, the AFC Signaller must instruct the driver to proceed cautiously to the first RCC controlled signal.  
*(Part 11 of Form E)*

**6.8.2.4.2 Network Rail initiated the protection request)****From/to the IECC signalled controlled area**

- If a works train requires to enter a track possession at the end protected by the AFC, the AFC signaller must advise the IECC Signaller, giving details of the train and its required movements and requests permission for it to enter.  
*(Part 10 of Form E)*
- When the IECC Signaller has given permission, the AFC Signaller must instruct the driver to proceed cautiously to the work site marker board.  
*(Part 10 of Form E)*
- Before allowing a works train to leave the protected area towards the AFC signalled controlled area, the IECC Signaller must request permission from the AFC Signaller.  
*(Part 11 of Form E)*
- The AFC Signaller must confirm to the IECC Signaller when permission is given. *(Part 11 of Form E)*

**6.8.2.4.3 Eurotunnel initiated the protection request****Within the protected area**

The RCC will organise the passing of any closed markers (including AFC controlled markers) within the protected area. Works trains will NOT proceed past pk8.210 (Down Fast line), pk7.977 (Up Fast and Up Slow lines) in the up direction without the AFC Signaller's permission.

**From/to the RCC signalled controlled area**

- If a works train requires to enter a track possession at the end protected by the AFC, the AFC signaller must advise the Coordinateur Travaux, giving details of the train and its required movements and requests permission for it to enter.  
*(Part 10 of Form E)*
- When the Coordinateur Travaux has given permission, the AFC Signaller must instruct the driver to proceed cautiously to the work site marker board.  
*(Part 10 of Form E)*
- Before allowing a works train to leave the protected area towards the AFC signalled controlled area, the Coordinateur Travaux must request permission from the AFC Signaller.  
*(Part 11 of Form E)*
- The AFC Signaller must confirm to the Coordinateur Travaux when permission is given  
*(Part 11 of Form E)*

**6.8.3 OHLE isolations in connection with engineering work****6.8.3.1 Protection arrangements for electrical sections/Sels**

The OHLE controlled by the RCC, AFC and Paddock Wood ECR is divided into separate electrical sections/Sels as shown in the isolation diagrams, appropriate copies of which are held in these controls and Ashford IECC.

These instructions apply to the isolation of Sels 602, 603, & 605 (controlled by the RCC) and electrical sections 601A & 602L (controlled by Paddock Wood ECR). These instructions also apply to the isolation of electrical section 717A (controlled by the AFC) on the Up CTRL line when it is required to be isolated to protect staff/equipment working on the adjacent Up Slow line. In addition, if Sel 610 (controlled by the RCC) is required to be isolated, then the Coordinateur Travaux will request the AFC Signaller to send all down trains via the Up Slow or Up Fast lines. The AFC Signaller must request the IECC Signaller to send all down trains via the Up Slow line.

The protecting signals/markers for each electrical section 601A and 602L are detailed in figure 8. The protecting signals/markers for each Sel 602, 603 and 605 are detailed in figure 9. The protecting signals/markers for Sel/electrical section 602 & 602L together and Sel/electrical section 605 & 601A together are detailed in figure 10. Before any electrical section or Sel is isolated, the electrical control operator or controller arranging the isolation must have received an assurance that the required electrical section(s)/Sel(s) has been blocked to electric train movements in accordance with the arrangements specified in the following points.

The AFC Signaller to record details of messages with the IECC/RCC in connection with signal protections for isolations on Form F shown in figure 11.

**Figure 8 - Electrical sections – Signalling Protection arrangements**

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
601A	Up Slow/ Up Main	<p><u>Up direction</u> Insulated overlap at pk7.780</p> <p><u>Down direction</u> Switch T1 at Network Rail kilometrage 108.329</p>	AF362 – AD830 AF364 – AD830	AD793 – AD823 AD795 – AF365 AD797 – AF365 AD799 – AF365 AD803 – AF365 AD807 – AF365 AD809 – AF365 AD813 – AF365 AD821 – AF365 AD823 – AF365 2167 – AF365 2171 – AF365	AFC Signaller to request RCC to send electric trains for Dollands Moor via the Down Fast line.
602L	Down Main/ Down Fast	<p><u>Up direction</u> Insulated overlap at pk7.935</p> <p><u>Down direction</u> Switch T2 at Network Rail kilometrage 108.325</p>	AD830 – AD796 AD830 – AD798 AD830 – AD804 AD830 – AD808 AD830 – AD814 AD830 – AD816 AD830 – AD818 AD830 – AD824 AD830 – 2164 AF366 – AD832	AD795 – AF363 AD795 – AF365 AD797 – AF363 AD797 – AF365 AD799 – AF363 AD799 – AF365 AD803 – AF363 AD803 – AF365 AD807 – AF363 AD807 – AF365 AD809 – AF363 AD809 – AF365 AD813 – AF363 AD813 – AF365 AD821 – AF363 AD821 – AF365 2167 – AF363 2167 – AF365 2171 – AF363 2171 – AF365	



**Figure 9 SELs – Signalling Protection arrangements**

Sels	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
602	Down CTRL/ Down Fast	<p><u>Up direction</u> Switch 0948JS</p> <p><u>Down direction</u> Phase break neutral section at CTRL kilometrage 108.300 Insulated overlap at pk7.935</p>	0976 – AF366	<p>0871 – 0968</p> <p>AD795 – AF363</p> <p>AD797 – AF363</p> <p>AD799 – AF363</p> <p>AD803 – AF363</p> <p>AD807 – AF363</p> <p>AD809 – AF363</p> <p>AD813 – AF363</p> <p>AD821 – AF363</p> <p>AD823 – AF363</p> <p>AF363 – 0834</p> <p>AF481 – AF361</p>	<p>Coordinateur Travaux to request AFC Signaller to protect this Sel.</p> <p>AFC Signaller to request IECC Signaller.</p>
603	Up Fast/ Up CTRL	<p><u>Up direction</u> Switch 0923JS</p> <p><u>Down direction</u> Phase break neutral section at pk7.329</p>	<p>0976 – AF362</p> <p>0977 – AF362</p> <p>0977 – AF364</p> <p>112 – AF362</p>	<p>AF365 – 0833</p> <p>AF367 – 0833</p>	<p>Coordinateur Travaux to request AFC Signaller to protect this Sel</p>
605	Up Slow	<p><u>Up direction</u> Switches 0925JS/0926JS</p> <p><u>Down direction</u> Insulated overlap at pk7.780</p>	<p>0976 – AF364</p> <p>0977 – AF364</p> <p>AF362 – AD830</p>	<p>AD795 – AF365</p> <p>AD797 – AF365</p> <p>AD799 – AF365</p> <p>AD803 – AF365</p> <p>AD807 – AF365</p> <p>AD809 – AF365</p> <p>AD813 – AF365</p> <p>AD821 – AF365</p> <p>AD823 – AF365</p> <p>AF365 – 0833</p> <p>AF365 – 0871</p>	<p>Coordinateur Travaux to request AFC Signaller to protect this Sel.</p> <p>AFC Signaller to request IECC Signaller</p>

**Figure 10 SELs and Electrical sections together – Signalling Protection arrangements**

Sels	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
602 & 602L	Down Main/ Down CTRL/ Down Fast	<p>Up direction Switch 0948JS</p> <p>Down direction Phase break neutral section at CTRL kilometrage 108.300</p> <p>Switch T2 at Network Rail kilometrage 108.325</p>	<p>0976 – AF366</p> <p>AD830 – AD796</p> <p>AD830 – AD798</p> <p>AD830 – AD804</p> <p>AD830 – AD808</p> <p>AD830 – AD814</p> <p>AD830 – AD816</p> <p>AD830 – AD818</p> <p>AD830 – AD824</p> <p>AD830 – 2164</p>	<p>AD795 – AF363</p> <p>AD795 – AF365</p> <p>AD797 – AF363</p> <p>AD797 – AF365</p> <p>AD799 – AF363</p> <p>AD799 – AF365</p> <p>AD803 – AF363</p> <p>AD803 – AF365</p> <p>AD807 – AF363</p> <p>AD807 – AF365</p> <p>AD809 – AF363</p> <p>AD809 – AF365</p> <p>AD813 – AF363</p> <p>AD813 – AF365</p> <p>AD821 – AF363</p> <p>AD821 – AF365</p> <p>2167 – AF363</p> <p>2167 – AF365</p> <p>2171 – AF363</p> <p>2171 – AF365</p> <p>AF481 – AF366</p>	
605 & 601A	Up Slow/ Up Main	<p>Up direction Switches 0925IS/0926IS</p> <p>Down direction Switch T1 at Network Rail kilometrage 108.329</p>	<p>0976 – AF364</p> <p>0977 – AF364</p> <p>AF362 – AD830</p>	<p>AD793 – AD823</p> <p>AD795 – AF365</p> <p>AD797 – AF365</p> <p>AD799 – AF365</p> <p>AD803 – AF365</p> <p>AD807 – AF365</p> <p>AD809 – AF365</p> <p>AD813 – AF365</p> <p>AD821 – AF365</p> <p>AD823 – AF365</p> <p>2167 – AF365</p> <p>2171 – AF365</p>	

Figure 11: Form F

<b>Form F – Signalling protection procedure for OHLE isolations at the IECC/AFC/RCC Interface (front)</b>	
<b>Record of messages between the AFC and IECC</b>	
<b>CTRL initiates the protection request</b> (Operation no.....)	
<b>Part 1</b>	<b>Arranging Block to Electric Trains</b>
<u><b>AFC to IECC</b></u>	
Block to electric trains, electrical section(s) .....	
Time.....	Date..... Message No.....
<b>Part 2</b>	<b>Confirming Block to Electric Trains</b>
<u><b>IECC to AFC</b></u>	
Reference your message no.....electrical section(s) .....are blocked to electric trains	
Time.....	Date..... Message No.....
<b>Part 3</b>	<b>Removing Block to Electric Trains</b>
<u><b>AFC to IECC</b></u>	
Reference your message no.....you may remove the block to electric trains for electrical section(s) .....	
Time.....	Date..... Message No.....
<b>Network Rail initiates the protection request</b>	
<b>Part 4</b>	<b>Arranging Block to Electric Trains</b>
<u><b>IECC to AFC</b></u>	
Block to electric trains, electrical section(s) .....	
Time.....	Date..... Message No.....
<b>Part 5</b>	<b>Confirming Block to Electric Trains</b>
<u><b>AFC to IECC</b></u>	
Reference your message no.....electrical section(s) .....are blocked to electric trains	
Time.....	Date..... Message No.....
<b>Part 6</b>	<b>Removing Block to Electric Trains</b>
<u><b>IECC to AFC</b></u>	
Reference your message no.....you may remove the block to electric trains for electrical section(s) .....	
Time.....	Date..... Message No.....

Figure 11: Form F

<b>Form F – Signalling protection procedure for OHLE isolations at the IECC/AFC/RCC Interface (back)</b>	
<b>Record of messages between the AFC and RCC</b>	
<b>Eurotunnel initiates the protection request</b>	
<b>Part 7</b>	<b>Arranging Block to Electric Trains</b>
<u><b>RCC to AFC</b></u>	
Block to electric trains, electrical section(s) .....	
Time.....	Date..... Message No.....
<b>Part 8</b>	<b>Confirming Block to Electric Trains</b>
<u><b>AFC to RCC</b></u>	
Reference your message no.....electrical section(s) .....are blocked to electric trains	
Time.....	Date..... Message No.....
<b>Part 9</b>	<b>Removing Block to Electric Trains</b>
<u><b>RCC to AFC</b></u>	
Reference your message no.....you may remove the block to electric trains for electrical section(s) .....	
Time.....	Date..... Message No.....
<b>CTRL initiates the protection request</b> (Operation no.....)	
<b>Part 10</b>	<b>Arranging Block to Electric Trains</b>
<u><b>AFC to RCC</b></u>	
Block to electric trains, electrical section(s) .....	
Time.....	Date..... Message No.....
<b>Part 11</b>	<b>Confirming Block to Electric Trains</b>
<u><b>RCC to AFC</b></u>	
Reference your message no.....electrical section(s) .....are blocked to electric trains	
Time.....	Date..... Message No.....
<b>Part 12</b>	<b>Removing Block to Electric Trains</b>
<u><b>AFC to RCC</b></u>	
Reference your message no.....you may remove the block to electric trains for electrical section(s) .....	
Time.....	Date..... Message No.....

**6.8.3.2 Isolation of electrical section(s) 602, 603 or 605****6.8.3.2.1 Eurotunnel initiates the isolation request**

- Coordinateur Travaux requests AFC Signaller to block to electric trains the electrical section(s) concerned. *(Part 7 of Form F)*
- AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- **Electrical sections 602 and 605 only**
  - AFC Signaller requests IECC Signaller to block to electric trains the electrical section(s) concerned. *(Part 1 of Form F)*
  - IECC Signaller confirms to AFC Signaller that block to electric trains is in place. *(Part 2 of Form F)*
  - AFC Signaller confirms to Coordinateur Travaux that block to electric trains is in place. *(Part 8 of Form F)*
- RCC carries out the switching instructions in order to isolate the electrical section(s) concerned.

**6.8.3.2.2 CTRL initiates the isolation request**

- Module T3 of the CTRL Rule Book applies with the following additional requirements:
- NPOS requests EMMIS Controller to isolate the electrical section(s) concerned. *(Form ISOL)*
- EMMIS Controller requests AFC Signaller to block to electric trains the electrical section(s) concerned.
- AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- **Electrical sections 602 and 605 only**
  - AFC Signaller requests IECC Signaller to block to electric trains the electrical section(s) concerned. *(Part 1 of Form F)*
  - IECC Signaller confirms to AFC Signaller that block to electric trains is in place. *(Part 2 of Form F)*
- AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.
- EMMIS Controller informs Coordinateur Travaux that the electrical section(s) concerned are blocked to electric trains and requests its isolation.
- RCC carries out the switching instructions in order to isolate the electrical section(s) concerned.
- Coordinateur Travaux confirms to EMMIS Controller that the electrical section(s) concerned is isolated.
- EMMIS Controller confirms to NPOS that the electrical section(s) concerned are isolated. *(Form ISOL)*
- NPOS carries out local protection measures and issues Overhead Line Permit(s).

**6.8.3.2.3 Network Rail initiates the isolation request**

**Note:** Applicable in connection with:

1. work being carried out on the boundary isolation transformers and associated switchgear that requires the isolation of the electrical section 602 and/or 605 **or**,
2. work on the Up Slow line that requires protection from the electrical risks associated with the OHLE (electrical section 603) on the adjacent Up CTRL line (point 8).
  - Nominated Person requests ECRO to isolate the electrical section(s) concerned.
  - ECRO requests IECC Signaller to block to electric trains the electrical section(s) concerned.
  - IECC Signaller requests AFC Signaller to block to electric trains the electrical section(s) concerned. *(Part 4 of Form F)*

- AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- AFC Signaller requests Coordinateur Travaux to block to electric trains the electrical section(s) concerned. *(Part 10 of Form F)*
- RCC applies Protection C measures and confirms to AFC Signaller that block to electric trains is in place. *(Part 11 of Form F)*
- AFC Signaller confirms to IECC Signaller that block to electric trains is in place. *(Part 5 of Form F)*
- IECC Signaller confirms to ECRO that block to electric trains is in place.
- ECRO instructs Coordinateur Travaux to isolate electrical section(s) concerned.
- RCC carries out the switching instructions in order to isolate the electrical section(s) concerned.
- Coordinateur Travaux confirms to ECRO that the electrical section(s) concerned is isolated.
- ECO confirms to Nominated Person that the electrical section(s) concerned is isolated.

### **6.8.3.3 Re-energisation of electrical section(s) 602, 603 or 605**

#### **6.8.3.3.1 Eurotunnel initiated the isolation request**

- RCC carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- Coordinateur Travaux advises AFC Signaller that the block to electric trains for the electrical section(s) concerned can be removed. *(Part 9 of Form F)*
- AFC Signaller removes signalling protection for the electrical section(s) concerned.
- **Electrical sections 602 and 605 only**
  - AFC Signaller advises IECC Signaller that the block to electric trains for the electrical section(s) concerned can be removed. *(Part 3 of Form F)*

#### **6.8.3.3.2 CTRL initiated the isolation request**

- NPOS cancels isolation with EMMIS Controller. *(Form ISOL)*
- EMMIS Controller requests Coordinateur Travaux to re-energise the electrical section(s) concerned.
- RCC carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- Coordinateur Travaux confirms to EMMIS Controller that the electrical section(s) concerned have been re-energised.
- EMMIS Controller advises AFC Signaller that the block to electric trains for the electrical section(s) concerned can be removed.
- AFC Signaller removes signalling protection for the electrical section(s) concerned.
- **Electrical sections 602 and 605 only**
  - AFC Signaller advises IECC Signaller that the block to electric trains for the electrical section(s) concerned can be removed. *(Part 3 of Form F)*

#### **6.8.3.3.3 Network Rail initiated the isolation request**

- Nominated Person cancels isolation with ECRO.
- ECRO authorises Coordinateur Travaux to re-energise the electrical section(s) concerned.
- RCC carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- ECRO advises IECC Signaller that the block to electric trains for the electrical section(s) concerned can be removed.
- IECC Signaller advises AFC Signaller that the block to electric trains for the electrical section(s) concerned can be removed. *(Part 6 of Form F)*
- AFC Signaller removes signalling protection for the electrical section(s) concerned.

- AFC Signaller advises Cordinateur Travaux that the block to electric trains for the electrical section(s) concerned can be removed. *(Part 12 of Form F)*

#### **6.8.3.4 Isolation of electrical sections 601A or 602L**

**Note:** Eurotunnel personnel have no requirement to request the isolation of these electrical sections.

##### **6.8.3.4.1 Network Rail initiates the isolation request**

- Nominated Person requests ECRO to isolate the electrical section(s) concerned.
- ECRO requests IECC Signaller to block to electric trains the electrical section(s) concerned.
- IECC Signaller requests AFC Signaller to block to electric trains the electrical section(s) concerned. *(Part 4 of Form F)*
- AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- **Isolation of electrical section 601A only**
  - AFC Signaller to request RCC to send electric trains for Dollands Moor via the Down Fast line.
- AFC Signaller confirms to IECC Signaller that block to electric trains is in place. *(Part 5 of Form F)*
- IECC Signaller confirms to ECRO that block to electric trains is in place.
- ECO carries out the switching instructions in order to isolate the electrical section(s) concerned.
- ECO confirms to Nominated Person that the electrical sections concerned are isolated.

##### **6.8.3.4.2 CTRL initiates isolation request**

- NPOS requests EMMIS Controller to isolate the electrical section(s) concerned. *(Form ISOL)*
- EMMIS Controller requests AFC Signaller to block to electric trains the electrical section(s) concerned.
- AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- AFC Signaller requests IECC Signaller to block to electric trains the electrical section(s) concerned. *(Part 1 of Form F)*
- IECC Signaller confirms to AFC Signaller that block to electric trains is in place. *(Part 2 of Form F)*
- AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.
- EMMIS Controller requests ECRO to isolate the electrical section(s) concerned.
- ECRO confirms to EMMIS Controller that the electrical section(s) concerned is isolated.
- EMMIS Controller confirms to NPOS that the electrical section(s) concerned are isolated. *(Form ISOL)*
- NPOS carries out local protection measures and issues Overhead Line Permit(s).

#### **6.8.3.5 Re-energisation of electrical sections 601A or 602L**

##### **6.8.3.5.1 Network Rail initiated the isolation request**

- Nominated Person cancels isolation with ECRO.
- ECRO carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- ECRO advises IECC Signaller that signal protection for the electrical section(s) concerned can be removed.
- IECC Signaller advises AFC Signaller that signalling protection for the electrical section(s) concerned can be removed. *(Part 6 of Form F)*
- AFC Signaller removes signalling protection for the electrical section(s) concerned.

- **Isolation of electrical section 601A only**
  - AFC Signaller to advise RCC that it can send electric trains for Dollands Moor via the Up Slow line.

#### 6.8.3.5.2 CTRL initiated the isolation request

- NPOS cancels isolation with EMMIS Controller. *(Form ISOL)*
- EMMIS Controller requests ECRO to re-energise the electrical section(s) concerned.
- ECRO carries out the switching instructions in order to re-energise the electrical section(s) concerned.
- ECRO informs EMMIS Controller that the electrical section (s)concerned is re-energised.
- EMMIS Controller advises AFC Signaller that signal protection for the electrical section(s) concerned can be removed.
- AFC Signaller removes signalling protection for the electrical section(s) concerned.
- AFC Signaller advises IECC Signaller that the block to electric trains for the electrical section(s) concerned can be removed. *(Part 2 of Form F)*

#### 6.8.3.5 Isolation of electrical sections 602 & 602L together or 605 & 601A together

If electrical sections 602 & 602L or 605 & 601A are required to be isolated together as part of the same isolation, the NPOS/Nominated Person to include both electrical sections in their isolation request.

Electrical sections 602 or 605 to be isolated in accordance with point 6.8.3.2

Electrical sections 601A or 602L to be isolated in accordance with point 6.8.3.4

#### 6.8.3.6 Isolation of OHLE on Up CTRL line for Network Rail work on the Up Slow line

In order to provide protection from electrical risks associated with the OHLE on the adjacent Up CTRL line, Network Rail Personnel working on the Up Slow line may require electrical section(s) 603 and/or 717A isolated, as well as the isolation of electrical section 601A. The Nominated Person to include electrical section(s) 603 and/or 717A in the request for an isolation to the ECRO.

##### 6.8.3.6.1 Isolation of electrical section 603

**Note:** This electrical section must only be isolated in association with the isolation of electrical sections 605 and 601A (point 6.8.3.5)

- The instructions shown in point 6.8.3.4.1 to be applied.
- The instructions shown in point 6.8.3.2.3 to be applied.

##### 6.8.3.6.2 Electrical section 717A

- ECRO requests EMMIS Controller to isolate electrical section 717A.
- EMMIS Controller to agree with AFC Signaller that electrical section 717A can be isolated.
- EMMIS Controller to isolate electrical section 717A in accordance with his control room instructions
- EMMIS Controller confirms to ECRO that electrical section 717A is isolated.
- ECRO confirms to Nominated Person that the electrical section is isolated.
- When the isolation is no longer required, the ECO to request EMMIS Controller to re-energise electrical section 717A.

#### 6.8.4 Isolation of the D.C. conductor rail

##### 6.8.4.1 Principles

If work has to be carried out that requires personnel or equipment to touch or come near to the normally de-energised conductor rail on the Down Fast line, then it must be formally isolated in accordance with the Network Rail “D.C. Electrified Lines Instructions” (GO/RT3091). **It must be assumed that this conductor rail is live until a Conductor Rail Permit has been issued in accordance with these rules.**



An Authorised Person, who is responsible for testing the conductor rail to ensure it is de-energised and the application of short circuiting straps in accordance with the Network Rail “D.C. Electrified Lines Instructions” (GO/RT3091) must be present to issue and cancel the Conductor Rail Permit.

The Task Supervisor must not allow any member of the works group to commence work near the conductor rail until a Conductor Rail Permit is issued.

Before the isolation of the conductor rail can commence, Track Protection Zone D and EZZ TD11 must be blocked to all train movements in accordance with point 6.8.2.2.

#### **6.8.4.2 Issue of Conductor Rail Permit**

When the RPOS has received confirmation from the AFC Signaller that Track Protection Zone D and EZZ TD11 are blocked to train movements, he requests the Authorised Person to arrange the isolation of the Conductor Rail.

The Authorised Person arranges with the ECRO for the conductor rail to be isolated. When the ECRO has isolated the conductor rail in accordance with the control room instructions, the ECRO will authorise the Authorised Person to test it.

The Authorised Person ensures the conductor rail is isolated by using a testing device and applies short circuiting straps between the conductor and running rails on both sides of each work site covered by the Conductor Rail Permit. These short circuiting straps must remain in position whilst work is in progress and cannot be removed until the Conductor Rail Permit is cancelled.

After the Authorised Person has applied the short circuiting straps, they will issue to the Task Supervisor of the working group a Conductor Rail Permit. It is the duty of the Authorised Person to ensure that the Task Supervisor is fully advised of the working limits stated on the Conductor Rail Permit.

The Task Supervisor must sign Part 1 of the Conductor Rail Permit and in turn ensure that all personnel for whom they are responsible are fully briefed of the conditions contained in the Conductor Rail Permit before any work commences. The Task Supervisor must retain the Conductor Rail Permit until the work is completed or terminated or is relieved.

#### **6.8.4.2 Cancellation of Conductor Rail Permit**

On completion of work the Task Supervisor must warn each person for whom they are responsible that electricity is due to be restored and that they must keep clear of the conductor rail and its connections. The Task Supervisor must ensure that all persons, tools and materials are clear of the conductor rail, sign Part 3 of the Conductor Rail Permit and return it to the Authorised Person for cancelling.

The Authorised Person then removes the short circuiting and advises the ECRO that the Conductor Rail Permit has been returned and cancelled, that all short circuiting straps have been removed and that the conductor rail is safe to energise.

### **6.9 Temporary speed restrictions**

#### **6.9.1 General principles**

To cover the transition between the lineside and cab signalling systems, the principles shown below must be complied with.

- The use of lineside signs as shown in module SR2 of the CTRL Rule Book does not apply in the cab signalled area.
- All temporary lineside boards to show the speeds in both mph and km/h.  
The upper indicator to show the speed in mph with black letters on a yellow background  
The lower indicator to show the speed in km/h with yellow letters on a black background
- Differential temporary speed restrictions are not permitted.
- Any Warning Indicator erected in the IECC signalled area to have an AWS electro-magnet as shown in Section U(i) of the Network Rail Rule Book except where agreed with the Train Operating Companies

### 6.9.2 Down direction

In the down direction, drivers are advised of temporary speed restrictions by means of temporary lineside boards and indicators in accordance with Section U(i) of the Network Rail Rule Book as far as markers AF363 or AF365 and thence by the cab signalling system. There are no temporary lineside boards and indicators after these markers.

The speed limit displayed by the temporary lineside boards and indicators in rear of markers AF363 or AF365 will depend on the temporary speed restriction shown by the cab signalling system in accordance with the table below :

Speed shown on cab signalling system in km/h	Speed limit displayed by temporary lineside boards & indicators	
	mph	km/h
30	20	30
60	40	60
100	60	100

Before applying any speed restriction by the cab signalling system, the RCC Supervisor will obtain permission from the AFC Signaller in order to ensure that any approaching down direction train does not receive an abnormal cab signalling display.

#### Special case of temporary speed restriction of less than 30 km/h

If a temporary speed restriction of less than 30 km/h is imposed that extends east of markers AF363 or AF365, the temporary speed restriction boards and indicators are to display the following equivalent speeds in mph:

Temporary speed restriction in km/h	Speed limit displayed by temporary lineside boards & indicators	
	mph	km/h
10	5	10
20	10	20

In addition, the AFC Signaller must:

- stop trains at marker AF363 or AF365,
- advise the driver (using the International Forms procedure), indicating:
  - the location and length of the restriction,
  - the speed limit in force,
- open the marker with the cab signalling system displaying a speed of 30 km/h

### 6.9.3 Up direction

In the up direction, drivers are advised of temporary speed restrictions by means of the cab signalling system in accordance with module SR1 of the CTRL Rule Book as far as the **CAB** board and thence by temporary lineside boards and indicators. If the temporary speed restriction immediately follows the cab signalling area, drivers may encounter a speed indicator without a prior warning board, but the cab signalling system will reduce the speed of the train to that of the speed restriction in accordance with the table below:

Temporary speed restriction in mph	Speed limit displayed by cab signalling system in km/h
20	30
25	
30	
35	
40	60
45	
50	
55	
60 and above	100

In connection with module S1 of the CTRL Rule Book, before giving authority to the Competent Person to operate the switch(es) in the lineside signalling room, the AFC Signaller must obtain permission from the RCC Supervisor in order to ensure that any approaching up direction train does not receive an abnormal cab signalling display.

### Special case of temporary speed restrictions of less than 20 mph

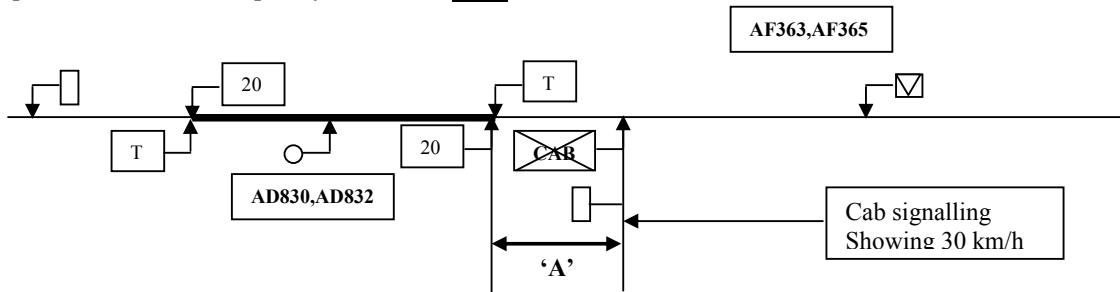
If a temporary speed restriction of less than 20 mph is imposed before signals AD830 or AD832: the AFC Signaller must:

- stop trains at marker AF362, AF364, or AF366,
- advise the driver (using the International Forms procedure), indicating:
  - the location and length of the restriction,
  - the speed limit in force.
- open the marker with the cab signalling system displaying a speed of 30 km/h

### 6.9.3 Examples of the application of temporary speed restrictions

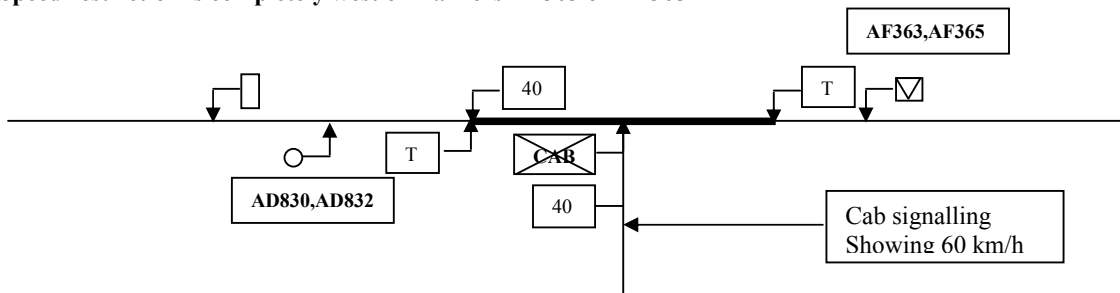
The speeds indicated on the linside boards are in mph.

Speed restriction is completely west of the **CAB** board

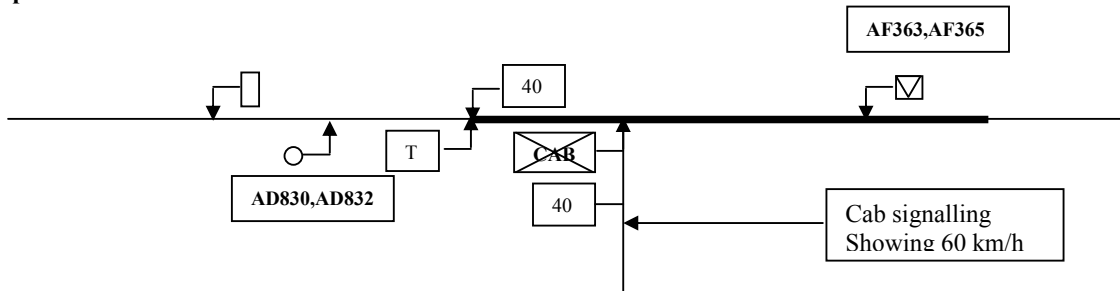


**Note:** In the up direction, if the distance “A” is less than the required braking distance, then the warning indicator will be placed at the **CAB** board and the cab signalling system to show 30 km/h. If the speed restriction commences at the **CAB** board, a warning indicator will not be provided and the advice will be given by the cab signalling system showing 30 km/h.

Speed restriction is completely west of markers AF363 or AF365



Speed restriction is west and east of markers AF363 or AF365



### 6.9.4 Planning of temporary speed restrictions

When a temporary speed restriction has to be imposed in the interface between the IECC and AFC control areas, the person responsible for planning the restriction must consult with the maintenance contractor of the adjacent infrastructure controller regarding the provision of lineside boards and indicators or the operation of the switches within the lineside signalling room.

## **6.10 Emergency speed restrictions**

### **6.10.1 Principles**

Temporary lineside indicators are to be erected in accordance with point 6.9. However, because lineside indicators cannot be placed before the **CAB** board in the up direction, there may not be a warning board or space to erect an emergency indicator before its associated warning board. In these cases the function of the emergency indicator is to be carried out by the cab signalling system.

### **6.10.2 Imposition**

If an emergency speed restriction becomes necessary, the person responsible for imposing the restriction to advise the IECC Signaller, the speed limit to be applied, stating the kilometre points at its extremities and the estimated duration of the restriction. Arrangements must also be made to erect temporary lineside indicators.

The IECC Signaller to advise the AFC Signaller details of the temporary speed, who must enter it into the cab signalling system, if applicable.

#### **6.10.2.1 Down direction**

Until such time that the temporary lineside indicators are erected, if any part of the emergency speed restriction is in rear of markers AF363 or AF365, then the IECC Signaller must stop trains at the signal in rear of the restriction and advise drivers its location and speed in accordance with the International Forms procedure.

#### **6.10.2.2 Up direction**

Until such time that the temporary lineside indicators are erected, if any part of the emergency speed restriction is between the **CAB** board and signals AD830 and AD840, then the AFC Signaller must stop trains at markers AF362, AF364 or AF366 and advise drivers its location and speed in accordance with the International Forms procedure.

## **6.11 Incident management**

### **6.11.1 Incident on the Concession**

If an incident (or part of an incident) occurs between the Concession boundary (western edge of the M20 Bridge at pk6.933) and the AFC/RCC signalling control boundary, the AFC Shift Manager must advise the RCC Supervisor in order that the Eurotunnel Accident/Incident Coordinator is informed.

### **6.11.2 Attendance of CTRL Rail Incident Officer**

The AFC Shift Manager to arrange for a CTRL Rail Incident Officer (RIO) to attend passing on his/her contact details to the RCC Supervisor.

If the incident is west of the AFC/IECC signaling control boundary, a Network Rail RIO will also attend

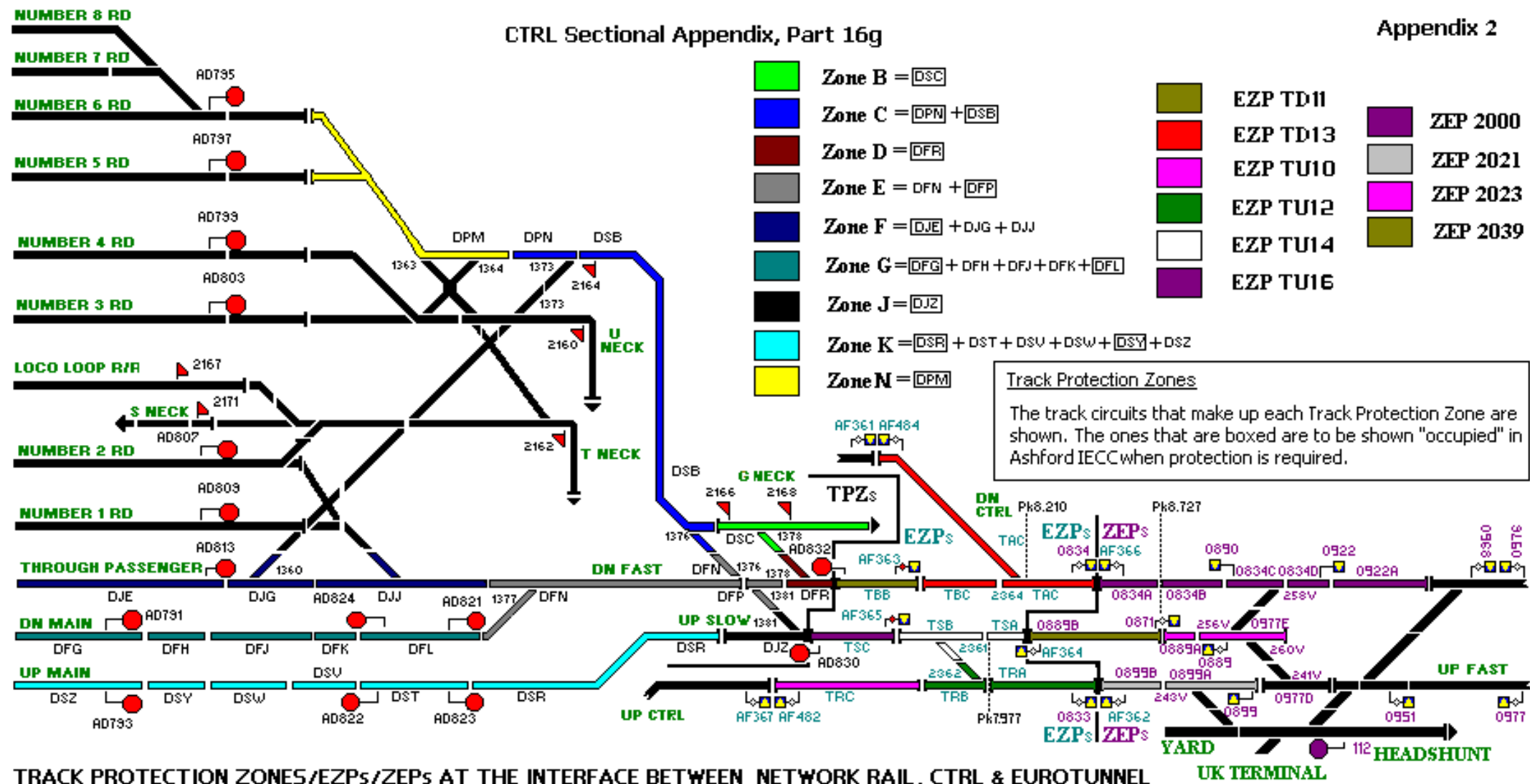
On arrival at the incident location, the CTRL RIO to liaise with the Eurotunnel Accident/Incident Coordinator and/or Network Rail RIO in order to decide, according to the circumstances, who is best suited to manage the incident. The other RIO(s)/Incident Coordinator to assist the RIO/Incident Coordinator managing the incident. The Eurotunnel Accident/Incident Coordinator to lead any subsequent investigation.

### **6.11.3 Attendance of Emergency services**

The RCC is responsible for arranging the attendance of the emergency services (if required) at the site of an incident occurring in the Concession. If the emergency services are summoned directly by the AFC, the AFC Shift Manager must advise the RCC Supervisor.

**Appendix 1****TELEPHONE NUMBERS**

	<b>BT</b>	<b>Racal</b>
Ashford AFC Signaller EMMIS Controller AFC Shift Manager Fax	01233-739470  01233-617250 01233-617423	00-39450 00-39410 00-77250 00-77423
Dollands Moor Yard Master Fax	01303-290150 01303-290160	00-80150 00-80160
Eurotunnel (RCC) RCC Supervisor Fax <b>Emergency</b>	01303-283860 01303-283031 <b>01303-283000</b>	
Eurotunnel (Security) Fax	01303-272747	
Paddock Wood ECR Electrical Control Room Operator Fax <b>Emergency</b>	01892-833018	01-34700 01-37703 <b>172 (Short code)</b>



This diagram is schematic only and NOT to scale

June 2003



Level 2 procedure

Effective Date: November 2013  
Ref No: C-02-OS-05-2030  
CCMS2 No: 64128583  
Issue No: 1.4  
Page: 1 of 21

<b>Title:</b>	Procedures for taking isolations of the traction power supply at the HS1 (section 2) / Network Rail interface.
<b>Document No:</b>	C/02/OS/05/2030
<b>Custodian:</b>	Operations Standards Manager, Network Rail (High Speed) Ltd.

**Synopsis:**

This document details the procedures for isolations of the traction power supply to apply at the Ripple Lane chord, North Kent Line interfaces and other locations where HS1 and Network Rail infrastructures are in close proximity.

This supersedes level two standards C/OP/OS/05/2010 and extracts information related to the issue of C-OP-OS-05-2018 (Procedure for taking isolation of the AC Traction power supply at the HS1 / Network Rail Interfaces near St Pancras International station).

<b>Prepared by:</b>	
	<b>Stephane Riverain</b> – 19 November 2013 Operations Standards Manager Network Rail (HS) Ltd
<b>Approved by:</b>	
	<b>Mark Hornshaw</b> - 19 November 2013 Operations Manager Network Rail (HS) Ltd
	
	<b>Alister Swift</b> - 19 November 2013 Local Operations Manager Network Rail Upminster
	
	<b>Vincent Clark</b> – 19 November 2013 ECR Operator Manager Network Rail Romford ECR



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<b>Approved by:</b>	
	<b>David Law</b> - 19 November 2013 Local Operations Manager Network Rail – North Kent
	
	<b>Zoe Boatman</b> - 19 November 2013 ECR Operator Manager Network Rail Lewisham ECR
<b>Authorised by:</b>	
	<b>Simon Lejeune</b> – 19 November 2013 Head of High Speed Operations Network Rail (HS) Ltd

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Level 2 procedure

Effective Date: November 2013

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Issue No: 1.4

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**Revision Record:**

Issue No.	Date	Comments
0.1	October 2013	Initial draft version for comment. Originally formed part of the Network Rail (HS1) Ltd Standard: "Procedures for taking isolations of the traction power supply at the HS1 (Section 2)/Network Rail interfaces" (C/OP/OS/05/2010) but now specific to the Ripple Lane, North Kent line connections and other locations where HS1 and Network Rail traction power supply systems are in close proximity to each other and may require isolation as part of the protection measures.
0.2	December 2013	Approved version



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## 1 Purpose

This standard details the procedures for isolating the 25kV AC Overhead Line Equipment or 750v DC conductor rail equipment to enable works to take place at the physical interfaces between the HS1 and Network Rail controlled infrastructures.

## 2 Scope

These procedures apply to the isolation of the OHLE controlled by the AFC and the OLE controlled by the ECRs where they make a physical interface on the Ripple Lane chords are shown in Section 5.

The arrangements to apply on the North Kent Line connection for the isolation of the OHLE or conductor rail are shown in Section 6

At some other locations, although HS1 and Network Rail lines do not make a physical connection, they do come into close proximity with each other.

On occasions, the OHLE/OLE of one infrastructure controller may need to be isolated in order to allow the adjacent infrastructure controller to carry out work on its infrastructure safely.

The principles applicable to these isolations are shown in Section 7



Level 2 procedure

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### 3 References

The following documents are related to this standard:

<b>HS1</b>	
C/02/OS/05/1000	HS1 (CTRL) Rule Book, Module AC "AC Electrified Line Equipment - Engineering Work"
C/01/IM/27/1001	HS1 (CTRL) Standard "Working on or about 25kV AC Electrified Lines"
C/OP/OS/05/2018	Procedure for taking isolation of the AC Traction power supply at the HS1 / Network Rail Interfaces near St Pancras International station.
C/OP/OS/05/2002	Sectional Appendix to the HS1 (CTRL) Rule Book
C03-EP-15-2300	EMMIS Control Instructions
CTRL EZP, ERS & OCS Limits Diagrams.	HS1 OHLE isolation diagrams
<b>Network Rail</b>	
GE/RT8000/AC	Railway Group Standard Rule Book, Module AC, "AC electrified lines".
NR/SP/ELP/29987	Network Rail Standard, "Working on or about 25kV AC Electrified Lines"
NR/WI/ELP/3091	DC Electrified lines working instructions
NR/ECR/002	Romford Electrical Control Room Instructions, Module 8
NSE/NLL/W-R/01.05 & NSE/NLL/W-R/01.05R	Network Rail OLE isolation diagrams



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## 4 Principles

### 4.1 Rules

The Railway Group Standard Rule Book, Module AC, "AC electrified lines" (GE/RT/8000/AC) applies to the 25kV AC OLE controlled by the ECO at Romford ECR.

The HS1 Rule Book Module AC, "AC Electrified Line Equipment - Engineering Work" (C/02/OS/05/1000/AC) applies to the 25kV AC OHLE controlled by the EMMIS Controller at Ashford AFC.

All work on or about the Network Rail 25kV AC OLE shall be carried out in accordance with Network Rail Instruction "Working On or About 25KV AC Electrified Lines" (NR/SP/ELP/29987).

All work on or about the HS1 25kV AC OHLE shall be carried out in accordance with Network Rail (High Speed) Ltd Instruction "25kV Overhead Line Isolation and Earthing Instructions" (C/03/IM/27/2001).

HS1 or Network Rail personnel (including maintenance contractors) to apply the rules and procedures of the organisation they are working for.

HS1 or Network Rail personnel to request isolations of the OHLE or OLE from the control centre defined in the rules and procedures of the organisation they are working for.

Thus, depending on the type of work and the personnel carrying out the work, isolations may be requested from either of the control centres.

The control centre concerned to be identified in the appropriate Notices, Safe Method of Working Statements or switching forms.

The control centre so identified becomes the Designated Control Centre for the management of the isolation and form procedures.

### 4.2 Planning arrangements

The person requiring the isolation must submit an application to the Planning Department of the organisation they are working for in accordance with their normal planning arrangements.

The Planning department of the organisation concerned must agree with the Planning department of the other organisation the following:

- limits of the isolation,
- the electrical section(s) and sub-section(s) required,
- which organisation's rules and procedures are to be applied,
- is the isolation request to be made to the EMMIS controller or Network Rail ECR,
- if personnel from the other organisation are required to assist, e.g. operate local isolation switches, apply earths, etc.
- Who will issue the Overhead Line Permit.

The agreed arrangements must be published in the appropriate notices.



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## 5 Ripple Lane chords

### 5.1 Principles

#### 5.1.1 General

The EMMIS controller is responsible for the isolation of the HS1 electrical section(s).

The Romford ECO is responsible for the isolation of the Network Rail electrical section(s).

Except in the event of an emergency, before any electrical section(s) is isolated and/or responsibility transferred, the Romford ECO or the EMMIS controller must have received an assurance that the required electrical section(s) has been blocked to electric train movements.

Form NC (shown in the appendix to this standard) is used to provide written confirmation of the state of Network Rail or HS1 equipment.

This form is used by each of the Designated Control Centres to manage the isolation procedures when switching operations are required on overhead line equipment that is not under their control.

#### 5.1.2 Isolation of the overhead line equipment for HS1 work

When work is to be carried out on behalf of HS1 and HS1 rules apply, then Ashford AFC becomes the Designated Control Centre.

The EMMIS Controller at Ashford to isolate the HS1 electrical sub-section(s) under their control and request isolation of the Network Rail electrical sub-section(s) by the Romford ECO.

When this has been carried out and the Form NC procedure completed, Network Rail (High Speed) Ltd, will be responsible for all testing, earthing and Permit procedures in accordance with HS1 rules and procedures throughout the isolated electrical sub sections(s) concerned.

#### 5.1.3 Isolation of the overhead line equipment for Network Rail work

When work is to be carried out on behalf of Network Rail and Network Rail rules apply, then Romford ECR becomes the Designated Control Centre.

The Romford ECO to isolate the Network Rail electrical sub-section(s) under their control and request isolation of the HS1 electrical sub-section(s) by the EMMIS Controller.

When this has been carried out and the Form NC procedure completed. Network Rail Infrastructure Ltd. will be responsible for all testing, earthing and Permit procedures in accordance with Network Rail rules and procedures throughout the isolated electrical sub section(s) concerned.



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## 5.2 Signal protection arrangements

The AFC Signaller is responsible for arranging the signal protection for HS1 electrical sections when requested by the EMMIS Controller.

The Shift Manager, Upminster is responsible for arranging the signal protection for Network Rail electrical sections when requested by the Romford ECO.

**Note:** Ashford AFC to be a signal box nominated in the Upminster signal box special instructions in connection with blocking the line to electric trains for electrical subsections 531K and 531M.

Defined messages to be used for communications when arranging the signal protection arrangements to block the line to electric trains for OLE/OHLE isolation.

Defined messages to be in the format shown below:

**From Signaller at Ashford AFC to Shift Manager, Upminster**

“Block to electric trains the Up/Down Ripple Lane chord affected by the isolation of electric sub-section(s) numbered 1709S and/or 1710B and report to me when this has been done. Message No. ....”

**From Shift Manager, Upminster to Signaller at Ashford AFC**

“The blockage of the Up/Down Ripple Lane chord specified in Message No. .... has been imposed.”

**From Signaller at Ashford AFC to Shift Manager, Upminster**

“The blockage of the Up/Down Ripple Lane chord specified in Message No. .... has been cancelled”

**From Shift Manager, Upminster to Signaller at Ashford AFC**

“Block to electric trains the Up/Down Ripple Lane chord affected by the isolation of electric sub-section(s) numbered 531K and/or 531M and report to me when this has been done. Message No. ....”

**From Signaller at Ashford AFC to Shift Manager, Upminster**

“The blockage of the Up/Down Ripple Lane chord specified in Message No. .... has been imposed.”

**From Shift Manager, Upminster to Signaller at Ashford AFC:**

“The blockage of the Up/Down Ripple Lane chord specified in Message No. .... has been cancelled ”



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### 5.3 Isolation of HS1 OHLE that is under the control of the EMMIS Controller

This clause applies if HS1 personnel require the isolation of HS1 electrical section 1709S (Up Ripple Lane chord) and/or 1710B (Down Ripple Lane chord) without the isolation of the adjacent Network Rail electrical section 531M (Up Ripple Lane chord) and/or 531K (Down Ripple Lane chord).

If the adjacent Network Rail electrical section is required to be isolated as part of the same isolation request, section 5.7 applies

If Network Rail personnel require the isolation of HS1 electrical section 1709S and/or 1710B, Clause 5.7 applies.

- a. NPOS requests the EMMIS controller to isolate the HS1 electrical section(s) concerned. (Form ISOL)
- b. EMMIS controller requests the AFC signaller to block to electric trains the HS1 electrical section(s) concerned.
- c. AFC signaller:
  - o Makes sure the HS1 electrical section(s) concerned are either:
    - Clear of electric trains, **or**
    - Any electric train that is to remain in the electrical section(s) has its pantograph(s) lowered, **and**
  - o Consults the Signalling Protection Arrangements for the HS1 electrical section(s) concerned and inhibits the designated markers.
  - o Requests the Shift Manager, Upminster to block the Ripple Lane chord concerned to electric trains. (*Defined Message*)
- d. Shift Manager, Upminster:
  - o Arranges for the signalling protection arrangements to be applied in Upminster IECC, **and**
  - o Confirms to the AFC signaller when the line is blocked to electric trains. (*Defined Message*)
- e. AFC signaller confirms to the EMMIS controller that the block to electric trains is in place.
- f. EMMIS controller:
  - o Carries out the switching instructions in order to isolate the HS1 electrical section(s) concerned, **and**
  - o Confirms to the NPOS that the HS1 electrical section(s) concerned is isolated. (*Form ISOL*)
- g. NPOS carries out local protection measures and issues Overhead Line Permit(s).





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- 5.4 Re-energisation of HS1 OHLE that is under the control of the EMMIS Controller
- a. NPOS cancels the Form ISOL with the EMMIS controller.
  - b. EMMIS controller:
    - o Carries out the switching instructions in order to re-energise the HS1 electrical section(s) concerned, **and**
    - o Advises the AFC signaller that the block to electric trains for the HS1 electrical section(s) concerned can be removed.
  - c. AFC signaller removes the signalling protection for the HS1 electrical section(s) concerned.
  - d. AFC signaller advises the Shift Manager, Upminster that the block to electric trains of the Ripple Lane chord concerned can be removed. (*Defined Message*)
  - e. Shift Manager, Upminster arranges for the signalling protection arrangements to be removed in Upminster IECC.

5.5 Isolation of Network Rail OLE that is under the control of Romford ECO

This clause applies if Network Rail personnel require the isolation of Network Rail electrical sections 531K (Down Ripple Lane chord) and/or 531M (Up Ripple Lane chord) without the isolation of the adjacent HS1 electrical section 1710B (Down Ripple Lane chord) and/or 1709S (Up Ripple Lane chord).

If the adjacent HS1 electrical section is required to be isolated as part of the same isolation request, clause 5.7 applies

- a. Nominated Person requests the Romford ECO to isolate the Network Rail electrical section(s) concerned.
- b. Romford ECO requests the Shift Manager, Upminster, to block to electric trains the Network Rail electrical section(s) concerned.
- c. Shift Manager, Upminster:
  - o Consults the Signalling Protection Arrangements for the Network Rail electrical section(s) concerned, **and**
  - o Arranges for the signalling protection arrangements to be applied in Upminster IECC, **and**
  - o Requests the AFC signaller to block the Ripple Lane chord concerned to electric trains. (*Defined Message*)
- d. AFC signaller:
  - o inhibits the designated markers for the Ripple Lane chord concerned, **and**
  - o Confirms to the Shift Manager, Upminster that the block to electric trains is in place. (*Defined Message*)
- e. Shift Manager, Upminster confirms to the Romford ECO that the block to electric trains is in place.
- f. Romford ECO:
  - o Carries out the switching instructions in order to isolate the Network Rail electrical section(s) concerned, **and**
  - o Confirms to the Nominated Person that the Network Rail electrical section(s) concerned are isolated.



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- g. Nominated Person carries out local protection measures and issues Overhead Line Permit(s).

#### 5.6 Re-energisation of Network Rail OLE that is under the control of Romford ECO

- a. Nominated Person cancels the isolation request with the Romford ECO.
- b. Romford ECO:
  - o Carries out the switching instructions in order to re-energise the Network Rail electrical section(s) concerned, **and**
  - o Advises the Shift Manager, Upminster, that the block to electric trains for the Network Rail electrical section(s) concerned can be removed.
- c. Shift Manager, Upminster:
  - o Arranges for the signalling protection arrangements to be removed in Upminster IECC, **and**
  - o Advises the AFC signaller that the block to electric trains of the Ripple Lane chord concerned can be removed. (*Defined Message*)
- d. AFC signaller removes the inhibit from the marker for the Ripple Lane chord concerned.

#### 5.7 Isolation of HS1 OHLE and Network Rail OLE together

This clause applies if the HS1 electrical section 1709S (Up Ripple Lane chord) and/or 1710B (Down Ripple Lane chord) and the adjacent Network Rail electrical section 531M and/or 531K are required to be isolated together as part of the same isolation request.

##### 5.7.1 HS1 personnel initiates the isolation request

- a. NPOS requests the EMMIS Controller to isolate the HS1 and Network Rail electrical sections concerned. (*Form ISOL*)
- b. EMMIS controller requests the AFC signaller to block to electric trains the HS1 electrical section(s) and advises that there will be an isolation of the Network Rail electrical section(s) concerned.
- c. AFC signaller:
  - o Makes sure the HS1 electrical section(s) concerned are either:
    - clear of electric trains, **or**
    - any electric train that is to remain in the electrical section(s) has its pantograph(s) lowered, **and**
  - o Consults the Signalling Protection Arrangements for the HS1 electrical section(s) concerned and inhibits the designated markers.
- d. AFC signaller confirms to the EMMIS controller that the block to electric trains is in place.
- e. EMMIS controller requests the Romford ECO to switch off and handover responsibility for the Network Rail electrical section(s) concerned. (*Part 1 of Form NC*)
- f. Romford ECO requests the Shift Manager, Upminster to block to electric trains the Network Rail electrical section(s) concerned.



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- g. Shift Manager, Upminster:
  - o Consults the Signalling Protection Arrangements for the Network Rail electrical section(s) concerned, **and**
  - o Arranges for the signalling protection arrangements to be applied in Upminster IECC, **and**
- h. Shift Manager, Upminster, confirms to the Romford ECO that the block to electric trains is in place.
- i. Romford ECO:
  - o Carries out the switching instructions in order to isolate the Network Rail electrical section(s) concerned, **and**
  - o Confirms to the EMMIS controller that the Network Rail electrical section(s) concerned is switched off. (*Part 2 of Form NC*)
- j. EMMIS controller:
  - o Carries out the switching instructions in order to isolate the HS1 electrical section(s) concerned, **and**
  - o Confirms to the NPOS that the HS1 and Network Rail electrical section(s) concerned are isolated. (*Form ISOL*)
- k. NPOS carries out local protection measures and issues Overhead Line Permit(s).

#### 5.7.2 Network Rail personnel initiates the isolation request

- a. Nominated Person requests the Romford ECO to isolate the HS1 and Network Rail electrical section(s) concerned.
- b. Romford ECO requests the Shift Manager, Upminster, to block to electric trains the Network Rail electrical section(s) concerned.
- c. Shift Manager, Upminster:
  - o Consults the Signalling Protection Arrangements for the Network Rail electrical section(s) concerned, **and**
  - o Arranges for the signalling protection arrangements to be applied in Upminster signal box, **and**
  - o Requests the AFC signaller to block the Ripple Lane chord concerned to electric trains. (*Defined Message*)
- d. AFC signaller:
  - o Makes sure the HS1 electrical section(s) concerned are either:
    - Clear of electric trains, **or**
    - Any electric train that is to remain in the electrical section(s) has its pantograph(s) lowered, **and**
  - o Inhibits the designated markers for the Ripple Lane chord concerned, **and**
  - o Confirms to the Shift Manager, Upminster that the block to electric trains is in place. (*Defined Message*)
- e. Shift Manager, Upminster confirms to the Romford ECO that the block to electric trains is in place.



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- f. Romford ECO:
- o Carries out the switching instructions in order to isolate the Network Rail electrical section(s) concerned, **and**
  - o Requests the EMMIS controller to switch off the HS1 electrical section(s) concerned. (*Part 1 of Form NC*)
- g. EMMIS controller:
- o Confirms with the AFC signaller that the block to electric train is in place.
  - o Carries out the switching instructions in order to isolate the HS1 electrical section(s) concerned, **and**
  - o Confirms to the Romford ECO that the HS1 electrical section(s) concerned is isolated. (*Part 2 of Form NC*)
- h. Romford ECO confirms to the Nominated Person that the HS1 and Network Rail electrical section(s) concerned are switched off.
- i. Nominated Person carries out local protection measures and issues Overhead Line Permit(s).
- 5.8 Re-energisation of HS1 OHLE and Network Rail OLE together
- 5.8.1 HS1 personnel initiated the isolation request
- a. NPOS cancels the Form ISOL with the EMMIS controller.
- b. EMMIS controller:
- o Carries out the switching instructions in order to re-energise the HS1 electrical section(s) concerned, **and**
  - o Advises the Romford ECO that the isolation of the Network Rail electrical sections concerned is no longer required. (*Part 4 of Form NC*).
- c. Romford ECO:
- o Carries out the switching instructions in order to re-energise the Network Rail electrical section(s) concerned, **and**
  - o Advises the Shift Manager, Upminster, that the block to electric trains for the network Rail electrical section(s) concerned can be removed.
- d. Shift Manager, Upminster:
- o Arranges for the specified signalling protection arrangements to be removed in Upminster IECC, **and**
  - o Advises the AFC signaller that the block to electric trains of the Ripple Lane chord concerned can be removed.
- e. AFC signaller removes the signalling protection for the HS1 and Network Rail electrical section(s) concerned.



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5.8.2 Network Rail personnel initiated the isolation request

- a. Nominated Person cancels the Form B with the Romford ECO.
- b. Romford ECO:
  - o Carries out the switching instructions in order to re-energise the Network Rail electrical section(s) concerned, **and**
  - o Advises the Shift Manager, Upminster, that the block to electric trains for the Network Rail electrical section(s) concerned can be removed.
  - o Advises the EMMIS controller that the isolation of the HS1 electrical section(s) concerned is no longer required. (*Part 4 of Form NC*)
- c. Shift Manager, Upminster:
  - o Arranges for the signalling protection arrangements to be removed in Upminster IECC, **and**
  - o Advises the AFC signaller that the block to electric trains of the Ripple Lane chord concerned can be removed. (*Defined Message*)
- d. AFC signaller removes the inhibit from the marker for the Ripple Lane chord concerned.
- e. EMMIS controller:
  - o Carries out the switching instructions in order to re-energise the HS1 electrical section(s) concerned, **and**
  - o Confirms with the AFC signaller that the block to electric trains for the HS1 electrical section(s) concerned have been removed.



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## 6 North Kent Line connection

### 6.1 Planning arrangements

The person requiring an isolation must submit an application to the Planning Department of the organisation they are working for in accordance with the normal planning arrangements.

This application must clearly state what is required:

- o Isolation of the OHLE only, **or**
- o Isolation of the conductor rail only, **or**
- o Isolation of both the OHLE and the conductor rail.

The Planning department of the organisation concerned must agree with the Planning department of the other organisation the following:

- o Limits of the isolation,
- o The electrical section(s) and sub-section(s) required,
- o If personnel from the other organisation are required to assist, e.g. operate isolation switches,
- o Who will issue the Overhead Line Permit and/or Network Rail Conductor Rail Permit.

The agreed arrangements must be published in the Daily Notice, Weekly Operating Notice, Safe Method of Working Statements, as appropriate.

This must state if **both** a HS1 Overhead Line Permit (Form OLPE) and a Network Rail Conductor Rail Permit are required.

### 6.2 OHLE isolations

#### 6.2.1 Principles

The EMMIS Controller is responsible for the isolation of the OHLE.

If Network Rail personnel (including maintenance contractors) require an isolation to carry out work on Network Rail infrastructure, a NPOS must be in attendance to request the isolation, and carry out local switching, testing and earthing.

Work must not start until an Overhead Line Permit has been issued.

When the OHLE electrical sections 1709Q (Up North Kent Line connection) and/or 1710J (Down North Kent Line connection) are isolated, electric trains may continue to operate on DC traction power from Network Rail controlled infrastructure as far as the limit of the conductor rail in Ebbsfleet station (AF150/AF152 signals).

The AFC signaller must make sure that the driver of any train requiring to enter/leave isolated OHLE electrical section 1709Q and/or 1710J has the pantographs lowered before clearing signals AF182/AF183.

#### 6.2.2 Signal protection arrangements

The AFC signaller is responsible for arranging the signal protection for OHLE electrical sections when requested by the EMMIS Controller.

Although the signaller in the North Kent Signalling Centre is not involved in the signalling protection of the OHLE, the AFC signaller must tell him/her if the electrical section 1709Q and/or 1710J is isolated



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## 6.3 Conductor rail isolations

### 6.3.1 Principles

The Lewisham ECO is responsible for the isolation of the conductor rail.

Procedure 'B' in the Network Rail publication "D.C. electrified lines working instructions" (NR/WI/ELP/3091), to apply if HS1 personnel (including maintenance contractors) require an isolation of the conductor rail to carry out work.

An Authorised Person must be in attendance to request the isolation, and carry out local switching, testing and short circuiting.

Work must not start until a Conductor Rail Permit has been issued.

When the conductor rail electrical section L133 (Up North Kent Line connection) and/or L134 (Down North Kent Line connection), is isolated, electric trains may continue to operate on AC traction power from HS1 as far as Ebbsfleet station (AF181/AF183 signals) and to/from Church Path Pit Sidings.

### 6.3.2 Signal protection arrangements

The signaller in the North Kent Signalling Centre Workstation 2 is responsible for arranging the signal protection for the conductor rail electrical sections when requested by the Lewisham ECO and advising the AFC signaller.

### 6.3.3 Isolation of the conductor rail

- a. Authorised Person requests the Lewisham ECO to isolate the conductor rail section(s) concerned.
- b. Lewisham ECO requests the signaller at North Kent Signalling Centre (Workstation 2) to block the line(s) concerned.
- c. Signaller at North Kent Signalling Centre (Workstation 2):
  - o Applies the signalling protection arrangements for the line(s) concerned, **and**
  - o Advises the AFC signaller that the conductor rail is being isolated, stating the line(s) concerned.
- d. AFC signaller must confirm with the driver of any train requiring to enter/leave the isolated conductor rail section has the collector shoes raised before clearing signals AF181/AF183/AF190/AF192.
- e. Signaller at North Kent Signalling Centre (Workstation 2) confirms to the Lewisham ECO that the block is in place.
- f. Lewisham ECO:
  - o Carries out the switching instructions in order to isolate the conductor rail electrical section(s) concerned, **and**
  - o Confirms to the Authorised Person that the Network Rail electrical sections concerned are isolated.
- g. Authorised Person carries out local protection measures and issues Conductor Rail Permit(s).





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6.3.4 Re-energisation of the conductor rail

- a. Authorised Person cancels the isolation with the Lewisham ECO.
- b. Lewisham ECO:
  - o Carries out the switching instructions in order to re-energise the conductor rail electrical section(s) concerned, **and**
  - o Advises the signaller at North Kent Signalling Centre (Workstation 2) that the blockage of the line(s) can be removed.
- c. Signaller at North Kent Signalling Centre (Workstation 2):
  - o Removes the protection arrangements for the route(s) concerned, **and**
  - o Advises the AFC Signaller that the conductor rail has been re-energised.





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## 7 Other locations

### 7.1 General

At the following locations:

- St. Pancras International Station area (platforms 4 and 5),
- Ripple Lane Up chord (adjacent to the Fords/Hanson connecting line),
- Rainham area (adjacent to the Fenchurch St. to Southend line),

although there is no direct interface between the Network Rail OLE and the HS1 OHLE, it does come into close proximity to each other which may necessitate the OHLE/OLE of the adjacent infrastructure controller being isolated in order to carry out maintenance work safely.

When this is required the following principles must be applied:

Module AC of the HS1 Rule Book (C/02/OS/05/1000) to apply to all isolations of the HS1 OHLE.

If Network Rail personnel (including maintenance contractors) require a permit in order to carry out work on the adjacent Network Rail infrastructure, a NPOS must be in attendance to request the isolation, and carry out local switching, testing and earthing.

Work must not start until an Overhead Line Permit (Form OLPE) has been issued.

The Network Rail publication: "Working on or about 25kV A.C. Electrified Lines" (RT/E/S/29987) to apply to all isolations of the Network Rail OLE.

If HS1 personnel (including maintenance contractors) require a permit in order to carry out work on the adjacent HS1 infrastructure, a Nominated Person must be in attendance to request the isolation, and carry out local switching, testing and earthing.

Work must not start until an Overhead Line Permit has been issued.

### 7.2 Planning arrangements

The person requiring an isolation must submit an application to the Planning Department of the organisation they are working for in accordance with the normal planning arrangements.

The Planning department of the organisation concerned must agree with the Planning department of the other organisation the following:

- limits of the isolation,
- the electrical section(s) and sub-section(s) required,
- which organisation rules and procedures are to be applied,
- is the isolation request to be made to the EMMIS controller or Network Rail ECO,
- if personnel from the other organisation is required to assist, e.g. operate isolation switches,
- Who will issue the Overhead Line Permit.

The agreed arrangements to be published in the Daily Notice, Weekly Operating Notice, Safe Method of Working Statements, as appropriate.

This must state that **both** a HS1 Overhead Line Permit and a Network Rail Overhead Line Permit are required.



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## 8 Review

These procedures will be reviewed every three years or in the event of an organisational change, infrastructure change or following any accident or incident in which it may have been a factor.

For further copies of this document please contact:

Document Controller

Network Rail (High Speed) Ltd

Singlewell Infrastructure Maintenance Depot,

Henhurst Road,

Cobham, Gravesend,

Kent DA12 3AN

Comments on the format or content of this document may be sent to the Document Controller in hard copy or by email to [Procman@networkrail.co.uk](mailto:Procman@networkrail.co.uk)





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9 Appendix 1 – Form NC

<small>29987/NC/1</small> <b>FORM NC</b>	<b>NETWORK RAIL / CTRL</b> <b>DECLARATION OF SWITCHED OFF OLE AT NEUTRAL SECTION FORMING BOUNDARY AT INTERFACE BETWEEN NETWORK RAIL AND CTRL</b>	<b>Ref:</b>  	
<b>Part 1 - Request</b>			
From : _____ at _____			
To : _____ at _____			
Switch off electrical sections _____ time _____ date _____			
<b>Part 2 - Declaration</b>			
From : _____ at _____			
To : _____ at _____			
The following overhead line equipment (OLE) has been switched off.			
<b>Electrical Section(s) or Subsection(s) Isolated</b>	<b>Line(s)</b>	<b>Limits</b>	
		From      To	
<b>Switches / Circuit Breakers</b>			
<b>Opened</b>	<b>Not in Normal Position</b>		
This declaration is to be cancelled by _____ hours _____ date _____			
Message No. _____ Sent by _____			
Date _____ Received by _____			
<b>Part 3 - Issue (for Network Rail use only)</b>			
The OLE referred to in Part 1 has been combined with the OLE switched off following the block to electric trains referred to on my _____			
Form AE Part 1 Message No. _____ date _____			
Within the combined, switched off OLE, the following Form "B" authorities have been issued:-			
	<b>Issued</b>	<b>Cancelled</b>	
Time	Date	Time	Date
<b>Part 4 - Cancellation</b>			
From : _____ at _____			
To : _____ at _____			
All Authorities issued from this Location within the limits of the switched off OLE shown in Part 1 have been cancelled. This Declaration is now cancelled.			
Message No. _____ Sent by _____			
Date _____ Received by _____			
		<b>Form NC checked by (name)</b>	<b>Signature</b>

	CTRL Level Two Standard
	C/OP/OS/05/2008
	Date: June 2007
	EUKL Departmental Procedure
	PDN/6xxx
	Date: June 2007

## Interface procedures between CTRL and EUKL for the Stratford/Temple Mills International depot link line

Prepared by

.....  
**Alan Chatfield**  
Rules & Procedures Manager, Network Rail (CTRL) Ltd.

Approved by

.....  
**Colin Charman**  
Operations Safety & Standards Manager, Eurostar (UK) Ltd.

Authorised By:

.....  
**Paul Ellis**  
Operations Manager, Network Rail (CTRL) Ltd.

.....  
**Jon Chilton**  
Head of UK Operations, Eurostar (UK) Ltd.

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# **INTERFACE PROCEDURES BETWEEN CTRL AND EUKL FOR THE STRATFORD/TEMPLE MILLS INTERNATIONAL DEPOT LINK LINE**

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## 1. Glossary

### GENERAL

Bi-directional	Line on which the signalling system allows for trains running in both directions.
Channel Tunnel Rail Link (CTRL)	High speed line between London St. Pancras International station and the Channel Tunnel at Folkestone (Cheriton) and associated chords and connecting lines.
Link line	Single bi-directional line linking Temple Mills International depot and the CTRL route at Stratford International station.
CTRL personnel	Personnel employed by Network Rail (CTRL) Ltd. and its maintenance contractor(s). They apply the rules and regulations published in the CTRL Rule Book (CTRL Standard C/02/OS/05/1000) and associated standards and procedures.
Down direction	Trains from St. Pancras International station to Temple Mills International depot are travelling in the “down direction”.
EUKL personnel	Personnel employed by Eurostar (UK) Ltd. and its maintenance contractor(s). They apply the rules and regulations published in the International Rule Book, Section 6 and appendices thereto.
Eurostar (UK) Ltd. (EUKL)	Organisation responsible for the operation and maintenance of Temple Mills International depot.
Network Rail (CTRL) Ltd.	Organisation responsible for the operation and maintenance of the CTRL.
Slot	Control within the signalling system which: <ul style="list-style-type: none"> <li>the operations controller operates in order to allow the signaller to signal a train to Temple Mills International depot, or</li> <li>the signaller operates in order to allow the operations controller to signal a train to the CTRL.</li> </ul>
Up direction	Trains from Temple Mills International depot to St. Pancras International station are travelling in the “up direction”.

### CTRL

Ashford Control Centre (AFC)	Network Rail (CTRL) Ltd. control centre located at Ashford (Kent).
<i>Balise</i>	On-track equipment which sends information to the train on-board systems.
CTRL Shift Manager	Duty Manager in Ashford Control Centre.
Duty Operations Manager (DOM)	CTRL manager responsible for the current control of operations activities.
Electrical and Mechanical Management Information System (EMMIS)	System that controls and monitors the electricity supply to the 25kV ac overhead line electrification system.
EMMIS controller	Person located in Ashford Control Centre responsible for the control and monitoring of the electricity supplies to the OHLE, carrying out switching operations at the feeder station and imposing isolations.

Engineering Zone of Protection (EZP)	A defined section of track, protected by the AFC's signalling system which is used for the protection of engineering works. The limits of each Zone is indicated by "EZP" signs placed in the four foot.
Nominated Person On Site (NPOS)	Qualified person responsible for local switching, testing, earthing, and issuing of Overhead Line Permits in accordance with Module AC of the CTRL Rule Book (C/02/OS/05/1000).
Protected Area	Defined area of track, protected by the signalling system for one or more EZPs, within which Worksite(s) can be created for engineering work or staff protection.
Signaller	Person located in Ashford Control Centre responsible for the control and monitoring of trains on the CTRL using the signalling system.
Responsible Person on Site (RPOS)	Person on the ground responsible for arranging protection by setting up a Protected Area. The RPOS wears a yellow armband or badge on the left arm with the words "Responsible Person on Site – RPOS" in red letters.
Task Supervisor (TS)	Person responsible for setting up a worksite and controlling train movements within that worksite. The TS wears a yellow armband or badge on the left arm with the words "Task Supervisor – TS" in blue letters.
Worksite	A portion of line which is protected by the creation of a Protected Area and within which the normal operation of trains is suspended in order to carry out engineering activities.
Works train	A train used to transport of staff, equipment and materials in connection with carrying out engineering works.
<b>EUKL</b>	
Operations controller	Person located in Temple Mills International depot responsible for the control and monitoring of trains within the depot using the Temple Mills Signalling Workstation.
Possession	A portion of line over which the normal operation of trains is suspended to carry out engineering activities.
Temple Mills International depot	Depot operated by EUKL for the maintenance of the Class 373 fleet of international high-speed trains.



## 2 Purpose

This document defines the procedures agreed between EUKL and Network Rail (CTRL) Ltd. that apply to railway operations at the interface of the two infrastructure controllers on the Stratford/Temple Mills International depot link line.

## 3 Scope of these instructions

These procedures apply within the following area:

Points 2058 (exclusive) at kilometerage 9.446 and signals TM2/TM4/TM6/TM8 (exclusive) at kilometerage 10.755.

They also apply to:

- Trains signalled from Block Section Markers AF055/AF057 or Shunt Markers AF507/AF509 towards Temple Mills International depot.
- Trains signalled from signals TM2/TM4/TM6/TM8 towards the CTRL.

## 4 Description of the link line

### 4.1 Control of trains

Normal train movements over the link line are Eurostar empty coaching stock (ECS) movements.

The CTRL lines are signalled by the TVM430 cab-signalling system.

The lines at the entrance to and within Temple Mills International depot are signalled by lineside colour light signals, monitored and controlled by the operations controller in the depot using the Temple Mills Signalling Workstation.

The boundaries between control centres are:

#### Down direction

AFC	as far as signal TM5 (exclusive)
Temple Mills International dep.	from signal TM5 (inclusive)

#### Up direction

Temple Mills International dep.	as far as the <b>CAB</b> board at kilometerage 10.536
AFC	from the <b>CAB</b> board at kilometerage 10.536

### 4.2 Signalling trains

The AFC signaller has control of the acceptance of trains onto the link line.

#### 4.2.1 Down direction

The operations controller must:

- set the route from TM5 signal to a reception road or LDA road,
- clear TM5 signal.

The signaller must:

- check that no routes have been set for the opposite direction,
- set the route from the CTRL to the depot (overlap of TM5 signal).

#### 4.2.2 Up direction

The **operations controller** must either:

- check that the route direction arrow is not illuminated and that no routes have been set for the opposite direction,
- input the train description,
- set the route from TM2/TM4/TM6/TM8 signal to the link line (overlap of TM5 signal) **or**,

- check that the route direction arrow is not illuminated and that no routes have been set for the opposite direction,
- make an 'Advance Request' for the route on the link line.

The **signaller** must, if accepting the train, set the route from AF080 (phantom marker) to block section marker AF062.

#### 4.2.3 Cancelling a route

To cancel a movement which has been previously accepted, the **operations controller** must cancel the route from TM2/TM4/TM6/TM8 signal to the link line.

To cancel a movement which has been previously accepted, the **signaller** must cancel the route from AF080 (phantom marker) to AF062 marker.

#### 4.3 Traction power supply

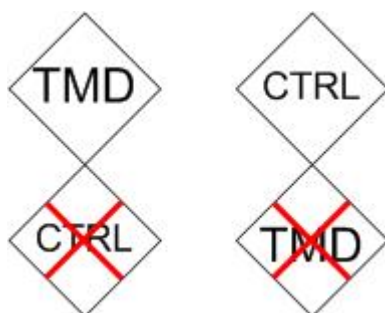
The traction power supply (OHLE) is monitored and controlled by the EMMIS controller at Ashford AFC.

#### 4.4 Boundary signs

4.4.1 The rules which apply in the AFC signalled control area are contained in the CTRL Rule Book (C/02/OS/05/1000) and Sectional Appendix (C/02/OS/05/2002).

The rules which apply in the area controlled by the operations controller at Temple Mills International depot are contained in International Rule Book, Section 6.

4.4.2 Signs are provided at the control centre boundaries which indicate where the applicable rules change.



### 5 Safety and security

#### 5.1 Safety critical messages

Where applicable, the forms specified in these procedures must be used when communicating messages about safety.

**Note:** The operations controller must dictate the following forms to drivers, when required:

FA SI To authorise a driver to pass TM2/TM4/TM6/TM8 signals at danger.

VIL I To tell the driver about a speed restriction on the link line applied by lineside signs.

Safety Critical Messages must be used for communications between the signaller and operations controller.

A Safety Critical Message must be read back by the recipient to the sender to make sure it is correct and both sender and recipient must record the details of the message in their respective occurrence book/train register. The originator of the Safety Critical Message must issue a message number when they are sure that the recipient has understood the message, to validate it.

Safety Critical Messages should be in the format shown in the following examples:

##### **signaller to operations controller**

"Block the link line at TM2/TM4/TM6/TM8 signals because of a CTRL possession.  
My message no. 123456"

**operations controller to signaller**

“Reference your message no. 123456, the link line is blocked at TM2/TM4/TM6/TM8 signals for a CTRL possession. My message no. 987654”

**signaller to operations controller**

“Reference my message no. 123456, the block of the link line at TM2/TM4/TM6/TM8 signals for a CTRL possession may be removed. My message no. 123457”

**5.2 Track safety**

All personnel going on the link line on the Stratford side of TM5 signal must be in possession of a:

- certificate of competence in CTRL Personal Track Safety, **and**
- way of communicating with either the signaller or operations controller.

All personnel going on or near the line on the depot side of TM5 signal must be in possession of **either** a:

- certificate of competence in CTRL Personal Track Safety, **or**
- certificate of competence in Depot Track Safety (EUKL personnel only), **and**
- way of communicating with either the operations controller or the signaller.

**5.3 Security**

Any member of CTRL personnel who needs to go past TM5 signal on foot, they (or the person in charge of a group) must contact the Infrastructure Services Manager or operations controller as soon as the requirement is known, detailing their name, grade, company and, where applicable, number of people in the group.

**5.4 Obstruction or danger on the link line**

If somebody becomes aware of an obstruction, or other danger, on the link line that requires trains to be stopped immediately, the signaller or operations controller must be told by the first available means, stating this is an “**Emergency call**”, quoting the reason and the exact location.

**5.5 Emergency isolation of the OHLE on the link line**

A request for an emergency isolation of the OHLE must be made to the EMMIS controller by the first available means, stating this is an “**Emergency call**”. This request may be made via the operations controller or signaller if this would be quicker. The person requesting the isolation must clearly specify, as far as possible, the precise location of the incident.

**6 Signalling arrangements**

**6.1 Temple Mills Signalling Workstation**

The Temple Mills Signalling Workstation is normally staffed at all times.

If the workstation is not staffed, the operations controller must tell the signaller when it closes and when it reopens.

The signaller must apply EZPs SD41/SD43 during the time the workstation is closed.

**6.2 Failure of signalling equipment**

**6.2.1 Principle**

When a failure of points, track circuits, train describers, or route direction arrows occurs that prevents the normal signalling of trains between the CTRL and the depot, the signaller and operations controller must reach a clear understanding with each other and agree a method by which train movements will be made.

### 6.2.2 Failure of train describers

The operations controller must tell the signaller the description of the train as soon as it is ready to leave the depot.

The signaller must tell the operations controller the description of the train when setting the route for it to leave St. Pancras International station.

### 6.2.3 Failure of route direction arrows

The signaller and operations controller must not attempt to set a route that conflicts with a route direction arrow for a route already set.

The **signaller** must, if a route direction arrow fails to illuminate:

- tell the CTRL shift manager.

The **CTRL shift manager** must:

- consider the train service and decide the direction of flow for the link line,
- tell the signaller the direction of flow. *(Safety Critical Message)*

The **signaller** must:

- tell the operations controller the direction of flow. *(Safety Critical Message)*

Trains must only be signalled in the direction of flow specified in the Safety Critical Message.

If the **CTRL shift manager** wishes to change the direction of flow, they must:

- receive confirmation from the signaller that there is no train on the link line and that no train has been accepted,
- tell the signaller the new direction of flow. *(Safety Critical Message)*

The **Signaller** must:

- tell the operations controller the new direction of flow. *(Safety Critical Message)*

## 7 Train working principles

### 7.1 Normal operation

#### 7.1.1 Provision of cab signalling equipment in driving cabs

All traction units proceeding beyond TM2/TM4/TM6/TM8 signals must be fitted with working cab signalling equipment in the leading driving cab in the direction of travel (in which the driver is located) except in the following circumstances:

- it is a works train or on-track machine being authorised to enter a possession (point 8.1)
- it has been planned and authorised by the CTRL Operations Manager or nominated representative and the arrangements published,
- specially authorised by the CTRL Duty Operations Manager (DOM).

#### 7.1.2 Propelling trains

The propelling of trains beyond TM2/TM4/TM6/TM8 signals onto the link line is prohibited unless an interface possession and an associated worksite has been created.

## 7.2 Train failure on the link line

### 7.2.1 General principles

The following principles should be applied:

- 1 Any train that fails on the link line should be sent to the depot, if possible.
- 2 The signaller and operations controller must come to a clear understanding as to what is required, e.g.
  - can the train return to the depot under its own power or does it need assistance ?
  - where is the assistance coming from ?
  - where is the train to be assisted to ?
  - who is in contact with the driver and managing the movement ?
  - who is authorising the assistance to proceed towards the failed train ?
- 3 The signaller/operations controller that the driver originally contacts and declares the train a failure, is responsible for authorising the onward movement. In the case of an up direction train, this responsibility may be transferred to the operations controller to authorise its return to the depot. The driver must be told about this transfer of responsibility.
- 4 If the driver has declared the train a failure to the operations controller, or if part of the train is the depot side of TM5 signal and assistance is coming from the depot, the operations controller is solely responsible for managing the assistance and onward movement in accordance with the instructions contained in IRB 6 telling the signaller as necessary.

### 7.2.2 Attending a failed train on the Link Line

In the event of a failure of a train on the link line, EUKL personnel only in possession of a Certificate of competence in Depot Track Safety may go as far as AF062 marker to help the driver.

The following conditions apply:

- the driver must have declared the train a failure and confirmed that no further movement will be made **and**,
- part of the failed train is the depot side of AF062 marker.

The **signaller** must:

- receive from the driver,
  - request for assistance, *(Form PROD 1)*
  - information on the location of the train,
  - confirmation that no further movement of the train will be made.
- protect the train in accordance with the Signalling Regulations.
- confirm that part of the train is the depot side of AF062 marker.
- tell the operations controller
  - that a train has failed on the link line and give information on its location,
  - assistance of EUKL personnel from the depot is required,
  - that no further movement of the train will be made. *(Safety Critical Message)*
- not authorise any train movement on the link line until it is confirmed that the EUKL personnel have reached the train.

The **operations controller** must:

- appoint suitable EUKL personnel to attend the train.

- tell the EUKL personnel that:
  - a train has failed on the link line and give information on its location,
  - they are required to attend the train and assist the driver,
  - train movements have been stopped on the link line and it is safe to walk as far as AF062 marker to reach the train.
- make sure that the EUKL personnel:
  - wear the correct Personal Protective Equipment (PPE),
  - can communicate with the operations controller by radio.
- tell the signaller that EUKL personnel are attending the train on the link line.

**EUKL personnel must:**

- be told by the operations controller that:
  - a train has failed on the link line and receive information on its location,
  - they are required to attend the train and help the driver,
  - train movements have been stopped on the link line and it is safe to walk as far as AF062 marker to reach the train.
- make sure that they:
  - are wearing the correct Personal Protective Equipment (PPE)
  - can communicate with the operations controller by radio.
- walk to the train, keeping to the cess.
- not go past the Stratford side of AF062 marker to reach the train.
- on reaching the train, meet the driver and receive their instructions about personal safety.
- tell the operations controller that they have reached the train and are now under the driver's responsibility for personal safety.

**The operations controller must:**

- be told by the EUKL personnel that they have reached the train and are now under the driver's responsibility for personal safety.
- tell the signaller that the EUKL personnel have reached the train and are now under the driver's responsibility for personal safety. *(Safety Critical Message)*

**The signaller must:**

- resume authorising any train movement on the link line, if required.

**The driver must:**

- meet the EUKL personnel when they have reached the train and give them instructions about their personal safety.
- if the EUKL personnel have to attend to a problem on the exterior of the train, make arrangements for their personal protection. *(Form PROD 5)*

## **8 Engineering works**

### **8.1 Track possessions**

#### **8.1.1 General principles**

CTRL or EUKL personnel (including maintenance contractors) must apply the rules and procedures of the organisation that they are working for.

CTRL personnel must request Protected Areas from the signaller.

EUKL personnel must request possessions from the operations controller.

CTRL Protected Areas and EUKL possessions must not overlap.

### 8.1.2 Principles applicable to CTRL Protected Areas

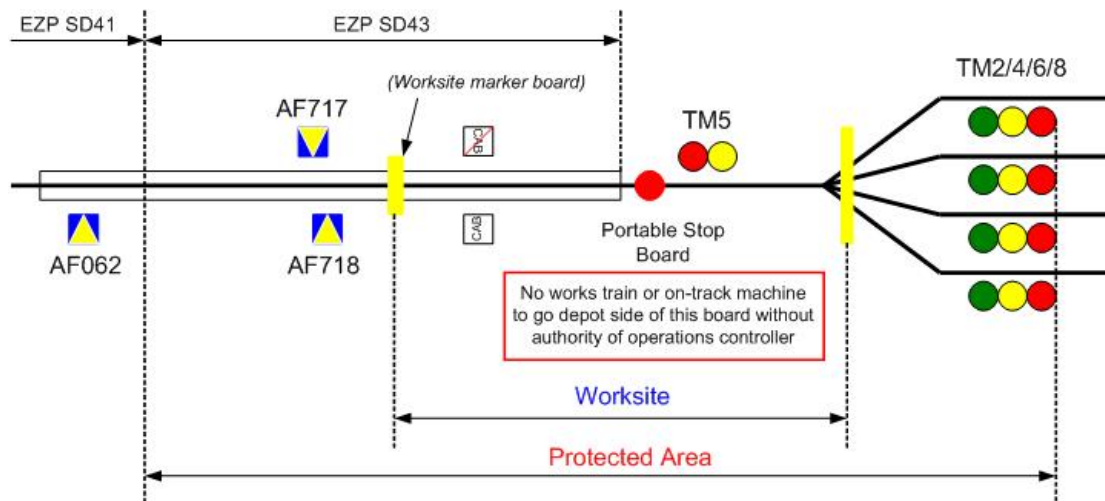
The CTRL EZPs on the link line and their protecting signals/markers are:

EZP	Protecting signals/marker at depot end	Protecting markers at Stratford end
SD41	AF062	AF055 AF057
SD43	TM2 TM4 TM6 TM8	AF055 AF057

Module T3 of the CTRL Rule Book must be applied with the following additional principles:

- Protected Area requests must be made using the forms process.
- CTRL personnel must not go on the line without the signaller first having arranged signalling protection with the operations controller and the lineside switch being operated.
- CTRL personnel must not work on the depot side of TM5 signal without EZP SD43 first being operated.
- The Task Supervisor (**TS**) must **always** provide worksite marker boards on both sides of the worksite.
- If a works train or on-track machine is working in the worksite a Portable Stop Board must be placed at TM5 signal. If it requires to move to the depot side of the Portable Stop Board, the operations controller must first put additional signalling protection arrangements in place to make sure that a sufficient distance (overlap) is kept clear of train movements.

#### Example of CTRL Protected Area and Worksite



### 8.1.3 Method of working for taking a CTRL Protected Area

The **RPOS** must:

- request the Protected Area from the signaller using the forms process.

The **signaller** must:

- request the operations controller to block the link line for a CTRL possession.  
(Safety Critical Message)

The **operations controller** must:

- place/maintain TM2/TM4/TM6/TM8 signals at danger.
- make sure 113/114/115/116 points are in the 'normal' position.
- apply reminder appliances.
- confirm to the signaller that the link line is blocked for a CTRL possession.  
(*Safety Critical Message*)

The **signaller** must:

- apply the EZP protection.
- grant the Protected Area request to the RPOS.

The **RPOS** must:

- give authority for the TS to create the worksite.

The **TS** must:

- create a worksite in accordance with the instructions shown in Module T3 of the CTRL Rule Book
- if there is a works train or on-track machine operating in the worksite, arrange for Portable Stop Board to be placed at TM5 signal.

#### **8.1.4 Movements of works trains or on-track machines from/to Temple Mills International depot**

***A works train or on-track machine requires to move to the depot side of the Portable Stop Board***

The **TS** must:

- request permission from the signaller for a works train or on-track machine to move to the depot side of the Portable Stop Board.

The **signaller** must:

- request permission from the operations controller for a works train or on-track machine to move to the depot side of the Portable Stop Board.

The **operations controller** must:

- set the route from TM5 to an empty reception road.
- prohibit all movements into the Reception Road from the other direction and apply reminder appliances.
- tell the signaller that the works train or on-track machine can move to the depot side of the Portable Stop Board.

The **signaller** must:

- tell the TS that the works train or on-track machine can move to the depot side of the Portable Stop Board.

The **TS** must:

- be told by the signaller that the works train or on-track machine can move to the depot side of the Portable Stop Board.
- remove the Portable Stop Board.
- tell the driver of works train or on-track machine operator to proceed.
- tell the signaller when the works train or on-track machine has stopped and will make no further movement towards the depot.



The **signaller** must:

- tell the operations controller that the works train or on-track machine has stopped and will make no further movement towards the depot.

The **operations controller** must:

- remove the reminder appliances, and may resume the signalling of trains into the empty Reception Road.

The **TS** must:

- replace the Portable Stop Board when the works train or on-track machine has returned to the Stratford side of its location.

#### ***Movements into the Protected Area from the depot***

The **operations controller** must, when the works train or on-track machine arrives at TM2/TM4/TM6/TM8 signal,

- request authorisation from the signaller for the works train or on-track machine to proceed.

The **signaller** must:

- receive authorisation from the RPOS for the works train or on-track machine to enter the Protected Area.
- tell the operations controller that authorisation is given for the works train or on-track machine to proceed.

The **operations controller** must:

- set the route
- authorise the driver of the works train or on-track machine operator to pass TM2/TM4/TM6/TM8 signal at danger
- tell the driver of the works train or on-track machine operator to proceed on sight to the worksite marker board.

#### ***Movements from the Protected Area to the depot***

The **RPOS** must, when the works train or on-track machine is ready to leave the Protected Area:

- request permission from the signaller for the works train or on-track machine to leave the Protected Area.

The **signaller** must:

- request authorisation from the operations controller for the works train or on-track machine to leave the Protected Area.

The **operations controller** must:

- set the route.
- tell the signaller that authorisation is given for the works train or on-track machine to leave the Protected Area.

The **signaller** must:

- receive authorisation from the operations controller for the works train or on-track machine to leave the Protected Area.
- tell the RPOS that authorisation is given for the works train or on-track machine to proceed.

The **RPOS** must:

- receive authorisation from the signaller for the works train or on-track machine to leave the Protected Area.

- arrange for:
  - the worksite marker board to be removed,
  - the driver of works train or on-track machine operator to be told to proceed cautiously to the first signal and to obey the aspect.
  - the worksite marker board to be replaced when the works train or on-track machine has left the Protected Area.

### 8.1.5 Method of working for giving up a CTRL Protected Area

The **TS** must:

- give up the worksite (including removal of the Portable Stop Board at TM5 signal).

The **RPOS** must:

- give up the Protected Area to the signaller.

The **signaller** must:

- remove the EZP protection
- tell the operations controller that the block for the CTRL possession can be removed.

The **operations controller** must:

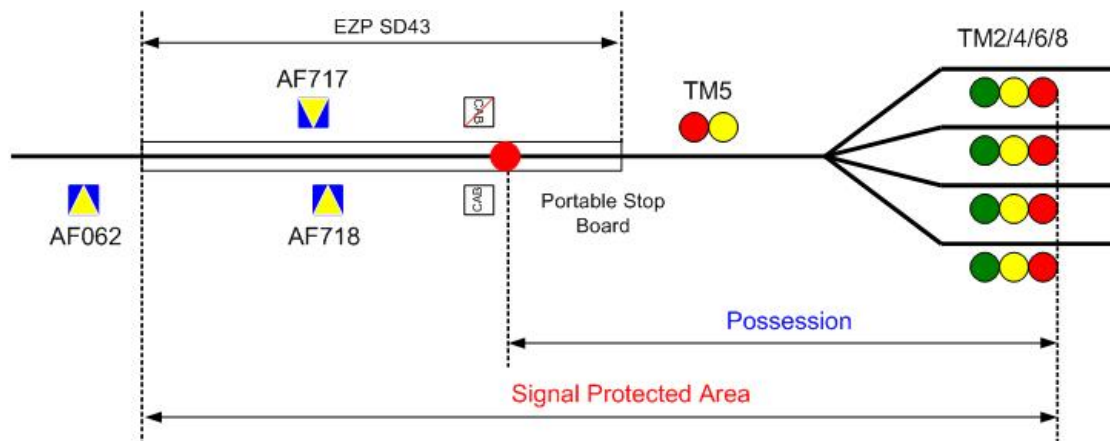
- remove the signalling protection.

### 8.1.6 Principles applicable to EUKL possessions

When EUKL personnel require to work on the Stratford side of TM2/TM4/TM6/TM8 signals the instructions shown in IRB 6 Chapter 1 apply with the following additional principles:

- EUKL personnel must not go to the Stratford side of TM2/TM4/TM6/TM8 signals without the operations controller first having arranged signalling protection with the signaller (remote application of EZP SD43).
- A Portable Stop Board must be placed at the **CAB** board at kilometrage 10.536.
- If a trolley is required to go to the Stratford side of TM2/TM4/TM6/TM8 signals, portable derailleurs must first be put on the rails at the Portable Stop Board.

#### Typical arrangements for an EUKL possession



### 8.1.7 Method of working for taking an EUKL possession

The **person in charge** must:

- confirm with the operations controller the signalling protection arrangements to protect the possession.

The **operations controller** must:

- apply signalling protection.
- request the signaller to provide protection for an EUKL possession.  
(Safety Critical Message)

The **signaller** must:

- apply EZP SD43.
- tell the operations controller that protection is provided. (Safety Critical Message)

The **operations controller** must:

- tell the person in charge that the possession is protected by signals.

The **person in charge** must:

- arrange for a Portable Stop Board to be placed at the **CAB** board at kilometrage 10.536.

### 8.1.8 Method of working for giving up an EUKL possession

The **person in charge** must:

- arrange for the Portable Stop Board at the **CAB** board to be removed.
- give up the possession to the operations controller.

The **operations controller** must:

- tell the signaller that the protection for an EUKL possession can be removed.
- removes the signalling protection.

The **signaller** must:

- remove the EZP protection.

## 8.2 OHLE isolations on the link line

### 8.2.1 Principles

The electrical sections on the link line and their protecting signals/markers are:

Electrical section	Protecting signals/marker at depot end	Protecting signal/markers at Stratford end
1708E	TM2 TM4 TM6 TM8	AF055 AF057
1720B08	TM2 TM4 TM6 TM8	TM5

The signaller is responsible for arranging the signal protection for electrical section 1708E when requested by the EMMIS controller.

The operations controller is responsible for arranging the signal protection for electrical section 1720B08 when requested by the EMMIS controller.

### 8.2.2 Isolation of electrical section 1708E on its own

**Note:** This point applies if the isolation of electrical section 1708E is required without the isolation of the adjacent electrical section 1720B08. If the electrical section 1720B08 is required to be isolated as part of the same isolation request, 8.2.4 to be applied.

The **NPOS** must:

- request the EMMIS controller to isolate electrical section 1708E.

The **EMMIS controller** must:

- request the signaller to block to electric trains electrical section 1708E.

The **signaller** must:

- make sure electrical section 1708E is clear of electric trains.
- inhibit the designated markers,
- request the operations controller to block the link line to electric trains because of an OHLE isolation. *(Safety Critical Message)*

The **operations controller** must:

- place/maintain TM2/TM4/TM6/TM8 signals at danger.
- apply reminder appliances.
- confirm to the signaller that the link line is blocked to electric trains because of an OHLE isolation.

The **signaller** must:

- confirm to the EMMIS controller that the block to electric trains is in place.

The **EMMIS controller** must:

- carry out the switching instructions in order to isolate electrical section 1708E.
- confirm to the NPOS that the electrical section 1708E is isolated.

The **NPOS** must

- carry out local protection measures and issue Overhead Line Permit(s).

### 8.2.3 Re-energisation of electrical section 1708E

The **NPOS** must:

- cancel the isolation with the EMMIS controller.

The **EMMIS controller** must:

- carry out the switching instructions to re-energise electrical section 1708E.
- tell the signaller that the block to electric trains for the electrical section 1708E can be removed.

The **signaller** must:

- remove the signalling protection for electrical section 1708E.
- tell the operations controller that the OHLE has been re-energised and the block to electric trains of the link line can be removed. *(Safety Critical Message)*

The **operations controller** must:

- remove the signalling protection.

### 8.2.4 Isolation of electrical sections 1708E and 1720B08 together

**Note:** This point applies if the electrical sections 1708E and 1720B08 are required to be isolated together as part of the same isolation request.

The **NPOS** must:

- request the EMMIS controller to isolate electrical sections 1708E and 1720B08.

The **EMMIS controller** must:

- request the signaller to block to electric trains electrical section 1708E and advises that there will be an isolation of the electrical section 1720B08.

The **Signaller** must:

- make sure electrical section 1708E is clear of electric trains,
- inhibit the designated markers,
- confirm to the EMMIS controller that the block to electric trains is in place.

The **EMMIS controller** must:

- request the operations controller to block to electric trains electrical section 1720B08  
(form BTET)

The **operations controller** must:

- place/maintain TM2/TM4/TM5/TM6/TM8 signals at danger,
- apply reminder appliances,
- confirm to the EMMIS Controller that the block to electric trains is in place. (form BTET)

The **EMMIS controller** must:

- carry out the switching instructions to isolate electrical sections 1708E and 1720B08.
- confirm to the NPOS that the electrical sections 1708E and 1720B08 are isolated.

The **NPOS** must

- carry out local protection measures and issue Overhead Line Permit(s).

### **8.2.5 Re-energisation of electrical sections 1708E and 1720B08**

The **NPOS** must:

- cancel the isolation with the EMMIS controller.

The **EMMIS controller** must:

- carry out the switching instructions to re-energise electrical sections 1708E and 1720B08.
- tell the operations controller that the OHLE has been re-energised and the block to electric trains for electrical section 1720B08 can be removed. (form BTET)
- tell the signaller that the block to electric trains for the electrical section 1708E can be removed.

The **operations controller** must:

- remove the signalling protection for electrical section 170B08.

The **Signaller** must:

- remove the signalling protection for electrical section 1708E.

## **9 Temporary and emergency speed restrictions**

### **9.1 Down direction movements**

The instructions shown in Modules SR1 and SR2 of the CTRL Rule Book will apply as far as the rules change board at TM5 signal.

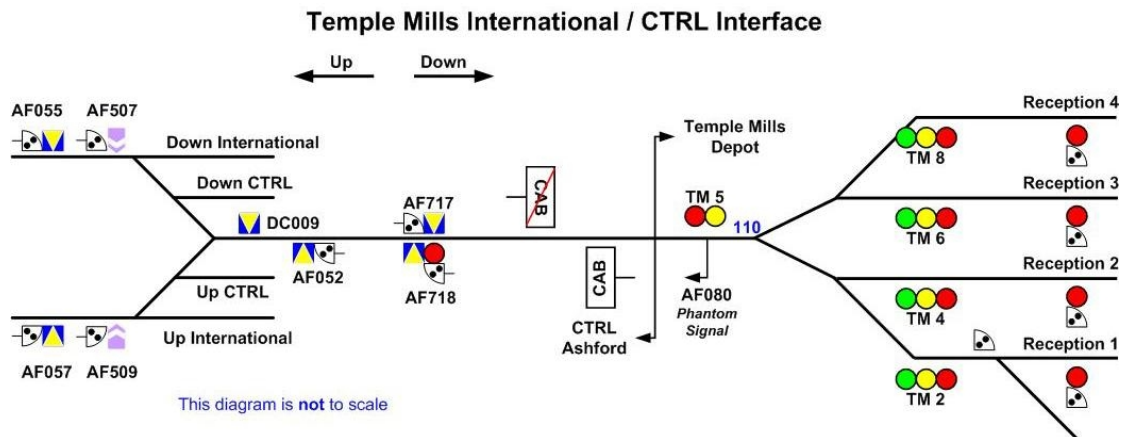
The instructions shown in IRB 6, Chapter 2 will apply from the rules change board at TM5 signal.

### **9.2 Up direction movements**

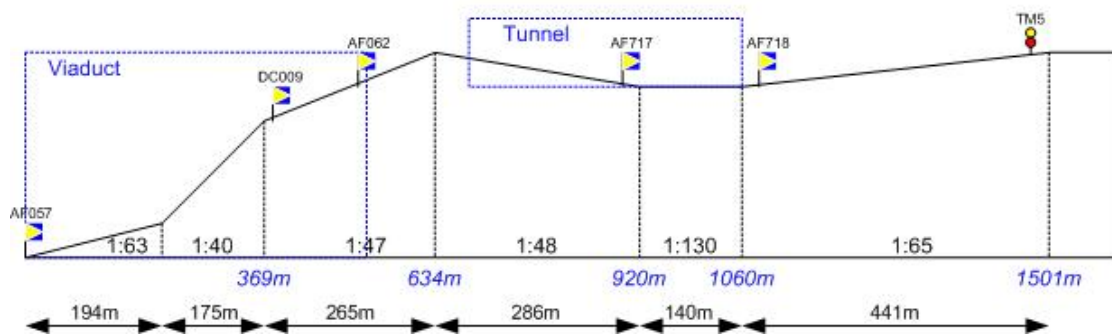
The instructions shown in IRB 6, Chapter 2 will apply as far as the rules change board at the **CAB** board at kilometrage 10.536.

The instructions shown in Modules SR1 and SR2 of the CTRL Rule Book will apply from the rules change board at the **CAB** board at kilometrage 10.536 as far as AF062 marker with the application of the following additional principles in connection with speed restrictions applied by lineside signs:

- if the speed restriction is to commence on the depot side of AF062 marker, a warning board is not to be provided.
- The operations controller must tell drivers about any speed restriction applied using lineside signs between the rules change board at the **CAB** board and AF062 marker by form VILI before authorising the train to pass TM2/TM4/TM6/TM8 signal.
- The signaller must tell the operations controller about any speed restriction applied using lineside signs between the rules change board at the **CAB** board and AF062 marker.



**Temple Mills Link Line  
Gradient Profile  
(Not to scale)**




**F  
A  
S  
I**

Temple Mills International	Time:..... (hhmm)	Date:..... (dd/mm/yy)
<b>PASS DESIGNATED SIGNAL</b>		
Authorisation is given to driver of train..... (urta)		
to pass signal..... at Danger (urta)		
<input type="checkbox"/> Arm the cab signalling for the Link line		
Authorisation.....(number)		
<b>EXAMPLE</b>		
<input type="checkbox"/> transmitted by telephone	<input type="checkbox"/> transmitted by radio	
Please give the completed form to your supervisor at the end of duty		
Return when completed: Operations, Times House		
JULY 2007		

Temple Mills International	Time:..... (hhmm)	Date:..... (dd/mm/yy)
<b>LIMIT SPEED</b>		
Order is given to the driver of train..... (unit)		
<input type="checkbox"/> not to exceed the speed of.....km/h		
from.....to..... (m) (m)		
- Reason.....		
situated between.....and..... (easily recognisable locations)		
Order..... (number)		
<b>EXAMPLE</b>		
Please give the completed form to your supervisor at the end of duty		
Return when completed: Operations, Times House		
JULY 2007		

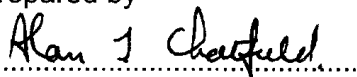
V  
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	CTRL Level Two Standard
	C/OP/OS/05/2006
	Date: February 2005

## Isolation of the OHLE Procedures CTRL/Network Rail Interfaces

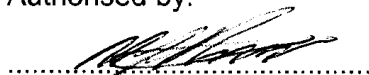
Prepared by



**Alan Chatfield**

**Rules & Procedures Manager, Network Rail (CTRL) Ltd.**

Authorised by:



**Mark Howard**

**Electrification & Plant Engineer, Network Rail (CTRL) Ltd.**



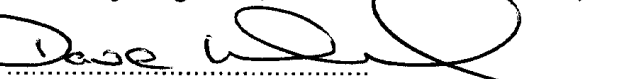
**Andy Verrall**

**Operations Manager, Network Rail (CTRL) Ltd.**



**Cliff Else**

**Territory Engineer, Electrification & Plant, Network Rail, South East**



**Dave Ward,**

**Route Director, Kent, Network Rail**

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R-SA-NR-00032-08-USO-AA

# ISOLATION OF OHLE PROCEDURES CTRL/NETWORK RAIL INTERFACES

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**Note:** The isolation procedures that apply at the interfaces between Eurotunnel, CTRL and Network Rail at Cheriton are contained in the CTRL Level Two Standard “Isolation of the OHLE Procedures – Eurotunnel/CTRL/Network Rail Interfaces” (C/OP/OS/05/2005).

## 1 Glossary

### GENERAL

CTRL	Channel Tunnel Rail Link high speed line between London (St. Pancras) and Cheriton and associated chords and connecting lines.
CTRL personnel	Personnel employed by Network Rail (CTRL) Ltd. and its maintenance contractor. They apply the rules and regulations published in the CTRL Rule Book (CTRL Standard C/02/OS/05/1000) and associated standards and procedures.
Network Rail	“Classic” railway system that excludes the Channel Tunnel Rail Link high speed line and associated chords and connecting lines.
Network Rail personnel	Personnel employed by Network Rail Infrastructure Ltd., either by the territory or the route. They apply the rules and regulations published in the Railway Safety Rule Book (Railway group Standard GE/RT8000) and associated standards and procedures.
Overhead Line Equipment (OHLE)	The equipment suspended over the railway line for supplying electricity to electric trains, and includes the overhead wires, indicators and any associated equipment.
Safety Critical Message	A formal message between the AFC Signaller and the VASC/IECC Signaller used in connection with arranging signalling protection for OHLE isolations.

### CTRL

AFC Signaller	Person responsible for monitoring and controlling the signalling system for the CTRL controlled system.
Ashford Control Centre (AFC)	CTRL control centre at Ashford.
EMMIS Controller	Controller located in the AFC responsible for monitoring and controlling the traction power supply to the CTRL controlled OHLE.
Nominated Person On Site (NPOS)	Qualified person responsible for local switching, testing, earthing, and issuing of Overhead Line Permits in accordance with Module AC2 of the CTRL Rule Book (C/02/OS/05/1012).

### NETWORK RAIL

Ashford Signalling Centre (IECC)	Network Rail signalling control centre at Ashford that interfaces with the CTRL system at Ashford (West & East chords) and the Dollands Moor Freight chord.
Electrical Control Operator (ECO)	Controller located in Paddock Wood Electrical Control Room responsible for monitoring and controlling the traction power supply to the Network Rail controlled OHLE.
IECC Signaller	Person responsible for monitoring and controlling the signalling system for the Ashford Signalling Centre (IECC) control area.
Nominated Person	Qualified person responsible for local switching, testing, earthing, and issuing of Overhead Line Permits in accordance with the Network Rail instructions: “Working on or about 25 Kv A.C. Electrified Lines” (RT/E/S/29987).
VASC Signaller	Person responsible for monitoring and controlling the signalling system for the Victoria Area Signalling Centre (VASC) control area.
Victoria Area Signalling Centre (VASC)	Network Rail signalling control centre at Clapham Jn. that interfaces with the CTRL system at Fawkham Jn. “Waterloo connection”.

## 2. Scope of these procedures

These procedures apply to the isolation of the electrical sections controlled by the AFC and Paddock Wood ECR at the following interfaces between CTRL and Network Rail:

- Waterloo connection
- Ashford West and East chords
- Dollands Moor Freight chord

For full details on the electrical sections involved, see appendix 2.

## 3. Principles

### 3.1 General

CTRL or Network Rail personnel (including maintenance contractors) to apply the rules and procedures of the organisation they are working for.

CTRL or Network Rail personnel to request isolations of the OHLE from the control centre defined in the rules and procedures of the organisation they are working for.

### 3.2 Isolation arrangements

The EMMIS Controller is responsible for the isolation of the CTRL electrical sections. The isolation switches for certain CTRL electrical sections (as detailed in appendix 2) are operated by the ECO. The ECO isolates/re-energises these CTRL electrical sections on instruction from the EMMIS Controller. **Note:** If the ECO receives a request for an emergency isolation of these CTRL electrical sections, he/she will switch off the electricity without receiving an instruction from the EMMIS Controller

The ECO is responsible for the isolation of the Network Rail electrical sections. Because CTRL supplies the traction power to the Network Rail OHLE, the isolation of CTRL electrical sections can cause the traction power to be switched off from part (or all) of the Network Rail OHLE unless alternative switching arrangements are implemented.

Except in the event of an emergency, before any electrical section(s) is isolated and/or responsibility transferred, the ECO or EMMIS Controller must have received an assurance that the required electrical section(s) has been blocked to electric train movements.

### 3.3. Signal protection arrangements

The AFC Signaller is responsible for arranging the signal protection for CTRL electrical sections when requested by the EMMIS Controller.

The VASC/IECC Signaller is responsible for arranging the signal protection for Network Rail electrical sections when requested by the ECO.

The detailed signal protection arrangements for each individual electrical section is shown in appendix 2. As the same signal or marker often protects more than one electrical section, this signal protection can be simplified as shown in the table shown on the next page.

Safety Critical Messages must be used for communications between Signallers when arranging the signal protection arrangements to block the line to electric trains for an OHLE isolation.

A Safety Critical Message must be read back by the recipient to the sender to ensure it is correct and both sender and recipient must record the details of message in their respective log books. The originator of the Safety Critical Message must issue a message number in accordance with local instructions when he/she is sure that the recipient has understood the message to validate it.

Safety Critical Messages to be in the format shown in the following examples:

#### **AFC Signaller to VASC Signaller**

“Block the Down Waterloo connection to electric trains at VS269 signal because of an OHLE isolation.  
My message no. 123456”

**VASC Signaller to AFC Signaller**

“Reference your message no. 123456, Down Waterloo connection blocked to electric trains at VS269 signal.  
My message no. 987654”

**AFC Signaller to VASC Signaller**

“Reference your message no. 987654, the block to electric trains of the Down Waterloo connection at VS269 signal may be removed.  
My message no.123457”

Line	Electrical sections	Protecting signal at Network Rail end of sections	Protecting marker/signal at CTRL end of sections
<b>CTRL electrical sections</b>			
Down Waterloo connection	710Q/710R/710S	VASC signal VS269	
Up Waterloo connection	709E/709F/709G		AFC marker AF206
Down Ashford West chord	716A/716B/716C	IECC signals AD672/AD674/AD676/AD678	AFC marker AF301
Up Ashford West chord	715G/715H/715J	IECC signals AD672/AD674/AD676/AD678	AFC marker AF303
Down Ashford East chord	716J/716K/716L	IECC signals AD665/AD667/AD669/AD671	AFC marker AF328
Up Ashford East chord	715A/715B/715C	IECC signals AD665/AD667/AD669/AD671	AFC marker AF326
Dollands Moor Freight chord	718E/718F	IECC signals AD808/AD814/AD816/AD818	AFC markers AF335/AF337/AF593
<b>Network Rail electrical sections</b>			
Down Ashford West chord	716D	IECC signals AD672/AD674/AD676/AD678	AFC marker AF301
Up Ashford West chord	715F	IECC signals AD672/AD674/AD676/AD678	AFC marker AF303 IECC signal AD947
Down Ashford East chord	716F	IECC signals AD665/AD667/AD669/AD671	AFC marker AF328 IECC signal AD954
Up Ashford East chord	715D	IECC signals AD665/AD667/AD669/AD671	AFC marker AF326
Ashford station area	715E 716E/716G/716H	Sections protected by IECC signals	
Dollands Moor Yard	600B	Section protected by IECC signals	

#### 4. Isolation of CTRL electrical sections that are under the control of the EMMIS Controller

**Note:** This point applies if the CTRL electrical sections are required to be isolated without the isolation of the adjacent Network Rail electrical sections. If the adjacent Network Rail electrical sections are required to be isolated as part of the same isolation request, point 8 to be applied.

##### 4.1 CTRL personnel initiates the isolation request (Appendix 3, flowchart 1)

4.1.1 NPOS requests EMMIS Controller to isolate the CTRL electrical section(s) concerned.

*(Form ISOL)*

- 4.1.2 EMMIS Controller requests AFC Signaller to block to electric trains the CTRL electrical section(s) concerned.
- 4.1.3 AFC Signaller inhibits the designated markers for the line concerned.
- 4.1.4 AFC Signaller requests VASC/IECC Signaller to block the line concerned to electric trains because of an OHLE isolation. *(Safety Critical Message)*
- 4.1.5 VASC/IECC Signaller places/maintains designated signals to danger and applies reminder appliances.
- 4.1.6 VASC/IECC Signaller confirms to AFC Signaller when the line concerned is blocked to electric trains. *(Safety Critical Message)*
- 4.1.7 AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.
- 4.1.8 EMMIS Controller instructs ECO to isolate the CTRL electrical section(s) concerned.
  - 4.1.9 Additional instructions in connection with the isolation of CTRL electrical sections 715B, 715C, 715G, 715H, 716B, 716C, 716J & 716K (Ashford West & East chords)**
    - 4.1.9.1 ECO consults and applies the Electrical Control Room instructions for the Network Rail electrical sections.
    - 4.1.9.2 If traction current supply is to be maintained to Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station)**
      - 4.1.9.2.1 ECO contacts IECC Signaller to ensure no electric train movements are taking place.
      - 4.1.9.2.2 ECO arranges alternative feeding to the Network Rail electrical sections.
      - 4.1.9.2.3 ECO informs IECC Signaller that electric train movements can recommence.
    - 4.1.9.3 If traction current supply is NOT to be maintained to Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station)**
      - 4.1.9.3.1 ECO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*
      - 4.1.9.3.2 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
      - 4.1.9.3.3 IECC Signaller confirms to ECO that block to electric trains is in place. *(Form AE)*
- 4.1.10 ECO carries out the switching instructions in order to isolate the CTRL electrical section(s) concerned.
- 4.1.11 ECO confirms to EMMIS Controller that the CTRL electrical section(s) concerned is isolated.
- 4.1.12 EMMIS Controller carries out the switching instructions in order to isolate the CTRL electrical section(s) concerned.
- 4.1.13 EMMIS Controller confirms to NPOS that the CTRL electrical section(s) concerned is isolated. *(Form ISOL)*
- 4.1.14 NPOS carries out local protection measures and issues Overhead Line Permit(s).
- 4.2 Network Rail personnel initiates the isolation request (Appendix 3, flowchart 2)**
  - 4.2.1 Nominated Person requests ECO to isolate the CTRL electrical section(s) concerned. *(Form B)*
    - 4.2.2 Additional instructions in connection with the isolation of CTRL electrical sections 715B, 715C, 715G, 715H, 716B, 716C, 716J & 716K (Ashford West & East chords)**
      - 4.2.2.1 ECO consults and applies the Electrical Control Room instructions for the Network Rail electrical sections.
      - 4.2.2.2 If traction current supply is to be maintained to Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station)**
        - 4.2.2.2.1 ECO contacts IECC Signaller to ensure no electric train movements are taking place.

- 4.2.2.2 ECO arranges alternative feeding to the Network Rail electrical sections.
- 4.2.2.3 ECO informs IECC Signaller that electric train movements can recommence.
- 4.2.3.3 If traction current supply is NOT to be maintained to Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station)**
  - 4.2.3.3.1 ECO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*
  - 4.2.3.3.2 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
  - 4.2.3.3.3 IECC Signaller confirms to ECO that block to electric trains is in place. *(Form AE)*
- 4.2.3 ECO requests EMMIS Controller to isolate the CTRL electrical section(s) concerned. *(Part 1 of Form NR)*
- 4.2.4 EMMIS Controller requests AFC Signaller to block to electric trains the CTRL electrical section(s) concerned.
- 4.2.5 AFC Signaller inhibits the designated markers for the line concerned.
- 4.2.6 AFC Signaller requests VASC/IECC Signaller to block the line concerned to electric trains because of an OHLE isolation. *(Safety Critical Message)*
- 4.2.7 VASC/IECC Signaller places/maintains designated signals to danger and applies reminder appliances.
- 4.2.8 VASC/IECC Signaller confirms to AFC Signaller when the line concerned is blocked to electric trains. *(Safety Critical Message)*
- 4.2.9 AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.
- 4.2.10 EMMIS Controller instructs ECO to isolate the CTRL electrical section(s) concerned.
- 4.2.11 ECO carries out the switching instructions in order to isolate the CTRL electrical section(s) concerned.
- 4.2.12 ECO confirms to EMMIS Controller that the CTRL electrical section(s) concerned is isolated.
- 4.2.13 EMMIS Controller carries out the switching instructions in order to isolate the CTRL electrical section(s) concerned.
- 4.2.14 EMMIS Controller confirms to ECO that the CTRL electrical section(s) concerned is isolated. *(Part 2 of Form NR)*
- 4.2.15 ECO confirms to Nominated Person that the CTRL electrical section(s) concerned is isolated. *(Form B)*
- 4.2.16 Nominated Person carries out local protection measures and issues Overhead Line Permit(s).

## **5. Re-energisation of CTRL electrical sections that are under the control of the EMMIS Controller**

### **5.1 CTRL personnel initiated the isolation request**

- 5.1.1 NPOS cancels isolation with EMMIS Controller. *(Form ISOL)*
- 5.1.2 EMMIS Controller carries out the switching instructions in order to re-energise the CTRL electrical section(s) concerned.
- 5.1.3 EMMIS Controller instructs ECO to re-energise the CTRL electrical section(s) concerned.
- 5.1.4 ECO carries out the switching instructions in order to re-energise the CTRL electrical section(s) concerned.

**5.1.5 Additional instructions in connection with the isolation of CTRL electrical sections 715B, 715C, 715G, 715H, 716B, 716C, 716J & 716K (Ashford West & East chords)**

5.1.5.1 ECO consults and applies the Electrical Control Room instructions for the Network Rail electrical sections.

**5.1.5.2 If traction current supply was maintained to Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station)**

5.1.5.2.1 ECO contacts IECC Signaller to ensure no electric train movements are taking place.

5.1.5.2.2 ECO arranges cancellation of the alternative feeding to the Network Rail electrical sections.

5.1.5.2.3 ECO informs IECC Signaller that electric train movements can recommence.

**5.1.5.3 If traction current supply has NOT been maintained to Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station)**

5.1.5.3.1 ECO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*

5.1.5.3.2 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.

5.1.6 ECO confirms to EMMIS Controller that the CTRL electrical section(s) concerned are re-energised.

5.1.7 EMMIS Controller advises AFC Signaller that the block to electric trains for the CTRL electrical section(s) concerned can be removed.

5.1.8 AFC Signaller removes signalling protection arrangements for the line concerned.

5.1.9 AFC Signaller advises VASC/IECC Signaller that the OHLE has been re-energised and the block to electric trains for the line concerned can be removed. *(Safety Critical Message)*

5.1.10 VASC/IECC Signaller removes the signal protection for the line concerned.

**5.2 Network Rail personnel initiated the isolation request**

5.2.1 Nominated Person cancels isolation with ECO. *(Form B)*

5.2.2 ECO requests EMMIS Controller to re-energise the CTRL electrical section(s) concerned. *(Part 4 of Form NR)*

5.2.3 EMMIS Controller carries out the switching instructions in order to re-energise the CTRL electrical section(s) concerned.

5.2.4 EMMIS Controller instructs ECO to re-energise the CTRL electrical section(s) concerned.

5.2.5 ECO carries out the switching instructions in order to re-energise the CTRL electrical section(s) concerned.

**5.2.6 Additional instructions in connection with the isolation of CTRL electrical sections 715B, 715C, 715G, 715H, 716B, 716C, 716J & 716K (Ashford West & East chords)**

5.2.6.1 ECO consults and applies the Electrical Control Room instructions for the Network Rail electrical sections.

**5.2.6.2 If traction current supply was maintained to Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station)**

5.2.6.2.1 ECO contacts IECC Signaller to ensure no electric train movements are taking place.

5.2.6.2.2 ECO arranges cancellation of the alternative feeding to the Network Rail electrical sections.

5.2.6.2.3 ECO informs IECC Signaller that electric train movements can recommence.



**5.2.6.3 If traction current supply has NOT been maintained to Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station)**

5.2.6.3.1 ECO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*

5.2.6.3.2 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.

5.2.7 ECO confirms to EMMIS Controller that the CTRL electrical section(s) concerned are re-energised.

5.2.8 EMMIS Controller advises AFC Signaller that the block to electric trains for the CTRL electrical section(s) concerned can be removed.

5.2.9 AFC Signaller removes signalling protection arrangements for the line concerned.

5.2.10 AFC Signaller advises VASC/IECC Signaller that the OHLE has been re-energised and the block to electric trains for the line concerned can be removed. *(Safety Critical Message)*

5.2.11 VASC/IECC Signaller removes the signal protection for the line concerned.

**6. Isolation of Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station) that are under the control of Paddock Wood ECO (Appendix 3, flowchart 3)**

**Notes:**

1. This point applies if the Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station) are required to be isolated without the isolation of the adjacent CTRL electrical sections. If the adjacent CTRL electrical sections are required to be isolated as part of the same isolation request, point 8 to be applied.

2. If CTRL personnel require the isolation of Network Rail electrical sections 715D – 715F & 716D – 716H, point 8 to be applied.

6.1 Nominated Person requests ECO to isolate the Network Rail electrical section(s) concerned. *(Form B)*

6.2 ECO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*

6.3 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.

**6.4 Additional instruction in connection with the isolation of Network Rail electrical section(s) 715D, 715F, 716D & 716F**

6.4.1 IECC Signaller requests AFC Signaller to block the line concerned to electric trains because of an OHLE isolation. *(Safety Critical Message)*

6.4.2 AFC Signaller inhibits the designated marker for the line concerned.

6.4.3 AFC Signaller confirms to IECC Signaller that block to electric trains is in place. *(Safety Critical Message)*

6.5 IECC Signaller confirms to ECO that block to electric trains is in place. *(Form AE)*

6.6 ECO carries out the switching instructions in order to isolate the Network Rail electrical section(s) concerned.

6.7 ECO confirms to Nominated Person that the Network Rail electrical sections concerned are isolated. *(Form B)*

6.8 Nominated Person carries out local protection measures and issues Overhead Line Permit(s).

**7. Re-energisation of Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station) that are under the control of Paddock Wood ECO**

7.1 Nominated Person cancels isolation with ECO. *(Form B)*

- 7.2 ECO carries out the switching instructions in order to re-energise the Network Rail electrical section(s) concerned.
- 7.3 ECO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*
- 7.4 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.
- 7.5 Additional instruction in connection with the isolation of Network Rail electrical section(s) 715D, 715F, 716D & 716F**
- 7.5.1 IECC Signaller advises AFC Signaller that the OHLE has been re-energised and the block to electric trains for the line concerned can be removed. *(Safety Critical Message)*
- 7.5.2 AFC Signaller removes the signalling protection for the line concerned.

## **8. Isolation of CTRL and Network Rail electrical sections together**

**Note:** This point applies if CTRL electrical sections and the adjacent Network Rail electrical sections 715D – 715F & 716D – 716H (Ashford station) or 600B (Dollands Moor Yard) are required to be isolated together as part of the same isolation request.

### **8.1 CTRL personnel initiates the isolation request (Appendix 3, flowchart 4)**

- 8.1.1 NPOS requests EMMIS Controller to isolate the CTRL and Network Rail electrical sections concerned. *(Form ISOL)*
- 8.1.2 EMMIS Controller requests AFC Signaller to block to electric trains the CTRL electrical section(s) and advises that there will be an isolation of the Network Rail electrical section(s) concerned.
- 8.1.3 AFC Signaller consults the Isolation Instructions for the CTRL electrical section(s) concerned and inhibits the designated markers.
- 8.1.4 AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.
- 8.1.5 EMMIS Controller requests ECO to isolate and/or handover responsibility for the Network Rail electrical section(s) concerned and instructs ECO to isolate the CTRL electrical section(s) concerned. *(Part 1 of Form CTRL)*
- 8.1.6 ECO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*
- 8.1.7 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
- 8.1.8 IECC Signaller confirms to ECO that block to electric trains is in place. *(Form AE)*
- 8.1.9 ECO consults and applies the Electrical Control Room instructions and carries out the switching in order to isolate the CTRL and Network Rail electrical sections concerned.
- 8.1.10 ECO confirms to EMMIS Controller that the CTRL and Network Rail electrical sections concerned are isolated and transfers responsibility of the Network Rail electrical sections to the EMMIS Controller. *(Part 2 of Form CTRL)*
- 8.1.11 EMMIS Controller carries out the switching instructions in order to isolate the CTRL electrical section(s) concerned.
- 8.1.12 EMMIS Controller confirms to NPOS that the CTRL and Network Rail electrical sections concerned are isolated. *(Form ISOL)*
- 8.1.13 NPOS carries out local protection measures and issues Overhead Line Permit(s).

### **8.2 Network Rail personnel initiates the isolation request (Appendix 3, flowchart 5)**

- 8.2.1 Nominated Person requests ECO to isolate the CTRL and Network Rail electrical sections concerned. *(Form B)*
- 8.2.2 ECO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*

- 8.2.3 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
- 8.2.4 Additional instruction in connection with the isolation of Network Rail electrical section(s) 715D, 715F, 716D & 716F**
- 8.2.4.1 IECC Signaller requests AFC Signaller to block the line concerned to electric trains because of an OHLE isolation. *(Safety Critical Message)*
- 8.2.4.2 AFC Signaller inhibits the designated marker for the line concerned.
- 8.2.4.3 AFC Signaller confirms to IECC Signaller that block to electric trains is in place. *(Safety Critical Message)*
- 8.2.5 IECC Signaller confirms to ECO that block to electric trains is in place. *(Form AE)*
- 8.2.6 ECO carries out the switching instructions in order to isolate the Network Rail electrical section(s) concerned.
- 8.2.7 ECO requests EMMIS Controller to isolate the CTRL electrical section(s) concerned. *(Part 1 of Form NR)*
- 8.2.8 EMMIS Controller confirms with AFC Signaller that the block to electric trains is in place for the CTRL electrical section(s) concerned.
- 8.2.9 AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.
- 8.2.10 EMMIS Controller instructs ECO to isolate the CTRL electrical section(s) concerned.
- 8.2.11 ECO confirms to EMMIS Controller that the CTRL electrical section(s) concerned is isolated.
- 8.2.12 EMMIS Controller carries out the switching instructions in order to isolate the CTRL electrical section(s) concerned.
- 8.2.13 EMMIS Controller confirms to ECO that the CTRL electrical section(s) concerned is isolated. *(Part 2 of Form NR)*
- 8.2.14 ECO confirms to Nominated Person that the Network Rail electrical sections concerned are isolated. *(Form B)*
- 8.2.15 Nominated Person carries out local protection measures and issues Overhead Line Permit(s).

## **9. Re-energisation of CTRL and Network Rail electrical sections together**

### **9.1 CTRL personnel initiated the isolation request**

- 9.1.1 NPOS cancels isolation with EMMIS Controller. *(Form ISOL)*
- 9.1.2 EMMIS Controller carries out the switching instructions in order to re-energise the CTRL electrical section(s) concerned.
- 9.1.3 EMMIS Controller requests ECO to re-energise the CTRL and Network Rail electrical sections concerned. *(Part 4 of Form CTRL)*
- 9.1.4 ECO consults and applies the Electrical Control Room instructions and carries out the switching instructions in order to re-energise the CTRL and Network Rail electrical sections concerned.
- 9.1.5 ECO confirms to EMMIS Controller that the CTRL electrical section(s) concerned are re-energised.
- 9.1.6 ECO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*
- 9.1.7 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.
- 9.1.8 EMMIS Controller advises AFC Signaller that the block to electric trains for the CTRL electrical section(s) concerned can be removed.
- 9.1.9 AFC Signaller removes signalling protection for the CTRL electrical section(s) concerned.

**9.2 Network Rail personnel initiated the isolation request**

- 9.2.1 Nominated Person cancels isolation with ECO. *(Form B)*
- 9.2.2 ECO requests EMMIS Controller to re-energise the CTRL electrical section(s) concerned. *(Part 4 of Form NR)*
- 9.2.3 EMMIS Controller carries out the switching instructions in order to re-energise the CTRL electrical section(s) concerned.
- 9.2.4 EMMIS Controller instructs ECO to re-energise the CTRL electrical section(s) concerned.
- 9.2.5 ECO consults and applies the Electrical Control Room instructions and carries out the switching instructions in order to re-energise the CTRL and Network Rail electrical sections concerned.
- 9.2.6 ECO confirms to EMMIS Controller that the CTRL electrical section(s) concerned are re-energised.
- 9.2.7 ECO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*
- 9.2.8 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.
- 9.2.9 Additional instruction in connection with the isolation of Network Rail electrical section(s) 715D, 715F, 716D & 716F**
  - 9.2.9.1 IECC Signaller advises AFC Signaller that the OHLE has been re-energised and the block to electric trains for the line concerned can be removed. *(Safety Critical Message)*
  - 9.2.9.2 AFC Signaller removes the signalling protection for the line concerned.
- 9.2.10 EMMIS Controller advises AFC Signaller that the block to electric trains for the CTRL electrical section(s) concerned can be removed.
- 9.2.11 AFC Signaller removes signalling protection for the CTRL electrical section(s) concerned.

**Appendix 1: Forms**

**NETWORK RAIL / CTRL OHL INTERFACES**

To be utilised by Network Rail

**FORM CTRL**

**DECLARATION OF ISOLATION AT INTERFACES FORMING OHL BOUNDARY BETWEEN  
ASHFORD CTRL CONTROL CENTRE AND PADDOCK WOOD ELECTRICAL CONTROL ROOM**  
Where CTRL request remote protection from Network Rail

**Part 1 Request\*** (For CTRL Use only)

**Part 2 Declaration**

From : Electrical Control Operator at Paddock Wood Control Room  
To : EMMIS Controller at CTRL Control Centre Ashford

**The following overhead line equipment has been isolated :**

Electrical Section(s) or Sub-section(s) isolated	Line(s)	Limits of isolation * (Quote Structure Numbers)	Switches / Circuit Breakers Effecting the Isolation
* for Network Rail use only			Switches / Circuit Breakers not in Normal Position
This declaration to be cancelled by ..... hours..... date <b>Message No</b> ..... <b>Sent by</b> ..... <b>Date</b> ..... <b>Received by</b> .....			

**Part 3 Issue** (Not Used)

**Part 4 Cancellation**

From : EMMIS Controller at CTRL Control Centre Ashford  
To : Electrical Control Operator at Paddock Wood Control Room

All authorities to work issued from this Control Centre within the limits of the isolation shown in Part 1 have been cancelled and this declaration is now cancelled.

**Message No**..... **Sent by** .....  
**Date**..... **Received by** .....

**Part 5 Re-energisation\*** (For CTRL use only)

## NETWORK RAIL / CTRL OHL INTERFACES

**To be utilised by Network Rail**

**FORM NR**

### DECLARATION OF ISOLATION AT INTERFACES FORMING OHL BOUNDARY BETWEEN ASHFORD CTRL CONTROL CENTRE AND PADDOCK WOOD ELECTRICAL CONTROL ROOM Where Network Rail request remote protection from CTRL

**Part 1 Request\*** (For CTRL Use only)

#### **Part 2 Declaration**

From : EMMIS Controller at CTRL Control Centre Ashford  
To : Electrical Control Operator at Paddock Wood Control Room

**The following overhead line equipment has been isolated :**

Electrical Section(s) or Sub-section(s) isolated	Line(s)	Limits of isolation * (Quote Structure Numbers)	Switches / Circuit Breakers Effecting the Isolation
* for Network Rail use only			Switches / Circuit Breakers not in Normal Position
This declaration to be cancelled by ..... hours..... date			
Message No..... Sent by .....			
Date..... Received by .....			

#### **Part 3 Issue \*** For use of Network Rail Electrical Control Room at Paddock Wood only

The isolation referred to in Part 1 has been combined with the isolation implemented following the block to electric trains referred to on my form AE part 1.

Message No ..... Date .....

**The following Form "B" authorities have been issued within the combined isolation :**

Issued		Cancelled	
Time	Date	Time	Date

#### **Part 4 Cancellation**

From : Electrical Control Operator at Paddock Wood Control Room  
To : EMMIS Controller at CTRL Control Centre Ashford

All authorities to work issued from this Control Centre within the limits of the isolation shown in Part 1 have been cancelled and this declaration is now cancelled.

Message No ..... Sent by .....  
Date ..... Received by .....

#### **Part 5 Re-energisation\*** (For CTRL use only)

## NETWORK RAIL / CTRL OHL INTERFACES

**To be utilised by EMMIS (CTRL)**

**FORM CTRL**

### DECLARATION OF ISOLATION AT INTERFACES FORMING OHL BOUNDARY BETWEEN ASHFORD CTRL CONTROL CENTRE AND PADDOCK WOOD ELECTRICAL CONTROL ROOM

Where CTRL request remote protection from Network Rail

**Part 1 Request\*** *(For CTRL Use only)*

From : EMMIS Controller at Ashford Control Centre  
 To : Electrical Control Operator at Paddock Wood Control Room  
**Isolate electrical Sections** ..... **Time** ..... **date**.....

**Part 2 Declaration**

From : Electrical Control Operator at Paddock Wood Control Room  
 To : EMMIS Controller at CTRL Control Centre Ashford

**The following overhead line equipment has been isolated :**

Electrical Section(s) or Sub-section(s) isolated	Line(s)	Limits of isolation * (Quote Structure Numbers)	Switches / Circuit Breakers Effecting the Isolation
* for Network Rail use only			Switches / Circuit Breakers not in Normal Position
This declaration to be cancelled by ..... hours..... date			
<b>Message No</b> ..... <b>Sent by</b> .....			
<b>Date</b> ..... <b>Received by</b> .....			

**Part 3 Issue** *(Not Used)*

**Part 4 Cancellation**

From : EMMIS Controller at CTRL Control Centre Ashford  
 To : Electrical Control Operator at Paddock Wood Control Room

All authorities to work issued from this Control Centre within the limits of the isolation shown in Part 1 have been cancelled and this declaration is now cancelled.

**Message No**..... **Sent by** .....

**Date** ..... **Received by** .....

**Part 5 Re-energisation\*** *( For CTRL use only)*

From: Electrical Control operator at Paddock Wood Control Room  
 To : EMMIS Controller at Ashford Control Centre

**Reference your message no** ....., **electrical section(s)**.....  
**have been re-energised.** **Time**..... **Date**.....

## NETWORK RAIL / CTRL OHL INTERFACES

To be utilised by EMMIS (CTRL)

FORM NR

### DECLARATION OF ISOLATION AT INTERFACES FORMING OHL BOUNDARY BETWEEN ASHFORD CTRL CONTROL CENTRE AND PADDOCK WOOD ELECTRICAL CONTROL ROOM Where Network Rail request remote protection from CTRL

**Part 1 Request\*** *(For CTRL Use only)*

From : Electrical Control Operator at Paddock Wood Control Room  
To : EMMIS Controller at Ashford Control Centre

Isolate electrical Sections ..... Time ..... date.....

**Part 2 Declaration**

From : EMMIS Controller at CTRL Control Centre Ashford  
To : Electrical Control Operator at Paddock Wood Control Room

**The following overhead line equipment has been isolated :**

Electrical Section(s) or Sub-section(s) isolated	Line(s)	Limits of isolation * (Quote Structure Numbers)	Switches / Circuit Breakers Effecting the Isolation
* for Network Rail use only			Switches / Circuit Breakers not in Normal Position
This declaration to be cancelled by ..... hours..... date			
<b>Message No</b> ..... <b>Sent by</b> .....			
<b>Date</b> ..... <b>Received by</b> .....			

**Part 3 Issue \*** *(For use of Network Rail Electrical Control Room at Paddock Wood only)*

**Part 4 Cancellation**

From : Electrical Control Operator at Paddock Wood Control Room  
To : EMMIS Controller at CTRL Control Centre Ashford

All authorities to work issued from this Control Centre within the limits of the isolation shown in Part 1 have been cancelled and this declaration is now cancelled.

**Message No** ..... **Sent by** .....  
**Date** ..... **Received by** .....

**Part 5 Re-energisation\*** *(For CTRL use only)*

From: Electrical Control operator at Paddock Wood Control Room  
To : EMMIS Controller at Ashford Control Centre

**Reference your message no** ..... , **electrical section(s)**.....  
**have been re-energised.** **Time**..... **Date**.....



**Appendix 2 – Electrical sections – Signalling Protection arrangements**

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
<b>Waterloo Connection</b>					
709E	Up Waterloo Connection	Switch 709/10 at Southfleet Jn. Switch 709/12 at catenary mast YF203/20	AF206 – AF410		<b>CTRL section</b>
709F	Up Waterloo Connection	Switch 709/13 at catenary mast YF203/16 Switch 709/14 at catenary mast YF202/28	AF206 – AF410		<b>CTRL section (switches operated by Paddock Wood ECR)</b>
709G	Up Waterloo Connection	Switch 709/15 at catenary mast YF202/24 Limit of OHLE at kilometrage 201.308	AF206 – AF410		<b>CTRL section (switches operated by Paddock Wood ECR)</b>
710Q	Down Waterloo Connection	Limit of OHLE at kilometrage 201.308 Switch 710/31 at catenary mast YF202/24		VS269 – VS291	<b>CTRL section (switches operated by Paddock Wood ECR)</b>
710R	Down Waterloo Connection	Switch 710/32 at catenary mast YF202/28 Switch 710/33 at catenary mast YF203/16		VS269 – VS291	<b>CTRL section (switches operated by Paddock Wood ECR)</b>
710S	Down Waterloo Connection	Switch 710/34 at catenary mast YF203/20 Switch 710/36 at Southfleet Jn.		VS269 – VS291	<b>CTRL section</b>

**Appendix 2 – Electrical sections – Signalling Protection arrangements**

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
<b>Ashford West and East chords</b>					
715A	Up East chord	Switch 713A/715A at catenary mast Y92/26 Switch 715/1 at catenary mast Y92/24	AF326 – AF462	AD665 – AF319 AD667 – AF319 AD669 – AF319 AD671 – AF319	<b>CTRL section</b>
715B	Up East chord	Switch 715/2 at catenary mast Y92/19 Switch 715/3 at catenary mast Y91/13	AF326 – AF462	AD665 – AF319 AD667 – AF319 AD669 – AF319 AD671 – AF319	<b>CTRL section (switches operated by Paddock Wood ECR)</b>
715C	Up East chord	Switch 715/4 at catenary mast Y91/12 Switch 715/5 at catenary mast YA2/62	AD954 – AD672 AD954 – AD674 AD954 – AD786 AD954 – AD788 AF326 – AF462	AD665 – AF319 AD667 – AF319 AD669 – AF319 AD671 – AF319	<b>CTRL section (switches operated by Paddock Wood ECR)</b>
715D	Up East chord/ Down Slow	Switch 715/5 at catenary mast YA2/62 Switch 715/6 at catenary mast YA2/47	AD954 – AD672 AD954 – AD674 AD954 – AD786 AD954 – AD788 AF326 – AF462	AD665 – AD691 AD665 – AF319 AD667 – AD691 AD667 – AF319 AD669 – AD691 AD669 – AF319 AD671 – AD691 AD671 – AF319	<b>Network Rail section</b> Dual – voltage trains may operate through this isolation on DC traction power
715E	Platform 3 Ashford station	Switch 715/6 at catenary mast YA2/47 Switch 715/9 at catenary mast YA1/48	AD954 – AD672 AD954 – AD674 AD954 – AD786 AD956 – AD672	AD667 – AD693 AD667 – AD695 AD669 – AD693 AD669 – AD695 AD947 – AD671 AD949 – AD671	<b>Network Rail section</b> Dual – voltage trains may operate through this isolation on DC traction power

## Appendix 2 – Electrical sections – Signalling Protection arrangements

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
715F	Up West chord	Switch 715/9 at catenary mast YA1/48 Switch 715/10 at catenary mast YA1/20	AD672 – AD854 AD672 – AD856 AD672 – AF312 AD672 – AF318 AD674 – AD660 AD674 – AD662X AD674 – AD854 AD674 – AD856 AD674 – AF312 AD676 – AD660 AD676 – AD662X AD676 – AD852 AD676 – AD854 AD676 – AD856 AD676 – AF312 AD678 – AD660 AD678 – AD662X AD678 – AD852 AD678 – AD854 AD678 – AD856 AD678 – AF312	AD947 – AD671 AF303 – AF453	<b>Network Rail section</b> Dual – voltage trains may operate through this isolation on DC traction power
715G	Up West chord	Switch 715/10 at catenary mast YA1/20 Switch 715/11 at catenary mast YA1/07	AD672 – AF312 AD674 – AF312 AD676 – AF312 AD678 – AF312	AF303 – AF453	<b>CTRL section</b> (switches operated by Paddock Wood ECR)
715H	Up West chord	Switch 715/12 at catenary mast YA1/06 Switch 715/13 at catenary mast Y88/18	AD672 – AF312 AD674 – AF312 AD676 – AF312 AD678 – AF312	AF303 – AF453	<b>CTRL section</b> (switches operated by Paddock Wood ECR)

## Appendix 2 – Electrical sections – Signalling Protection arrangements

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
715J	Up West chord	Switch 715/14 at catenary mast Y88/16 Switch 713C/715J at catenary mast Y88/15	AD672 – AF312 AD674 – AF312 AD676 – AF312 AD678 – AF312	AF303 – AF453	<b>CTRL section</b>
715 complete	Up East chord Platform 3 Ashford station Up West chord	Switch 713A/715A at catenary mast Y92/26 Switch 713C/715J at catenary mast Y88/15	AD674 – AD854 AD674 – AD856 AD674 – AF312 AD676 – AD660 AD676 – AD662X AD676 – AD852 AD676 – AD854 AD676 – AD856 AD676 – AF312 AD678 – AD660 AD678 – AD662X AD678 – AD852 AD678 – AD854 AD678 – AD856 AD678 – AF312 AF326 – AF462	AD665 – AF319 AD667 – AF319 AD669 – AF319 AD947 – AD671 AF303 – AF453	Dual – voltage trains may operate through this isolation on DC traction power
716A	Down West chord	Switch 714E/716A at catenary mast Y88/15 Switch 716/1 at catenary mast Y88/16	AD672 – AF318 AD674 – AF318 AD676 – AF318 AD678 – AF318	AF301 – AF451	<b>CTRL section</b>
716B	Down West chord	Switch 716/2 at catenary mast Y88/18 Switch 716/3 at catenary mast YA1/06	AD672 – AF318 AD674 – AF318 AD676 – AF318 AD678 – AF318	AF301 – AF451	<b>CTRL section (switches operated by Paddock Wood ECR)</b>
716C	Down West chord	Switch 716/4 at catenary mast YA1/07 Switch 716/5 at catenary mast YA1/20	AD672 – AF318 AD674 – AF318 AD676 – AF318 AD678 – AF318	AF301 – AF451	<b>CTRL section (switches operated by Paddock Wood ECR)</b>

## Appendix 2 – Electrical sections – Signalling Protection arrangements

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
716D	Down West chord	Switch 716/5 at catenary mast YA1/20 Switch 716/8 at catenary mast YA1/47	AD672 – AF318 AD674 – AF318 AD676 – AF318 AD678 – AF318	AF301 – AF451 AD947 – AD669 AD947 – AD783 AD949 – AD669 AD949 – AD783	<b>Network Rail section</b>
716E	Platform 4 Ashford station	Switch 716/6 at catenary mast YA1/36 Switch 716/9 at catenary mast YA2/35	AD676 – AD660 AD676 – AD662X AD676 – AD852 AD676 – AD854 AD676 – AD856 AD676 – AF312 AD678 – AD660 AD678 – AD662X AD678 – AD852 AD678 – AD854 AD678 – AD856 AD678 – AF312 AD954 – AD674 AD956 – AD674	AD947 – AD669 AD947 – AD783 (via 1260 points) AD949 – AD669 AD949 – AD783	<b>Network Rail section</b> Dual – voltage trains may operate through this isolation on DC traction power

## Appendix 2 – Electrical sections – Signalling Protection arrangements

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
716F	Down East chord	Switch 716/10 at catenary mast YA2/30 Switch 716/12 at catenary mast YA2/55	AD954 – AD674 AD954 – AD786 AD954 – AD788 AD956 – AD672 AD956 – AD674 AD956 – AD786 AD956 – AD788 AF328 – AF464	AD665 – AD691 AD665 – AF313 AD665 – AF319 AD667 – AD691 AD667 – AD693 AD667 – AD695 AD667 – AD873 AD667 – AD878 AD667 – AF313 AD667 – AF319 AD669 – AD693 AD669 – AD695 AD669 – AF313 AD669 – AF319 AD671 – AF313	<b>Network Rail section</b> Dual – voltage trains may operate through this isolation on DC traction power
716G	Platform 5 Ashford station	Switch 716/7 at catenary mast YA1/47 Switch 716/10 at catenary mast YA2/30	AD954 – AD786 AD956 – AD786	AD947 – AD783 AD949 – AD783	<b>Network Rail section</b> Dual – voltage trains may operate through this isolation on DC traction power
716H	Platform 6 Ashford station	Switch 716/8 at catenary mast YA1/47 Switch 716/11 at catenary mast YA2/39	AD954 – AD788 AD956 – AD788	AD783 – AD665 AD947 – AD781	<b>Network Rail section</b> Dual – voltage trains may operate through this isolation on DC traction power
716J	Down East chord	Switch 716/12 at catenary mast YA2/55 Switch 716/13 at catenary mast Y91/12	AD956 – AD672 AD956 – AD674 AD956 – AD786 AD956 – AD788 AF328 – AF464	AD665 – AF313 AD667 – AF313 AD669 – AF313 AD671 – AF313	<b>CTRL section</b> <b>(switches operated by Paddock Wood ECR)</b>

**Appendix 2 – Electrical sections – Signalling Protection arrangements**

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
716K	Down East chord	Switch 716/14 at catenary mast Y91/13 Switch 716/15 at catenary mast Y92/19	AF328 – AF464	AD665 – AF313 AD667 – AF313 AD669 – AF313 AD671 – AF313	<b>CTRL section (switches operated by Paddock Wood ECR)</b>
716L	Down East chord	Switch 716/16 at catenary mast Y92/24 Switch 714G/716L at catenary mast Y92/26	AF328 – AF464	AD665 – AF313 AD667 – AF313 AD669 – AF313 AD671 – AF313	<b>CTRL section</b>
716 complete	Down West chord Platforms 4,5 & 6 Ashford station Down East chord	Switch 714E/716A at catenary mast Y88/15 Switch 714G/716L at catenary mast Y92/26	AD672 – AF318 AD954 – AD674 AD954 – AD786 AD954 – AD788 AF328 – AF464	AD671 – AF313 AD949 – AD669 AD949 – AD783 AF301 – AF451	Dual – voltage trains may operate through this isolation on DC traction power
715 + 716 complete	Up and Down West chords Platforms 3,4,5 & 6 Ashford station Up and Down East chords	Switch 713C/715J at catenary mast Y88/15 Switch 714E/716A at catenary mast Y88/15 Switch 713A/715A at catenary mast Y92/26 Switch 714G/716L at catenary mast Y92/26	AF326 – AF462 AF328 – AF464	AF301 – AF451 AF303 – AF453	Dual – voltage trains may operate through this isolation on DC traction power

## Appendix 2 – Electrical sections – Signalling Protection arrangements

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
<b>Dollands Moor Freight Chord</b>					
600B	Sidings 3 to 6 at west end of Dollands Moor Yard	Neutral section at kilometrage 106.955	AD808 – AD756 AD808 – AD758 AD808 – AF342 AD808 to 'R' Neck AD808 to West Siding AD814 – AD756 AD814 – AD758 AD814 – AF342 AD814 to 'R' Neck AD814 to West Siding AD816 – AD756 AD816 – AD758 AD816 – AF342 AD816 to 'R' Neck AD816 to West Siding AD818 – AD756 AD818 – AD758 AD818 – AF342 AD818 to 'R' Neck AD818 to West Siding	AD759 – AD795 AD759 – AD797 AD759 – AD799 AD759 – AD803 AD759 – 2163 AD759 – 2165 2153 – AD797 2153 – AD799 2153 – AD803 2153 – 2163 2153 – 2165 2157 – AD797 2157 – AD799 2157 – AD803 2157 – 2163 2157 – 2165	<b>Network Rail section</b> Dual – voltage trains may operate through this isolation on DC traction power
718E	Freight chord	Switch 718/6 Switch 718/9	AD808 – AF342 AD814 – AF342 AD816 – AF342 AD818 – AF342	AF335 – AF471 AF337 – AF471 AF593 – AF471	<b>CTRL section</b> When this electrical section is isolated, electrical section 718F is also isolated.
718F	Freight chord	Switch 718/11 Neutral section at kilometrage 106.955	AD808 – AF342 AD814 – AF342 AD816 – AF342 AD818 – AF342	AF335 – AF471 AF337 – AF471 AF593 – AF471	<b>CTRL section (switches operated by Paddock Wood ECR)</b>

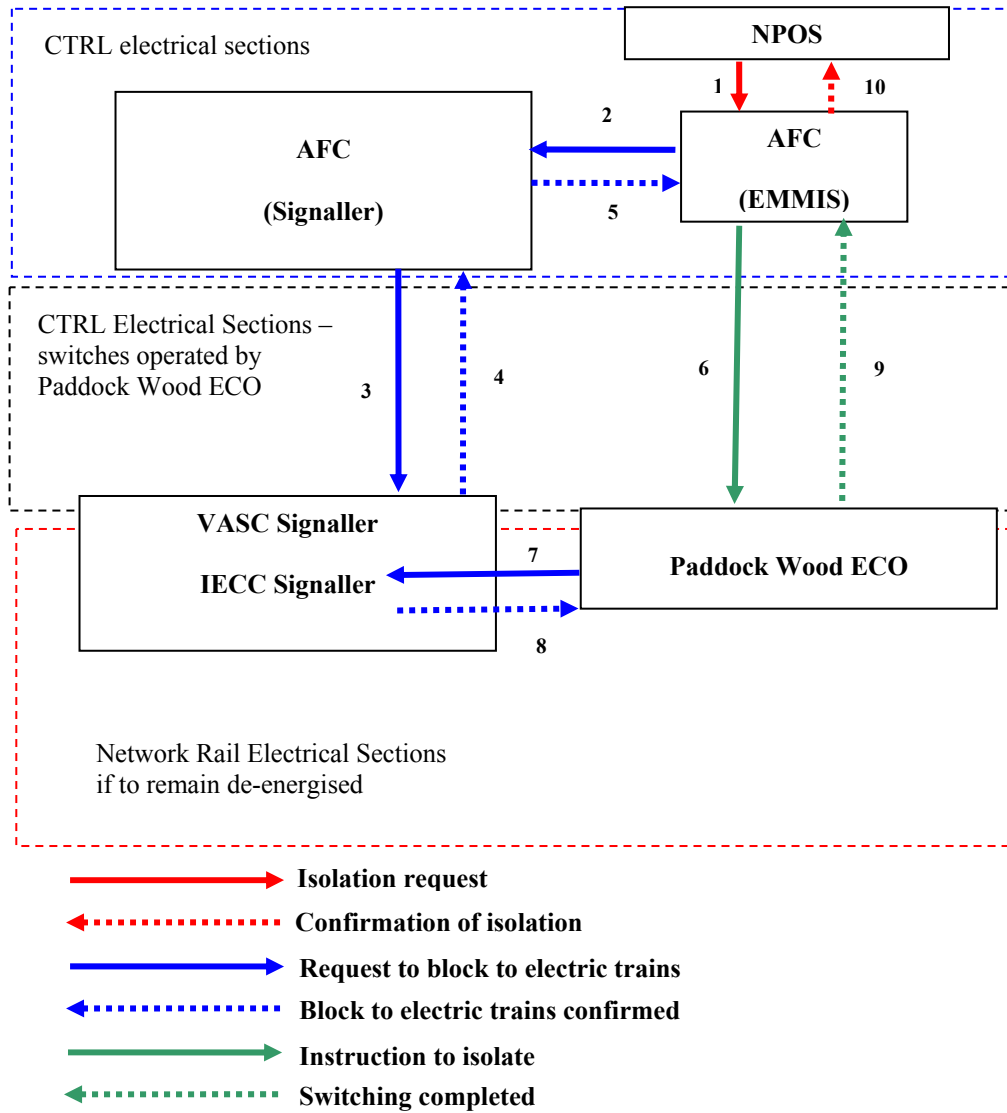


**Flow chart 1**

**Appendix 3**

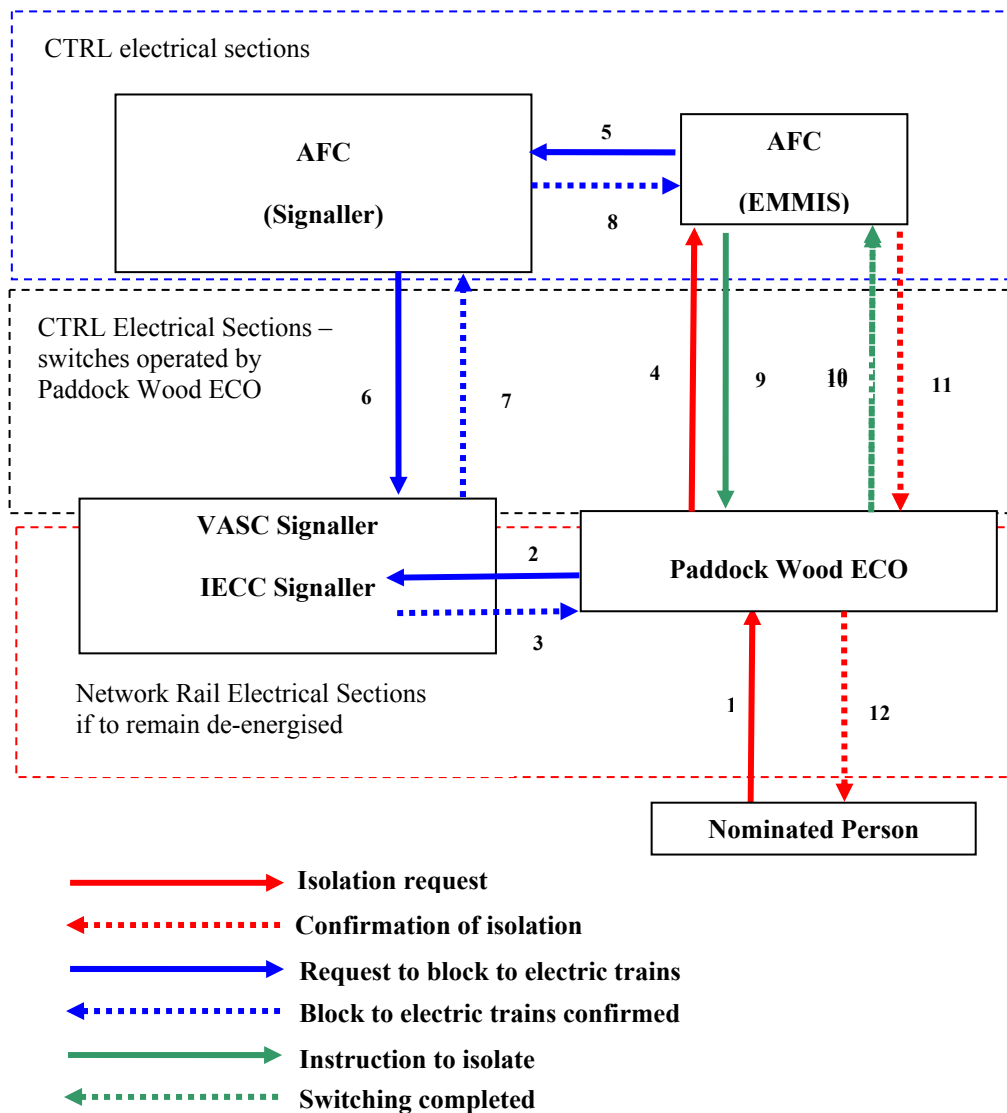
**Isolation of CTRL electrical sections**

CTRL initiates the isolation request (section 4.1)



### Isolation of CTRL electrical sections

Network Rail initiates the isolation request (section 4.2)

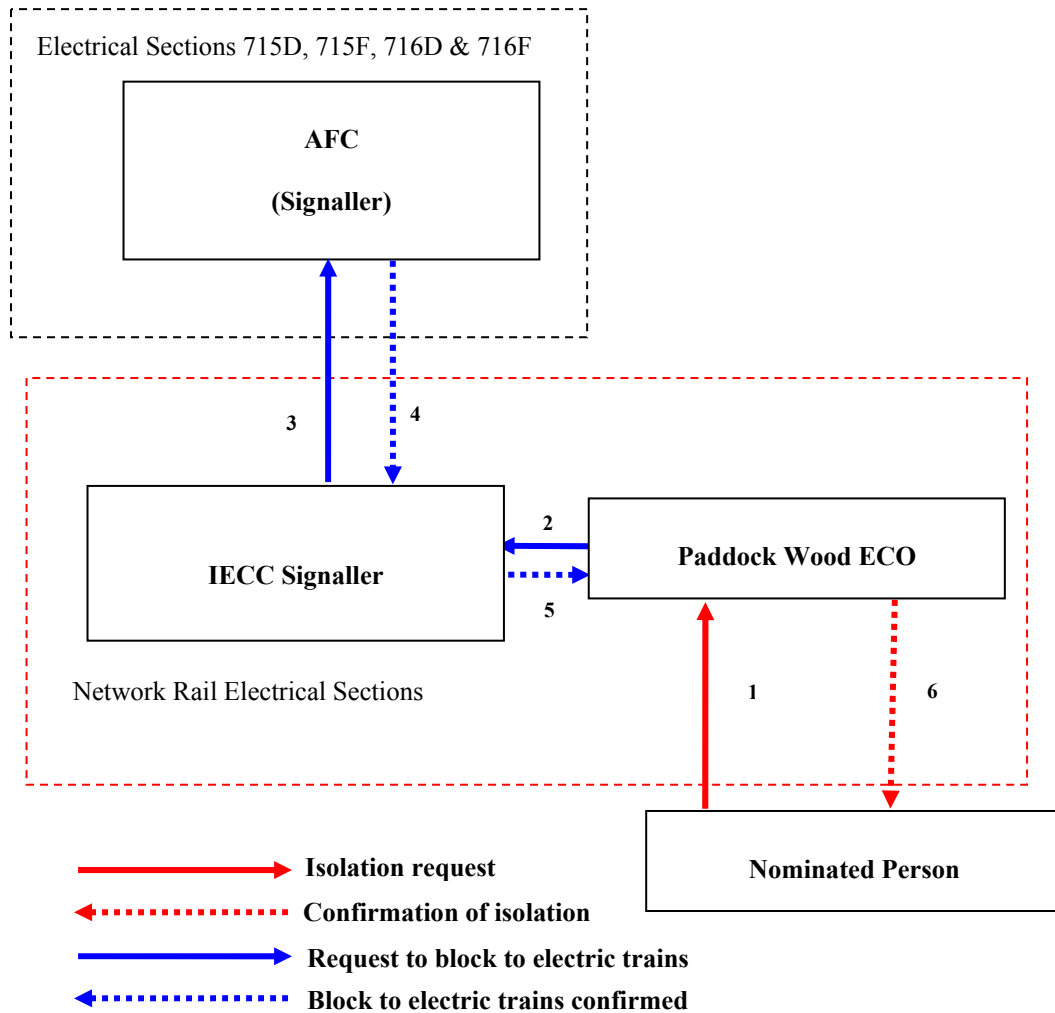


**Flow chart 3**

**Appendix 3**

**Isolation of Network Rail electrical sections  
715D - 715F & 716D - 716H**

Network Rail initiates the isolation request (section 6)

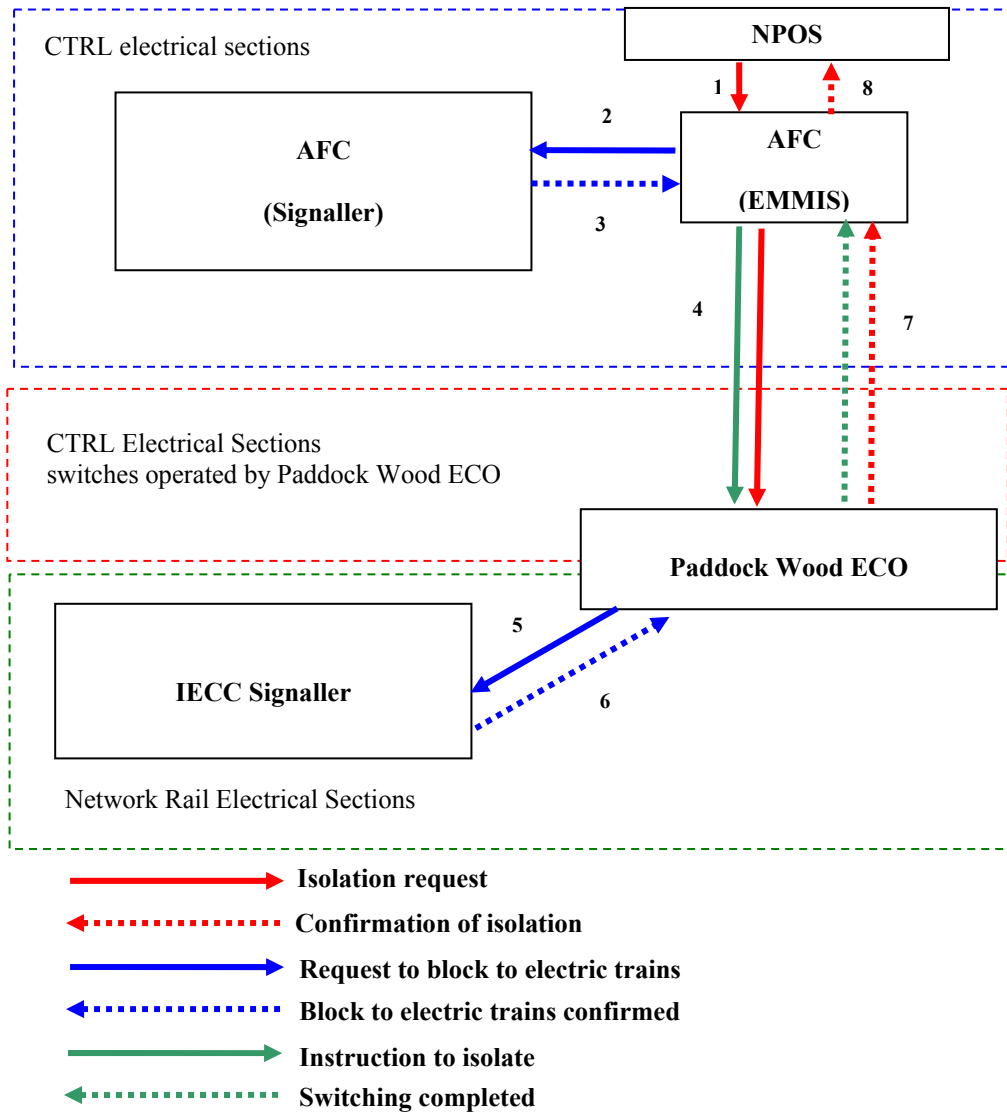


**Flow chart 4**

**Appendix 3**

**Isolation of CTRL and Network Rail electrical sections**

CTRL initiates the isolation request (section 8.1)

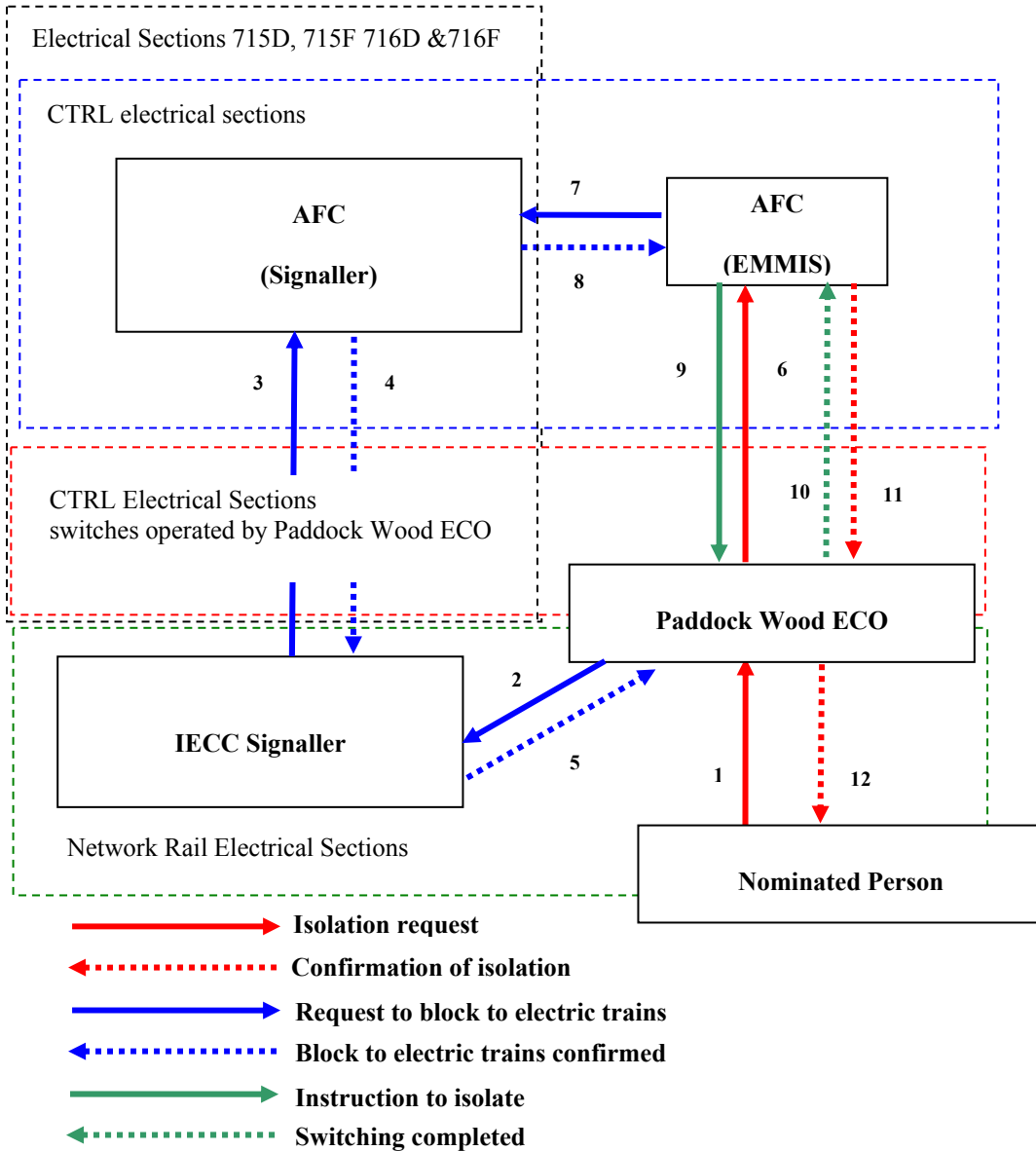


**Flow chart 5**

**Appendix 3**

**Isolation of CTRL and Network Rail electrical sections**

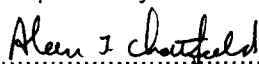
Network Rail initiates the isolation request (section 8.2)



<b>CTRL</b>	CTRL Level Two Standard
	C/OP/OS/05/2005
	Date: July 2004

## Isolation of the OHLE Procedures Eurotunnel/CTRL/Network Rail Interfaces

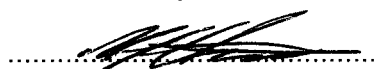
Prepared by



Alan Chatfield

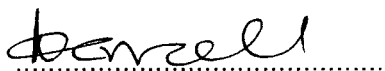
Rules & Procedures Manager, Network Rail (CTRL) Ltd.

Authorised By:



Mark Howard

Electrification & Plant Engineer, Network Rail (CTRL) Ltd.



Andy Verrall

Production Manager, Network Rail (CTRL) Ltd.



Philippe Merette

Railways Rules & Regulations Specialist, Eurotunnel



Cliff Eisey

Territory Engineer, Electrification & Plant, Network Rail, South East



Derek Holmes

Head of Operations Services, Network Rail

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R-SA-ET-00004-08-URO-AC

# **ISOLATION OF OHLE PROCEDURES EUROTUNNEL/CTRL/NETWORK RAIL INTERFACES**

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## 1 Glossary

### EUROTUNNEL

Catenary Consignation ( <i>Consignation C</i> )	equates to Block to electric trains and Isolation for CTRL and Network Rail.
Coordinateur Travaux	RCC Controller responsible for accepting OHLE isolation requests and arranging for the activation and maintenance of the required remote protection measures. He/she is the sole RCC interface with the other control centres. This function is normally carried out by the RCC Supervisor.
Overhead Catenary System (OCS)	equates to Overhead Line Equipment (OHLE) for CTRL and Network Rail.
Protection C	RCC process for blocking lines to electric trains.
Rail Control Centre (RCC)	Eurotunnel control centre.
Réalisateur Travaux	Qualified person responsible for the protection of the works zone of which he/she is in charge and for the smooth running of the various sites within this zone. For this zone he is the sole interface with the Coordinateur Travaux for catenary consignation requests and for notification of cancellation of catenary consignations.
<i>Section élémentaire (SEL)</i>	equates to electrical section for CTRL and Network Rail.

### CTRL

AFC Signaller	responsible for monitoring and controlling the signalling system for the CTRL controlled system.
Ashford Control Centre (AFC)	CTRL control centre at Ashford.
Electrical section	equates to a Sel for Eurotunnel
EMMIS Controller	Controller located in the AFC responsible for monitoring and controlling the traction power supply to the CTRL controlled OHLE.
Isolation	equates to Consignation C for Eurotunnel
Nominated Person On Site (NPOS)	Qualified person responsible for local switching, testing, earthing, and issuing of Overhead Line Permits in accordance with Module AC2 of the CTRL Rule Book (C/02/OS/05/1012).
Overhead Line Equipment (OHLE)	equates to Overhead Catenary System (OCS) for Eurotunnel.

### NETWORK RAIL

Ashford Signalling Centre (IECC)	Network Rail signalling control centre at Ashford.
Electrical Control Room Operator (ECRO)	Controller located in Paddock Wood Electrical Control Room responsible for monitoring and controlling the traction power supply to the Network Rail controlled OHLE.
Electrical section	equates to a Sel for Eurotunnel
IECC Signaller	Person responsible for monitoring and controlling the signalling system for the Network Rail controlled system.
Isolation	equates to Consignation C for Eurotunnel
Nominated Person	Qualified person responsible for local switching, testing, earthing, and issuing of Overhead Line Permits in accordance with the Network Rail instructions: “Working on or about 25 Kv A.C. Electrified Lines” (RT/E/S/29987).



## 2. Scope of these procedures

These instructions apply to the isolation of Sels 602, 603, & 605 (controlled by the RCC) and electrical sections 601A & 602L (controlled by Paddock Wood ECR).

Because Eurotunnel supplies the traction power to the Network Rail, Southern Region OHLE, the isolation of Sels 602 or 605 will cause the traction power to be switched off from part (or all) of the Network Rail, Southern Region and Dollands Moor OHLE unless alternative local switching arrangements are implemented on Network Rail, Southern Region.

These instructions also apply to the isolation of electrical section 717A (controlled by the AFC) on the Up CTRL line when it is required to be isolated to protect Network Rail personnel/equipment working on the adjacent Up Slow line.

## 3. Principles

Each infrastructure controller's personnel (including maintenance contractors) to apply the rules and procedures of the infrastructure controller that they are working for.

Each infrastructure controller's personnel to request isolations of the OHLE/OCS from the control centre defined in the rules and procedures of the infrastructure controller that they are working for.

Except in the event of an emergency, before any electrical section or Sel is isolated and/or responsibility transferred, the ECRO or Controller must have received an assurance that the required electrical section(s)/Sel(s) has been blocked to electric train movements.

## 4. Isolation of Eurotunnel Sel(s) 602, 603 or 605 that are under the control of the RCC

**Note:** If Network Rail personnel require the isolation of Eurotunnel Sel(s) 602 and/or 605, point 8 to be applied.

### 4.1 Eurotunnel initiates the isolation request (Appendix 3, flowchart 1)

4.1.1 Réalisateur Travaux requests Coordinateur Travaux to provide Consignation C for the Eurotunnel Sel(s) concerned.

4.1.2 Coordinateur Travaux requests AFC Signaller to block to electric trains the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 1.1)*

4.1.3 AFC Signaller consults the Isolation Instructions for the Eurotunnel Sel(s) concerned and inhibits the designated markers.

#### 4.1.4 Eurotunnel Sels 602 and 605 only

4.1.4.1 AFC Signaller requests IECC Signaller to block to electric trains the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 2.1)*

4.1.4.2 IECC Signaller consults the Isolation Instructions for the Eurotunnel Sel(s) concerned, places/maintains designated signals to danger and applies reminder appliances.

4.1.4.3 IECC Signaller confirms to AFC Signaller that block to electric trains is in place. *(Appendix 1, message ref. 2.2)*

4.1.5 AFC Signaller confirms to Coordinateur Travaux that block to electric trains is in place, and, if the isolation of Sel 605 only is required request the Coordinateur Travaux to send electric trains for Dollands Moor via the Down Fast line. *(Appendix 1, message ref. 1.2)*

#### 4.1.6 Eurotunnel Sels 602 and 605 only

4.1.6.1 Coordinateur Travaux requests permission of ECRO to isolate the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 3.1)*

4.1.6.2 ECRO consults and applies the Electrical Control Room instructions.

**4.1.6.3 If traction current supply is to be maintained to Network Rail electrical sections 600A – 600L & 602A – 602L or 601A & 603B**

- 4.1.6.3.1 ECRO contacts IECC Signaller to ensure no electric train movements are taking place.
- 4.1.6.3.2 ECRO opens boundary circuit breakers.
- 4.1.6.3.3 ECRO instructs Nominated Person to manually operate designated isolation switches.
- 4.1.6.3.4 Nominated Person manually operates and secures designated isolation switches.
- 4.1.6.3.5 Nominated Person confirms to ECRO that designated isolation switches are operated.
- 4.1.6.3.6 ECRO closes relevant boundary circuit breaker.
- 4.1.6.3.7 ECRO informs IECC Signaller that electric train movements can recommence.

**4.1.6.4 If traction current supply is NOT to be maintained to Network Rail electrical sections 600A – 600L & 602A – 602L or 601A & 603B**

- 4.1.6.4.1 ECRO requests permission of Yard Master, Dollands Moor, to isolate Network Rail electrical sections 600A – 600L and 602A – 602L.
- 4.1.6.4.2 Yard Master, Dollands Moor, gives permission to ECRO to isolate Network Rail electrical sections 600A – 600L and 602A – 602L
- 4.1.6.4.3 ECRO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*
- 4.1.6.4.4 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
- 4.1.6.4.5 IECC Signaller confirms to ECRO that block to electric trains is in place. *(Form AE)*
- 4.1.6.4.6 ECRO opens boundary circuit breaker(s).
- 4.1.6.5 ECRO gives permission to the Coordinateur Travaux to isolate the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 3.2)*

4.1.7 RCC applies Protection C measures and carries out the switching instructions in order to isolate the Eurotunnel Sel(s) concerned.

4.1.8 Coordinateur Travaux grants Consignation C to Réalisateur Travaux.

**4.2 CTRL initiates the isolation request (Appendix 3, flowchart 2)**

**Note:** This point applies if Eurotunnel Sel(s) 602, 603, or 605 are required to be isolated without the isolation of the adjacent Network Rail electrical sections 601A and/or 602L. If the adjacent Network Rail electrical section(s) is required to be isolated as part of the same isolation request, point 8 to be applied.

- 4.2.1 NPOS requests EMMIS Controller to isolate the Eurotunnel Sel(s) concerned. *(Form ISOL)*
- 4.2.2 EMMIS Controller requests AFC Signaller to block to electric trains the Eurotunnel Sel(s) concerned.
- 4.2.3 AFC Signaller consults the Isolation Instructions for the Eurotunnel Sel(s) concerned and inhibits the designated markers.

**4.2.4 Eurotunnel Sel 605 only**

- 4.2.4.1 AFC Signaller requests RCC to send electric trains for Dollands Moor via the Down Fast line.

**4.2.5 Electrical sections 602 and 605 only**

- 4.2.5.1 AFC Signaller requests IECC Signaller to block to electric trains the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 2.1)*
- 4.2.5.2 IECC Signaller consults the Isolation Instructions for the Eurotunnel Sel(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
- 4.2.5.3 IECC Signaller confirms to AFC Signaller that block to electric trains is in place. *(Appendix 1, message ref. 2.2)*
- 4.2.6 AFC Signaller confirms to EMMIS Controller that block to electric trains is in place.

**4.2.7 Eurotunnel Sels 602 and 605 only**

- 4.2.7.1 EMMIS Controller requests permission of ECRO for the Eurotunnel Sel(s) concerned to be isolated. *(Appendix 1, message ref. 4.1)*
- 4.2.7.2 ECRO consults and applies the Electrical Control Room instructions.

**4.2.7.3 If traction current supply is to be maintained to Network Rail electrical sections 600A – 600L & 602A – 602L or 601A & 603B**

- 4.2.7.3.1 ECRO contacts IECC Signaller to ensure no electric train movements are taking place.
- 4.2.7.3.2 ECRO opens boundary circuit breakers.
- 4.2.7.3.3 ECRO instructs Nominated Person to manually operate designated isolation switches.
- 4.2.7.3.4 Nominated Person manually operates and secures designated isolation switches.
- 4.2.7.3.5 Nominated Person confirms to ECRO that designated isolation switches are operated.
- 4.2.7.3.6 ECRO closes relevant boundary circuit breaker.
- 4.2.7.3.7 ECRO informs IECC Signaller that electric train movements can recommence.

**4.2.7.4 If traction current supply is NOT to be maintained to Network Rail electrical sections 600A – 600L & 602A – 602L or 601A & 603B**

- 4.2.7.4.1 ECRO requests permission of Yard Master, Dollands Moor, to isolate Network Rail electrical sections 600A – 600L and 602A – 602L.
- 4.2.7.4.2 Yard Master, Dollands Moor, gives permission to ECRO to isolate Network Rail electrical sections 600A – 600L and 602A – 602L
- 4.2.7.4.3 ECRO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*
- 4.2.7.4.4 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
- 4.2.7.4.5 IECC Signaller confirms to ECRO that block to electric trains is in place. *(Form AE)*
- 4.2.7.4.6 ECRO opens boundary circuit breaker(s).
- 4.2.7.5 ECRO gives permission to EMMIS Controller for the Eurotunnel Sel(s) concerned to be isolated. *(Appendix 1, message ref. 4.2)*
- 4.2.8 EMMIS Controller requests Coordinateur Travaux to protect and isolate the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 5.1)*
- 4.2.9 RCC applies Protection C measures and carries out the switching instructions in order to isolate the Eurotunnel Sel(s) concerned.

- 4.2.10 Coordinateur Travaux confirms to EMMIS Controller that the Eurotunnel Sel(s) concerned is isolated. *(Appendix 1, message ref. 5.2)*
- 4.2.11 EMMIS Controller confirms to NPOS that the Eurotunnel Sel(s) concerned is isolated. *(Form ISOL)*
- 4.2.12 NPOS carries out local protection measures and issues Overhead Line Permit(s).

## **5. Re-energisation of Eurotunnel Sel(s) 602, 603 or 605 that are under the control of the RCC**

### **5.1 Eurotunnel initiated the isolation request**

- 5.1.1 Réalisateur Travaux cancels Consignation C to Coordinateur Travaux.
- 5.1.2 RCC carries out the switching instructions in order to re-energise the Eurotunnel Sel(s) concerned and removes Protection C measures.

#### **5.1.3 Eurotunnel Sels 602 and 605 only**

- 5.1.3.1 Coordinateur Travaux informs ECRO that the Eurotunnel Sel(s) concerned is re-energised. *(Appendix 1, message ref. 3.3)*
- 5.1.3.2 ECRO consults and applies the Electrical Control Room instructions.

#### **5.1.3.3 If traction current supply was maintained to Network Rail electrical sections 600A – 600L & 602A – 602L or 601A & 603B**

- 5.1.3.3.1 ECRO contacts IECC Signaller to ensure no electric train movements are taking place.
- 5.1.3.3.2 ECRO opens relevant boundary circuit breaker.
- 5.1.3.3.3 ECRO instructs Nominated Person to manually operate designated isolation switches.
- 5.1.3.3.4 Nominated Person manually operates and secures designated isolation switches.
- 5.1.3.3.5 Nominated Person confirms to ECRO that designated isolation switches are operated.
- 5.1.3.3.6 ECRO closes boundary circuit breakers.
- 5.1.3.3.7 ECRO informs IECC Signaller that electric train movements can recommence.

#### **5.1.3.4 If traction current supply has NOT been maintained to Network Rail electrical sections 600A – 600L & 602A – 602L or 601A & 603B**

- 5.1.3.4.1 ECRO closes boundary circuit breaker(s).
- 5.1.3.4.2 ECRO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*
- 5.1.3.4.3 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.
- 5.1.3.4.4 ECRO advises Yard Master, Dollands Moor that Network Rail electrical sections 600A – 600L and 602A – 602L are re-energised.

- 5.1.4 Coordinateur Travaux advises AFC Signaller that the block to electric trains for the Eurotunnel Sel(s) concerned can be removed. *(Appendix 1, message ref. 1.3)*

- 5.1.5 AFC Signaller removes signalling protection for the Eurotunnel Sel(s) concerned.

#### **5.1.6 Eurotunnel Sel(s) 602 and 605 only**

- 5.1.6.1 AFC Signaller advises IECC Signaller that the block to electric trains for the Eurotunnel Sel(s) concerned can be removed. *(Appendix 1, message ref. 2.5)*
- 5.1.6.2 IECC Signaller removes signal protection for the Eurotunnel Sel(s) concerned.

## **5.2 CTRL initiated the isolation request**

- 5.2.1 NPOS cancels isolation with EMMIS Controller. *(Form ISOL)*
- 5.2.2 EMMIS Controller requests Coordinateur Travaux to re-energise the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 5.3)*
- 5.2.3 RCC carries out the switching instructions in order to re-energise the Eurotunnel Sel(s) concerned and removes Protection C measures.
- 5.2.4 Coordinateur Travaux confirms to EMMIS Controller that the Eurotunnel Sel(s) concerned have been re-energised. *(Appendix 1, message ref. 5.4)*

### **5.2.5 Eurotunnel Sels 602 and 605 only**

- 5.2.5.1 EMMIS Controller informs ECRO that the Eurotunnel Sel(s) concerned are re-energised. *(Appendix 1, message ref. 4.3)*
- 5.2.5.2 ECRO consults and applies the Electrical Control Room instructions.

#### **5.2.5.3 If traction current supply was maintained to Network Rail electrical sections 600A – 600L & 602A – 602L or 601A & 603B**

- 5.2.5.3.1 ECRO contacts IECC Signaller to ensure no electric train movements are taking place.
- 5.2.5.3.2 ECRO opens relevant boundary circuit breaker.
- 5.2.5.3.3 ECRO instructs Nominated Person to manually operate designated isolation switches.
- 5.2.5.3.4 Nominated Person manually operates and secures designated isolation switches.
- 5.2.5.3.5 Nominated Person confirms to ECRO that designated isolation switches are operated.
- 5.2.5.3.6 ECRO closes boundary circuit breakers.
- 5.2.5.3.7 ECRO informs IECC Signaller that electric train movements can recommence.

#### **5.2.5.4 If traction current supply has NOT been maintained to Network Rail electrical sections 600A – 600L & 602A – 602L or 601A & 603B**

- 5.2.5.4.1 ECRO closes boundary circuit breaker(s).
- 5.2.5.4.2 ECRO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*
- 5.2.5.4.3 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.
- 5.2.5.4.4 ECRO advises Yard Master, Dollands Moor that Network Rail electrical sections 600A – 600L and 602A – 602L are re-energised.

- 5.2.6 EMMIS Controller advises AFC Signaller that the block to electric trains for the Eurotunnel Sel(s) concerned can be removed.
- 5.2.7 AFC Signaller removes signalling protection for the Eurotunnel Sel(s) concerned.

### **5.2.8 Eurotunnel Sel(s) 602 and 605 only**

- 5.2.8.1 AFC Signaller advises IECC Signaller that the block to electric trains for the Eurotunnel Sel(s) concerned can be removed. *(Appendix 1, message ref. 2.5)*
- 5.2.8.2 IECC Signaller removes signal protection for the Eurotunnel Sel(s) concerned.

## **6. Isolation of Network Rail electrical sections 601A or 602L that are under the control of Paddock Wood ECR**

### **Notes:**

1. This point applies if Network Rail electrical sections 601A and/or 602L are required to be isolated without the isolation of the adjacent Eurotunnel Sel(s) 605 and/or 602. If the adjacent Eurotunnel Sel is required to be isolated as part of the same isolation request, point 8 to be applied.
2. Eurotunnel personnel have no requirement to request the isolation of these electrical sections.

### **6.1 Network Rail initiates the isolation request (Appendix 3, flowchart 3)**

- 6.1.1 Nominated Person requests ECRO to isolate the Network Rail electrical section(s) concerned.  
*(Form B)*
- 6.1.2 ECRO requests permission of Yard Master, Dollands Moor, to isolate Network Rail electrical sections 600A – 600L and 602A – 602L.
- 6.1.3 Yard Master, Dollands Moor, gives permission to ECRO to isolate Network Rail electrical sections 600A – 600L and 602A – 602L
- 6.1.4 ECRO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned.  
*(Form AE)*
- 6.1.5 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
- 6.1.6 IECC Signaller requests AFC Signaller to block to electric trains the Network Rail electrical section(s) concerned.  
*(Appendix 1, message ref. 2.3)*
- 6.1.7 AFC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned and inhibits the designated markers.

#### **6.1.8 Network Rail electrical section 601A only**

- 6.1.8.1 AFC Signaller to request RCC to send electric trains for Dollands Moor via the Down Fast line.
- 6.1.9 AFC Signaller confirms to IECC Signaller that block to electric trains is in place.  
*(Appendix 1, message ref. 2.4)*
- 6.1.10 IECC Signaller confirms to ECRO that block to electric trains is in place. *(Form AE)*
- 6.1.11 ECRO carries out the switching instructions in order to isolate the Network Rail electrical section(s) concerned.
- 6.1.12 ECRO confirms to Nominated Person that the Network Rail electrical sections concerned are isolated.  
*(Form B)*
- 6.1.13 Nominated Person carries out local protection measures and issues Overhead Line Permit(s).

### **6.2 CTRL initiates the isolation request (Appendix 3, flowchart 4)**

- 6.2.1 NPOS requests EMMIS Controller to isolate the Network Rail electrical section(s) concerned.  
*(Form ISOL)*
- 6.2.2 EMMIS Controller advises AFC Signaller that there will be an isolation of the Network Rail electrical section(s) concerned.
- 6.2.3 **Isolation of Network Rail electrical section 601A only**
  - 6.2.3.1 AFC Signaller to request RCC to send electric trains for Dollands Moor via the Down Fast line.
- 6.2.4 EMMIS Controller requests ECRO to isolate and/or handover responsibility for the Network Rail electrical section(s) concerned.  
*(Appendix 1, message ref. 4.4)*
- 6.2.5 ECRO requests permission of Yard Master, Dollands Moor, to isolate Network Rail electrical sections 600A – 600L and 602A – 602L.
- 6.2.6 Yard Master, Dollands Moor, gives permission to ECRO to isolate Network Rail electrical sections 600A – 600L and 602A – 602L

- 6.2.7 ECRO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*
- 6.2.8 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.
- 6.2.9 IECC Signaller requests AFC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Appendix I, message ref. 2.3)*
- 6.2.10 AFC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned and inhibits the designated markers.
- 6.2.11 AFC Signaller confirms to IECC Signaller that block to electric trains is in place. *(Appendix I, message ref. 2.4)*
- 6.2.12 IECC Signaller confirms to ECRO that block to electric trains is in place. *(Form AE)*
- 6.2.13 ECRO carries out the switching instructions in order to isolate the Network Rail electrical section(s) concerned.
- 6.2.14 ECRO confirms to EMMIS Controller that the Network Rail electrical section(s) concerned are blocked to electric trains and isolated, and transfers responsibility of the section(s) to the EMMIS Controller. *(Appendix I, message ref. 4.5)*
- 6.2.15 EMMIS Controller confirms to NPOS that the Network Rail electrical section(s) concerned is isolated. *(Form ISOL)*
- 6.2.16 NPOS carries out local protection measures and issues Overhead Line Permit(s).

## **7. Re-energisation of Network Rail electrical sections 601A or 602L that are under the control of Paddock Wood ECR**

### **7.1 Network Rail initiated the isolation request**

- 7.1.1 Nominated Person cancels isolation with ECRO. *(Form B)*
- 7.1.2 ECRO carries out the switching instructions in order to re-energise the Network Rail electrical section(s) concerned.
- 7.1.3 ECRO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*
- 7.1.4 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.
- 7.1.5 IECC Signaller advises AFC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Appendix I, message ref. 2.6)*
- 7.1.6 AFC Signaller removes signalling protection for the Network Rail electrical section(s) concerned.

#### **7.1.7 Network Rail electrical section 601A only**

- 7.1.7.1 AFC Signaller to advise RCC that it can send electric trains for Dollands Moor via the Up Slow line.
- 7.1.8 ECRO advises Yard Master, Dollands Moor that Network Rail electrical sections 600A – 600L and 602A – 602L are re-energised.

### **7.2 CTRL initiated the isolation request**

- 7.2.1 NPOS cancels isolation with EMMIS Controller. *(Form ISOL)*
- 7.2.2 EMMIS Controller advises AFC Signaller that the Network Rail electrical section(s) concerned will be re-energised.
- 7.2.3 EMMIS Controller requests ECRO to re-energise the Network Rail electrical section(s) concerned. *(Appendix I, message ref. 4.6)*
- 7.2.4 ECRO carries out the switching instructions in order to re-energise the Network Rail electrical section(s) concerned.

- 7.2.5 ECRO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*
- 7.2.6 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.
- 7.2.7 IECC Signaller advises AFC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Appendix 1, message ref. 2.6)*
- 7.2.8 AFC Signaller removes signalling protection for the Network Rail electrical section(s) concerned.
- 7.2.9 Network Rail electrical section 601A only**
- 7.2.9.1 AFC Signaller to advise RCC that it can send electric trains for Dollands Moor via the Up Slow line.
- 7.2.10 ECRO advises Yard Master, Dollands Moor that Network Rail electrical sections 600A – 600L and 602A – 602L are re-energised.

**8. Isolation of Eurotunnel Sel/Network Rail electrical section 602 & 602L together or 605 & 601A together (flowchart 5)**

**Notes:**

1. This point applies if Eurotunnel Sel(s) 605 and/or 602 and the adjacent Network Rail electrical sections 602L and/or 601A are required to be isolated together as part of the same isolation request.
  2. Eurotunnel personnel have no requirement to request the isolation of these electrical sections.
  3. Network Rail personnel working on the boundary isolation transformers and associated switchgear that requires the isolation of these Eurotunnel Sel(s)/Network Rail electrical section(s) together must request the attendance of a CTRL NPOS who will apply this procedure and issue them with an Overhead Line Permit.
  4. In the event of an emergency isolation in the interface area which requires these Eurotunnel Sel(s)/Network Rail electrical section(s) together to remain isolated and earthed, then the attendance of a CTRL NPOS must be requested, who will apply this procedure and issue an Overhead Line Permit(s).
- 8.1 NPOS requests EMMIS Controller to isolate the Network Rail electrical section(s)/Eurotunnel Sel(s) concerned. *(Form ISOL)*
- 8.2 EMMIS Controller advises AFC Signaller that there will be an isolation of the Network Rail electrical section(s) concerned and requests the Eurotunnel Sel(s) concerned be blocked to electric trains.
- 8.3 AFC Signaller consults the Isolation Instructions for the electrical section(s) concerned and inhibits the designated markers.
- 8.4 Eurotunnel Sel 605 and Network Rail electrical section 601A only**
- 8.4.1 AFC Signaller to request RCC to send electric trains for Dollands Moor via the Down Fast line.
- 8.5 EMMIS Controller requests ECRO to isolate and/or handover responsibility for the Network Rail electrical section(s) concerned and requests permission for the Eurotunnel Sel(s) concerned to be isolated. *(Appendix 1, messages ref. 4.1 & 4.4)*
- 8.6 ECRO requests permission of Yard Master, Dollands Moor, to isolate Network Rail electrical sections 600A – 600L and 602A – 602L.
- 8.7 Yard Master, Dollands Moor, gives permission to ECRO to isolate Network Rail electrical sections 600A – 600L and 602A – 602L
- 8.8 ECRO requests IECC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Form AE)*
- 8.9 IECC Signaller consults the Isolation Instructions for the Network Rail electrical section(s) concerned, places/maintains designated signals to danger and applies reminder appliances.



- 8.10 IECC Signaller requests AFC Signaller to block to electric trains the Network Rail electrical section(s) concerned. *(Appendix 1, message ref. 2.3)*
- 8.11 AFC Signaller confirms to IECC Signaller that block to electric trains is in place. *(Appendix 1, message ref. 2.4)*
- 8.12 IECC Signaller confirms to ECRO that block to electric trains is in place. *(Form AE)*
- 8.13 ECRO carries out the switching in order to isolate the Network Rail electrical section(s) concerned.
- 8.14 ECRO confirms to EMMIS Controller that the Network Rail electrical section(s) concerned are blocked to electric trains and isolated, and transfers responsibility of the section(s) to the EMMIS Controller and gives permission for the Eurotunnel Sel(s) concerned to be isolated. *(Appendix 1, messages ref. 4.2 & 4.5)*
- 8.15 EMMIS Controller requests Coordinateur Travaux to protect and isolate the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 5.1)*
- 8.16 RCC applies Protection C measures and carries out the switching instructions in order to isolate the Eurotunnel Sel(s) concerned.
- 8.17 Coordinateur Travaux confirms to EMMIS Controller that the Eurotunnel Sel(s) concerned are isolated. *(Appendix 1, message ref. 5.2)*
- 8.18 EMMIS Controller confirms to NPOS that all the Network Rail electrical section(s)/Eurotunnel Sel(s) concerned are isolated. *(Form ISOL)*
- 8.19 NPOS carries out local protection measures and issues Overhead Line Permit(s).
- 9. Re-energisation of Eurotunnel Sel/Network Rail electrical section 602 & 602L together or 605 & 601A together**
- 9.1 NPOS cancels isolation with EMMIS Controller.
- 9.2 EMMIS Controller requests Coordinateur Travaux to re-energise the Eurotunnel Sel(s) concerned. *(Appendix 1, message ref. 5.3)*
- 9.3 RCC carries out the switching instructions in order to re-energise the Eurotunnel Sel(s) concerned and removes Protection C measures.
- 9.4 Coordinateur Travaux confirms to EMMIS Controller that the Eurotunnel Sel(s) concerned have been re-energised. *(Appendix 1, message ref. 5.4)*
- 9.5 EMMIS Controller informs ECRO that the Eurotunnel Sel(s) concerned are re-energised and requests ECRO to re-energise the Network Rail electrical section(s) concerned. *(Appendix 1, messages ref. 4.3 & 4.6)*
- 9.6 EMMIS Controller advises AFC Signaller that the block to electric trains for the Eurotunnel Sel(s) concerned can be removed and that the Network Rail electrical section(s) concerned will be re-energised.
- 9.7 ECRO consults and applies the Electrical Control Room instructions.
- 9.8 ECRO carries out the switching instructions in order to re-energise the Network Rail electrical section(s) concerned.
- 9.9 ECRO advises IECC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Form AE)*
- 9.10 IECC Signaller removes signal protection for the Network Rail electrical section(s) concerned.
- 9.11 IECC Signaller advises AFC Signaller that the block to electric trains for the Network Rail electrical section(s) concerned can be removed. *(Appendix 1, message ref. 2.6)*
- 9.12 AFC Signaller removes signalling protection for the Eurotunnel Sel(s) and Network Rail electrical section(s) concerned.
- 9.13 ECRO advises Yard Master, Dollands Moor that Network Rail electrical sections 600A – 600L and 602A – 602L are re-energised.

## **10. Isolation of OHLE on Up CTRL line for Network Rail work on the Up Slow line**

In order to provide protection from electrical risks associated with the OHLE on the adjacent Up CTRL line, Network Rail Personnel working on the Up Slow line may require CTRL electrical section 717A isolated, as well as the isolation of Network Rail electrical section 601A. Therefore the following additional instructions will apply.

- 10.1 Nominated Person to include CTRL electrical section 717A in the request for an isolation to the ECRO.
- 10.2 ECRO requests EMMIS Controller to isolate CTRL electrical section 717A.  
*(Appendix 1, message ref. 4.7)*
- 10.3 EMMIS Controller to agree with AFC Signaller that CTRL electrical section 717A can be isolated.
- 10.4 EMMIS Controller to isolate CTRL electrical section 717A in accordance with his control room instructions
- 10.5 EMMIS Controller confirms to ECRO that CTRL electrical section 717A is isolated.  
*(Appendix 1, message ref. 4.8)*
- 10.6 ECRO confirms to Nominated Person that CTRL electrical section 717A is isolated.
- 10.7 When the isolation is no longer required, the ECRO to request EMMIS Controller to re-energise electrical section 717A.  
*(Appendix 1, message ref. 4.9)*

## Texts of messages

## Appendix 1

## Between Eurotunnel (RCC) and CTRL (AFC Signaller)

Ref. No	Text of message	Procedure clause no.
1.1	<p><b>RCC to AFC Signaller</b></p> <p>Block to electric trains, Sel(s) <b>602   603   605</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.1.2
1.2	<p><b>AFC Signaller to RCC</b></p> <p>Reference your message no....., Sel(s) <b>602   603   605</b> * are blocked to electric trains</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.1.5
1.3	<p><b>RCC to AFC Signaller</b></p> <p>Reference your message no....., you may remove the block to electric trains for Sel(s) <b>602   603   605</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	5.1.4

## Texts of messages

## Appendix 1

## Between CTRL (AFC Signaller) and Network Rail (IECC)

Ref. No	Text of message	Procedure clause no.
2.1	<p><b>AFC Signaller to IECC Signaller</b></p> <p>Block to electric trains, Sel(s) <b>602 † 605</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.1.4.1 4.2.5.1
2.2	<p><b>IECC Signaller to AFC Signaller</b></p> <p>Reference your message no....., Sel(s) <b>602 † 605</b> * are blocked to electric trains</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.1.4.3 4.2.5.3
2.3	<p><b>IECC Signaller to AFC Signaller</b></p> <p>Block to electric trains, electrical section(s) <b>601A † 602L</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	6.1.6 6.2.9 8.10
2.4	<p><b>AFC Signaller to IECC Signaller</b></p> <p>Reference your message no....., electrical section(s) <b>601A † 602L</b> * are blocked to electric trains</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	6.1.9 6.2.11 8.11
2.5	<p><b>AFC Signaller to IECC Signaller</b></p> <p>Reference your message no....., you may remove the block to electric trains for Sel(s) <b>602 † 605</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	5.1.6.1 5.2.8.1
2.6	<p><b>IECC Signaller to AFC Signaller</b></p> <p>Reference your message no....., you may remove the block to electric trains for electrical section(s) <b>601A † 602L</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	7.1.5 7.2.7 9.11

**Texts of messages**

**Appendix 1**

**Between Eurotunnel (RCC) and Network Rail (Paddock Wood ECR)**

Ref. No	Text of message	Procedure clause no.
3.1	<p><b>RCC to Paddock Wood</b></p> <p>Request permission to isolate Sel(s) <b>602 † 605</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.1.6.1
3.2	<p><b>Paddock Wood to RCC</b></p> <p>Reference your message no. ...., permission granted to isolate Sel(s) <b>602 † 605</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.1.6.5
3.3	<p><b>RCC to Paddock Wood</b></p> <p>Reference your message no. ...., Sel(s) <b>602 † 605</b> * are re-energised</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	5.1.3.1

## Texts of messages

## Appendix 1

## Between CTRL (EMMIS Controller) and Network Rail (Paddock Wood ECR)

Ref. No	Text of message	Procedure clause no.
4.1	<p><b>AFC (EMMIS Controller) to Paddock Wood</b></p> <p>Request permission for Sel(s) <b>602 † 605</b> * to be isolated</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.2.7.1 8.5
4.2	<p><b>Paddock Wood to AFC (EMMIS Controller)</b></p> <p>Reference your message no. ...., permission granted for Sel(s) <b>602 † 605</b> * to be isolated</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.2.7 5 8.14
4.3	<p><b>AFC (EMMIS Controller) to Paddock Wood</b></p> <p>Reference your message no. ...., Sel(s) <b>602 † 605</b> * are re-energised</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	5.2.5.1 9.5
4.4	<p><b>AFC (EMMIS Controller) to Paddock Wood</b></p> <p>Isolate and transfer responsibility for electrical section(s) <b>601A † 602L</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	6.2.4 8.5
4.5	<p><b>Paddock Wood to AFC (EMMIS Controller)</b></p> <p>Reference your message no. ...., electrical section(s) <b>601A † 602L</b> * are isolated and responsibility transferred to you.</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	6.2.14 8.14
4.6	<p><b>AFC (EMMIS Controller) to Paddock Wood</b></p> <p>Reference your message no. ...., you may re-energise electrical section(s) <b>601A † 602L</b> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	7.2.3 9.5
4.7	<p><b>Paddock Wood to AFC (EMMIS Controller)</b></p> <p>Isolate electrical section 717A</p> <p>Time..... Date..... Message No.....</p>	10.2
4.8	<p><b>AFC (EMMIS Controller) to Paddock Wood</b></p> <p>Reference your message no. ...., electrical section 717A is isolated</p> <p>Time..... Date..... Message No.....</p>	10.5
4.9	<p><b>Paddock Wood to AFC (EMMIS Controller)</b></p> <p>Reference your message no. ...., you may re-energise electrical section 717A</p> <p>Time..... Date..... Message No.....</p>	10.7

**Texts of messages** **Appendix 1**  
**Between Eurotunnel (RCC) and CTRL (AFC EMMIS Controller)**  
**(Form ET/CTRL)**

Ref. No	Text of message	Procedure clause no.
5.1	<p><b>AFC (EMMIS Controller) to RCC</b></p> <p>Apply RCC measures to protect and isolate Sel(s) <span style="border: 1px solid black; padding: 2px;">602 † 603 † 605</span> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.2.8 8.15
5.2	<p><b>RCC to AFC (EMMIS Controller)</b></p> <p>Reference your message no....., Sel(s) <span style="border: 1px solid black; padding: 2px;">602 † 603 † 605</span> * are protected and isolated</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	4.2.10 8.17
5.3	<p><b>AFC (EMMIS Controller) to RCC</b></p> <p>Reference your message no....., you may remove the RCC measures taken to protect and isolate Sel(s) <span style="border: 1px solid black; padding: 2px;">602 † 603 † 605</span> *</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	5.2.2 9.2
5.4	<p><b>RCC to AFC (EMMIS Controller)</b></p> <p>Reference your message no....., Sel(s) <span style="border: 1px solid black; padding: 2px;">602 † 603 † 605</span> * are re-energised</p> <p>* Delete as necessary</p> <p>Time..... Date..... Message No.....</p>	5.2.4 9.4

## Electrical sections/SELs – Signalling Protection arrangements

## Appendix 2

Electrical sections	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
601A	Up Slow/ Up Main	<u>Up direction</u> Insulated overlap at pk7.780 <u>Down direction</u> Switch T1 at Network Rail kilometrage 108.329	AF362 – AD830 AF364 – AD830	AD793 – AD823 AD795 – AF365 AD797 – AF365 AD799 – AF365 AD803 – AF365 AD807 – AF365 AD809 – AF365 AD813 – AF365 AD821 – AF365 AD823 – AF365 2167 – AF365 2171 – AF365	AFC Signaller to request RCC to send electric trains for Dollands Moor via the Down Fast line.
602L	Down Main/ Down Fast	<u>Up direction</u> Insulated overlap at pk7.935 <u>Down direction</u> Switch T2 at Network Rail kilometrage 108.325	AD830 – AD796 AD830 – AD798 AD830 – AD804 AD830 – AD808 AD830 – AD814 AD830 – AD816 AD830 – AD818 AD830 – AD824 AD830 – 2164 AF366 – AD832	AD795 – AF363 AD795 – AF365 AD797 – AF363 AD797 – AF365 AD799 – AF363 AD799 – AF365 AD803 – AF363 AD803 – AF365 AD807 – AF363 AD807 – AF365 AD809 – AF363 AD809 – AF365 AD813 – AF363 AD813 – AF365 AD821 – AF363 AD821 – AF365 2167 – AF363 2167 – AF365 2171 – AF363 2171 – AF365	



## Electrical sections/SELS – Signalling Protection arrangements

## Appendix 2

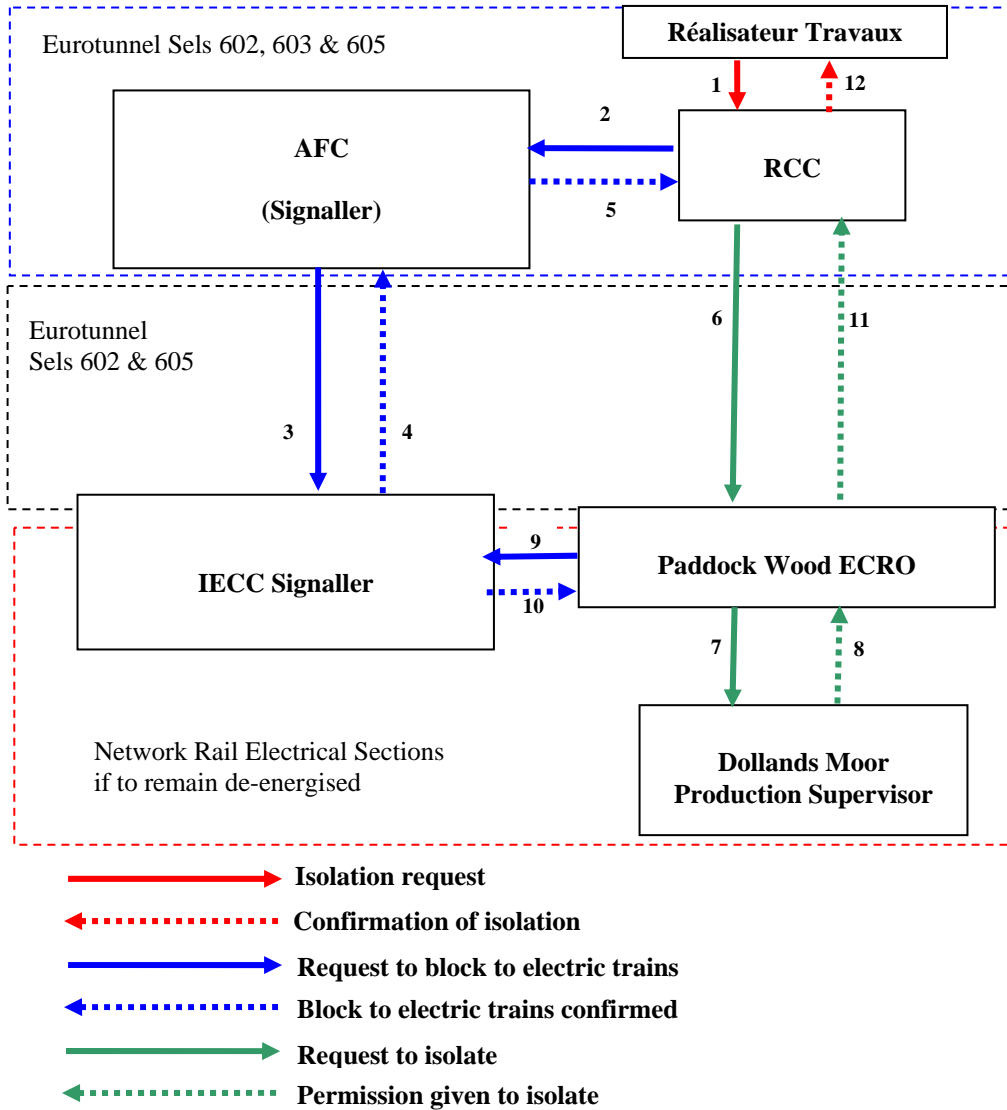
Sels	LINE	LIMITS	ROUTES PROHIBITED		REMARKS
			Up direction	Down direction	
602	Down CTRL/ Down Fast	<u>Up direction</u> Switch 0948JS <u>Down direction</u> Phase break neutral section at CTRL kilometerage 108.300 Insulated overlap at pk7.935	0976 – AF366	0871 – 0968 AD795 – AF363 AD797 – AF363 AD799 – AF363 AD803 – AF363 AD807 – AF363 AD809 – AF363 AD813 – AF363 AD821 – AF363 AD823 – AF363 AF363 – 0834 AF481 – AF361	
603	Up Fast/ Up CTRL	<u>Up direction</u> Switch 0923JS <u>Down direction</u> Phase break neutral section at pk7.329	0976 – AF362 0977 – AF362 0977 – AF364 112 – AF362	AF365 – 0833 AF367 – 0833	
605	Up Slow	<u>Up direction</u> Switches 0925JS/0926JS <u>Down direction</u> Insulated overlap at pk7.780	0976 – AF364 0977 – AF364 AF362 – AD830	AD795 – AF365 AD797 – AF365 AD799 – AF365 AD803 – AF365 AD807 – AF365 AD809 – AF365 AD813 – AF365 AD821 – AF365 AD823 – AF365 AF365 – 0833 AF365 – 0871	AFC Signaller to request RCC to send electric trains for Dollands Moor via the Down Fast line.

**Flow chart 1**

**Appendix 3**

**Isolation of Eurotunnel Sels 602, 603 and 605**

**Eurotunnel initiates the isolation request (section 4.1)**

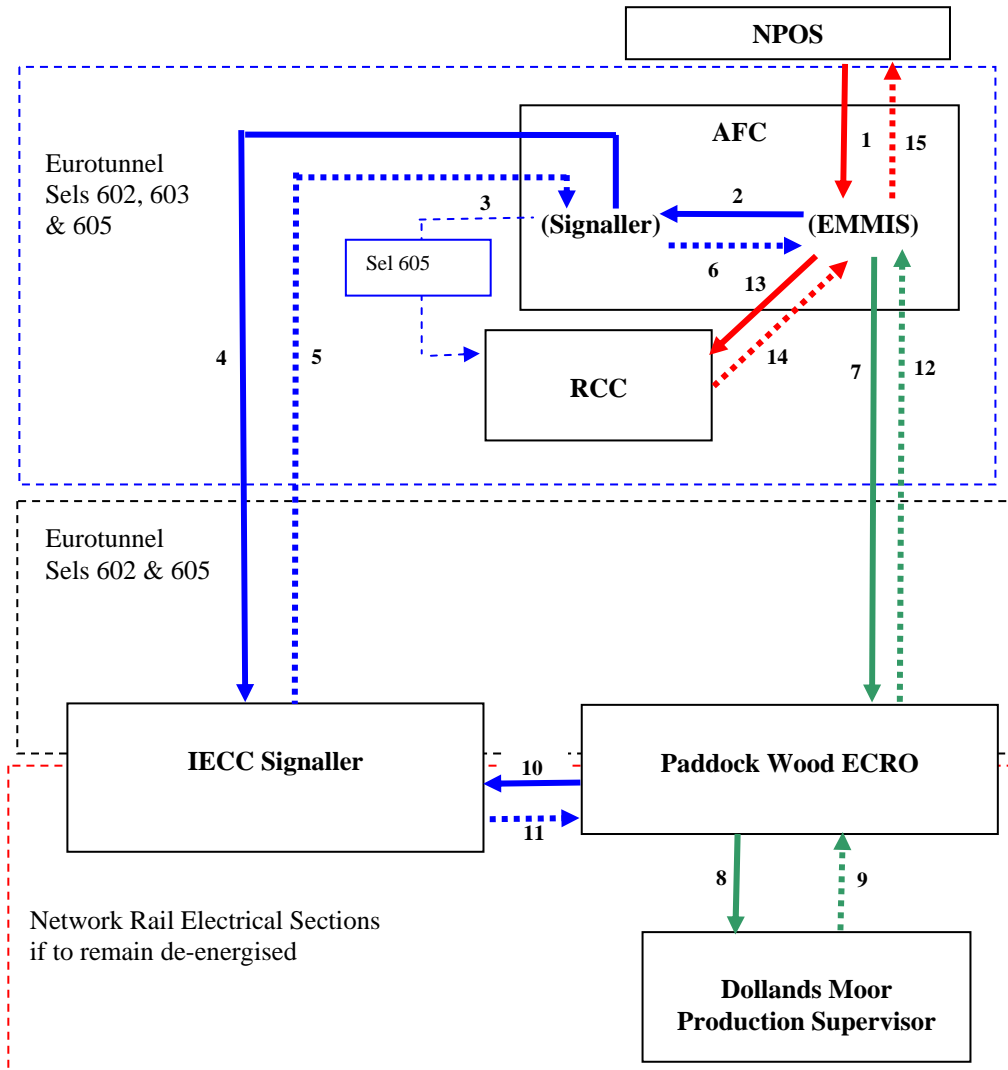


Flow chart 2

Appendix 3

Isolation of Eurotunnel Sels 602, 603 and 605

CTRL initiates the isolation request (section 4.2)



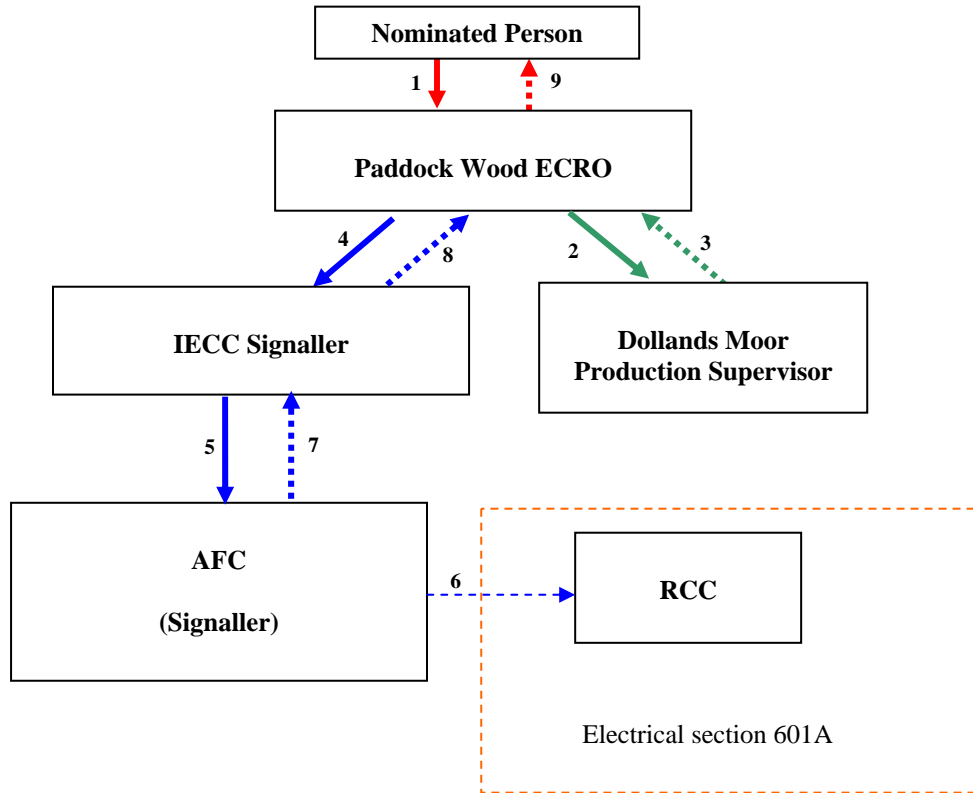
- Isolation request
- ← Confirmation of isolation
- Request to block to electric trains
- ← Block to electric trains confirmed
- - - - - Advice of route blocked to electric trains
- Request to isolate
- ← Permission given to isolate

**Flow chart 3**

**Appendix 3**

**Isolation of Paddock Wood ECR Electrical sections 601A and 602L**

Network Rail initiates the isolation request (section 6.1)



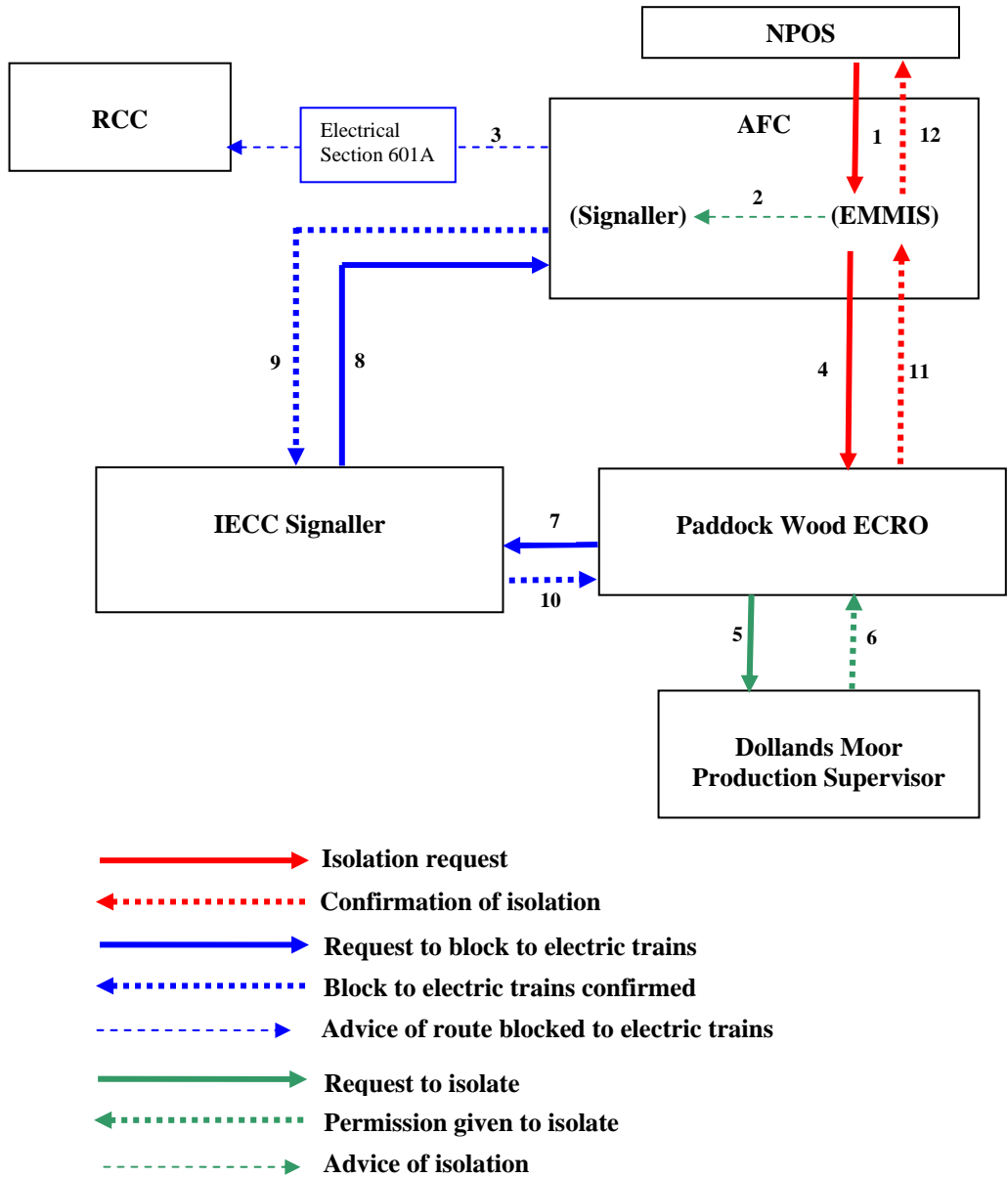
- Isolation request
- ← Confirmation of isolation
- Request to block to electric trains
- ← Block to electric trains confirmed
- - - - - Advice of route blocked to electric trains
- Request to isolate
- ← Permission given to isolate

**Flow chart 4**

**Appendix 3**

**Isolation of Paddock Wood ECR Electrical sections 601A and 602L**

CTRL initiates the isolation request (section 6.2)

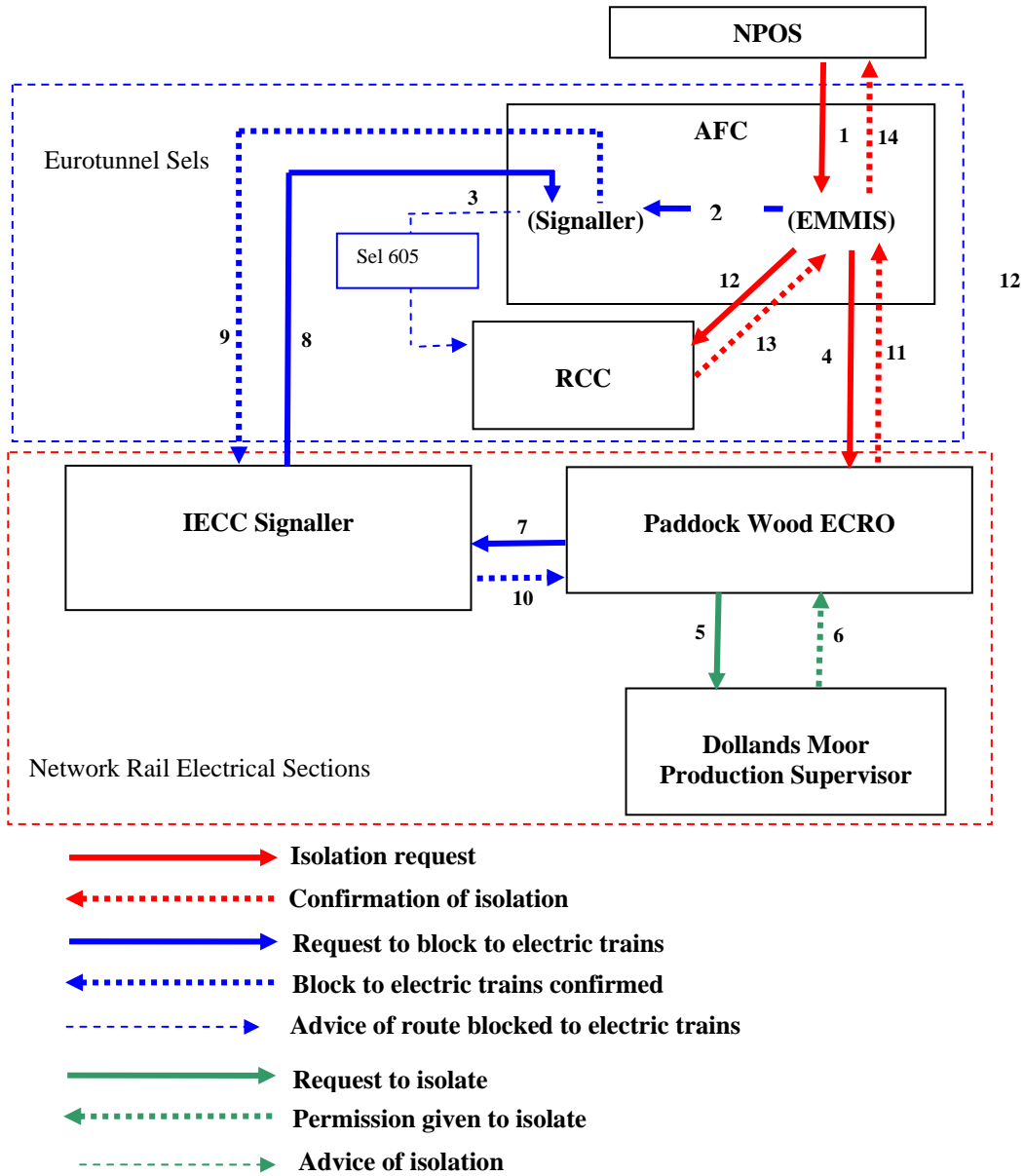


**Flow chart 5**

**Appendix 3**

**Isolation of Eurotunnel Sel/Network Rail Electrical section 602 & 602L together or 605 and 601A**

CTRL initiates the isolation request (section 8)





Level 2 Procedure

Effective Date: November 2013

Ref No: C-OP-OS-05-2018

CCMS2 No: 63221435

Issue No: 1.4

Page: 1 of 28

<b>Title:</b>	Procedures for taking isolations of the AC traction power supply at the HS1/Network Rail interfaces near St. Pancras International station
<b>Document No:</b>	C/OP/OS/05/2018
<b>Custodian:</b>	Operations Standards Manager, Network rail (High Speed) Ltd.

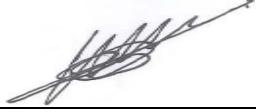
**Synopsis:**

This document details the procedures to request and protect isolations of the OHLE controlled by Ashford AFC and the OLE controlled by Romford ECR where there is a requirement for mutual protection arrangements between Ashford AFC and Upminster IECC on the North London Line and East Coast Main Line connections.

<b>Prepared by:</b>	
	<b>Stephane Riverain</b> – 19 November 2013 Operations Standards Manager Network Rail (HS) Ltd
<b>Approved by:</b>	
	<b>Mark Hornshaw</b> - 19 November 2013 Operations Manager Network Rail (HS) Ltd
	
	<b>Alister Swift</b> - 19 November 2013 Local Operations Manager Network Rail Upminster
	
	<b>Vincent Clark</b> – 19 November 2013 ECR Operator Manager Network Rail Romford ECR



Level 2 Procedure  
Effective Date: November 2013  
Ref No: C-OP-OS-05-2018  
CCMS2 No: 63221435  
Issue No: 1.4  
Page: 2 of 28

<b>Authorised by:</b>	
	<b>Simon Lejeune</b> – 19 November 2013 Head of High Speed Operations Network Rail (HS) Ltd

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**Revision Record:**

A black line in the right hand margin shows amendments to the previous issue.

Issue No.	Date	Comments
0.1	November 2012	Initial draft version for comment. 1. Originally formed part of the Network Rail (CTRL) Ltd Standard: "Procedures for taking isolations of the traction power supply at the CTRL (Section 2)/Network Rail interfaces" (C/OP/OS/05/2010) but now specific to the North London Line and East Coast Main Line connections at St. Pancras. 2. Procedures revised at these interfaces as Camden Road Jn. signal box has closed and the signalling control for the North London Line transferred to Upminster IECC (NLL Workstation). Control of the Network Rail OLE has been transferred from Rugby ECR to Romford ECR
0.2	April 2013	Initial draft updated to replace the Train Running Controller by, the Signalling Shift Manager, Upminster IECC.
0.3	June 2013	Initial draft updated to incorporate Upminster LOM's (Juwad Nasir) comments.
0.4	September 2013	Job function and format updates to bring in line with company standards Added OHLE Instructions reference table for HS1 electrical section 1706 complete and sub-sections. References to Anglia route and King's cross removed as per agreed meeting discussions held at Upminster IECC on August 08 <sup>th</sup> 2013 Updated references to Upminster SCC to IECC Change to document synopsis. Added Sub section protection arrangements tables as appendix.
0.5	October 2013	Correction to sectioning tables in appendices



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Level 2 Procedure  
Effective Date: November 2013  
Ref No: C-OP-OS-05-2018  
CCMS2 No: 63221435  
Issue No: 1.4  
Page: 5 of 28

## 1. Purpose

This standard details the procedures to be adopted at the interfaces in the St. Pancras area between Ashford Control Centre (AFC) and Romford Electrical Control Room (ECR) for the issue of Permits to Work on the 25kV AC Overhead Line Equipment.

This standard also details the 'Block to electric trains' arrangements between Romford Electrical Control Room (ECR), Ashford Control Centre (AFC) and Upminster Integrated Electrical Control Centre (IECC) to prevent electric trains entering the isolated area.

**This procedure supersedes Section 4 of the Level 2 Standard "Procedures for taking isolations of the traction power supply at the CTRL (Section 2) / Network Rail interfaces" (C/OP/OS/05/2010)**

**Note:** If the work requires personnel and/or equipment to be protected from train movements then the arrangements shown in the following HS1 Level 2 Standards must also be applied:

"Procedures for taking possessions CTRL/Network Rail interface on the East Coast Main Line Connection" (C-OP-OS-05-2012), dated September 2007.

"Procedures for protecting engineering work on the North London Line Connection and Silo Curve near St. Pancras International station" (C-OP-OS-05-2014), dated July 2013.

## 2. Scope

These procedures apply to the isolations of:

- Network Rail electrical section **IN-1** (sub-sections **1N-1A** & **1N-1B**) controlled by Romford ECR and
- HS1 electrical section **1706** (sub-sections **1706C, D, E** & **1706F**) controlled by Ashford AFC

At the interface on the North London Line and East Coast Main Line Connections between HS1 and Network Rail north of St. Pancras International station.

They **do not** apply to the isolations of Network Rail electrical section **IN-1** (sub-section **1N-1A**) controlled by Romford ECR and Network Rail electrical sub-section **4A** controlled by York Electrical Control Room where they make a physical interface on the North London Incline.

Isolations across this interface are in accordance with Network Rail Standard, "Working on or about 25kV AC Electrified Lines" (NR/SP/ELP/29987).



Level 2 Procedure

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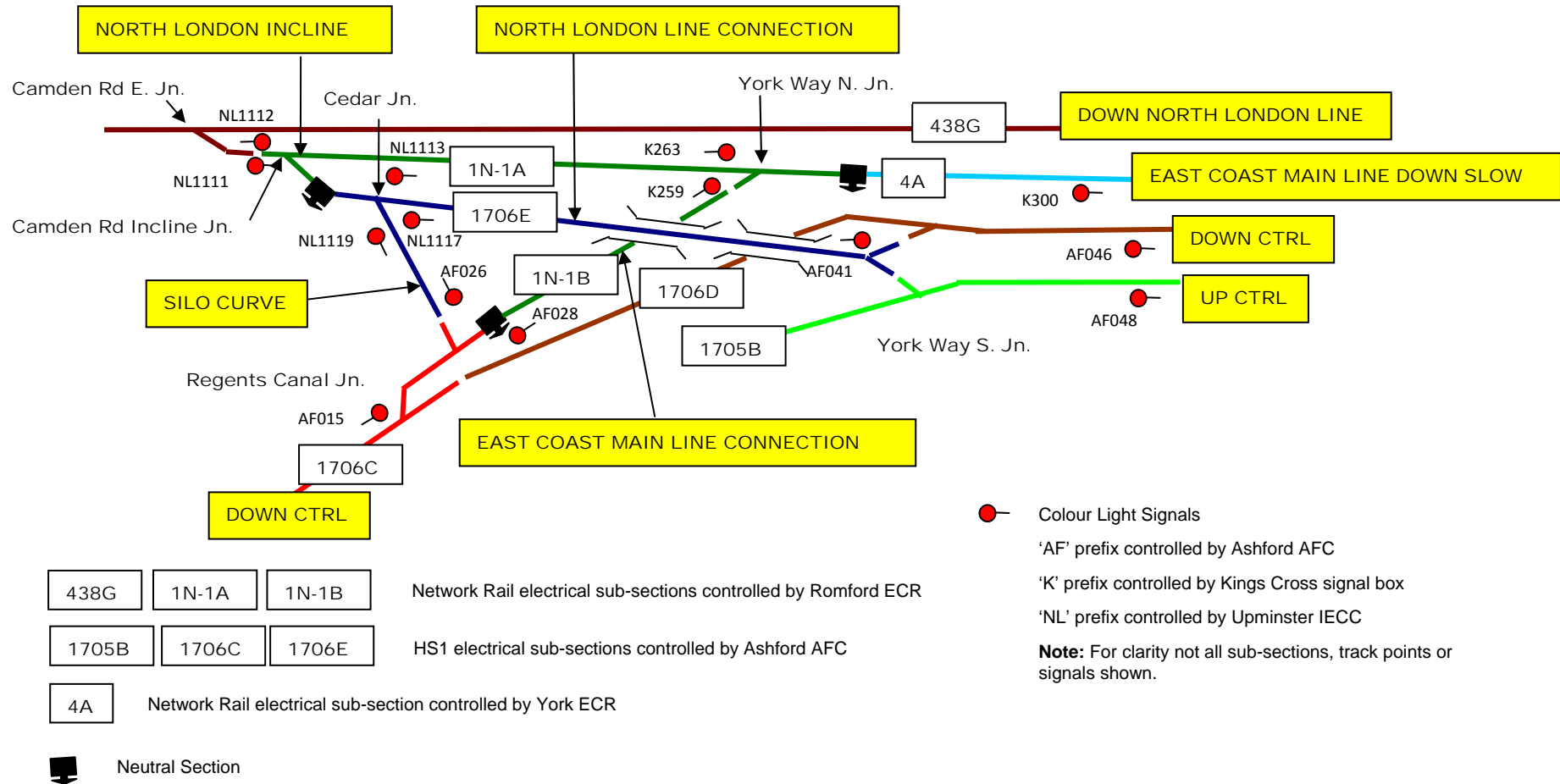
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### 3. References

The following documents are related to this standard:

<b>HS1</b>	
C/02/OS/05/1000	HS1 (CTRL) Rule Book, Module AC "AC Electrified Line Equipment - Engineering Work"
C/01/IM/27/1001	HS1 (CTRL) Standard "Working on or about 25kV AC Electrified Lines"
C/OP/OS/02/2010	Procedures for taking isolations of the traction power supply at the CTRL (Section 2) / Network Rail interfaces
C/OP/OS/05/2002	Sectional Appendix to the HS1 (CTRL) Rule Book
C03-EP-15-2300	EMMIS Control Instructions
CTRL EZP, ERS & OCS Limits Diagrams P004, P005, P006 & P007.	HS1 OHLE isolation diagrams
<b>Network Rail</b>	
GE/RT8000/AC	Railway Group Standard Rule Book, Module AC, "AC electrified lines".
NR/SP/ELP/29987	Network Rail Standard, "Working on or about 25kV AC Electrified Lines"
NR/ECR/002	Romford Electrical Control Room Instructions, Module 8
NSE/NLL/W-R/01.05 & NSE/NLL/W-R/01.05R	Network Rail OLE isolation diagrams



#### 4. Definitions

AFC signaller	Person located in Ashford AFC responsible for monitoring and controlling the signalling system on HS1.
Ashford Control Centre (AFC)	Network Rail (High Speed) Ltd. control centre located within the Ashford (Kent) IECC building containing the apparatus for the remote control of the signalling and electric traction systems on HS1.
'Block to electric trains instructions'	The operational instructions in Ashford AFC and Upminster IECC signal boxes that detail the signalling arrangements that must be applied in order to protect the isolation of a specified electrical section(s)/sub-section(s) from electric train movements.
Channel Tunnel Rail Link (CTRL).	See High Speed 1 (HS1)
East Coast Main Line (ECML)	Network Rail route between London (Kings Cross station) and Edinburgh.
East Coast Main Line (ECML) Connection	Line that connects HS1 (Regents Canal Jn.) to the North London Incline (York Way North Jn.)
Electric train	An electrically powered train having on the traction unit a pantograph through which electric current is collected from the overhead line equipment
Electrical section	A length of overhead line equipment between switching stations, or between a switching station and a terminal end.
Electrical sub-section	Part of an electrical section which may be isolated from all other lengths of overhead line equipment by the operation of overhead line switches.
EMMIS Control Instructions	Specific instructions describing the procedures to be adopted by the EMMIS controller in the carrying out of their duties, and the actions to be carried out in particular circumstances.
EMMIS controller	Person located in Ashford AFC responsible for the control and monitoring the electricity supplies to the overhead line equipment, carrying out switching operations at the feeder stations and imposing isolations, and is certified as competent in these duties.
High Speed 1 (HS1)	Route between London (St. Pancras International station) and Cheriton, (near Folkestone, Kent), together with associated chords and connecting lines. <b>Note:</b> Previously known as the Channel Tunnel Rail Link (CTRL).

HS1 personnel	Personnel employed by Network Rail (High Speed) Ltd. and its contractors. They apply the rules and regulations published in the HS1 (CTRL) Rule Book and associated standards and procedures.
Network Rail	UK railway system that excludes HS1. Owned and managed by Network Rail Infrastructure Ltd.
Network Rail Infrastructure Ltd.	Organisation that is responsible for the management of the Network Rail owned railway system.
Network Rail personnel	Personnel employed by Network Rail Infrastructure Ltd. and its contractors. They apply the rules and regulations published in the Railway Group Standard Rule Book and associated standards and procedures.
Network Rail (High Speed) Ltd.	Organisation that is responsible for the operation and maintenance of HS1.
NLL signaller	Person located in Upminster IECC responsible for monitoring and controlling the signalling system on the North London Line.
North London Incline	Line that connects the East Coast Main Line (Copenhagen Jn.) to the North London Line (Camden Road East Jn.)
North London Line (NLL)	Network Rail route between Stratford (London) and Richmond.
North London Line (NLL) Connection	Line that connects HS1 (York Way South Jn.) to the North London Incline (Camden Road Incline Jn.)
Nominated Person	Network Rail qualified person responsible for local switching, testing, earthing, and issuing of Overhead Line Permits in accordance with the Network Rail standard: "Working on or about 25kV AC Electrified Lines" (RT/E/S/29987).
Nominated Person On Site (NPOS)	HS1 qualified person responsible for local switching, testing, earthing, and issuing of Overhead Line Permits in accordance with the HS1 standard "25kV Overhead Line Isolation and Earthing Instructions" (C/03/IM/27/2001).
Overhead Line Equipment (OLE - Network Rail) (OHLE - HS1)	Arrangement of wires, suspended over the railway line, for supplying electricity to electric trains, together with associated fittings, insulators and other attachments including feeders, autotransformer feeders, overhead line switches, jumpers and return conductors.

Romford Electrical Control Operator (ECO)	Person located in Romford ECR having control of the power supply to the electric traction system and who is responsible for all switching operations and isolations of electrical equipment thereon, and is certified as competent in these duties.
Romford Electrical Control Room (ECR)	Network Rail electrical control room containing the apparatus for the remote control of the electric traction system on the North London Line.
Romford Electrical Control Room Instructions	Specific instructions describing the procedures to be adopted by the Romford ECO in the carrying out of their duties, and the actions to be carried out in particular circumstances.
Shift Signaller Manager, Upminster IECC	Person responsible for arranging for the limits of the isolation on the Network Rail side to be protected by the signalling system.
Silo Curve	Line that connects HS1 (Regents Canal Jn.) to the North London Line Connection (Cedar Jn.)
Upminster Integrated Electronic Control Centre (IECC)	Network Rail signalling centre located within the Upminster IECC building containing the apparatus for the remote control of the signalling system on the North London Line. It interfaces with HS1 on the North London Line Connection.
York Electrical Control Room (ECR)	Network Rail electrical control room containing the apparatus for the remote control of the electric traction system on the East Coast Main Line.



## 5. Principles

### 5.1 Rules

The Railway Group Standard Rule Book, Module AC, "AC electrified lines" (GE/RT/8000/AC) applies to the 25kV AC OLE controlled by the ECO at Romford ECR.

The HS1 (CTRL) Rule Book Module AC, "AC Electrified Line Equipment - Engineering Work" (C/02/OS/05/1000/AC) applies to the 25kV AC OHLE controlled by the EMMIS Controller at Ashford AFC.

All work on or about the Network Rail 25kV AC OLE shall be carried out in accordance with Network Rail Instruction "Working On or About 25KV AC Electrified Lines" (NR/SP/ELP/29987).

All work on or about the HS1 25kV AC OHLE shall be carried out in accordance with Network Rail (High Speed) Ltd Instruction "25kV Overhead Line Isolation and Earthing Instructions" (C/03/IM/27/2001).

HS1 or Network Rail personnel (including maintenance contractors) to apply the rules and procedures of the organisation they are working for.

HS1 or Network Rail personnel to request isolations of the OHLE or OLE from the control centre defined in the rules and procedures of the organisation they are working for. Thus, depending on the type of work and the personnel carrying out the work, isolations may be requested from either of the control centres.

The control centre concerned to be identified in the appropriate Notices, Safe Method of Working Statements or switching forms. The control centre so identified becomes the Designated Control Centre for the management of the isolation and form procedures.

### 5.2 Planning arrangements

The person requiring the isolation must submit an application to the Planning Department of the organisation they are working for in accordance with their normal planning arrangements.

The Planning department of the organisation concerned must agree with the Planning department of the other organisation the following:

- limits of the isolation,
- the electrical section(s) and sub-section(s) required,
- which organisation's rules and procedures are to be applied,
- is the isolation request to be made to the EMMIS controller or Romford ECO,
- if personnel from the other organisation are required to assist, e.g. operate local isolation switches, apply earths, etc.
- who the person requiring an isolation will receive an Overhead Line Permit from in order to start work.

The agreed arrangements must be published in the appropriate notices.

### 5.3 Isolation arrangements

#### 5.3.1 General

The EMMIS controller is responsible for the isolation of the HS1 electrical section(s).

The Romford ECO is responsible for the isolation of the Network Rail electrical section(s).

Except in the event of an emergency, before any electrical section(s) is isolated and/or responsibility transferred, the Romford ECO or the EMMIS controller must have received an assurance that the required electrical section(s) has been blocked to electric train movements.

Form NC (shown in the appendix to this standard) is used to provide written confirmation of the state of Network Rail or HS1 equipment. This form is used by each of the Designated Control Centres to manage the isolation procedures when switching operations are required on overhead line equipment that is not under their control.

#### 5.3.2 Isolation of the overhead line equipment for HS1 work

When work is to be carried out on behalf of HS1 and HS1 rules apply, then Ashford AFC becomes the Designated Control Centre.

The EMMIS Controller at Ashford to isolate the HS1 electrical sub-section(s) under their control and request isolation of the Network Rail electrical sub-section(s) by the Romford ECO.

When this has been carried out and the Form NC procedure completed, Network Rail (High Speed) Ltd, will be responsible for all testing, earthing and Permit procedures in accordance with HS1 rules and procedures throughout the isolated electrical sub sections(s) concerned.

**Note:** Details of the limits of isolation and isolators/circuit breakers to be quoted in Part 2 of Form NC for the Network Rail electrical subsection(s) are:

Electrical Section(s) or Sub Section(s)	Line(s)	Limits		Circuit breakers or switches
		From	To	
IN-1A and IN- 1 complete	North London Incline	YN 00/04	YN 00/31	IN-1
	ECML Connection / NLL Connection	Y 01/01	YW 00/23	
IN-1B	ECML Connection	Y 01/01	Y 01/26	IN-1/2

**Note:** This table only shows the physically interfacing sub-sections between HS1 and Network Rail infrastructures.



5.3.3 Isolation of the overhead line equipment for Network Rail work

When work is to be carried out on behalf of Network Rail and Network Rail rules apply, then Romford ECR becomes the Designated Control Centre.

The Romford ECO to isolate the Network Rail electrical sub-section(s) under their control and request isolation of the HS1 electrical sub-section(s) by the EMMIS Controller.

When this has been carried out and the Form NC procedure completed. Network Rail Infrastructure Ltd. will be responsible for all testing, earthing and Permit procedures in accordance with Network Rail rules and procedures throughout the isolated electrical sub section(s) concerned.

**Note:** Details of the limits of isolation and isolators/circuit breakers to be quoted in Part 2 of Form NC for the HS1 electrical subsection(s) are:

Electrical Section(s) or Sub Section(s)	Line(s)	Limits		Circuit breakers or switches
		From	To	
1706E	NLL Connection	YC 00/01	Y 00/71	1706/4
1706C	ECML Connection	Y 00/74	Y 00/23	1706/7
	St. Pancras (Platform 5)	Y 00/74	Y 00/36	1706/6
	St. Pancras (Platform 6)	Y 00/74	Y 00/49	1705C/1706C
	Down CTRL	Y 00/74	Y 00/71	

**Note:** This table only shows the physically interfacing sub-sections between HS1 and Network Rail infrastructures.

#### 5.4 Signal protection arrangements 'Block to electric trains'

##### 5.4.1 Isolations involving HS1 electrical sub-section 1706 E/D/F and 1706 Complete

The AFC signaller is responsible for arranging the signal protection for the HS1 electrical sections or sub-section(s) when requested by the EMMIS Controller.

Isolations involving HS1 electrical sub-section **1706 E/D/F and 1706 Complete** require signal protection to be provided by the NLL signaller.

This is managed by the Signalling Shift Manager, Upminster IECC, who applies the relevant 'Block to electric train instructions'. Communications between the AFC signaller and the Signalling Shift Manager in connection with these instructions must use the following agreed texts:

##### **From Signaller at Ashford AFC to Signalling Shift Manager, Upminster IECC**

"Block to electric trains the North London Line Connection and Silo Curve affected by the isolation of electrical sub-section numbered **1706 E/D/F or complete** and report to me when this has been done. - Message No. ...."

##### **From Signalling Shift Manager, Upminster IECC to Signaller at Ashford AFC**

"The blockage of the North London Line Connection and Silo Curve specified in Message No. .... has been imposed."

##### **From Signaller at Ashford AFC to Signalling Shift Manager, Upminster IECC**

"The blockage of the North London Line Connection and Silo Curve specified in Message No. .... has been cancelled"

These specific texts must be used for every isolation involving the above mentioned sub-sections

##### 5.4.2 Isolations involving Network Rail electrical sub-section IN-1B

The Signalling Shift Manager, Upminster IECC, is responsible for arranging the signal protection for the Network Rail electrical sections or sub-section(s) when requested by the Romford ECO.

Isolations involving Network Rail electrical sub-section **IN-1B** require signal protection to be provided by the AFC signaller.

This is managed by the Signalling Shift Manager who applies the relevant 'Block to electric train instructions'. Communications between the Signalling Shift Manager and the AFC signaller in connection with these instructions must use the following agreed texts:

##### **From Signalling Shift Manager, Upminster IECC to Signaller at Ashford AFC**

"Block to electric trains the East Coast Main Line Connection affected by the isolation of electrical sub-section numbered **IN-1B** and report to me when this has been done. Message No. ...."

##### **From Signaller at Ashford AFC to Signalling Shift Manager, Upminster IECC**

"The blockage of the East Coast Main Line Connection specified in Message No. .... has been imposed."



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**From Signalling Shift Manager, Upminster IECC to Signaller at Ashford AFC**

"The blockage of the East Coast Main Line Connection specified in Message No. .... has been cancelled"

These specific texts to be used for every isolation involving electrical sub-section **IN-1B**, both when it is isolated on its own or forms part of a larger isolation.

## 6 Procedures

### 6.1 Isolation of HS1 OHLE under the control of the EMMIS controller

#### Notes:

- This section applies if HS1 personnel requiring an isolation on HS1 that involves HS1 electrical sub-section **1706C** and/or **1706E** **without** the isolation of the adjacent Network Rail electrical sub-section **IN-1B** and/or **IN-1A**.
- If the adjacent Network Rail electrical sub-section is required to be isolated as part of the same isolation request, section 6.4 applies.
- If Network Rail personnel require the isolation of HS1 electrical sub-section **1706C** and/or **1706E**, section 6.4 applies.

**6.1.1 NPOS** requests the EMMIS controller to isolate the HS1 electrical sub-section(s) concerned.

**6.1.2 EMMIS controller** requests the AFC signaller to block to electric trains the HS1 electrical section(s) concerned.

#### 6.1.3 AFC signaller:

- makes sure the HS1 electrical section(s) concerned are either clear of electric trains or any electric train that is to remain in the electrical section(s) concerned has its pantograph(s) lowered, **and**
- consults the 'Block to electric train instructions', **and**

#### **If the isolation involves electrical sub-section 1706E**

- applies the instructions and requests the Signalling Shift Manager, Upminster IECC, to block the North London Line Connection and Silo Curve to electric trains for HS1 electrical sub-section **1706E** using the text specified in clause 5.4.1

#### 6.1.4 Signalling Shift Manager:

- consults the 'Block to electric train instructions' for HS1 electrical sub-section **1706E**, **and**
- arranges for the specified signalling protection arrangements to be applied by the NLL signaller for HS1 electrical sub-section **1706E**.

#### 6.1.5 NLL signaller:

- consults the 'Block to electric train instructions' for HS1 electrical sub-section **1706E**, **and**
- applies the specified signalling protection **and**
- confirms to the Signalling Shift Manager that the North London Line Connection and Silo Curve are blocked to electric trains.

**6.1.6 Signalling Shift Manager** confirms to the AFC signaller that the North London Line Connection and Silo Curve are blocked to electric trains for HS1 electrical sub-section **1706E** using the text specified in clause 5.4.1

**6.1.7 AFC signaller** confirms to the EMMIS controller that the block to electric trains is in place.

**6.1.8 EMMIS controller:**

- Carries out the switching instructions in order to isolate the HS1 electrical sub-section(s) concerned, **and**
- Confirms to the NPOS that the HS1 electrical sub-section(s) concerned is isolated.

**6.2 Re-energisation of HS1 OHLE under the control of the EMMIS Controller****6.2.1 NPOS** cancels the isolation with the EMMIS controller.**6.2.2 EMMIS controller:**

- carries out the switching instructions in order to re-energise the HS1 electrical sub-section(s) concerned, **and**
- Advises the AFC signaller that the block to electric trains for the HS1 electrical section(s) concerned can be removed.

**If the isolation involves electrical sub-section 1706E****6.2.3 AFC signaller:**

- consults the 'Block to electric train instructions', **and**
- advises the Signalling Shift Manager, Upminster IECC, that the block to electric trains on the North London Line Connection and Silo Curve for HS1 electrical sub-section **1706E** can be removed using the text specified in clause 5.4.1

**6.2.4 Signalling Shift Manager:**

- consults the 'Block to electric train instructions' for HS1 electrical sub-section **1706E**, **and**
- requests the NLL signaller to remove the specified signalling protection for HS1 electrical sub-section 1706E on the North London Line Connection and Silo Curve.

**6.2.5 NLL signaller:**

- consults the 'Block to electric train instructions' for HS1 electrical sub-section **1706E**, **and**
- removes the specified signalling protection for HS1 electrical sub-section **1706E** on the North London Line Connection and Silo Curve

### 6.3 Isolation of Network Rail OLE under the control of the Romford ECO

#### Notes:

- This clause applies if Network Rail personnel require the isolation of Network Rail electrical sub-section **IN-1A** and/or **IN-1B** **without** the isolation of the adjacent HS1 electrical sub-section **1706C** and/or **1706E**.
- If the adjacent HS1 electrical sub-section is required to be isolated as part of the same isolation request, section 6.4 applies.
- If HS1 personnel require the isolation of Network Rail electrical sub-section **IN-1A** and/or **IN-1B**, section 6.4 applies.

**6.3.1 Nominated Person** requests the Romford ECO to isolate the Network Rail electrical sub-section(s) concerned.

**6.3.2 Romford ECO** requests the Signalling Shift Manager, Upminster IECC, to block to electric trains the Network Rail electrical sub-section(s) concerned.

#### **6.3.3 Signalling Shift Manager:**

- consults the 'Block to electric train Instructions' for the Network Rail electrical sub-section(s) concerned, **and**
- arranges for the specified signalling protection arrangements for the Network Rail electrical sub-section(s) concerned to be applied **and**
- Requests the AFC signaller to block to electric trains for Network Rail electrical sub-section **IN-1B** and/or **IN-1A** using the text specified in clause 5.4.2

#### **6.3.4 AFC signaller:**

- consults the 'Block to electric train instructions' for Network Rail electrical sub-section **IN-1B** and /or **IN-1A**, **and**
- applies the specified signalling protection **and**
- Confirms to the Signalling Shift Manager that the East Coast Line Connection is blocked to electric trains using the text specified in clause 5.4.2.

#### **6.3.5 Signalling Shift Manager**

- Confirms to the Romford ECO that the Network Rail electrical sub-section(s) concerned are blocked to electric trains.

#### **6.3.6 Romford ECO:**

- Carries out the switching instructions in order to isolate the Network Rail electrical sub-section(s) concerned, **and**
- Confirms to the Nominated Person that the Network Rail electrical sub-section(s) concerned is isolated.



#### 6.4 Re-energisation of Network Rail OLE under the control of the Romford ECO

##### 6.4.1 **Nominated Person**

- Cancels the isolation with the Romford ECO.

##### 6.4.2 **Romford ECO:**

- Carries out the switching instructions in order to re-energise the Network Rail electrical sub-section(s) concerned, **and**
- Advises the Signalling Shift Manager, Upminster IECC, that the block to electric trains for the Network Rail sub-electrical section(s) concerned can be removed.

##### 6.4.3 **Signalling Shift Manager:**

- Consults the 'Block to electric train instructions' for the Network Rail electrical sub-section(s) concerned, **and**
- Arranges for the specified signalling protection for the Network Rail sub-electrical sub-section(s) concerned to be removed, **and**
- Advises the AFC signaller that the block to electric trains for Network Rail electrical sub-section **IN-1B** and/or **IN-1A** can be removed using the text specified in clause 5.4.2.

##### 6.4.4 **AFC signaller**

- Removes the specified signalling protection for Network Rail electrical sub-section **IN-1B** and/or **IN-1A** .

6.5 Isolation of HS1 and Network Rail overhead line equipment (Ashford AFC is the Designated Control Centre)

**Note:** This section applies if HS1 personnel require an isolation that involves HS1 electrical sub-section **1706C** and/or **1706E** together with the isolation of the adjacent Network Rail electrical sub-section(s) **IN-1B** and/or **IN-1A**.

6.5.1 **NPOS**

- Requests the EMMIS Controller to isolate the HS1 and Network Rail electrical sub-sections concerned.

6.5.2 **EMMIS controller**

- Requests the AFC signaller to block to electric trains the HS1 electrical section(s) concerned and advises that there will be an isolation of the adjacent Network Rail electrical section(s).

6.5.3 **AFC signaller:**

- Makes sure the HS1 electrical section(s) concerned are either clear of electric trains or any electric train that is to remain in the electrical section(s) has its pantograph(s) lowered.
- Confirms to the EMMIS controller that the block to electric trains is in place.

6.5.4 **EMMIS controller**

- Requests the Romford ECO to switch off and handover responsibility for the Network Rail electrical sub-section(s) concerned.

6.5.5 **Romford ECO**

- Requests the Signalling Shift Manager, Upminster IECC, to block to electric trains the Network Rail electrical sub-section(s) concerned.

6.5.6 **Signalling Shift Manager:**

- consults the 'Block to electric train Instructions' for the Network Rail electrical sub-section(s) concerned, **and**
- arranges for the specified signalling protection arrangements for the Network Rail electrical sub-section(s) concerned to be applied, **and**
- Requests the AFC signaller to block the East Coast Main Line Connection to electric trains for Network Rail electrical sub-section **IN-1B** and/or **IN-1A** using the text specified in clause 5.4.2.

6.5.7 **AFC signaller:**

- Consults the 'Block to electric train instructions' for Network Rail electrical sub-section **IN-1B** and/or **IN-1A**, **and**
- Applies the specified signalling protection **and**
- Confirms to the Signalling Shift Manager that the East Coast Line Connection is blocked to electric trains using the text specified in clause 5.4.2.

6.5.8 **Signalling Shift Manager**

- Confirms to the Romford ECO that the Network Rail electrical sub-section(s) concerned are blocked to electric trains.

6.5.9 **Romford ECO:**

- Carries out the switching instructions in order to isolate the Network Rail electrical sub-section(s) concerned, **and**
- Confirms to the EMMIS controller that the Network Rail electrical sub-section(s) concerned is isolated

#### 6.5.10 **EMMIS controller:**

- Carries out the switching instructions in order to isolate the HS1 electrical sub-section(s) concerned, **and**
- Confirms to the NPOS that the HS1 and Network Rail electrical sub-section(s) concerned are isolated.

### 6.6 Re-energisation of both HS1 and Network Rail overhead line equipment (Ashford AFC is the Designated Control Centre)

#### 6.6.1 **NPOS** cancels the isolation with the EMMIS controller.

#### 6.6.2 **EMMIS controller:**

- carries out the switching instructions in order to re-energise the HS1 electrical sub-section(s) concerned, **and**
- advises the Romford ECO that the isolation of the Network Rail electrical sub-sections concerned is no longer required, **and**
- Advises the AFC signaller that the block to electric trains for the HS1 electrical sub-section(s) concerned can be removed.

#### 6.6.3 **Romford ECO:**

- carries out the switching instructions in order to re-energise the Network Rail electrical sub-section(s) concerned, **and**
- Advises the Signalling Shift Manager, Upminster IECC, that the block to electric trains for the Network Rail sub-electrical section(s) concerned can be removed.

#### 6.6.4 **Signalling Shift Manager:**

- consults the 'Block to electric train instructions' for the Network Rail electrical sub-section(s) concerned, **and**
- Arranges for the specified signalling protection for the Network Rail sub-electrical sub-section(s) concerned to be removed, **and**
- Advises the AFC signaller that the block to electric trains for Network Rail electrical sub-section **IN-1B** and/or **IN-1A** can be removed using the text specified in clause 5.4.2.

#### 6.6.5 **AFC signaller**

- Removes the specified signalling protection for Network Rail electrical sub-section **IN-1B** and/or **IN-1A**.

6.7 Isolation of both HS1 and Network Rail overhead line equipment (Romford ECR is the Designated Control Centre)

**Note:** This section applies if Network Rail personnel require an isolation that involves Network Rail electrical sub-section(s) **IN-1B** and/or **IN-1A** together with the isolation of the adjacent HS1 electrical sub-section **1706C** and/or electrical sub-section **1706E**.

6.7.1 **Nominated Person**

- Requests the Romford ECO to isolate the Network Rail electrical sub-section(s) concerned.

6.7.2 **Romford ECO**

- Requests the Signalling Shift Manager, Upminster IECC, to block to electric trains the Network Rail electrical sub-section(s) concerned.

6.7.3 **Signalling Shift Manager:**

- Consults the 'Block to electric train Instructions' for the Network Rail electrical sub-section(s) concerned, **and**
- Arranges for the specified signalling protection arrangements for the Network Rail electrical sub-section(s) concerned to be applied, **and**
- Requests the AFC signaller to block to electric trains for Network Rail electrical sub-section **IN-1B** or **IN-1A** using the text specified in clause 5.4.2.

6.7.4 **AFC signaller:**

- Consults the 'Block to electric train instructions' for Network Rail electrical sub-section **IN-1B** and/or **IN-1A**, **and**
- Applies the specified signalling protection, **and**
- Confirms to the Signalling Shift Manager that the line affected is blocked to electric trains using the text specified in clause 5.4.2.

6.7.5 **Signalling Shift Manager**

- Confirms to the Romford ECO that the Network Rail electrical sub-section(s) concerned are blocked to electric trains.

6.7.6 **Romford ECO:**

- Carries out the switching instructions in order to isolate the Network Rail electrical sub-section(s) concerned, **and**
- Requests the EMMIS controller to isolate the HS1 electrical section(s) concerned.

6.7.7 **EMMIS Controller**

- Requests the AFC Signaller to block to electric trains the HS1 electrical sub-section(s) concerned and advises that there is an isolation of the adjacent Network Rail electrical sub-section(s).

6.7.8 **AFC signaller:**

- makes sure the HS1 electrical section(s) concerned are either clear of electric trains or any electric train that is to remain in the electrical section(s) concerned has its pantograph(s) lowered, **and**
- Confirms to the EMMIS controller that the block to electric trains is in place.

6.7.9 **EMMIS controller:**

- Carries out the switching instructions in order to isolate the HS1 electrical sub-section(s) concerned, **and**
- Confirms to the Romford ECO that the HS1 electrical sub-section(s) concerned is isolated.

#### 6.7.10 Romford ECO

- Confirms to the Nominated Person that the Network Rail and HS1 electrical sub-section(s) concerned are isolated.

#### 6.8 Re-energisation of both HS1 and Network Rail overhead line equipment (Ashford AFC is the Designated Control Centre)

##### 6.8.1 Nominated Person

- Cancels the isolation with the Romford ECO.

##### 6.8.2 Romford ECO:

- Carries out the switching instructions in order to re-energise the Network Rail electrical sub-section(s) concerned, **and**
- Advises the Signalling Shift Manager, Upminster IECC, that the block to electric trains for the Network Rail sub-electrical section(s) concerned can be removed, **and**
- Advises the EMMIS controller that the isolation of the Network Rail electrical sub-sections concerned is no longer required.

##### 6.8.3 Signalling Shift Manager:

- Consults the 'Block to electric train instructions' for the Network Rail electrical sub-section(s) concerned, **and**
- Arranges for the specified signalling protection for the Network Rail sub-electrical sub-section(s) concerned to be removed, **and**
- Advises the AFC signaller that the block to electric trains for Network Rail electrical sub-section IN-1B and/or IN-1A can be removed using the text specified in clause 5.4.2.

##### 6.8.4 AFC signaller

- Removes the specified signalling protection for Network Rail electrical sub-section **IN-1B** and/or **IN-1A**

##### 6.8.5 EMMIS controller:

- Carries out the switching instructions in order to re-energise the HS1 electrical sub-section(s) concerned, **and**
- Advises the AFC signaller that the block to electric trains for the HS1 electrical section(s) concerned can be removed.

## 7 Responsibilities

The following have been identified as having responsibilities within these procedures:

AFC signaller	Making sure electrical sub-sections are protected from train movements when requested.
EMMIS controller	Switching off the traction power supply to the HS1 electrical sub-section(s) when requested.
NLL signaller	Making sure electrical sub-sections are protected from train movements when requested.
Romford ECO	Switching off the traction power supply to the Network Rail electrical sub-section(s) when requested.
Signalling Shift Manager Upminster IECC	Arranging for electrical sub-sections to be protected from train movements when requested.

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Network Rail (High Speed) Ltd

Singlewell Infrastructure Maintenance Depot,

Enhurst Road,

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Kent DA12 3AN

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## 8 Review

These procedures will be reviewed every three years or in the event of an organisational change, infrastructure change or following any accident or incident in which it may have been a factor.



HS1 Level 2 Standard  
 Effective Date: 19 November 2013  
 Ref No: C-OP-OS-05-2018  
 CCMS2 No: 63221435  
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## 9 Appendix 1 – Form NC

<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">FORM NC</div>	<b>NETWORK RAIL / CTRL</b> <b>DECLARATION OF SWITCHED OFF OLE AT NEUTRAL SECTION FORMING</b> <b>BOUNDARY AT INTERFACE BETWEEN NETWORK RAIL AND CTRL</b>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Ref:</div>												
<b>Part 1 - Request</b> From : _____ at _____ To : _____ at _____ Switch off electrical sections _____ time _____ date _____														
<b>Part 2 - Declaration</b> From : _____ at _____ To : _____ at _____ The following overhead line equipment (OLE) has been switched off.														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 30%;">Electrical Section(s) or Subsection(s) Isolated</th> <th rowspan="2" style="width: 40%;">Line(s)</th> <th colspan="2" style="width: 30%;">Limits</th> </tr> <tr> <th style="width: 15%;">From</th> <th style="width: 15%;">To</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			Electrical Section(s) or Subsection(s) Isolated	Line(s)	Limits		From	To						
Electrical Section(s) or Subsection(s) Isolated	Line(s)	Limits												
		From	To											
Switches / Circuit Breakers														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Opened</th> <th style="width: 40%;">Not in Normal Position</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>			Opened	Not in Normal Position										
Opened	Not in Normal Position													
This declaration is to be cancelled by _____ hours _____ date Message No. _____ Sent by _____ Date _____ Received by _____														
<b>Part 3 - Issue (for Network Rail use only)</b> The OLE referred to in Part 1 has been combined with the OLE switched off following the block to electric trains referred to on my Form AE Part 1 Message No. _____ date _____ Within the combined, switched off OLE, the following Form "B" authorities have been issued:-														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="width: 50%;">Issued</th> <th colspan="2" style="width: 50%;">Cancelled</th> </tr> <tr> <th style="width: 25%;">Time</th> <th style="width: 25%;">Date</th> <th style="width: 25%;">Time</th> <th style="width: 25%;">Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			Issued		Cancelled		Time	Date	Time	Date				
Issued		Cancelled												
Time	Date	Time	Date											
<b>Part 4 - Cancellation</b> From : _____ at _____ To : _____ at _____ All Authorities issued from this Location within the limits of the switched off OLE shown in Part 1 have been cancelled. This Declaration is now cancelled. Message No. _____ Sent by _____ Date _____ Received by _____														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Form NC checked by (name)</th> <th style="width: 40%;">Signature</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>			Form NC checked by (name)	Signature										
Form NC checked by (name)	Signature													

## 10 Appendix 2 – Sub-Sections Signalling Arrangements

### 1706C & 1706D

Electrical Section	Line	Signal protecting block section	Remarks
<b>1706C</b>	Down International line and ECML connection	<u>ASHFORD AFC</u>  AF008 AF009 AF010 AF018 AF026 AF028 AF030 AF501	When this sub-section is isolated, sub-sections 1706A and 1706B are also isolated
<b>1706D</b>	Down International, Relief and Down CTRL lines, North London Line Connection and Silo Curve	<u>ASHFORD AFC</u>  AF005 AF006 AF007 AF008 AF009 AF010 AF011 AF012 AF013 AF015 AF024* AF039* AF046 AF048 AF501  <u>UPMINSTER (NLL)</u>  NL1112	When this sub-section is isolated, sub-section 1706E is also isolated  *Ashford AFC slots AF024 & AF039 not to be used for electric trains.  Ashford AFC signaller to request the Signalling Shift Manager, Upminster to block the North London Line Connection & Silo Curve to electric trains



**1706E & 1706F**

Electrical Section	Line	Signal protecting block section	Remarks
<b>1706E</b>	North London Line Connection and Silo curve	<u>ASHFORD AFC</u>  AF015 AF024* AF039* AF046 AF048  <u>UPMINSTER (NLL)</u>  NL1112	*Ashford AFC slots AF024 & AF039 not to be used for electric trains.  Ashford AFC signaller to request the Signalling Shift Manager, Upminster to block the North London Line Connection & Silo Curve to electric trains
<b>1706F</b>	Scissors crossover on ECML bridge	<u>ASHFORD AFC</u>  AF005 AF006 AF007 AF008 AF009 AF010 AF011 AF012 AF013 AF024* AF039* AF501 AF706 AF802  <u>UPMINSTER (NLL)</u>  NL1112	For this sub-section to be isolated, sub-sections 1705A, 1705B, 1706D and 1706G must be isolated.  *Ashford AFC slots AF024 & AF039 not to be used for electric trains.  Ashford AFC signaller to request the Signalling Shift Manager, Upminster to block the North London Line Connection & Silo Curve to electric trains.



HS1 Level 2 Standard

Effective Date: 19 November 2013

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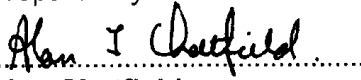
**1706 Complete**

Electrical Section	Line	Signal protecting block section	Remarks
<b>1706 Complete</b>	St. Pancras Station (Platforms 5, 6 and 7), Down International, Relief and Down CTRL lines, North London Line Connection and Silo curve	<u>ASHFORD AFC</u>  AF008 AF009 AF010 AF011 AF012 AF013 AF018 AF024* AF028 AF039* AF048 AF501 AF706 AF802  <u>UPMINSTER (NLL)</u>  NL1112	*Ashford AFC slots AF024 & AF039 not to be used for electric trains.  Ashford AFC signaller to request the Signalling Shift Manager, Upminster to block the North London Line Connection & Silo Curve to electric trains

	CTRL Level Two Standard
	C/OP/OS/05/2007
	Date: March 2005

## Procedures for taking possessions CTRL/Network Rail interfaces

Prepared by



**Alan Chatfield**

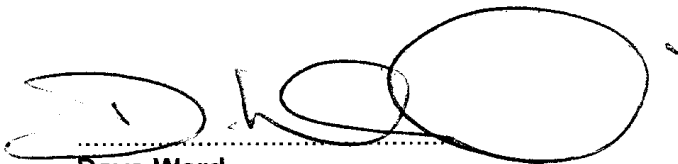
**Rules & Procedures Manager, Network Rail (CTRL) Ltd.**

Authorised By:



**Mark Hornshaw**

**Acting Operations Manager, Network Rail (CTRL) Ltd.**



**Dave Ward**

**Route Director, Kent, Network Rail**

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R-SA-NR-00039-08-UKO-AA

# PROCEDURES FOR TAKING POSSESSIONS CTRL/NETWORK RAIL INTERFACES

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Diagrams

**Note:** These procedures do not apply at the interfaces between Eurotunnel, CTRL and Network Rail at Cheriton.

## 1. Glossary

### GENERAL

CTRL	Channel Tunnel Rail Link high speed line between London (St. Pancras) and Cheriton and associated chords and connecting lines.
CTRL personnel	Personnel employed by Network Rail (CTRL) Ltd. and its maintenance contractor. They apply the rules and regulations published in the CTRL Rule Book (CTRL Standard C/02/OS/05/1000) and associated standards and procedures.
Network Rail	“Classic” railway system that excludes the Channel Tunnel Rail Link high speed line and associated chords and connecting lines.
Network Rail personnel	Personnel employed by Network Rail Infrastructure Ltd., either by the territory or the route. They apply the rules and regulations published in the Railway Safety Rule Book (Railway group Standard GE/RT8000) and associated standards and procedures.
Overhead Line Equipment (OHLE)	The equipment suspended over the railway line for supplying electricity to electric trains, and includes the overhead wires, indicators and any associated equipment.
Safety Critical Message	A formal message between the AFC Signaller and the VASC/IECC Signaller used in connection with arranging signalling protection for possessions.

### CTRL

AFC Signaller	Person responsible for monitoring and controlling the signalling system for the CTRL controlled system.
Ashford Control Centre (AFC)	CTRL control centre at Ashford.
Engineering Zone of Protection (EZP)	CTRL track is divided into defined Engineering Zones of Protection (EZPs) protected by the AFC’s signalling system. The limits of each Zone is indicated by “EZP” signs placed in the four foot.
Nominated Person On Site (NPOS)	Qualified person responsible for local switching, testing, earthing, and issuing of Overhead Line Permits for the OHLE in accordance with Module AC2 of the CTRL Rule Book (C/02/OS/05/1012).
Protected Area	A portion of CTRL track, protected by the signalling system for one or more EZPs, within which Worksite(s) can be created for engineering work or staff protection.
Responsible Person on Site (RPOS)	CTRL member of staff responsible for arranging protection by setting up a Protected Area.
Task Supervisor (TS)	CTRL member of staff responsible for setting up a worksite and the control of works train/OTM/OTP movements within that worksite.
Works train	A train used in the transport of staff, equipment and materials in connection with carrying out engineering works. The term also includes On-Track Machines.

### NETWORK RAIL

Ashford Signalling Centre (IECC)	Network Rail signalling control centre at Ashford that interfaces with the CTRL system at Ashford (West & East chords) and the Dollands Moor Freight chord.
Engineering Supervisor (ES)	Network Rail member of staff responsible for setting up a worksite and the control of works train/OTM/OTP movements within that worksite.

IECC Signaller	Person responsible for monitoring and controlling the signalling system for the Ashford Signalling Centre (IECC) control area.
Person in charge of Possession (PICOP)	Network Rail member of staff responsible for arranging protection by setting up a possession.
Possession	A portion of Network Rail track that is protected by the signalling system and detonator protection, within which Worksite(s) can be created for engineering work or staff protection.
VASC Signaller	Person responsible for monitoring and controlling the signalling system for the Victoria Area Signalling Centre (VASC) control area.
Victoria Area Signalling Centre (VASC)	Network Rail signalling control centre at Clapham Jn. that interfaces with the CTRL system at Fawkham Jn. "Waterloo connection".

## 2. Scope of these procedures

These procedures apply to the taking of Protected Areas by CTRL personnel and possessions by Network Rail personnel to carry out maintenance work at the following interfaces between CTRL and Network Rail:

- Waterloo connection (CTRL side of 911 and 912 points at Fawkham Jn.)
- Ashford West and East chords (CTRL side of 1247 and 1249 points at Ashford West Jn. and 1298 and 1299 points at Ashford East Jn.)\*
- Dollands Moor Freight chord (CTRL side of 1350 points at Dollands Moor Yard)

\* Also includes the procedure required when the CTRL maintenance contractors have to undertake maintenance work which requires the Network Rail controlled lines on the Ashford station side of these locations to be under possession (see point 7).

## 3. Principles

### 3.1 General

CTRL or Network Rail personnel (including maintenance contractors) to apply the rules and procedures of the organisation that they are working for.

CTRL or Network Rail personnel to request Protected Areas/possessions from the control centre defined in the rules and procedures of the organisation that they are working for.

CTRL Protected Areas and Network Rail possessions must not overlap.

### 3.2 Safety Critical Messages

Safety Critical Messages must be used for communications between Signallers when arranging the signal protection arrangements for Protected Areas/possessions.

A Safety Critical Message must be read back by the recipient to the sender to ensure it is correct and both sender and recipient must record the details of message in their respective log books. The originator of the Safety Critical Message must issue a message number in accordance with local instructions when he/she is sure that the recipient has understood the message to validate it.

Safety Critical Messages to be in the format shown in the following examples:

#### AFC Signaller to VASC Signaller

“Block the Down Waterloo connection at VS269 signal because of a CTRL possession.  
My message no. 123456”

#### VASC Signaller to AFC Signaller

“Reference your message no. 123456, Down Waterloo connection blocked at VS269 signal for a CTRL possession.

#### AFC Signaller to VASC Signaller

“Reference my message no. 123456, the block of the Down Waterloo connection at VS269 signal for a CTRL possession may be removed.

### 3.3 Principles applicable to CTRL Protected Areas

#### Notes:

Examples of the application of principles are shown in the diagrams at the end of these procedures.

When the term “detonator protection” is used in these procedures, the RPOS must arrange for:

- three detonators to be put on the line concerned, 20 metres apart on the cess side railhead.
- a Possession Limit Board (PLB) to be attached to the cess side railhead next to the middle detonator. PLBs must be red with the word STOP on both sides with a steady or flashing red light that can be seen along the line in both directions.

The CTRL EZPs that are next to the VASC/IECC signal controlled area and their protecting markers and signals are:

Line	EZP	Protecting signal at Network Rail end	Protecting marker at CTRL end
Down Waterloo connection	YD09	VASC signal VS269	
Up Waterloo connection	YU04		AFC marker AF206
Down Ashford West chord	FD13	IECC signals AD672/AD674/AD676/AD678	AFC marker AF301
Up Ashford West chord	FU14	IECC signals AD672/AD674/AD676/AD678	AFC marker AF303
Down Ashford East chord	FD19	IECC signals AD665/AD667/AD669/AD671	AFC marker AF328
Up Ashford East chord	FU18	IECC signals AD665/AD667/AD669/AD671	AFC marker AF326
Dollands Moor Freight chord	WU30	IECC signals AD808/AD814/AD816/AD818	AFC markers AF335/AF337

If the CTRL Protected Area requires one or more of these EZPs to be operated, Module T3 of the CTRL Rule Book to apply with the application of the following additional principles:

Protected Area requests must be made using the Forms Process (specific interface Form POSSI).

CTRL personal must not work on the Network Rail side of these EZPs without the EZP concerned first being operated.

Detonator protection must be put down on the Network Rail side of the worksite. The locations where this detonator protection is to be put down is indicated on the track.

Before detonator protection is put down, the AFC Signaller to arrange signalling protection with the VASC/IECC signaller and the lineside switch operated.

**The following principle applies when there are works trains/OTM/OTP operating in the worksite**

If the worksite extends beyond the Network Rail side of the following locations, a Portable Stop Board must be placed at that location:

Down Waterloo connection	VS292
Up Waterloo connection	opposite VS292
Down Ashford West chord	AD947
Up Ashford West chord	AD949
Down Ashford East chord	AD954
Up Ashford East chord	AD956
Dollands Moor Freight chord	AD759

If a works train/OTM/OTP requires to move to the Network Rail side of the Portable Stop Board, the VASC/IECC Signaller must first put in place additional signalling protection arrangements on the Network Rail side of the detonator protection to ensure that a sufficient distance (overlap) is kept clear of train movements. This additional signalling protection can be removed once it is confirmed that the works train/OTM/OTP has stopped and no further movement towards the detonator protection will take place.

**3.4 Principles applicable to Network Rail possessions**

When Network Rail personnel require to work in the interface areas, the Railway Safety Rule Book (Railway Group Standard GE/RT8000) to apply with the additional requirements shown in these procedures.



The detonator protection for a CTRL Protected Area and the detonator protection for a Network Rail possession must not overlap. If a CTRL Protected Area is adjacent to a Network Rail possession, each must have its own detonator protection put “back-to-back”.

Work being carried out under the protection arrangements shown in the Railway Safety Rule Book, Module T2 must be wholly contained within the VASC/IECC signalled control area, with the following additional requirement:

**Waterloo connection** - If work is to take place within 200 metres in advance of VS296 signal, the VASC Signaller must request the AFC Signaller to apply protection. The AFC Signaller will advise the VASC Signaller when protection has been applied.

**Ashford chords** - If work is to take place within 200 metres in advance of AD947, AD949, AD954 or AD956 signals, the IECC Signaller must request the AFC Signaller to apply protection. The AFC Signaller will advise the IECC Signaller when protection has been applied.

**Dollands Moor Freight chord**- If work is to take place within 200 metres in advance of AD759 signal, the IECC Signaller must request the AFC Signaller to apply protection. The AFC Signaller will advise the IECC Signaller when protection has been applied.

#### 4. Planning and publication

CTRL and Network Rail must advise each other of Protected Areas/possessions that are planned for the interface areas. If a CTRL Protected Area and Network Rail possession are adjacent, the location where each organisation’s detonator protection is to be put down is to be identified.

There is no requirement for the details of CTRL Protected Areas to be published in the Network Rail Weekly Operating Notice (WON).

There is no requirement for the details of Network Rail possessions to be published in the CTRL Daily Notice.

#### 5. Method of working for taking Protected Areas/possessions

##### 5.1 CTRL Protected Area

5.1.1 RPOS requests the Protected Area from AFC Signaller using the Forms Process. *(Form POSSI)*

5.1.2 AFC Signaller requests VASC/IECC Signaller to block the line for a CTRL possession. *(Safety Critical Message)*

5.1.3 VASC/IECC Signaller

- places/maintains the protecting signal(s) at danger and applies reminder appliances.
- confirms to AFC Signaller that the line is blocked for a CTRL possession *(Safety Critical Message)*

5.1.4 AFC Signaller

- applies the EZP(s) protection.
- tells RPOS that it is safe to place detonator protection. *(Form POSSI)*

5.1.5 RPOS

- arranges for the ERS switch(es) to be operated.
- puts down detonator protection at the defined location.
- tells AFC Signaller that the detonator protection has been put down.

5.1.6 AFC Signaller grants the Protected Area request to RPOS. *(Form POSSI)*

5.1.7 RPOS gives authority for TS to create the worksite *(Form WORK)*

##### 5.2 Works trains/OTM/OTP working within a CTRL Protected Area

##### 5.2.1 If the worksite does NOT extend to the Network Rail side of the location shown in point 3.3

5.2.1.1 No additional requirements – TS to create worksite in accordance with the instructions shown in Module T3 of the CTRL Rule Book.

**5.2.2 If the worksite does extend to the Network Rail side of the location shown in point 3.3**

5.2.2.1 TS creates worksite in accordance with the instructions shown in Module T3 of the CTRL Rule Book and arrange for a Portable Stop Board to be placed at that location.

**5.2.3 Works trains/OTM/OTP requires to move to the Network Rail side of the Portable Stop Board**

5.2.3.1 Driver of works train/OTM/OTP stops at Portable Stop Board.

5.2.3.2 TS requests permission from AFC Signaller for works train/OTM/OTP to move to the Network Rail side of the Portable Stop Board.

5.2.3.3 AFC Signaller requests permission from VASC/IECC Signaller for works train/OTM/OTP to move to the Network Rail side of the Portable Stop Board.

5.2.3.4 VASC/IECC Signaller

- puts in place additional signalling protection arrangements on the Network Rail side of the detonator protection to ensure that a sufficient distance (overlap) is kept clear of train movements.
- tells AFC Signaller that the works train/OTM/OTP can move to the Network Rail side of the Portable Stop Board.

5.2.3.5 AFC Signaller tells TS that the works train/OTM/OTP can move to the Network Rail side of the Portable Stop Board.

5.2.3.6 TS

- removes Portable Stop Board
- tells driver of works train/OTM or OTP operator to proceed.
- tells AFC Signaller when the works train/OTM/OTP has stopped and will make no further movement towards the detonator protection,.

5.2.3.7 AFC Signaller tells VASC/IECC Signaller when the works train/OTM/OTP has stopped and will make no further movement towards the detonator protection.

5.2.3.8 VASC/IECC Signaller removes additional signalling protection arrangements.

5.2.3.9 TS replaces Portable Stop Board when works train/OTM/OTP has moved to the CTRL side of its location.

**5.3 Movements of works trains/OTM from/to the Network Rail signalled controlled area**

**5.3.1 Movements into the Protected Area**

5.3.1.1 When the works train/OTM arrives at the VASC/IECC protecting signal, VASC/IECC Signaller requests permission of AFC Signaller for the train to proceed.

5.3.1.2 AFC Signaller

- gets permission from RPOS for the works train/OTM to proceed
- tells VASC/IECC Signaller that permission is given.

5.3.1.3 VASC/IECC Signaller

- sets the route
- authorises driver of works train//OTM to pass the protecting signal at danger
- tells him/her to proceed cautiously to the detonator protection.

5.3.1.4 RPOS

- arranges to meet the works train/OTM at the detonator protection
- removes the detonator protection
- instructs driver of works train//OTM to proceed cautiously to the Worksite Marker Board
- when the works train/OTM has gone past, replaces the detonator protection
- tells AFC Signaller that the works train/OTM has entered the Protected Area.

5.3.1.7 AFC Signaller tells VASC/IECC Signaller that the works train/OTM has passed clear of the detonator protection

### 5.3.2 Movements from the Protected Area

- 5.3.2.1 When a works train/OTM is ready to leave the Protected Area, the driver must stop it at the detonator protection
- 5.3.2.2 RPOS
- tells AFC Signaller that the works train/OTM is ready to leave
  - requests permission for the detonator protection to be removed.
- 5.3.2.3 AFC Signaller requests permission from VASC/IECC Signaller for the works train/OTM to leave the possession.
- 5.3.2.4 When VASC/IECC Signaller gives permission, AFC Signaller tells RPOS to authorise the works train/OTM to proceed cautiously to the first VASC/IECC controlled lineside signal.
- 5.3.2.5 RPOS
- removes the detonator protection
  - tells driver of works train/OTM to proceed cautiously to the first Network Rail controlled lineside signal.
  - when the works train/OTM has left the Protected Area, replaces the detonator protection.

### 5.4 Network Rail possession

- 5.4.1 PICOP confirms with VASC/IECC signaller which signals will be used to protect the Network Rail possession.
- 5.4.2 VASC/IECC Signaller
- applies signal protection.
  - asks AFC Signaller to provide protection for a Network Rail possession  
*(Safety Critical Message)*
- 5.4.3 AFC Signaller
- applies the appropriate EZP(s) as shown in point 3.3
  - tells VASC/IECC Signaller that protection is provided. *(Safety Critical Message)*
- 5.4.4 VASC/IECC signaller tells PICOP that the Network Rail possession is protected by signals.
- 5.4.4 PICOP
- arranges for detonator protection to be put down at the limits of the Network Rail possession
  - tells VASC/IECC signaller that detonator protection has been put down.
- 5.4.9 VASC/IECC signaller grants the Network Rail possession to the PICOP.

## 6. Method of working for giving up Protected Areas/possessions

### 6.1 CTRL Protected Area

- 6.1.1 TS gives up worksite. *(Form WORK)*
- 6.1.2 RPOS
- removes detonator protection
  - arranges for the ERS switch(es) to be operated
  - gives up the Protected Area to AFC Signaller. *(Form POSSI)*
- 6.1.3 AFC Signaller
- removes the EZP(s) protection
  - tells VASC/IECC Signaller that the block for the CTRL possession can be removed. *(Safety Critical Message)*
- 6.1.4 VASC/IECC Signaller removes the signal protection.

### 6.2 Network Rail possession

- 6.2.1 PICOP gives up the possession to VASC/IECC Signaller
- 6.2.2 VASC/IECC Signaller tells AFC Signaller that the protection for a Network Rail possession can be removed. *(Safety Critical Message)*
- 6.2.3 AFC Signaller removes the EZP(s) protection.

6.2.4 VASC/IECC Signaller removes the signal protection.

## 7. Specific procedure for taking a joint CTRL Protected Area /Network Rail possession of an Ashford chord and the station area

**Note:** This point applies when CTRL personnel have to undertake maintenance work to the Network Rail OHLE on the Ashford station side of 1298 and 1299 points at Ashford East Jn. and 1247 and 1249 points at Ashford West Jn. using OTP (road/rail vehicles) that are on-tracked on CTRL infrastructure

### 7.1 Principles

Separate CTRL Protected Area/Network Rail possession and worksites to be planned, with the following common limits where they meet:

<b>West chord</b>	
Down line	Signal AD947
Up line	Signal AD949
<b>East chord</b>	
Down line	Signal AD954
Up line	Signal AD956

Refer to the diagrams at the end of these procedures

The Protected Area/possession must be published in the Network Rail Weekly Operation Notice and the CTRL Daily Notice, specifying that they form a joint CTRL/Network Rail Protected Area/possession and identifying the location where they meet as one of the limits for each Protected Area/possession.

The CTRL Protected Area and worksite to be arranged in accordance with Module T3 of the CTRL Rule Book with the application of the following additional principles:.

The Network Rail possession and worksite to be arranged in accordance with Module T3 of the Railway Safety Rule Book (Railway Group Standard GE/RT8000) with the additional requirements shown in these procedure.

The PICOP must have received confirmation from the RPOS that the CTRL Protected Area is place before arranging the Network Rail possession.

The PICOP must arrange for the D.C. conductor rail in the Network Rail worksite to be isolated in accordance with the instructions contained in the Railway Safety publication D.C. Electrified Lines Instructions (GO/RT3091).

If an isolation of the OHLE is required, this must cover the limits of both the Network Rail and CTRL worksites. A CTRL NPOS to be appointed to arrange the isolation in accordance with Module AC2 of the CTRL Rule Book as amended in the CTRL Standard “Isolation of the OHLE Procedures – CTRL/Network Rail Interfaces (C/OP/OS/05/2006).

Detonator protection not to be provided at the meeting point of the CTRL Protected Area/Network Rail possession.

Worksite marker boards not to be provided at the meeting point of the worksites, but must be provided at the other extremities of the worksites.

A Demarcation Board (see next page) to be positioned at the meeting point of the CTRL Protected Area/Network Rail possession and worksites.

Both the CTRL Protected Area/worksite and the Network Rail possession/worksite must be in place before the OTP is on-tracked within the CTRL worksite.

The ES is responsible for OTP movements into and within the worksite in the Network Rail possession.

The TS is responsible for OTP movements into and within the worksite in the CTRL possession.

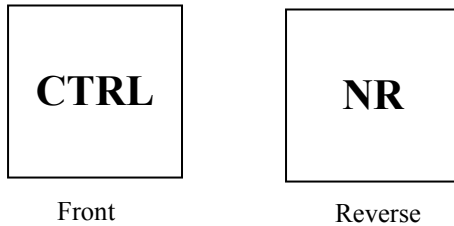
The OTP operator must not pass the Demarcation Board without the authority of the Supervisor responsible for the worksite that the OTP is about to enter.

CTRL personnel must not pass the Demarcation Board without the authority of the ES responsible for the worksite in the Network Rail possession. Similarly Network Rail personnel must not pass the Demarcation Board without the authority of the TS responsible for the worksite in the CTRL Protected Area. This equally applies to personnel who pass between worksites indirectly via road and to personnel who pass directly along the track.

The RPOS must have received confirmation from the PICOP that the Network Rail possession has been given up before giving up the CTRL Protected Area.

## 7.2 Demarcation Board

A white board, with black letters CTRL on one side and black letters NR on the reverse.



This board is to be positioned at the meeting point of the CTRL Protected Area/Network Rail possession and worksites, with ‘CTRL’ facing the Network Rail possession and ‘NR’ facing the CTRL Protected Area. Any personnel or OTP authorised by the ES/TS to pass this board must apply the rules and regulations of the organisation whose worksite they are entering and indicated by the Demarcation Board.

## 7.3 Publishing the joint CTRL Protected Area/Network Rail possession

### 7.3.1 CTRL end

The CTRL Planning organisation publishes

- the CTRL Protected Area in the Daily Notice with the limits on the chord lines being signals AD947/AD949/AD954/AD956, as appropriate. A note to be included that it is in conjunction with a Network Rail possession.
- details of any associated AC isolation by individual electrical section numbers. **Note:** If the whole OHLE through Ashford stations and the chord lines (sections 715 + 716) is to be isolated, a statement to be included to this effect.

### 7.3.2 Network Rail end

The Network Rail Planning organisation publishes

- the Network Rail possession and associated DC isolation in the Weekly Operating Notice with the limits on the chord lines being signals AD947/AD949/AD954/AD956, as appropriate. To include a note that it is in conjunction with a CTRL Protected Area.
- details of any associated AC isolation by individual electrical section numbers. **Note:** If the whole the OHLE through Ashford stations and the chord lines (sections 715 + 716) is to be isolated, a statement to be included to this effect.

## 7.4 Method of working

### 7.4.1 Arranging the joint CTRL Protected Area/Network Rail possession and worksites

#### 7.4.1.1 CTRL end

##### 7.4.1.1.1 RPOS

- makes contact with PICOP
- confirms the arrangements for the joint CTRL Protected Area/Network Rail possession and that everything is in place for it to go ahead.
- tells AFC Signaller that a joint CTRL Protected Area/Network Rail possession is required of the line(s) concerned on the Ashford west and/or east chords
- requests the CTRL Protected Area using the Forms Process *(Form POSS)*

##### 7.4.1.1.2 AFC Signaller

- tells IECC Signaller that a joint CTRL /Network Rail possession is required of the line(s) concerned on the Ashford west and/or east chords
- requests IECC Signaller to block the line for the CTRL possession *(Safety Critical Message)*

##### 7.4.1.1.3 IECC Signaller

- places/maintains the protecting signal(s) at danger and applies reminder appliances
- confirms to AFC Signaller that the line is blocked for a CTRL possession *(Safety Critical Message)*

##### 7.4.1.1.4 AFC signaller

- applies the EZP(s) protection
- grants the Protected Area request to RPOS. *(Form POSS)*

##### 7.4.1.1.5 RPOS

- arranges for the EZP switch(es) to be operated
- tells PICOP that the CTRL Protected Area is in place
- receives confirmation from PICOP that the Network Rail possession is in place
- gives authority for TS to create the worksite and instructs him/her to place a Demarcation Board at the limit of the worksite at the Network Rail end. *(Form WORK)*

##### 7.4.1.1.6 TS

- creates worksite
- places a Demarcation Board at the meeting point with the Network Rail possession. (Worksite marker board not required this end.)
- tells ES that the Demarcation Board is in place
- receive confirmation from ES that the Network Rail worksite is in place
- confirms the arrangements for passing the OTP between worksites
- authorises the on-tracking of the OTP within the CTRL worksite.

#### 7.4.1.2 Network Rail end

##### 7.4.1.2.1 PICOP

- makes contact with RPOS
- confirms the arrangements for the joint CTRL Protected Area/Network Rail possession and that everything is in place for it to go ahead
- receives confirmation from PICOP that the CTRL Protected Area is in place
- tells IECC Signaller that a joint CTRL Protected Area/Network Rail possession is required of the line(s) concerned and that the CTRL Protected Area is in place
- confirms with the VASC/IECC signaller which signals will be used to protect the Network Rail possession and in which position points are required to be set for the movement of the OTP.

##### 7.4.1.2.2 IECC Signaller

- applies signal protection
- tells PICOP that the Network Rail possession is protected by signals.

##### 7.4.1.2.3 PICOP

- arranges for detonator protection to be put down at the limits of the Network Rail possession, but **not** at the meeting point with the CTRL possession.
- tells IECC signaller that detonator protection has been put down.

7.4.1.2.4 IECC signaller grants the Network Rail possession to the PICOP.

7.4.1.2.5 PICOP

- tells RPOS that the Network Rail possession is in place
- tells ES to erect worksite marker boards
- arranges for the isolation of the D.C. conductor rail.

7.4.1.2.6 ES

- erects worksite marker boards (not at the meeting point with the CTRL Protected Area).
- receives confirmation from TS that the Demarcation Board is in place
- tells TS that the Network Rail worksite is in place
- confirms the arrangements for passing any works trains/OTM/OTP between worksites.

#### **7.4.2 Movement of the OTP between worksites**

7.4.2.1 When the OTP is required to move from the CTRL worksite to the Network Rail worksite or vice-versa, the TS and ES must meet at the Demarcation Board at the meeting point of the CTRL and Network Rail worksites.

7.4.2.2 Supervisor (responsible for the worksite that the OTP is leaving)

- gives details of the works train/OTM/OTP
- gives details of its required movements
- requests permission of Supervisor (responsible for the worksite that the OTP requires to enter) for the OTP to enter.

7.4.2.3 When safe to do so, Supervisor (responsible for the worksite that the OTP requires to enter)

- removes the Demarcation Board
- authorises OTP operator to enter the worksite, giving any necessary instructions.

7.4.2.4 OTP operator proceeds cautiously into the other worksite.

7.4.2.5 When the OTP has entered the worksite Supervisor (responsible for the worksite that the OTP requires to enter) replaces the Demarcation Board.

#### **7.4.3 Removing the worksites and giving up the joint CTRL Protected Area/Network Rail possession**

##### **7.4.3.1 CTRL end**

After all works has finished and OTP removed, etc:

7.4.3.1.1 TS

- removes worksite marker boards and Demarcation Board
- tells RPOS that the worksite has been given up *(Form WORK)*

7.4.3.1.2 RPOS

- tells PICOP that the Network Rail possession can be given up.
- receive confirmation from PICOP that the Network Rail possession has been given up
- arrange for the EZP switch(es) concerned to be operated to the 'Normal' position.
- tell AFC Signaller that the Protected Area has been given up. *(Form POSS)*

7.4.3.1.3 AFC Signaller

- receive confirmation from IECC Signaller that the Network Rail possession has been given up
- removes the EZP(s) protection
- tells IECC Signaller that the block for the CTRL possession can be removed. *(Safety Critical Message)*

##### **7.4.3.2 Network Rail end**

After all works has finished and the OTP have returned to the CTRL worksite, etc:

7.4.3.2.1 ES tells PICOP that all work has finished and request permission to remove worksite marker boards

7.4.3.2.2 PICOP

- receive confirmation from RPOS that the Network Rail possession can be given up
- tells ES to remove worksite marker boards.

7.4.3.2.3ES.

- removes worksite marker boards
- tells PICOP that the worksite marker boards have been removed and that the line is clear and safe for trains to pass.

7.4.3.2.4PICOP

- gives up the possession to IECC Signaller
- confirm to RPOS that the Network Rail possession has been given up.

7.4.3.2.5IECC signaller

- tells AFC Signaller that the Network Rail possession has been given up
- receives advice from AFC Signaller that the block for the CTRL possession can be removed *(Safety Critical Message)*
- removes the signal protection.

**8. Specific procedure for on/off-tracking OTP (road/rail vehicles) at Dollands Moor Freight chord level crossing**

**Note:** This point applies when CTRL personnel require to on/off-track OTP (road/rail vehicles) at Dollands Moor Freight chord level crossing, which is located between AD759 signal and 1350 points at Dollands Moor Yard.

**8.1 Principles**

The AHB Level Crossing to be put on local control during the time that the CTRL Protected Area is in place. The operator may only be in attendance during the times the OTP is being on/off tracked or any movement is required to be made over it.

All the time that the OTP is Dollands Moor Yard side of signal AD759, the IECC Signaller must first put in place additional signalling protection arrangements on the Network Rail side of the detonator protection to ensure that a sufficient distance (overlap) is kept clear of train movements. This includes when it is being on/off tracked.

**8.2 Procedure to on-track OTP**

- 8.2.1 RPOS requests the Protected Area from AFC Signaller using the Forms Process. *(Form POSSI)*
- 8.2.2 AFC Signaller requests IECC Signaller to block the line for a CTRL possession and that additional signalling protection arrangements are put in place to allow OTP to be on-tracked at the level crossing. *(Safety Critical Message)*
- 8.2.3 IECC Signaller
- places/maintains the protecting signal(s) at danger and applies reminder appliances.
  - puts in place additional signalling protection arrangements on the Network Rail side of the detonator protection to ensure that a sufficient distance (overlap) is kept clear of train movements.
  - confirms to AFC Signaller that the line is blocked for a CTRL possession *(Safety Critical Message)*
- 8.2.4 AFC Signaller
- applies the EZP(s) protection.
  - tells RPOS that it is safe to place detonator protection. *(Form POSSI)*
- 8.2.5 RPOS
- arranges for the ERS switch(es) to be operated.
  - puts down detonator protection at the defined location.
  - tells AFC Signaller that the detonator protection has been put down.
- 8.2.6 AFC Signaller grants the Protected Area request to RPOS. *(Form POSSI)*
- 8.2.7 RPOS gives authority for TS to create the worksite *(Form WORK)*

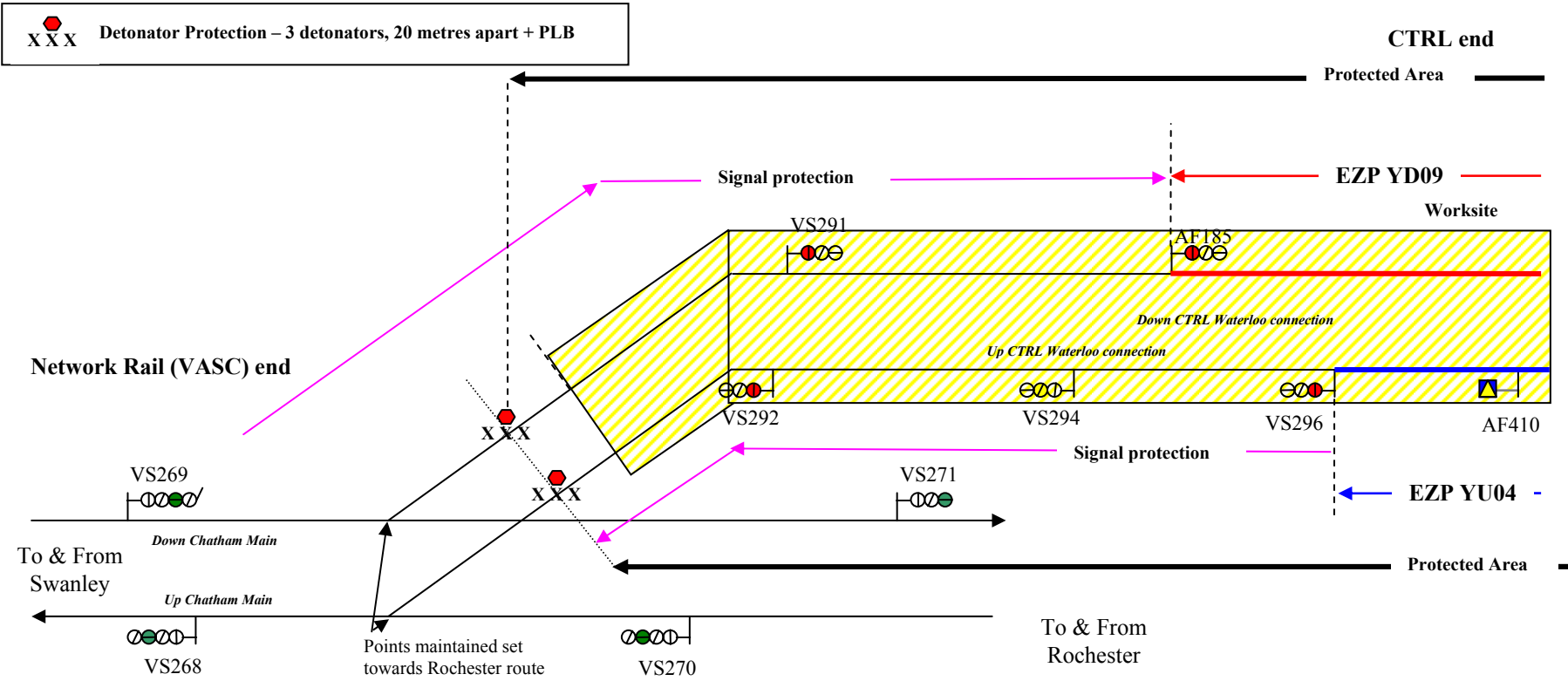


- 8.2.8 TS
- creates worksite, placing the worksite marker board at the Dollands Moor Yard end between the level crossing and the detonator protection
  - authorises the on-tracking of the OTP within the worksite.
- 8.2.9 OTP moves to the CTRL side of signal AD759.
- 8.2.10 TS
- arranges for a Portable Stop Board to be placed at signal AD759
  - tells AFC Signaller that the OTP is the CTRL side of signal AD759.
- 8.2.11 AFC tells IECC Signaller that the OTP is the CTRL side of signal AD759.
- 8.2.12 IECC Signaller removes additional signalling protection arrangements.
- 8.3 Procedure to off-track OTP**
- 8.3.1 OTP operator stops at Portable Stop Board at signal AD759
- 8.3.2 TS requests permission from AFC Signaller for the OTP to move to the Network Rail side of the Portable Stop Board.
- 8.3.3 AFC Signaller requests permission from IECC Signaller for the OTP to move to the Network Rail side of the Portable Stop Board.
- 8.3.4 IECC Signaller
- puts in place additional signalling protection arrangements on the Network Rail side of the detonator protection to ensure that a sufficient distance (overlap) is kept clear of train movements.
  - tells AFC Signaller that the OTP can move to the Network Rail side of the Portable Stop Board.
- 8.3.5 AFC Signaller tells TS that the OTP can move to the Network Rail side of the Portable Stop Board.
- 8.3.6 TS
- removes Portable Stop Board
  - tells OTP operator to proceed.
  - authorises off-tracking of OTP
  - tells AFC Signaller when the OTP is off-tracked.
- 8.3.7 AFC Signaller tells IECC Signaller is off-tracked and will make no further movement towards the detonator protection.
- 8.3.8 IECC Signaller removes additional signalling protection arrangements.
- 8.3.9 TS removes worksite
- 8.3.10 RPOS
- removes detonator protection
  - arranges for the ERS switch(es) to be operated
  - gives up the Protected Area to AFC Signaller. *(Form POSSI)*
- 8.3.11 AFC Signaller
- removes the EZP(s) protection
  - tells IECC Signaller that the block for the CTRL possession can be removed. *(Safety Critical Message)*
- 8.3.12 IECC Signaller removes the signal protection.

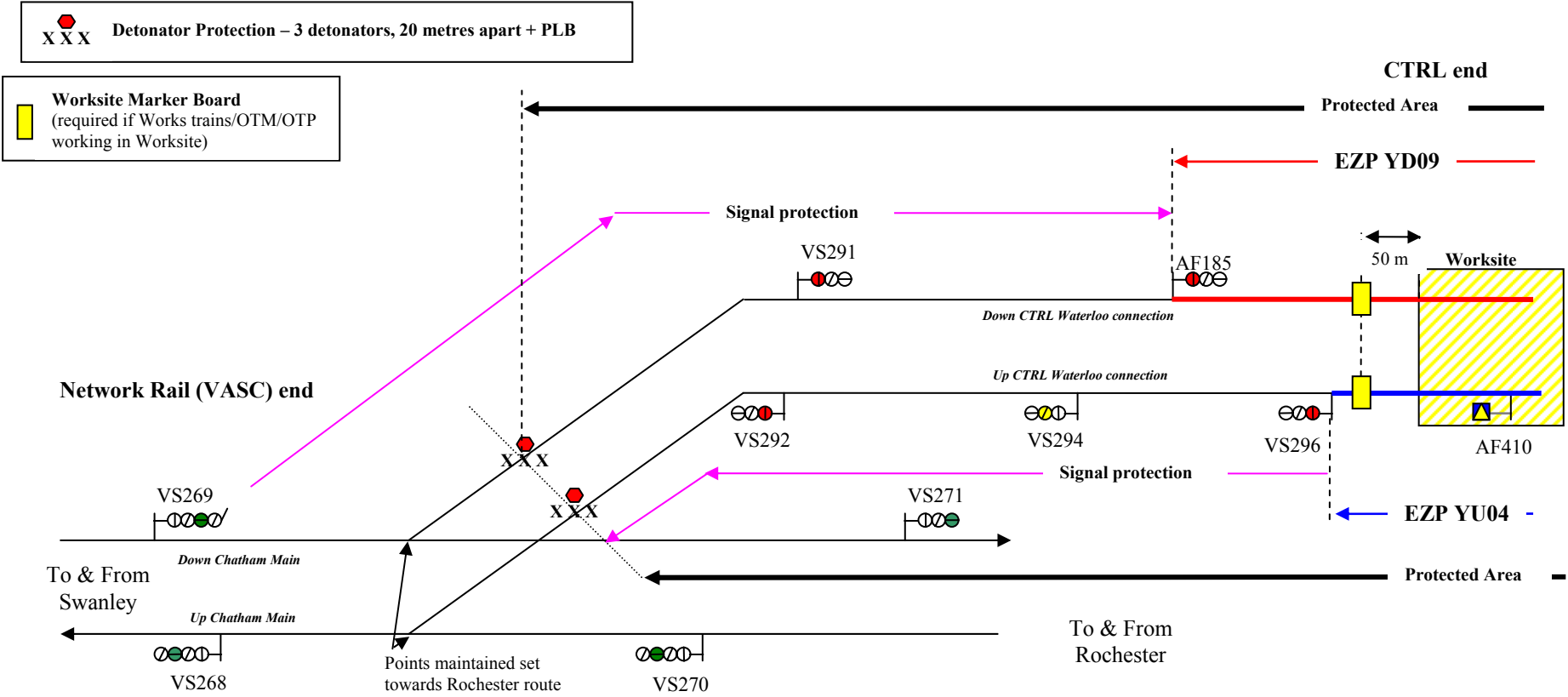
**Diagram WC1 Waterloo connection - Example of Protected Area**  
**Worksite extends to the Fawkham Jn side of VS292 signal.**

*(Down and Up Chatham Main Lines - Trains passing normally between Swanley and Rochester)*

**NO** Works trains/OTM/OTP allowed in Worksite



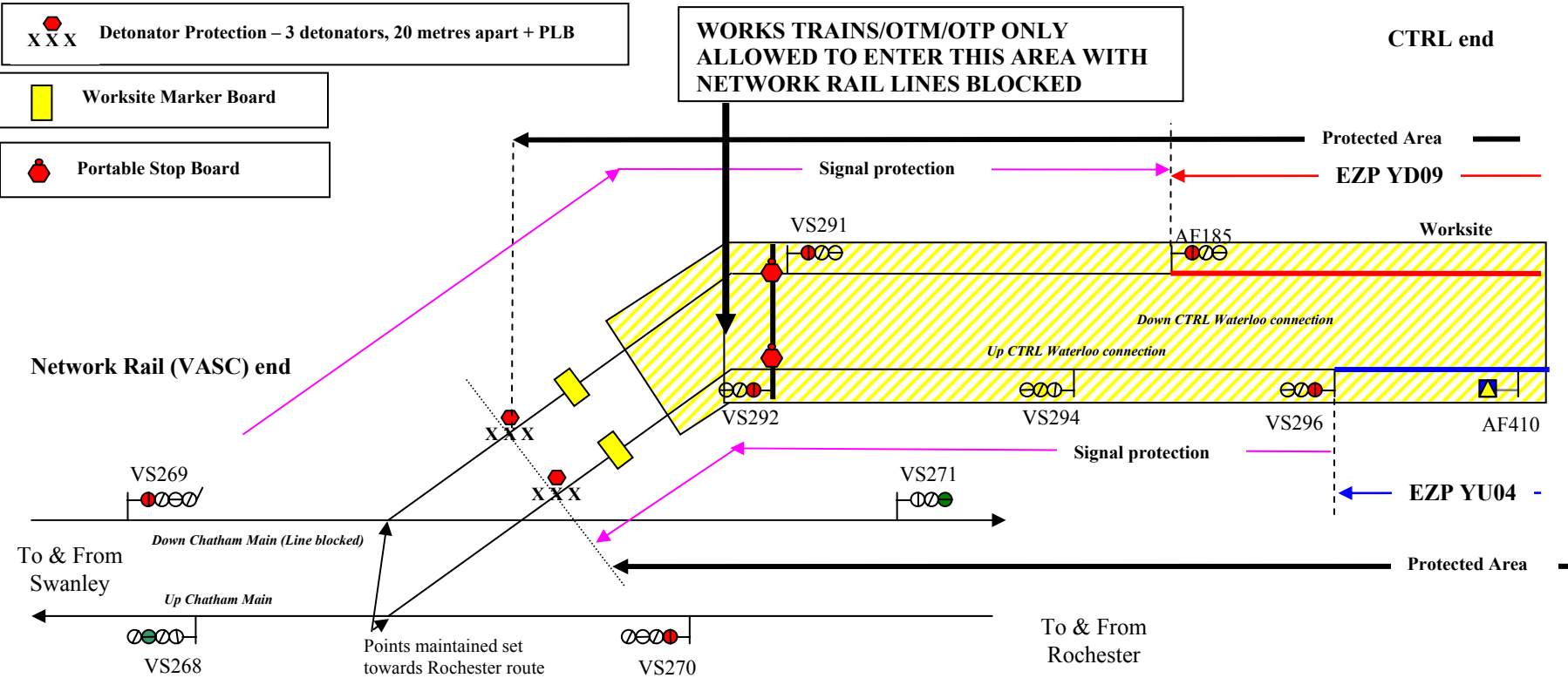
**Diagram WC2 Waterloo connection - Example of Protected Area**  
**Worksite wholly CTRL side of VS292 signal**  
*(Down and Up Chatham Main Lines - Trains passing normally between Swanley and Rochester)*  
 Works trains/OTM/OTP can operate within Worksite



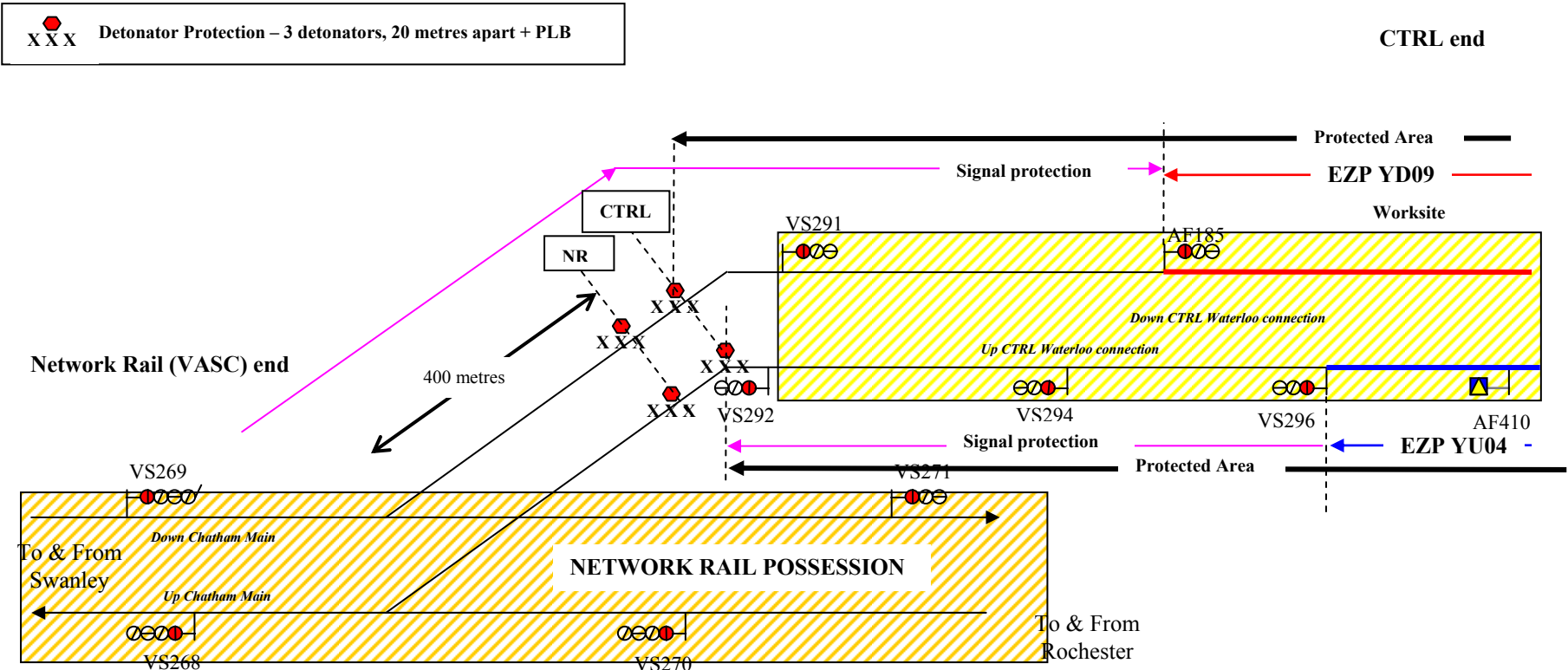
**Diagram WC3 Waterloo connection - Example of Protected Area**  
**Worksite extends to the Fawkham Jn side of VS292 signal.**

Down and Up Chatham Main Lines

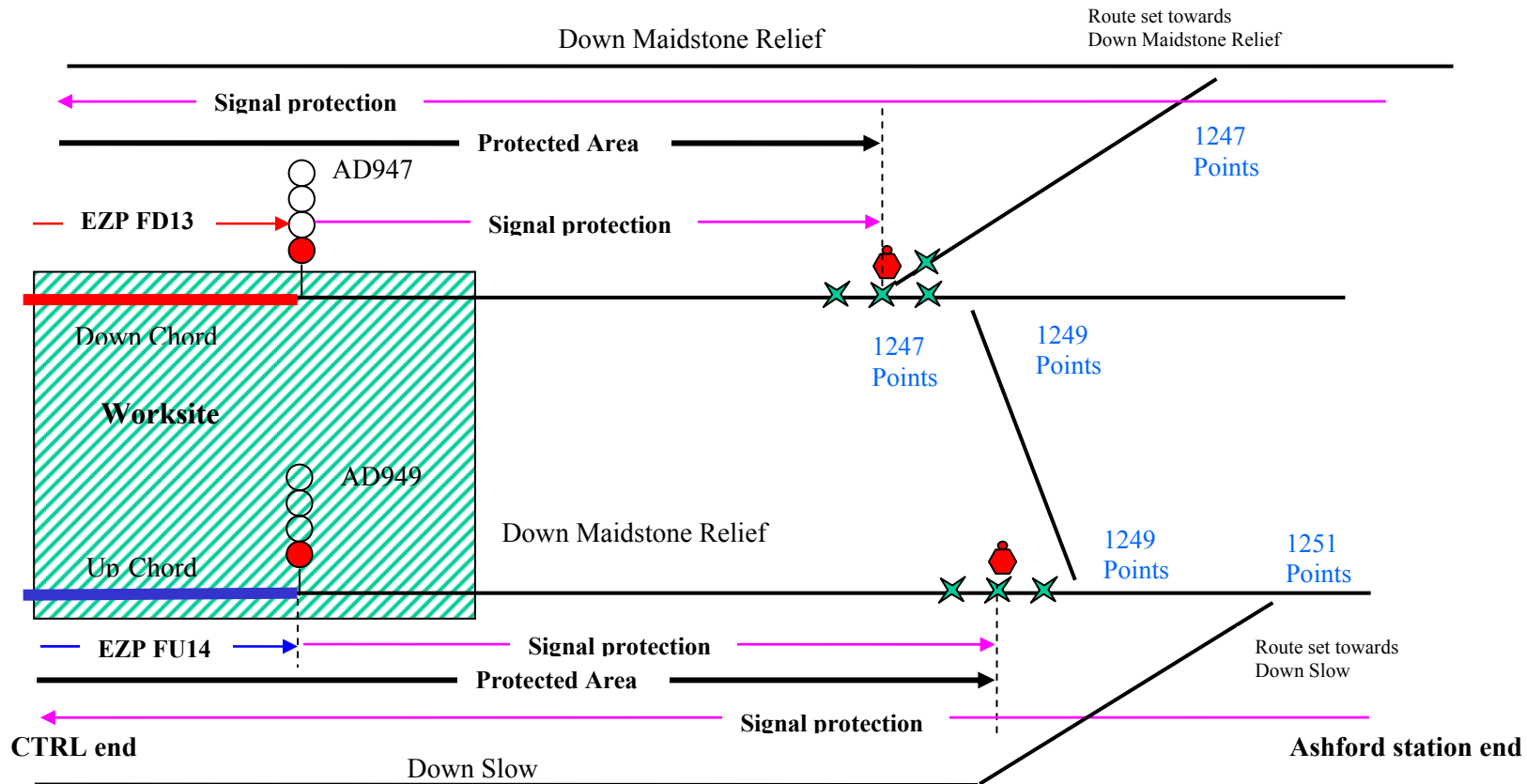
- No restrictions - Works trains/OTM/OTP can operate CTRL side of Stop Board only
- blocked by VASC to provide safe "over lap" - Works trains/OTM/OTP can operate NR side of Stop Board



**Diagram WC4 – Example of Protected Area with “back-to-back” detonator protection**  
**NO Works trains/OTM/OTP in Worksite**  
*(Down and Up Chatham Main Lines – Under Network Rail possession)*



**Diagram AW1 Ashford West chord - Example of Protected Area**  
**Worksite extends to the Ashford station side of AD947/AD949 signals.**  
*(Network Rail Lines - Trains passing normally into and out of Ashford station)*  
**NO Works trains/OTM/OTP allowed in Worksite**

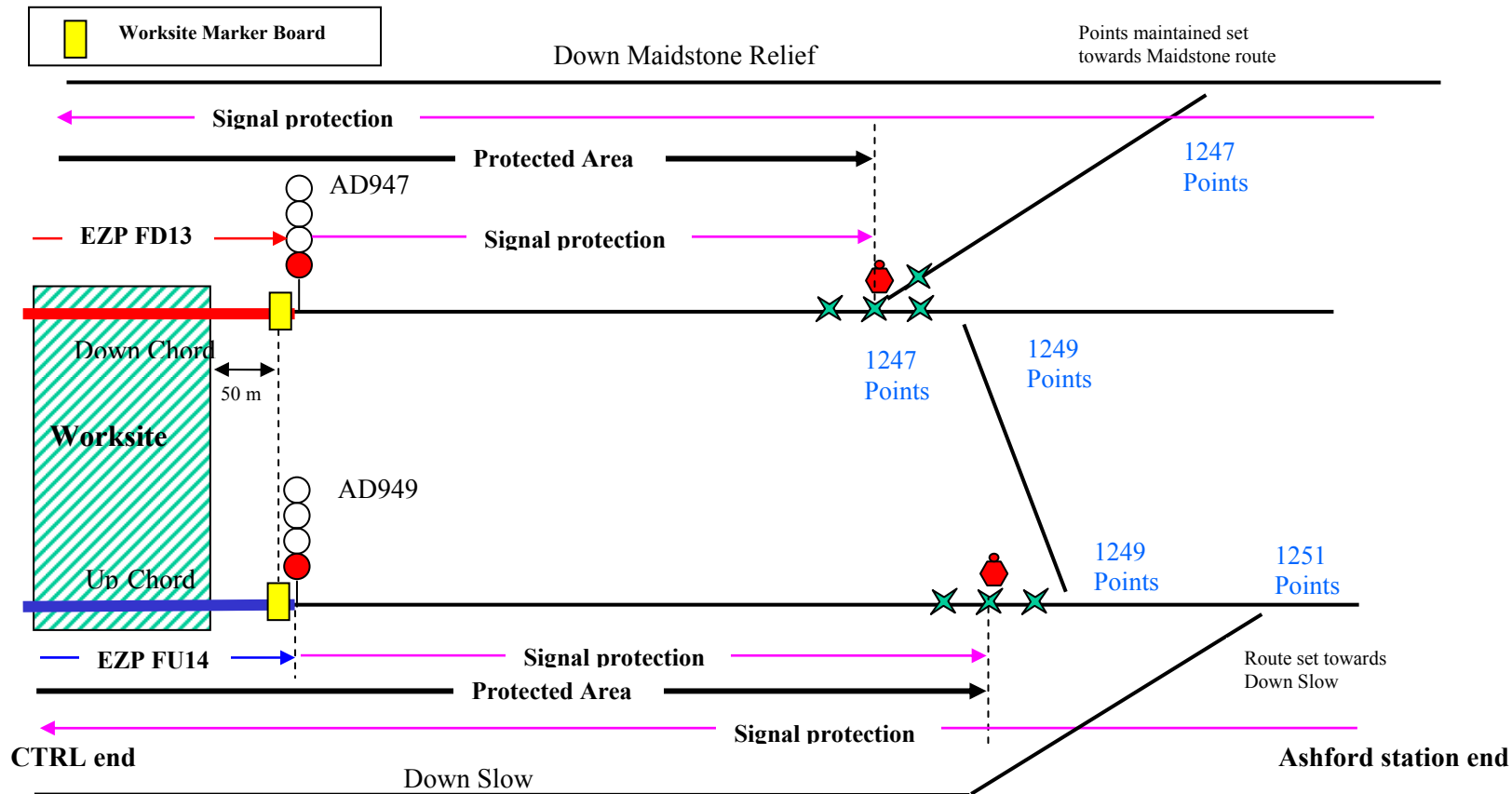


### Diagram AW2 Ashford West chord - Example of Protected Area

**Worksite wholly CTRL side of AD947/AD949 signals.**

*(Network Rail Lines - Trains passing normally into and out of Ashford station)*

Works trains/OTM/OTP can operate in Worksite

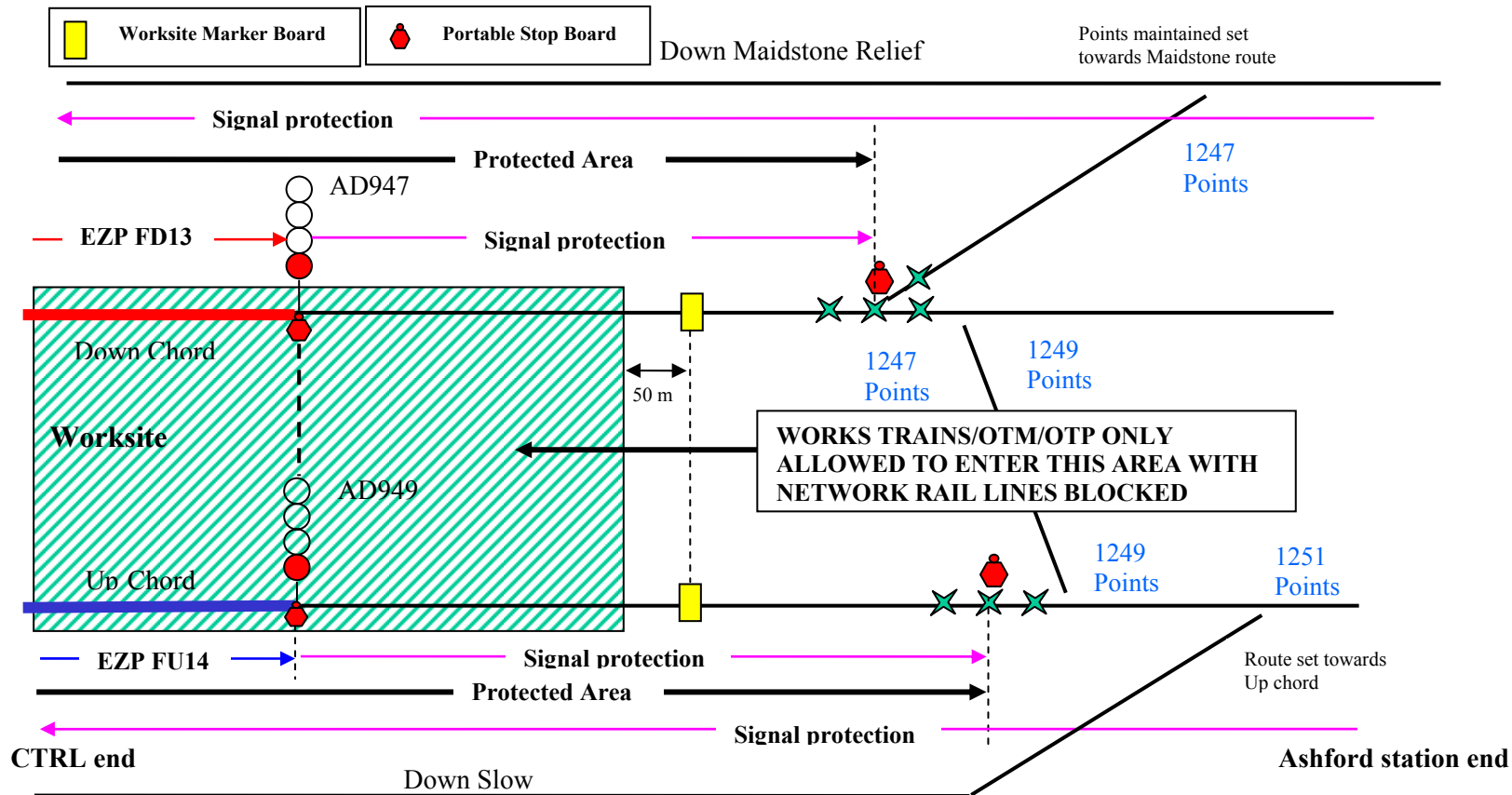


### Diagram AW3 Ashford West chord - Example of Protected Area

**Worksite extends to the Ashford station side of AD947/AD949 signals.**

Network Rail Lines - No restrictions - Works trains/OTM/OTP can operate CTRL side of Stop Board only

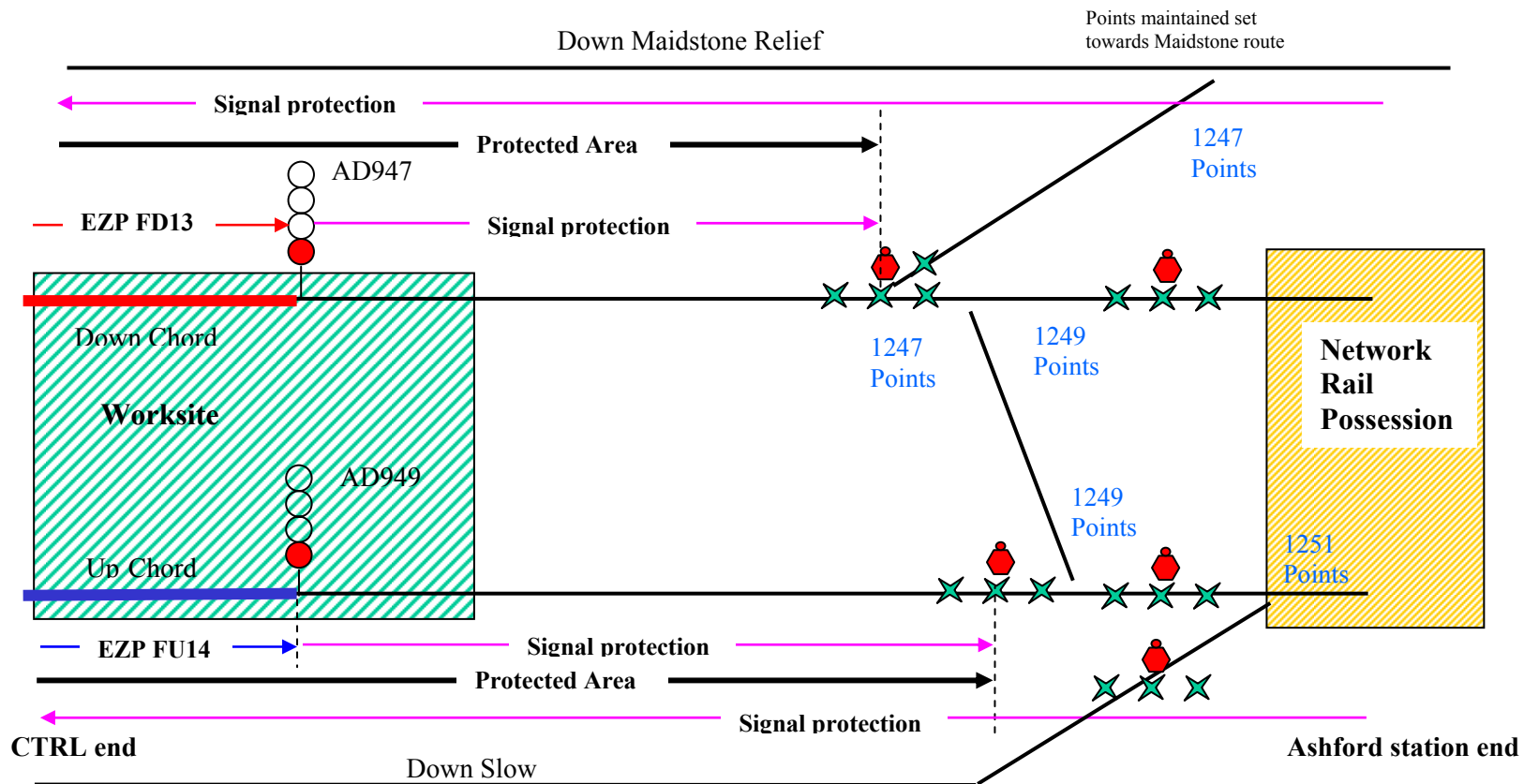
- blocked by IECC to provide safe "over lap" - Works trains/OTM/OTP can operate NR side of Stop Board





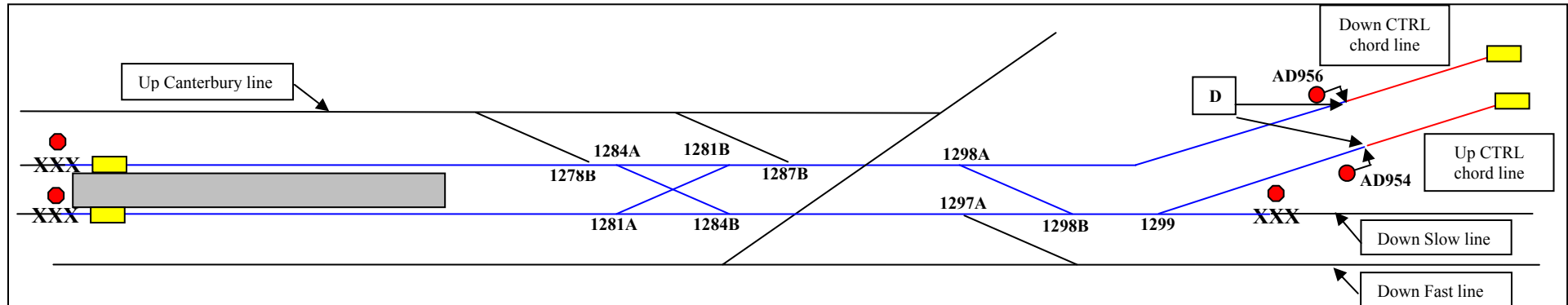
### Diagram AW4 Ashford West chord - Example of Protected Area with “back-to-back” detonator protection

**NO** Works trains/OTM/OTP allowed in Worksite  
*(Network Rail Lines – Under Network Rail possession)*

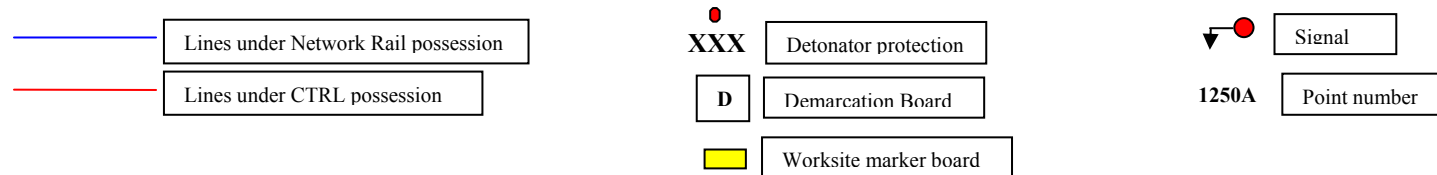
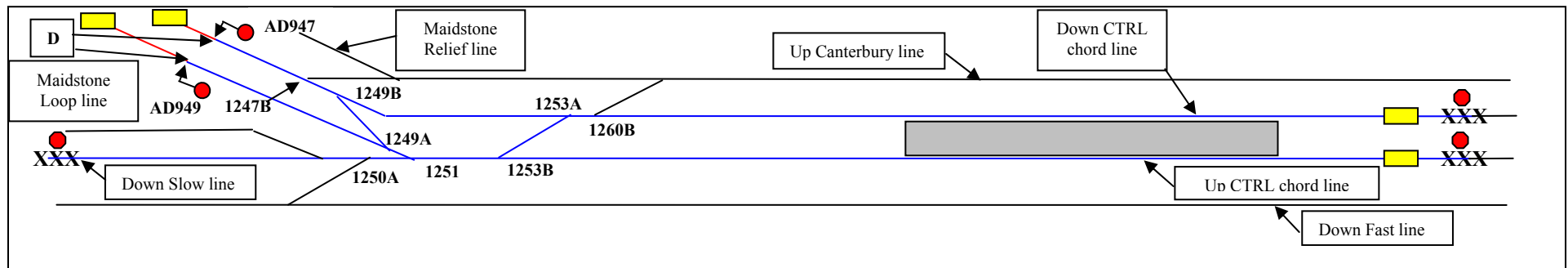


### Diagram AW5 - Examples of joint CTRL Protected areas/Network Rail possessions

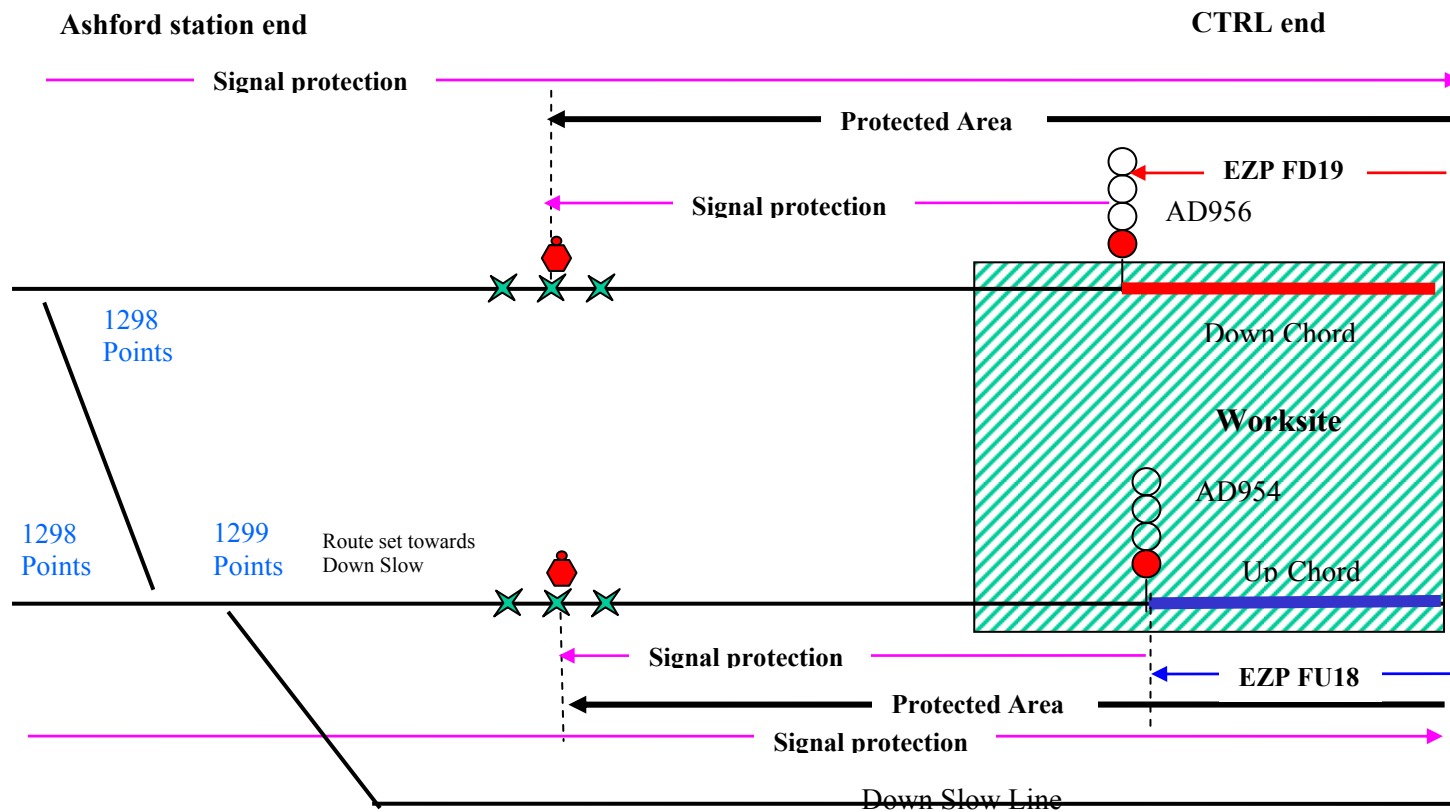
#### 1. Ashford east chords and station – up and down CTRL chord lines



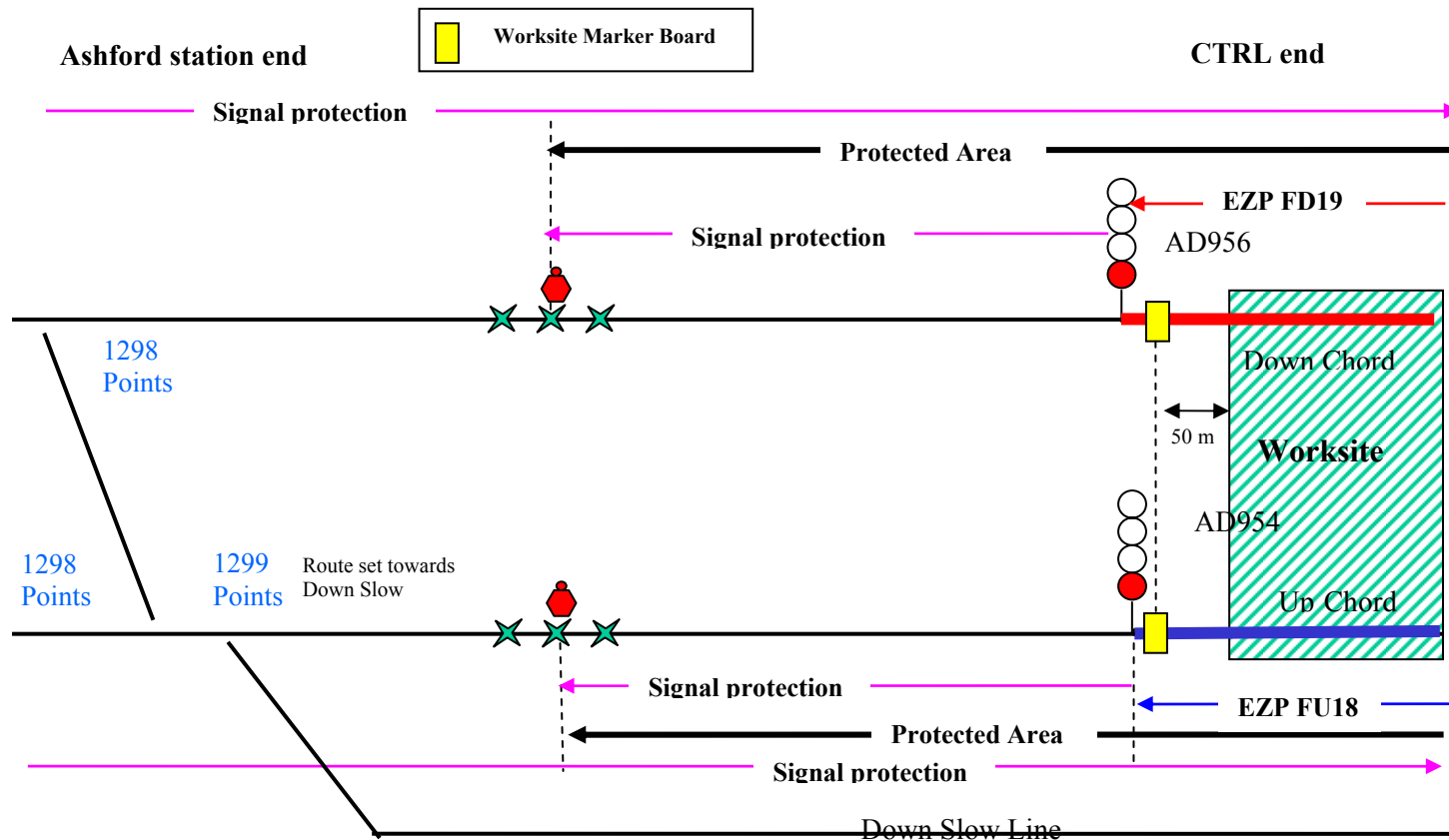
#### 2. Ashford west chords and station – up and down CTRL chord lines



**Diagram AE1 Ashford East chord - Example of Protected Area**  
**Worksite extends to the Ashford station side of AD954/AD956 signals.**  
*(Network Rail Lines - Trains passing normally into and out of Ashford station)*  
**NO Works trains/OTM/OTP allowed in Worksite**



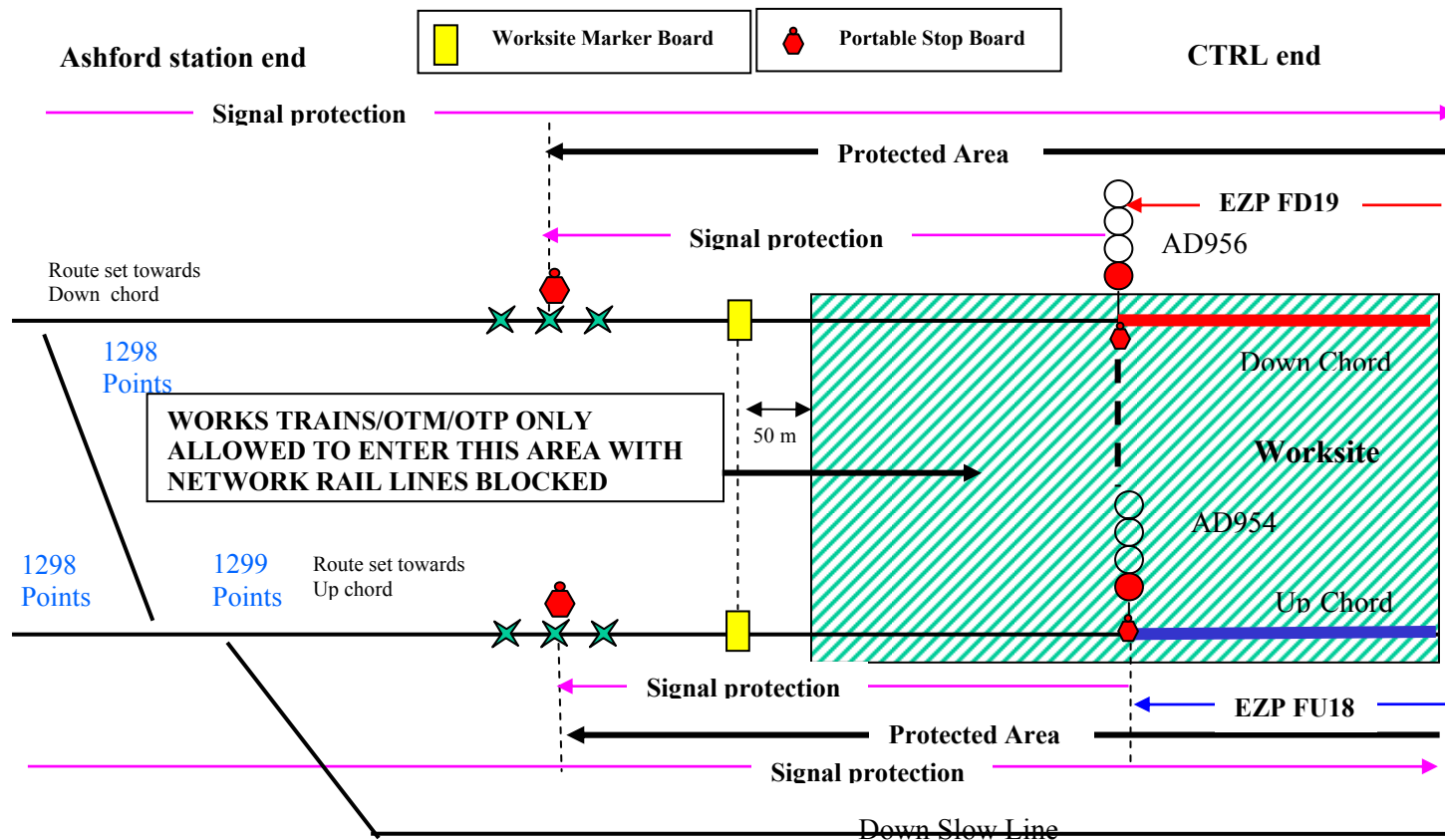
**Diagram AE2 Ashford East chord - Example of Protected Area**  
**Worksite wholly CTRL side of AD954/AD956 signals.**  
*(Network Rail Lines - Trains passing normally into and out of Ashford station)*  
 Works trains/OTM/OTP can operate in Worksite



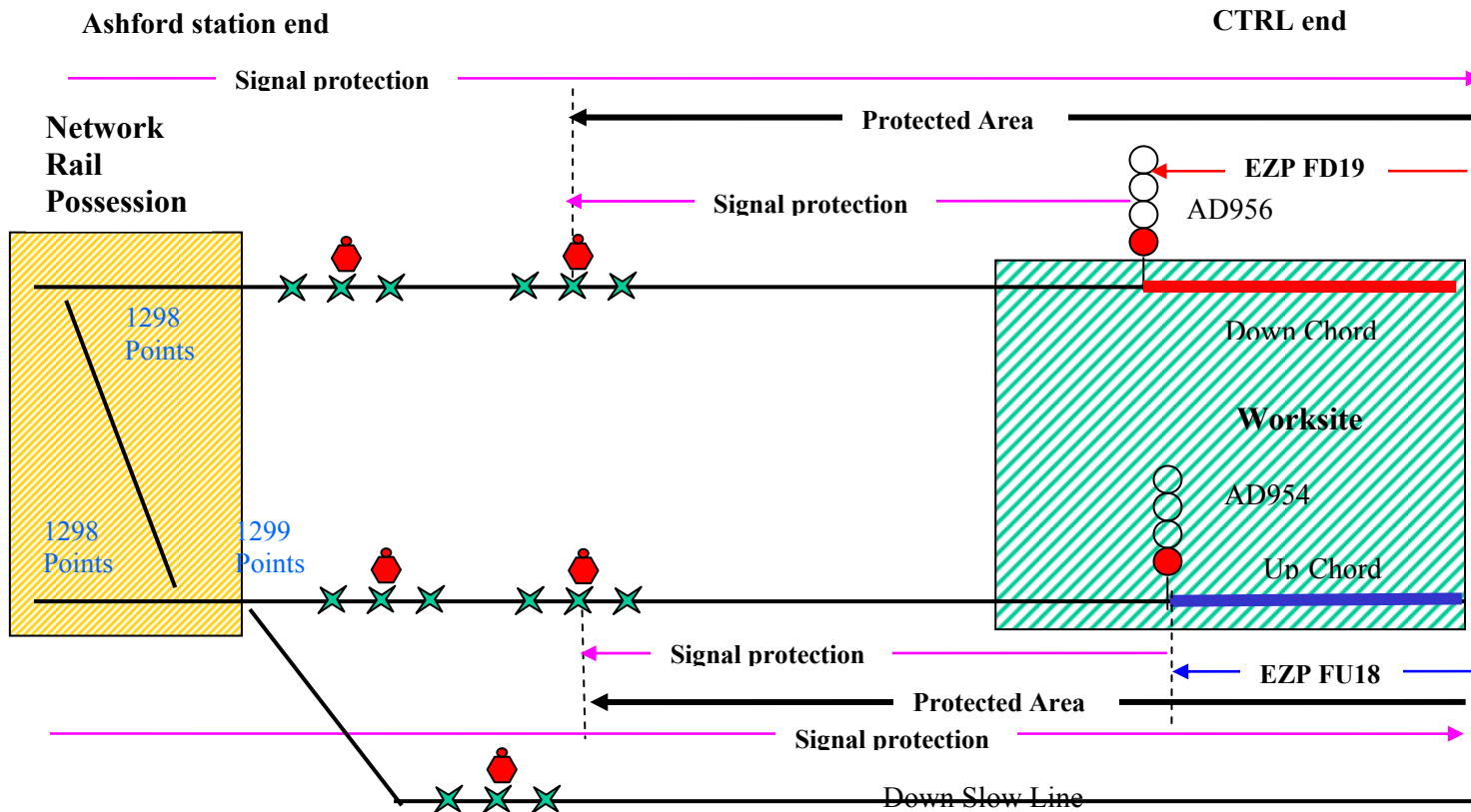
### Diagram AE3 Ashford East chord - Example of Protected Area

**Worksite extends to the Ashford station side of AD954/AD956 signals.**

Network Rail Lines - No restrictions - Works trains/OTM/OTP can operate CTRL side of Stop Board only  
 – blocked by IECC to provide safe “over lap” - Works trains/OTM/OTP can operate NR side of Stop Board



**Diagram AE4 Ashford East chord - Example of Protected Area with “back-to-back” detonator protection**  
**NO Works trains/OTM/OTP allowed in Worksite**  
*(Network Rail Lines – Under Network Rail possession)*

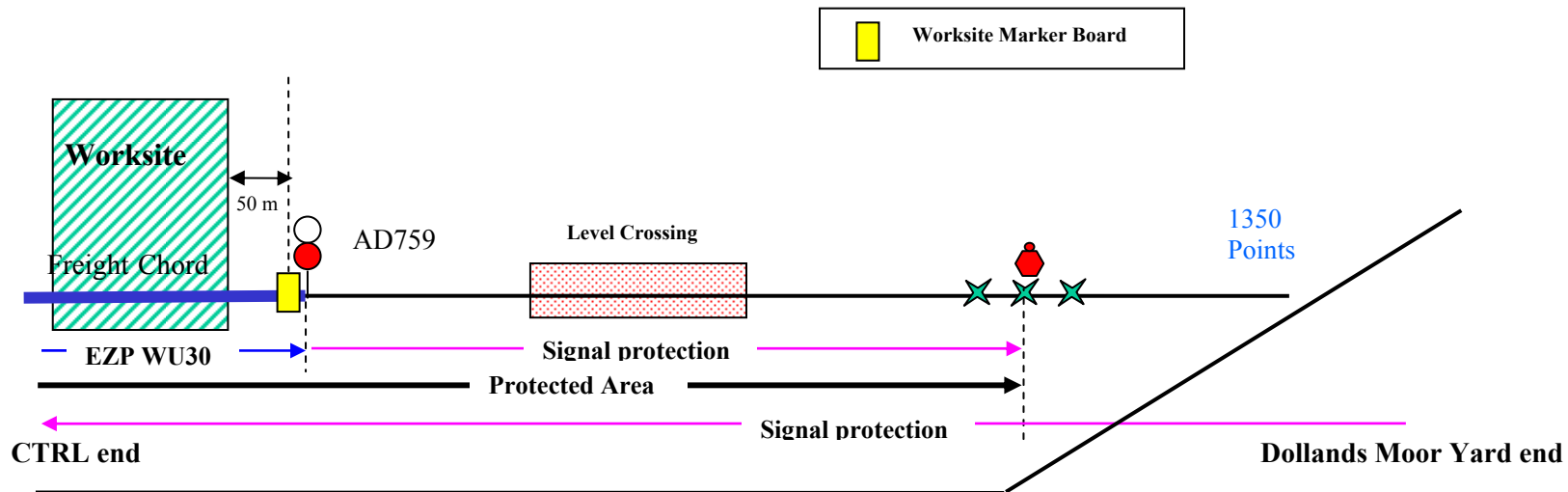


**Diagram DM1 Dollands Moor Freight chord - Example of Protected Area**

**Worksite wholly CTRL side of AD759 signal.**

*(Network Rail Lines - Trains passing normally into and out of Dollands Moor Yard)*

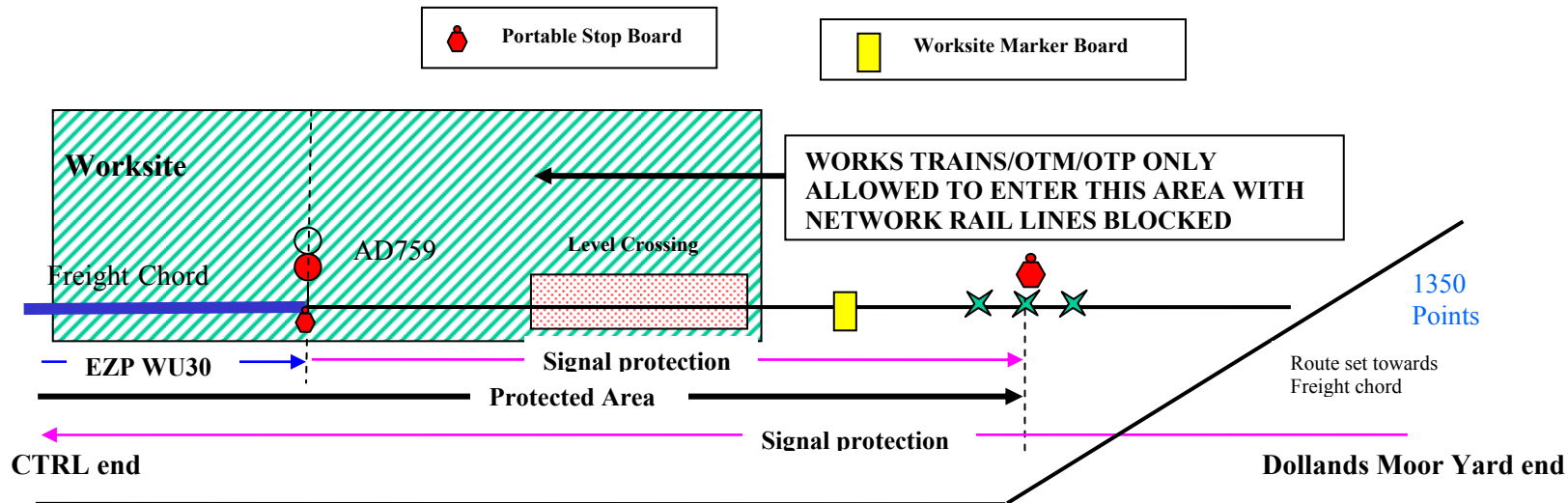
Works trains/OTM/OTP can operate in Worksite




**Diagram DM2 Dollands Moor Freight chord - Example of Protected Area**  
**Worksite extends to the Ashford station side of AD759 signal.**

Network Rail Lines

- No restrictions – Works trains/OTM/OTP can operate CTRL side of Stop Board only
- blocked by IECC to provide safe “over lap” - Works trains/OTM/OTP can operate NR side of Stop Board
- Level crossing to be on local control all the time that movements are required to be made over it, OTP on/off tracked, etc.





	Level Two Standard
	C/OP/OS/05/2011
	November 2008

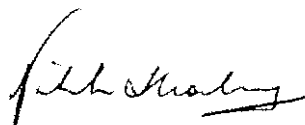
## Procedures for taking possessions CTRL/Network Rail interfaces on the North Kent Line connection

Prepared by



.....  
**Alan Chatfield**  
Rules & Procedures Manager, Network Rail (CTRL) Ltd.

Authorised By:



.....  
**Nick Thorley**  
Operations Manager, Network Rail (CTRL) Ltd.



.....  
**Mike Carr**  
Route Operations Manager, Network Rail

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(CCMS 8066465)

# PROCEDURES FOR TAKING POSSESSIONS CTRL/NETWORK RAIL INTERFACE ON THE NORTH KENT LINE CONNECTION

## CONTENTS

- 1 Purpose
  - 2 Scope
  - 3 Reference documents
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    - 7.1 CTRL Protected Areas
    - 7.2 Network Rail T2/T12 protections or T3 possessions
- Examples of Protected Areas/possessions

REVISION HISTORY		
October 2007	Initial issue	AC
July 2008	Inclusion of Network Rail T2/T12 protection arrangements. Removal of requirement for the RPOS to place detonator protection for a CTRL Protected Area when there is no works trains/OTM/OTP present.	AC
November 2008	Specifying locations where detonator protection is to be place when there is a "back-to-back" Protected Area/possession.	AC

Amendments to text are indicated by a side-line in the margin.

## 1. Purpose

This standard details the arrangements to apply in order to protect maintenance work being carried out by either CTRL or Network Rail personnel from train movements at the physical interface of the CTRL and Network Rail controlled infrastructures on the North Kent Line connection.

The following must be specially noted:

- CTRL personnel apply the rules and regulations published in the CTRL Rule Book (C/02/OS/05/1000) and associated standards and procedures.
- Network Rail personnel apply the rules and regulations published in the Railway Group Standard Rule Book (GE/RT8000) and associated standards and procedures.

This standard summarises those parts of Module T3 of the CTRL Rule Book and Modules T2, T3, T7 & T12 of the Railway Group Standard Rule Book applicable to the protection of maintenance works at this interface. For full details, the publication concerned must be referred to.

This standard does **not** apply to the protection arrangements for traction current isolations of the 25kV AC Overhead Line Equipment or 750V DC conductor rail equipment. These arrangements are shown in the Level 2 Standard "Procedures for taking isolations of the traction power supply at the CTRL (Section 2) / Network Rail interfaces" (C/OP/OS/05/2010), dated June 2007.

## 2. Scope

These procedures to apply when maintenance work has to be undertaken between the following locations (refer to the diagram on page 4):

### **Down North Kent Line Connection**

Springhead Road Jn. side of 2161 points at Ebbsfleet (CTRL kp 37.193) [NR kp 35.803] and Ebbsfleet side of 2130 points at Springhead Road Jn. (CTRL kp 37.525) [NR kp 36.135].

### **Up North Kent Line Connection**

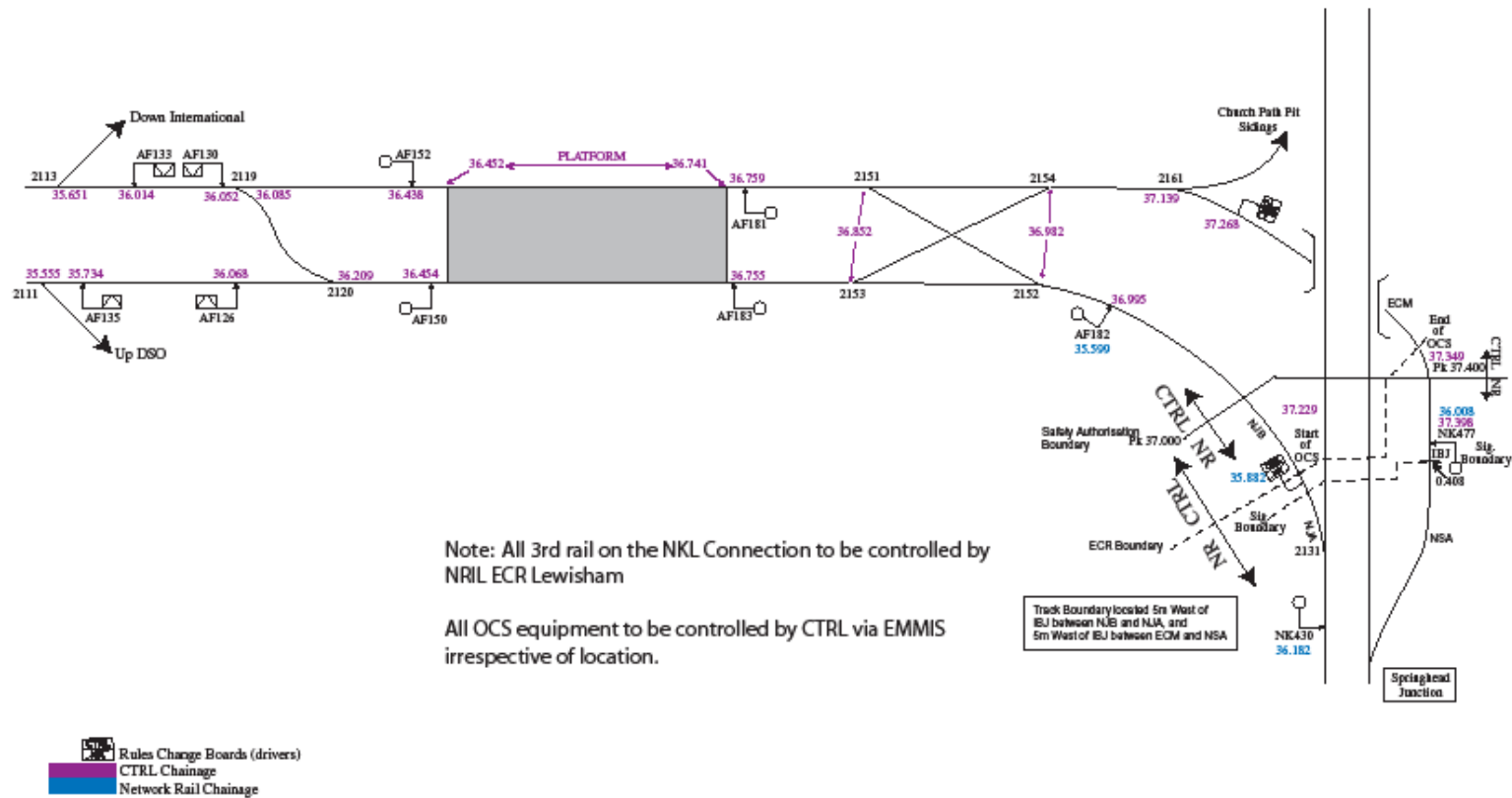
Ebbsfleet side of 2131 points at Springhead Road Jn. (CTRL kp 37.269) [NR kp 35.882] and AF182 signal at Ebbsfleet (CTRL kp 36.995) [NR kp 35.599].

This is defined as the Interface Area.

### **Notes:**

- 1 If CTRL personnel are required to maintain any items of equipment on Network Rail controlled infrastructure outside the Interface Area, e.g. the TPWS (OSS) equipment associated with signal AF182 located at NR kp 35.993, this must be carried out in accordance with the Railway Group Standard Rule Book: either Module T3 under the authority of a PICOP and ES, or Module T2 under the authority of a COSS.
- 2 If Network Rail personnel are required to maintain any items of equipment on CTRL controlled infrastructure outside the Interface Area, e.g. the DC conductor rail equipment that extends to signals AF150/AF152 at the London end of Ebbsfleet platforms 5 & 6, this must be carried out in accordance with the CTRL Rule Book Module T3 under the authority of a RPOS and TS.

### North Kent Line Connection Boundaries (Summary)



Revision AE - 05-12-06

### 3 Reference documents

CTRL Rule Book, Module T3 (C/02/OS/05/1000), "Protection arrangements on the line and the control of works trains".

Railway Group Standard Rule Book, Module T2 (GE/RT8000/T2), "Protecting engineering work or a hand trolley on a line not under possession".

Railway Group Standard Rule Book, Module T3 (GE/RT8000/T3), "Possession of the line for engineering work".

Railway Group Standard Rule Book, Module T7 (GE/RT8000/T7), "Safe systems of work when walking or working on or near the line".

Railway Group Standard Rule Book, Module T12 (GE/RT8000/T12), "Protecting personnel carrying out activities on the line that do not affect the safety of the line".

### 4. Glossary of terms

#### GENERAL

CTRL	Channel Tunnel Rail Link high speed line between London (St. Pancras) and Cheriton and associated chords and connecting lines.
CTRL personnel	Personnel employed by Network Rail (CTRL) Ltd. and its maintenance contractor.
Defined Message	A formal message between the AFC signaller and the North Kent signaller used in connection with arranging signalling protection.
Kilometrage point (kp)	Datum point of any specific location which is the distance (in kilometres) from a given "0" point.
Network Rail	UK railway system that excludes the Channel Tunnel Rail Link high speed line and associated chords and connecting lines.
Network Rail personnel	Personnel employed by Network Rail Infrastructure Ltd., either by the territory or the route.

#### CTRL

AFC Signaller	Person responsible for monitoring and controlling the signalling system for the CTRL controlled system.
Ashford Control Centre (AFC)	CTRL control centre at Ashford.
Engineering Zone of Protection (EZP)	Defined area of CTRL track which can be protected by the AFC's signalling system in order to create a Protected Area. The limits of each Zone is indicated by "EZP" signs placed in the four foot or on the sleeper ends.
Protected Area	A section of CTRL track, protected within the signalling system by one or more EZPs, within which Worksite(s) can be created for engineering work or staff protection.
Responsible Person on Site (RPOS)	CTRL member of staff responsible for arranging protection by means of a Protected Area.
Task Supervisor (TS)	CTRL member of staff responsible for setting up a worksite and the control of works train/OTM/OTP movements within that worksite.
Works train	A train used in the transport of staff, equipment and materials in connection with carrying out engineering works. The term also includes On-Track Machines.

## NETWORK RAIL

Controller of Site Safety (COSS)	Network Rail member of staff responsible for arranging protection in accordance with Module T2 of the Railway Group Standard Rule Book.
Engineering Supervisor (ES)	Network Rail member of staff responsible for setting up a worksite within a T3 possession and the control of works train/OTM/OTP movements within that worksite.
Green Zone	A site of work on or near the line within which there are no train movements.
Individual Working Alone (IWA)	Network Rail member of staff responsible for arranging protection in accordance with Module T12 of the Railway Group Standard Rule Book.
North Kent Signalling Centre	Network Rail signalling control centre at Ashford, Kent, that interfaces with the CTRL on the North Kent Line connection.
North Kent Signaller	Person responsible for monitoring and controlling the Network Rail signalling system for the Springhead Road Jn. area.
Person in charge of Possession (PICOP)	Network Rail member of staff responsible for arranging protection by means of a possession in accordance with Module T3 of the Railway Group Standard Rule Book.
Red Zone	A site of work on or near the line which is <b>not</b> protected from train movements.
T2 protection	A portion of Network Rail track that is protected by the signalling system within which engineering work may be carried out.
T3 possession	A portion of Network Rail track that is protected by the signalling system and detonator protection, within which worksite(s) can be created for maintenance work to be carried out. A T3 possession must be arranged if there are works trains/OTM/OTP involved.
T12 protection	A portion of Network Rail track that is protected by the signalling system within which engineering work may be carried out.

## 5. Principles

### 5.1 General

CTRL or Network Rail personnel (including maintenance contractors) to apply the rules and procedures of the organisation that they are working for.

CTRL personnel to request Protected Areas from the AFC Signaller.

Network Rail personnel to request T2/T12 protections or T3 possessions from the North Kent signaller.

CTRL Protected Areas and Network Rail T2/T12 protections or T3 possessions must not overlap.

The detonator protection for a CTRL Protected Area (if required) and the detonator protection for a Network Rail T2-H protection or T3 possession must not overlap. If a CTRL Protected Area is adjacent to a Network Rail T2-H protection or T3 possession, each must have its own detonator protection put "back-to-back". These to be placed on the Down North Kent Line connection on the approach to NK477 signal and on the Up North Kent Line connection on the approach to AF182 signal.

### 5.2 Defined Messages

Defined messages must be used for communications between signallers when arranging the signal protection arrangements for Protected Areas/possessions.

The AFC and North Kent signallers to record details of defined messages in their respective Occurrence Books.

Defined messages to be in the format shown in the following examples:

#### **AFC signaller to North Kent signaller**

"Block the Up and Down North Kent Line connection because of a CTRL possession - My message no. 123456".

#### **North Kent signaller to AFC signaller**

"Reference your message no. 123456, the up and down North Kent line connection is now blocked because of a CTRL possession - My message no. 987654".

#### **AFC signaller to North Kent signaller**

"Reference my message no. 123456, the block of the up and down North Kent line connection because of a CTRL possession may be removed - My message no. 123457".

### 5.3 Principles applicable to CTRL Protected Areas

#### **Notes:**

- 1 Examples of the application of principles are shown in the diagrams at the end of these procedures.
- 2 When the term "detonator protection" is used in these procedures, the RPOS must arrange for:
  - three detonators to be put on the line concerned, 20 metres apart on the cess side railhead.
  - a Possession Limit Board (PLB) to be attached to the cess side railhead next to the middle detonator. PLBs must be red with the word STOP on both sides with a steady or flashing red light that can be seen along the line in both directions.

The CTRL EZPs that are next to the North Kent signal controlled area and their protecting signals are:

Line	EZP	Protecting signals at Springhead Road Jn. end	Protecting signals at Ebbsfleet end
Up North Kent Line connection	EU42*	NK430/AF182	AF183 AF190/AF192
Down North Kent Line connection	ED49	Nil	AF181/AF183

\* The AFC signaller must request permission from the North Kent signaller before applying EZP EU42.

Module T3 of the CTRL Rule Book to apply with the application of the following additional principles:

- CTRL personnel must not work:
  - **Down North Kent Line connection** – on the Springhead Road Jn. side of 2161 points at Ebbsfleet without EZP ED49 first being operated
  - **Up North Kent Line connection** – on the Springhead Road Jn. side of AF182 signal without signal protection first being granted.
- Protected Area requests must be made using the Forms Process.
- Detonator protection need only be provided if works trains/OTM/OTP are working within the Protected Area. This is to be placed on the Up North Kent Line connection Ebbsfleet side of 2131 points at Springhead Road Jn. (CTRL kp 37.269) [NR kp 35.882] and on the Down North Kent Line connection Ebbsfleet side of 2130 points (CTRL kp 37.525) [NR kp 36.135].
- Before detonator protection is put down, the AFC signaller to arrange signalling protection with the North Kent signaller or the lineside switch operated.
- Worksite Marker Boards must always be provided.
- If a works train/OTM/OTP requires to work on the Up North Kent Line connection a Portable Stop Board must be placed at AF182 signal.
- If a works train/OTM/OTP requires to work on the Down North Kent Line connection and the worksite extends beyond NK477 signal, a Portable Stop Board must be placed at that signal.
- Before any movement of a works train/OTM/OTP is allowed to the Springhead Road Jn. side of either of these Portable Stop Boards, the North Kent signaller must first put in place additional signalling protection arrangements to make sure that a sufficient distance (overlap) is kept clear of train movements. This additional signalling protection can be removed once it is confirmed that the works train/OTM/OTP has stopped and no further movement towards the detonator protection will take place.

The additional signalling protection to consist of:

Down North Kent line Placing or maintaining NK427 signal at danger.

Up North Kent line Placing or maintaining NK430 signal at danger.

#### 5.4 Principles applicable to Network Rail possessions and protections for maintenance work

The Railway Group Standard Rule Book to apply with the application of the following additional principles:

- Red Zone working as defined in Module T7 is prohibited.
- T2 protection [T2-D, T2-H (using detonators), and T2-X] or T12 protection is permitted.



- T2/T12 protection or a T3 possession of the Down North Kent Line connection must have EZP ED49 applied. The North Kent signaller to request the AFC signaller to apply protection.
- Detonator protection for T2-H protection to be placed on the Down North Kent Line connection Springhead Road Jn. side of 2161 points at Ebbsfleet (CTRL kp 37.195) [NR kp 35.805]
- Detonator protection for a T3 possession to be placed on the Down North Kent Line connection Springhead Road Jn. side of 2161 points at Ebbsfleet (CTRL kp 37.195) [NR kp 35.805] and on the Up North Kent Line connection on the approach to AF182 signal.

## 5.5 Planning and publication

CTRL and Network Rail must advise each other of Protected Areas/possessions that are planned for the interface area. If a CTRL Protected Area and Network Rail T2-H protection or T3 possession are adjacent, the location where each organisation's detonator protection is to be put down is to be identified.

## 6. Method of working for taking CTRL Protected Areas or Network Rail possessions/protections

### 6.1 CTRL Protected Areas

6.1.1 The RPOS requests the Protected Area from the AFC signaller using the Forms Process.

#### Down North Kent Line connection

- 6.1.2 The AFC signaller:
- applies EZP ED49,
  - tells the North Kent signaller the Down North Kent Line connection is blocked for a CTRL possession.
- 6.1.3 The AFC signaller grants the Protected Area request to the RPOS.
- 6.1.4 The RPOS
- arranges for EZP ED49 lineside switch to be operated,
  - if works trains/OTM/OTP are working within the Protected Area, arranges for detonator protection to be put down Ebbsfleet side of 2130 points (CTRL kp 37.525) [NR kp 36.135],

#### Up North Kent Line connection

- 6.1.5 The AFC signaller requests the North Kent signaller to block the Up North Kent Line connection for a CTRL possession *(Defined Message)*
- 6.1.6 The North Kent signaller
- sets 2131 points to the Up North Kent line route and applies reminder appliance,
  - confirms to the AFC signaller that the Up North Kent Line connection is blocked for a CTRL possession. *(Defined Message)*
- 6.1.7 The AFC signaller grants the Protected Area request to the RPOS.
- 6.1.8 The RPOS, if works trains/OTM/OTP are working within the Protected Area, arranges for detonator protection to be put down Ebbsfleet side of 2131 points (CTRL kp 37.269) [NR kp 35.882],

#### Both lines

- 6.1.9 The RPOS gives authority for the TS to create the worksite.

6.1.10 The TS

- creates the worksite in accordance with the instructions shown in Module T3 of the CTRL Rule Book,
- if works train/OTM/OTP are working within a worksite that extends Springhead Road Jn. side of NK477 and/or AF182 signals, arranges for a Portable Stop Board to be placed at those signals.

**6.2 Movements of works trains/OTM/OTP into the North Kent signal controlled area**

6.2.1 The driver of works train/OTM/OTP stops at Portable Stop Board.

6.2.2 The TS requests permission from the AFC signaller for works train/OTM/OTP to move to the Springhead Road Jn. side of the Portable Stop Board.

6.2.3 The AFC signaller requests permission from the North Kent signaller for a works train/OTM/OTP to move to the Springhead Road Jn. side of the Portable Stop Board agreeing the following:

- how far the movement will proceed,
- how long the movement will take.

6.2.4 The North Kent signaller, when there is sufficient gap in train movements on the North Kent line to allow the movement to take place without causing delay:

- puts in place the additional signalling protection arrangements specified in clause 5.3.
- tells the AFC signaller that the works train/OTM/OTP can move to the Springhead Road Jn. side of the Portable Stop Board.

6.2.5 The AFC signaller tells the TS that the works train/OTM/OTP can move to the Springhead Road Jn. side of the Portable Stop Board.

6.2.6 The TS

- removes the Portable Stop Board
- tells the driver of works train/OTM or OTP operator to proceed.
- tells AFC signaller when the works train/OTM/OTP has stopped and will make no further movement towards the detonator protection.

6.2.7 The AFC signaller tells the North Kent signaller when the works train/OTM/OTP has stopped and will make no further movement towards the detonator protection.

6.2.8 The North Kent signaller removes the additional signalling protection arrangements.

6.2.9 TS replaces Portable Stop Board when works train/OTM/OTP has moved to the CTRL side of its location.

**6.3 Network Rail T2/T12 protections or T3 possessions**

6.3.1 The COSS/IWA/PICOP confirms with the North Kent signaller which signals will be used to protect the Network Rail T2/T12 protection or T3 possession.

**Up North Kent Line connection**

6.3.2 The North Kent signaller

- applies signal protection.
- tells the AFC signaller the Up North Kent Line connection is blocked for a Network Rail possession.

**Down North Kent Line connection**

6.3.3. The North Kent signaller asks the AFC signaller to provide protection for a Network Rail possession. *(Defined Message)*

6.3.4 The AFC signaller

- applies EZP ED49,
- tells the North Kent signaller that protection is provided. *(Defined Message)*

## **Both lines**

6.3.5 The North Kent signaller tells the COSS/IWA/PICOP that the Network Rail T2/T12 protection or T3 possession is protected by signals.

### **6.3.6 Network Rail T2-H protection only**

6.3.6.1 The COSS arranges for detonator protection to be put down at the defined location.

### **6.3.7 Network Rail T3 possession only**

6.3.7.1 The PICOP

- arranges for detonator protection to be put down at the defined location,
- tells the North Kent signaller that detonator protection has been put down.

6.3.7.2 The North Kent signaller grants the Network Rail possession to the PICOP.

## **7. Method of working for giving up CTRL Protected Areas or Network Rail possessions/protectations**

### **7.1 CTRL Protected Areas**

7.1.1 The TS gives up worksite.

#### **Down North Kent Line connection**

7.1.2 The RPOS

- removes detonator protection
- arranges for the EZP switch to be operated,
- gives up the Protected Area to AFC signaller.

7.1.3 The AFC signaller

- removes the EZP protection,
- tells the North Kent signaller that the block for the CTRL possession has been removed.

#### **Up North Kent Line connection**

7.1.4 The RPOS

- removes detonator protection, (if provided),
- gives up the Protected Area to AFC signaller.

7.1.5 The AFC signaller tells the North Kent signaller that the block for the CTRL possession can be removed. *(Defined Message)*

7.1.6 The North Kent signaller removes the protection from 2131 points.

### **7.2 Network Rail T2/T12 protections or T3 possessions**

7.2.1 The COSS of a T2-H protection or PICOP of a T3 possession arranges for the detonator protection to be removed.

7.2.2 The COSS/IWA of a T2/T12 protection tells the North Kent signaller that signal protection is no longer required.

7.2.3 The PICOP of a T3 possession gives up the possession to the North Kent signaller

#### **Up North Kent Line connection**

7.2.4 The North Kent signaller

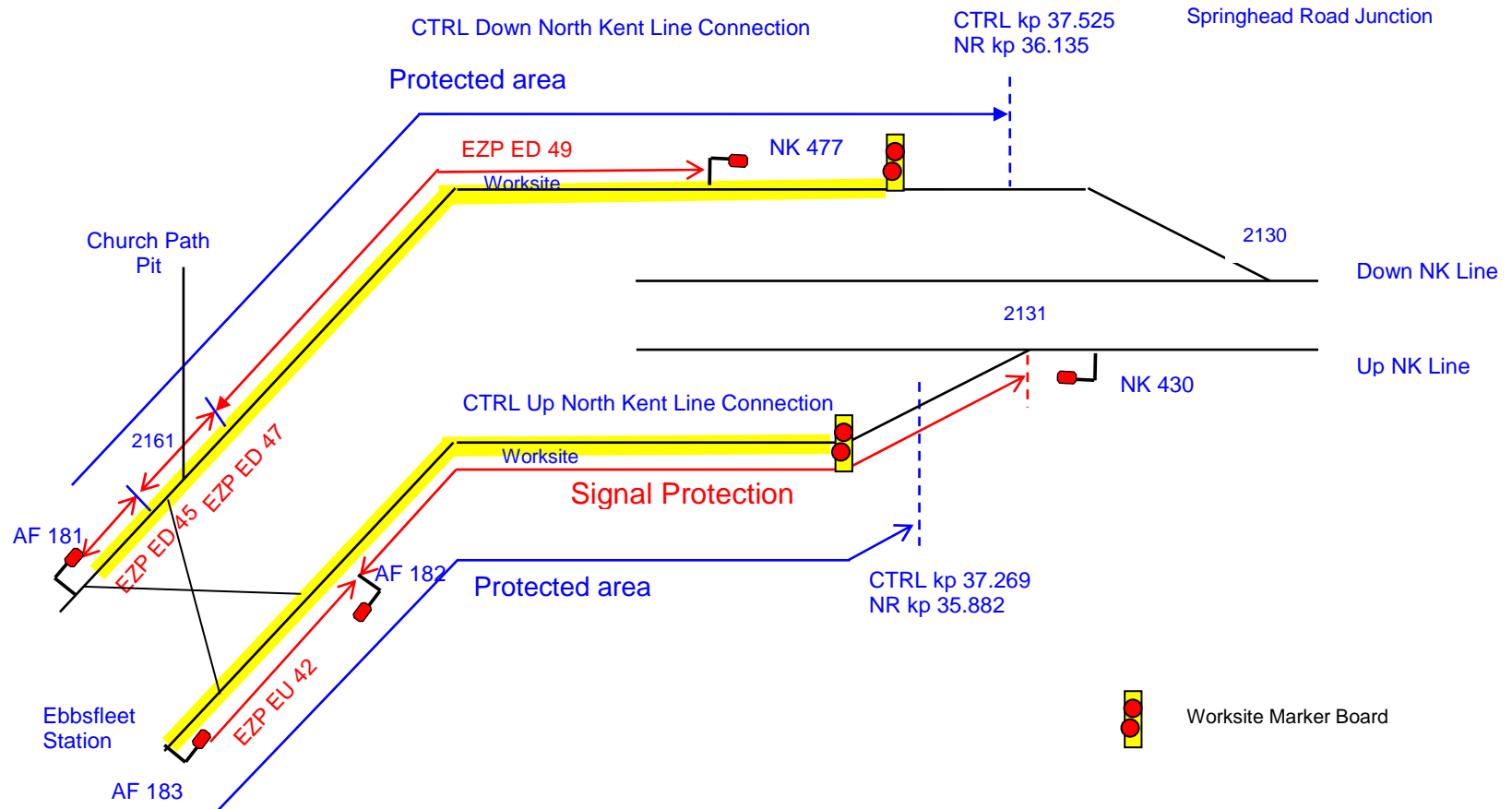
- removes signal protection,
- tells the AFC signaller that the block for the Network Rail possession has been removed.

#### **Down North Kent Line connection**

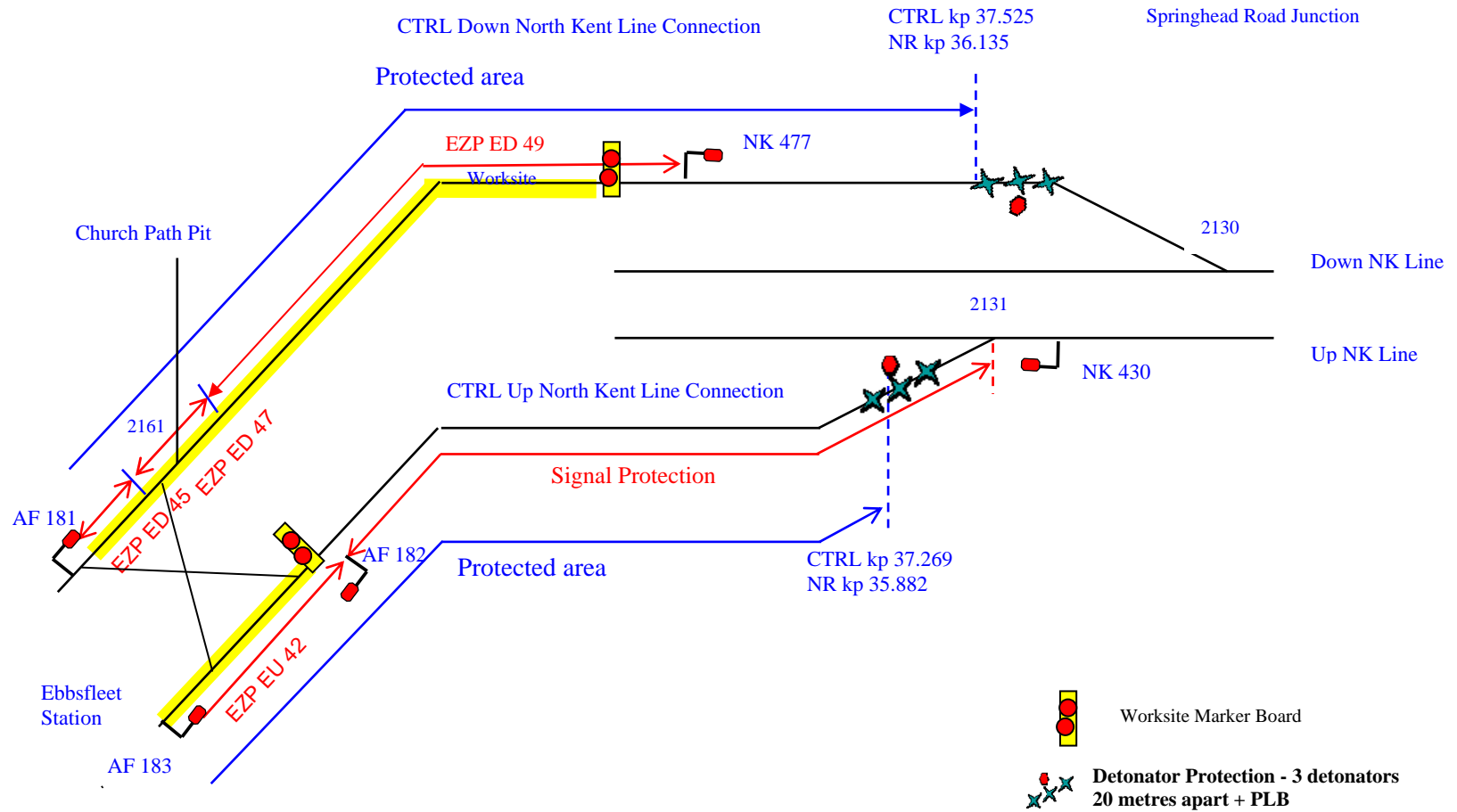
7.2.5 The North Kent signaller tells the AFC signaller that the protection for a Network Rail possession can be removed. *(Defined Message)*

7.2.6 The AFC signaller removes the EZP protection

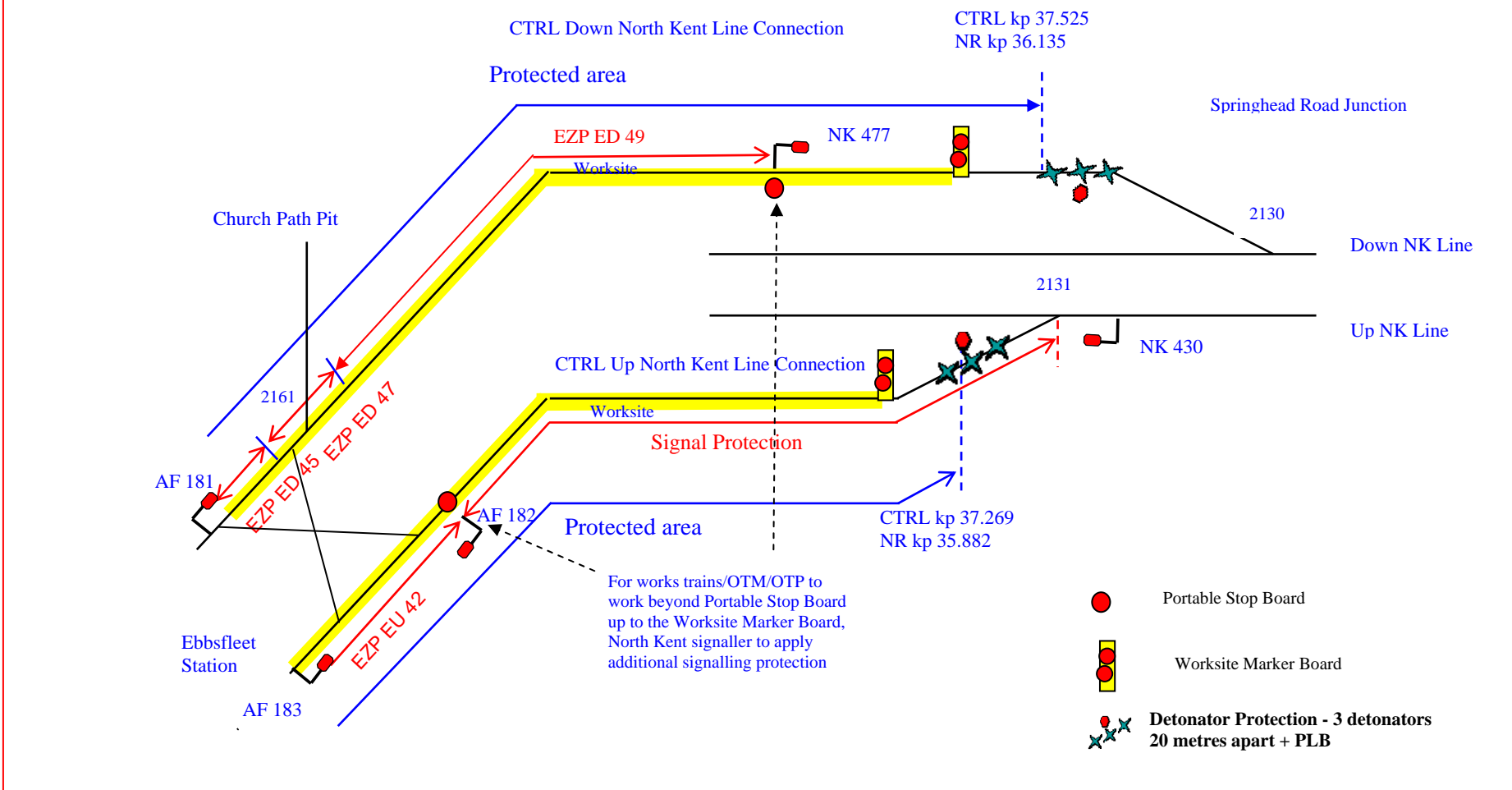
**Diagram NK 1— Example of a CTRL Protected area and worksite at the CTRL/North Kent Line connection**  
**No works trains/OTM/OTP**



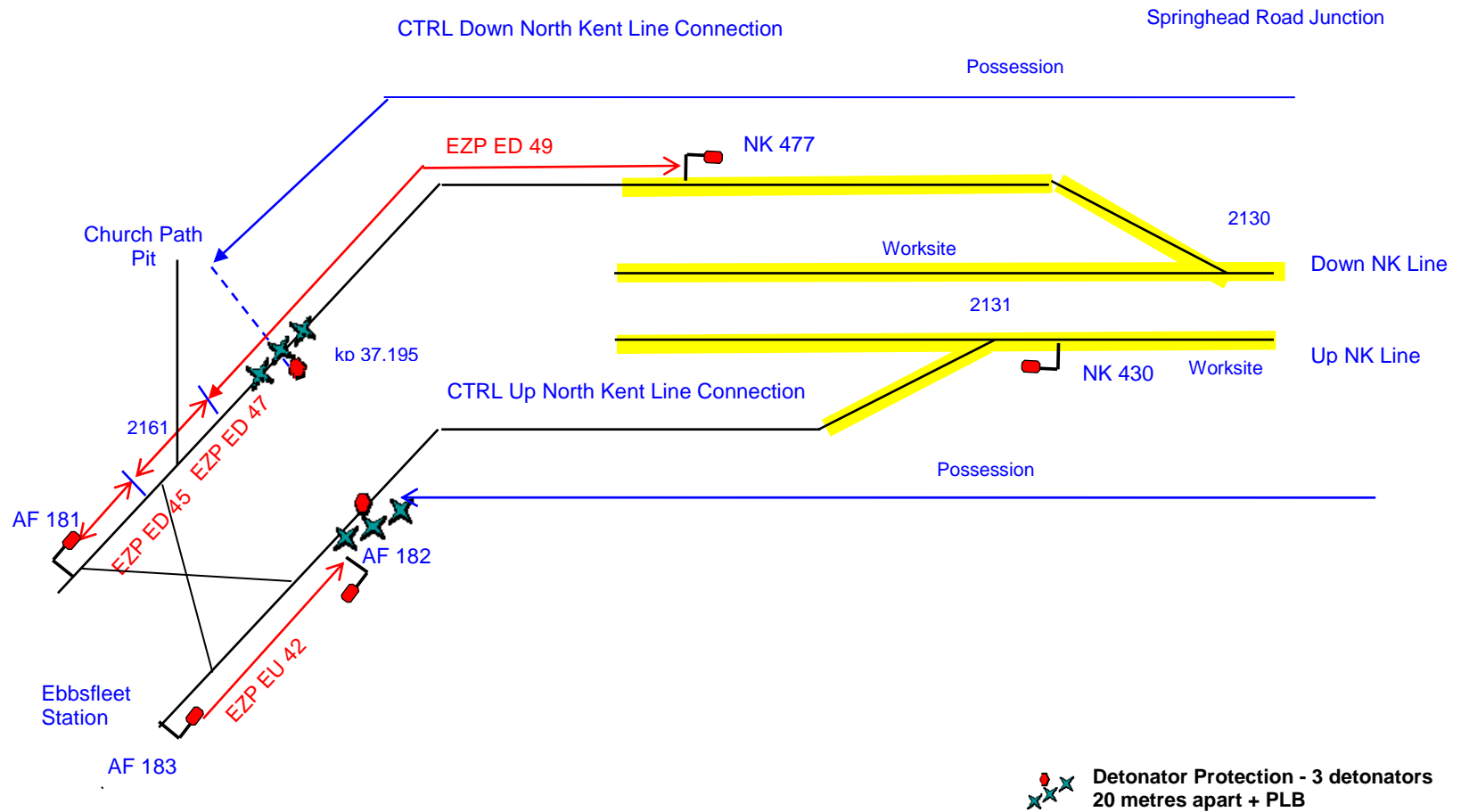
**Diagram NK 2— Example of a CTRL Protected area and worksite at the CTRL/North Kent Line connection that does NOT extend beyond NK477 & AF182 signals**  
Works trains/OTM/OTP can operate without restriction




**Diagram NK 3— Example of a CTRL Protected area and worksite at the CTRL/North Kent Line connection that extends beyond NK477 or AF182 signals**  
Works trains/OTM/OTP can operate up to Portable Stop Board without restriction



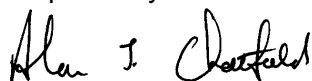
**Diagram NK 4— Example of a Network Rail T3 possession and worksite at the CTRL/North Kent Line connection**  
**No works trains/OTM/OTP**



	Level Two Standard
	C/OP/OS/05/2014
	July 2008

## Procedures for taking possessions CTRL/Network Rail interfaces on the North London Line connection and Silo Curve

Prepared by

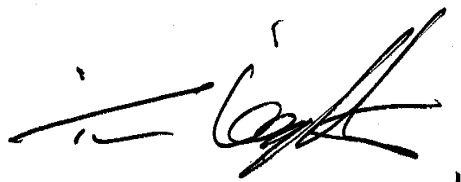


.....  
**Alan Chatfield**  
Rules & Procedures Manager, Network Rail (CTRL) Ltd.

Authorised By:



.....  
**Paul Ellis**  
Operations Manager, Network Rail (CTRL) Ltd.



.....  
**Tim Leighton**  
Route Operations Manager, Network Rail

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(CCMS 7259448)*



# PROCEDURES FOR TAKING POSSESSIONS CTRL/NETWORK RAIL INTERFACES ON THE NORTH LONDON LINE CONNECTION AND SILO CURVE

## CONTENTS

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Diagrams

REVISION HISTORY		
September 2007	Initial issue	AC
July 2008	Inclusion of Network Rail T2/T12 protection arrangements. Revised instructions for works trains/OTM/OTP working within a CTRL Protected Area and entering/exiting from/to Camden Road Jn. Removal of requirement for the RPOS to place detonator protection for a CTRL Protected Area when there is no works trains/OTM/OTP present.	AC

Amendments to text are indicated by a side-line in the margin.

## 1. Purpose

This standard details the arrangements to apply in order to protect maintenance work being carried out by either CTRL or Network Rail personnel from train movements at the physical interface of the CTRL and Network Rail controlled infrastructures on the North London Line connection and Silo Curve.

The following must be specially noted:

- CTRL personnel apply the rules and regulations published in the CTRL Rule Book (C/02/OS/05/1000) and associated standards and procedures.
- Network Rail personnel apply the rules and regulations published in the Railway Group Standard Rule Book (GE/RT8000) and associated standards and procedures.

This standard summarises those parts of Modules G & T3 of the CTRL Rule Book and Modules T2, T3, T7 & T12 of the Railway Group Standard Rule Book applicable to the protection of maintenance works at this interface. For full details, the publication concerned must be referred to.

This standard does **not** apply to the protection arrangements for traction current isolations of the 25kV AC Overhead Line Equipment. These arrangements are shown in the Level 2 Standard "Procedures for taking isolations of the traction power supply at the CTRL (Section 2) / Network Rail interfaces" (C/OP/OS/05/2010), dated June 2007.

## 2. Scope

These procedures apply to track possessions that require train movements to be stopped between the following locations (refer to the diagram on page 4):

### **North Line Connection**

AF042 signal at York Way South Jn. and CTRL side of 3110 points at Camden Road Incline Jn. (CTRL kp 0.643).

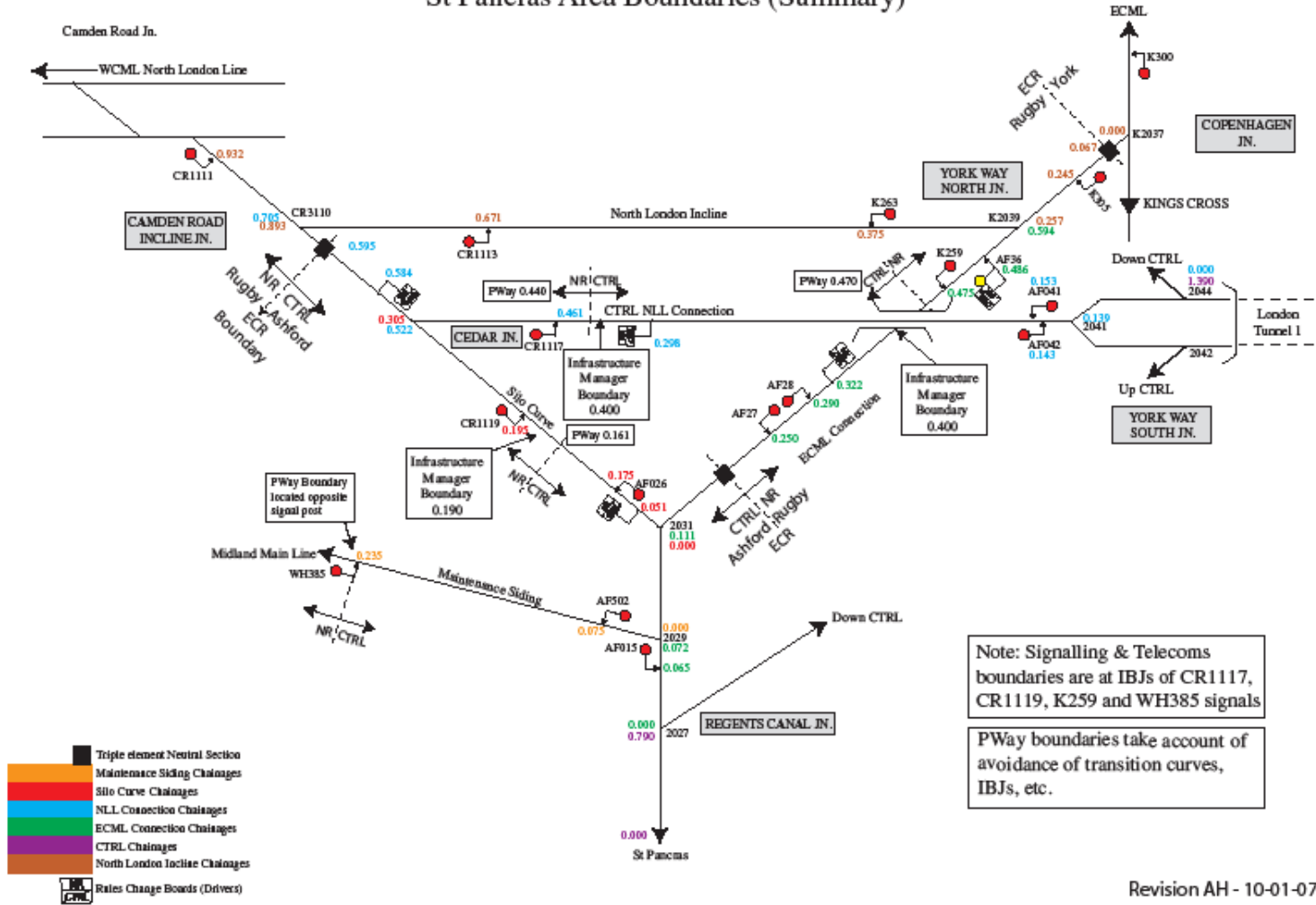
### **Silo Curve**

Camden Road Jn. side of 2031 points at Regents Canal Jn. (CTRL kp 0.067) and CTRL side of 3110 points at Camden Road Incline Jn. (CTRL kp 0.643).

This is defined as the Interface Area.

- 1 If CTRL personnel are required to maintain any items of equipment on Network Rail controlled infrastructure outside the Interface Area, this must be carried out in accordance with the Railway Group Standard Rule Book: either Module T3 under the authority of a PICOP and ES, or Module T2 under the authority of a COSS.
- 2 If Network Rail personnel are required to maintain any items of equipment on CTRL controlled infrastructure outside the Interface Area, this must be carried out in accordance with the CTRL Rule Book, Module T3 under the authority of a RPOS and TS.

St Pancras Area Boundaries (Summary)



### 3. Reference documents

CTRL Rule Book, Module G (C/02/OS/05/1000), "General and personal safety on the operational railway".

CTRL Rule Book, Module T3 (C/02/OS/05/1000), "Protection arrangements on the line and the control of works trains".

Railway Group Standard Rule Book, Module T2 (GE/RT8000/T2), "Protecting engineering work or a hand trolley on a line not under possession".

Railway Group Standard Rule Book, Module T3 (GE/RT8000/T3), "Possession of the line for engineering work".

Railway Group Standard Rule Book, Module T7 (GE/RT8000/T7), "Safe systems of work when walking or working on or near the line".

Railway Group Standard Rule Book, Module T12 (GE/RT8000/T12), "Protecting personnel carrying out activities on the line that do not affect the safety of the line".

### 3. 4. Glossary of terms

#### GENERAL

CTRL	Channel Tunnel Rail Link high speed line between London (St. Pancras) and Cheriton and associated chords and connecting lines.
CTRL personnel	Personnel employed by Network Rail (CTRL) Ltd. and its maintenance contractor.
Defined Message	A formal message between the AFC signaller and the Camden Road Jn. signaller used in connection with arranging signalling protection.
Kilometerage point (kp)	Datum point of any specific location which is the distance (in kilometres) from a given "0" point.
Network Rail	UK railway system that excludes the Channel Tunnel Rail Link high speed line and associated chords and connecting lines.
Network Rail personnel	Personnel employed by Network Rail Infrastructure Ltd., either by the territory or the route.

#### CTRL

AFC Signaller	Person responsible for monitoring and controlling the signalling system for the CTRL controlled system.
Ashford Control Centre (AFC)	CTRL control centre at Ashford.
Engineering Zone of Protection (EZP)	Defined area of CTRL track which can be protected by the AFC's signalling system in order to create a Protected Area. The limits of each Zone is indicated by "EZP" signs placed in the four foot or on the sleeper ends.
Protected Area	A section of CTRL track, protected within the signalling system by one or more EZPs, within which Worksite(s) can be created for engineering work or staff protection.
Responsible Person on Site (RPOS)	CTRL member of staff responsible for arranging protection by means of a Protected Area.
Task Supervisor (TS)	CTRL member of staff responsible for setting up a worksite and the control of works train/OTM/OTP movements within that worksite.

Works train A train used in the transport of staff, equipment and materials in connection with carrying out engineering works. The term also includes On-Track Machines.

#### NETWORK RAIL

Camden Road Jn. signal box	Network Rail signalling control centre that interfaces with the CTRL on the North London Line connection and Silo Curve.
Camden Road Jn. signaller	Person responsible for monitoring and controlling the Network Rail signalling system for the Camden Road Jn. area.
Controller of Site Safety (COSS)	Network Rail member of staff responsible for arranging protection in accordance with Module T2 of the Railway Group Standard Rule Book.
Engineering Supervisor (ES)	Network Rail member of staff responsible for setting up a worksite within a T3 possession and the control of works train/OTM/OTP movements within that worksite.
Green Zone	A site of work on or near the line within which there are no train movements.
Individual Working Alone (IWA)	Network Rail member of staff responsible for arranging protection in accordance with Module T12 of the Railway Group Standard Rule Book.
Person in charge of Possession (PICOP)	Network Rail member of staff responsible for arranging protection by means of a T3 possession in accordance with the Railway Group Standard Rule Book.
Red Zone	A site of work on or near the line which is <b>not</b> protected from train movements.
T2 protection	A portion of Network Rail track that is protected by the signalling system within which engineering work may be carried out.
T3 possession	A portion of Network Rail track that is protected by the signalling system and detonator protection, within which worksite(s) can be created for maintenance work to be carried out. A T3 possession must be arranged if there are works trains/OTM/OTP involved.
T12 protection	A portion of Network Rail track that is protected by the signalling system within which engineering work may be carried out.

## 5. Principles

### 5.1 General

CTRL or Network Rail personnel (including maintenance contractors) to apply the rules and procedures of the organisation that they are working for.

CTRL personnel to request Protected Areas from the AFC Signaller.

Network Rail personnel to request T2/T12 protections or T3 possessions from the Camden Road Jn. signaller.

CTRL Protected Areas and Network Rail T2/T12 protections or T3 possessions must not overlap.

The detonator protection for a CTRL Protected Area (if required) and the detonator protection for a Network Rail T2-H protection or T3 possession must not overlap. If a CTRL Protected Area is adjacent to a Network Rail T2-H protection or T3 possession, each must have its own detonator protection put "back-to-back".

Protected Areas and possessions must be taken of **both** the North London Line connection and Silo curve together.

### 5.2 Defined messages

Defined messages must be used for communications between signallers when arranging the signal protection arrangements for CTRL Protected Areas or Network Rail possessions/protections.

The AFC and Camden Road Jn. signallers to record details of defined messages in their respective Occurrence Books.

Defined messages to be in the format shown in the following examples:

#### **AFC signaller to Camden Road Jn. signaller**

"Block the North London Line connection because of a CTRL possession - My message no. 123456".

#### **Camden Road Jn. signaller to AFC signaller**

"Reference your message no. 123456, the North London Line connection is now blocked because of a CTRL possession - My message no. 987654".

#### **AFC signaller to Camden Road Jn. signaller**

"Reference my message no. 123456, the block of the North London line connection because of a CTRL possession may be removed - My message no. 123457".

### 5.3 Principles applicable to CTRL Protected Areas

#### **Notes:**

- 1 Examples of the application of principles are shown in the diagrams at the end of these procedures.
- 2 When the term "detonator protection" is used in these procedures, the RPOS must arrange for:
  - three detonators to be put on the line concerned, 20 metres apart on the cess side railhead.
  - a Possession Limit Board (PLB) to be attached to the cess side railhead next to the middle detonator. PLBs must be red with the word STOP on both sides with a steady or flashing red light that can be seen along the line in both directions.

The CTRL EZPs that are next to the Camden Road Jn. signal controlled area and their protecting signals are:

Line	EZP	Protecting signal at Camden Road Jn. end	Protecting signals at CTRL end
North London Line connection	PN38	CR1112	AF046/AF048
Silo Curve	PS35	CR1112	AF015

The AFC signaller must request permission from the Camden Road Jn. signaller before applying these EZPs.

Module T3 of the CTRL Rule Book to apply with the application of the following additional principles:

- CTRL personal must not work on the Camden Road Jn. side of AF042 signal (North London Line connection) or 2031 points at Regents Canal Jn. without EZPs PN38 and PS35 first being operated .
- Protected Area requests must be made using the Forms Process.
- Detonator protection need only be provided CTRL side of 3110 points at Camden Road Incline Jn. (CTRL kp 0.643) if works trains/OTM/OTP are working within the Protected Area.
- Before detonator protection is put down, the AFC signaller to arrange signalling protection with the Camden Road Jn. signaller and the appropriate lineside switches operated.
- Worksite Marker Boards must always be provided after the operation of the appropriate lineside switch(es).
- If a works train/OTM/OTP requires to work on the North London Line connection and the worksite extends beyond CR1117 signal, a Portable Stop Board must be placed at that signal.
- If a works train/OTM/OTP requires to work on the Silo Curve and the worksite extends beyond CR1119 signal, a Portable Stop Board must be placed at that signal.
- Before any movement of a works train/OTM/OTP is allowed to the Camden Road Jn. side of these Portable Stop Boards, the Camden Road Jn. signaller must first put in place additional signalling protection arrangements to make sure that a sufficient distance (overlap) is kept clear of train movements. This additional signalling protection can be removed once it is confirmed that the works train/OTM/OTP has stopped and no further movement towards the detonator protection will take place.

The additional signalling protection to consist of:

- placing or maintaining CR1113 signal at danger,
- setting 3104 points to the Up North London Line and applying reminder appliance.
- If the position of 3112 points is required to be changed to facilitate the movement of a works train/OTM/OTP between the Silo Curve and the North London Line connection a competent points operator must be in attendance.

#### **5.4 Principles applicable to Network Rail possessions and protections for maintenance work**

The Railway Group Standard Rule Book to apply with the application of the following additional principles:

- Red Zone working as defined in Module T7 is prohibited.
- T2 protection [T2-D, T2-H (using detonators), and T2-X] or T12 protection is permitted.

- T2/T12 protection or a T3 possession of the North London Line connection and Silo Curve must have EZPs PS35 and PN38 applied. The Camden Road Jn. signaller to request the AFC signaller to apply protection.
- Detonator protection for a T2-H protection or a T3 possession to be placed on the North London Line connection on the approach to AF041 signal and on the Silo Curve on the approach to AF026 signal.

## 5.5 Planning and publication

CTRL and Network Rail must advise each other of CTRL Protected Areas, Network Rail T2/12 protections or T3 possessions that are planned for the interface area and if works trains/OTM/OTP will be present. If a CTRL Protected Area and Network Rail T2-H protection or T3 possession are adjacent, the location where each organisation's detonator protection is to be put down is to be identified.

## 6. Method of working for taking CTRL Protected Areas or Network Rail possessions/protections

### 6.1 CTRL Protected Areas

- 6.1.1 The RPOS requests the Protected Area from the AFC signaller using the Forms Process.
- 6.1.2 The AFC signaller requests the Camden Road Jn. signaller to block the North London Line connection for a CTRL possession *(Defined Message)*
- 6.1.3 The Camden Road Jn. signaller:
- maintains 3110 points in the normal position and applies reminder appliance,
  - confirms to the AFC signaller that the North London Line connection is blocked for a CTRL possession. *(Defined Message)*
- 6.1.4 The AFC signaller:
- applies EZPs PS35 and PN38,
  - grants the Protected Area request to the RPOS.
- 6.1.5 The RPOS:
- arranges for EZPs PS35 and PN38 switches to be operated,
  - if works trains/OTM/OTP are working in the Protected Area, arranges for detonator protection to be put down CTRL side of 3110 points (CTRL kp 0.643),
  - gives authority for the TS to create the worksite.
- 6.1.6 The TS:
- creates the worksite in accordance with the instructions shown in Module T3 of the CTRL Rule Book
  - if there is a works train/OTM/OTP operating in a worksite that extends Camden Road Jn. side of CR1117 and/or CR1119 signals, arranges for Portable Stop Boards to be placed at these signals.

### 6.2 Movements of works trains/OTM/OTP from/to the Camden Road Jn. signal controlled area

#### 6.2.1 Works trains/OTM/OTP requires to move to the Camden Road Jn. side of the Portable Stop Board

- 6.2.1.1 The driver of works train/OTM/OTP stops at Portable Stop Board.
- 6.2.1.2 The TS requests permission from the AFC signaller for works train/OTM/OTP to move to the Camden Road Jn. side of the Portable Stop Board.
- 6.2.1.3 The AFC signaller requests permission from the Camden Road Jn. signaller for a works train/OTM/OTP to move to the Camden Road Jn. side of the Portable Stop Board agreeing the following:
- how far the movement will proceed,
  - how long the movement will take.



- 6.2.1.4 The Camden Road Jn. signaller, when there is sufficient gap in train movements on the North London Incline to allow the movement to take place without causing delay:
- puts in place the additional signalling protection arrangements specified in clause 5.3.
  - tells the AFC signaller that the works train/OTM/OTP can move to the Camden Road Jn. side of the Portable Stop Board.
- 6.2.1.5 The AFC signaller tells the TS that the works train/OTM/OTP can move to the Camden Road Jn. side of the Portable Stop Board.
- 6.2.1.6 The TS:
- removes the Portable Stop Board
  - tells the driver of works train/OTM/OTP operator to proceed.
  - tells AFC signaller when the works train/OTM/OTP has stopped and will make no further movement towards the detonator protection.
  - if the works train/OTM/OTP is to move between the Silo Curve and North London Line connection, ask the AFC signaller to obtain permission.
- 6.2.1.6 The AFC signaller:
- tells the Camden Road Jn. signaller the works train/OTM/OTP has stopped and will be making no further movement towards the detonator protection.
  - if the works train/OTM/OTP is to move between the Silo Curve and North London Line connection, ask the Camden Road signaller for permission to change the position of 3112 points.
- 6.2.1.7 The Camden Road Jn. signaller:
- if the works train/OTM/OTP is to move between the Silo Curve and North London Line connection, gives permission to the AFC signaller for the position of 3112 points to be changed.
  - removes the additional signalling protection arrangements.
- 6.2.1.8 The AFC signaller gives permission to the TS for the position of 3112 points to be changed.
- 6.2.1.9 The TS tell the points operator to change the position of 3112 points.
- 6.2.1.10 The points operator tells the TS when the points are in the correct position for the next movement.
- 6.2.1.11 The TS:
- tells the driver of works train/OTM/OTP operator to proceed.
  - replaces the Portable Stop Board when the works train/OTM/OTP has moved to the CTRL side of its location.
- 6.2.2 Movements into the Protected Area from the Camden Road Jn. signal controlled area**
- 6.2.2.1 When the works train/OTM arrives at CR1112 signal, the Camden Road Jn. signaller requests permission of the AFC signaller for the train to proceed.
- 6.2.2.2 The AFC signaller
- gets permission from the RPOS for the works train/OTM to proceed
  - tells the Camden Road Jn. signaller that permission is given.
- 6.2.2.3 The Camden Road Jn. signaller
- sets the route from CR1112 signal using the route card(s) provided,
  - authorises the driver of the works train/OTM to pass CR1112 signal at danger,
  - tells them to proceed cautiously to the detonator protection.
- 6.2.2.4 The RPOS
- arranges to meet the works train/OTM at the detonator protection,
  - removes the detonator protection,
  - instructs the driver of the works train/OTM to proceed cautiously to the Worksite Marker Board,
  - when the works train/OTM has gone past, replaces the detonator protection,
  - tells the AFC signaller that the works train/OTM has entered the Protected Area.

6.2.2.5 The AFC signaller tells the Camden Road Jn. signaller that the works train/OTM has passed clear of the detonator protection

### **6.2.3 Movements from the Protected Area to the Camden Road Jn. signal controlled area**

6.2.3.1 When a works train/OTM is ready to leave the Protected Area, the driver must stop at the detonator protection

6.2.3.2 The RPOS

- tells the AFC signaller that the works train/OTM is ready to leave,
- requests permission for the detonator protection to be removed.

6.2.3.3 The AFC signaller requests permission from the Camden Road Jn. signaller for the works train/OTM to leave the Protected Area.

6.2.3.4 When the Camden Road Jn. signaller gives permission, the AFC signaller tells the RPOS to remove the detonator protection and tell the driver to obey the aspect of CR1111 signal.

6.2.3.5 The RPOS

- removes the detonator protection,
- tells the driver of works train/OTM to proceed and obey the aspect of CR1111 signal.

6.2.3.6 The driver:

- checks that the detonator protection has been removed,
- proceeds, obeying the aspect of CR1111 signal.

6.2.3.7 When the works train/OTM has left the Protected Area, the RPOS replaces the detonator protection.

### **6.3 Network Rail T2/T12 protections or T3 possessions**

6.3.1 The COSS/IWA/PICOP confirms with the Camden Road Jn. signaller which signals will be used to protect the Network Rail T2/T12 protection or T3 possession.

6.3.2 The Camden Road Jn. signaller

- applies signal protection.
- asks the AFC signaller to provide protection for a Network Rail possession.  
*(Defined Message)*

6.3.3 The AFC signaller

- applies EZPs PS35 and PN38,
- tells the Camden Road Jn. signaller that protection is provided.*(Defined Message)*

6.3.4 The Camden Road Jn. signaller tells the COSS/IWA/PICOP that the Network Rail T2/T12 protection or T3 possession is protected by signals.

#### **6.3.5 Network Rail T2-H protection only**

6.3.5.1 The COSS arranges for detonator protection to be put down at the defined location.

#### **6.3.6 Network Rail T3 possessions only**

6.3.6.1 The PICOP

- arranges for detonator protection to be put down at the defined locations,
- tells the Camden Road Jn. signaller that detonator protection has been put down.

6.3.6.2 The Camden Road Jn. signaller grants the Network Rail possession to the PICOP.

## **7. Method of working for giving up CTRL Protected Areas or Network Rail possessions/protections**

### **7.1 CTRL Protected Areas**

7.1.1 The TS gives up worksite.

7.1.2 The RPOS

- arranges for the detonator protection to be removed (if provided),
- arranges for the EZP switches to be operated,
- gives up the Protected Area to AFC signaller.

7.1.3 The AFC signaller

- removes the EZP protection,
- tells the Camden Road Jn. signaller that the block for the CTRL possession can be removed. *(Defined Message)*

7.1.4 The Camden Road Jn. signaller removes the protection from 3110 points.

**7.2 Network Rail T2/T12 protections or T3 possessions**

7.2.1 The COSS of a T2-H protection or PICOP of a T3 possession arranges for the detonator protection to be removed.

7.2.2 The COSS/IWA of a T2/T12 protection tells the Camden Road Jn. signaller that signal protection is no longer required.

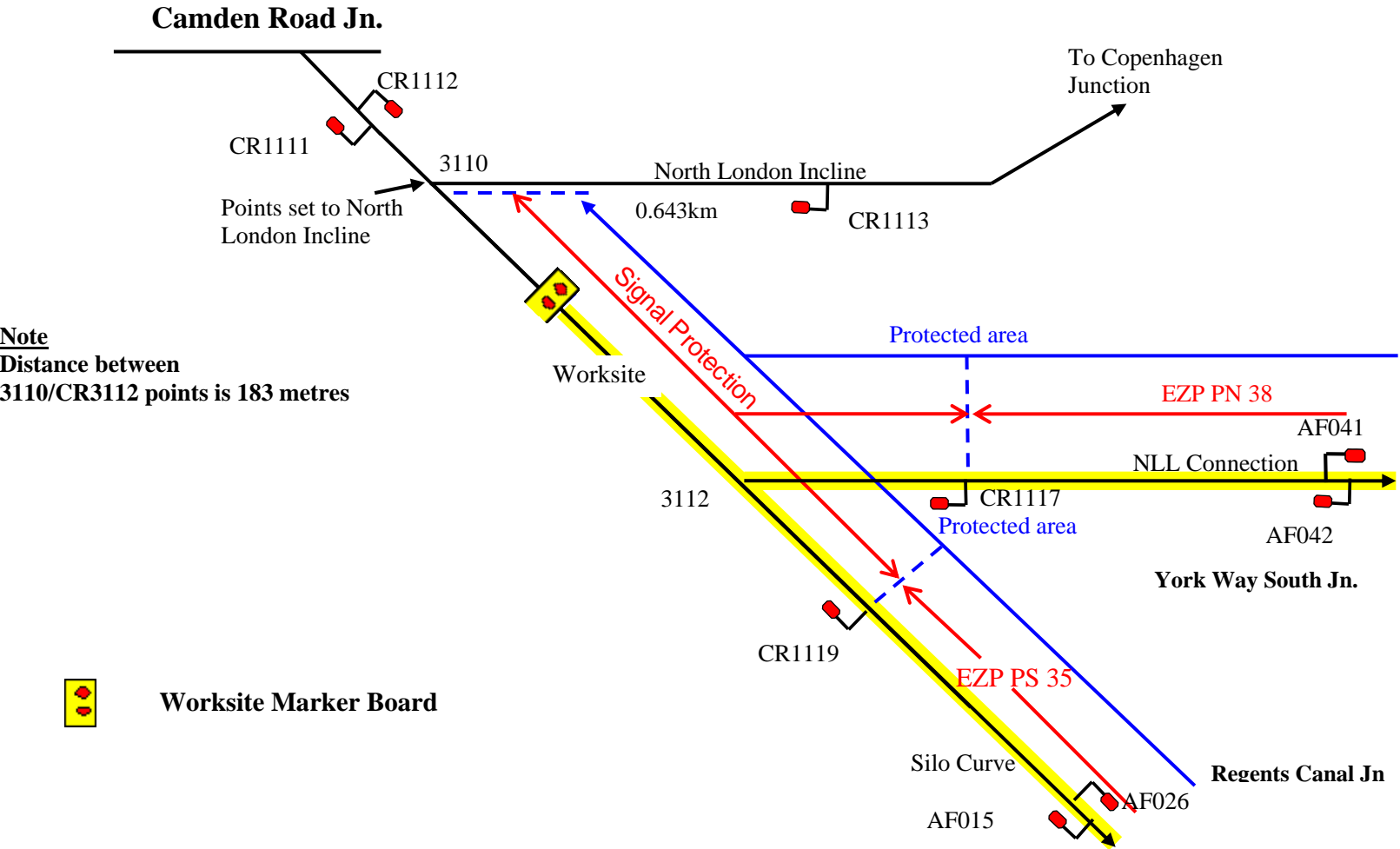
7.2.3 The PICOP of a T3 possession gives up the possession to the Camden Road Jn. signaller

7.2.4 The Camden Road Jn. signaller

- removes signal protection,
- tells the AFC signaller that the protection for a Network Rail possession can be removed. *(Defined Message)*

7.2.5 The AFC signaller removes the EZP protection.

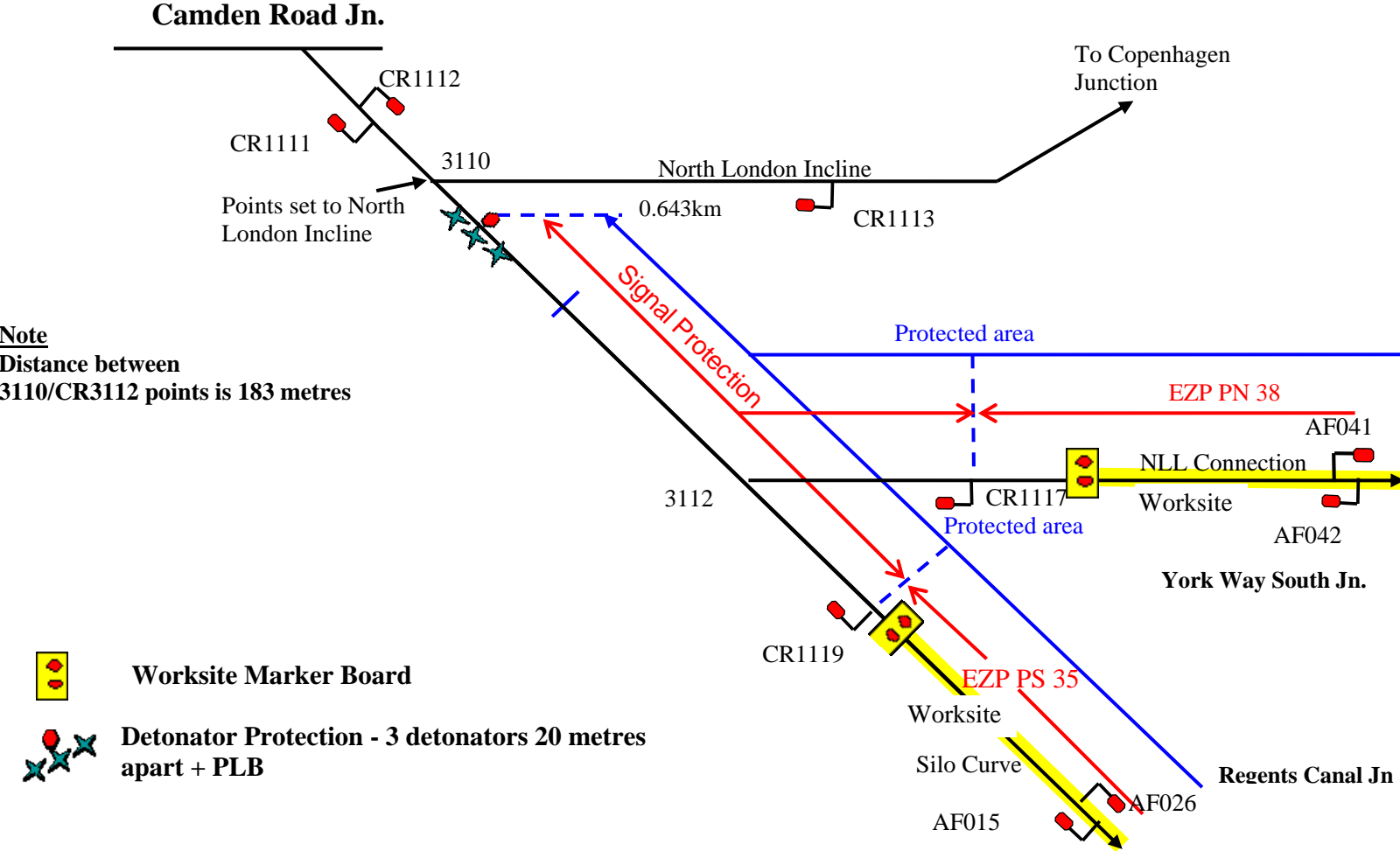
**Diagram CR1 - Example of CTRL Protected Area on NLL connection and Silo Curve**  
**Worksite extends to the Camden Road Jn. side of CR1117 and CR1119 signals**  
**No works trains/OTM/OTP permitted**





**Note**  
Distance between  
3110/CR3112 points is 183 metres

 **Worksite Marker Board**

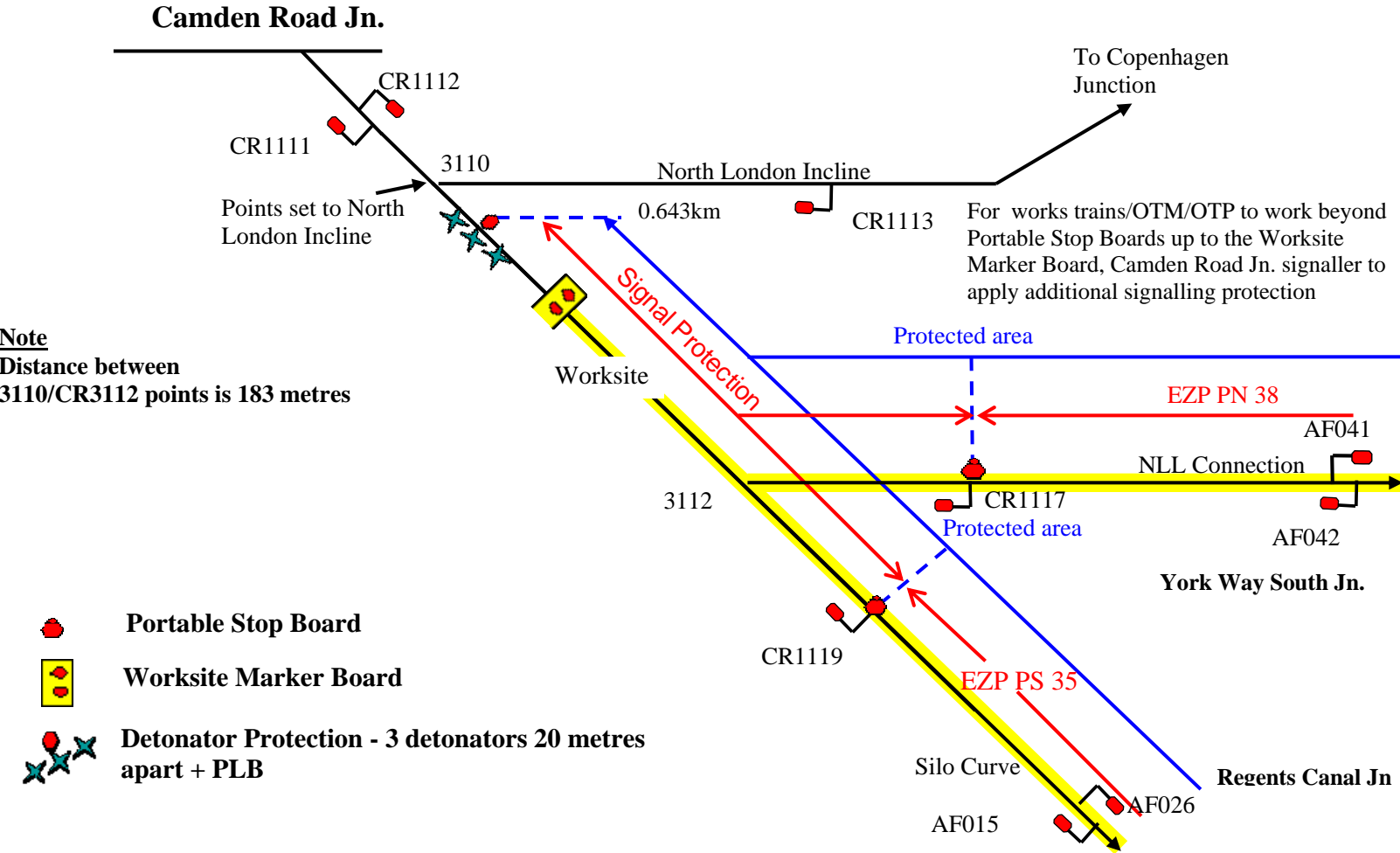
**Diagram CR2 - Example of CTRL Protected Area on NLL connection and Silo Curve**  
**Worksite fully CTRL side of CR1117 and CR1119 signals**  
 Works trains/OTM/OTP can operate without restriction



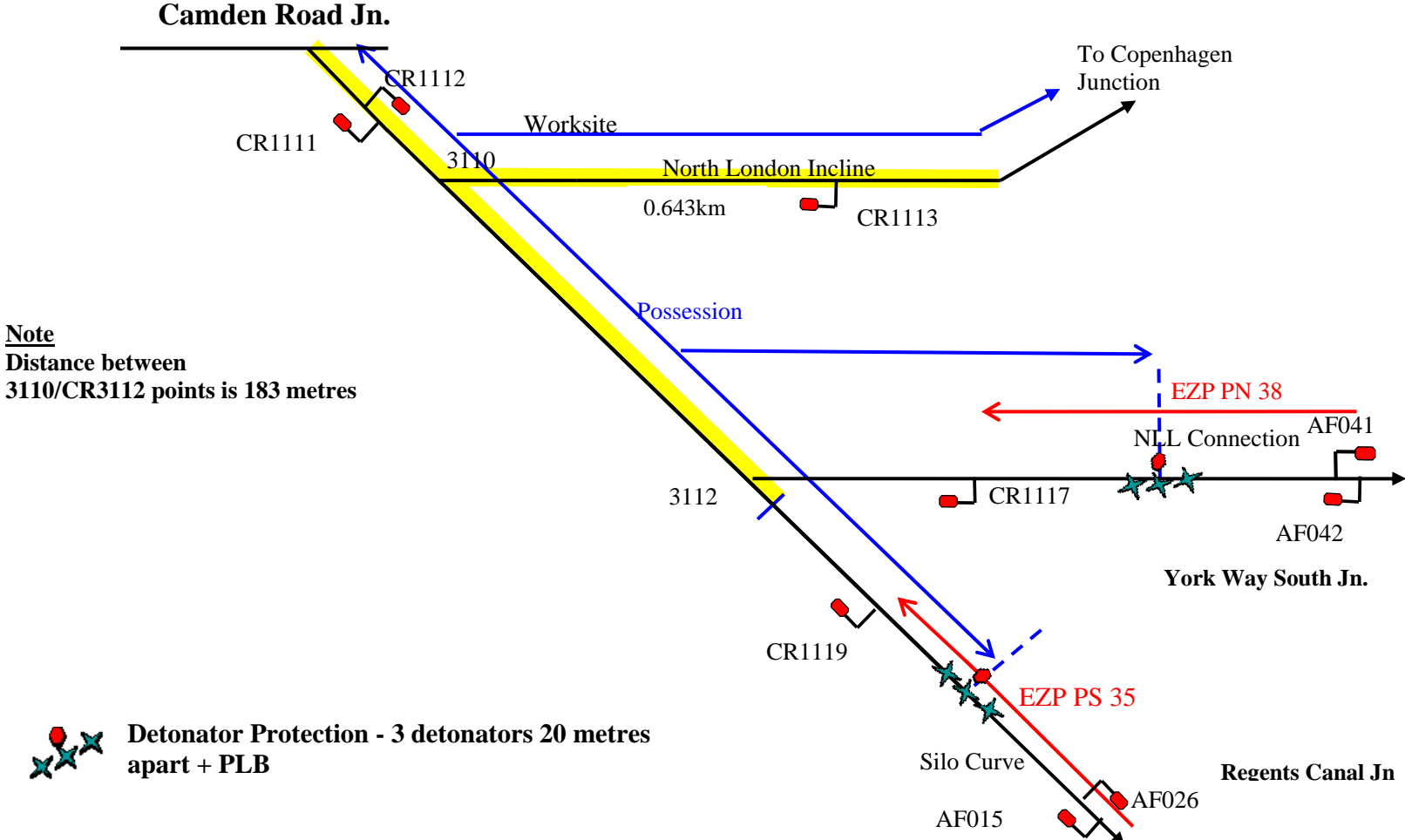
**Note**  
 Distance between  
 3110/CR3112 points is 183 metres


-  **Worksite Marker Board**
-  **Detonator Protection - 3 detonators 20 metres apart + PLB**

**Diagram CR3 - Example of CTRL Protected Area on NLL connection and Silo Curve**  
**Worksite extends to the Camden Road Jn. side of CR1117 and CR1119 signals**  
 Works trains/OTM/OTP can operate up to Portable Stop Boards without restriction



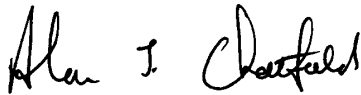
**Diagram CR4 - Example of Network Rail T3 possession on NLL connection and Silo Curve**



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	C/OP/OS/05/2012
	September 2007

# Procedures for taking possessions CTRL/Network Rail interface on the East Coast Main Line connection

Prepared by




.....  
**Alan Chatfield**  
Rules & Procedures Manager, Network Rail (CTRL) Ltd.

Authorised By:



.....  
**Paul Ellis**  
Operations Manager, Network Rail (CTRL) Ltd.



.....  
**Tony Raine**  
Route Operations Manager, Network Rail

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(CCMS 5231023)



# **PROCEDURES FOR TAKING POSSESSIONS CTRL/NETWORK RAIL INTERFACE ON THE EAST COAST MAIN LINE CONNECTION**

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- 2 Scope
- 3 Glossary
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  - 4.3 Principles applicable to CTRL Protected Areas
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  - 4.5 Planning and publication
- 5 Method of working for taking Protected Areas/possessions
  - 5.1 CTRL Protected Areas
  - 5.2 Network Rail possessions
- 6 Method of working for giving up Protected Areas/possessions
  - 6.1 CTRL Protected Areas
  - 6.2 Network Rail possessions

Diagrams

## **1. Purpose**

This standard details the procedures for taking track possessions to enable works to take place at the physical interface of the CTRL and Network Rail controlled infrastructures between the Regents Canal Jn. (St. Pancras International station end) and York Way North Jn. (ECML end) on the East Coast Main Line (ECML) connection.

## **2. Scope**

These procedures apply to track possessions that require train movements to be stopped between AF027 signal at Regents Canal Jn. and St. Pancras side of K2039 points at York Way North Jn.

This is defined as the Interface Area.

### 3. Glossary of terms

#### GENERAL

CTRL	Channel Tunnel Rail Link high speed line between London (St. Pancras International station) and Cheriton and associated chords and connecting lines.
CTRL personnel	Personnel employed by Network Rail (CTRL) Ltd. and its maintenance contractor. They apply the rules and regulations published in the CTRL Rule Book (C/02/OS/05/1000) and associated standards and procedures.
Defined message	A formal message between the AFC signaller and the Kings Cross signaller used in connection with arranging signalling protection for possessions.
ECML	East Coast Main Line – Network Rail main line between London (Kings Cross) and the north of England.
Kilometerage point (kp)	Datum point of any specific location which is the distance (in kilometres) from a given “0” point.
Network Rail	UK railway system that excludes the Channel Tunnel Rail Link high speed line and associated chords and connecting lines.
Network Rail personnel	Personnel employed by Network Rail Infrastructure Ltd., either by the territory or the route. They apply the rules and regulations published in the Railway Group Standard Rule Book (GE/RT8000) and associated standards and procedures.

#### CTRL

AFC Signaller	Person responsible for monitoring and controlling the signalling system for the CTRL controlled system.
Ashford Control Centre (AFC)	CTRL control centre at Ashford.
Engineering Zone of Protection (EZP)	Defined area of CTRL track which can be protected by the AFC’s signalling system in order to create a Protected Area. The limits of each Zone is indicated by “EZP” signs placed in the four foot or on the sleeper ends.
Protected Area	A section of CTRL track, protected within the signalling system by one or more EZPs, within which Worksite(s) can be created for engineering work or staff protection.
Responsible Person on Site (RPOS)	CTRL member of staff responsible for arranging protection by setting up a Protected Area.
Task Supervisor (TS)	CTRL member of staff responsible for setting up a worksite and the control of works train/OTM/OTP movements within that worksite.
Works train	A train used in the transport of staff, equipment and materials in connection with carrying out engineering works. The term also includes On-Track Machines.

#### NETWORK RAIL

Engineering Supervisor (ES)	Network Rail member of staff responsible for setting up a worksite and the control of works train/OTM/OTP movements within that worksite.
Kings Cross signal box	Network Rail signal box that interfaces with the CTRL on the ECML connection.

Kings Cross signal box signaller Person responsible for monitoring and controlling the Network Rail signalling system for the ECML.

Person in charge of Possession (PICOP) Network Rail member of staff responsible for arranging protection by setting up a possession.

Possession A portion of Network Rail track that is protected by the signalling system and detonator protection, within which Worksite(s) can be created for engineering work or staff protection.

## 4. Principles

### 4.1 General

CTRL or Network Rail personnel (including maintenance contractors) to apply the rules and procedures of the organisation that they are working for.

CTRL personnel to request Protected Areas from the AFC Signaller.

Network Rail personnel to request possessions from the Kings Cross signaller.

CTRL Protected Areas and Network Rail possessions must not overlap.

### 4.2 Defined messages

Defined messages must be used for communications between signallers when arranging the signal protection arrangements for Protected Areas/possessions.

The AFC signaller to record details of defined messages in the AFC log. The Kings Cross signaller to record details of defined messages in the Occurrence Book.

Defined messages to be in the format shown in the following examples:

#### AFC signaller to Kings Cross signaller

"Block the ECML connection because of a CTRL possession - My message no. 123456".

#### Kings Cross signaller to AFC signaller

"Reference your message no. 123456, the up and down ECML connection is now blocked because of a CTRL possession - My message no. 987654".

#### AFC signaller to Kings Cross signaller

"Reference my message no. 123456, the block of the up and down ECML connection because of a CTRL possession may be removed - My message no. 123457".

### 4.3 Principles applicable to CTRL Protected Areas

#### Notes:

1. Examples of the application of principles are shown in the diagrams at the end of these procedures.
2. When the term "detonator protection" is used in these procedures, the RPOS must arrange for:
  - three detonators to be put on the line concerned, 20 metres apart on the cess side railhead.
  - a Possession Limit Board (PLB) to be attached to the cess side railhead next to the middle detonator. PLBs must be red with the word STOP on both sides with a steady or flashing red light that can be seen along the line in both directions.

The CTRL EZP that is next to the Kings Cross signal controlled area and its protecting signals is:

Line	EZP	Protecting signal at Network Rail end	Protecting signal at CTRLend
ECML connection	PE39	K300	AF027

The AFC signaller must request permission from the Kings Cross signaller before applying this EZP.

Module T3 of the CTRL Rule Book to apply with the application of the following additional principles:

- CTRL personal must not work on the York Way North Jn. side of AF027 signal without EZP PE39 first being operated .
- Protected Area requests must be made using the Forms Process (Form POSSI).

- Detonator protection to be placed on the approach to K259 signal.
- Before detonator protection is put down, the AFC signaller to arrange signalling protection with the Kings Cross signaller and the line side switch operated.

**Note:** Maintenance of equipment on the York Way North Jn. side of K259 signal by CTRL personnel must only be carried out under the protection of a possession and worksite in accordance with Module T3 of the Railway Group Standard Rule Book under the authority of a PICOP and ES.

#### 4.4 Principles applicable to Network Rail possessions

When a Network Rail possession requires the line on the St. Pancras International station side of K259 signal to be blocked, the Railway Group Standard Rule Book to apply with the additional requirements shown in these procedures:

- A possession of the ECML connection must have EZZ PE39 applied. The Kings Cross signal box signaller to request the AFC signaller to apply protection.
- Detonator protection for a T3 possession to be placed on the approach to AF028 signal.
- The detonator protection for a CTRL Protected Area and the detonator protection for a Network Rail possession must not overlap. If a CTRL Protected Area is adjacent to a Network Rail possession, each must have its own detonator protection put “back-to-back”.

**Note:** Maintenance of equipment on the St. Pancras International station side of AF028 signal by Network Rail personnel must be carried out under the protection of a Protected Area and worksite in accordance with Module T3 of the CTRL Rule Book under the authority of a NPOS and TS.

#### 4.5 Planning and publication

CTRL and Network Rail must advise each other of Protected Areas/possessions that are planned for the interface area. If a CTRL Protected Area and Network Rail possession are adjacent, the location where each organisation’s detonator protection is to be put down is to be identified.

Details of CTRL Protected Areas and Network Rail possessions to be published in the Network Rail Weekly Operating Notice (WON) and the CTRL Daily Notice.

### 5. Method of working for taking Protected Areas/possessions

#### 5.1 CTRL Protected Area

- 5.1.1 The RPOS requests the Protected Area from the AFC signaller using the Forms Process.
- 5.1.2 The AFC signaller requests the Kings Cross signaller to block the ECML connection for a CTRL possession *(Defined Message)*
- 5.1.3 The Kings Cross signaller
  - sets K2039 points to the North London Incline route and applies reminder appliance,
  - confirms to the AFC signaller that the ECML connection is blocked for a CTRL possession. *(Defined Message)*
- 5.1.4 The AFC signaller:
  - applies EZZ PE39,
  - tells the RPOS that it is safe to place detonator protection.
- 5.1.5 The RPOS
  - arranges for the EZZ PE39 switch to be operated,
  - puts down detonator protection on the approach to K259 signal,
  - tells the AFC signaller that the detonator protection has been put down.
- 5.1.6 The AFC signaller grants the Protected Area request to the RPOS.

- 5.1.7 The RPOS gives authority for the TS to create the worksite.
- 5.1.8 The TS creates the worksite in accordance with the instructions shown in Module T3 of the CTRL Rule Book

## **5.2 Network Rail T3 possession**

- 5.2.1 The PICOP confirms with the Kings Cross signaller which signals will be used to protect the Network Rail possession.
- 5.2.2 The Kings Cross signal box signaller
  - applies signal protection.
  - asks the AFC signaller to provide protection for a Network Rail possession.  
*(Defined Message)*
- 5.2.3 The AFC signaller
  - applies EZZ PE39,
  - tells the Kings Cross signaller that protection is provided. *(Defined Message)*
- 5.2.4 The Kings Cross signaller tells the PICOP that the Network Rail possession is protected by signals.
- 5.2.5 The PICOP
  - arranges for detonator protection to be put down on the approach to AF028 signal,
  - tells the Kings Cross signaller that detonator protection has been put down.
- 5.2.6 The Kings Cross signaller grants the Network Rail possession to the PICOP.

## **6. Method of working for giving up Protected Areas/possessions**

### **6.1 CTRL Protected Area**

- 6.1.1 The TS gives up worksite.
- 6.1.2 The RPOS
  - removes detonator protection
  - arranges for the EZZ switch to be operated,
  - gives up the Protected Area to the AFC signaller.
- 6.1.3 The AFC signaller
  - removes the EZZ protection,
  - tells the Kings Cross signal box signaller that the block for the CTRL possession can be removed. *(Defined Message)*
- 6.1.4 The Kings Cross signaller removes the protection from K2039 points.

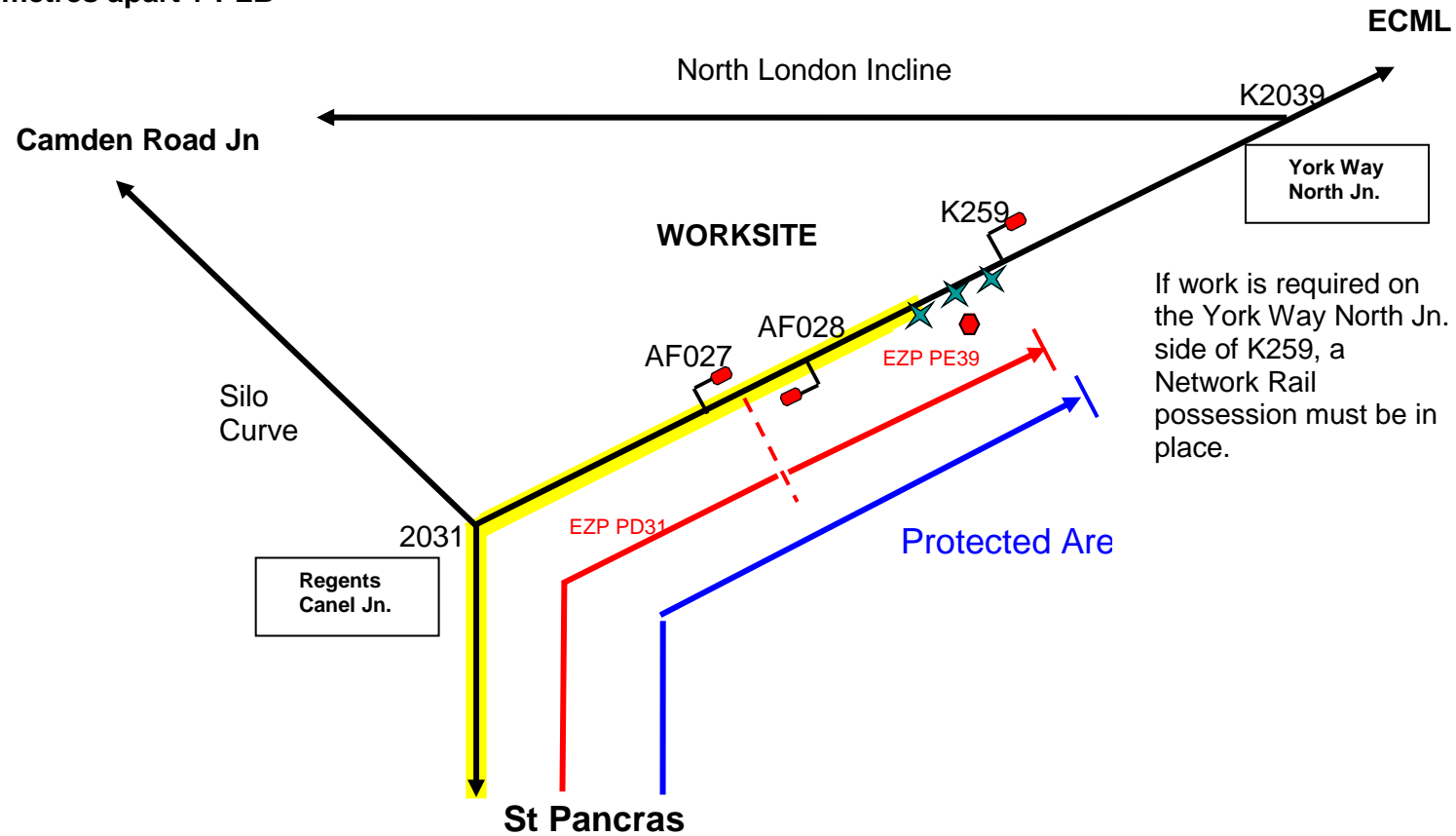
### **6.2 Network Rail possession**

- 6.2.1 The PICOP gives up the possession to the Kings Cross signaller
- 6.2.2 The Kings Cross signal box signaller
  - removes signal protection,
  - tells the AFC signaller that the protection for a Network Rail possession can be removed. *(Defined Message)*
- 6.2.3 The AFC signaller removes the EZZ protection.

### Diagram ECML 1— Example of a CTRL Protected area and worksite at the ECML interface



Detonator Protection - 3 detonators 20 metres apart + PLB

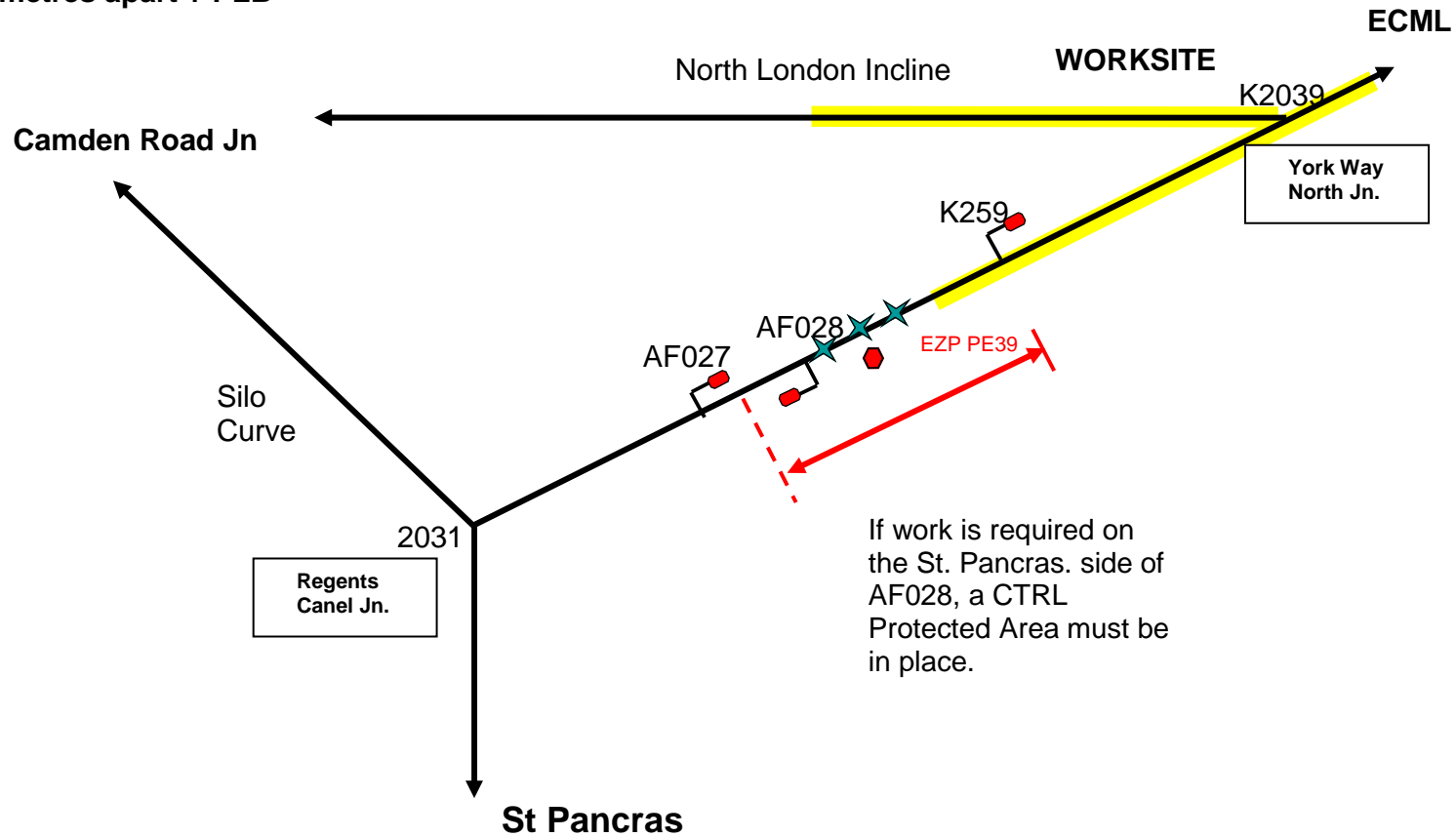





### Diagram ECML 2— Example of a Network Rail possession and worksite at the ECML interface



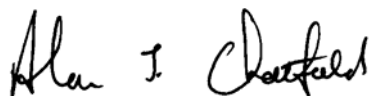
Detonator Protection - 3 detonators 20 metres apart + PLB



	Level Two Standard
	C/OP/OS/05/2013
	July 2008

## Procedures for taking possessions CTRL/Network Rail interfaces on the Ripple Lane chords

Prepared by



.....  
**Alan Chatfield**  
Rules & Procedures Manager, Network Rail (CTRL) Ltd.

Authorised by:



.....  
**Paul Ellis**  
Operations Manager, Network Rail (CTRL) Ltd.



.....  
**Tim Leighton**  
Route Operations Manager, Network Rail

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(CCMS 6298511)*

# PROCEDURES FOR TAKING POSSESSIONS CTRL/NETWORK RAIL INTERFACES ON THE RIPPLE LANE CHORDS

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REVISION HISTORY		
November 2007	Initial issue	AC
July 2008	Inclusion of Network Rail T2/T12 protection arrangements. Additional requirements for Network Rail T3 possessions when works trains/OTM/OTP are present. Removal of requirement for the RPOS to place detonator protection for a CTRL Protected Area when there is no works trains/OTM/OTP present.	AC

Amendments to text are indicated by a side-line in the margin.

## 1. Purpose

This standard details the arrangements to apply in order to protect maintenance work being carried out by either CTRL or Network Rail personnel from train movements at the physical interface of the CTRL and Network Rail controlled infrastructures on the Ripple Lane chords.

The following must be specially noted:

- CTRL personnel apply the rules and regulations published in the CTRL Rule Book (C/02/OS/05/1000) and associated standards and procedures.
- Network Rail personnel apply the rules and regulations published in the Railway Group Standard Rule Book (GE/RT8000) and associated standards and procedures.

This standard summarises those parts of Modules G & T3 of the CTRL Rule Book and Modules T2, T3, T7 & T12 of the Railway Group Standard Rule Book applicable to the protection of maintenance works at this interface. For full details, the publication concerned must be referred to.

This standard does **not** apply to the protection arrangements for traction current isolations of the 25kV AC Overhead Line Equipment. These arrangements are shown in the Level 2 Standard "Procedures for taking isolations of the traction power supply at the CTRL (Section 2) / Network Rail interfaces" (C/OP/OS/05/2010), dated June 2007.

## 2. Scope

These procedures apply when maintenance work has to be undertaken between the following locations (refer to the diagram on page 4):

### **Down Ripple Lane chord**

Colour light signal UR834, CTRL side of 2508 points at the exit of Ripple Lane Exchange Sidings (CTRL kp 20.071), and Block Section Marker AF880, Ripple Lane Exchange Sidings side of 2090 points where the Down Ripple Lane chord joins the Down CTRL (CTRL kp 20.518).

### **Up Ripple Lane chord**

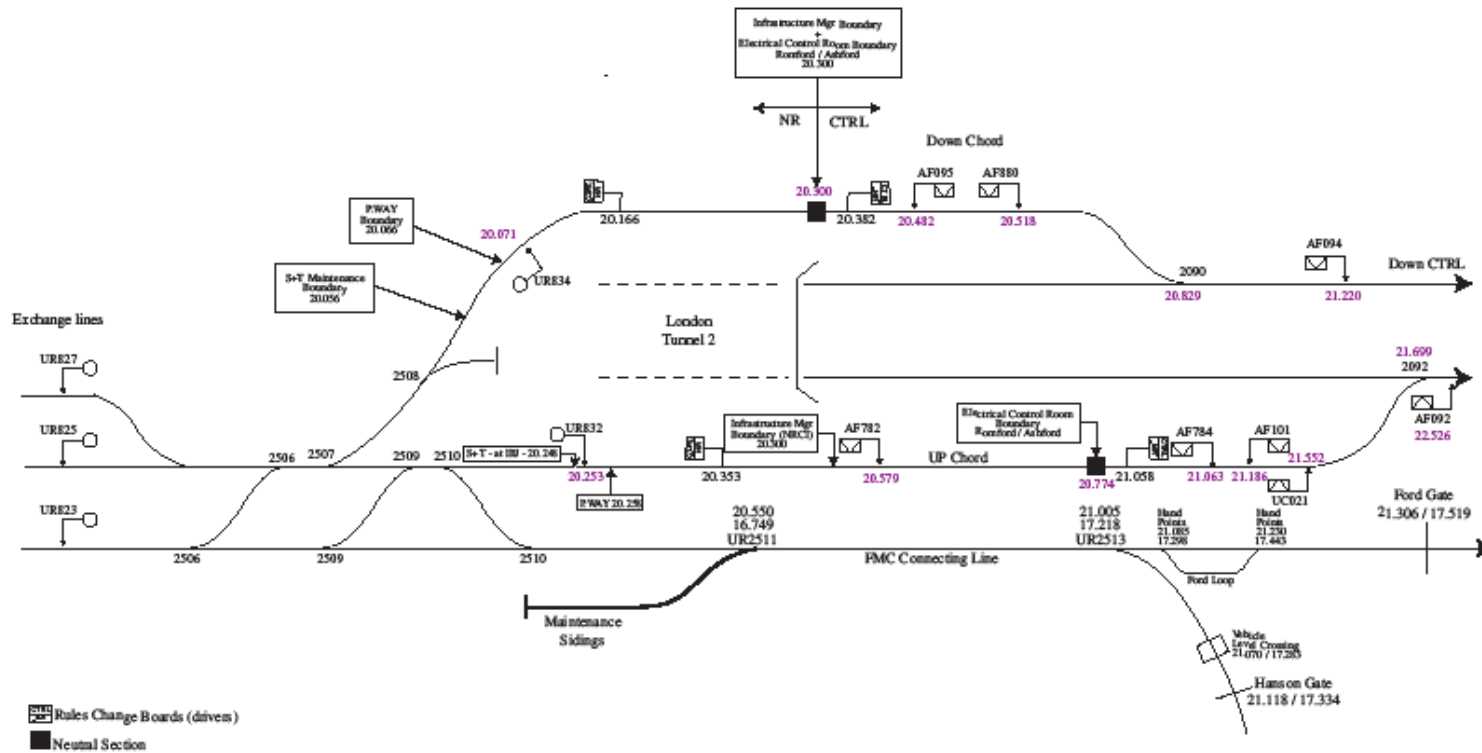
Block Section Marker UC021, Ripple Lane Exchange Sidings side of 2092 points where the Up Ripple Lane chord joins the Up CTRL (CTRL kp 21.552), and colour light signal UR832, CTRL side of 2510 points at the entrance to Ripple Lane Exchange Sidings (CTRL kp 20.253).

This is defined as the Interface Area.

### **Notes:**

- 1 If CTRL personnel are required to maintain any items of equipment on Network Rail controlled infrastructure outside the Interface Area, this must be carried out in accordance with the Railway Group Standard Rule Book: either Module T3 under the authority of a PICOP and ES, or Module T2 under the authority of a COSS.
- 2 These procedures also apply to Network Rail T3 possessions on the Ripple Lane Exchange Sidings side of colour light signals UR832/UR834 involving works trains/OTM/OTP that require any of points 2507, 2508 or 2509 to be set to the reverse position.

### Ripple Lane Chords - Boundaries (Summary)



Revision AF - 05-12-06

3.

### 3. Reference documents

CTRL Rule Book, Module G (C/02/OS/05/1000), "General and personal safety on the operational railway".

CTRL Rule Book, Module T3 (C/02/OS/05/1000), "Protection arrangements on the line and the control of works trains".

Railway Group Standard Rule Book, Module T2 (GE/RT8000/T2), "Protecting engineering work or a hand trolley on a line not under possession".

Railway Group Standard Rule Book, Module T3 (GE/RT8000/T3), "Possession of the line for engineering work".

Railway Group Standard Rule Book, Module T7 (GE/RT8000/T7), "Safe systems of work when walking or working on or near the line".

Railway Group Standard Rule Book, Module T12 (GE/RT8000/T12), "Protecting personnel carrying out activities on the line that do not affect the safety of the line".

### 4. Glossary of terms

#### GENERAL

CTRL	Channel Tunnel Rail Link high speed line between London (St. Pancras) and Cheriton and associated chords and connecting lines.
CTRL personnel	Personnel employed by Network Rail (CTRL) Ltd. and its maintenance contractor.
Defined Message	A formal message between the AFC signaller and the Upminster IECC signaller used in connection with arranging signalling protection.
Kilometerage point (kp)	Datum point of any specific location which is the distance (in kilometres) from a given "0" point.
Network Rail	UK railway system that excludes the Channel Tunnel Rail Link high speed line and associated chords and connecting lines.
Network Rail personnel	Personnel employed by Network Rail Infrastructure Ltd., either by the territory or the route.

#### CTRL

AFC Signaller	Person responsible for monitoring and controlling the signalling system for the CTRL controlled system.
Ashford Control Centre (AFC)	CTRL control centre at Ashford.
Block Section Marker	A marker which identifies the boundary between adjacent block sections in an area controlled by the cab signalling system.
Engineering Zone of Protection (EZP)	Defined area of CTRL track which can be protected by the AFC's signalling system in order to create a Protected Area. The limits of each Zone is indicated by "EZP" signs placed in the four foot or on the sleeper ends.
Protected Area	A section of CTRL track, protected within the signalling system by one or more EZPs, within which Worksite(s) can be created for engineering work or staff protection.
Responsible Person on Site (RPOS)	CTRL member of staff responsible for arranging protection by means of a Protected Area.

Task Supervisor (TS)	CTRL member of staff responsible for setting up a worksite and the control of works train/OTM/OTP movements within that worksite.
Works train	A train used in the transport of staff, equipment and materials in connection with carrying out engineering works. The term also includes On-Track Machines.

## NETWORK RAIL

Controller of Site Safety (COSS)	Network Rail member of staff responsible for arranging protection in accordance with Module T2 of the Railway Group Standard Rule Book.
Engineering Supervisor (ES)	Network Rail member of staff responsible for setting up a worksite within a T3 possession and the control of works train/OTM/OTP movements within that worksite.
FMC (Ford Motor Company) connecting line	Line that runs adjacent to the Up Ripple Lane chord that connects Ripple Lane Exchange Sidings to the Ford's and Hanson's sidings for the exchange of those companies' traffics. This line is under the control of Upminster IECC and the Railway Group Standard Rule Book applies.
Green Zone	A site of work on or near the line within which there are no train movements.
Individual Working Alone (IWA)	Network Rail member of staff responsible for arranging protection in accordance with Module T12 of the Railway Group Standard Rule Book.
Person in charge of Possession (PICOP)	Network Rail member of staff responsible for arranging protection by means of a T3 possession in accordance with the Railway Group Standard Rule Book.
Red Zone	A site of work on or near the line which is <b>not</b> protected from train movements.
T2 protection	A portion of Network Rail track that is protected by the signalling system within which engineering work may be carried out.
T3 possession	A portion of Network Rail track that is protected by the signalling system and detonator protection, within which worksite(s) can be created for maintenance work to be carried out. A T3 possession must be arranged if there are works trains/OTM/OTP involved.
T12 protection	A portion of Network Rail track that is protected by the signalling system within which engineering work may be carried out.
Upminster Integrated Electronic Control Centre (IECC)	Network Rail signalling control centre that interfaces with the CTRL on the Ripple Lane chords.
Upminster IECC signaller	Person responsible for monitoring and controlling the Network Rail signalling system for the Ripple Lane Exchange Sidings area.

## 5. Principles

### 5.1 General

CTRL or Network Rail personnel (including maintenance contractors) to apply the rules and procedures of the organisation that they are working for.

CTRL personnel to request Protected Areas from the AFC Signaller.

Network Rail personnel to request T2/T12 protections or T3 possessions from the Upminster IECC signaller.

CTRL Protected Areas and Network Rail T2/T12 protections or T3 possessions must not overlap.

The detonator protection for a CTRL Protected Area (if required) and the detonator protection for a Network Rail T2-H protection or T3 possession must not overlap. If a CTRL Protected Area is adjacent to a Network Rail T2-H protection or T3 possession, each must have its own detonator protection put "back-to-back".

### 5.2 Defined messages

Defined messages must be used for communications between signallers when arranging the signal protection arrangements for CTRL Protected Areas or Network Rail possessions/protections.

The AFC and Upminster IECC signallers to record details of defined messages in their respective Occurrence Books.

Defined messages to be in the format shown in the following examples:

#### **AFC signaller to Upminster IECC signaller**

"Block the Up Ripple Lane chord and FMC connecting line because of a CTRL possession - My message no. 123456".

#### **Upminster IECC signaller to AFC signaller**

"Reference your message no. 123456, the Up Ripple Lane chord and FMC connecting line are now blocked because of a CTRL possession - My message no. 987654".

#### **AFC signaller to Upminster IECC signaller**

"Reference my message no. 123456, the block of the Up Ripple Lane chord and FMC connecting line because of a CTRL possession may be removed - My message no. 123457".

### 5.3 Principles applicable to CTRL Protected Areas

#### **Notes:**

- 1 Examples of the application of principles are shown in the diagrams at the end of these procedures.
- 2 When the term "detonator protection" is used in these procedures, the RPOS must arrange for:
  - three detonators to be put on the line concerned, 20 metres apart on the cess side railhead.
  - a Possession Limit Board (PLB) to be attached to the cess side railhead next to the middle detonator. PLBs must be red with the word STOP on both sides with a steady or flashing red light that can be seen along the line in both directions.



The CTRL EZPs that are next to the Upminster IECC signal controlled area and their protecting signals and Block Section Markers are:

Line	EZP	Protecting signals at Ripple Lane Exchange Sidings end	Protecting Block Section Marker at CTRL end
Up Ripple Lane chord	RU22	UR823/UR825/UR827	AF092
Down Ripple Lane chord	RD21	UR823/UR825/UR827	AF880

The AFC signaller must request permission from the Upminster IECC signaller before applying these EZPs.

Module T3 of the CTRL Rule Book to apply with the application of the following additional principles:

- CTRL personnel must not work on the Ripple Lane Exchange Sidings side of UC021 Block Section Marker (Up Ripple Lane chord) or AF880 Block Section Marker (Down Ripple Lane chord) without EGP RU22 or RD21 first being operated.
- Protected Area requests must be made using the Forms Process.
- Access to the lineside switch for EGP RU22 is only possible **after** crossing the FMC connecting line and the Up Ripple Lane chord. The FMC connecting line is to be blocked with Upminster IECC by a COSS in accordance with the Railway Group Standard Rule Book (GE/RT8000). The RPOS is authorised to cross the Up Ripple Lane chord once the AFC signaller has granted the Protected Area.  
**Note:** The RPOS may also be the COSS if they are trained and certified competent. He/she must protect the FMC connecting line in accordance with the Railway Group Standard Rule Book and the Up Ripple Lane chord in accordance with the CTRL Rule Book.
- Detonator protection need only be provided on the approach to UR832 and UR834 signals if works trains/OTM/OTP are working within the Protected Area.
- Before detonator protection is put down, the AFC signaller to arrange signal protection with the Upminster IECC signaller and the appropriate lineside switch(es) operated.
- Worksite Marker Boards must always be provided after the operation of the appropriate lineside switch(es).
- If CTRL work on the Up Ripple Lane chord requires the FMC connecting line to be blocked to train movements, this must be done in accordance with the Railway Group Standard Rule Book (GE/RT8000).

#### 5.4 Principles applicable to Network Rail possessions and protections for maintenance work

The Railway Group Standard Rule Book to apply with the application of the following additional principles:

- Red Zone working as defined in Module T7 is prohibited.
- T2 protection [T2-D, T2-H (using detonators), and T2-X] or T12 protection is permitted.
- T2/T12 protection or a T3 possession must have EGP RD21 (Down Ripple Lane chord) and/or EGP RU22 (Up Ripple Lane chord) applied. The Upminster IECC signaller to request the AFC signaller to apply protection.
- Detonator protection for T2-H protection or a T3 possession of the Down Ripple Lane chord to be placed on the approach to AF095 Block Section Marker and on the Up Ripple Lane chord to be placed on the approach to AF101 Block Section Marker. (**Note:** Block Section Markers AF095 and AF101 will display a steady red aspect.)

- If Network Rail work on the FMC connecting line requires the Up Ripple Lane chord to be blocked to train movements, this must be done in accordance with these procedures as if Network Rail personnel were working on the Up Ripple Lane chord.
- When a Network Rail T3 possession involving works trains/OTM/OTP requires 2507 or 2509 points to be set to the reverse position, the Up Ripple chord and Up CTRL line (EZPs RU22 and RU12) must have the EZPs applied to provide a safe overlap free of train movements. If 2508 points are required to be set to the reverse position the Down Ripple chord and Down CTRL line (EZPs RU21 and RU11) must have the EZPs applied to provide a safe overlap free of train movements. Points 2507, 2508 or 2509 must not be set to the reverse position unless the protection has been applied.

## 5.5 Planning and publication

CTRL and Network Rail must advise each other of CTRL Protected Areas, Network Rail T2/12 protections or T3 possessions that are planned for the interface area (including the FMC connecting line) and if works trains/OTM/OTP will be present. If a CTRL Protected Area and Network Rail T2-H protection or T3 possession are adjacent, the location where each organisation's detonator protection is to be put down is to be identified.

**Note:** If the CTRL Protected Area requires the Up Ripple Lane chord to be blocked (EZP RU22), trains to/from the Ford's and Hanson's sidings must be planned to use Ripple Lane Exchange Siding no. 3 only. Any works trains/OTM that are required to enter/exit the CTRL Protected Area must be planned to use Ripple Lane Exchange Sidings nos. 1 and 2 only.

## 6. Method of working for taking CTRL Protected Areas or Network Rail possessions/protections

### 6.1 CTRL Protected Areas

6.1.1 The RPOS requests the Protected Area from the AFC signaller using the Forms Process.

#### Down Ripple Lane chord

6.1.2 The AFC signaller requests the Upminster IECC signaller to block the Down Ripple Lane chord for a CTRL possession. *(Defined Message)*

6.1.3 The Upminster IECC signaller

- maintains 2508 points in the normal position and applies reminder appliance,
- confirms to the AFC signaller that the Down Ripple Lane chord is blocked for a CTRL possession. *(Defined Message)*

6.1.4 The AFC signaller applies EZP RD21.

#### Up Ripple Lane chord

6.1.5 The AFC signaller requests the Upminster IECC signaller to block the Up Ripple Lane chord for a CTRL possession. *(Defined Message)*

6.1.6 The Upminster IECC signaller

- maintains 2507 and 2509 points in the normal position and applies reminder appliances,
- confirms to the AFC signaller that the Up Ripple Lane chord is blocked for a CTRL possession, *(Defined Message)*
- routes trains to/from the Ford's and Hanson's sidings via Ripple Lane Exchange Siding no. 3 only.

6.1.7 The AFC signaller applies EZP RU22.

#### Both chords

6.1.8 The AFC signaller grants the Protected Area request to the RPOS.

6.1.9 The RPOS

- arranges for EZP RD21 and/or EZP RU22 lineside switch(es) to be operated,
- if works trains/OTM/OTP are working in the Protected Area, arranges for detonator protection to be put down on the approach to UR832 and/or UR834 signal(s),

- gives authority for the TS to create the worksite.
- 6.1.10 The TS creates the worksite in accordance with the instructions shown in Module T3 of the CTRL Rule Book
- 6.2 Movements of works trains/OTM from/to the Upminster IECC signal controlled area**
- 6.2.1 Movements into the Protected Area from the Upminster IECC signal controlled area**
- Note:** Works trains/OTM that are required to enter the CTRL Protected Area must use Ripple Lane Exchange Sidings nos. 1 and 2 only.
- 6.2.1.1 When the works train/OTM arrives at UR825/UR827 signal, the Upminster IECC signaller requests permission of the AFC signaller for the train to proceed.
- 6.2.1.2 The AFC signaller
- gets permission from the RPOS for the works train/OTM to proceed
  - tells the Upminster IECC signaller that permission is given.
- 6.2.1.3 The Upminster IECC signaller
- sets the route from UR825/UR827 signal using the route card(s) provided,
  - obtains confirmation from another signaller or the Signalling Shift Manager that the route is set correctly,
  - authorises the driver of the works train/OTM to pass UR825/UR827 signal at danger,
  - tells them to proceed cautiously to the detonator protection.
- 6.2.1.4 The RPOS
- arranges to meet the works train/OTM at the detonator protection,
  - removes the detonator protection,
  - instructs the driver of the works train/OTM to proceed cautiously to the Worksite Marker Board,
  - when the works train/OTM has gone past, replaces the detonator protection,
  - tells the AFC signaller that the works train/OTM has entered the Protected Area.
- 6.2.1.5 The AFC signaller tells the Upminster IECC signaller that the works train/OTM has passed clear of the detonator protection
- 6.2.2 Movements from the Protected Area to the Upminster IECC signalled controlled area**
- 6.2.2.1 When a works train/OTM is ready to leave the Protected Area, the driver must stop at the detonator protection
- 6.2.2.2 The RPOS
- tells the AFC signaller that the works train/OTM is ready to leave,
  - requests permission for the detonator protection to be removed.
- 6.2.2.3 The AFC signaller requests permission from the Upminster IECC signaller for the works train/OTM to leave the Protected Area.
- 6.2.2.4 When the Upminster IECC signaller gives permission, the AFC signaller tells the RPOS to remove the detonator protection and tell the driver to contact the Upminster IECC signaller for instructions.
- 6.2.2.5 The RPOS
- removes the detonator protection,
  - tells the driver of works train/OTM to contact the Upminster IECC signaller for instructions.
- 6.2.2.6 The driver
- contacts the Upminster IECC signaller for instructions,
  - checks that the detonator protection has been removed,
  - proceeds in accordance with the instructions received.

6.2.2.7 When the works train/OTM has left the Protected Area, the RPOS replaces the detonator protection.

### **6.3 Network Rail T2/T12 protections or T3 possessions without works trains/OTM/OTP present**

6.3.1 The COSS/IWA/PICOP confirms with the Upminster IECC signaller which signals will be used to protect the Network Rail T2/T12 protection or T3 possession.

6.3.2 The Upminster IECC signaller

- applies signal protection.
- asks the AFC signaller to provide protection for a Network Rail possession. *(Defined Message)*

6.3.3 The AFC signaller

- applies EYP RD21 and/or EYP RU22,
- tells the Upminster IECC signaller that protection is provided. *(Defined Message)*

6.3.4 The Upminster IECC signaller tells the COSS/IWA/PICOP that the Network Rail T2/T12 protection or T3 possession is protected by signals.

#### **6.3.5 Network Rail T2-H protection only**

6.3.5.1 The COSS arranges for detonator protection to be put down at the defined location.

#### **6.3.6 Network Rail T3 possessions only**

6.3.6.1 The PICOP

- arranges for detonator protection to be put down at the defined location,
- tells the Upminster IECC signaller that detonator protection has been put down.

6.3.6.2 The Upminster IECC signaller grants the Network Rail possession to the PICOP.

### **6.4 Network Rail T3 possession with works trains/OTM/OTP present**

**Note:** This clause applies if works trains/OTM/OTP are present in a Network Rail T3 possession and any of the points 2507, 2508 or 2509 requires to be set to the reverse position.

6.4.1 The PICOP confirms with the Upminster IECC signaller which signals will be used to protect the Network Rail possession.

6.4.2 The Upminster IECC signaller

- applies signal protection.
- asks the AFC signaller to provide protection for a Network Rail possession specifying that works trains/OTM/OTP will be present. *(Defined Message)*

6.4.3 The AFC signaller

- applies EZPs RD11 and RD21 (Down CTRL line/Down Ripple Lane chord) and/or EZPs RU12 and RU22 (Up CTRL line/Up Ripple Lane chord),
- tells the Upminster IECC signaller that protection is provided. *(Defined Message)*

6.4.4 The Upminster IECC signaller tells the PICOP that the Network Rail possession is protected by signals.

6.4.5 The PICOP

- arranges for detonator protection to be put down at the defined location,
- tells the Upminster IECC signaller that detonator protection has been put down.

6.4.6 The Upminster IECC signaller

- grants the Network Rail possession to the PICOP,
- sets points 2507, 2508 or 2509 to the reverse position when requested by the PICOP.

## **7. Method of working for giving up CTRL Protected Areas or Network Rail possessions/protections**

### **7.1 CTRL Protected Areas**

7.1.1 The TS gives up worksite.

7.1.2 The RPOS

- arranges for the detonator protection to be removed (if provided),
- arranges for the EZP switch(es) to be operated,
- gives up the Protected Area to AFC signaller.

7.1.3 The AFC signaller

- removes the EZP protection.
- tells the Upminster IECC signaller that the block for the CTRL possession can be removed. *(Defined Message)*

7.1.4 The Upminster IECC signaller removes the protection from 2507, 2508 and 2509 points.

### **7.2 Network Rail T2/T12 protections or T3 possessions**

7.2.1 The COSS of a T2-H protection or PICOP of a T3 possession arranges for the detonator protection to be removed.

7.2.2 The COSS/IWA of a T2/T12 protection tells the Upminster IECC signaller that signal protection is no longer required.

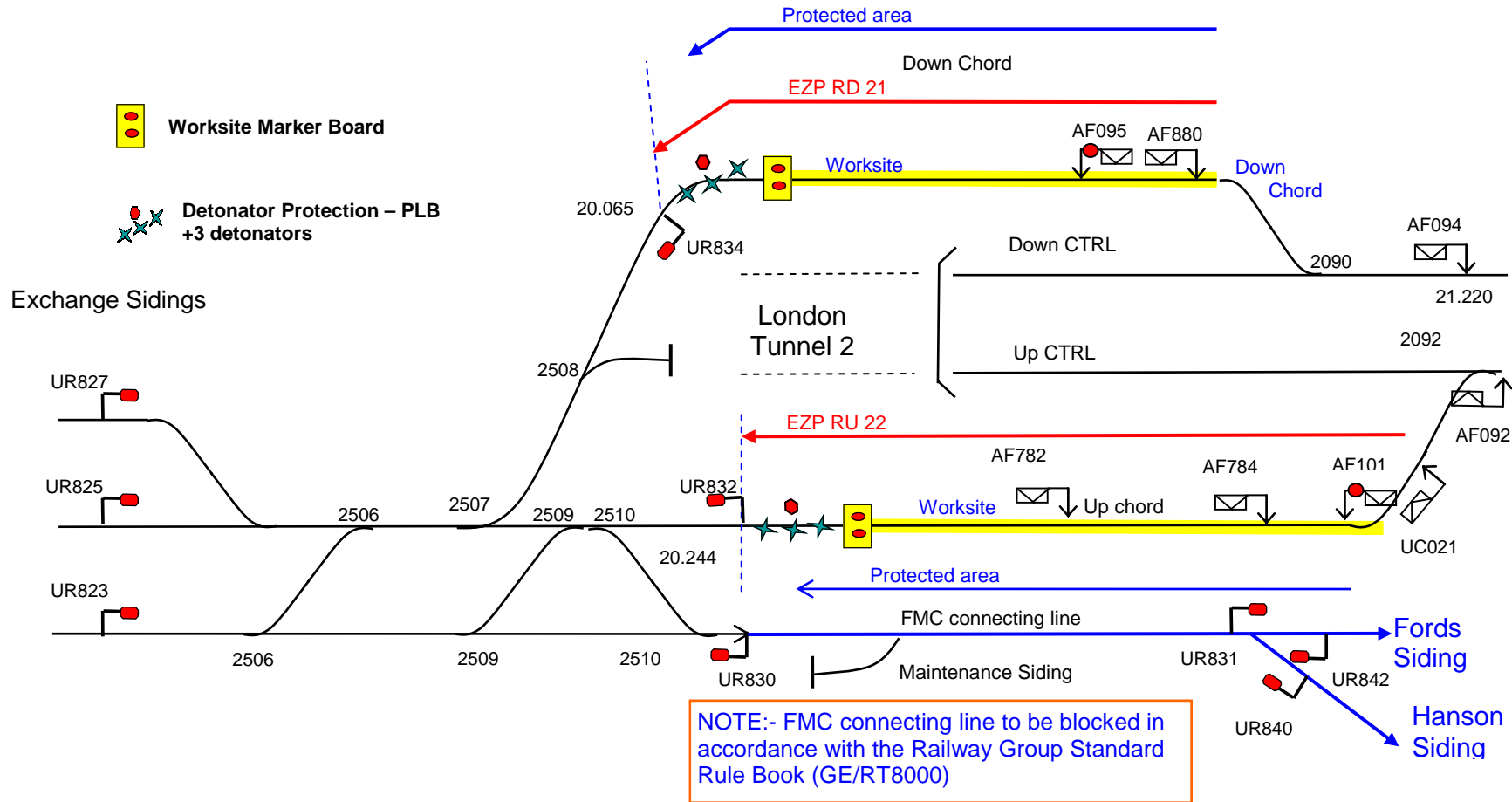
7.2.3 The PICOP of a T3 possession gives up the possession to the Upminster IECC signaller.

7.2.4 The Upminster IECC signaller

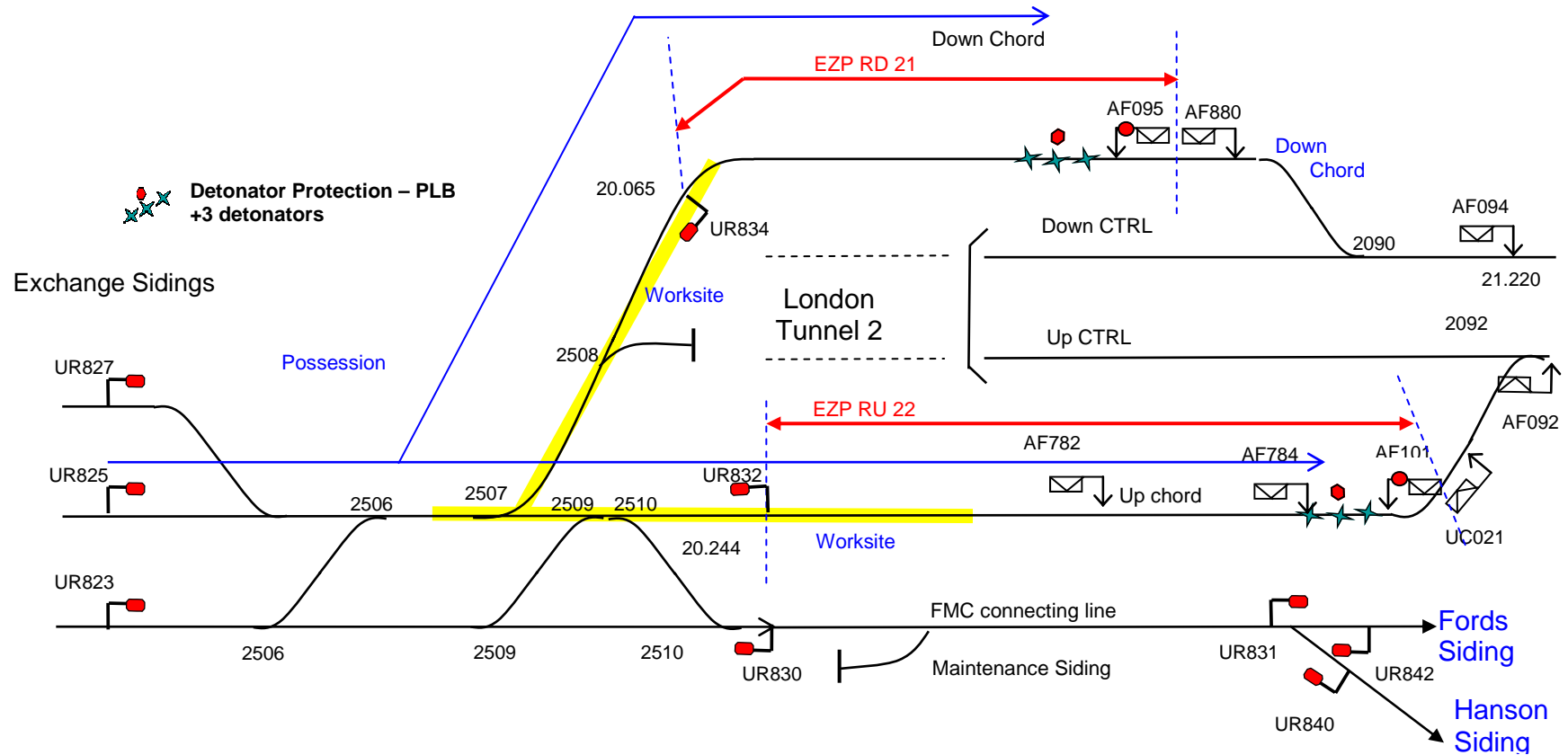
- Makes sure points 2507, 2508 and 2509 are in the normal position,
- removes signal protection,
- tells the AFC signaller that the protection for a Network Rail possession can be removed. *(Defined Message)*

7.2.5 The AFC signaller removes the EZP protection.

**Diagram RL1 - Example of CTRL Protected area and worksite at the CTRL/Ripple Lane chords interfaces**  
Works trains/OTM/OTP are permitted on up and down chord lines



**Diagram RL2 - Example of Network Rail T2 protection or T3 possession  
and worksite at the CTRL/Ripple Lane chords interfaces  
Works trains/OTM/OTP not permitted**



**Diagram RL3 - Example of Network Rail T3 possession and worksite on the Ripple Lane Exchange sidings side of UR832/UR834 signals**  
**Works trains/OTM/OTP permitted**

