

# **An Un-Official Guide to Signalling in Rail Simulator**

## **Part 2 – UK Colour Light Signals**

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Issue 1.00

Changes since previous version will be shown in blue.

### ***Introduction***

The intention of this guide is to show how the “as supplied” signalling can be applied to custom routes in an operationally as realistic a manner as possible. It is not intended to deal with any programming or scripting issues as they are being described elsewhere by others more competent than myself in these aspects. This document is designed to sit between the prototype signalling system information available in various books etc. and the detailed scripting and modelling details supplied by Rail Simulator. This is in no way an official publication and has not been sanctioned or approved in any way by Rail Simulator.

The following directions are referenced:

Normal – When the train is proceeding in the direction to which a signal applies.

Reverse – When the train is moving in the opposite direction to which a signal applies.

The following movement references are also made:

Passed – The front (in direction of travel) of a train/vehicle passes a specified point.

Cleared – The rear (in direction of travel) of a train/vehicle passes a specified point.

The signalling may appear on occasions to behave differently in scenarios than in free play. This is probably due to the route setting influences of the scenario “controller” rather than differences in the actual signalling controls. The tests to determine the following conclusions were undertaken in Free Play so as to demonstrate the different operations of the signalling.

### ***UK Colour Light Signals***

For the sake of simplicity I have shortened the signal file names in the descriptions below. The file descriptions in the options panel on RS in Editor Mode all start with “UK 2Asp CtrlSig...” or “UK 2Asp Signd...” or “2Asp JuncSig...” with similar designation for three and four aspect signals by changing the figure appropriately. The rest of the name refers to the feather positions (F number) for junction signals and also the number and type of the various track links (T and E numbers).

Below I have only used the unique part of the file name omitting the initial part. A full list, of the supplied UK signals in Rail Simulator, is shown in Appendix A.

#### **Feather Position Designations**

In the signal description for a junction signal there is a number prefixed with an F. This number is built up from the numbered positions of the individual “feathers” with which the signal is provided. For example signal fitted with F1 and F4 “feathers” is designated F14.

See Fig. 1 for details of the individual numbered positions.

Where a figure is repeated e.g. F11 or F44 this means that there are two track links which will result in the F1 or F4 “Feather” being illuminated. Refer to Appendix A for full details.

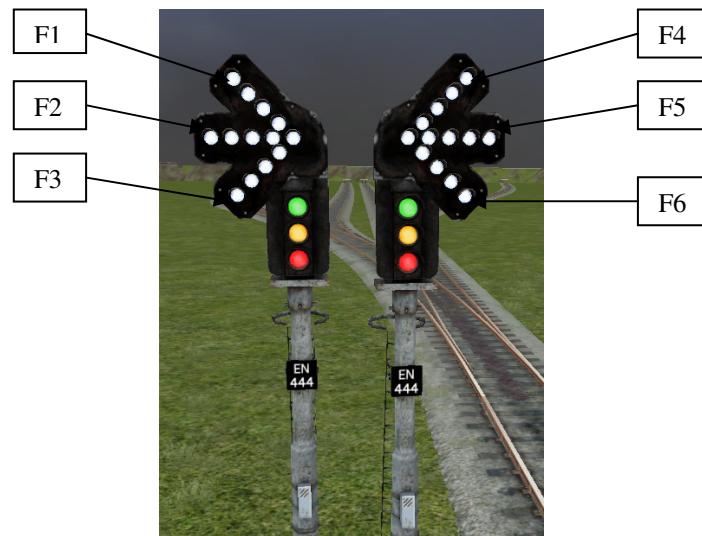
#### **Auto and Ctrl Signals**

Each aspect version of a signal has two post models named “AutoSig” and “CtrlSig”. In RS these function in an identical manner (use the same head models and scripts). However the graphical model of the post is slightly different with the “AutoSig” having a “semi-automatic” indicator plate fitted. See Fig.2.

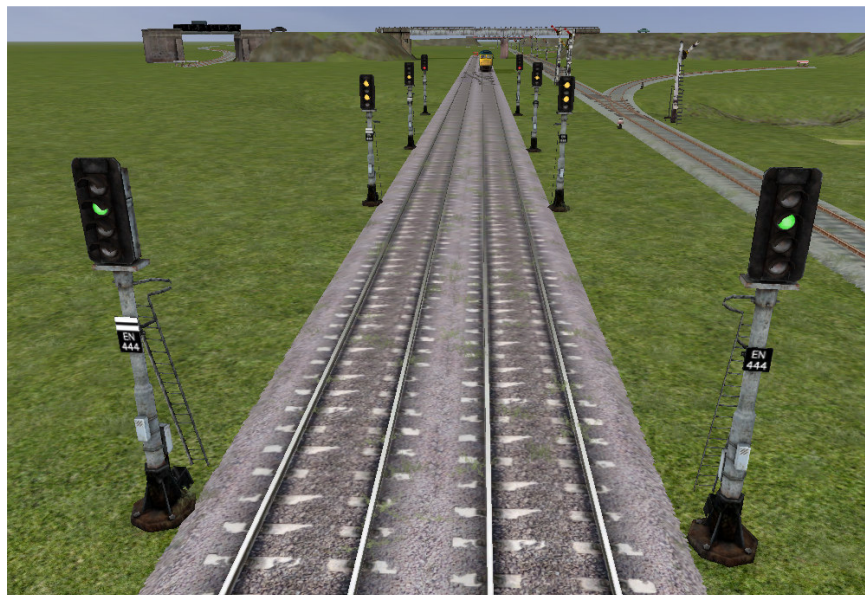
#### **Heads and Posts**

Colour light signals have two variations either “head only”, or “head on post”. They operate in a similar manner regardless. The “head only” versions are for mounting on gantries or as a separate item

on a user supplied post. The “head on post” signals are one model within Rail Simulator and are self-contained.



**Figure 1 Numbered positions of "feathers"**



**Figure 2 "AutoSig" on left and "CtrlSig" on Right. Both showing the four aspect signal sequence.**

## Signal Links

Each signal has one or more track links. There are three types of links which RS define as Link 0, “Route Link” and “Yard Entry”.

If a signal is passed and the train then proceeds onto a route without a link then it is possible for the signal to become “Locked” in the on position. See Fig.2 here the loco has proceeded down the LH track, passing each of the “AutoSig”s in turn. It then reversed over the crossover in the distance and passed all the “CtrlSig”s in reverse. The last “AutoSig” remained locked on as the loco did not pass its “Initial” Link on the way back. A train will then have to be reversed back down the route or the game will have to be restarted to get the signal to clear again. The loco then proceeded in the normal direction past the “CtrlSig”s to the position seen in Fig.2.

Also take care not to change the points between the Link 0 and the relevant Route Link until the train has cleared the Link 0 for the next signal. This can also cause the signal to “lock on”. It would appear that signals “count” trains passed their Link 0 and then subtract the number of trains passing the Link 0 of the next signal. The Route Links selecting which next signal is used. If the resulting number is zero then the signal is off (clear) if the number is not zero then the signal is on.

The links respond to the front and rear of trains. It would appear that they do not look at track occupation or count vehicles/axles. If used correctly the signals can look at the point/route settings and operate accordingly.

When you first “initialise” a route the signalling system will look for trains with drivers between its various links and then “set-up” accordingly.

### Link 0

Each signal has one of these track links (See Fig.3). In free roam mode this appears to perform the following functions at stop signals:-

When moving in the normal direction:

- 1) As front of train passes it sets the signal to on.
- 2) As the rear of the train clears it sets the preceding signal (in the rear) to off.

When moving in the reverse direction:

- 3) As the front of the train passes it sets the next signal in the direction of travel to on.
- 4) As the rear of the train clears it sets its own signal to off.

When positioning the marker make sure that the orange “arrow” head of the marker is clear of any points (to the rear of the red triangle/rectangle), as this can lead to signalling system confusion and it points in the forward direction (direction of movement for which the signal applies).

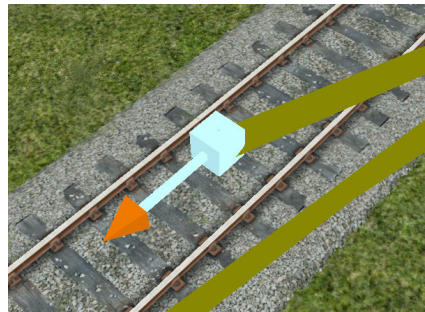


Figure 3 Link 0

### Route Link

A signal may have one, or more, of these types of link (See Fig.4), see Appendix A for details. It is used by the signal to define a specific route through one or more sets of point work. The signal looks at the lay of the points between the Link 0 and each of the Route Links. It would also appear to look for conflicting set routes crossing the path. It does not detect reverse routes, if the position of the points is the same. The signal also looks to the next signal beyond the set Route Link for which proceed indication to show (i.e. single or double yellow or green). On initialising the system (when a game is first started) it will detect any locomotives with drivers (not static consists) on the set route between it and the next signal. However, once the system has been initialised the signals only monitor passing traffic.

Only the first six Route Links visually display their number in the 3D model. Link numbers seven onwards do not display their numbers above them. See Fig.4.

In most cases the quantity of Route Links is one more than the number of “feathers”. The first link applies to the “non-feather” route the each remaining link applying to one feather. There are some signals where more than one Route Link applies to a “Feather”. Where this is done the “F” number is repeated in the signal description (e.g. F11 for two links which illuminate F1 feather). Refer to Appendix A for full details of individual signals.

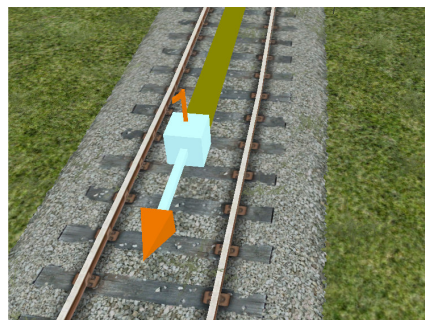


Figure 4 “Route ” or “Yard Entry” Link No.1

### **“Yard Entry” Link**

This is a form of Route Link, but has the additional two functions:

- 1) When the train is moving in the normal direction, as the rear of the train passes over it, its signal is re-set to clear.
- 2) When the train is moving in a reverse direction and the front passes over it, its signal is set to on.

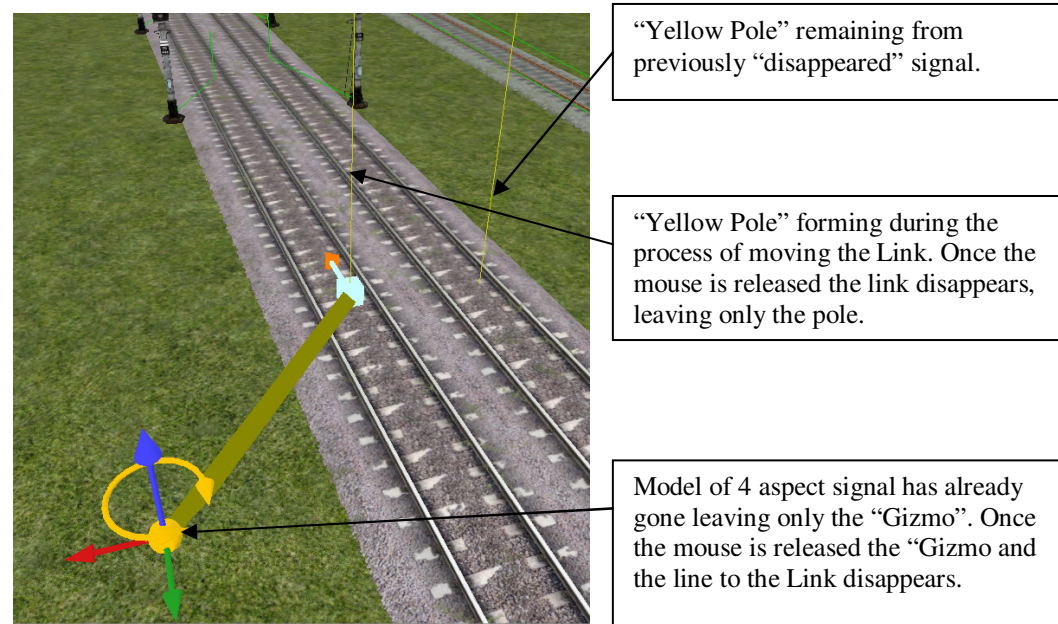
These “Yard Entry” Links are visually indistinguishable from Route Links. Their presence and number is indicated in the signal description. The number of them is the figure suffixed with an “E” in the description. See Appendix A to determine which markers are which type for a specific signal. Where the number is in the form xE (e.g. 3E) then the “Yard Entry” Links are the last links in the order of links. If the number is xEx, for example 2E1, then the “Yard Entry” Links are in this example the first and last one of the Route Links.

### **“Reverse Junction” Link**

These are only used on semaphore signals, there does not appear to be any colour light signals fitted with these links.

### **Disappearing Signals Problem**

With the earlier issues of the Development Tools (before 1/12/07) there was a problem that when a signal link was moved the signal model disappeared together with the associated links. The links left a “yellow pole” as shown in Figure 5.



**Figure 5 "Disappearing Signals"**

The “disappearing” signal itself does not cause a problem to the operation of the game. However, the remaining “Yellow Pole” on occasions affects the operation of the signalling system. Therefore they should be removed where this occurs. This can be done by deleting the track section where the link occurs. If this is occurring to you, check that you have the latest version of the Development Tools installed.

To check for “Yellow Poles” be in World Editor/Object Menu then press the keyboard space bar several times until the visible signals display their links as “Green Poles”. Then traverse your route looking for any “Yellow or Red Poles”.

## ***The Basic Colour Light Signals***

This signal consists of one head capable of displaying a stop indication without any junction “Feathers”. This may or may not be mounted on a post. In RS this comes in a number of versions (See Appendix A). For now the two we are going to discuss are “UK 2Asp Ctrl” and “UK 2Asp Ctrl 1T”. The other versions behave similarly, but with different numbers of links.



Signal “UK 2Asp Ctrl” is a basic stop signal and can be used where there is no point work that requires to be interlocked with the signal between it and the Link 0 of the next signal (e.g. advanced starting signal). This signal should have the post positioned as described in the basic RS instruction manual. Having left clicked to position the post you will be presented with a Link 0 (Fig.3) at the cursor. This should be positioned in the “four foot” of the required track in advance of the signal. I would suggest that if possible this is at least a scale 20-25m (bogie coach length). The reason for this is that when the front of the train passes this marker the signal will go to danger.

Once the Link is roughly positioned, right click to stop the repeat copy, then if necessary left click on the post and correctly orientate and position the signal model. When initially set the Link may point in the wrong direction as it seems to take its orientation from which way the signal faces. So whilst the signal is highlighted and the Link visible, check and re-position it, if necessary, so that the marker arrow points in the normal direction. To reverse the direction of the arrow, just move the marker slightly, by highlighting (turns yellow) and then grabbing with the mouse. If necessary the arrow will then reverse. If you still have the marker facing the wrong direction (due to track curvature) then hold down the Shift key and click on the Link. This should force it to reverse.

Signal “UK 2Asp Ctrl 1T” is similar to the previous one, but can be used where there is one route in advance of the signal that has some point work which requires route detection, normally one or more trailing points<sup>1</sup> (e.g cross-over in Fig.6). This signal is installed similarly to the previous one, but once the first Link (Link 0) has been positioned you will be presented with a further one (Route Link) which looks similar to the Link 0, but has an orange figure one (1) above it (see Fig.4). Position this Link on the far side of the point work (beyond the red triangle/rectangle point marker) that requires to be monitored by the signal, see Fig.6. There should be no point work between this Link and the next signal.

Figure 7 shows a “UK 2Asp Ctrl 1T” signal to the rear of a facing point. In this example the Route Link has been positioned in the “mainline” beyond the points. In the picture the route has been set for the crossover, therefore there is no route between the Link 0 and the signal’s Route Link. Hence the signal displays a stop aspect. If you now ignore the signal and proceed in a normal direction over the cross-over the signal will become locked on. Reversing the cross-over points will not restore the signal to a proceed aspect. For the application shown you would probably use a “UK 2Asp Ctrl 2T 1E” signal with Link 2 located beyond the crossover points on the other line. However you need to be careful as the signal will clear again as soon as the train clears Link 2 and cause problems with any AI trains.

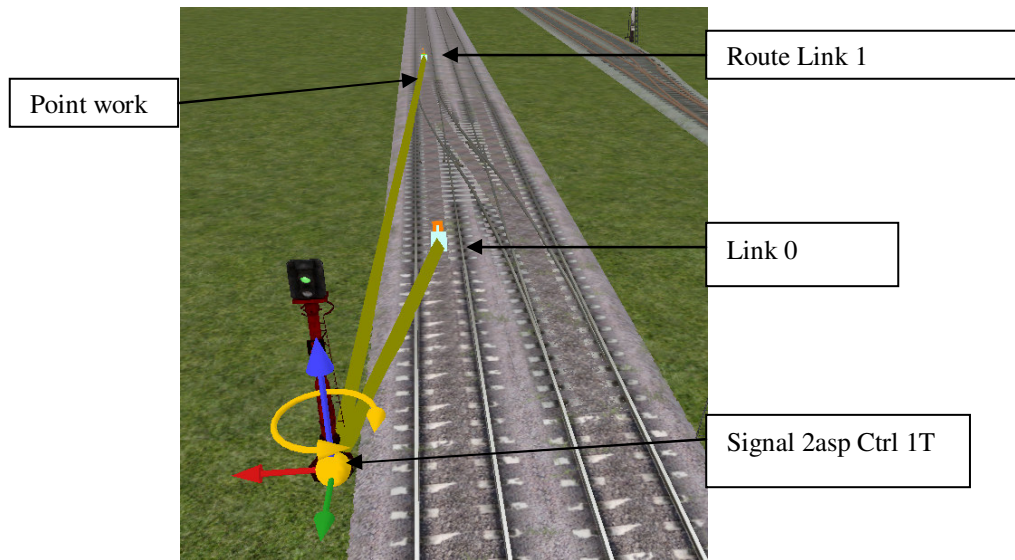
When signalling cross-overs it is recommended that you put the Route Link beyond the trailing point so that this is detected as well. This will prove that both ends of the cross-over are correctly set before the proceed aspect is displayed.

There are no differences in the link set-up between two, tree and four aspect signals of the same signal type. The other basic signals are similarly set up, but have a different number of Route Links. The order of the routes (Left to Right) is not important. If the signal has any “Yard Entry” Links they will normally be the highest numbered Links, except where the E code has a suffix (e.g. 3E1), see Appendix A for other details.

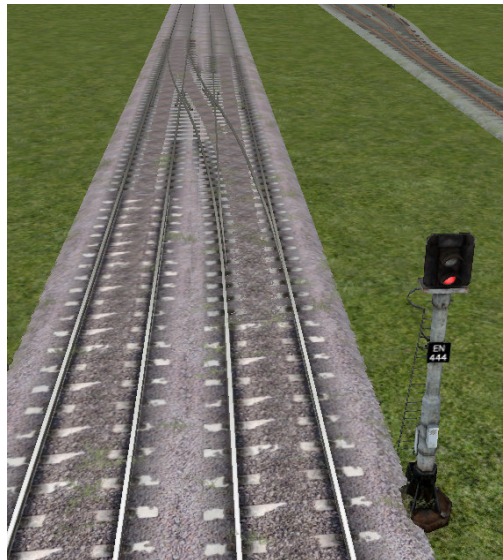
Figure 8 shows a basic 2 aspect signal with four Route links. If any of the four routes are correctly set then the signal will display a proceed aspect.

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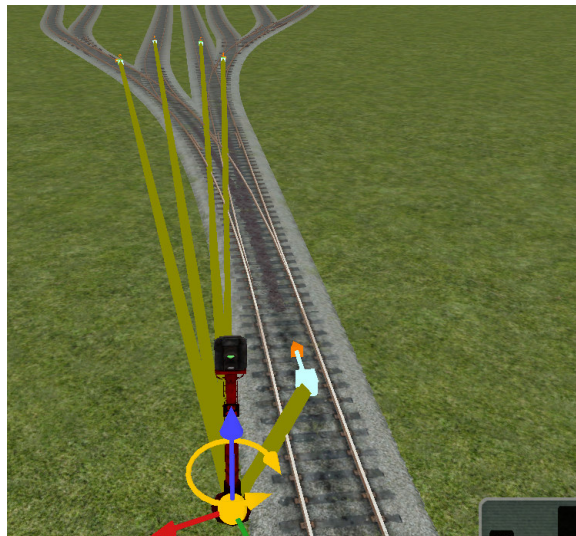
<sup>1</sup> If there is one or more facing points in the route you will need to consider using one of signals with more than one Route Link. This is because of the risk of “locking” the signal if you inadvertently traverse a non-linked route.



**Figure 6 Set-up for "CtrlSig 1T"**



**Figure 7 "1T" signal (on right) with route incorrectly set**



**Figure 8 2asp Signal with four "Route Indicator" Links**

## The Basic Junction Signals

These signals come in a number of forms but the basic one we are considering here is “2asp JuncSig F1”. This is a 2 aspect signal with a single left hand route indication (“Feather”).

Referring to Fig.9 position the signal, in a similar manner to the other signals, to the rear of the junction points. Place the first Link (Link 0) in advance of the signal, but before the points. Then place the next Route Link (1) along the route that will not display the “feather” when the signal is clear (primary route). This link must be positioned so that it is in advance of the all the point work required to be monitored by the signal when set for this route. Having placed this link you will then have a second Route Link (2) which should be placed along the left-hand (secondary) route, again ahead of all the point work to be detected. See Fig.9 for details.

The Link 0 and the Route Links 1 and 2 affect their respective aspects as described above, however both aspects share the Link 0.

For signals with more than one “feather” take care to set-out the links on the correct routes. To comply with signalling regulations the routes are set out from the primary route (no “feather”) to the left F1, F2, then F3. To the right of the primary route F4, F5, then F6. Except under special circumstances it is not normal to have more than about four “feathers” on a single signal. If there are more routes from a signal then usually a “theatre” type route indicator would be used, unfortunately this is not currently available in Rail Simulator.

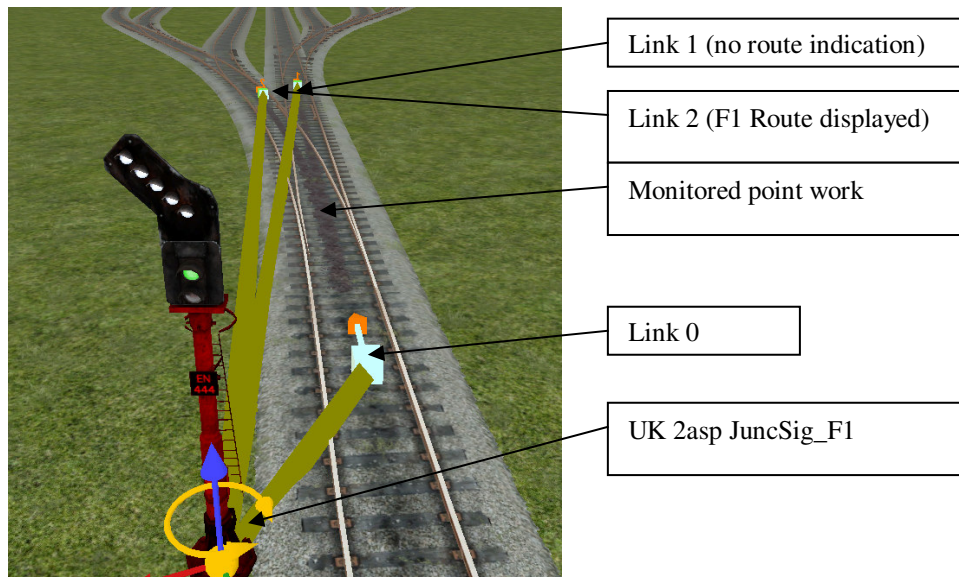


Figure 9 Basic Junction Signal

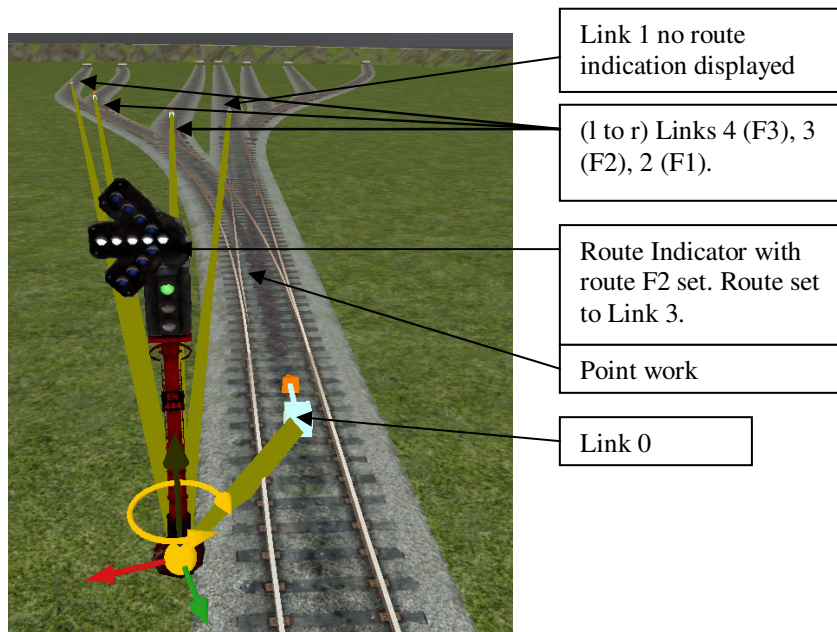


Figure 10 Typical signal with "feathers"

## The Distant Signal

There is no two aspect distant signal provided. Therefore currently it is not possible to implement correct two aspect colour light signalling schemes of the traditional type where they are used as direct replacement for equivalent semaphore signals.

The three and four aspect signals automatically display the correct proceed aspect (single or double yellow, or green) depending on the status of the next signal ahead on the set route.

## Signals with “Yard Entry” Links

Signals with “Yard Entry” Links are set up similarly to junction signals, however one or more of the Route Links have the additional capability to return their signal to clear without reference to any other signals. These routes should be used where trains will pass out of a “signal controlled” area e.g. a yard or group of sidings. See Appendix A for a list of signals with this facility and the marker numbers to which it applies.

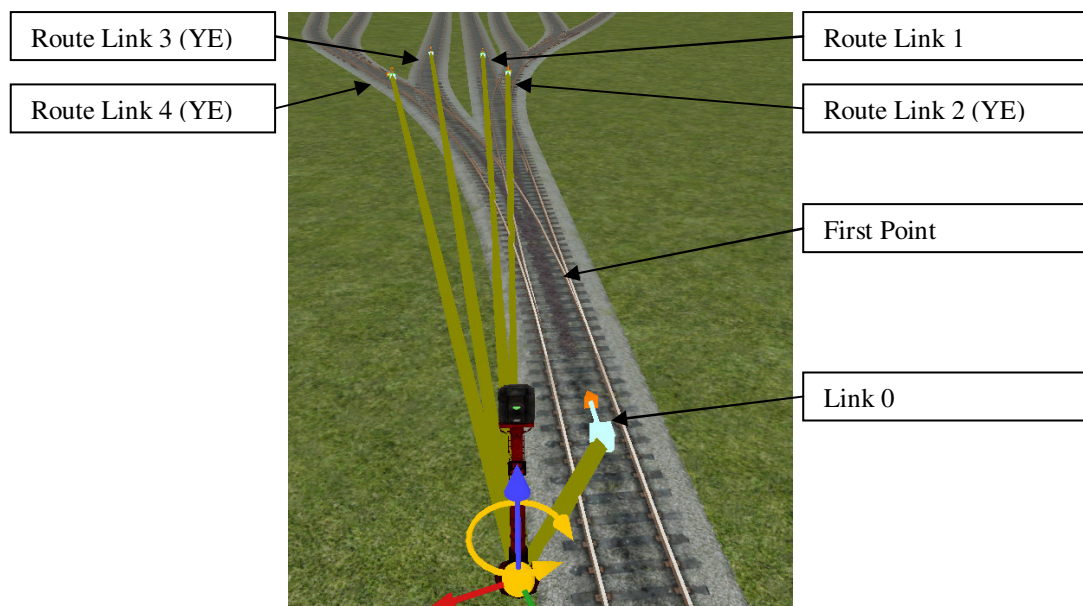


Figure 11 Typical "4T 3E" signal set-up

These “Yard Areas” appear to represent areas of non-signal control. In “non-virtual” life a move from a signalled to non-signalled area is usually controlled by a subsidiary signal and not a main aspect.



## Ground Signals

There are two basic types Entry, with two or more Route Links and Exit with one Route Link. The “Entry” type signals are not visible on the 2D map.

Link 1 (beyond points “triangle”)

Siding Points

Mainline

Link 0

“UK Mod ShuntSig Exit” model

Siding

Links (l-r) 2-1-3  
Signal clears for 2 & 3

Pointwork. Mainline  
straight ahead.

Link 0

"UK Mod ShuntSig  
Entry 3T" model

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**Figure 14 Raised & Tilted Signal Head**

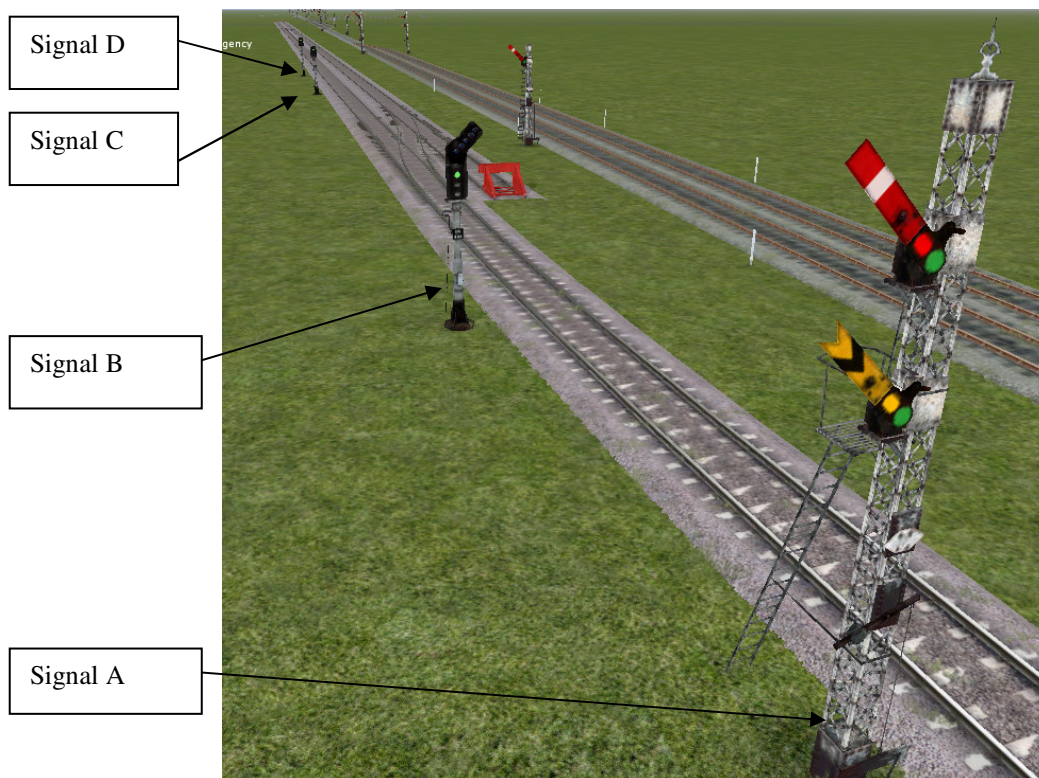
The colour light ground signal is difficult to see from a loco cab especially when close up. It is recommended that you tilt the head back as done on the real item and also raise it up slightly to clear the “procedural scenery”. See Fig.14.

### ***Interaction Between Colour Light and Semaphore Signals***

The interaction between the semaphore signals and the colour light signals (CLS) has been tested in two ways; semaphore to CLS and CLS to semaphore. Samples of both types of signal were used and it is assumed that other signals or the same basic type will react similarly.

### **Colour Light Control of a Semaphore Signal.**

This was tested using a demonstration set-up shown in Fig.15 and moving a locomotive passed the signals in the normal direction. The semaphore signal was controlled by the CLS as expected. Details are shown in Table 1.



**Figure 15 Set-up for testing Semaphore to CLS**

**Table 1 Operation of Set-up in Fig.15**

Move	Signal A	Signal B	Signal C	Signal D	Comment
Initial set-up	clear	green	green	green	as shown in Fig.13
Signal A Link 0 passed	on	green	green	green	
Signal B Link 0 passed	on	red	green	green	
Signal B Link 0 cleared	caution	red	green	green	
Signal C Link 0 passed	caution	red	red	green	
Signal C Link 0 cleared	clear	yellow	red	green	
Signal D Link 0 passed	clear	yellow	red	green	
Signal D Link 0 cleared	clear	green	yellow	red	

A similar test was under taken using “sig\_d” in place of the “combsig\_hd”. This operated in a similar manner to the caution arm of the “combsig\_hd” shown above.

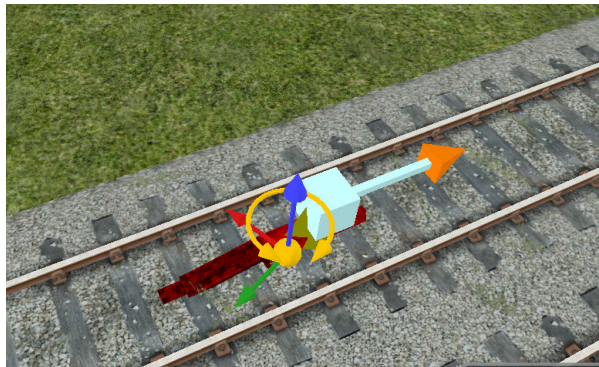
## Semaphore Signal Control of a Colour Light Signal.

Refer to Part 1 of this publication for details of how a semaphore signal can be used to control a colour light.

## AWS Ramps

For AWS to function correctly you need to be in “Expert Driving Mode” using a locomotive fitted with AWS equipment. AWS equipment does not function with the semaphore signals.

AWS Inductors (to use their correct name) should be positioned about a scale equivalent of 220yds (200m) to the rear (before) the signal. The inductor should be positioned with the shallow angled (grey coloured) ramp facing oncoming trains. The Link should be positioned very slightly in advance of the centre of the ramp with the arrow pointing in the direction of travel which the AWS is required to operate with. See Fig.16.



**Figure 16 AWS Inductor**

It is when the Link is passed over that the horn/bell sounds in the loco cab. See Fig. 17.

The loco equipment appears to work correctly, as would be required on the real thing. Once the horn starts to sound the AWS indicator goes black. If the system is reset (Q key pressed) within 3 seconds then the “sunflower” indicator goes to yellow and black and no brake application is made. If the reset button (Q key) is not pressed within three seconds then the brakes are applied and the reverser put to neutral. When the reset button (Q key) is pressed the AWS Indicator goes to black and yellow and the brake application cancelled once the speed has reduced to 0mph. If the signal is showing a clear (green) aspect then the AWS Indicator goes (or stays) black and the bell rings (or equivalent tone sounds).

Figure 17 shows a loco passing over the track inductor and is frozen at the point at which the on-train AWS equipment was activated. You do need to be in “Expert Driver” mode for the Q key to operate the system correctly.



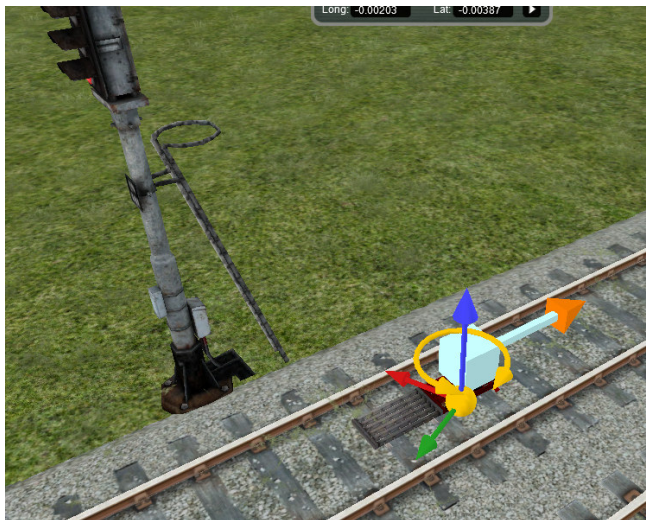


**Figure 17 Point of Activation of On-Train AWS Equipment**

## **TPWS Track Aerials (Grids)**

These also do not work with the semaphore signals. For colour light signals the Grid needs to be set in the “four foot” just in advance of the stop signal. Its Link should be set adjacent to and in advance of the ramp with the arrow pointing in the direction of travel see Fig.18 for details. The highlighted (dark yellow) half of the Grid should be rotated so that it is the second half to be passed over in the normal direction. The model supplied is an equivalent to the real “Train Stop Sensor (TSS)”.

In the “real world” not all signals are fitted with TPWS equipment. In general they are only fitted where, if the signal is passed at danger, a route conflict (side or head-on collision) may occur.



**Figure 18 TPWS "Grid" Installation**





**Figure 19 Point of Activation of On-Train TPWS Equipment**

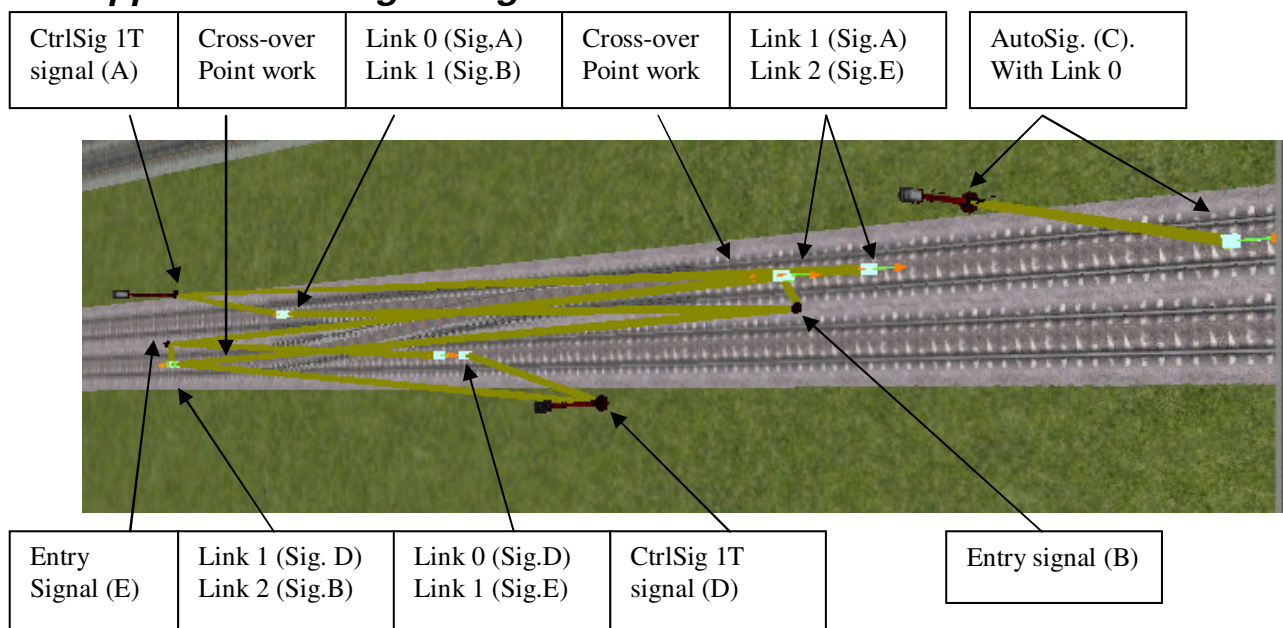
The “on-train” equipment does not operate the TPWS Control Panel. It is shown in some cab models, but does not appear to be interactive, also the brake demand indicator does not illuminate when the brakes are applied by the TPWS. There is no facility for temporary isolation or train stop over-ride, which are provided in real locomotives.

In Rail Simulator, if the TPWS is activated by passing a fitted signal at danger then an emergency brake application is initiated and the reverser put to neutral. The brakes will not release until the train has come to a stand.

There is no over speed sensor (OSS) track equipment for TPWS provided in Rail Simulator.

For those who are interested, the GW ATP equipment on the HST power car does not indicate permitted speed. It would appear that an over-speed situation with this stock initiates an emergency brake application until the train is brought to a stand. This is not correct of this system.

### ***Application of Signalling***



**Figure 20 Typical signalling of a trailing cross-over**

## Appendix A - Signals Supplied with Rail Simulator

### UK 2, 3 & 4 Aspect Signals

Files names: “UK 2AspSig Hd [Signal name].bin” for signal heads for installation on gantries or custom posts and “UK 2Asp [model name].bin” for signals supplied with posts. Similar file names are used for the three and four aspect signals, but with the figure 3 or 4 substituted for 2 in the file name. The model name is the same as the Desc+Signal Name below, except the Model Name not display the xT number shown in the Signal Name column, this only appears in the descriptive name used in World Editor

Desc.	Signal Name	Models			Link Numbers									Remarks
		2 Asp	3 Asp	4 Asp	Route Ahead	Route F1	Route F2	Route F3	Route F4	Route F5	Route F6	Route Links (only)	Yard Entry Links	
AutoSig		1	1	1	-	-	-	-	-	-	-	nil	nil	
CtrlSig		1	1	1	-	-	-	-	-	-	-	nil	nil	
	1E1	N	1	N	1	-	-	-	-	-	-	nil	1	calc
	1T	Y	Y	Y	1	-	-	-	-	-	-	1	nil	
	1T 1E	1	2	N	1	-	-	-	-	-	-	nil	1	
	2T	Y	Y	Y	1-2	-	-	-	-	-	-	1-2	nil	calc
	2T 1E	Y	Y	Y	1-2	-	-	-	-	-	-	1	2	
	2T 2E	1	N	N	1-2	-	-	-	-	-	-	nil	1-2	calc
	3T	1	Y	T	1-2-3	-	-	-	-	-	-	1-2-3	nil	calc
	3T 1E	1	Y	1	1-2-3	-	-	-	-	-	-	1-2	3	calc
	3T 2E	N	1	N	1-2-3	-	-	-	-	-	-	1	2-3	calc
	4T	2	Y	1	1-2-3-4	-	-	-	-	-	-	1-2-3-4	nil	calc
	4T 2E	1	1	N	1-2-3-4	-	-	-	-	-	-	1-2	3-4	calc
	4T 3E	1	N	N	1-2-3-4	-	-	-	-	-	-	1	2-3-4	
	5T	2	N	N	1-2-3-4-5	-	-	-	-	-	-	1-2-3-4-5	nil	calc

Desc.	Signal Name	Models			Link Numbers									Remarks
		2 Asp	3 Asp	4 Asp	Route Ahead	Route F1	Route F2	Route F3	Route F4	Route F5	Route F6	Route Links (only)	Yard Entry Links	
	5T 1E	N	Y	N	1-2-3-4-5	-	-	-	-	-	-	1-2-3-4	5	calc
	5T 2E	N	2	N	1-2-3-4-5	-	-	-	-	-	-	1-2-3	4-5	calc
	5T 3E	N	1	N	1-2-3-4-5	-	-	-	-	-	-	1-2	3-4-5	calc
	6T	N	Y	2	1-2-3-4-5-6	-	-	-	-	-	-	1-2-3-4-5-6	nil	calc
	6T 2E	N	Y	N	1-2-3-4-5-6	-	-	-	-	-	-	1-2-3-4	5-6	calc
	7T	N	1	N	1-2-3-4-5-6-7	-	-	-	-	-	-	1-2-3-4-5-6-7	nil	calc
	8T	2	N	2	1-2-3-4-5-6-7-8	-	-	-	-	-	-	1-2-3-4-5-6-7-8	nil	calc
	8T 1E	N	N	2	1-2-3-4-5-6-7-8	-	-	-	-	-	-	1-2-3-4-5-6-7	8	calc
	9T	2	N	N	1-2-3-4-5-6-7-8-9	-	-	-	-	-	-	1-2-3-4-5-6-7-8-9	nil	calc
	11T	N	N	2	1-2-3-4-5-6-7-8-9-10-11	-	-	-	-	-	-	1-2-3-4-5-6-7-8-9-10-11	nil	calc
	11T 1E	N	N	2	1-2-3-4-5-6-7-8-9-10-11	-	-	-	-	-	-	1-2-3-4-5-6-7-8-9-10	11	calc
	E3	N	1	N	1-2-3	-	-	-	-	-	-	1-2	3	
JuncSig	F1	Y	Y	Y	1	2	-	-	-	-	-	1-2	nil	
	F1 1E	N	Y	Y	1	2	-	-	-	-	-	1	2	calc
	F1 2E	N	1	N	1	2	-	-	-	-	-	nil	1-2	calc
	F1 3T	N	Y	N	1-2	3	-	-	-	-	-	1-2-3	nil	

Desc.	Signal Name	Models			Link Numbers									Remarks
		2 Asp	3 Asp	4 Asp	Route Ahead	Route F1	Route F2	Route F3	Route F4	Route F5	Route F6	Route Links (only)	Yard Entry Links	
	F1 3T 1E1	N	N	1	1-2	3	-	-	-	-	-	2-3	1	
	F1 5T	N	2	N	1-2-3-4	5	-	-	-	-	-	1-2-3-4-5	nil	
	F1 Entry 3M (E3M)	N	1	N	1-3	2	-	-	-	-	-	1-2	3	
	F11	2	1	1	1	2-3	-	-	-	-	-	1-2-3	nil	
	F11 1E	N	Y	1	1	2-3	-	-	-	-	-	1-2	3	calc
	F11 2E	N	N	1	1	2-3	-	-	-	-	-	1	2-3	calc
	F11 3E	N	Y	N	1	2-3	-	-	-	-	-	nil	1-2-3	
	F11 4T	N	1	N	1-2	3-4	-	-	-	-	-	1-2-3-4	nil	calc
	F11 4T 2E1	N	1	N	1	2-3-4	-	-	-	-	-	2-3	1-4	
	F11 7T 2E	N	2	N	1-2-3-4-5	6-7	-	-	-	-	-	1-2-3-4-5	6-7	
	F111	2	2	N	1	2-3-4	-	-	-	-	-	1-2-3-4	nil	
	F111 1E	N	N	1	1	2-3-4	-	-	-	-	-	1-2-3	4	
	F111 2E1	N	2	N	1	2-3-4	-	-	-	-	-	2-3	1-4	
	F1111 3E1	N	N	1	1	2-3-4-5	-	-	-	-	-	2-3-4	1-5	
	F11111 2E1	N	1	N	1	2-3-4-5-6	-	-	-	-	-	2-3-4-5	1-6	
	F114	N	1	N	1	2	-	-	3	-	-	1-2-3	nil	
	F12	2	Y	Y	1	2	3	-	-	-	-	1-2	nil	calc
	F12 1E	N	Y	2	1	2	3	-	-	-	-	1-2	3	calc
	F12 2E	N	N	1	1	2	3	-	-	-	-	1	2-3	calc
	F12 Special	N	2	N	1	5-6-7-8-9	2-3-4	-	-	-	-	1-2-3-4-5-6-7	8-9	
	F123	N	Y	Y	1	2	3	4	-	-	-	1-2-3-4	nil	



Desc.	Signal Name	Models			Link Numbers									Remarks
		2 Asp	3 Asp	4 Asp	Route Ahead	Route F1	Route F2	Route F3	Route F4	Route F5	Route F6	Route Links (only)	Yard Entry Links	
	F123 1E	N	N	1	1	2	3	4	-	-	-	1-2-3	4	calc
	F123 3E	N	N	1	1	2	3	4	-	-	-	1	2-3-4	calc
	F1233 1E	N	N	2					-	-	-			
	F124	2	Y	Y	1	2	3	-	4	-	-	1-2-3-4	nil	calc
	F124 E1	N	2	N	1	2	3	-	4	-	-	1-2-3	4	calc
	F1245	N	N	Y	1	2	3	-	4	5	-	1-2-3-4-5	nil	calc
	F14	2	Y	Y	1	2	-	-	3	-	-	1-2-3	nil	calc
	F14 4T 2E1	N	2	N	1-2	3	-	-	4	-	-	2-3	1-4	
	F14 Entry 3M 4F4 (F14 4T E3M)	N	2	N	1-3	2	-	-	4	-	-	1-2	3-4	
	F145	2	Y	1	1	2	-	-	3	4	-	1-2-3-4	nil	calc
	F4	Y	Y	Y	1	-	-	-	2	-	-	1-2	nil	calc
	F4 1E	N	1	Y	1	-	-	-	2	-	-	1	2	calc
	F4 1E1	N	1	N	1	-	-	-	2	-	-	2	1	calc
	F4 3T	N	N	1		-	-	-		-	-			
	F4 8T 1E	N	N	2	1-2-3-4-5-6	-	-	-	7-8	-	-	1-2-3-4-5-6-7	8	
	F44	2	1	1	1	-	-	-	2-3	-	-	1-2-3	nil	
	F44 4T	2	N	N	1-2	-	-	-	3-4	-	-	1-2-3-4	nil	
	F44 1E	N	1	1	1	-	-	-	2-3	-	-	1-2	3	
	F44 2E	N	1	N	1	-	-	-	2-3	-	-	1	2-3	
	F44 2E1	N	1	N	1	-	-	-	2-3	-	-	2	1-3	
	F444	2	N	N	1	-	-	-	2-3-4	-	-	1-2-3-4	nil	

Desc.	Signal Name	Models			Link Numbers									Remarks
		2 Asp	3 Asp	4 Asp	Route Ahead	Route F1	Route F2	Route F3	Route F4	Route F5	Route F6	Route Links (only)	Yard Entry Links	
	F45	2	Y	Y	1	-	-	-	2	3	-	1-2-3	nil	calc
	F45 1E	N	2	Y	1	-	-	-	2	3	-	1-2	3	calc
	F45 2E	1	1	N	1	-	-	-	2	3	-	1	2-3	calc
	F45 3E	N	1	N	1	-	-	-	2	3	-	nil	1-2-3	calc
	F456	N	Y	Y	1	-	-	-	2	3	4	1-2-3-4	nil	calc
	F456 1E	N	N	2	1	-	-	-	2	3	4	1-2-3	4	calc

Key to Models:

1 – Post model only

2 – Head model only

Y- Both models supplied

N- Neither model supplied

## Shunting Signals

Files names for disc signals: “UK ShuntSig [model name].bin”

Description	Model Name	Route Indicator (only) Links	Yard Entry Links	Remarks
UKMod ShuntSig	Entry	1	2	Does not clear for Route 1
	Entry 3T	1	2-3	Does not clear for Route 1
	Exit Head	1	-	

## Appendix B - List of Signal Files

The information contained in the table below shows how the various files are interlinked for a signal. This information has been sourced from the signal model .bin files.

Signal Name	Bin file <sup>2</sup>	Script file <sup>3</sup>	Geo File <sup>4</sup>	Route Indicator file <sup>5</sup>	No. of links	Remarks
UK 2Asp SigHd 2T	UK 2Asp SigHd 2T	UK 2AspSig Head	Mod_hd_2asp	-	3	
UK 2Asp SigHd 4T	UK 2Asp SigHd 4T	UK 2AspSig Head	Mod_hd_2asp	-	5	
UK 2Asp SigHd 5T	UK 2Asp SigHd 5T	UK 2AspSig Head	Mod_hd_2asp	-	6	
UK 2Asp SigHd 8T	UK 2Asp SigHd 8T	UK 2AspSig Head	Mod_hd_2asp	-	9	
UK 2Asp SigHd 9T	UK 2Asp SigHd 9T	UK 2AspSig Head	Mod_hd_2asp	-	10	
UK 2Asp SigHd 2T 1E	UK 2Asp SigHd Entry	UK 2AspSig Head 1E	Mod_hd_2asp	-	3	
UK 2Asp SigHd 1T	UK 2Asp SigHd Exit	UK 2AspSig Head	Mod_hd_2asp	-	2	
UK 2Asp SigHd	UK 2Asp SigHd	UK 2AspSig Head	Mod_hd_2asp	-	1	
UK 2Asp SigHd_F1	UK 2Asp SigHd_F1	UK 2AspSig Head F1	Mod_hd_2asp	mod_fi_p1	3	
UK 2Asp SigHd_F4	UK 2Asp SigHd_F4	UK 2AspSig Head F4	Mod_hd_2asp	mod_fi_p4	3	
UK 2Asp SigHd_F11	UK 2Asp SigHd_F11	UK 2AspSig Head F1	Mod_hd_2asp	mod_fi_p1	4	
UK 2Asp SigHd_F12	UK 2Asp SigHd_F12	UK 2AspSig Head F12	Mod_hd_2asp	mod_fi_p12	4	
UK 2Asp SigHd_F14	UK 2Asp SigHd_F14	UK 2AspSig Head F14	Mod_hd_2asp	mod_fi_p14	4	
UK 2Asp SigHd_F44 4T	UK 2Asp SigHd_F44 4T	UK 2AspSig Head F44	Mod_hd_2asp	mod_fi_p4	5	
UK 2Asp SigHd_F44	UK 2Asp SigHd_F44	UK 2AspSig Head F4	Mod_hd_2asp	mod_fi_p4	4	
UK 2Asp SigHd_F45	UK 2Asp SigHd_F45	UK 2AspSig Head F45	Mod_hd_2asp	mod_fi_p45	4	
UK 2Asp SigHd_F111	UK 2Asp SigHd_F111	UK 2AspSig Head F1	Mod_hd_2asp	mod_fi_p1	5	
UK 2Asp SigHd_F124	UK 2Asp SigHd_F124	UK 2Asp SigHd_F124	Mod_hd_2asp	mod_fi_p124	5	
UK 2Asp SigHd_F145	UK 2Asp SigHd_F145	UK 2Asp SigHd_F145	Mod_hd_2asp	mod_fi_p145	5	
UK 2Asp SigHd_F444	UK 2Asp SigHd_F444	UK 2AspSig Head F4	Mod_hd_2asp	mod_fi_p4	5	
UK 3Asp SigHd 2T 1E	UK 3Asp SigHd 2T 1E	UK 3AspSig Head 1E	Mod_hd_3asp	-	3	
UK 3Asp SigHd 2T	UK 3Asp SigHd 2T	UK 3AspSig Head	Mod_hd_3asp	-	3	
UK 3Asp SigHd 3T	UK 3Asp SigHd 3T	UK 3AspSig Head	Mod_hd_3asp	-	4	
UK 3Asp SigHd 4T	UK 3Asp SigHd 4T	UK 3AspSig Head	Mod_hd_3asp	-	5	

<sup>2</sup> These files are found in C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour Light\..\UK\_Mod\_Heads  
Or \UK\_Mod\_Posts and have a \*.bin suffix.

<sup>3</sup> These files are found in C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour Light with \*.lua suffix

<sup>4</sup> These files are found in C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour Light\UK\_Mod\_Heads or \UK\_Mod\_Posts and have \*.bin suffix

<sup>5</sup> These files are found in C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour Light\UK\_Mod\_Feathers and have a \*.bin suffix

Signal Name	Bin file <sup>2</sup>	Script file <sup>3</sup>	Geo File <sup>4</sup>	Route Indicator file <sup>5</sup>	No. of links	Remarks
UK 3Asp SigHd 5T 1E	UK 3Asp SigHd 5T 1E	UK 3AspSig Head 1E	Mod_hd_3asp	-	6	
UK 3Asp SigHd 5T 2E	UK 3Asp SigHd 5T 2E	UK 3AspSig Head 2E	Mod_hd_3asp	-	6	
UK 3Asp SigHd 6T 2E	UK 3Asp SigHd 6T 2E	UK 3AspSig Head 2E	Mod_hd_3asp	-	7	
UK 3Asp SigHd 6T	UK 3Asp SigHd 6T	UK 3AspSig Head	Mod_hd_3asp	-	7	
UK 3Asp SigHd E1	UK 3Asp SigHd E1	UK 3AspSig Head Entry All	Mod_hd_3asp	-	2	
UK 3Asp SigHd E3	UK 3Asp SigHd E3	UK 3AspSig Head 1E	Mod_hd_3asp	-	4	
UK 3Asp SigHd 1T 1E	UK 3Asp SigHd Exit	UK 3AspSig Head	Mod_hd_3asp	-	2	
UK 3Asp SigHd	UK 3Asp SigHd	UK 3AspSig Head	Mod_hd_3asp	-	1	
UK 3Asp SigHd_F1 1E	UK 3Asp SigHd_F1 1E	UK 3AspSig Head F1 1E	Mod_hd_3asp	mod_fi_p1	3	
UK 3Asp SigHd_F1 3T	UK 3Asp SigHd_F1 3T	UK 3AspSig Head F1 XT	Mod_hd_3asp	mod_fi_p1	4	
UK 3Asp SigHd_F1 5T	UK 3Asp SigHd_F1 5T	UK 3AspSig Head F1 XT	Mod_hd_3asp	mod_fi_p1	6	
UK 3Asp SigHd_F1	UK 3Asp SigHd_F1	UK 3AspSig Head F1	Mod_hd_3asp	mod_fi_p1	3	
UK 3Asp SigHd_F4	UK 3Asp SigHd_F4	UK 3AspSig Head F4	Mod_hd_3asp	mod_fi_p4	3	
UK 3Asp SigHd_F11 1E	UK 3Asp SigHd_F11 1E	UK 3AspSig Head F1 1E	Mod_hd_3asp	mod_fi_p1	4	
UK 3Asp SigHd_F11 3E	UK 3Asp SigHd_F11 3E	UK 3AspSig Head F11 3E	Mod_hd_3asp	mod_fi_p1	4	
UK 3Asp SigHd_F11 7T 2E	UK 3Asp SigHd_F11 7T 2E	UK 3AspSig Head F11 2E	Mod_hd_3asp	mod_fi_p	8	
UK 3Asp SigHd_F12 1E	UK 3Asp SigHd_F12 E3	UK 3AspSig Head F12 Entry 3	Mod_hd_3asp	mod_fi_p12	4	
UK 3Asp SigHd_F12	UK 3Asp SigHd_F12	UK 3AspSig Head F12	Mod_hd_3asp	mod_fi_p12	4	
UK 3Asp SigHd_F14 4T 2E1	UK 3Asp SigHd_F14 4T 2E1	UK 3AspSig Head F14 2E1	Mod_hd_3asp	mod_fi_p14	5	
UK 3Asp SigHd_F14 4T E3M E4F4	UK 3Asp SigHd_F14 4T E3M E4F4	UK 3AspSig Head F14 Entry 3M 4F4	Mod_hd_3asp	mod_fi_p14	5	
UK 3Asp SigHd_F14	UK 3Asp SigHd_F14	UK 3AspSig Head F14	Mod_hd_3asp	mod_fi_p14	4	
UK 3Asp SigHd_F45 1E	UK 3Asp SigHd_F45 E3	UK 3AspSig Head F45 Entry 3	Mod_hd_3asp	mod_fi_p45	4	
UK 3Asp SigHd_F45	UK 3Asp SigHd_F45	UK 3AspSig Head F45	Mod_hd_3asp	mod_fi_p45	4	
UK 3Asp SigHd_F111 2E1	UK 3Asp SigHd_F111 2E1	UK 3AspSig Head F1 2E1	Mod_hd_3asp	mod_fi_p1	5	
UK 3Asp SigHd_F111	UK 3Asp SigHd_F111	UK 3AspSig Head 1E	Mod_hd_3asp	mod_fi_p1	5	
UK 3Asp SigHd_F123	UK 3Asp SigHd_F123	UK 3AspSig Head F123	Mod_hd_3asp	mod_fi_p123	5	
UK 3Asp SigHd_F124 1E	UK 3Asp SigHd_F124 1E	UK 3AspSig Head F124 1E	Mod_hd_3asp	mod_fi_p124	5	
UK 3Asp SigHd_F124	UK 3Asp SigHd_F124	UK 3AspSig Head F124	Mod_hd_3asp	mod_fi_p124	5	
UK 3Asp SigHd_F145	UK 3Asp SigHd_F145	UK 3AspSig Head F145	Mod_hd_3asp	mod_fi_p145	5	
UK 3Asp SigHd_F456	UK 3Asp SigHd_F456	UK 3AspSig Head F456	Mod_hd_3asp	mod_fi_p456	5	
UK 3Asp SigHd_F12 Special	UK 3Asp SigHd_F11122 9T 2E	UK 3AspSig Head F12 Special	Mod_hd_3asp	mod_fi_p12	10	
UK 4Asp SigHd 2T	UK 4Asp SigHd 2T	UK 4AspSig Head	Mod_hd_4asp	-	3	
UK 4Asp SigHd 3T	UK 4Asp SigHd 3T	UK 4AspSig Head	Mod_hd_4asp	-	4	



Signal Name	Bin file <sup>2</sup>	Script file <sup>3</sup>	Geo File <sup>4</sup>	Route Indicator file <sup>5</sup>	No. of links	Remarks
UK 4Asp SigHd 6T	UK 4Asp SigHd 6T	UK 4AspSig Head	Mod_hd_4asp	-	7	
UK 4Asp SigHd 8T 1E	UK 4Asp SigHd 8T 1E	UK 4AspSig Post 1E	Mod_hd_4asp	-	9	
UK 4Asp SigHd 8T	UK 4Asp SigHd 8T	UK 4AspSig Head	Mod_hd_4asp	-	9	
UK 4Asp SigHd 11T 1E	UK 4Asp SigHd 11T 1E	UK 4AspSig Post 1E	Mod_hd_4asp	-	12	
UK 4Asp SigHd 11T	UK 4Asp SigHd 11T	UK 4AspSig Head	Mod_hd_4asp	-	12	
UK 4Asp SigHd 2T 1E	UK 4Asp SigHd Entry	UK 4AspSig Post 1E	Mod_hd_4asp	-	3	
UK 4Asp SigHd 1T	UK 4Asp SigHd Exit	UK 4AspSig Head	Mod_hd_4asp	-	2	
UK 4Asp SigHd	UK 4Asp SigHd	UK 4AspSig Head	Mod_hd_4asp	-	1	
UK 4Asp SigHd_F1 1E	UK 4Asp SigHd_F1 E2	UK 4AspSig Head F1 1E	Mod_hd_4asp	mod_fi_p1	3	
UK 4Asp SigHd_F1	UK 4Asp SigHd_F1	UK 4AspSig Head F1	Mod_hd_4asp	mod_fi_p1	3	
UK 4Asp SigHd_F4 1E	UK 4Asp SigHd_F4 E2	UK 4AspSig Head F4 1E	Mod_hd_4asp	mod_fi_p4	3	
UK 4Asp SigHd_F4	UK 4Asp SigHd_F4	UK 4AspSig Head F4	Mod_hd_4asp	mod_fi_p4	3	
UK 4Asp SigHd_F12 1E	UK 4Asp SigHd_F12 E3	UK 4AspSig Head F12 2E	Mod_hd_4asp	mod_fi_p12	4	
UK 4Asp SigHd_F12	UK 4Asp SigHd_F12	UK 4AspSig Head F12	Mod_hd_4asp	mod_fi_p12	4	
UK 4Asp SigHd_F14	UK 4Asp SigHd_F14	UK 4AspSig Head F14	Mod_hd_4asp	mod_fi_p14	4	
UK 4Asp SigHd_F44 8T 1E	UK 4Asp SigHd_F44 8T E8	UK 4AspSig Head F44 1E	Mod_hd_4asp	mod_fi_p4	9	
UK 4Asp SigHd_F45 1E	UK 4Asp SigHd_F45 E3	UK 4AspSig Head F45 1E	Mod_hd_4asp	mod_fi_p45	4	
UK 4Asp SigHd_F45	UK 4Asp SigHd_F45	UK 4AspSig Head F45	Mod_hd_4asp	mod_fi_p45	4	
UK 4Asp SigHd_F123	UK 4Asp SigHd_F123	UK 4AspSig Head F123	Mod_hd_4asp	mod_fi_p123	5	
UK 4Asp SigHd_F124	UK 4Asp SigHd_F124	UK 4AspSig Head F124	Mod_hd_4asp	mod_fi_p124	5	
UK 4Asp SigHd_F456 1E	UK 4Asp SigHd_F456 1E	UK 4AspSig Head F456 1E	Mod_hd_4asp	mod_fi_p456	5	
UK 4Asp SigHd_F456	UK 4Asp SigHd_F456	UK 4AspSig Head F456	Mod_hd_4asp	mod_fi_p45	5	
UK 4Asp SigHd_F1233 1E	UK 4Asp SigHd_F1233 E5	UK 4AspSig Head F1233 Entry 5	Mod_hd_4asp	mod_fi_p123	6	
UK 4Asp SigHd_F1245	UK 4Asp SigHd_F1245	UK 4AspSig Head F1245	Mod_hd_4asp	mod_fi_p1245	6	
UK 2Asp AutoSig	UK 2Asp AutoSig	UK 2AspSig Post	Mod_hd_2asp	-	1	uses [00]mod_pt_auto
UK 2Asp CtrlSig 2T	UK 2Asp CtrlSig 2T	UK 2AspSig Post	Mod_hd_2asp	-	3	uses [00]mod_pt_ctrl
UK 2Asp CtrlSig 3T 1E	UK 2Asp CtrlSig 3T 1E	UK 2AspSig Post 1E	Mod_hd_2asp	-	4	
UK 2Asp CtrlSig 3T	UK 2Asp CtrlSig 3T	UK 2AspSig Post	Mod_hd_2asp	-	4	
UK 2Asp CtrlSig 4T 2E	UK 2Asp CtrlSig 4T 2E	UK 2AspSig Post 2E	Mod_hd_2asp	-	5	
UK 2Asp CtrlSig 4T 3E	UK 2Asp CtrlSig 4T 3E	UK 2AspSig Post 3E	Mod_hd_2asp	-	5	
UK 2Asp CtrlSig 1T 1E	UK 2Asp CtrlSig E1	UK 2AspSig Post Entry All	Mod_hd_2asp	-	2	
UK 2Asp CtrlSig 2T 2E	UK 2Asp CtrlSig E12	UK 2AspSig Post Entry All	Mod_hd_2asp	-	3	
UK 2Asp CtrlSig 2T 1E	UK 2Asp CtrlSig Entry	UK 2AspSig Post 1E	Mod_hd_2asp	-	3	
UK 2Asp CtrlSig 1T	UK 2Asp CtrlSig Exit	UK 2AspSig Post	Mod_hd_2asp	-	2	
UK 2Asp CtrlSig	UK 2Asp CtrlSig	UK 2AspSig Post	Mod_hd_2asp	-	1	
UK 2Asp JuncSig F1	UK 2Asp JuncSig_F1	UK 2AspSig Post F1	Mod_hd_2asp	mod_fi_p1	3	
UK 2Asp JuncSig F4	UK 2Asp JuncSig_F4	UK 2AspSig Post F4	Mod_hd_2asp	mod_fi_p4	3	

Signal Name	Bin file <sup>2</sup>	Script file <sup>3</sup>	Geo File <sup>4</sup>	Route Indicator file <sup>5</sup>	No. of links	Remarks
UK 2Asp JuncSig F45 2E	UK 2Asp JuncSig_F45 2E	UK 2AspSig Post F45 2E	Mod_hd_2asp	mod_fi_p45	4	
UK 3Asp AutoSig	UK 3Asp AutoSig	UK 3AspSig Post	Mod_hd_3asp	-	1	uses [00]mod_pt_auto
UK 3Asp CtrlSig 2T 1E	UK 3Asp CtrlSig 2T 1E	UK 3AspSig Post 1E	Mod_hd_3asp	-	3	uses [00]mod_pt_ctrl
UK 3Asp CtrlSig 2T	UK 3Asp CtrlSig 2T	UK 3AspSig Post	Mod_hd_3asp	-	3	
UK 3Asp CtrlSig 3T 1E	UK 3Asp CtrlSig 3T 1E	UK 3AspSig Post 1E	Mod_hd_3asp	-	4	
UK 3Asp CtrlSig 3T 2E	UK 3Asp CtrlSig 3T 2E	UK 3AspSig Post 2E	Mod_hd_3asp	-	4	
UK 3Asp CtrlSig 3T	UK 3Asp CtrlSig 3T	UK 3AspSig Post	Mod_hd_3asp	-	4	
UK 3Asp CtrlSig 4T 2E	UK 3Asp CtrlSig 4T 2E	UK 3AspSig Post 2E	Mod_hd_3asp	-	5	
UK 3Asp CtrlSig 4T	UK 3Asp CtrlSig 4T	UK 3AspSig Post	Mod_hd_3asp	-	5	
UK 3Asp CtrlSig 5T 1E	UK 3Asp CtrlSig 5T 1E	UK 3AspSig Post 1E	Mod_hd_3asp	-	6	
UK 3Asp CtrlSig 6T 2E	UK 3Asp CtrlSig 6T 2E	UK 3AspSig Post 2E	Mod_hd_3asp	-	7	
UK 3Asp CtrlSig 6T	UK 3Asp CtrlSig 6T	UK 3AspSig Post	Mod_hd_3asp	-	7	
UK 3Asp CtrlSig 7T	UK 3Asp CtrlSig 7T	UK 3AspSig Post	Mod_hd_3asp	-	8	
UK 3Asp CtrlSig 1E1	UK 3Asp CtrlSig E1	UK 3AspSig Post Entry All	Mod_hd_3asp	-	2	
UK 3Asp CtrlSig E3	UK 3Asp CtrlSig E3	UK 3AspSig Post 1E	Mod_hd_3asp	-	4	
UK 3Asp CtrlSig 5T 3E	UK 3Asp CtrlSig E345	UK 3AspSig Post 3E	Mod_hd_3asp	-	6	
UK 3Asp CtrlSig 2T 1E	UK 3Asp CtrlSig Entry	UK 3AspSig Post 1E	Mod_hd_3asp	-	3	
UK 3Asp CtrlSig 1T	UK 3Asp CtrlSig Exit	UK 3AspSig Post	Mod_hd_3asp	-	2	
UK 3Asp CtrlSig	UK 3Asp CtrlSig	UK 3AspSig Post	Mod_hd_3asp	-	1	
UK 3Asp JuncSig F1 3T	UK 3Asp JuncSig_F1 3T	UK 3AspSig Post F1 XT	Mod_hd_3asp	mod_fi_p1	4	
UK 3Asp JuncSig F1 1E	UK 3Asp JuncSig_F1 E2	UK 3AspSig Post F1 1E	Mod_hd_3asp	mod_fi_p1	3	
UK 3Asp JuncSig F1 E3M	UK 3Asp JuncSig_F1 E3M	UK 3AspSig Post F1 Entry 3M	Mod_hd_3asp	mod_fi_p1	4	
UK 3Asp JuncSig F1 2E	UK 3Asp JuncSig_F1 E12	UK 3AspSig Post F1 2E	Mod_hd_3asp	mod_fi_p1	3	
UK 3Asp JuncSig F1	UK 3Asp JuncSig_F1	UK 3AspSig Post F1	Mod_hd_3asp	mod_fi_p1	3	
UK 3Asp JuncSig F4 1E1	UK 3Asp JuncSig_F4 E1	UK 3AspSig Post F4 1E1	Mod_hd_3asp	mod_fi_p4	3	
UK 3Asp JuncSig F4 1E	UK 3Asp JuncSig_F4 E2	UK 3AspSig Post F4 1E	Mod_hd_3asp	mod_fi_p4	3	
UK 3Asp JuncSig F44 1E	UK 3Asp JuncSig_F4 E3F4	UK 3AspSig Post F4 1E	Mod_hd_3asp	mod_fi_p4	4	
UK 3Asp JuncSig F4	UK 3Asp JuncSig_F4	UK 3AspSig Post F4	Mod_hd_3asp	mod_fi_p4	3	
UK 3Asp JuncSig F11 4T	UK 3Asp JuncSig_F11 4T	UK 3AspSig Post F11	Mod_hd_3asp	mod_fi_p1	5	
UK 3Asp JuncSig F11 1E	UK 3Asp JuncSig_F11 E3	UK 3AspSig Post F1 1E	Mod_hd_3asp	mod_fi_p1	4	
UK 3Asp JuncSig F11 4T 2E1	UK 3Asp JuncSig_F11 E14M	UK 3AspSig Post Entry 14M	Mod_hd_3asp	mod_fi_p1	5	
UK 3Asp JuncSig F11 3E	UK 3Asp JuncSig_F11 E123	UK 3AspSig Post F1 3E	Mod_hd_3asp	mod_fi_p1	4	
UK 3Asp JuncSig F11	UK 3Asp JuncSig_F11	UK 3AspSig Post F1	Mod_hd_3asp	mod_fi_p1	4	
UK 3Asp JuncSig F12 1E	UK 3Asp JuncSig_F12 1E	UK 3AspSig Post F12 1E	Mod_hd_3asp	mod_fi_p12	4	
UK 3Asp JuncSig F12	UK 3Asp JuncSig_F12	UK 3AspSig Post F12	Mod_hd_3asp	mod_fi_p12	4	
UK 3Asp JuncSig F14	UK 3Asp JuncSig_F14	UK 3AspSig Post F14	Mod_hd_3asp	mod_fi_p14	4	
UK 3Asp JuncSig F44 2E1	UK 3Asp JuncSig_F44 2E1	UK 3AspSig Post F4 2E1	Mod_hd_3asp	mod_fi_p4	4	

Signal Name	Bin file <sup>2</sup>	Script file <sup>3</sup>	Geo File <sup>4</sup>	Route Indicator file <sup>5</sup>	No. of links	Remarks
UK 3Asp JuncSig F44 2E	UK 3Asp JuncSig_F44 E23	UK 3AspSig Post F4 2E	Mod_hd_3asp	mod_fi_p4	4	
UK 3Asp JuncSig F44	UK 3Asp JuncSig_F44	UK 3AspSig Post F4	Mod_hd_3asp	mod_fi_p4	4	
UK 3Asp JuncSig F45 2E	UK 3Asp JuncSig_F45 E23	UK 3AspSig Post F45 Entry 23	Mod_hd_3asp	mod_fi_p45	4	
UK 3Asp JuncSig F45 3E	UK 3Asp JuncSig_F45 E123	UK 3AspSig Post F45 Entry 123	Mod_hd_3asp	mod_fi_p45	4	
UK 3Asp JuncSig F45	UK 3Asp JuncSig_F45	UK 3AspSig Post F45	Mod_hd_3asp	mod_fi_p45	4	
UK 3Asp JuncSig F114	UK 3Asp JuncSig_F114	UK 3AspSig Post F114	Mod_hd_3asp	mod_fi_p14	5	
UK 3Asp JuncSig F123	UK 3Asp JuncSig_F123	UK 3AspSig Post F123	Mod_hd_3asp	mod_fi_p123	5	
UK 3Asp JuncSig F124	UK 3Asp JuncSig_F124	UK 3AspSig Post F124	Mod_hd_3asp	mod_fi_p124	5	
UK 3Asp JuncSig F145	UK 3Asp JuncSig_F145	UK 3AspSig Post F145	Mod_hd_3asp	mod_fi_p145	5	
UK 3Asp JuncSig F456	UK 3Asp JuncSig_F456	UK 3AspSig Post F456	Mod_hd_3asp	mod_fi_p456	5	
UK 3Asp JuncSig F11111 2E1	UK 3Asp JuncSig_F11111 E16	UK 3AspSig Post F1 2E1	Mod_hd_3asp	mod_fi_p1	7	
UK 4Asp AutoSig	UK 4Asp AutoSig	4AspSig Post	Mod_hd_4asp	-	1	uses [00]mod_pt_auto
UK 4Asp CtrlSig 2T	UK 4Asp CtrlSig 2T	4AspSig Post	Mod_hd_4asp	-	3	uses [00]mod_pt_ctrl
UK 4Asp CtrlSig 3T	UK 4Asp CtrlSig 3T	4AspSig Post	Mod_hd_4asp	-	4	
UK 4Asp CtrlSig 4T	UK 4Asp CtrlSig 4T	4AspSig Post	Mod_hd_4asp	-	5	
UK 4Asp CtrlSig 3T 1E	UK 4Asp CtrlSig E3	4AspSig Post 1E	Mod_hd_4asp	-	4	
UK 4Asp CtrlSig 2T 1E	UK 4Asp CtrlSig Entry	4AspSig Post 1E	Mod_hd_4asp	-	3	
UK 4Asp CtrlSig 1T	UK 4Asp CtrlSig Exit	4AspSig Post	Mod_hd_4asp	-	2	
UK 4Asp CtrlSig	UK 4Asp CtrlSig	4AspSig Post	Mod_hd_4asp	-	1	
UK 4Asp JuncSig_F1 3T 1E1	UK 4Asp JuncSig_F1 3T 1E1	4AspSig Post XT 1E1	Mod_hd_4asp	mod_fi_p1	4	
UK 4Asp JuncSig_F1 1E	UK 4Asp JuncSig_F1 E2	4AspSig Post F1 1E	Mod_hd_4asp	mod_fi_p1	3	
UK 4Asp JuncSig_F11 1E	UK 4Asp JuncSig_F1 E3	4AspSig Post F1 1E	Mod_hd_4asp	mod_fi_p1	4	
UK 4Asp JuncSig_F11 2E1	UK 4Asp JuncSig_F1 E13F1	4AspSig Post F1 2E1	Mod_hd_4asp	mod_fi_p1	4	
UK 4Asp JuncSig_F1	UK 4Asp JuncSig_F1	4AspSig Post F1	Mod_hd_4asp	mod_fi_p1	3	
UK 4Asp JuncSig_F4 3T	UK 4Asp JuncSig_F4 3T	4AspSig Post F4 XT	Mod_hd_4asp	mod_fi_p4	4	
UK 4Asp JuncSig_F4 1E	UK 4Asp JuncSig_F4 E2	4AspSig Post F4 1E	Mod_hd_4asp	mod_fi_p4	3	
UK 4Asp JuncSig_F44 1E	UK 4Asp JuncSig_F4 E3	4AspSig Post F4 1E	Mod_hd_4asp	mod_fi_p4	4	
UK 4Asp JuncSig_F4	UK 4Asp JuncSig_F4	4AspSig Post F4	Mod_hd_4asp	mod_fi_p4	3	
UK 4Asp JuncSig_F11	UK 4Asp JuncSig_F11	4AspSig Post F1	Mod_hd_4asp	mod_fi_p1	4	
UK 4Asp JuncSig_F12 2E	UK 4Asp JuncSig_F12 2E	4AspSig Post F12 2E	Mod_hd_4asp	mod_fi_p12	4	
UK 4Asp JuncSig_F12	UK 4Asp JuncSig_F12	4AspSig Post F12	Mod_hd_4asp	mod_fi_p12	4	
UK 4Asp JuncSig_F14	UK 4Asp JuncSig_F14	4AspSig Post F14	Mod_hd_4asp	mod_fi_p14	4	
UK 4Asp JuncSig_F44	UK 4Asp JuncSig_F44	4AspSig Post F4	Mod_hd_4asp	mod_fi_p4	4	
UK 4Asp JuncSig_F45 1E	UK 4Asp JuncSig_F45 E3	4AspSig Post F45 Entry3	Mod_hd_4asp	mod_fi_p45	4	
UK 4Asp JuncSig_F45	UK 4Asp JuncSig_F45	4AspSig Post F45	Mod_hd_4asp	mod_fi_p45	4	

Signal Name	Bin file <sup>2</sup>	Script file <sup>3</sup>	Geo File <sup>4</sup>	Route Indicator file <sup>5</sup>	No. of links	Remarks
UK 4Asp JuncSig_F111 1E	UK 4Asp JuncSig_F111 E4	4AspSig Post F1 1E	Mod_hd_4asp	mod_fi_p1	5	
UK 4Asp JuncSig_F123 1E	UK 4Asp JuncSig_F123 E4	4AspSig Post F123 Entry4	Mod_hd_4asp	mod_fi_p123	5	
UK 4Asp JuncSig_F123 3E	UK 4Asp JuncSig_F123 E234	4AspSig Post F123 Entry234	Mod_hd_4asp	mod_fi_p123	5	
UK 4Asp JuncSig_F123	UK 4Asp JuncSig_F123	4AspSig Post F123	Mod_hd_4asp	mod_fi_p123	5	
UK 4Asp JuncSig_F124	UK 4Asp JuncSig_F124	4AspSig Post F124	Mod_hd_4asp	mod_fi_p124	5	
UK 4Asp JuncSig_F145	UK 4Asp JuncSig_F145	4AspSig Post F145	Mod_hd_4asp	mod_fi_p145	5	
UK 4Asp JuncSig_F456	UK 4Asp JuncSig_F456	4AspSig Post F456	Mod_hd_4asp	mod_fi_p456	5	
UK 4Asp JuncSig_F1111 3E1	UK 4Asp JuncSig_F1111 E145	4AspSig Post F1 3E1	Mod_hd_4asp	mod_fi_p1	6	
UK 4Asp JuncSig_F1245	UK 4Asp JuncSig_F1245	4AspSig Post F1245	Mod_hd_4asp	mod_fi_p1245	6	

## Appendix C– Full List of Available Signal Control Files

The lua files are normally referred to as the signal script files and control how the individual aspects operate and the signals interact with each other.

The bin files are the xml files converted for Rail Simulator and contain the signal type design specific information (e.g. number and type of arms, position etc.).

The pcdx files would appear to be some sort of graphic file specifically for Rail Simulator.

The ban files would appear to be the animation control files.

Below is a list of principle signalling files and where they can be found with the default Rail Simulator set-up

C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour  
Light

Common UK 2AspSig Post.lua  
Common UK 2AspSig Head.lua  
Common UK 3AspSig Head.lua  
Common UK 3AspSig Post.lua  
Common UK 4AspSig Head.lua  
Common UK 4AspSig Post.lua  
UK 2AspSig Head 1E.lua  
UK 2AspSig Head F1.lua  
UK 2AspSig Head F4.lua  
UK 2AspSig Head F12.lua  
UK 2AspSig Head F14.lua  
UK 2AspSig Head F44.lua  
UK 2AspSig Head F45.lua  
UK 2AspSig Head F124.lua  
UK 2AspSig Head F145.lua  
UK 2AspSig Head.lua  
UK 2AspSig Post 1E.lua  
UK 2AspSig Post 2E.lua  
UK 2AspSig Post 3E.lua  
UK 2AspSig Post Entry All.lua  
UK 2AspSig Post F1.lua  
UK 2AspSig Post F4.lua  
UK 2AspSig Post F45 2E.lua  
UK 2AspSig Post.lua  
UK 3AspSig Head 1E.lua  
UK 3AspSig Head 2E.lua  
UK 3AspSig Head Entry All.lua  
UK 3AspSig Head F1 1E.lua  
UK 3AspSig Head F1 2E1.lua  
UK 3AspSig Head F1 XT.lua  
UK 3AspSig Head F1.lua  
UK 3AspSig Head F4.lua  
UK 3AspSig Head F11 2E.lua  
UK 3AspSig Head F11 3E.lua  
UK 3AspSig Head F12 Entry 3.lua  
UK 3AspSig Head F12 Special.lua  
UK 3AspSig Head F12.lua  
UK 3AspSig Head F14 2E1.lua  
UK 3AspSig Head F14 Entry 3M 4F4.lua  
UK 3AspSig Head F14.lua  
UK 3AspSig Head F45 Entry 3.lua  
UK 3AspSig Head F45.lua  
UK 3AspSig Head F123.lua  
UK 3AspSig Head F124 1E.lua  
UK 3AspSig Head F124.lua  
UK 3AspSig Head F145.lua  
UK 3AspSig Head F456.lua



UK 3AspSig Head.lua  
UK 3AspSig Post 1E.lua  
UK 3AspSig Post 2E.lua  
UK 3AspSig Post 3E.lua  
UK 3AspSig Post Entry All.lua  
UK 3AspSig Post F1 1E.lua  
UK 3AspSig Post F1 2E1.lua  
UK 3AspSig Post F1 2E.lua  
UK 3AspSig Post F1 3E.lua  
UK 3AspSig Post F1 Entry 3M.lua  
UK 3AspSig Post F1 XT.lua  
UK 3AspSig Post F1.lua  
UK 3AspSig Post F4 1E1.lua  
UK 3AspSig Post F4 1E.lua  
UK 3AspSig Post F4 2E1.lua  
UK 3AspSig Post F4 2E.lua  
UK 3AspSig Post F4.lua  
UK 3AspSig Post F11 Entry 14M.lua  
UK 3AspSig Post F11.lua  
UK 3AspSig Post F12 1E.lua  
UK 3AspSig Post F12.lua  
UK 3AspSig Post F14.lua  
UK 3AspSig Post F45 Entry 23.lua  
UK 3AspSig Post F45 Entry 123.lua  
UK 3AspSig Post F45.lua  
UK 3AspSig Post F114.lua  
UK 3AspSig Post F123.lua  
UK 3AspSig Post F124.lua  
UK 3AspSig Post F145.lua  
UK 3AspSig Post F456.lua  
UK 3AspSig Post.lua  
UK 4AspSig Head 1E.lua  
UK 4AspSig Head F1 1E.lua  
UK 4AspSig Head F1.lua  
UK 4AspSig Head F4 1E.lua  
UK 4AspSig Head F4.lua  
UK 4AspSig Head F12 Entry 3.lua  
UK 4AspSig Head F12.lua  
UK 4AspSig Head F14.lua  
UK 4AspSig Head F44 1E.lua  
UK 4AspSig Head F45 1E.lua  
UK 4AspSig Head F45.lua  
UK 4AspSig Head F123.lua  
UK 4AspSig Head F124.lua  
UK 4AspSig Head F456 1E.lua  
UK 4AspSig Head F456.lua  
UK 4AspSig Head F1233 Entry 5.lua  
UK 4AspSig Head F1245.lua  
UK 4AspSig Head.lua  
UK 4AspSig Post 1E.lua  
UK 4AspSig Post F1 1E.lua  
UK 4AspSig Post F1 2E1.lua  
UK 4AspSig Post F1 3E1.lua  
UK 4AspSig Post F1 XT 1E1.lua  
UK 4AspSig Post F1.lua  
UK 4AspSig Post F4 1E.lua  
UK 4AspSig Post F4 XT.lua  
UK 4AspSig Post F4.lua  
UK 4AspSig Post F12 2E.lua  
UK 4AspSig Post F12.lua

UK 4AspSig Post F14.lua  
UK 4AspSig Post F45 Entry 3.lua  
UK 4AspSig Post F45.lua  
UK 4AspSig Post F123 Entry 4.lua  
UK 4AspSig Post F123 Entry 234.lua  
UK 4AspSig Post F123.lua  
UK 4AspSig Post F124.lua  
UK 4AspSig Post F145.lua  
UK 4AspSig Post F456.lua  
UK 4AspSig Post F1245.lua  
UK 4AspSig Post.lua  
UK AWS.lua  
UK ShuntSig Entry Head.lua  
UK ShuntSig Exit Head.lua  
UK TPWS.lua

C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour  
Light\CommonScripts  
Common UK 2 Aspect Feather Entry Script.lua  
Common UK 2 Aspect Feather Script.lua  
Common UK 3 Aspect Feather Entry Script.lua  
Common UK 3 Aspect Feather Script.lua  
Common UK 4 Aspect Feather Entry Script.lua  
Common UK 4 Aspect Feather Script.lua  
Common UK Colour Light Script.lua

C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour  
Light\UK\_Mod\_Feathers  
Textures  
mod\_fi\_p1.bin  
mod\_fi\_p1.GeoPcDx  
mod\_fi\_p4.bin  
mod\_fi\_p4.GeoPcDx  
mod\_fi\_p12.bin  
mod\_fi\_p12.GeoPcDx  
mod\_fi\_p14.bin  
mod\_fi\_p14.GeoPcDx  
mod\_fi\_p45.bin  
mod\_fi\_p45.GeoPcDx  
mod\_fi\_p123.bin  
mod\_fi\_p123.GeoPcDx  
mod\_fi\_p124.bin  
mod\_fi\_p124.GeoPcDx  
mod\_fi\_p145.bin  
mod\_fi\_p145.GeoPcDx  
mod\_fi\_p456.bin  
mod\_fi\_p456.GeoPcDx  
mod\_fi\_p1245.bin  
mod\_fi\_p1245.GeoPcDx  
mod\_fi\_p1456.bin  
mod\_fi\_p1456.GeoPcDx  
mod\_fi\_p12456.bin  
mod\_fi\_p12456.GeoPcDx  
mod\_fi\_p123456.bin  
mod\_fi\_p123456.GeoPcDx

C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour  
Light\UK\_Mod\_Heads  
Contains .bin files for each signal head together with their texture files.

C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour  
Light\UK\_Mod\_Posts  
Contains .bin files for each signal post together with texture files.

C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour  
Light\UK\_Mod\_Shunt  
Textures  
mod\_trk\_shunt.GeoPcDx  
UK Mod ShuntSig Entry 3T.bin  
UK Mod ShuntSig Entry.bin  
UK Mod ShuntSig Exit.bin

C:\Program Files\Rail Simulator\Assets\Kuju\RailSimulator\RailNetwork\signals\UK Colour  
Light\UK\_Mod\_Track  
Textures  
Dummy TPWS.bin  
Mod\_trk\_AWS.bin  
Mod\_trk\_AWS.GeoPcDx  
Mod\_trk\_AWS.lua  
Mod\_trk\_TPWS.bin  
Mod\_trk\_TPWS.GeoPcDx  
UK AWS Ramp.bin  
UK TPWS Grid.bin