

TRAIN SIM WORLD: TEES VALLEY LINE DRIVER'S MANUAL





dovetail
GAMES

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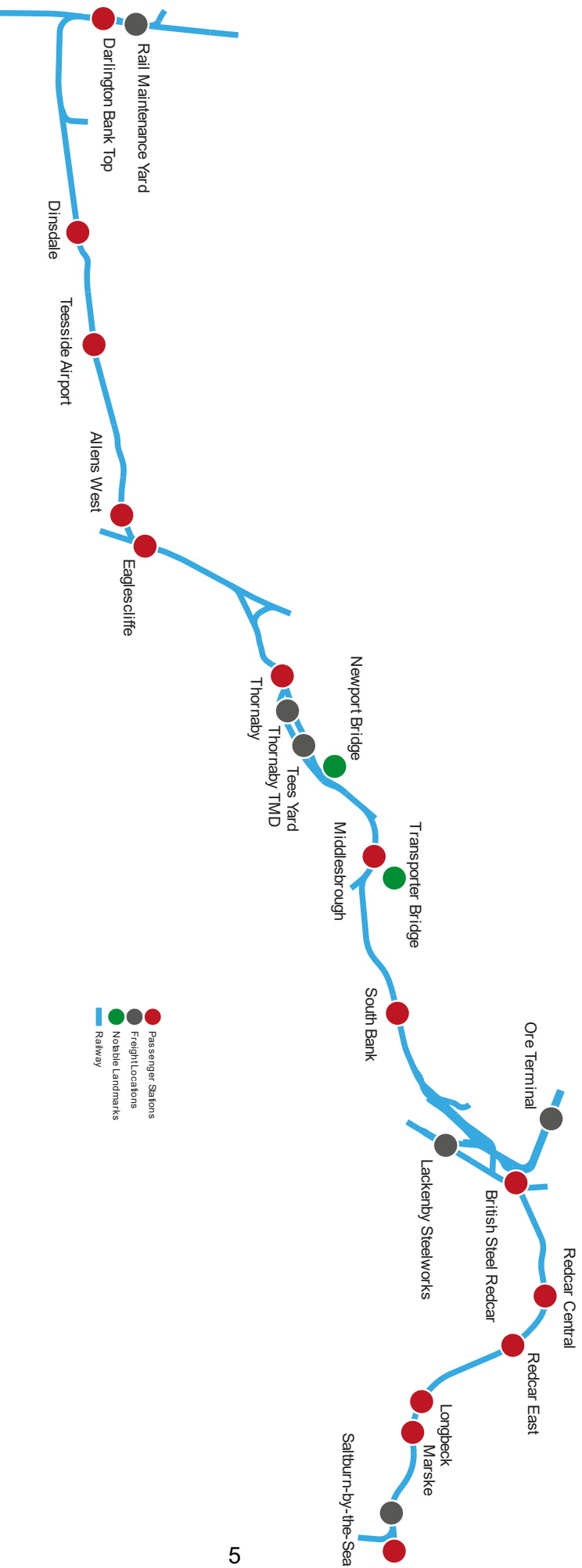
An Introduction to Tees Valley Line



Much like many other railways built in North-East England, the Tees Valley Line shares its lineage with the Stockton and Darlington Railway and was born out of industrial advancements and the drive to increase production. The rural landscape was suited to the roaring fires of steel smelting, while the vast flatland countryside proved ideal for mass construction of both industrial buildings and expansive railway yards.

With local industry booming, along came housing to accommodate the workers, which when combined with the coastal town of Saltburn made the Tees Valley Line just as busy with passenger services. Local trains connected the residents to their place of work, as well as with Darlington on the East Coast Main Line, meanwhile longer-distance services connect to the Tees Valley Line at Middlesbrough.

Tees Valley Line Route Map & Key Locations



The Game Modes

Tutorials

Tutorials give you the knowledge you need to get the most from your locomotives and trains via interactive lessons that teach you key concepts. If you're new to Train Sim World, we recommend you start here to learn the fundamentals.

Scenarios

These provide a selection of operations over the Tees Valley Line route. Scenarios are objective-based activities which provide unique experiences undertaking the tasks of a driver in the British Rail era.

Services

These provide a host of activities throughout an entire 24-hour time period, Service Mode is a new way to play. There's always something to do with a large variety of services to take control of or ride along with. Sit back and enjoy the action and capture amazing screenshots, hop on or off and ride along with the various services as they go about their duties or take control and carry out the duties yourself. Featuring many individual services, you'll always find something going on.

An Introduction to the BR Class 37/5



The sound of 'Tractors' is synonymous to the 1980s, with the BR Class 37 being a frequent sight across the UK, particularly in East Anglia and the North East of England. Built between 1960 and 1965 by English Electric at Vulcan Foundry, Robert Stephenson and Hawthorns, 309 of the class were produced for mixed-traffic duties during the transitional era from steam to diesel traction.

Throughout their lives, many Class 37s were refurbished and reclassified to fulfil particular roles. Changes during refurbishment included re-gearred bogies, and EE generators replaced with more modern Brush alternators. Some were also fitted with electric train heating to haul newer passenger coaches, others were not and were instead destined for freight use, such as the Class 37/5s.

BR Trainload divided their 37/5 fleet among the various freight sectors that were bred from the looming end of British Rail, including the Metals sector, meaning the 37s would spend their days hauling heavy steel trains fresh from the smelters to various customers across the country.

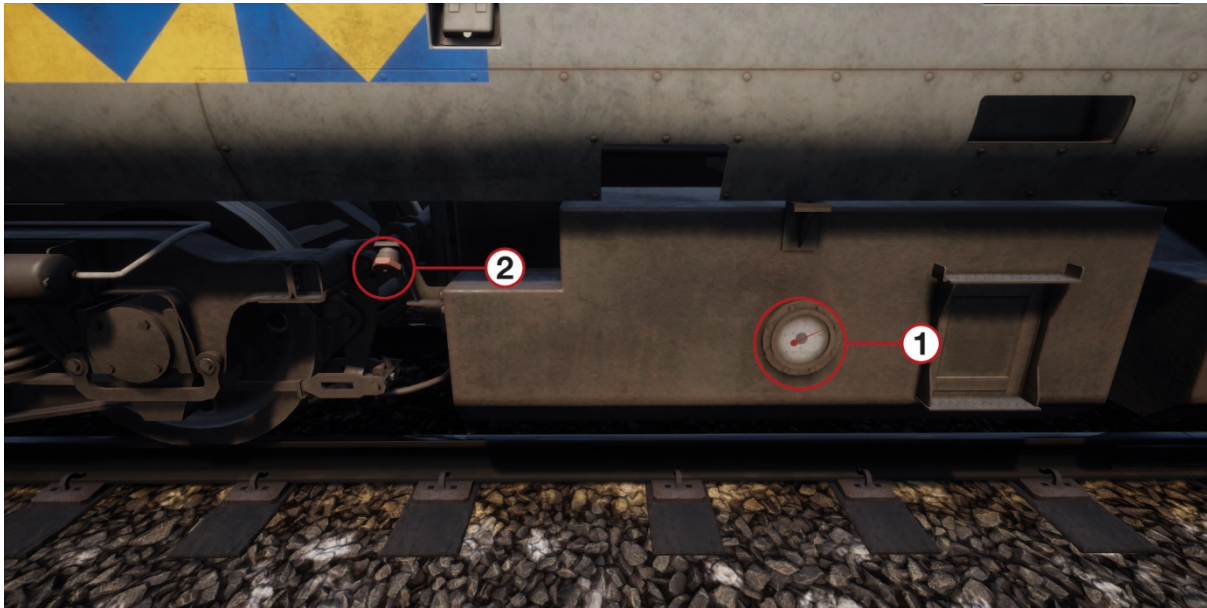
Quick Start Guide: BR Class 37/5

1. Enter the No. 1 Cab (look for the notice on the nose access door) and set the Battery Isolation Switch to the Normal position.
2. Enter the rear cab (the opposite end of where you'll be driving from) and check the following:
 - a. Master Key is Off.
 - b. Handbrake is Released.
 - c. Driver's Brake is in the Cab Shutdown position and the Brake Pin is engaged.
 - d. Reverser is Off.
 - e. Cab Change End Lever (on the rear bulkhead) is Off.
 - f. AWS Isolation Lever (on the rear bulkhead) is Isolated.

- g. If running light loco, set Tail Light (A Side) and Tail Light (B Side) to On.
 - h. If the rear cab is also the No.2 Cab, ensure the brake mode selection switch is also set to the appropriate setting for your train. For light loco running, ensure it is set to Air Brake Passenger mode. The brake mode setting alters how quickly the brakes apply and release. For goods/freight trains, the brakes apply and release a little slower which minimises “snatching” (where trailing vehicles violently move back and forth in response to the brakes catching) and therefore excessive strain on the vehicle couplings.
 - i. All cab access doors and windows are closed, and interior lights are switched off when leaving the cab.
3. Enter the forward cab (the driving position) and check the following:
 - a. Master Key is On.
 - b. Handbrake is Applied.
 - c. Route Indicator is On.
 4. Check the appropriate brake mode indication is shown on the Secondman’s side of the cab.
 5. If you wish to run with AWS enabled:
 - a. On the rear bulkhead, move the AWS Isolation Lever to Unisolated,
 - b. On the rear bulkhead, move the AWS Cab Change End Lever to On.
 6. Sit in the driver’s seat (if you wish, you can adjust the height of the seat before you take a seat).
 7. If you enabled AWS:
 - a. The AWS alarm will be sounding, press the AWS Reset Switch to clear it.
 8. Move the Driver’s Brake to the Full-Service position. If the brake is in the Cab Shutdown position, you will need to raise the Brake Pin in order to move the handle.
 9. Move the reverser to the Engine Only position.
 10. Press the Engine Start button and wait for the Engine Stopped light to extinguish.
 11. Wait for the Fault light to extinguish, which happens when the brakes are fully charged.
 12. If required, set the Instrument Lights to On and set the brightness level to a comfortable reading level.
 13. When ready to proceed, move the reverser to Forwards.
 14. Move the Driver’s Brake to the Running position.
 15. Move the Throttle to the On position until you’re rolling, then apply additional throttle as required. Locomotive speed can then be managed by careful use of the throttle and the brake. The Driver’s Brake can be used when an appropriate consist is coupled to the locomotive (hint, you can also use the Straight Air Brake to trim your train’s speed whilst coasting but, it should not be used for extended periods and must not be used whilst the throttle is applied). When running light loco (i.e. with no trailing vehicles), use the Locomotive Brake to manage your speed.

Checking Fuel Levels & Refuelling the BR Class 37/5

The fuel gauge is located on the exterior fuel tanks of the vehicle (1). See the image below.



Refuelling the locomotive can be achieved by following these instructions:

1. Stop the locomotive at the appropriate fuelling point.
2. Move the Reverser into the Engine Only position.
3. Move the Driver's Brake into the Neutral/Cab Shutdown position and ensure the Brake Pin is fully engaged.
4. Press and hold the Engine Shutdown switch and wait until the engine comes to a complete stop.
5. Fully apply the Handbrake.
6. Move the Reverser into the Off position.
7. Set the Master Key to Off.
8. Leave the loco via the nearest door to the fuelling point.
9. Locate and remove the Fuel Filler Cap (2) which is located centrally on either side of the locomotive's fuel tanks (between the locomotive's bogies).
10. Pick up the Fuelling Hose from the Fuelling Point and insert it into the Fuel Filling Pipe.
11. Operate the control on the Fuelling Point to being refuelling.
12. Watch the Fuel Gauge and wait for the fuel tanks to fill to the full level.
13. Remove the Fuelling Hose and replace it into the Fuelling Point receptacle.
14. Replace the Fuel Cap.
15. The locomotive is now refuelled and ready for start-up.

Managing Heavy Freight in the BR Class 37/5

Power Delivery

Heavy trains require careful management of the locomotive's driving controls to ensure the train is well under control. It is essential that you are fully familiar with the driving controls, the sequence they should be operated in, the locomotive's power characteristics and braking performance. You also need to have a good understanding of how your train will behave given certain environmental factors, such as in wet conditions and for downhill or uphill grades. Knowing the route your train is expected to take including all appropriate maximum permitted speed limits, signals, signs and appropriate hazards will also stand you in good stead. Finally, knowing the total length and weight of your consist will help guide you on how much power/brake to apply.

Getting the Train Moving

1. Begin by releasing the train brake and wait until the Brake Cylinder reads 14.5 PSI (1 Bar) – then move the throttle handle to the On position.
2. As the brakes begin to fully release, the locomotive will “take the strain”. If the locomotive does not move, increase the throttle handle's position slightly until the locomotive begins to creep forward.
3. Once in motion, wait for the speed to build to 10 mph. Once above 10 mph, move the throttle control in one complete, steady and precise motion, to the half way position.
4. Be aware of the locomotive's transitions through the field diverts (a complex system that enables the locomotive to reach higher speeds) as this can result in a change to the locomotive's handling.
5. As the locomotive's speed increases ensure the power applications are precise and singular. Don't be tempted to keep adjusting the throttle. Always set the throttle once and wait until the train stabilises with the new power setting before then increasing or reducing power. This takes a lot of practice and experience to get right but you will get a feel for the locomotive and its handling characteristics.

Slowing/Braking

1. In the same way as you would for stopping a passenger train, the timing of the brake applications will need to be timed properly to ensure a smooth and stable stop. With heavy freight trains, however, you need to be particularly mindful of the consist weight behind you as the stopping distance is greatly increased by the weight of your consist and you need to decide at what distance you need to begin braking. Thinking and acting well ahead will stand you in good stead. It is always better to over-brake your train than under-brake. Always begin your brake application by applying a reduction of 14.5 PSI (1 Bar) with the Driver's Brake. Note this 'braking point' distance is influenced by numerous factors, such as the current speed of the train, the weight of the consist, the current grade and the conditions of the rails – it will be necessary for you to adjust your braking point accordingly. This takes a great deal of practice to get right.

2. The aim is to apply sufficient brake pressure once and only adjust it once you are within sighting distance of your intended stop. As a general rule, you should always aim to be at no more than 25 mph by the time you are within 500 yards (457 metres). Avoid fanning (moving the handle back and forth) the Driver's Brake handle as this can deplete your air reserves and cause snatching in the consist.
3. Move the Driver's Brake and reduce further to around 29 PSI (2 Bar).
4. As your speed reduces below 7 mph, move the Driver's Brake to reduce the brake pressure to 14.5 PSI (1 Bar) in preparation for the stop. This will prevent the wheels locking up and causing the train to judder.
5. Once the train has reached a full stop, move the Driver's Brake to the Full Service position to secure the train.

An Introduction to the BR Class 08



In the steam age, any shunting duties throughout yards, sidings, and major stations was carried out by diminutive 0-4-0 and 0-6-0 tank locomotives, their short wheel base able to fit around the typically tighter curves found in such complex and compact locations.

It was inevitable, however, that diesel equivalents would be required nationwide. Diesel could offer more tractive effort for a locomotive similar size, ideal for general purpose use where anything needed moving or shunting over a short distance. The London Midland and Scottish railway had already tinkered with the idea of using diesel shunters by the mid-1930s, and had English Electric building the D3/6 in 1935.

The D3/6 shunter formed the basis of things to come, a short 0-6-0 wheelbase upon which a small cab and long bonnet was rested - the bonnet housed a 350 horsepower English Electric 6K engine and two traction motors, giving a top speed of 30mph and a tractive effort of 122.k kN. Only a handful of these shunters were built, yet they were the foundation for what would be the LMS 12033 series (BR Class 11), of which 120 were built.

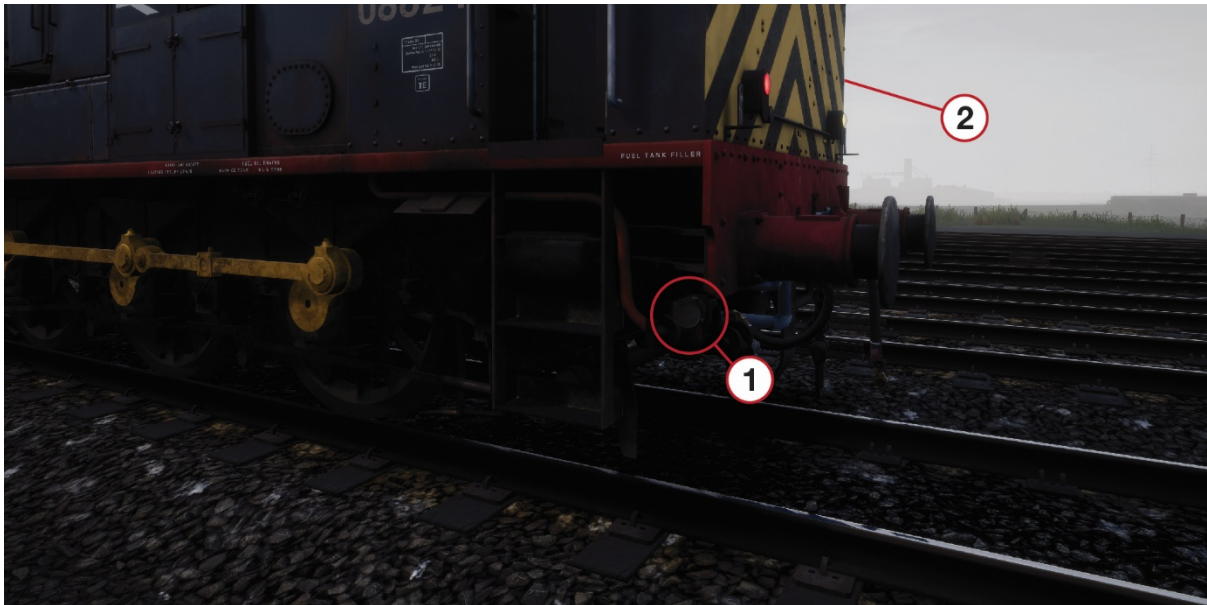
When the time came to “go large” with general purpose shunters under British Railways, the design of the BR Class 11 was chosen, and between 1952 and 1962, a whopping 996 diesel shunters were built as the BR Class 08. Being the most prolific of any British Rail locomotives, they became a common sight at any site of significance.

Quick Start Guide: BR Class 08

1. Starting on the outside, open the Battery Isolation access hatch (approximately mid-way along the forward part of the locomotive, and toward the bottom). Move the control to the Normal position and close the hatch door.
2. Repeat the process from Step 1 for the opposite side of the locomotive. Both Isolation controls must be set.
3. Enter the driving cab and check the following:
 - a. Master Key is Off.
 - b. Handbrake is Applied.
 - c. Locomotive Brake is in the Released position.
 - d. Train Brake is in the Full Service position.
 - e. Reverser is Off.
 - f. Set the Marker Lights to On.
 - g. Set the Instrument Lights to On.
4. Sit in the Driver's seat.
5. Turn the Master Key to the Start position and hold the position until the engine catches. Once the engine is running, move the Master Key to the On position.
6. Move the Master Key to the Engine Only position and wait for the brakes to charge.
7. Move the Locomotive Brake to the Full Service position and release the Handbrake.
8. When ready to proceed, move the reverser to Forwards or Reverse (whichever applies to your driving direction).
9. Move the Train Brake to the Running position and the Locomotive Brake to the Released position.
10. Move Throttle to the Notch 1 position until you're rolling, then apply throttle as required. Locomotive speed can then be managed by careful use of the Throttle and the Locomotive Brake. The Train Brake can be used when an appropriate consist is coupled to the locomotive. When running Light Loco, use the Locomotive Brake.

Checking Fuel Levels & Refuelling the BR Class 08

A fuel gauge (2) is located both on the interior and exterior of the locomotive. Note that the Fuel Filler Cap (1) is located on the left-hand side of the locomotive. See the images below.



Refuelling the locomotive can be achieved by following these instructions:

1. Stop the locomotive at the appropriate fuelling point.
2. Move the Reverser into the Off position.
3. Move the Train Brake into the Full Service position.
4. Move the Master Key to the Off position.
5. Fully apply the Handbrake.
6. Leave the loco via the nearest door to the fuelling point.
7. Locate and remove the Fuel Filler Cap which is on the rear left-hand side just behind the rear buffer.
8. Pick up the Fuelling Hose from the Fuelling Point and insert it into the Fuel Filling Pipe.

9. Enter the cab and engage the Fuel Transfer Pump.
10. Return to the Fuelling Point and active the control to begin refuelling.
11. Watch the Fuel Gauge and wait for the fuel tanks to fill to the full level.
12. Remove the Fuelling Hose and replace it into the Fuelling Point receptacle.
13. Replace the Fuel Cap.
14. Enter the cab and turn off the Fuel Transfer Pump.

The locomotive is now refuelled and ready for start-up.

An Introduction to the BR Class 101



The Class 101 was one of the largest classes of first-generation Diesel Multiple Units on the British railway network. Built by Metro-Cammell Works in Birmingham from 1956, the Class 101 was made up from a number of sub-classes, making them the most numerous and possibly most successful and well known of first generation DMUs.

Sets were supplied in two, three and four car sets, depending on the service they were intended for, and passenger accommodation was provided in first and standard class configuration.

More than 500 units of the Class 101 were built and could be seen on routes across the country and saw service many years into the privatisation of Britain's railways. The final five units survived 47 years of service, finally being withdrawn on 24 December 2003, but thanks to their longevity many units have been preserved on the country's heritage railways.

Driver Setup Guide: BR Class 101

1. Before you enter the forward driving cab, go to the driving cab of the rear-most trailing vehicle and set the following:
 - a. Left and Right Marker Lights (Red),
 - b. Destination Light to On,
 - c. Destination Blind to the appropriate destination,
 - d. Train Lights to on,
 - e. Optional – AWS Isolation Lever to Unisolated.
2. Whilst in the rear cab, check the following:
 - a. Control Circuit Key is Off,
 - b. Handbrake is Released,
 - c. Driver's Brake Valve is in the Lap position,
 - d. Reverser is in the Off position,
 - e. Gear Selector is in the Neutral position,
 - f. All cab access doors and windows are closed when leaving the cab.
3. Head to the forward driving cab. If there are intermediate cabs (like in a four or six-car train), set or check the following in each cab:
 - a. Destination Blind to the appropriate destination,
 - b. Control Circuit Key is Off,
 - c. Handbrake is Released,
 - d. Driver's Brake Valve is in the Lap position,
 - e. Reverser is in the Off position,
 - f. Gear Selector is in the Neutral position,
 - g. All cab access doors and windows are closed when leaving the cab.
4. Enter the forward driving cab and set the following:
 - a. Control Circuit Key to On,
 - b. Handbrake is Applied,
 - c. Marker lights (white),
 - d. Destination Light to On,
 - e. Destination Blind destination.
5. Check that the air pressure in the brake system reads greater than 75 lbs/in.
6. Set the Reverser, which determines the direction of travel, to the Forward position.
7. If the engines have not been started, move the Throttle handle to notch 2 and press the Engine Start – Back and Engine Start – Front buttons one at a time to start them
8. Check that the Air Lights are lit for all engines and cars in the consist.
9. Move the Throttle handle to the Idle position.
10. Next, it is necessary to perform a brake test. Move the Driver's Brake Valve to the left-most position (full apply) and check that the Train Pipe gauge reads 0 inches of vacuum.

Steps 11 and 12 are only required if the engines were not running when you took over the train. If the engines are running, continue with Step 13:

11. *Leave the forward cab and head to the rear cab and check that the Train Brake gauge also reads 0 inches of vacuum.*
12. *Return to the forward cab.*

13. Move the Driver's Brake Valve to the right-most position (full release) and check that the Train Pipe gauge reads 21 inches of vacuum.

Steps 14 and 15 are also only required if the engines were not running when you took over the train. If the engines are running, continue with Step 16.

14. *Return to the rear cab and check that the Train Brake gauge also reads 21 inches of vacuum.*
15. *Return to the forward cab. The brake continuity test is now complete.*
16. Finally, move the Driver's Brake Valve to the left-most position (full apply) and return the Driver's Brake Valve handle to the Lap position. The brake test has now been completed.
17. Set the Handbrake to Off.
18. The train is now ready to move.

Driving the BR Class 101

1. Await the Guard's Right Away. This is typically two clear buzzes.
2. Acknowledge the Guard's Right Away by pressing the Guard Buzzer twice so that it reproduces the same two clear buzzes received from the Guard.
3. Move the Driver's Brake Valve to the right-most position (full release).
4. Move the Gear Selector to Gear 1 and pause for 2 seconds to allow the gearbox time to engage the selected gear.
5. Move the Throttle handle to full power (position 4) steadily and one notch at a time.
6. Watch the Engine RPM gauge and pause until the needle reaches the Up arrow marked on the gauge.
7. Move the Throttle handle to the Idle position and then move the Gear Selector to Gear 2.
8. Pause for 2 seconds and then move the Throttle handle to the full power position, steadily and one notch at a time.
9. Repeat steps 6 to 8 to change up successive gears.

Coasting in the BR Class 101

1. Move the Throttle handle to the Idle position and pause for 2 seconds.
2. When Coasting in the BR Class 101, you should always select Gear 4. If the Gear Selector is not in the Gear 4 position, select Gear 4 now.
3. The train is now coasting.
4. If it becomes necessary to reapply power, you will need to move the Gear Selector to the appropriate gear. Select the most appropriate gear for your speed if it is between the change down and change up speeds shown on the table below. Make sure that, once you have selected the new gear, you pause for 2 seconds before moving the Throttle lever, again, steadily and one notch at a time.

Select Gear	Change Down Speed	Change Up Speed
1	0 mph	15 mph
2	15 mph	26 mph
3	26 mph	39 mph
4	39 mph	75 mph

Down Shifting in the BR Class 101

1. When the Engine RPM gauge needle shows that it is necessary to change down a gear (the needle will point at the Down position on the Engine RPM gauge), move the Throttle handle to the Idling position and pause for 2 seconds for the Engine RPM to fall.
2. Select the next lowest gear with the Gear Selector. For example, if you are in Gear 4, move the Gear Selector to the Gear 3 position and pause for 2 seconds.
3. Move the Throttle handle to the full power position, steadily and one notch at a time.
4. Repeat steps 1 to 3 to further reduce down in gears until the Engine RPM gauge holds steady or begins to increase.

Stopping at Stations in the BR Class 101

1. On approach to the station, you should always manage your speed appropriately. The timing of the brake applications will need to be timed properly to ensure a smooth and stable stop. As such, you will need to think and act well ahead. Begin approximately 1 to 1.5 miles from the station by applying 15 inches of vacuum with the Driver's Brake Valve. Note this 'braking point' distance is influenced by numerous factors, such as the current speed of the train, the weight of the consist, the current grade and the conditions of the rails – it will be necessary for you to adjust your braking point accordingly.
2. The aim is to apply sufficient brake pressure once and only adjust it once you reach the start of the platform. As a general rule, you should always aim to be at no more

than 25 mph depending on the platform length. For short platforms, you should aim to be at no more than 15 mph when you reach the start of the platform.

3. Move the Driver's Brake Valve and reduce the vacuum in the Train Brake to around 8 inches of vacuum.
4. As your speed reduces below 7 mph, move the Gear Selector to the Neutral position and Move the Driver's Brake Valve to increase the vacuum to 15 inches of vacuum in preparation for the stop.
5. Once the train has reached a full stop, move the Driver's Brake Valve to the full left-most position (full apply) to secure the train.

Passenger Door Controls

In Train Sim World, you can control the passenger entry and exit doors on each side independently i.e. either left side or right side. A simple method of control has been implemented for the included trains. Simply press the TAB key to call up the menu and select on which side of the train you wish to lock/unlock the doors.

On the included trains you cannot directly interact with the passenger car doors because this is normally controlled from the passenger cars themselves, so you must use the TAB key to cause the doors to open/close.

Refuelling the BR Class 101

The Class 101's Fuel Filler Cap (1) is located on the body side panel approximately mid-way along its length.



Refuelling the unit can be achieved by following these instructions:

1. Stop the unit at the appropriate fuelling point.
2. Move the Driver's Brake Valve into the Apply position and ensure the brakes are fully applied, then move the handle into the Hold position.
3. Press and hold the Engine Shutdown switch and wait until all engines come to a complete stop.
4. Fully apply the Handbrake.
5. Move the Reverser into the Off position.
6. Set the Control Key to Off.
7. Leave the unit via the nearest door to the fuelling point.
8. Locate and remove the Fuel Filler Cap which is located centrally on either side of the unit's body.
9. Pick up the Fuelling Hose from the Fuelling Point and insert it into the Fuel Filling Pipe.
10. Operate the control on the Fuelling Point to begin refuelling.
11. Watch the Fuel Gauge and wait for the fuel tanks to fill to the full level.
12. Remove the Fuelling Hose and replace it into the Fuelling Point receptacle.
13. Replace the Fuel Filler Cap.

The unit is now refuelled and ready for start-up.

Reference Section

Safety Systems: Automatic Warning System (AWS)

The Automatic Warning System is used to provide indications in the cab based on the upcoming conditions on the line. Alarms sound in the cab when approaching aspects other than green or when approaching some other fixed reason for ensuring the driver is forced to acknowledge their location and situation such as some diverging junctions.

How to Activate/Deactivate

1. Move the AWS Isolation Lever to Unisolated
2. Move the AWS Cab Change End Lever to ON.
3. The AWS self-test may now be sounding, press the AWS Reset Switch to acknowledge it.

How to Use

As you approach a signal you will observe you go over a yellow “ramp” in the “four foot” (in between the rails), this is an AWS Magnet.

If the signal aspect you are approaching is GREEN, the magnet will be energised and you will hear a clear bell/tone in the cab, you need take no further action.

If the signal aspect you are approaching is not green, the magnet will not be energised, and you will hear an alarm in the cab. You must acknowledge this by pressing the AWS Reset Switch within a couple of seconds or the train brakes will apply.

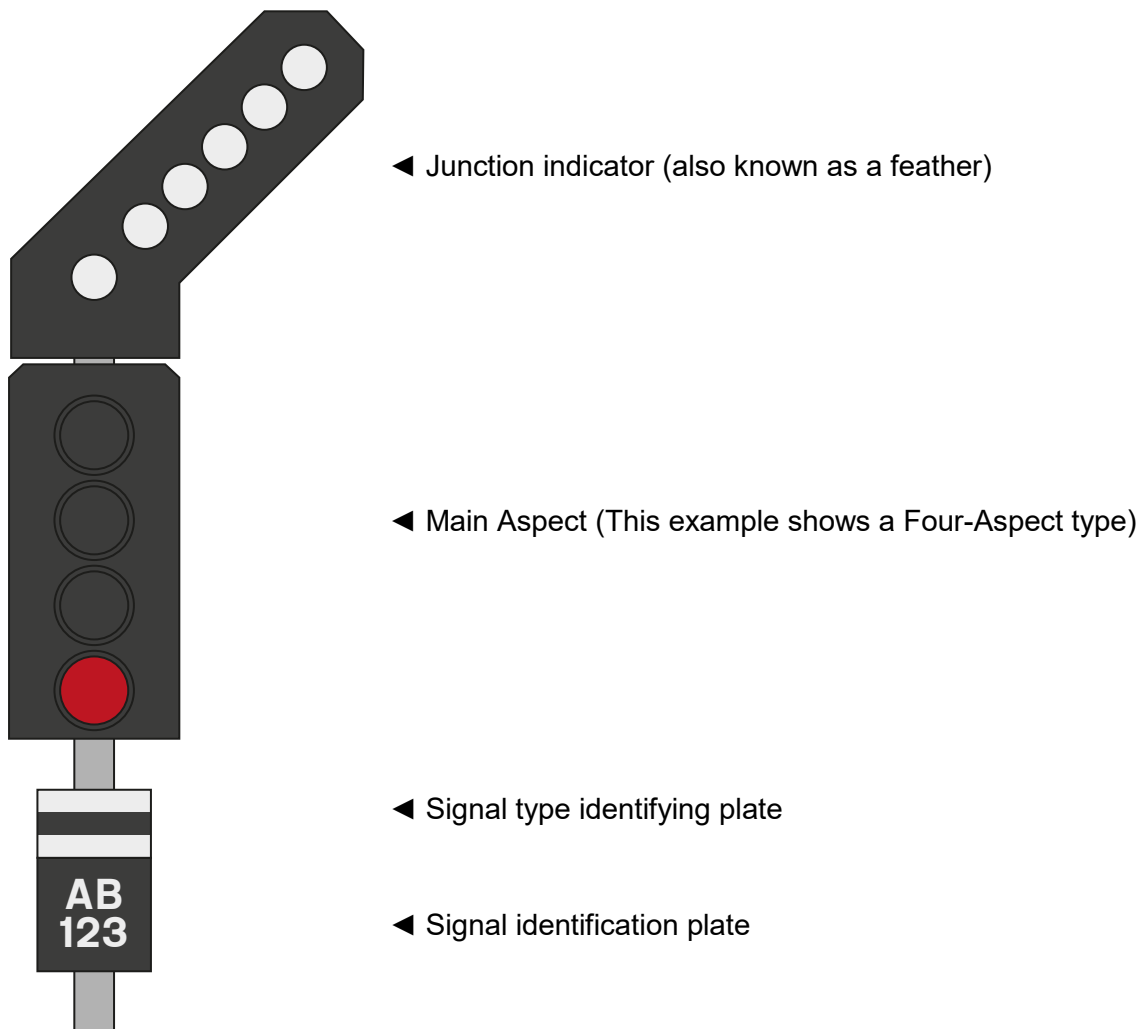
Note: Unlike some European systems there are no speed restrictions monitored with this system, it is left entirely to the driver to ensure that they will not pass a red signal and the AWS is used to provide repeated warning and driver acknowledgement of the upcoming situation on the line.

There are also fixed AWS Magnets that are permanently energised which will always cause an alarm in the cab usually because of something ahead on the line, and some AWS magnets may only trigger when the train is routed in a specific direction.

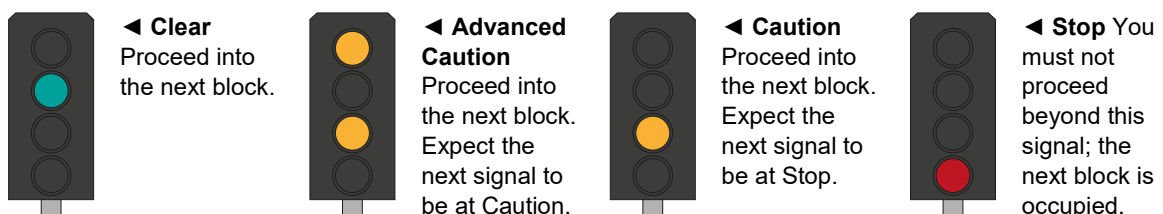
In simplistic terms, if the alarm goes off, acknowledge it and understand why it went off then react accordingly.

British Signalling Reference

British colour light railway signals consist of one or more physical components or modules that form the basis of advising the driver on the state of the route ahead. These components are:

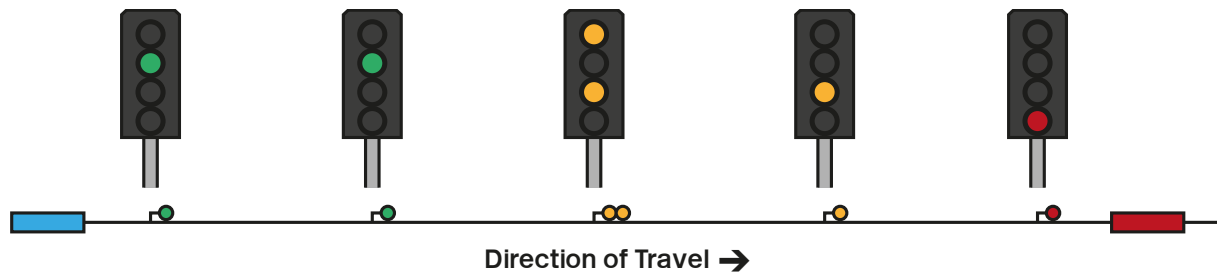


Main Aspects: Colour Light



The examples above show the appropriate aspects for four-aspect block signalling. For three-aspect signalling, these signals cannot display the Advanced Caution aspect but are able to show the other three. For two-aspect signalling, these can only display the Clear and

Stop aspects (except distant or fixed aspect signals). The sequence of displayed aspects runs from left to right as shown in the example below:



In the above diagram, if you are the blue train, the five signals spaced between you and the red train would follow the sequence as shown in this example. They also form a protection barrier between you and the red train. The empty space between each signal is called a block. Essentially, there are four empty blocks between you and the train in front. The distance between you and the train you are following is important as it provides you with enough distance in order to bring your train to a complete stop when travelling at the maximum permitted speed of the line.

For a three-aspect signalling system, the number of blocks would be reduced to three blocks. This means there is less braking distance between you and the train in front since three-aspect signals are incapable of displaying the Advanced Caution aspect. So, you can form the conclusion that the greater the number of main aspects a signal can display, the greater the distance between you and the train ahead and the greater the overall braking distance.

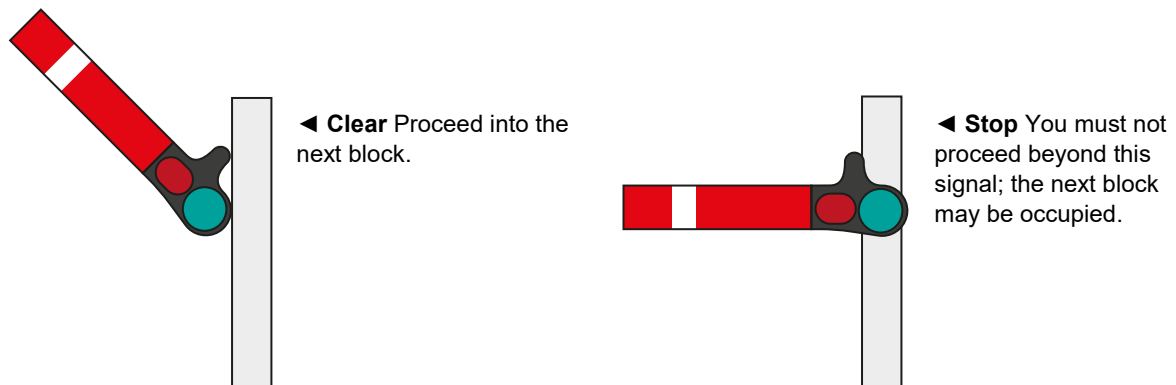
Typically, four-aspect signals are used where line speeds would be in excess of 100 mph. However, there may be instances where the line speed is lower but additional protection is required. For example, due to a junction with a preceding steep downhill section and therefore greater distance required for braking of heavier trains.

Additionally, each buffer stop (the end of the track as found at the end of sidings or at a terminus station) is regarded itself as a Stop signal and therefore signals further back up the line would display the appropriate aspects.

Co-Acting Signals

Co-acting signals are smaller versions of the main aspect signals and give both short and long-distance sighting of a signal. A co-acting signal repeats the exact same aspect of the main aspect and are always the same type (colour light or semaphore) as the main signal.

Main Aspects: Semaphore (Home)



The examples above show the appropriate aspects for Upper-Quadrant signals (UQ), i.e. the signal arm raises into the upper quadrant of an arc in order to display its Clear aspect. Lower Quadrant (LQ) signals are those that drop downwards but the meaning between each type is identical. For a Clear aspect, you should regard any indication that is at a 45-degree position and, for a Stop aspect, those indications that are at a horizontal position. Note that these signals are essentially only capable of displaying two aspects and you should regard them as such when considering speed and braking effort.

Reacting to Main Aspect Signals

Clear

Continue at the maximum permitted speed for your train or for the route that has been set. If the train is fitted with AWS, a clear bell or tone will sound as you pass over the magnet that is situated on approach to the signal.

Advanced Caution

For lighter trains that have good braking, you should continue at the maximum permitted speed and look out for the next signal which is likely to be at Caution. If you are in a heavy train, are travelling at or just below 125 mph or are descending a steep grade, you should begin braking as soon as you see the aspect with a 14.5 PSI (1 Bar) reduction with the Driver's or Train Brake. If the train is fitted with AWS, a warning horn or tone will sound, as you pass over the magnet, that you must acknowledge.

Caution

All trains should be braking once this signal is in sight. If your speed is such that you are unlikely to stop before the next signal, increase your braking effort to 29 PSI (2 Bar) to further reduce your speed. The aim is to reduce your speed to around 25 mph well in advance of the Stop signal ahead. If the train is fitted with AWS, a warning horn or tone will sound, as you pass over the magnet, that you must acknowledge.

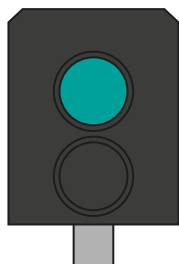
Stop

All trains must stop in advance of the signal. If the train is fitted with AWS, a warning horn or tone will sound, as you pass over the magnet, that you must acknowledge.

It is important that you bring your train to a stop as close to the signal as possible but ensure that you can safely read the displayed aspect from your seated position. Do not stop so close to the signal that you need to adjust your driving position in order to read the signal aspect. Also, do not stop so far away from the signal that there is an extended distance to cover before passing the signal, this may result in the rear of the train occupying the rear-most signal block and impacting the safe movement of trains behind you.

Once you have come to a complete stop, it is considered good practice to move the Driver's or Train Brake into the full-service position to secure the train.

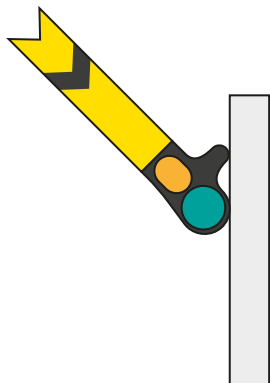
Distant/Related Aspects



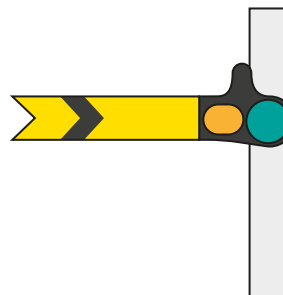
◀ **Proceed** The next signal is displaying a clear aspect.



◀ **Caution** Expect the next signal to be displaying a Stop aspect.



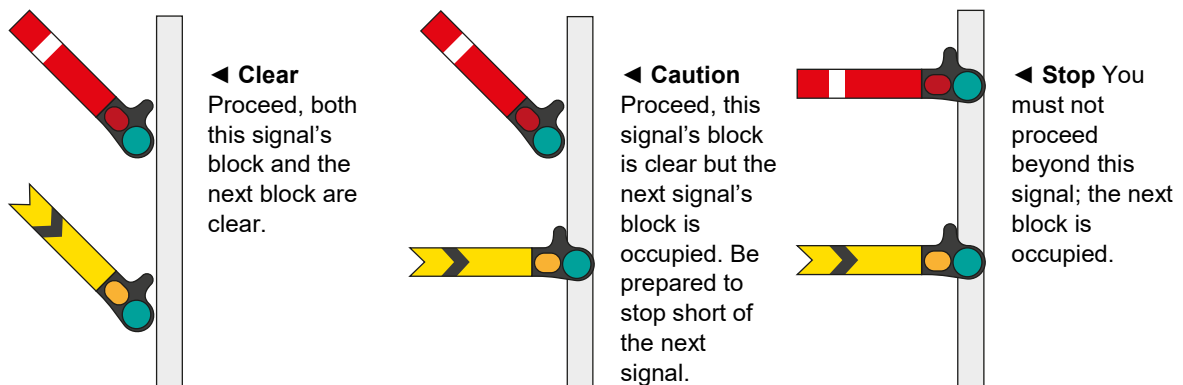
◀ **Proceed** The next signal is displaying a clear aspect.



◀ **Caution** Expect the next signal to be displaying a Stop aspect.

Distant signals, sometimes referred to as Related Signals, essentially provide advanced warning of the aspect being displayed on the next block signal (the signal it is related to). You are not required to take any action at distant signals, but they can be useful for providing extra braking distance when you have a heavy or fast train.

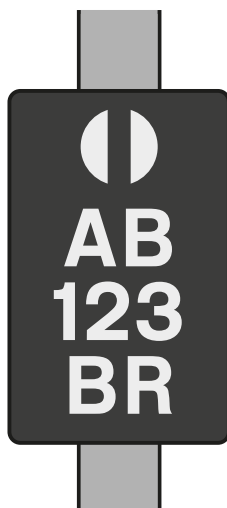
Combined Main Aspect & Distant Semaphore Signals



Identifying Signal Types

Most colour light signals carry identification plates that aid the driver in understanding how they should regard the indication the signal is displaying. Understanding how to read the identification plate can be useful in determining what type of signal is providing you with instructions or guidance.

The identification plate is typically mounted to the post that carries the main signal aspect head. However, due to placement or clearance issues such as when signals need to be placed on the ground in stations, the identification plate may be mounted on top of the signal head. The identification plate can be broken up into three dedicated sections:



- ◀ The upper part of the identification plate employs a form of code that advises the driver on what type of signal is deployed. In this instance, a three-aspect banner repeater signal.
- ◀ The alphanumeric characters **AB 123** are the signal's area code and the signal number in that area.
- ◀ The suffix characters further advise what type of signal is deployed. In this instance, the letters **BR** mean Banner Repeater.

Here are some additional signal ID plates that are commonly used:



◀ Signals that carry no type identification are called Controlled Signals. This means the signal is directly controlled by a signaller or controller.



◀ The horizontal black band signifies that this is an automatic signal that sets its aspect based on the passage of trains and not by a signaller.



◀ With the word "SEMI" added, this advises that this signal is semi-automatic and can be controlled by a signaller if required.



◀ Slightly different to the three-aspect Banner Repeater shown in the example above, the solid circle and "BR" suffix signifies this is a two-aspect Banner Repeater.

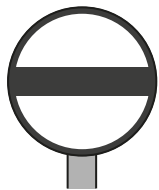


◀ The white triangle signifies that this is a distant signal and can sometimes be displayed with or without the triangle or the "R" (Repeater) suffix, but never both.

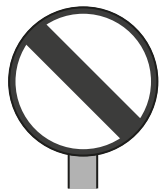


◀ The "CA" suffix indicates that this signal is a co-acting signal.

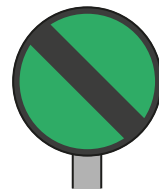
Banner Repeater Aspects



◀ **Caution** Expect the next signal to be displaying a stop aspect.



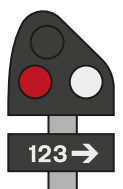
◀ **Proceed** The next signal is displaying a clear or caution aspect.



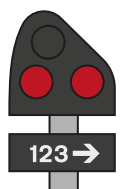
◀ **Clear** The next signal is displaying a clear aspect.

Banner Repeater signals should be treated in exactly the same way as Distant/Repeater Signals. These signals are often used where visibility of the main signal is reduced or obstructed.

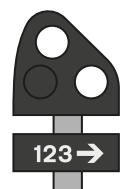
Position-Light Aspects



◀ **Stop** The line ahead may be obstructed, do not proceed beyond this signal without permission.



◀ **Stop** The line ahead may be obstructed, do not proceed beyond this signal without permission.



◀ **Proceed** at caution toward the next train, signal or buffer stop, and be prepared to stop short of any obstruction.

Semaphore Position Aspects



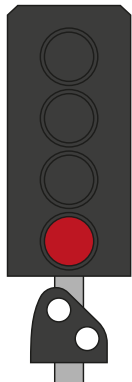
◀ **Stop** The line ahead may be obstructed, do not proceed beyond this signal.



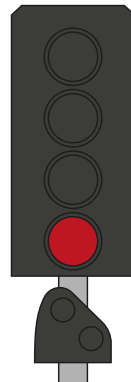
◀ **Proceed** at caution toward the next train, signal or buffer stop, and be prepared to stop short of any obstruction

Call On / Proceed on Sight

If the position-light is affixed below a main aspect signal, there may not be any indication provided as these indicators are incapable of displaying a red Stop aspect in the same way that Position-Lights do (above). If this indicator is unlit, you should always obey the main aspect. Typically, the position light below the main signal would be lit if movement authority is granted where the main aspect cannot provide an indication other than Stop (for example if the line ahead is occupied when coupling to vehicles in a station or siding). For these signals, you need to regard the signal as one indication even though there may be multiple aspects displayed:

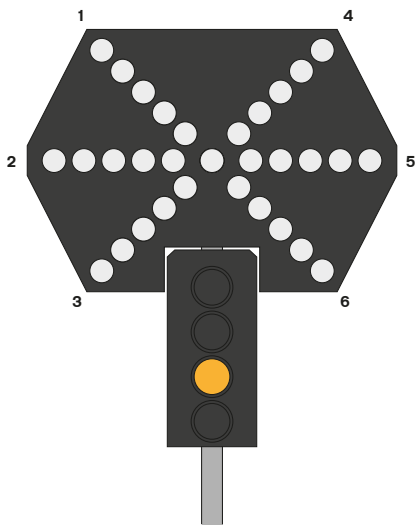


◀ **Proceed at Caution** toward the next train, signal or buffer stop, and be prepared to stop short of any obstruction.



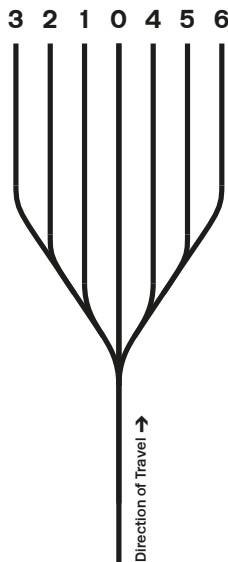
◀ **Stop** You must not proceed beyond this signal; the next block is occupied.

Junction & Route Indicators: Colour Light

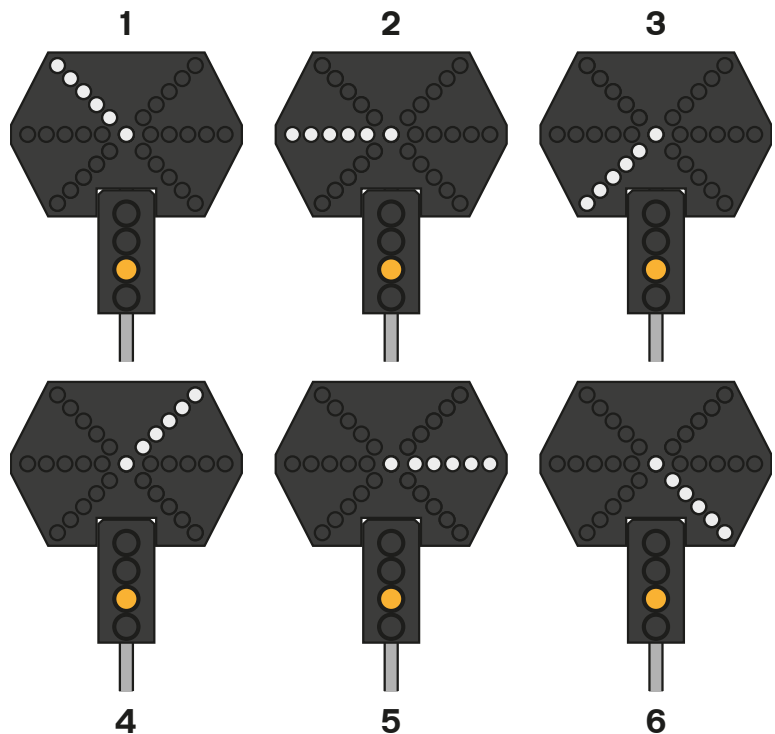


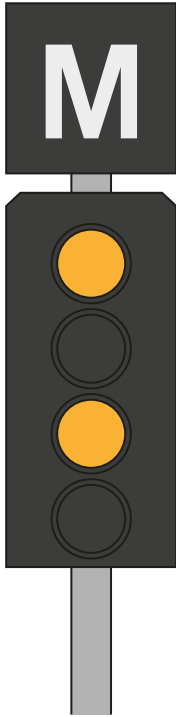
◀ The junction indicator can display up to 7 possible indications for each of the possible routes you can take. The guidance provided by this indicator is not easily understood as routes 2 and 5 seem to imply you'll be taking a sharp left and right turn with routes 3 and 6 seemingly making no sense at all and implying you will be turning completely around – something that's not possible with trains!

Instead of reading these indicators in a literal fashion, you need to regard these indicators as a form of code with each of the routes, 1 through 6, having a different meaning as shown in the image below.



◀ The straight-ahead route (0) would normally have no indication displayed on the junction indicator and only the main aspect would be shown. Where a route is set to the first diverging route (1), the indicator for this route would be lit forming an upper-left diagonal line. Each of the routes would always be formed of a single white line to indicate the set route:



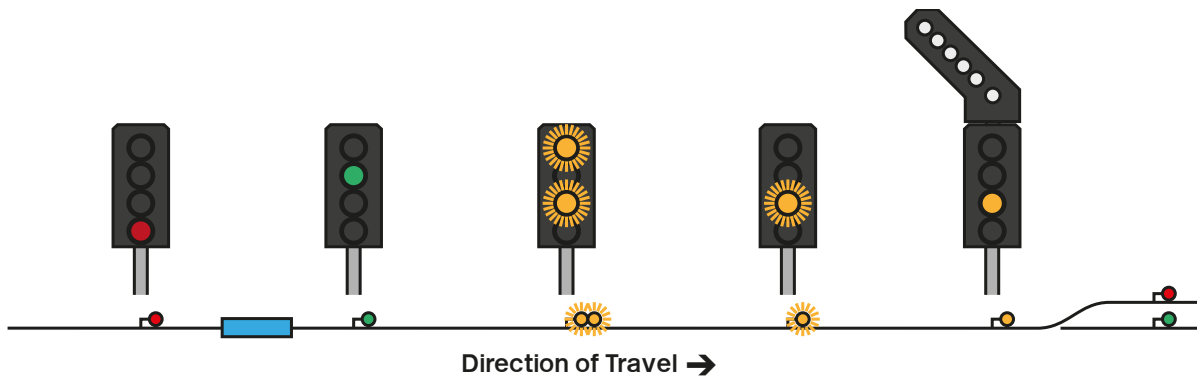


◀ The theatre route indicator style works in exactly the same way as a junction indicator but provides the routing notification via alphanumeric characters. The example shown here shows an 'M' indication, usually relating to Main or, that your train is being routed via the main line. Some other possible indications are provided below:

#	Numbers usually relate to platform or siding numbers.
M	Usually relates to Main Line, combinations can also include DM for Down Main and UM for Up Main.
R	Usually relates to Relief Line (a line that runs alongside or near to main running lines and provides additional capacity). Combinations can also apply.
G	Usually relates to Goods Line (a line that runs alongside or near to main running lines that's exclusively used by freight trains). Combinations can also apply.
A	All alphabetic characters can be displayed and usually relate to a station, town or area that the routing is heading toward. For example, an 'S' indication would imply a routing toward Swindon or could be advising of a Slow Line routing. Route knowledge of these indications is essential as different indications can imply different meanings.
S	Usually relates to Slow Line (a line that has a lower permanent speed limit than that of the main lines). Combinations can also apply.
F	Usually relates to Fast Line (a line that has a higher permanent speed limit than that of the main lines). Combinations can also apply.
X	Usually relates to a route that requires a reversing manoeuvre such as accessing a goods unloading point in a siding. Combinations can also apply.

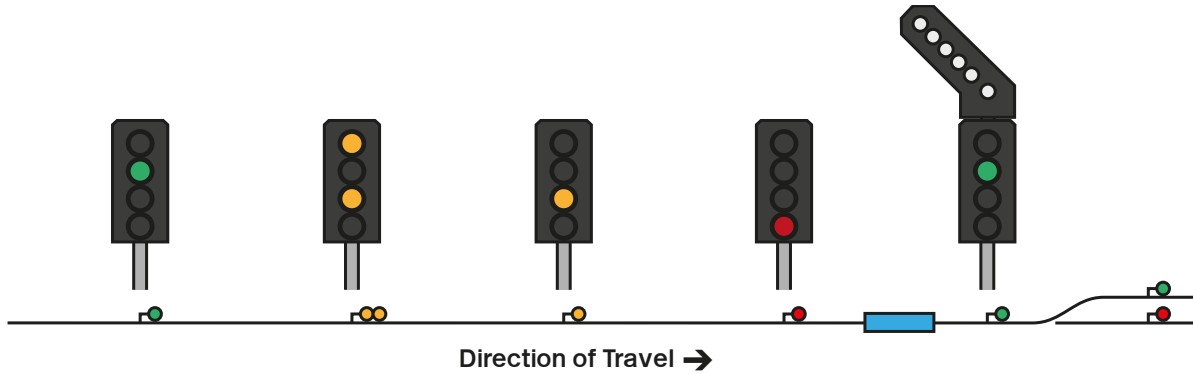
Flashing Aspects

When approaching a junction, you will find the sequence of signals to be slightly different in that the Advanced Caution and Caution aspects will flash (modern-day routes only).



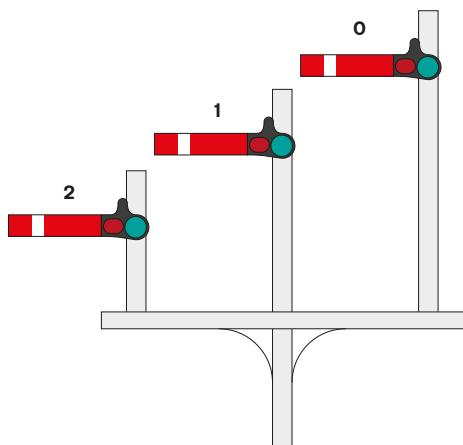
The flashing aspect itself should be treated in exactly the same way as its non-flashing counterpart (they have the same meaning). However, the difference is that the junction signal itself will only display the next degraded meaning for the diverging route's signal (shown in red above) and all preceding flashing aspects will all degrade in sequence from

the junction signal, irrespective of the aspect displayed on the junction signal. Junction signals typically employ approach control. This essentially means that all signals in advance of the junction will display a fixed pattern whilst you are approaching them and it is not until you are within a set distance from the junction signal that its aspect will improve (provided that the route ahead is also improved) as shown in the next example.

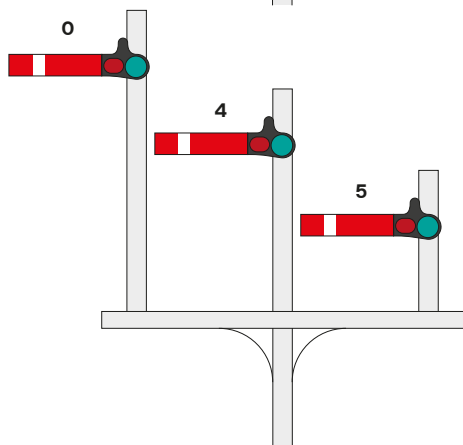


Note that now your train is in the approach block of the junction signal, the aspect has now improved to Clear as the proceeding signal on the diverging route is now also at Clear.

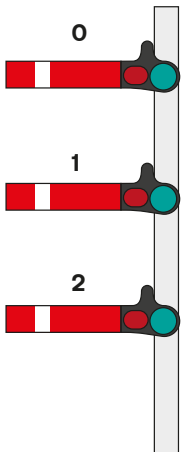
Junction & Route Indicators: Semaphore



◀ Unlike colour light junction indicators, the semaphore signal uses a cascaded or “stepped” style to aid in readability. The taller signal relates to the straight-ahead route (or primary route) with the lower signals relating to the diverging routes as shown in the previous diagram.



◀ For routes 4 and 5, a mirrored stepped style signal is used to aid in readability.



◀ Junction semaphore signals can also be “stacked”. These are read in exactly the same way as the “stepped” type.

Railway Signs

Maximum Permitted Speed



◀ The modern style of maximum permitted speed sign which, in this instance, requires you to not exceed 25 mph.



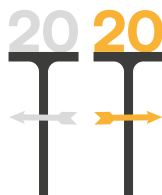
◀ The signs can also be stacked to show differential limits. The bottom limit is always the higher limit and applies to passenger and mail/parcel trains and light locomotives. All other trains must obey the top limit.



◀ The “Morpeth Board” advises the driver that the maximum permitted speed will decrease ahead. You should begin to slow to match this new speed before you reach the new limit ahead.



◀ Warnings about reductions in differential speed limits can also be provided in the Morpeth Board.



◀ The older “cut-out” style of maximum permitted speed sign, can either be in white or yellow and essentially should be regarded in exactly the same way as modern signs.



◀ Cut-out style signs also follow the same convention as their modern counterparts.



◀ The cut-out style signs are a little hard to read but can also advise of similar reductions in speed. However, they were not widely used, and you should not rely on sighting such a sign and instead rely on route knowledge to navigate speed limits.



◀ This also applies to cut-out style signs.

◀ All speed-related signs can also display an arrow that advises to which line this sign applies to.

Whistle Boards



◀ The modern variant of the whistle board at which the driver must make a clear single loud tone on the horn if between the hours of 7:30 am and 11:30 pm. At some sites, particularly at crossings it will be necessary to use a loud two-tone horn. Between the hours of 11:30 pm and 7:30 am, drivers must use discretion in use of the horn and should use a low tone except when required to warn other users of the railway of your approach, loud tones can therefore be used for this purpose.

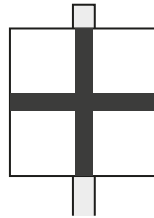


◀ Cut-out signs also follow similar rules but can be of varying type and can simply be a board with the word "Whistle" on it. The driver must use a sustained blast of the horn/whistle to be clearly heard. For both these signs, and the modern counterparts, you should always confirm those on the railway ahead have seen and heard your approach. When in doubt, you should make consecutive sustained blasts of the horn/whistle.

Coasting & Crossing Boards



◀ The coasting board advises that the driver may coast (travelling along without power applied) to a stopping point or significant speed reduction beyond the board.



◀ The crossing warning board means that there is an automatic open/barrier crossing ahead that is locally monitored or an open crossing ahead. On crossings that are fitted with barriers, a signal is sometimes provided to advise the driver whether the crossing barriers are closed which consists of a single white light. The light will remain steady if the crossing gates are raised/open and begin to flash once the gates are lowered/closed.

Default English Keyboard Controls

Name	Keyboard	
	Increase / Press	Decrease
Throttle	A	D
Train Brake	'	;
Straight Air Brake	[]
Brake to Lap (Class 101 Only)	/	
Gear	Ctrl + A	Ctrl + D
Reverser	W	S
Headlights	H	Shift + H
Marker Lights	K	
High Horn	Space	
Master Key	CTRL + W	
AWS Reset	Q	
Cab Light	L	Shift + L
Instrument Lights	I	Shift + I
Handbrake	\	Shift + \
Emergency Brake	Backspace	
Wipers	V	Shift + V
Toggle AWS	Shift + Enter	
Toggle DSD	Ctrl + Enter	
Uncouple	Ctrl + Shift + C	
Flashlight (When Walking)	L	

Note: the above keys can be redefined in the in-game settings menu.

Default Xbox Controller Controls

Name	Xbox	
	Increase / Press	Decrease
Throttle	Right Trigger	Right Bumper
Brake	Left Trigger	Left Bumper
Reverser	Left Stick Up	Left Stick Down
Headlights	Hold D-Pad Right Also: Tap D-Pad Right to cycle headlight settings	Hold D-Pad Right
Marker Lights		
High Horn	Left Stick Click	
Master Switch		
AWS Reset	B Button	
Cab Light		
Instrument Lights		
Handbrake		
Emergency Brake		
Wipers	D-Pad Up	
Toggle AWS		
Toggle DSD		
Uncouple		
Flashlight (When Walking)		

Controlling the Camera & Camera Modes

Train Sim World includes several cameras for you to control, here's an outline of those cameras and some examples of use:

- 1 Key - First Person Camera or Cab Camera**
Use this camera to operate your locomotive, flip switches and handle all your cab controls.

- 2 Key - Boom Camera**
Just like the camera from Train Simulator, your camera extends outward on an invisible pole, you can rotate it around your focussed vehicle. Use Ctrl and the left & right cursor keys to switch between vehicles or press the 2 key again to switch between the front and rear of your consist.

- 3 Key - Floating Camera**
A new camera that allows you to freely look in all directions, useful for coupling and changing switches. Press it once to view the front of your consist and again to view the rear. Freely move your view using the cursor keys.

- 8 Key - Free Camera**
Freely move around without limits using this camera. Use this camera to navigate your way around a busy yard, change switches or position it to get the perfect screenshot.

Customising the HUD

Train Sim World includes many options for you to customise the Head Up Display (HUD):

- CTRL+1 Toggles the in-world objective marker.
- CTRL+2 Toggles the in-world next speed limit marker.
- CTRL+3 Toggles the in-world next signal marker.
- CTRL+4 Cycles the next speed limit / signal information panel in top right.
- CTRL+5 Toggles the speedometer panel (or clock/compass while walking).
- CTRL+6 Toggles the score display.
- CTRL+7 Toggles the passenger stop marker on the track.
- CTRL+8 Cycles the centre dot transparency (off, 50/50, white).

Dovetail Live Account

The Dovetail Forums are your one-stop destination for everything Train Simulator and Train Sim World related. We have an ever-growing and vibrant community of train enthusiasts from all over the world, ranging from experienced railroad veterans to new players getting into the world of train simulation. So, if you haven't already, why not sign up for an account today and join our community – we'd love to have you on board!

See more at: [**https://forums.dovetailgames.com**](https://forums.dovetailgames.com)

Dovetail Live is an online destination which enables players to interact with Dovetail's products and each other in an environment tailored specifically to fans of simulation entertainment. Dovetail Live will evolve to become central to Train Sim World®, enriching the player experience in every way from offering rewards, building a community of like-minded players and helping every player find the right content to create their own perfect personal experience.

Signing up for Dovetail Live is completely voluntary. However, users that do sign up for it will receive exclusive benefits in the future.

See more at: [**https://live.dovetailgames.com**](https://live.dovetailgames.com)

Troubleshooting Guide & How to Get Support

I have a problem downloading the Steam client, how do I contact them?

You can contact Steam Support by opening a customer service ticket at support.steampowered.com/newticket.php. You will need to create a unique support account to submit a ticket (your Steam account will not work on this page) and this will enable you to track and respond to any tickets you open with Steam.

How do I install any secondary programs that the game may need?

Train Sim World requires certain secondary programs to operate properly. These are standard programs that most up-to-date computers already have installed on them, such as DirectX. These programs can be found at the following location: Local Disk (C:) > Program Files (x86) > Steam > SteamApps > common > TSW > _CommonRedist

How do I change the language of TSW?

This is an easy process and will allow you to play Train Sim World in English, French, German, Spanish, Russian and Simplified Chinese. To change the language of Train Sim World, double-click on the Steam icon on your PC desktop, left click on 'Library', right click on 'Train Sim World', left click on 'Properties', and finally left click on the Language tab and select your preferred language.

How do I reset my display screen size settings?

It is possible to change the display screen size settings for Train Sim World from within the game. Changing display screen size settings is done from the Settings menu in the Display tab.

For any questions not covered here, visit our knowledgebase at <https://dovetailgames.kayako.com>