

TRAIN **SIM WORLD** **3**



TRAIN SIM WORLD 3 MANUAL **BIRMINGHAM CROSS-CITY LINE**



dovetail
GAMES

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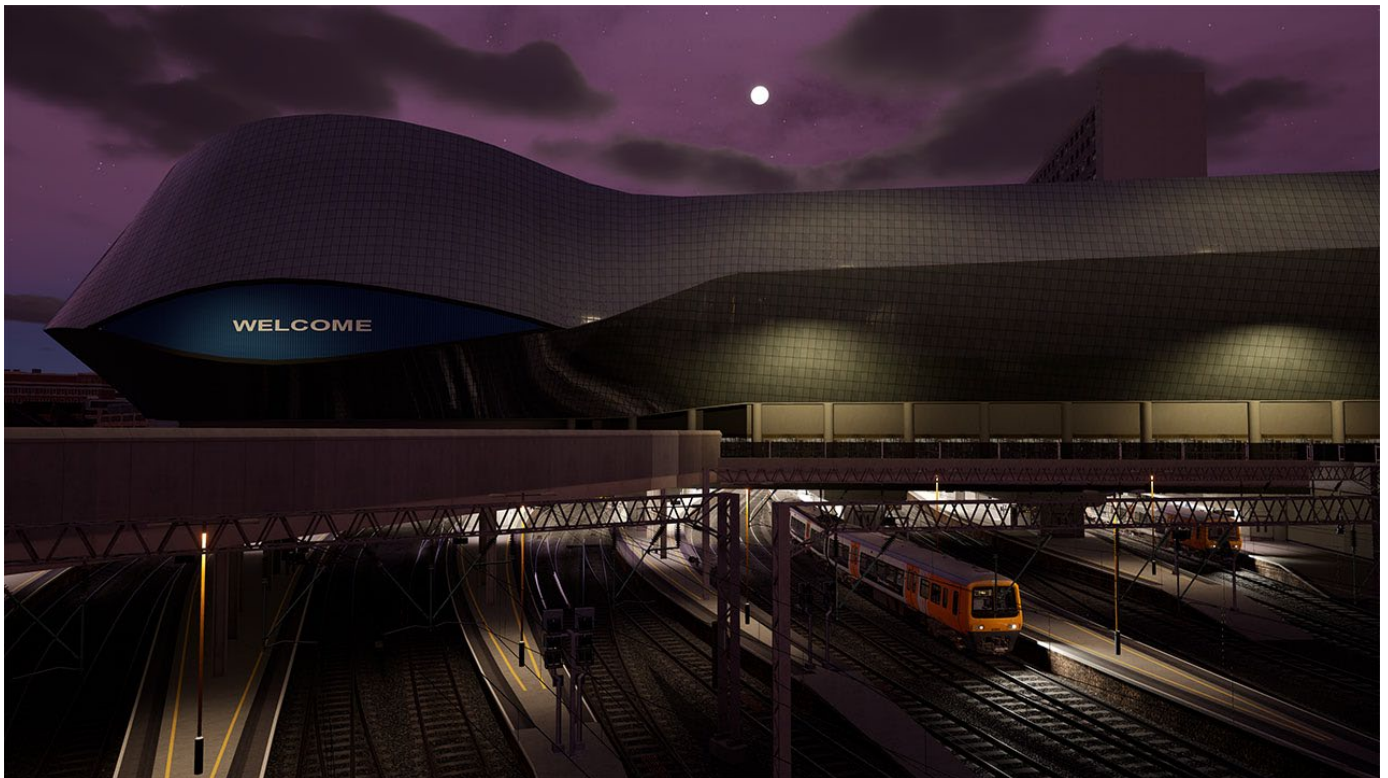
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TRAIN SIM WORLD 3 INTRODUCTION



Welcome to Train Sim World 3, a highly immersive rail simulation, featuring authentic routes and trains from around the world. In this manual, we will be covering the basics of how to get started in the Training Center, before moving onto the main event, Birmingham Cross-City Line, we will go in-depth with full start-up procedures, as well as route tips & tricks and an overview of signalling informations. This manual will not cover keyboard/gamepad controls - please refer to the in-game Training & Menus for this information.

New skies bring a transformed atmosphere to routes. Volumetric clouds roam free at altitude, casting shadows upon the ground, dynamically forming and fading. Re-balanced lighting provides more realistic lighting based on real lumen values.

Weather is now dynamic! When starting a service the skies may have a few scattered clouds, but there's always the chance that angrier, overcast weather starts to form, and before you know it you're in the midst of a storm – complete with new lightning, rain splashes and wet platform reflections. A drop in temperature around those Winter months and rain turns to snow, which now builds on top of rail sleepers and ballast; with all that snow on the ground, it's no wonder a train at high speed will kick it back up into the air as it races by!

An all-new UI offers a refreshed and streamlined navigation experience. Select your gameplay by route or by train, find a dedicated screen for all creator tools and Training, and see more of your collection on a single, searchable and filterable page. This optimized approach gets you in-game in the right train faster than ever before. Plus, enjoy our lovely new menu music!

HOW TO PLAY TRAIN SIM WORLD 3



Scenarios

Scenarios in Train Sim World deliver individual, more narrative-driven gameplay, ranging anything from unique weather challenges, lineside obstructions, faults or disruption to one-off rail operations and services. With a finite time and a step-by-step instruction set, Scenarios are the perfect way to dive in and experience a handful of what any route has to offer with a little extra guidance and a unique experience.

Timetables

Timetables in Train Sim World represent a full 24-hour period, during which a life-like Timetable runs throughout the whole day, representing the full day's amount of traffic on any route. Traffic volumes can vary throughout the day and night, as the route serves different purposes. With no end to the action as trains constantly move about the route, string together your own experience by driving your own shift patterns, riding as a passenger, or watching all the trains go by.

Rail Journeys

Not sure where to begin? Rail Journeys tie together Scenarios and Timetables, along with relevant Training, so you can learn all you need to know about a train, then put that theory into practice throughout a range of increasingly challenging experiences. The playlist of chapters provides hours of sequential gameplay, and once you're all done, there's still the rest of the timetable to explore!

Quick Play

If you really don't know what you want to do, then Quick Play is the solution! The Quick Play feature will randomly select any Training, Scenario or Timetable Service that you haven't yet completed, from anywhere in your collection. Maybe you will be driving a train you haven't tried yet or revisiting a classic route you haven't experienced in a while. Not to worry, Quick Play also lets you pick 30- and +30-minute duration times, so you can even squeeze in a quicker service if you're in a hurry.

CREATORS CLUB & DOVETAIL LIVE



Livery Designer

Add your own personal flare to each locomotive, multiple unit, coach and wagon with the included Livery Designer. Paint rail vehicles in any colour of your choice, then apply a wide range of decals to perfectly craft your own designs. Once you have made a livery, it will be selectable to play in Timetable Mode, and in custom Scenarios.

Scenario Planner

Want to drive a train but with your own stopping pattern, or perhaps add a twist by including your own liveries, or go completely off the rails and try to tackle the Cross-City Line with an ICE? Scenario Planner lets you do all that! Pick any route, set up your player train and AI to fill out the experience, and take your journey into your own hands.

Online Sharing Hub

Fancy sharing your latest creation with the world? Made a scenario that's just too good for others to miss out on? Or maybe your friends have made their own content and you want to give it a go. With the Online Sharing Hub, you can upload and download custom-made liveries and scenarios, share content across all platforms and discover a whole new world of experiences.

Mastery

Complete challenges and unlock rewards! With the power of Dovetail Live, complete a series of challenges with every route to unlock additional items for your content; new scenery tiles which add something unique to every route, as well as additional decals that can further power your creativity in the Livery Designer.

TRAINING CENTER



The Training Center is the all-inclusive hub for learning the fundamentals about Train Sim World 3 and its included locomotives. You will learn everything from how to move and interact with the environment, how to interpret the HUD, and get to grips with the basics of making a locomotive move.

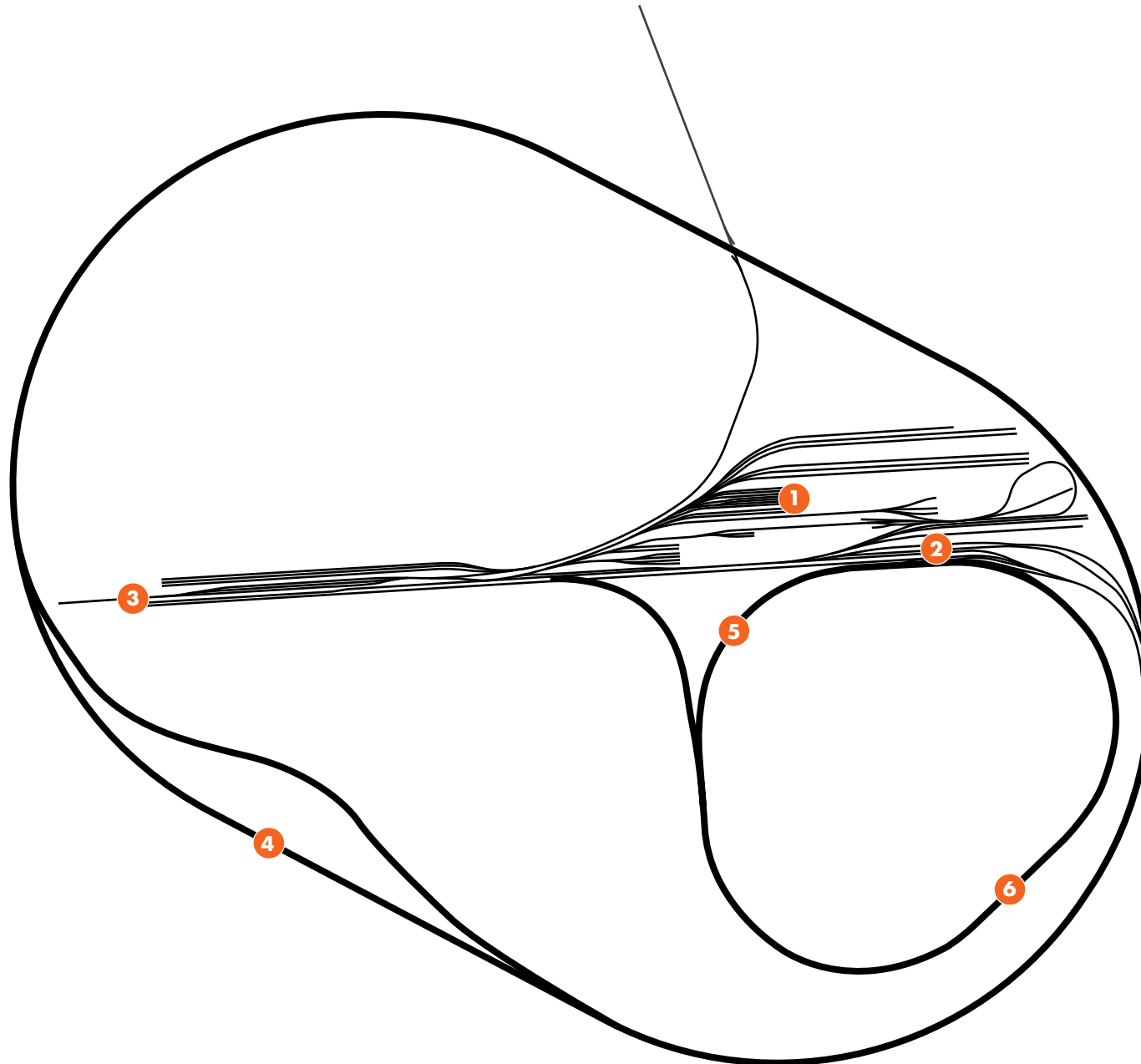
The route is based on the Wildenrath Test Track near Düsseldorf, Germany, but with our own buildings, facilities, and scenery to make it the perfect environment for learning about all your trains. Included with the Training Center is a Class 66 to learn the basics of Train Sim World 3 on, and all loco training is now done on the Training Center. You can also freely explore the route, practice driving trains endlessly around the loops, and making your own scenarios in Scenario Designer.

More advanced training, such as signalling systems, are still done on the main routes themselves, but you can still access these through the Training Center screen.

Training Center Tips & Tricks

- All the junctions are manually controlled, and the route has no signalling, so you can go wherever you want!
- In Scenario Planner, use Off the Rails mode to bring anything from your collection onto the route, create weird and wonderful mixes in this free roam environment
- The outer loop encompassing the Training Center is ready for 300 km/h operation, which train can you do the fastest lap in?
- You can explore almost everywhere on-foot in the Training Center, from the building interior to ladders onto the top of depots, or maybe just a nice bench with a view
- There are several Map Route Tasks dotted around the route to place, can you find them all?

TRAINING CENTER ROUTE MAP



- 1 - Central Square
- 2 - Nav Hub
- 3 - Switching Area
- 4 - Station One
- 5 - Metro North
- 6 - Metro South

TRAINING CENTER BR CLASS 66



Perhaps one of the most widespread and successful locomotives in the UK, the Class 66 was introduced following the successful albeit limited number of Class 59s. Built across the pond in Ontario, Canada, this massive fleet of locomotives bears many operational similarities to their North American cousins. Capable of hauling a large variety of freight and able to fit almost anywhere, there aren't many places you won't see a 66 out and about. Between 1998 and 2015, a total of 480 locomotives were delivered directly to the UK, with many more also built for Continental Europe.

TRAINING CENTER BR CLASS 66 CAB LAYOUT - 1/5



- | | |
|-----------------------------------|-------------------------------------|
| 1 - Hazard Lights Button | 18 - Main Reservoir Gauge |
| 2 - AWS Reset Button | 19 - Direct Brake Gauge |
| 3 - Horn Lever | 20 - Air Flow Gauge |
| 4 - Automatic Brake Handle | 21 - Automatic Brake Gauge |
| 5 - Direct Brake Handle | 22 - Speedometer |
| 6 - Train Length Button | 23 - Tractive Effort Gauge |
| 7 - Slow Speed Control Switches | 24 - AWS Sunflower |
| 8 - Sander Switch | 25 - Instrument Light Dimmer Switch |
| 9 - Emergency Brake Plunger | 26 - Windscreen Wiper Left Switch |
| 10 - Left Cab Window | 27 - Banking Comm Button |
| 11 - Brake Timing Indicators | 28 - Throttle Handle |
| 12 - Parking Brake Apply Button | 29 - Reverser |
| 13 - Parking Brake Indicator | 30 - Isolation Switch |
| 14 - Parking Brake Release Button | 31 - Engine Run Switch |
| 15 - Brake Overcharge Button | 32 - Generator Field Switch |
| 16 - Engine Start Button | 33 - Control & Fuel Pump Switch |
| 17 - Engine Stop Button | |

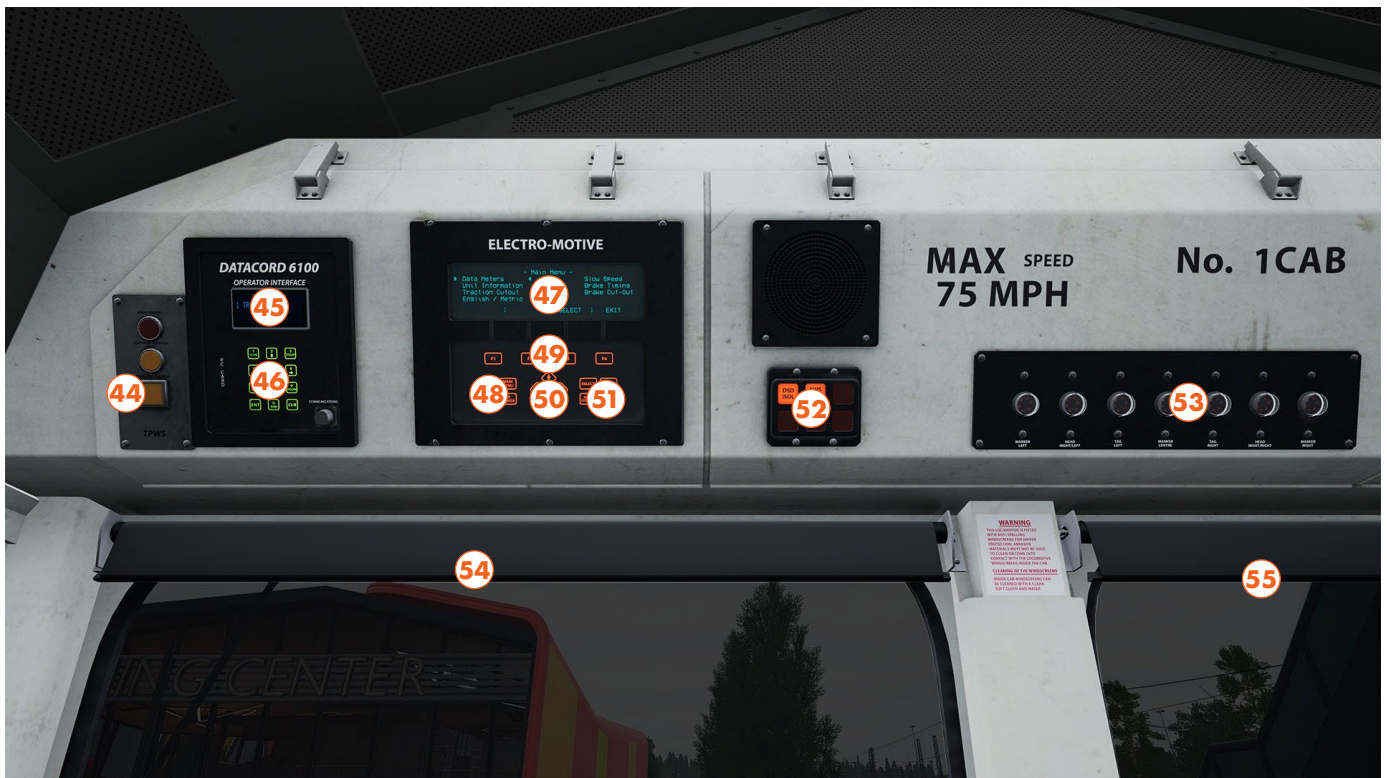
This Cab Layout shows many of interactive elements and operating gauges that feature on this train. Not all controls are essential to operating this train, you can see the essential controls needed to get this train moving in the "Quick Start" and "Cold & Dark Start" guides.

TRAINING CENTER BR CLASS 66 CAB LAYOUT - 2/5



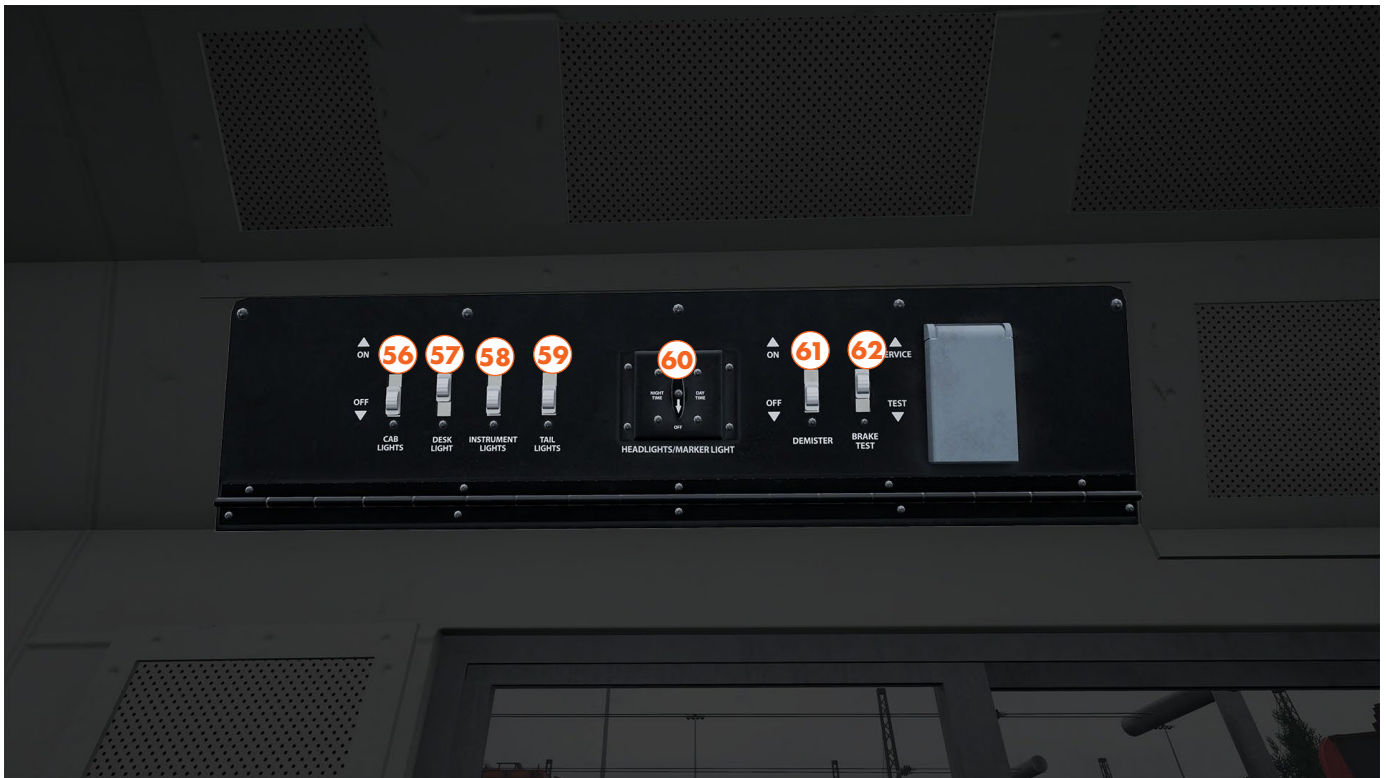
- 34 - Contact Signaller Phone
- 35 - Hot Plate Switch
- 36 - Windscreen Wiper Right Switch
- 37 - Fresh Air Lever
- 38 - High Speed Switch
- 39 - Overheating Switch
- 40 - Heater Speed Switch
- 41 - Driver Safety Device Button
- 42 - Horn Lever
- 43 - Right Cab Window

TRAINING CENTER BR CLASS 66 CAB LAYOUT - 3/5



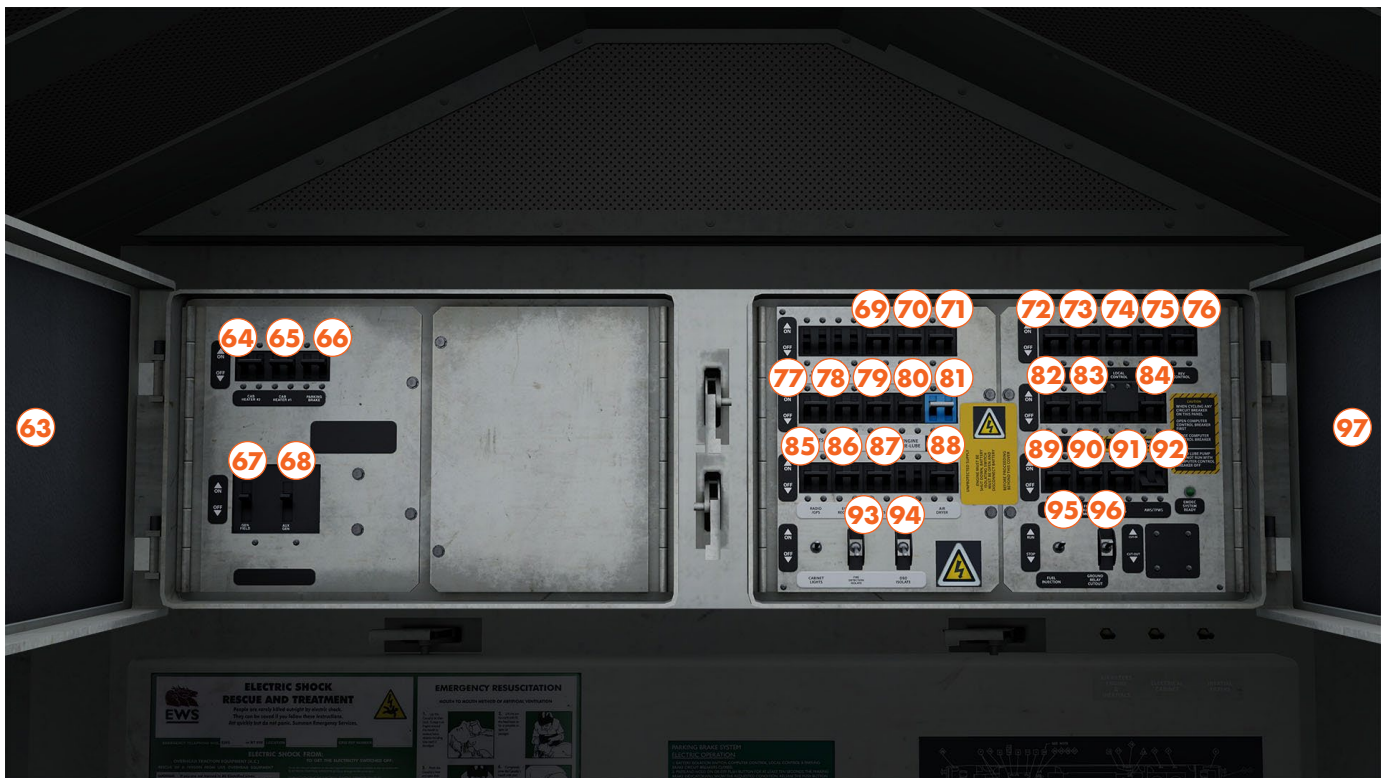
- 44 - TPWS Train Stop Override
- 45 - Train Length Screen
- 46 - Train Length Keypad
- 47 - Train Management System "TMS" Screen
- 48 - TMS Power/Options Keys
- 49 - TMS Function Keys
- 50 - TMS Arrow Keys
- 51 - TMS Selection Keys
- 52 - Safety Systems Indicator
- 53 - Head & Tail Lights Indicator
- 54 - Left Side Blind
- 55 - Right Side Blind

TRAINING CENTER BR CLASS 66 CAB LAYOUT - 4/5



- 56 - Cab Lights Switch
- 57 - Desk Light Switch
- 58 - Instrument Lights Switch
- 59 - Tail Lights Switch
- 60 - Headlights Switch
- 61 - Demister Switch
- 62 - Brake Test Switch

TRAINING CENTER BR CLASS 66 CAB LAYOUT (No. 1 Cab Only) - 5/5



- 63 - Left Fuse Cabinet Door
- 64 - Cab Heaters 2 Fuse
- 65 - Cab Heaters 1 Fuse
- 66 - Parking Brake Fuse
- 67 - Generator Field Fuse
- 68 - Auf Gen Fuse
- 69 - Windshield Heater 2 Fuse
- 70 - Windshield Heater 1 Fuse
- 71 - Fuel Gauge Fuse
- 72 - AC Control Fuse
- 73 - Control Fuse
- 74 - Local Control Fuse
- 75 - Engine Control Fuse
- 76 - Rev Control Fuse
- 77 - Lights 2 Fuse
- 78 - Lights 1 Fuse
- 79 - Headlights Fuse
- 80 - Engine Pre Lube Fuse

- 81 - ETCS fuse
- 82 - Aux Generator Field Fuse
- 83 - Aux Generator Feedback Fuse
- 84 - Computer Control Fuse
- 85 - Radio/GPS Fuse
- 86 - Event Recorder Fuse
- 87 - Tail Lights Fuse
- 88 - Air Dryer Fuse
- 89 - Main Generator Fuse
- 90 - Filter Blower Motor Fuse
- 91 - Fuel Pump Fuse
- 92 - AWS/TPWS Isolation Fuse
- 93 - Fire Detection Isolate Switch
- 94 - DSD Isolate Switch
- 95 - Fuel Injection Switch
- 96 - Ground Relay Cutout Switch
- 97 - Right Fuse Cabinet Door

TRAINING CENTER BR CLASS 66 QUICK START

This Quick Start sequence represents the basics you will need to follow to get this train moving - follow along with the Training Module of this train in the Training Center or when you start a Scenario or Service.

- Insert the Master Key, leaving it in the Neutral position
- Move the Reverser into Forward
- Clear the AWS self-test sequence (if enabled) by pressing on the AWS Reset Button
- Release the Brakes by holding the Automatic Brake Handle in the Release Position until you see 4.5 Bar on the Brake Pipe Control gauge
- Set the Head and Tail Lights as appropriate
- Apply Power using the Throttle Handle and Release the rest of the Brakes once generating traction

TRAINING CENTER BR CLASS 66 COLD & DARK START

This Cold & Dark Start sequence represents when the train is fully powered down. You may use this as a reference to get familiar with how trains are started and practice the full start-up sequence by spawning on-foot in the Training Center.

- Enter the locomotive by interacting with the External Door and climbing on-board
- Enter the cab by interacting with the Cab Door
- If you wish to drive with Safety Systems enabled, open the Right Fuse Cabinet on the back wall (No. 1 cab only) and set the AWS/TPWS isolation fuse to On, and set the Driver's Safety Device Isolation switch to Normal
- Sit down in the driver's seat
- Insert the Master Key, leaving it in the Neutral position
- Set the Control & Fuel Pump, Generator field and Engine Run switches to On
- Press and Hold Down the Engine Start switch for 10 seconds
- Once the engine is running, set the Isolation Switch to Run
- Cut in the brakes using the TMS Screen above the Windscreen; use the arrow keys to select Brake Cut-Out, F3 to select that page, then F2 to Cut In the brakes, use F4 to exit
- Check the Brake Gauge and ensure the Main Reservoir reaches 9 Bar
- Set the Head and Tail Lights as appropriate
- Release the Parking Brake
- Move the Reverser into Forward
- Clear the AWS self-test sequence (if enabled) by pressing on the AWS Reset Button
- Release the Brakes by holding the Automatic Brake Handle in the Release Position until you see 4.5 Bar on the Brake Pipe Control gauge
- Apply Power using the Throttle Handle and Release the rest of the Brakes once generating traction

BIRMINGHAM CROSS-CITY LINE INTRODUCTION



The Cross-City Line as it is known today has largely existed since the late 1970s, although prior to that it was two separate lines out of Birmingham, built throughout the mid-to-late 19th Century by 4 different railway companies. It wasn't until the West Midlands Passenger Transport Executive (WMPTE) came along to improve services through the city that a through-line connection was established, followed by extensions to the line's current-day termini of Redditch in 1980, and Lichfield Trent Valley in 1988.

Services on the line were dirty, diesel-fumed, and infrequent, with heritage slam door DMUs shuttling between each station. In a further effort to improve the route, the WMPTE sought after electrification and a brand-new fleet of EMUs which could take charge, improving the punctuality and reliability of service throughout. Electrification took place between 1990 and 1993, along with various station rebuilds and re-signalling, in readiness for the state-of-the-art BR Class 323, which have been in service since 1994.

The line has seen some 21st Century developments too, chiefly of which include a passing loop on the single-track line to Redditch in 2013, and an extension of electrification down the Lickey Incline, Britain's steepest sustained railway gradient, to Bromsgrove, which has been part of the Cross-City service since 2018. Today services are operated by West Midlands Trains under their "West Midlands Railway" brand, still making good use of the BR Class 323 fleet until such a time the new BR Class 730s are ready to enter service.

ROUTE INFORMATION, TIPS & TRICKS



The Cross-City Line features 25 stations across its 37-mile length, with constantly varying speed limits. The longest journeys on the line can take over an hour, so continuous vigilance is key to a successful run.

Look out for unique features such as the modern University station, Bournville's distinctive purple hue and artwork, intricate station signs and the massively complex Spaghetti Motorway Junction.

While modern multiple units can make easy work of the famed Lickey Incline, do take extra care as you approach from either direction, particularly downhill so your train doesn't run away!

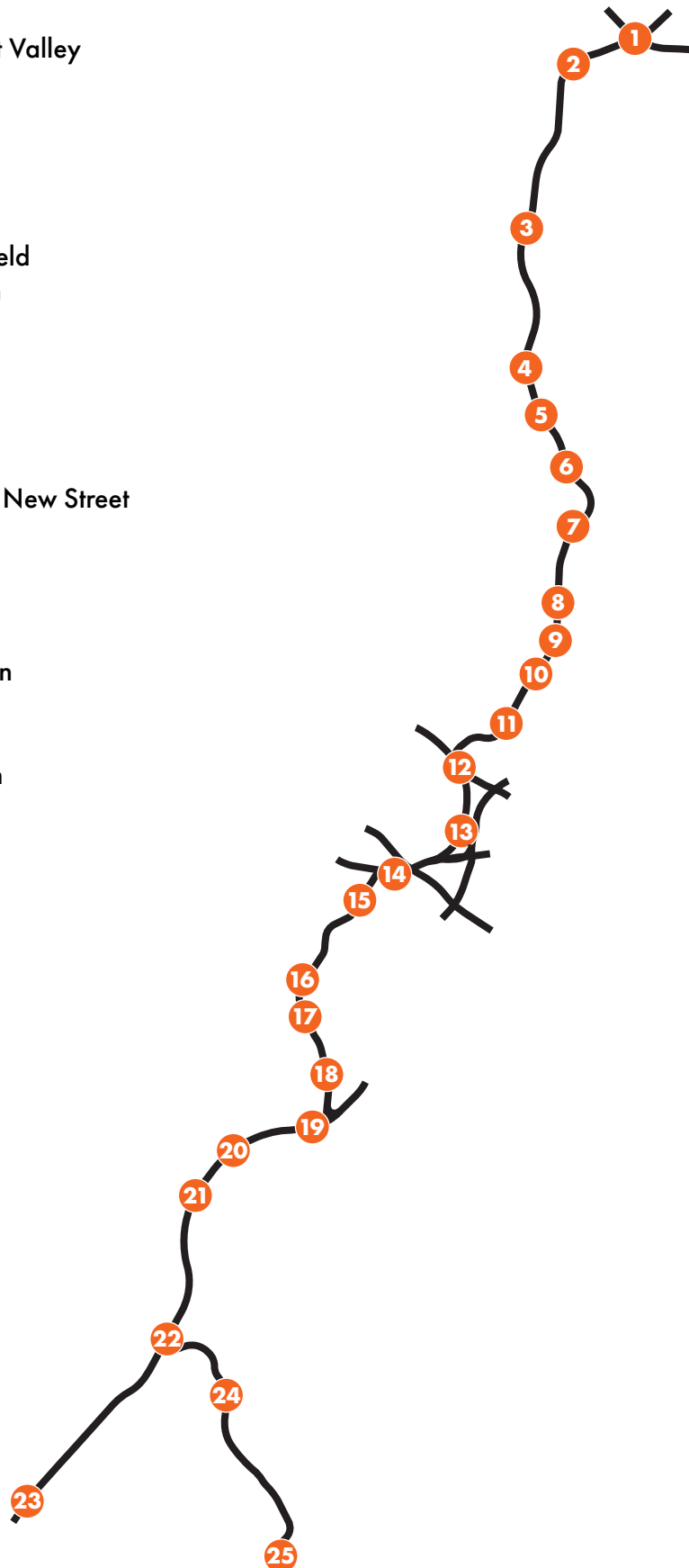
Additional layers on this route allow you to have different driving experiences. The Incline sees freight throughout the day, as well as the odd rare GWR HST movement. Kings Norton depot is for Rail Head Treatment Trains, and you can even tackle the line in a Class 37-hauled railtour!

Route tasks for Cross-City include placing route maps, filling planters, placing high-vis jackets on Hunslet the Bear and sampling all the Cadbury's Dairy Milk chocolate.

With Dovetail Live, unlock Mastery rewards, including an additional font of characters for the Livery Designer, and a Scenery Tile of a Canal Boat Festival at Bournville.

BIRMINGHAM CROSS-CITY LINE ROUTE MAP

- 1 - Lichfield Trent Valley
- 2 - Lichfield City
- 3 - Shenstone
- 4 - Blake Street
- 5 - Butlers Lane
- 6 - Four Oaks
- 7 - Sutton Coldfield
- 8 - Wylde Green
- 9 - Chester Road
- 10 - Erdington
- 11 - Gravelly Hill
- 12 - Aston
- 13 - Duddeston
- 14 - Birmingham New Street
- 15 - Five Ways
- 16 - University
- 17 - Selly Oak
- 18 - Bournville
- 19 - Kings Norton
- 20 - Northfield
- 21 - Longbridge
- 22 - Barnt Green
- 23 - Bromsgrove
- 24 - Alvechurch



WEST MIDLANDS RAILWAY BR CLASS 323 - INTRODUCTION



The Class 323 was built in the early 1990s to exclusively serve lines in the Midlands and the North of England. Designed by Hunslet in Birmingham, and constructed in Leeds, the Class 323 shares much of its characteristics with the Networker fleet, despite there being no relation. In fact, the unit has earned itself the unofficial nickname of “Hyper Networker” as its traction equipment operates in a very similar fashion, creating distinctive motor phasing sounds.

The Midlands fleet have been in service on the Cross-City Line since 1995, early teething troubles prevented them from entering service quickly, and prior to full operation, the Cross-City Line was supplemented with its previous heritage DMUs alongside slam-door EMUs.

As of December 2017, the fleet have been operated by West Midlands Trains, using their more regional “West Midlands Railway” brand. While the full brand has seen many trains go into a full two-tone purple and orange livery, the Class 323 instead retains their previous London Midland livery, albeit with orange overlays. This has been done because WMT have ordered a brand-new fleet of trains to replace the 323s, following which more of the existing fleet will go join their Northern counterparts on services out of Manchester.

WEST MIDLANDS RAILWAY BR CLASS 323 - RAILFAN GUIDE

While performing duties on the Cross-City Line, you will see all the various numbered Class 323s operated by West Midlands Railway. Use this table below to tick off which ones you have experienced!

Sight = Seen the unit on the route

Captured = Taken a screenshot of the unit

Haulage = Ridden the unit as a passenger

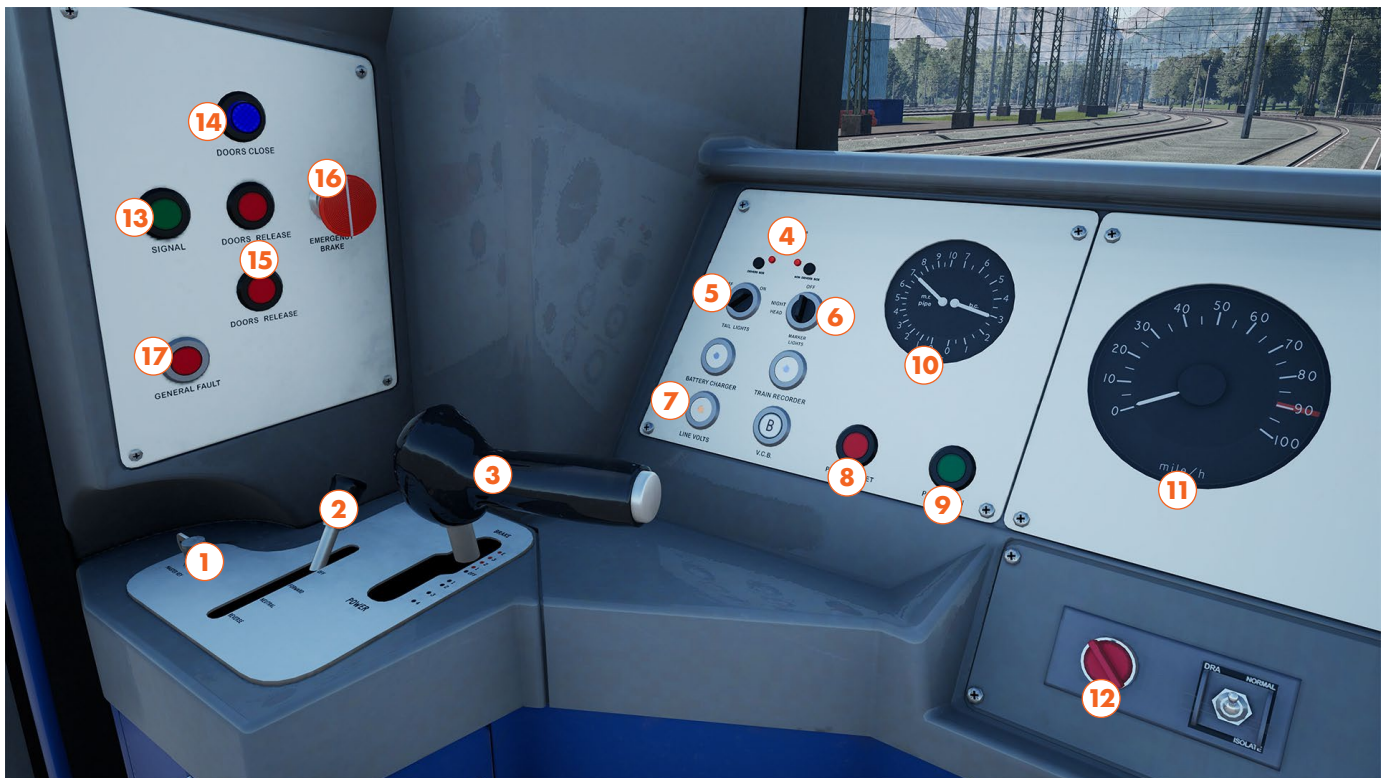
Signed = Driven the unit as a driver

| Unit Number | Unit Name | Sight | Captured | Haulage | Signed |
|-------------|---|-------|----------|---------|--------|
| 323201 | Duddeston | | | | |
| 323202 | Butlers Lane | | | | |
| 323203 | Aston | | | | |
| 323204 | Selly Oak | | | | |
| 323205 | Blake Street | | | | |
| 323206 | Barnt Green | | | | |
| 323207 | Bournville | | | | |
| 323208 | Five Ways | | | | |
| 323209 | Birmingham New Street | | | | |
| 323210 | Shenstone | | | | |
| 323211 | Four Oaks | | | | |
| 323212 | Bromsgrove | | | | |
| 323213 | Sutton Coldfield | | | | |
| 323214 | Wylde Green | | | | |
| 323215 | Gravelly Hill | | | | |
| 323216 | University | | | | |
| 323217 | Chester Road | | | | |
| 323218 | Lichfield City | | | | |
| 323219 | Kings Norton | | | | |
| 323220 | Lichfield Trent Valley | | | | |
| 323221 | Northfield | | | | |
| 323222 | Redditch | | | | |
| 323240 | Erdington | | | | |
| 323241 | Dave Pomroy 323 Fleet Engineer - 40 Years Service | | | | |
| 323242 | Alvechurch | | | | |
| 323243 | Longbridge | | | | |

WEST MIDLANDS RAILWAY BR CLASS 323 - TECH SPECS

Manufacturer.....Hunslet Transportation Projects Limited
 Build Date.....1992-1995
 Number Built.....43 sets
 Power Type.....25kV AC OHLE
 Length.....70 Metres (229 ft)
 Weight.....119.8 Metric Tons
 Top Speed.....90mph (144 km/h)

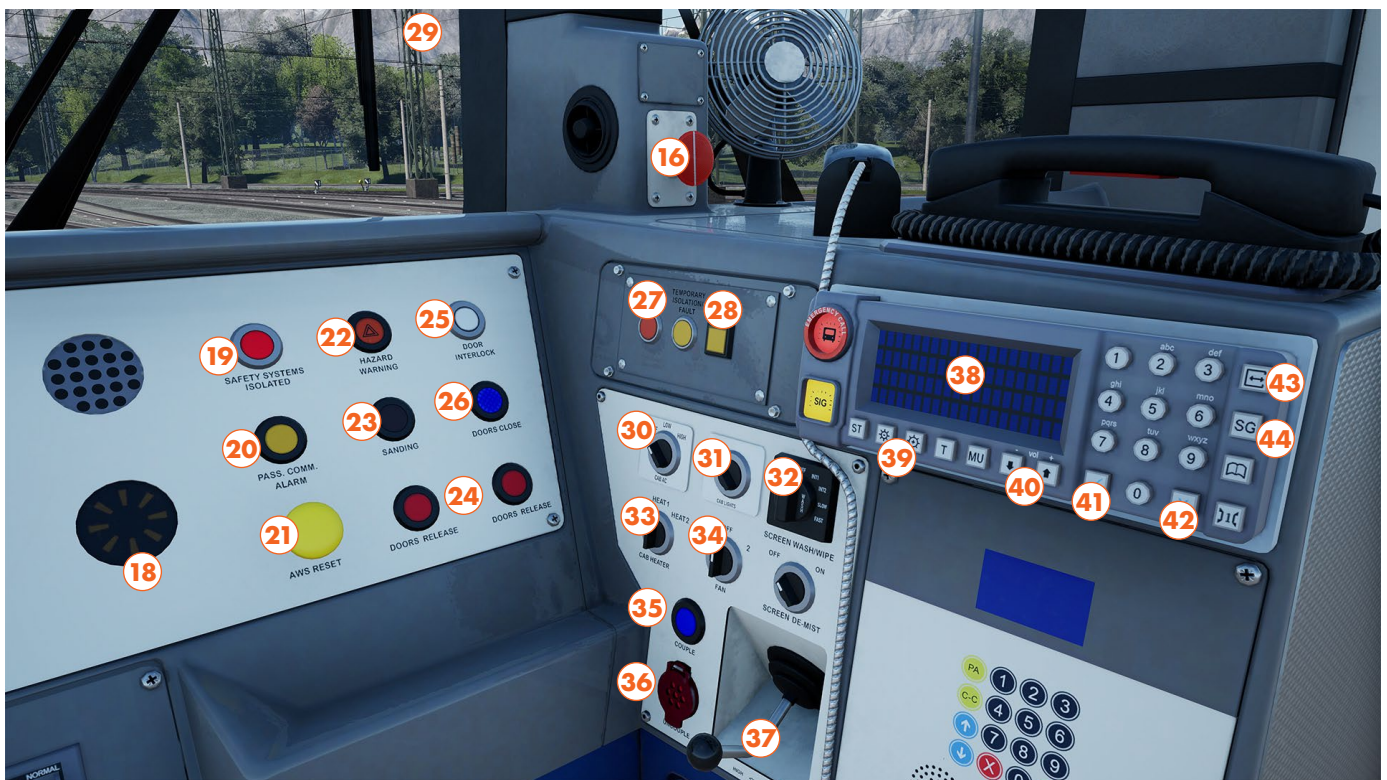
WEST MIDLANDS RAILWAY BR CLASS 323 CAB LAYOUT - 1/4



- | | |
|-------------------------------------|---|
| 1 - Master Key | 10 - Brake Gauge |
| 2 - Reverser | 11 - Speedometer Gauge |
| 3 - Power Brake Handle | 12 - Driver's Reminder Appliance Switch |
| 4 - Headlight Indicators | 13 - Signal Buzzer Button |
| 5 - Tail Lights Switch | 14 - Left Doors Close Button |
| 6 - Headlights/Marker Lights Switch | 15 - Left Doors Release Buttons |
| 7 - Line Volts Indicator | 16 - Emergency Brake Plunger |
| 8 - Pan Up/Reset Button | 17 - General Fault Indicator |
| 9 - Pan Down Button | |

This Cab Layout shows many of interactive elements and operating gauges that feature on this train. Not all controls are essential to operating this train, you can see the essential controls needed to get this train moving in the "Quick Start" and "Cold & Dark Start" guides.

WEST MIDLANDS RAILWAY BR CLASS 323 CAB LAYOUT - 2/4

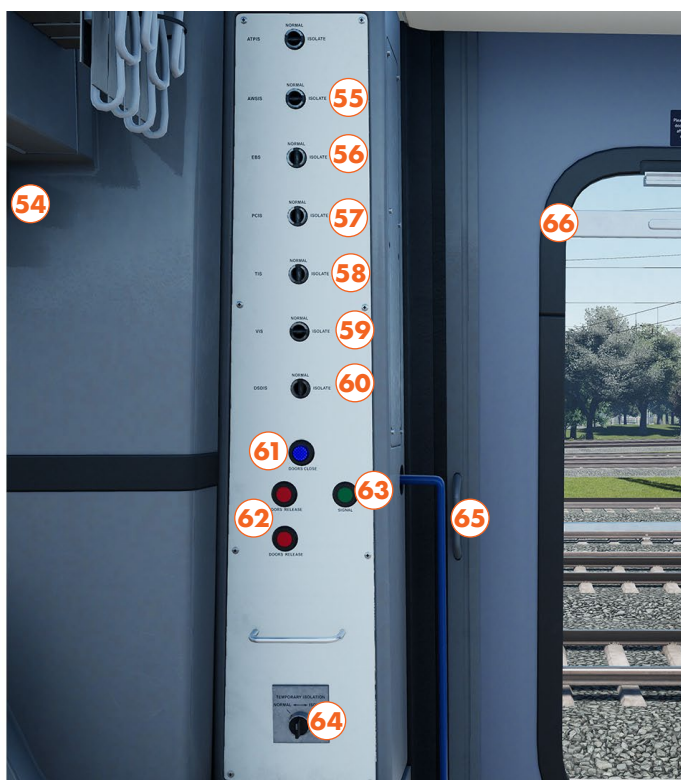


- | | |
|--|-------------------------------------|
| 18 - AWS Sunflower | 32 - Wiper Control Switch |
| 19 - Safety Systems Isolated Indicator | 33 - Cab Heater Switch |
| 20 - Pass Comm Alarm Override Button | 34 - Cab Fan Switch |
| 21 - AWS Reset Button | 35 - Couple Button |
| 22 - Hazard Warning Lights Button | 36 - Uncouple Button |
| 23 - Sander Button | 37 - Two-Tone Horn Lever |
| 24 - Right Doors Release Buttons | 38 - GSM-R Screen |
| 25 - Door Interlock Indicator | 39 - GSM-R Brightness Buttons |
| 26 - Right Doors Close Button | 40 - GSM-R Volume Buttons |
| 27 - TPWS Brake Demand Indicator | 41 - GSM-R Confirm Button |
| 28 - TPWS Train Stop Override Button | 42 - GSM-R Cancel Button |
| 29 - Left Side Blind (Off Screen) | 43 - GSM-R On/Off Button |
| 30 - Cab Air Con Switch | 44 - GSM-R Contact Signaller Button |
| 31 - Cab Lights Switch | |

WEST MIDLANDS RAILWAY BR CLASS 323 CAB LAYOUT - 3/4

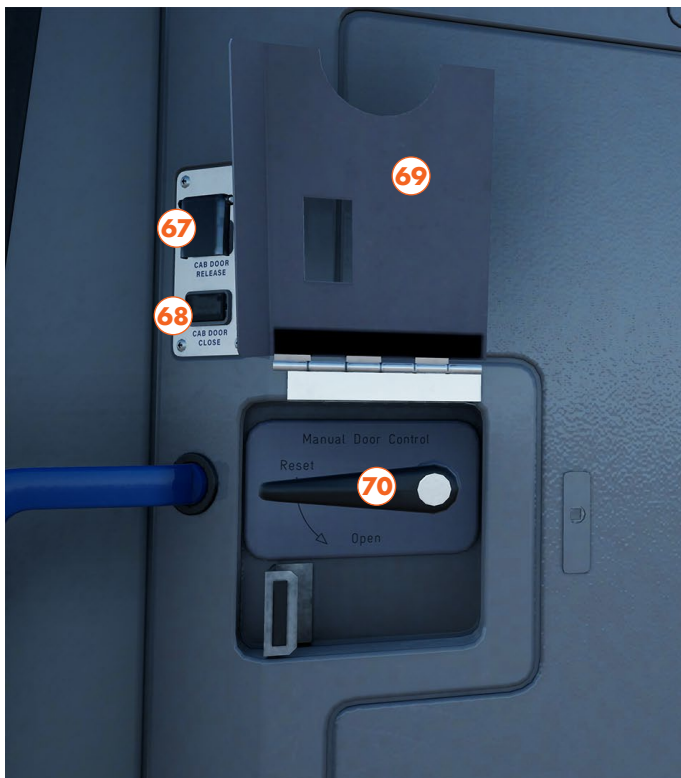


- 45 - Coach Lighting On Button
- 46 - Coach Lighting Off Button
- 47 - Aux On Button
- 48 - Aux Off Button
- 49 - Door Key
- 50 - Regen Brake Switch
- 51 - Clipboard Light Button
- 52 - Left Cab Window
- 53 - Left Cab Door



- 54 - Right Side Blind (Off Screen)
- 55 - AWS Isolation
- 56 - Emergency Bypass Isolation
- 57 - Pass Comm Isolation
- 58 - Traction Interlock Isolation
- 59 - Vigilance Isolation
- 60 - DSD Isolation
- 61 - Right Doors Close Button
- 62 - Right Doors Release Buttons
- 63 - Signal Buzzer Button
- 64 - TPWS Temporary Isolation Switch
- 65 - Right Cab Door
- 66 - Right Cab Window

WEST MIDLANDS RAILWAY BR CLASS 323 CAB LAYOUT - 4/4



- 67 - Right Cab Door Release Button
- 68 - Right Cab Door Close Button
- 69 - Handle Cover
- 70 - Right Door Release Handle

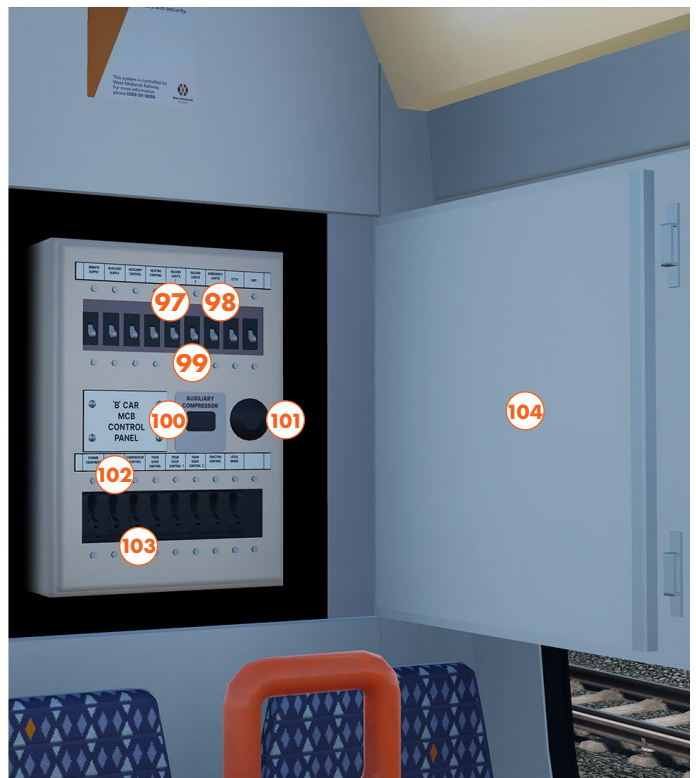


- 71 - AWS TPWS Fuse
- 72 - Cab Fan Fuse
- 73 - Train Brake Fuse
- 74 - Cab Door Fuse
- 75 - Radio Fuse
- 76 - Destination Display Fuse
- 77 - Cab Heater Fuse
- 78 - Sand Fuse
- 79 - GSM-R Fuse
- 80 - Auxiliary Lights 1 Fuse
- 81 - Auxiliary Lights 2 Fuse
- 82 - Saloon Lights 1 Fuse
- 83 - Saloon Lights 1 Fuse
- 84 - Emergency Lights Fuse
- 85 - Traction Cut-Out Switch
- 86 - Left Cab Door Release Button
- 87 - Left Cab Door Close Button
- 88 - Handle Cover
- 89 - Left Door Release Handle

WEST MIDLANDS RAILWAY BR CLASS 323 - COACH B



- 90 - Local Door Release Button
- 91 - Door Release Button
- 92 - Door Key
- 93 - Door Close Button
- 94 - Local Door Close Button
- 95 - Signal Buzzer Button
- 96 - Guard Operating Panel Door



- 97 - Saloon Lights 1 Fuse
- 98 - Saloon Lights 2 Fuse
- 99 - Emergency Lights Fuse
- 100 - Auxiliery Compressor Button
- 101 - Pantograph Isolation
- 102 - Fault Indicators Fuse
- 103 - Remote Supply Fuse
- 104 - Cabinet Door

The Guard Operating Panel (Left) allows train doors to be controlled by the train guard away from the cab train door control panels, this functionality is not fully present, but the panel is still included for you to interact with should you desire.

WEST MIDLANDS RAILWAY BR CLASS 323 - PROCEDURES

QUICK START

This Quick Start sequence represents the basics you will need to follow to get this train moving - follow along with the Training Module of this train in the Training Center or when you start a Scenario or Service.

- Open the desk by inserting and turning the Master Key
- Move the Reverser from Off into Neutral
- Clear the AWS self-test sequence (if enabled) by pressing on the AWS Reset Button
- Set the Head and Tail Lights as appropriate
- Turn on the GSM-R with the On/Off Button, it will auto register and display your train's headcode (if applicable)
- If in the platform, begin passenger boarding by inserting and turning the Door Key, then pressing the Left or Right Side Door Release Buttons
- Once passenger loading has completed, press the Close Doors button and await interlock, turn the Door Key and remove it
- If it is set, reset the Driver's Reminder Appliance
- Move the Reverser into the intended direction of travel
- Pull the Power Brake Handle into Notch 2, increase notches to gain more speed

COLD & DARK START

This Cold & Dark Start sequence represents when the train is fully powered down. You may use this as a reference to get familiar with how trains are started and practice the full start-up sequence.

- Enter the cab by interacting with the Cab Door and climbing on-board
- If you wish to drive with Safety Systems enabled, set the AWS, DSD and Vigilance Isolation Switches on the side wall to Normal as you desire
- Sit down in the driver's seat
- Open the desk by inserting the Master Key
- Move the Reverser into Neutral
- If the train is not powered on at all, press and hold the Aux On button for a few seconds
- Clear the AWS self-test sequence (if enabled) by pressing on the AWS Reset Button
- Raise the Pantograph with the Pan Up/Reset Button so it may make contact with the overhead wires
- Set the Head and Tail Lights as appropriate
- Turn on the GSM-R with the On/Off Button, it will auto register and display your train's headcode (if applicable)
- If in the platform, begin passenger boarding by pressing the Left or Right Side Open Doors Buttons
- Once passenger loading has completed, press the Close Doors Button and await interlock, turn the Door Key and remove it
- If it is set, reset the Driver's Reminder Appliance
- Move the Reverser into the intended direction of travel
- Pull the Power/Brake Handle into Notch 2, increase notches to gain more speed

SHUT DOWN

This Shut Down sequence represents the steps needed to return the EMU to a Cold & Dark state, which you may wish to do at the end of a service, or to practice the Cold & Dark Start sequence.

- After completing your final move, secure the train in place by ensuring the Power Brake Handle is in B3, full service braking
- If you have just finished a passenger stop, press the Close Doors Button and await interlock, turn the Door Key and remove it
- Set the Driver's Reminder Appliance
- Move the Reverser to Neutral
- Set the Tail Lights to On and Headlights to Off
- Press and hold the Pan Down Button until the Line Volts Indicator is extinguished
- Press and hold the Aux Off Button for a few seconds

CHANGING ENDS

This sequence represents the steps needed to change driving cabs, this is a very common practice you will perform whenever you complete a service, as you will need to be in the other cab to drive the next service.

- After completing your final move, secure the train in place by ensuring the Power Brake Handle is in B3, full service braking
- If terminating at a station, leave the passenger doors open
- Set the Driver's Reminder Appliance
- Move the Reverser to Neutral
- Set the Tail Lights to On and Headlights to Off
- If registered, de-register the GSM-R by pressing the On/Off and Confirm Buttons.
- Move the Reverser to Off
- Turn and remove the Master Key
- Stand up from the driver's seat
- Exit via the appropriate Cab Door and either walk along the train to the other cab, or walk through the train to the other cab - you may need to use the external Cab Doors to change units if driving a 6-car formation
- Once in the other cab, sit in the driver's seat
- From this point you can wait for the next service to begin then follow the Quick Start procedure to setup the unit

COUPLING

This Coupling sequence represents the steps needed to join 2 units together to form a 6-car train, a common practice around rush hour to meet capacity demands on the Cross-City Line.

- On approach to a coupling operation, you may be required to pass a signal at danger to gain access to the occupied platform
- Use the GSM-R Contact Signaller Button to request this permission
- Once granted, and if enabled, press the TPWS Train Stop Override Button to prevent the Emergency Brakes from applying as you pass the Danger Signal
- Ease up to the train ahead and perform any passenger tasks
- Ensuring doors are closed on all units, use a low notch of power on the Power Brake Handle to crawl closer to the unit. Prototypically, driver's will make an additional stop a few feet away from the unit
- Draw closer and listen out for the couplings to connect, when they do, apply the brakes on the Power Brake Handle and press the Couple Button for a few seconds
- Now the 2 units are coupled, you may need to shut down the cab you are in and move to the new leading cab, you may do this as per the Changing Ends procedure

UNCOUPLING

This Uncoupling sequence represents the steps needed to split 2 units apart to form 2 3-car trains, a common practice after rush hour to meet capacity demands on the Cross-City Line.

- Shut down the cab you are in as per the Changing Ends procedure, but ensure all passenger doors are closed by pressing the Close Doors Button and await interlock, turn the Door Key and remove it
- Stand up and make your way to the cab which will be used for the uncoupling procedure, this is typically the next cab facing in the same direction
- Sit down in the driver's seat
- Open up the desk by inserting the Master Key
- Move the Reverser into Neutral
- Ensure all is safe and all doors are closed
- Press and hold the Uncouple Button until you hear the Tightlock coupler's electrical blocks disconnect
- Move the Reverser into Reverse
- Using a low notch of power on the Power Brake Handle, reverse gradually to complete the uncoupling and put some distance between the two units
- Stop the train and return the Reverser to Neutral
- Setup the Headlights and Tail Lights as appropriate for both units
- You may now continue your journey

EMERGENCY BRAKE RESET

This sequence represents the steps needed to reset the train in case of an emergency brake application, either by Plunger, the Emergency notch of the Power Brake Handle, or missing an AWS or Vigilance alarm.

- Let the train come to a complete stop
- Reset any Plungers, return the Power Brake Handle to a normal braking position, cancel any alarms
- Pull the Power Brake Handle into Notch 2 to take power and move away

If you encounter a TPWS brake demand:

- The red brake demand indicator will flash when the emergency brakes apply
- Move the Power Brake Handle into a brake step to acknowledge this
- Press the AWS Button, the brake demand light will turn steady
- When your train stops, wait 60 seconds and the brakes will release
- If the brakes do not release, move the Reverser into the Off position then back into intended direction of travel, this should only be done in case of a fault as it hard resets the system

PANTOGRAPH ISOLATION

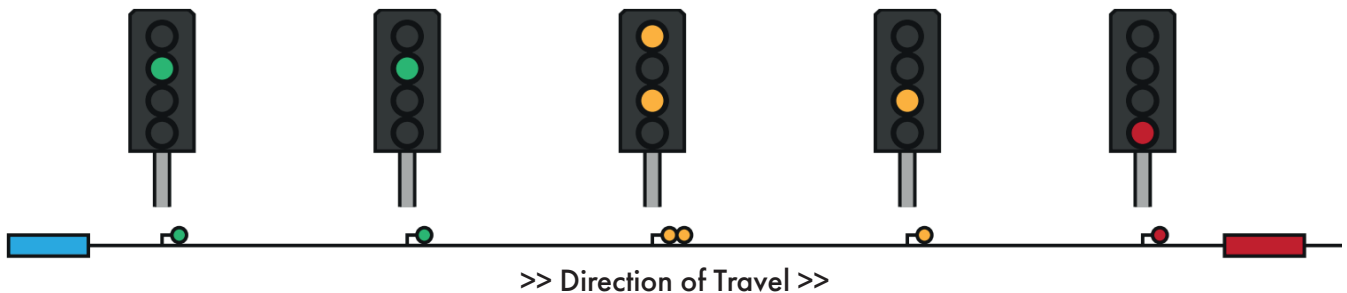
This sequence represents the steps needed to isolate a train by lowering the pantograph from Coach B, which may be necessary during a fault (see Thunderstruck scenario)

- Climb aboard the affected train
- Make your way to Coach B
- Open the Cabinet Door
- Insert and turn the Pantograph Isolation key
- The unit is now isolated and can be dragged "dead" by another unit

BRITISH SIGNALLING SUMMARY

MAIN ASPECT SEQUENCE

The foundation of modern-day colour light signalling in Britain is based on 3 or 4-aspect signalling sequences. These sequences denote the distance between your train and the train ahead of you, forming a protection barrier with enough braking distance that should you need to, you can come to a complete stop without entering the occupied signal block of the train ahead. Below is the sequence for 4-aspect signalling:



From left to right we see the following aspects in the sequence:

- **Clear:** Proceed into the next block
- **Advanced Caution:** Proceed into the next block, expect the next signal to be at Caution (this is for 4-aspect signalling only)
- **Caution:** Proceed into the next block, expect the next signal to be at Stop
- **Stop:** You must not proceed beyond this signal, the next block is occupied

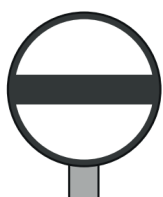
APPROACH CONTROL

When approaching a diverging route, you may find that the sequence above is acting out even though there are no trains occupying blocks ahead of you, this is called Approach Control.

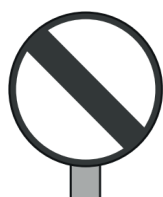
Approach Control is all about speed, ensuring that your inbound train is going at a safe enough speed to traverse the upcoming junction without incident. This is done based on a timer; as you get nearer to the signal protecting the junction, it will remain at Stop for a fixed period of time before upgrading up to the next suitable aspect. The key to avoiding having to stop at these signals is to ensure you approach at the correct speed. Typically you should be approaching a red signal, from where the AWS and TPWS equipment is on the track, at no more than 10-20 mph.

BANNER REPEATERS

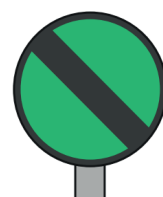
Sometimes you will be on certain sections of route with obstructed views, this could be due to rail curvature, other railway infrastructure or masonry. In these instances, be on the look out for Banner Repeaters. These signals are used to offer an advanced indication of what the next main signal is displaying.



Caution:
Next signal is displaying Stop



Proceed:
Next signal is displaying Clear or Caution

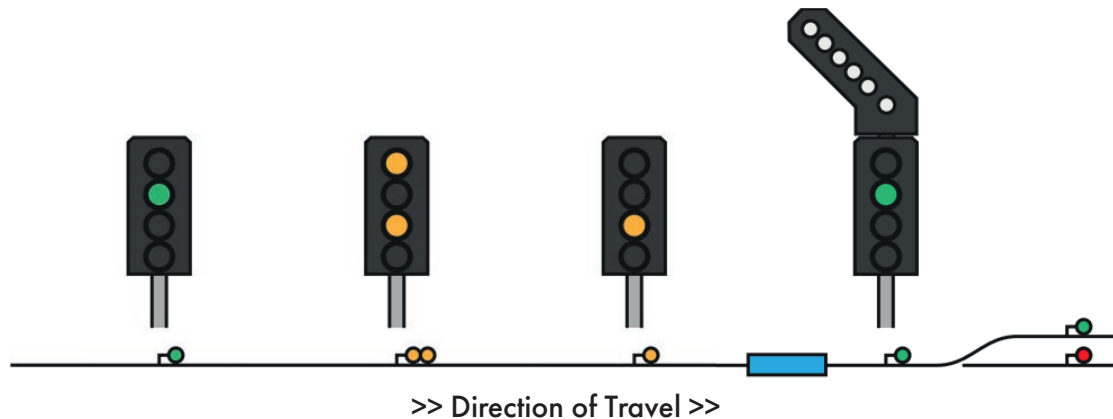


Clear:
Next signal is displaying Clear

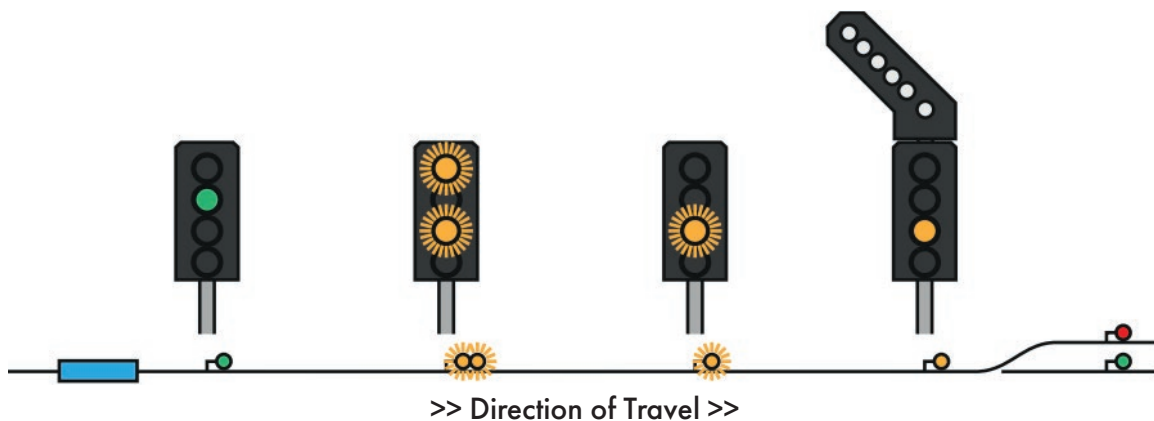
JUNCTION INDICATORS

When approaching a diverging point in the rails, a place where your train can take one of any number of routes, it is common to see Junction Indicators, also known as Feathers, attached the signal head. This indicator tells you as the driver which route you are set, this can be useful as you will know you are heading in the right direction, and inform you that you should potentially be travelling at a reduced speed.

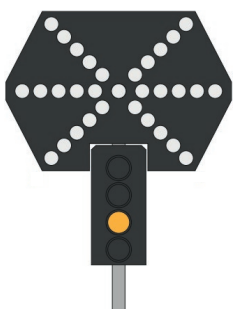
After following the Approach Control procedure, a signal with a lit junction indicator will look something like this: a series of white signals pointing in the general direction of the set route.



Sometimes the Approach Control method isn't used for an upcoming diverging junction. You can also come across flashing signal aspects. The Advanced Caution and Caution aspects will periodically flash between yellow and unlit states, warning of an upcoming diverging path. The final junction indicator will still be static, accompanied with the "feather" as mentioned before. You should still treat the flashing aspects as you would stationary aspects, ensuring that you are safely approaching the junction should it be occupied or not yet set.



There are also different kinds of Junction Indicators which you may come across. Theatre indicators are able to display routes, lines and platforms, which can be helpful in complex junctions with multiple routes. You may also see signals with multiple feathers at junctions with multiple routes.



A "feathered" signal can display up to 7 different routes, 6 diverging and the main signal for the main route. Spreading out from the center represents junctions which are further away from the main route.



The Theatre indicator can sit alongside a signal like this, and can display a variety of routes. "M" in this instance could refer to "Main", it can also display numbers for platforms, or even multiple letters combined.

TPWS OSS GRIDS

As mentioned earlier, one vital piece of track equipment is the TPWS Over Speed Sensor (OSS) Grids. These grids can be found in various places on the railway but are in places to prevent collisions or derailments due to a greater than intended speed.

It's not a drivers job to know the speed that TPWS grids are set at, only to drive sensibly enough to avoid triggering the system, therefore we recommend, with the Class 323, passing double yellow signals at no more than 75mph, and single yellow signals at no more than 50mph, reducing your speed after the single yellow down to 30mph, aiming to be at 15mph at the AWS magnet before the signal.

Approaching bufferstops you will find if you are travelling faster than 10mph you are likely going to trigger the system.

If you trigger the emergency brakes via TPWS grid, follow the reset procedure on page 17.

RAILWAY SIGNAGE

This brief list will detail the common signs you will see on your travels and what they mean.



These boards display the line's maximum permitted speed, in this case, 25mph.



These boards display differential speeds, the bottom limit is typically for passenger trains and higher than the upper, slower speed for freight.



The "Morpeth Board" advises of an upcoming decrease in maximum permitted speed, which you should be at in time for the signs above.



Warnings about reductions in differential speeds can also be provided.



These boards display the line's maximum permitted speed for the indicated route direction.



These boards advise of an upcoming decrease in maximum permitted speed for the indicated route direction.



Stop Car Markers can be found on platforms to denote where to stop depending on train length. They can display any number, or S as the default for all trains.



The Whistle Board denotes when the horn should be used. A single low tone is the standard, and should typically only be sounded between 0630 and 2330 hrs.

USEFUL INFORMATION

For any questions or comments, you have, please reach out to us on our forums:

<https://forums.dovetailgames.com/forums/trainsimworld/>

If you are experiencing an issue with Train Sim World 3, please check out our Knowledgebase or submit a support ticket:

<https://dovetailgames.freshdesk.com/support/home>

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