EN

TRAIN SIM WORLD 2

GGD-R5 01

WEST CORNWALL LOCAL

RIVET GAMES

STEAM®

dovetail GAMES

CONTENTS

1 WEST CORNWALL LOCAL OVERVIEW

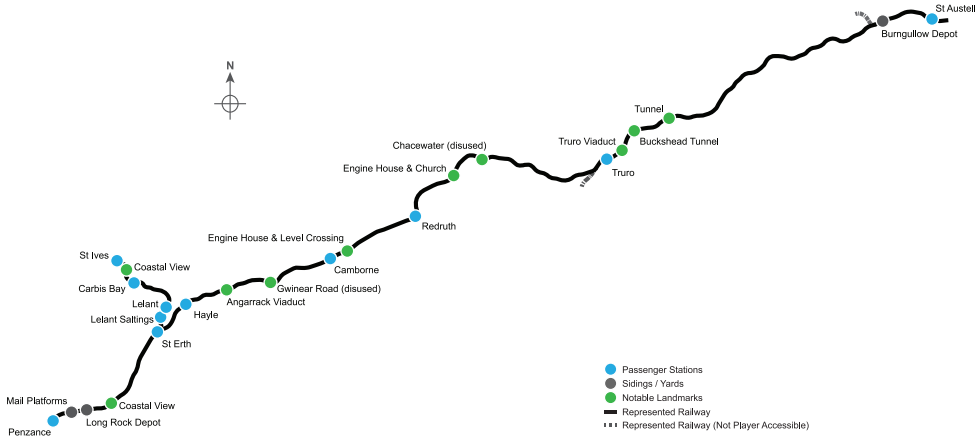
INTRODUCING WEST CORNWALL LOCAL

The Cornish Main Line has long been the backbone for Cornwall. Opened in 1867, the line weaves its way through the landscape linking the coastal county to the rest of the country. Brunel originally built the line to his unique 7ft “broad gauge”, but in 1892 the route was converted to standard gauge.

For those areas not reached by the main line, branches sprawl out such as the St Ives Bay Line to serve local communities and offer seaside destinations to keen holidaymakers.

West Cornwall Local captures the line as it was in the early 1990s, with some sections sporting single-track operation, with not a single modern dot-matrix board in sight.

5 ROUTE MAP & POINTS OF INTEREST



MAIN LINE SECTION: PENZANCE - ST. AUSTELL

The main line heads towards Exeter as far as St. Austell, a distance of around 40-miles, and is part of the Cornish Main Line. Typically, the line is serviced regularly with fast and semi-fast main line trains to Bristol, Wales, London and the North of England as well as DMU local stopping services which serve the many communities of Cornwall.

The line is characterised with a maximum permitted speed of 75 mph and consists of a single track between the Shunt limit of St. Austell to just north of the town Probus where the line is doubled. This continues almost to Penzance where the line becomes single again for the approach into the terminus station and past Long Rock Traction Maintenance Depot.

Signalling consists of standard 2- and 3-aspect colour light signals and Western region lower-quadrant semaphore signals.

Total journey time between Penzance and St. Austell is typically around 50 minutes.

ST. IVES BRANCH LINE: ST. ERTH - ST. IVES

The coastal line of St. Ives branches out from the main line at St. Erth and covers a distance of around 3-miles. Whilst there is a main line connection, DMUs typically operate from the bay platforms and are confined to the branch.

The line is characterised with a maximum permitted speed of 30 mph and is entirely single track working.

Signalling consists of standard 2-aspect colour light (St. Erth end) and Western region lower-quadrant semaphore signals.

Total journey time between St. Erth and St. Ives is typically around 18 minutes.

7 GAME MODES

JOURNEYS

Blends together more than 24 hours of sequential gameplay. Start a Journey and enjoy hundreds of scenarios, timetabled services, and jobs to complete around the railway.

TRAINING

Training modules 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

Scenarios are objective-based activities which provide unique experiences. Move coaches around, drive passenger and freight services and experience some of the operations that occur on the route.

TIMETABLES

These provide a host of activities throughout an entire 24-hour time period; Timetable 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.

2 BR CLASS 150/2 SPRINTER DIESEL MULTIPLE UNIT

9 INTRODUCING THE BR CLASS 150/2

Experience the classic “Sprinter” family and carry passengers through the Cornish countryside with the BR Class 150/2. The 150 was developed in the early 1980s as a replacement for heritage DMUs on regional routes across the country.

Unlike the “Pacers” which were lower cost and derived from bus designs, the Class 150 “Sprinter” was to be built using the same body frame design as the BR Mark 3 coach, offering greater comfort and higher top speed.

Production units were split into a couple of subclasses, and the 150/2 was put to work in the western reaches of England, shuttling through Cornwall resplendent in BR’s Regional Railways livery.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B


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UNIT NUMBER 150247
THIS CAR 57247
OTHER CAR 52247
MAX SPEED 75 M.P.H
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NORMAL
EBS


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ON
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VIGILANCE
HEATER SWITCH
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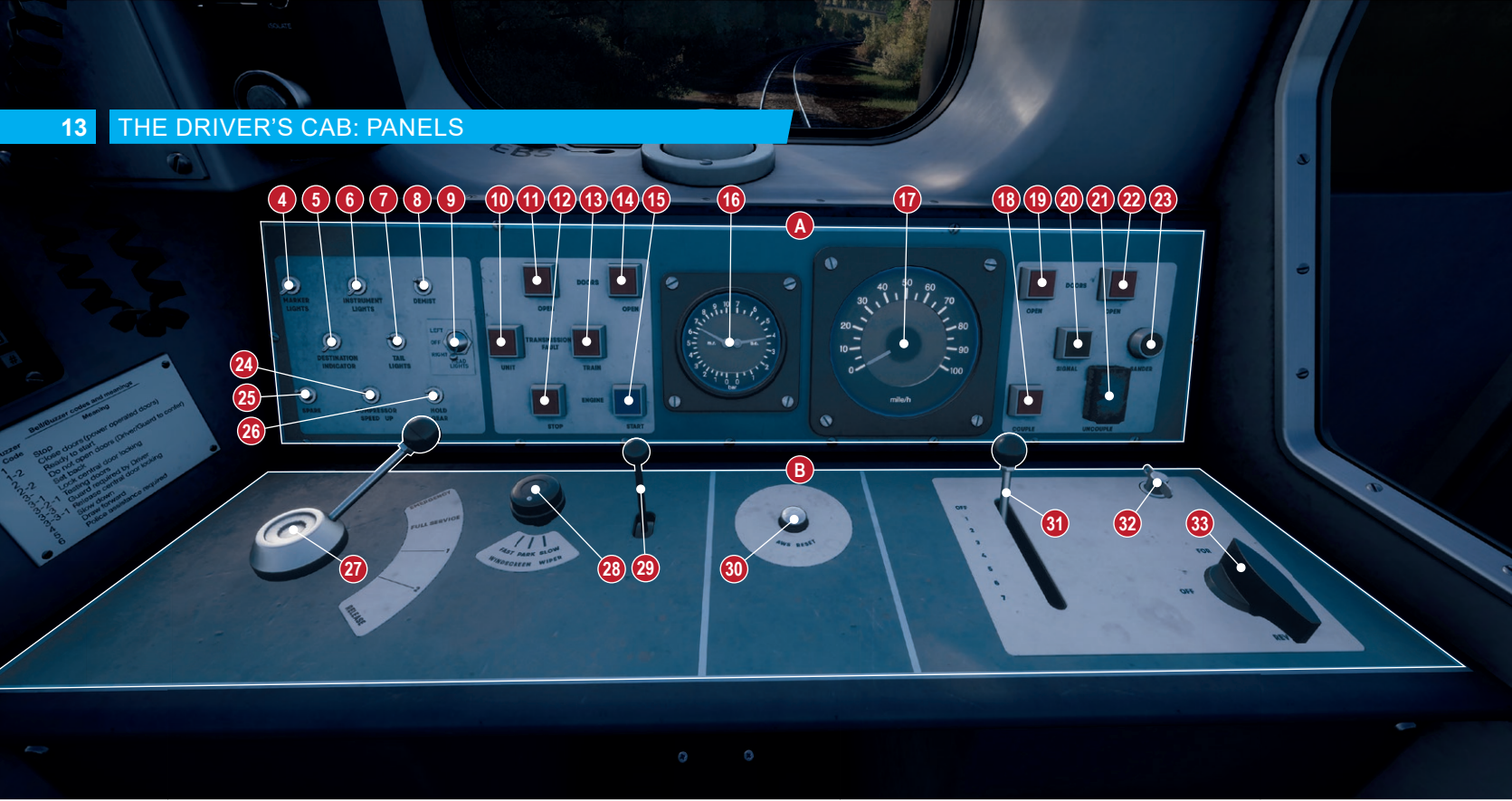
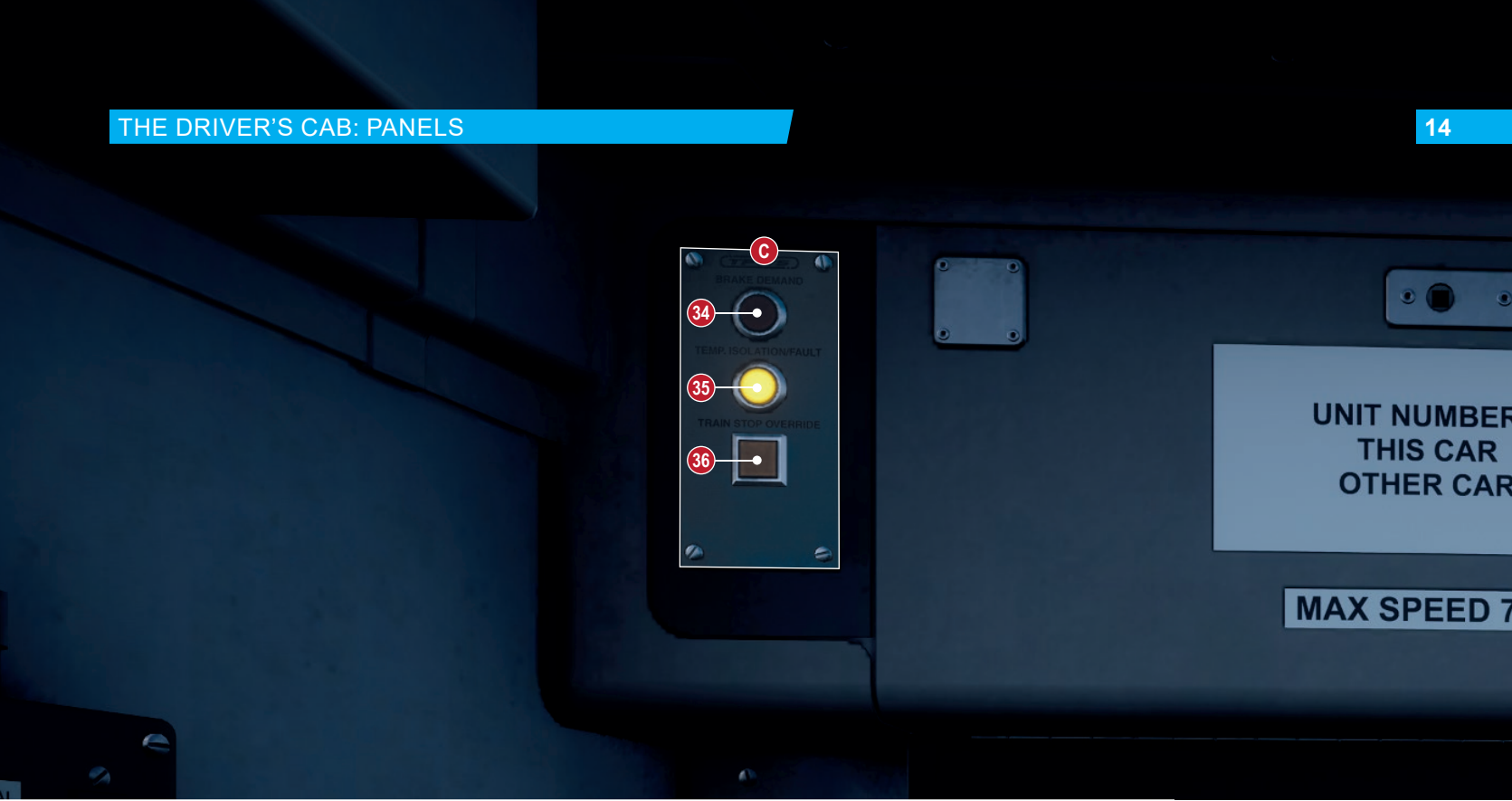
A F F F FIRE SYSTEM
NORMAL
FIRE
FIRE SYSTEM MANUAL OVERRIDE
FIRE SYSTEM INTEGRITY
FIRE SYSTEM MANUAL OVERRIDE SWITCH
When operated this Switch WILL
Discharge the Automatic Fire Suite

THE DRIVER'S CAB: PANELS




C
BRAKE DEMAND
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TEMP. ISOLATION/FAULT
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TRAIN STOP OVERRIDE
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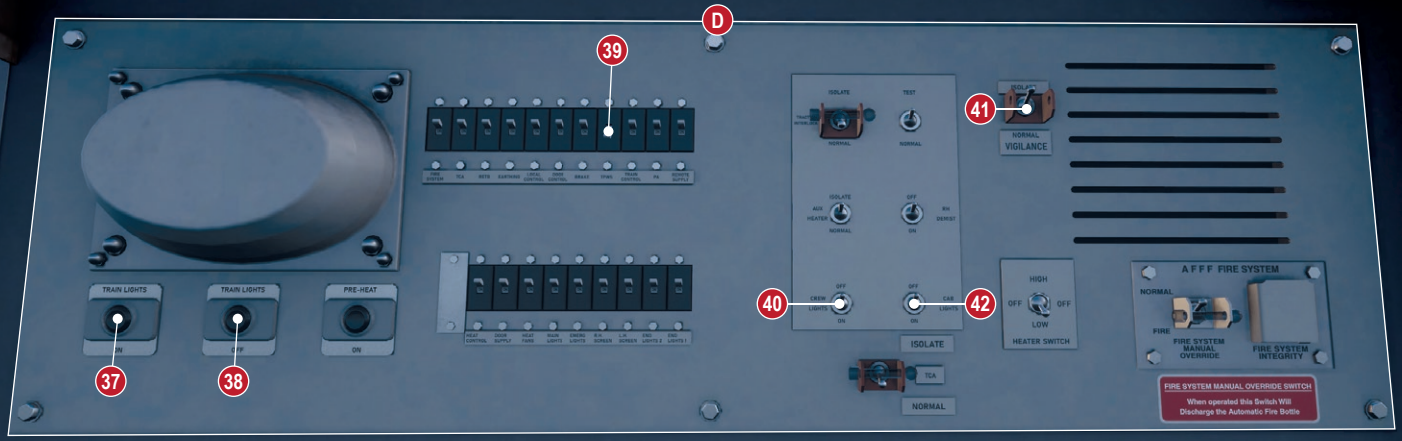
UNIT NUMBER
THIS CAR
OTHER CAR
MAX SPEED 7

THE DRIVER'S CAB: PANELS



THE DRIVER'S CAB PANELS

MISC CONTROLS

1 Driver Reminder Appliance (DRA) disables throttle input which acts as a reminder for the driver in situations such as being stopped at a red signal or at a station with the doors open.

2 Automatic Warning System (AWS) panel consists of a speaker which provides an alert and the sunflower which displays the last received warning when active. For more information on AWS, see the AWS/TPWS section of this manual.

3 Destination Roller Blind handle sets the passenger information destination blind on the front of the vehicle.

A CONTROL DESK

4 Marker Lights sets the state of the exterior marker lights for this vehicle only.

5 Destination Indicator sets the state of the backlighting for the passenger information destination blind for this vehicle only.

6 Instrument Lights sets the state of the instrument backlighting for this vehicle only.

7 Tail Lights sets the state of the exterior tail lights for this vehicle only.

8 Demist sets the state of the windscreen demister for this vehicle only (Inop).

9 Head Lights sets the state of the exterior headlights for this vehicle only. The switch has three positions: Left, Off and Right. Typically, Right is used for daytime running with the Left used for nighttime running.

10 Unit Transmission Fault indicator advises of a local transmission fault.

11 Left-Side Doors Open button is used in conjunction with (A14) to enable passenger access. Typically, both buttons are depressed simultaneously[†].

12 Engine Stop button stops the engine on this vehicle only.

13 Train Transmission Fault indicator advises of a train-wide transmission fault.

[†] Both buttons do not need to depressed in Train Sim World. For your convenience, pressing either of the buttons will open the doors. If the Doors Indicators are lit, pressing either of the buttons will also close the doors. In the real world, this is typically done by the Guard via the Guard's Control Panel (Inop) in the vestibule behind the Driver's Cab.

A CONTROL DESK CONTINUED

14 Left-Side Doors Open control is used in conjunction with (A11) to enable passenger access. Typically, both buttons are depressed simultaneously[†]. Both (A11) and (A14) also provide a visual indication of the traction interlock. When lit, the traction interlock is engaged which inhibits throttle application and applies a Full Service brake application.

15 Engine Start button starts the engine on this vehicle only.

16 Duplex Brake Gauge displays the current pressure in the Main Reservoir on the left and the Brake Cylinder on the right in Bar.

17 Speedometer displays your current speed in miles per hour (mph).

18 Couple button enables the unit to attach to another unit via the BSI Couplings at this end of the vehicle/unit only.

19 Right-Side Doors Open button is used in conjunction with (A22) to enable passenger access. Typically, both buttons are depressed simultaneously[†].

20 Signal is used to communicate with the Guard using a pulse code system.

21 Uncouple enables the unit to detach from another unit coupled at this end of the vehicle/unit only.

22 Right-Side Doors Open button is used in conjunction with (A19) to enable passenger access. Typically, both buttons are depressed simultaneously[†].

23 Sander aids adhesion in adverse weather conditions that would cause power induced slip or brake induced slide by placing sand on the rails in front of the wheels. Sand is typically automatically applied during instances of wheel slip via the Wheel Slip Protection (WSP) system which will automatically control how much power is applied. However, it will be necessary to apply sand manually for wheel slide.

24 Compressor Speed Up increases air compressor output to restore air in the main reservoir.

25 Spare (Inop).

26 Hold Gear Switch (Inop).

THE DRIVER'S CAB PANELS

B DRIVING CONTROLS

27 Three Step Westcode Brake Control is used to slow and stop the unit.

28 Windscreen Wiper control sets the state of the windscreen wiper on the driver's side.

29 Two Tone Horn sounds the approach warning horn.

30 AWS Reset button acknowledges an active AWS alert. The button is also used to acknowledge a TPWS induced Brake Demand.

31 Throttle Lever controls how much power is applied.

32 Master Key unlocks the Reverser (B33). The key can only be locked or unlocked with the Reverser in the Off position.

33 Reverser sets the direction of travel. Off or the Neutral position also disables alerts from the Driver Vigilance Device and is typically used when stopped at stations or in sidings.

C TPWS PANEL

34 Brake Demand indicator indicates the current state of emergency braking. The indicator starts flashing when TPWS or AWS has initiated an emergency brake. The indicator becomes steady once the demand has been acknowledged by the driver using the AWS Reset (B30) button.

35 Temp. Isolation Fault indicates whether TPWS is isolated from use.

36 Train Stop Override is used to pass a signal at danger and is used to override a brake demand arising from the TSS loop for around 20 seconds. Once pressed, the indicator will be lit until passing over the TSS.

D REAR MCB PANEL

37 Train Lights On sets the state of the passenger saloon lighting throughout the train.

38 Train Lights On sets the state of the passenger saloon lighting throughout the train.

39 TPWS MCB sets the state of the AWS/TPWS system.

40 Crew Lights sets the state of the overhead lighting on the secondman's side of the cab.

41 Cab Lights sets the state of the overhead lighting on the driver's side of the cab.

42 Vigilance switch sets the state of the Driver Vigilance Device.

3 OPERATING THE BR CLASS 150/2

1. Enter the rear cab (the opposite end of where you'll be driving from) and check the following:

    a. Master Key (B32) is Off.
    b. Brake Handle (B27) is in the Emergency position.
    c. Reverser (B33) is Off.
    d. Tail Lights (A7) are set to On.
    e. Destination blind (3) is set to the appopriate destination.
    f. Destination Indicator Light (A5) is set to On.
    g. All access doors and windows are closed before leaving.

2. Enter the forward cab (the driving position) and check the following:

    a. Master Key (B32) is On.
    b. Brake Handle (B27) is in the Emergency position.
    c. Marker Lights (A4) is set to On.
    d. Tail Lights (A7) are set to Off.
    e. Head Lights (A9) are set to the appropriate position for the time of day.
    f. Destination blind (3) is set to the appropriate destination.
    g. Destination Indicator Light (A5) is set to On.

3. If you wish to run with AWS enabled:

    a. Set the TPWS MCB (D39) to On.
    b. As AWS is not designed to be isolated in these units, there is no switch for it so you will need to use the appropriate control for Safety Systems as shown in the Control Settings of Train Sim World's Settings Menu.

4. Sit in the driver's seat.
5. Set the Reverser (B33) to Forward.
6. If you enabled AWS:

    a. The AWS alarm will be sounding, press the AWS Reset Switch to clear it.

7. Move the Brake Handle (B27) to the Full-Service position.
8. You can now begin boarding passengers by pressing the Doors (A11, A14, A19 or A22) buttons.
9. Once loading has completed, you will need to close the doors, by pressing the Doors button a second time.
10. Move the Brake Handle (B27) to the Step 1 position.
11. Move the Throttle Lever (B31) to notch 1.
12. As the engine note climbs, move the Brake Handle (B27) to the Release position.
13. The unit should begin to move and you can now set a higher throttle position to increase acceleration.

Unlike locomotives, the BR Class 150/2 has a single braking system designed to be simple to use and keep the train under control at all times. The three-step Westcode brake actually has 5 positions called notches but only four of the 5 are used in regular operation. The three-steps are in reference to the 3 braking notches. The positions of the brake handle are explained below.

Release

As it suggests this position releases the brakes throughout the unit. When released, the Brake Cylinder will read 0 Bar with no changed to the Brake Pipe and Main Reservoir which will remain at 6.9 Bar.

Step 1

Applies the first step, often referred to as initial braking, where the Brake Cylinder pressure will increase to 1.4 Bar.

Step 2

Applies the second step where the Brake Cylinder pressure will increase by 1 Bar to 2.4 Bar.

Full Service

Applies the third step where the Brake Cylinder pressure will increase by 1 Bar to 3.4 Bar.

Emergency

Further increases the Brake Cylinder pressure to 3.9 Bar.

Brake Interlock

If the Brake Handle is placed into any position that is not Step 1 or Release, the brake interlock will prevent throttle input. This is also true whilst in motion. If the Brake Handle is placed into any position other than Step 1 or Release, throttle input will be cut and you will be required to place the throttle handle into the Off position before power can be re-applied.

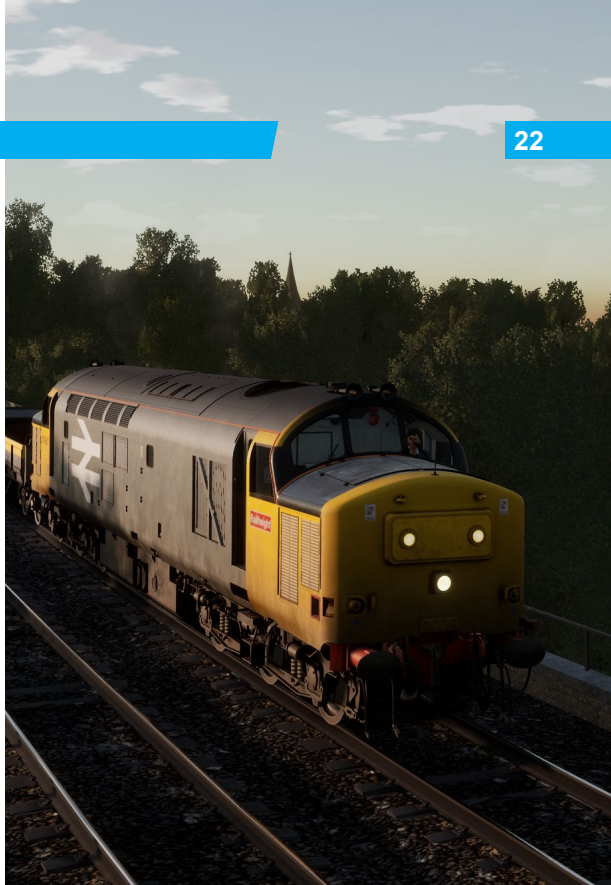
4 BR CLASS 37/5 DIESEL ELECTRIC LOCOMOTIVE

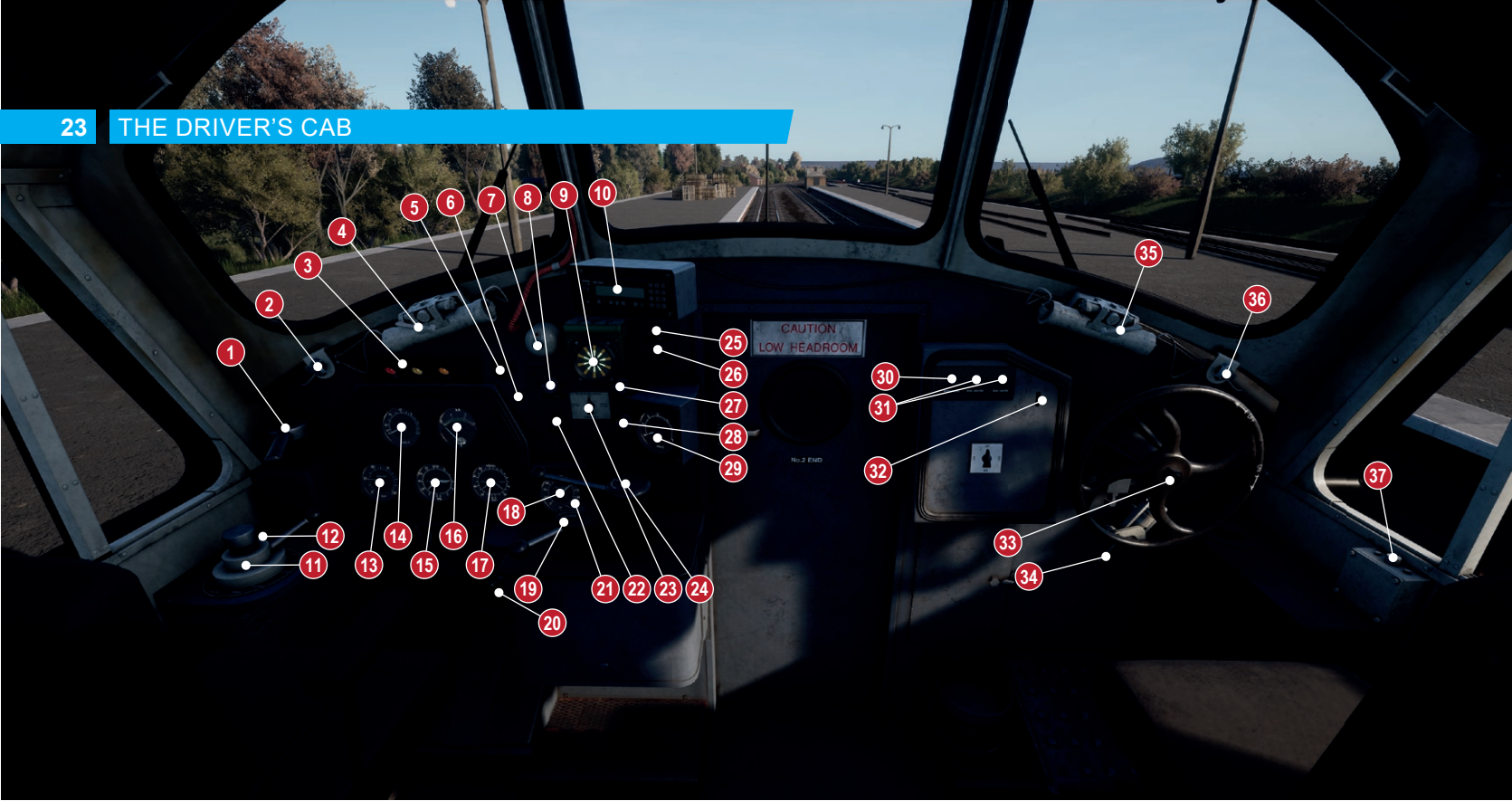
INTRODUCING THE BR CLASS 37/5

The sound of ‘Tractors’ is synonymous to the 1980s, with the BR Class 37 being a frequent sight across the UK. 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-geared 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, which was ultimately replaced by the two-tone Railfreight Grey liveries of the late 80s and early 90s.

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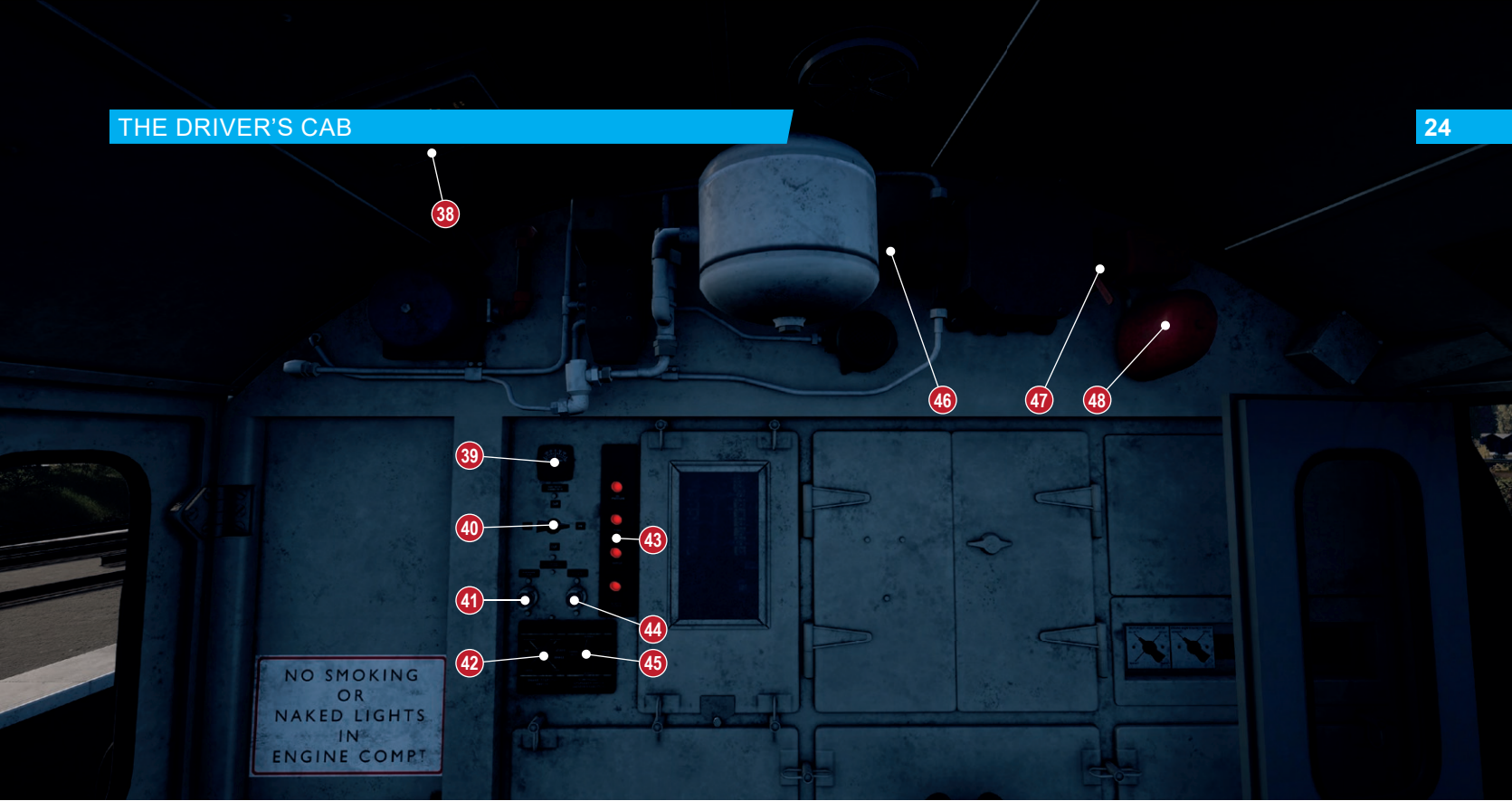
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NO SMOKING
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NO SMOKING
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ENGINE COMPT

27 THE DRIVER'S CAB CONTROLS

1	Straight Air Brake applies/releases the locomotive's brakes only.
2	Driver's Windscreen Wiper switch.
3	Warning Indicator Panel displays fault indications for Engine, Wheelslip and General Operating Faults.
4	Driver's Windscreen Wiper manual operating lever.
5	Instrument Light Dimmer adjusts the brightness of the instrument back lighting.
6	Headlight switch sets the state of the forward headlamp.
7	AWS/TPWS Acknowledgement.
8	Sander button sets the state of the sanding equipment for adhesion control.
9	AWS Sunflower displays the current status of the Automatic Warning System.
10	NRN Equipment is used to communicate with the signaller (inop).
11	Driver's Brake handle applies/releases the brakes throughout the train.
12	Brake Pin is used to lock out local control of the Driver's Brake handle when operating from the other end of the locomotive.
13	Brake Pipe gauge displays the current pressure in the brake pipe in psi.
14	Speedometer displays the current speed in miles per hour (mph).
15	Duplex Vacuum Brake gauge. The left needle displays the current vacuum pressure in the brake pipe and the right needle displays the current pressure in the vacuum chamber. Both readings are in inHg.
16	Ammeter displays the total current being applied to the traction motors in kA.
17	Brake Duplex gauge displays the current force being applied to the wheels in psi. The two needles displays each bogie separately.
18	Main Air Brake Reservoir gauge displays the pressure of the main reservoir in psi.
19	Reverser sets the direction of travel.
20	Horn lever is used to sound the two-tone warning horn. Lifting the lever sounds the high tone whereas lowering the lever sounds the low tone.
21	Master Key (rear of Reverser) enables the Reverser to be moved from its Off position.
22	Slave Loco Cut Out switch disables power application of any slaved locomotives. It is typically depressed prior to applying power when operating in Slow Speed Control modes.
23	Slow Speed Control sets the operating speed of the locomotive to a maximum of 0.5, 1 or 2.7 mph. This greatly improves locomotive control when using automated loading or unloading facilities.
24	Throttle lever controls power delivery to the traction motors.
25	Nose Light sets the state of the lighting in the nose of the locomotive.
26	The two Cab Heater switches sets the state of the driver's side cab heaters.
27	Engine Start switch engages the starter motor for the diesel engine.
28	Engine Stop switch shuts down the diesel engine.
29	Slow Speed Speedometer displays the current speed when Slow Speed Control is active.
30	Demister activates the locomotive's windscreen demister (inop).
31	The two Cab Heater switches sets the state of the secondman's side cab heaters.
32	Horn lever is used to sound the two-tone warning horn.
33	Handbrake applies or releases the locomotive's handbrake.

34	Vacuum Chamber Release Valve is used to vent the distributor vacuum chamber. This is typically used when switching between Air and Vacuum brake systems.
35	Secondman's Windscreen Wiper manual operating lever.
36	Secondman's Windscreen Wiper switch.
37	DSD Holdover switch temporarily disables the driver's vigilance device. It is used when shunting, collecting tokens from signallers or other situations where the locomotive may be in motion and the driver needs to lean out of the window on the secondman's side.
38	Brake Mode Indicator displays the current brake operating mode.
40	Control Cut-Out Switch sets the state of the locomotive control systems. When cut-out, none of the locomotive's controls will be functional. This is used when operating in multiple configuration and the locomotive is operating as a slave unit.
41	Fire Alarm Test activates the fire alarm test.
42	Brake Selector Switch sets the brake operating mode (see page 26 for more information on the brake operating modes).
43	Engine Fault Indicator Panel displays appropriate fault warning indications.
44	Exhauster Isolation Switch is used to isolate the locomotive's vacuum exhausters.
45	Compressor Change Over Switch is used to switch between the locomotive's two vacuum compressors.
46	AWS Isolation Lever sets the state of the AWS in the cab being operated.
47	AWS Change End Lever is used to enable or disable AWS in the cab where the lever is operated. The lever is placed in the up position to activate AWS in that cab. Changing ends will need this lever to be moved to the down position before then being able to use AWS in the other cab. Having both Change End levers in the up position will cause the AWS to be active in both cabs meaning it cannot be acknowledged.
48	AWS Warning Bell.
49	Motor Cut-Out Switch sets which traction motors are enabled or isolated.
50	Engine Maintenance Switch sets the engine into maintenance mode (inop).
51	DSD Circuit Breaker sets the state of the Driver Safety Device electrical circuits.
52	Control Circuit Breaker sets the state of the control desk electrical circuits.
53	Engine Start Circuit Breaker enables or disables the engine start electrical circuits.
54	Main Lighting Switch sets the state of the main lighting electrical circuits.
55	MCB4 Lighting Switch sets the state of the route indicator lighting electrical circuits.
56	MCB5 Lighting Switch sets the state of the tail light electrical circuits.
57	MCB6 Lighting Switch sets the state of the auxiliary lighting electrical circuits.
58	Route Indicator Light switch sets the state of the route indicator lamps.
59	Tail Light Side A switch sets the state of the A-side tail lamp.
60	Tail Light Side B switch sets the state of the B-side tail lamp.
61	Instrument Light switch sets the state of the instrument backlighting.
62	Cab Light switch sets the state of the cab light.
63	Interior Light Side A switch sets the state of the A-side interior lights.
64	Interior Light Side B switch sets the state of the B-side interior lights.
65	Battery Isolation Switch (No 1 End).
66	Fire Alarm Test activates the fire alarm test (inop).

5 OPERATING THE 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. Train 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 Train 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 Train 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 Train 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. For more information on the braking systems, please see the section: On-Board Systems: Brakes

The BR Class 37/5 utilises a number of braking systems to aid the driver in keeping the locomotive, and its consist, under control. Each braking system is used for a specific purpose as explained below.

Handbrake

The handbrake is a relatively simple device and consists of a wheel which rotates a screw jack and applies the brake shoes directly to the wheel treads. It is slow to apply and release and therefore should only be used when stabling the locomotive in a siding or yard.

Locomotive Brake

The Locomotive Brake is sometimes referred to as the straight air brake as it generally uses air to control the brake shoes on the locomotive only. This brake is generally inefficient at bringing a train to a stop and should only be used in emergencies to do so with an ascending grade in your favour. The brake can also be used a trim brake, to ease off slight increases in speed to maintain control. However, it should always be used sparingly when doing so. Finally, the Locomotive Brake can and should be used when operating as a light loco (i.e. without any vehicles attached to the locomotive). Since the Locomotive Brake is a variable control it can operate at variable pressure up to around 75 psi.

Train Brake

The Train Brake as its name suggests is used to brake the entire train. The BR Class 37/5 utilises two forms of

The brake pipe which runs the length of the train supplies air or vacuum to the appropriate distributors on each vehicle in the chain. The distributors then supplies each brake cylinder of which there may be one or more per wheelset. The brake cylinder then forces the brake shoes against the wheel tread which slows the train. The further away the vehicle is from the locomotive, the longer it takes for brakes to apply and release as the pressure needs to travel. You will need to factor this ‘delay’ into your thinking for timing brake and power application.

The brake handle has 7 stops, called notches, which control how much air or vacuum is transmitted to each vehicle the consist. The notches are outlined below:

Release/Overcharge

If held in this position for more than 15 seconds, the brake pipe will be overcharged to around 76 psi. In the real world, this is used to allow any distributors which may be sticking to be released. When in vacuum mode, the exhausters, which create the vacuum in the brake pipe, will speed up enabling the brakes to release faster.

When operating in Air mode, care should be taken when using the Release/Overcharge posiiton without understanding its function. Failure to do so will result in the brakes being locked on. The proper use of this position should be to hold it in this position for no more than 30 seconds, then let the handle return to its resting position in the Running position. This will ensure the brakes are bled off slowly so the distributors are not forced to apply the brake. If the brakes do get locked on, you will need to carry out another overcharge cycle using the correct timing.

Running

In this position, the brakes will be released throughout the train with 72.5 psi in the brake pipe if operating in air modes, or 21 inHg if operating in vacuum modes.

1st Application

In this position, the brakes will be applied with the minimum force possible. This will bring the brake pipe pressure down to around 66 psi when operating in air modes or 16 inHg if operating in vacuum modes.

Service

In this position, the brakes are self-lapped between initial and full service. Self-lapped essentially means that the brake valve has a variable position which determines the rate or level of brake application, or how quickly the train is slowed. This can therefore mean that the brake pipe can be anything from 66 psi to 48 psi when operating under air modes, or 16 inHg or 0 inHg when operating under vacuum modes.

Full Service

In this position, you are applying the maximum brake force you can. This is often used to secure a train to stop it from moving when stopped in stations or when being loaded in a yard or siding. When operating in air modes, the brake pipe will read around 48 psi or, when in vaccum modes, 0 inHg.

Emergency

In this position, the brake pipe is vented to atmosphere which rapidly applies the brakes. Naturally, because of this, the brake pipe will read 0 regardless of the current brake mode.

Shutdown

In this position, the Train Brake valve is placed in a neutral state and will not apply the brake. To move into this position, you will need to lift the brake pin which is used to avoid accidental shutdown of the Train Brake valve.

When operating under vacuum brake modes, there are additional steps to be aware of, particularly when changing ends or when changing to air brake modes, as explained below:

Changing Ends

It is important to be aware, when changing ends and you are operating under any vacuum brake mode, that the Reverser is placed into the Off position before the Train Brake valve is moved into the Shutdown position. This is to ensure that the vacuum exhausters are shut off. The vacuum relay valve will automatically isolated once you move the valve into the Shutdown position.

Changing from Vacuum to Air Modes

When changing from vacuum to air modes, you will need to utilise the Vaccum Release Valve (situated near to the Handbrake wheel) to ensure the distributor's vaccum chamber is vented and thus enable air brake application.

Changing from Air to Vacuum Modes

When changing from air to vacuum modes, it will be necessary to operate the Exhauster Isolation Switch before changing modes so that they will not run when a vaccum mode is selected. It should be re-enabled once a selection is made.

Brake Modes Selector

To switch between the various modes, a selector switch is provided with four positions as outlined below:

Vacuum Passenger

One compressor will run on the locomotive and both vacuum exhausters are switched on. Brakes will operate quickly as it is intended for use on vacuum-braked passenger trains. The locomotive's brakes will apply within 5 to 8 seconds of an emergency application and release within 9 to 12 seconds of a full release of the vacuum brake.

Vaccum Goods

One compressor will run on the locomotive and both vacuum exhausters are switched on. Brakes will operate slowly as it is intended for use on vacuum-braked freight trains. The locomotive's brakes will apply within 25 to 30 seconds of an emergency application and release within 9 to 12 seconds of a full release of the vacuum brake.

Air Passenger

Both compressors will run on the locomotive and both vacuum exhausters are switched off. Brakes will operate quickly as it is intended for use on air-braked passenger trains. The locomotive's brakes will apply within 5 to 8 seconds of an emergency

application and release within 9 to 12 seconds of a full release of the vacuum brake.

Air Goods

Both compressors will run on the locomotive and both vacuum exhausters are switched off. Brakes will operate slowly as it is intended for use on air-braked freight trains. The locomotive's brakes will apply within 20 to 28 seconds of an emergency application and release within 30 to 45 seconds of a full release of the air brake.

6 SAFETY SYSTEMS

37 AUTOMATIC WARNING SYSTEM (AWS)

The original concept of AWS was to provide the driver with an audible and visual indication of whether a distant signal was at clear or caution. Should the driver fail to respond to a warning indication, an emergency brake application would be initiated.

Since the introduction of multi-aspect signalling, the majority of signals are fitted with AWS and provide a failsafe method to alert the driver to potentially dangerous conditions ahead such as a signal at caution or danger, some types of level crossing or a dramatic change in permissable speed.

ENABLING OR DISABLING AWS

The default state of the AWS system is disabled. To enable the system you must be seated in the driving seat and the train must be stationary. Use the **Signalling Systems Enabled** control (See Settings > Controls menu). Repeat to disable the system again.

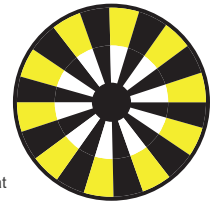
OTHER CONTROLS

AWS can also be enabled/disabled via in-cab switches. See Pages 10 - 17 and 19 - 28 for the location of the in-cab switches.

COMPONENTS OF AWS

AWS has its own indicator known as a sunflower (shown opposite) which displays either an on or off indication. The on indication simply advises that the driver has acknowledged an alert.

GENERAL NOTES



Unlike some European systems, AWS cannot differentiate between different types of cautionary or dangerous signal aspects nor can it monitor speed. The responsibility remains in the driver's hands how to respond to such alerts and obey appropriate signalling and signage at the line side.

AWS typically consists of a magnet placed in the four-foot and preceeds a signal by a distance of typically 200 yards (180 metres), which is then energised when the signal is at clear. A train-mounted device then reads the state of the magnet and reports the state accordingly in the cab.

AWS is a fail-safe system in that the system remains operational and provides a warning even when the system fails or is unpowered.

In modern trains, AWS is typically interconnected with the Train Protection & Warning System (TPWS) as it provides additional protection in the form of overspeed (going too fast) and overrun (passing a signal at danger) protection alongside the basic operation of AWS.

TRAIN PROTECTION & WARNING SYSTEM (TPWS)

The Train Protection & Warning System is used to stop the train by automatically initiating an emergency brake application if the train has:

- passed a signal at danger without permission to do so.
- approached a signal at danger too fast.
- approached a reduction in permissable speed too fast.
- approached buffer stops too fast.

ENABLING OR DISABLING TPWS

TPWS is tied to the basic operation of AWS and when AWS is disabled, so is TPWS. See Enabling or Disabling AWS on the previous page for further instructions.

GENERAL NOTES

TPWS typically consists of one or more types of loop placed in the four-foot at the following locations:

- on passenger lines, at all main running signals capable of showing a stop aspect, including some stop boards which protect crossing or converging train movements.
- at any signal capable of showing a stop aspect on a non-passenger line, where that signal that protects a crossing of, or convergence with, a passenger line.
- at stop signals where conflicting movements could take place in the overlap of the next stop signal ahead.
- on the approach to a buffer stop at the end of passenger platforms.
- on the approach to permissable speed restrictions, where the permissible speed on the approach is 60 mph or more and the reduction in permissible speed is at least one third.

The loops are typically of two types, TSS (Train Stop System) and OSS (Overspeed Sensor System), and generally are placed to factor a number of variables such as the braking performance of trains and gradient of the line, among others.

Alongside the track equipment, on-train equipment reads the status of the track equipment and takes action to stop the train if it deems appropriate to do so such as in the case of overspeed (going too fast) or if it is about to overrun (go past) a signal at danger.

The TSS is a single loop placed ahead of the signal it is protecting and is energised when a signal is at danger. Should a train pass the loop, the emergency brakes are triggered.

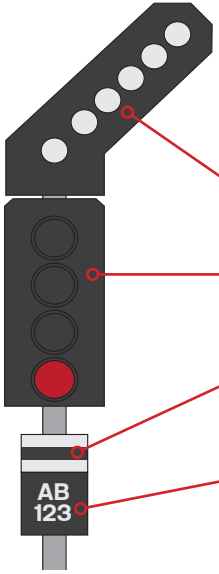
The OSS consists of two loops, an arming loop and a trigger loop. The arming loop starts a timer and if a train passes a trigger loop within a designated time period (which indicates a train is overspeeding) the emergency brakes are triggered.

EMERGENCY BRAKE RECOVERY

At some point in your Train Sim World driving career, you will encounter an emergency brake application. Whatever the reason, here are some simple steps to get you back on your way quickly:

1. You should always begin by understanding why you received an emergency brake application. Was it an intervention by an on-board safety system? Was it because you tripped a trackside mechanism? Or something else? Understanding the exact cause can significantly help you avoid similar situations in the future.
2. If you can hear an alarm, and you are still moving, you must wait for the train to come to a complete stop before you can acknowledge or cancel the alarm.
3. Acknowledge/Cancel the alarm by pressing the **Alerter Reset Control** (See Settings > Controls menu). All audible alarms should have been silenced. If you can still hear alarms, please refer to the appropriate section about on-board safety or signalling systems.
4. Once at a complete stop, and all alarms have been acknowledged or cancelled, you should always 'reset' your driving controls. Resetting simply means to restore all the driving controls to their default position, neither applying power or braking (except where brake needs to be applied to prevent you from free-rolling) and the direction control or Reverser is set to its neutral or off state. In some instances, you may be required to move the brake handle to the Emergency position before the brakes can be released.
5. Once all the driving controls have been reset, move the Reverser to Forward.
6. Move the brake handle to the release position.
7. Move the throttle lever to a low throttle position to begin applying power.
8. Once the brakes have fully released, the train should begin to move.

7 BRITISH RAILWAY SIGNALLING GUIDE



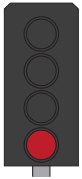
British colour light railway signals consist of one or more physical components or modules that form the basis of advising the driver on the state of the route ahead. The components are, from top to bottom:

Junction Indicator or Route Indicator typically mounted above the main aspect head.

Main Aspect Head (the example shown is a four-aspect type) which provides a visual representation of the state of the route ahead.

Signal Type Identifying plate advises what type of signal this is (the example shown is an automatic signal).

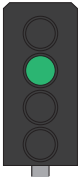
Signal Identification Plate advises the area this signal is situated in and its corresponding identification number.



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

Advanced Caution
Proceed into the next block. Expect the next signal to be at Caution.

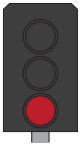
Caution
Proceed into the next block. Expect the next signal to be at Stop.



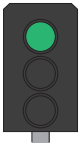
Clear
Proceed into the next block.

The examples above show the appropriate aspects for four-aspect block signalling. The Advanced Caution aspect is used to enable greater braking distance for trains travelling at high speeds or that have heavy loads, and even in situations such as on steep downhill grades that is likely to require greater distances to stop.

COLOUR LIGHT OVERVIEW



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



Clear
Proceed into the next block.

Caution
Proceed into the next block. Expect the next signal to be at Stop.

For three-aspect signalling, these signals cannot display the Advanced Caution aspect. The meaning of each aspect is identical to those of four aspect signals.

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

Clear
Proceed into the next block.

DISTANT SIGNALS

Caution
Proceed into the next block. Expect the next signal to be at Stop.

Clear
Proceed into the next block.

LIMITED ASPECT

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

Caution
Proceed into the next block. Expect the next signal to be at Stop.

For two-aspect signalling, these can only display the Clear and Stop aspect. However, care should be taken with two aspect signals as there can also be limited aspect and distant variants as shown above.

Distant signals are explained further along in this guide. However, Limited Aspect signals are those that are incapable of displaying a Clear aspect and are therefore limited to ‘degraded’ aspects. Degraded essentially means - if Clear is the best possible aspect you can receive, then the aspect below that is Caution, which is worse than Clear and Stop is worse than Caution. These are called degraded aspects because each one degrades or slows the movements of trains.

COLOUR LIGHT OPERATING SEQUENCE

The sequence of displayed aspects runs from left to right as shown in the examples below:

FOUR ASPECT SIGNALLING

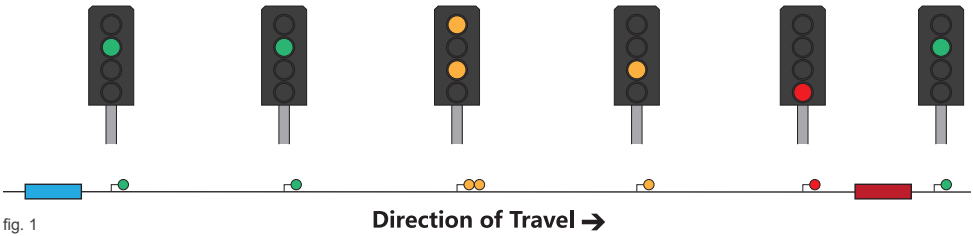


fig. 1

THREE ASPECT SIGNALLING

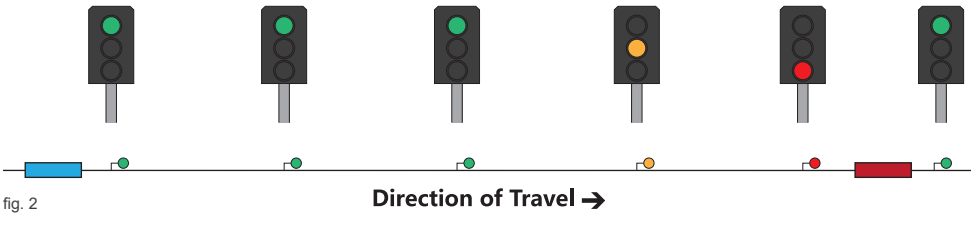


fig. 2

TWO ASPECT SIGNALLING

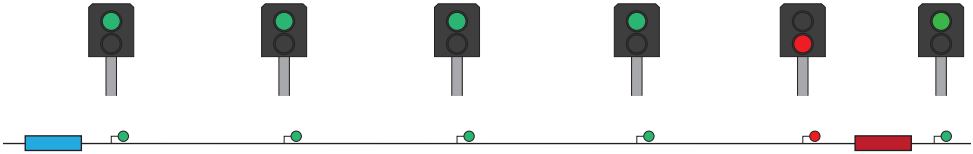


fig. 3

In these diagrams, if you are the blue train, the five signals spaced between you and the red train would follow the sequence as shown in these examples. 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 should provide you with enough distance 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 for braking 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 and the safer it is.

For two aspect signalling, you can see that there is very little braking distance. In fact, you would be unaware you were following another train until you were in the block immediately behind it. Two aspect signalling is not commonly used on main lines and is usually used on slower branch lines with less traffic.

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. It is also used to increase overall capacity as the more protection that is provided, the more trains can run on the same line.

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.

Finally, for limited aspect signals, you would normally find these when on approach to terminus stations where the aspect is limited to Caution or stop to add additional protection for trains within the platforms.

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. You will typically find them at stations where visibility of the main signal is obstructed or impossible to read when stopped in a platform.

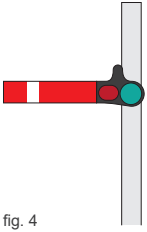


fig. 4

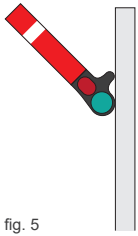


fig. 5

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 signals are those that drop downwards but the meaning between each type is identical. For a Clear aspect (fig. 5), you should regard any indication that is at a 45-degree position and, for a Stop aspect (fig. 4), 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 OR RELATED ASPECTS

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.

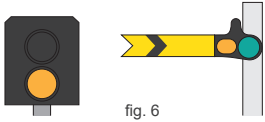


fig. 6

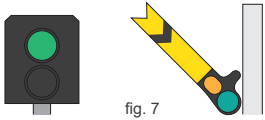


fig. 7

In the examples above, the top row of signals are displaying a Caution aspect. The bottom row are displaying a Clear aspect. These type of signals will show either a triangle or ‘R’ suffix on the identification plate as explained in the Identifying Signal Types section.

COMBINED MAIN ASPECT & DISTANT SIGNALS

When main aspect and distant signals are combined, they are effectively capable of displaying three aspects, as shown in the examples below. Combined semaphore signals are read from the top-most arm first and then the next lower arm, as explained below:

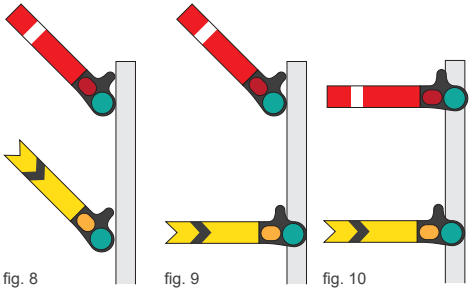


fig. 8 fig. 9 fig. 10

The signal on the left (fig. 8) both arms display a Clear aspect, so it is safe to proceed past this signal into the next block. This signal also advises that the next main signal is also displaying a Clear aspect, so it is also safe to proceed into that block too.

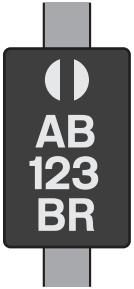
The centre signal's (fig. 9) top-most arm displays a Clear aspect but the lower arm advises that the following main aspect signal is displaying a stop aspect. You therefore need to regard this signal as Caution, you may pass this signal but be prepared to stop at the next signal.

The right signal's (fig. 10) top-most arm displays a Stop aspect. In this situation, the distant arm drops to caution because that is the lowest degraded aspect it can display. You should therefore not pass this signal.

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.

The alphanumeric characters **AB 123** are the signal's area code and signal identification number in that area.

The suffix characters further advises what type of signal is deployed. In this instance, the letters BR mean Banner Repeater.

Here are some other types of identification plates that are commonly used:

Signals that carry no type identification are called Controlled Signals (fig. 11). This means the signal is directly controlled by a signaller or controller.

The horizontal black band on a white background 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 or set to automatic operation if required.

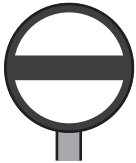
Slightly different to the three-aspect Banner Repeater shown in the previous example, the solid circle and “BR” suffix signifies this is a two-aspect Banner Repeater.

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.

53 BANNER REPEATERS & POSITION LIGHTS

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.



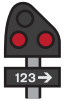
The horizontal band denotes the next main signal is displaying a stop aspect. You should be prepared to stop at the next signal.

The diagonal band denotes the next main signal is displaying a proceed aspect. Note that a proceed aspect can either be Clear, Advanced Caution or Caution. Most banner repeater signals can only display two aspects.

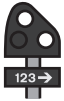
The diagonal band on a green background denotes the next main signal is displaying a Clear aspect. Note the distinction between Proceed and Clear. You will only find this on three aspect banner repeaters.

Position lights are subsidiary signals that grant on-sight movement authority to trains when a main aspect can't be provided, such as in sidings or a yard.

This signal means stop. There may be an obstruction ahead and you should not proceed beyond this signal without permission to do so.



This signal also means stop. If you are shunting, you should not proceed beyond this signal as this is the outermost shunt limit.

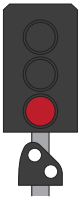


Proceed on sight at caution toward the next train, signal or buffer stop, and be prepared to stop short of any obstruction.

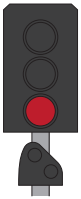
This signal also means proceed on sight at caution.

This signal means stop.

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 (previous page). 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.

Alongside signals, there are some important signs to be aware of. Here are some of the examples you will find in the route:

Maximum Permitted Speed

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

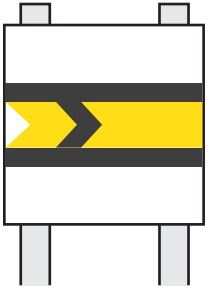
The “Morpeth Board” advises the driver that the maximum permitted speed will decrease ahead. You should begin to slow to match this new speed before you reach the speed restriction ahead.

Whistle & Coasting 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.

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.

Fixed Distant Board



The Fixed Distant Board replaces the role of a controllable distant signal and essentially is regarded as a Caution aspect. This is therefore advising you that you may pass this board but the next signal will be at Danger. These boards are typically used on lightly-used routes and reduces the overall cost of signalling.

Fixed Stop Board

The Fixed Stop Board replaces the role of a controllable stop signal and essentially is regarded as a Stop aspect. You should stop at the board and then carry out the instructions indicated on the board before proceeding. In Train Sim World, the instructions are typically not simulated so, you may proceed beyond the board without carrying out the instructions advised.

8 GENERAL INFORMATION

DOVETAIL LIVE

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**

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 likeminded 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**

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 **https://support.steampowered.com**. 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 change the language of Train Sim World 2?

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.freshdesk.com**

ABOUT RIVET GAMES

Rivet Games is a team of passionate and talented artists and developers based in Stirling, Scotland. Building on years of prior experience of developing the highest quality routes and models for Train Simulator and Train Sim World, the team have a passion for ensuring everything they do is accurate, built to the highest possible standards, and above all, is fun and enjoyable.

For more information about Rivet Games and to find out more about how they work, please follow them on social media:

www.rivet-games.com
youtube.com/rivetgames
instagram.com/rivetgames
twitter.com/rivetgames
facebook.com/rivetgame
forums.rivet-games.com

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www.rivet-games.com