# Class 37 Locomotive Volume 1

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# How to Install

1) Locate where you have downloaded this pack and unzip it. Information on how to do this can be found *here*.
2) Go to the location where you have extracted the files from the .zip file.
3) Now find the .exe file called 'Class 37 Locomotive Pack Vol 1'. Double-click this file.
4) Follow the steps and by the end of the process, the main part of this pack will have installed.
5) If you intend to use any of the included scenarios, make sure you have the freely available extra stock pack and relevant payware add-on packs listed on the product page installed so the scenarios function as intended.
6) To ensure the cab environment sounds as intended in this pack, please make sure that 'EFX' is ticked within your in-game Audio settings.

# Technical Information

| | |
|---|---|
| **Manufacturer** | English Electric at Vulcan Foundry and Robert Stephenson and Hawthorns of Darlington |
| **Years built** | 1960 - 1965 |
| **Number built** | 309 |
| **Engine** | English Electric 12CSVT |
| **Maximum speed** | 80 mph (130 km/h) |
| **Length** | 61 ft 6 in (18.75 m) |
| **Height** | 12 ft 9 in (3.89 m) |
| **Width** | 8 ft 10.5 in (2.71 m) |
| **Weight** | 106 t - 120 t |

# Liveries

BR Large Logo:

without orange cant rail - *BR LL*

with orange cant rail - *BR LL 2*

BR Railfreight Red Stripe - *BR RF Red*

BR Railfreight - *BR RF*

BR Trainload

InterCity Mainline - *IC*

InterCity Swallow - *ICS*

Regional Railways - *RR*

Transrail

Mainline Grey

Mainline

Loadhaul

EW&S/EWS - *EWS*

Royal Scotsman - *RS*

West Coast Railway Company - *WCRC*

Direct Rail Services 1 - *DRS1*

Direct Rail Services 2 - *DRS2*

Direct Rail Services 3 - *DRS3*

Direct Rail Services (37422) - *DRS (37422)*

DB Schenker - *DBS*

Colas Rail - *Colas*

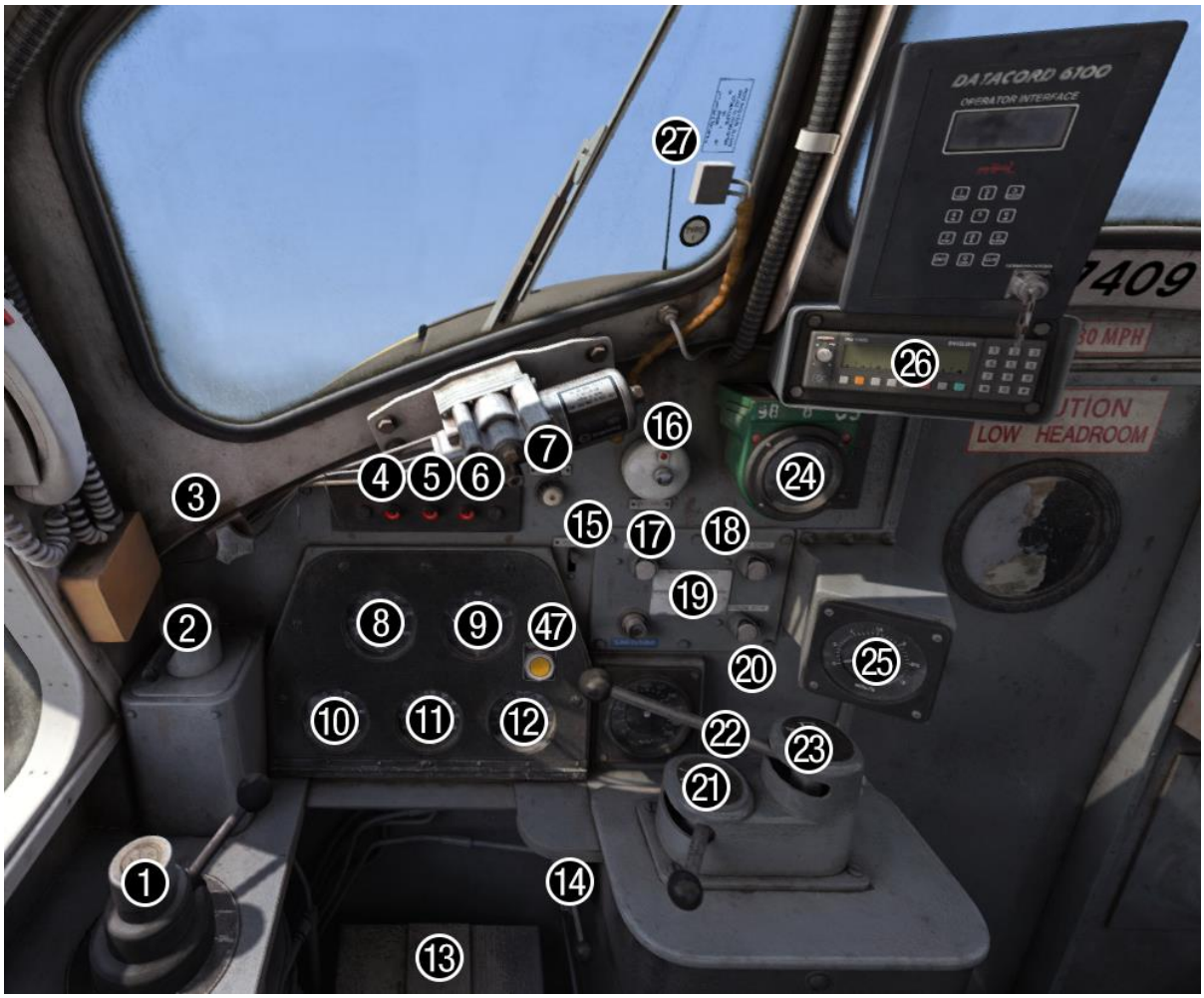
Europhoenix (Rail Operations Group) - *EP (ROG)*

with 'Dellner' coupling - *EP (ROG) (Del)*

with 'Tightlock' coupling - *EP (ROG) (Tight)*

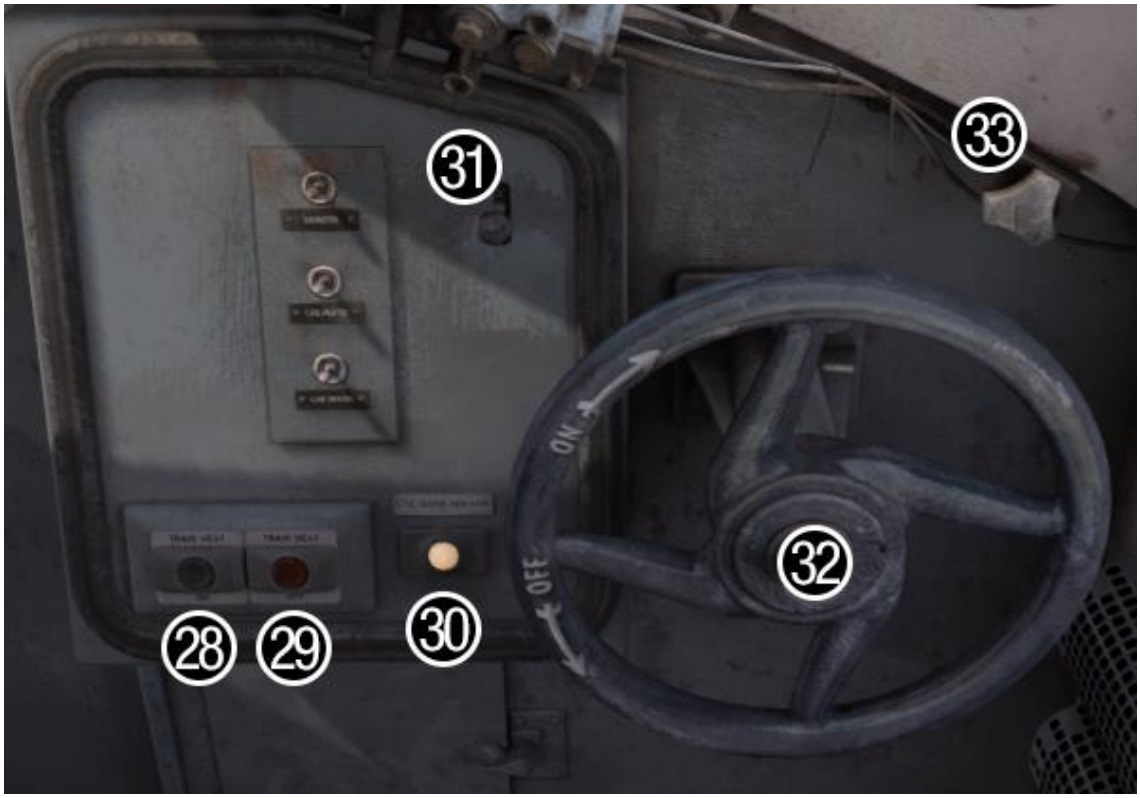
# Cab Guide

## Driver's Side




1 - Train brake handle
2 - Loco brake handle
3 - Windscreen wiper switch (left)
4 - Engine stopped indicator light
5 - Wheelslip indicator light
6 - Fault indicator light
7 - Instrument light dimmer
8 - Speedometer
9 - Ammeter
10 - Brake pipe pressure gauge
11 - Vacuum brake pressure gauge
12 - Brake cylinder pressure gauge
13 - Deadman's pedal
14 - Horn
15 - Headlight switch
16 - AWS reset button
17 - Sander button
18 - Engine start button
19 - Slow Speed Control switch
20 - Engine stop button
21 - Reverser
22 - Master key
23 - Power handle
24 - AWS sunflower
25 - Slow Speed Control speedometer
26 - NRN radio or GSM-R
27 - Radio antenna
47 - Train length button

## Second Man's Side

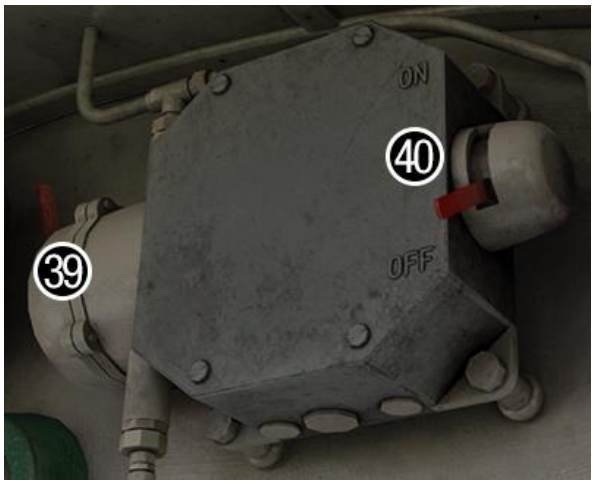


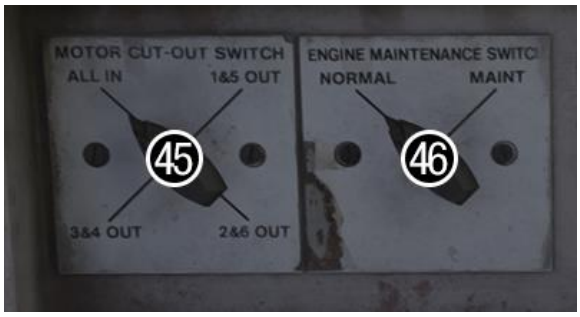

28 - Train heat on button
29 - Train heat off button
30 - Train heat status indicator
31 - Horn
32 - Handbrake
33 - Windscreen wiper switch (right)

## Driver's Side Ceiling

34 - Route indicator lights switch
35 - Tail light (A-side) switch
36 - Tail light (B-side) switch
37 - Instrument light switch
38 - Cab light switch

## Back Wall



39 - AWS isolation switch
40 - Change end switch
41 - Battery ammeter (no.2 end only)
42 - Fire alarm test button (no.2 end only)
43 - Brake selector switch (no.2 end only)
44 - Compressor changeover switch (no.2 end only)
45 - Motor cut-out switch (no.2 end only)
46 - Engine maintenance switch (no.2 end only)

# Keyboard Controls

Non-standard keyboard controls are listed below:

| | |
|---|---|
| Ctrl+N - | AWS change end switch ON/OFF |
| Ctrl+A - | AWS isolation switch |
| Shift+Ctrl+B - | Brake type TREAD/DISC |
| L - | Cab light switch ON/OFF |
| Shift+C - | Clag Factor INCREASE |
| Ctrl+C - | Clag Factor DECREASE |
| E - | Deadman's pedal (DVD reset) |
| Y - | Driver reminder appliance (DRA) ON/OFF |
| Ctrl+D - | Driver vigilance device (DVD) ON/OFF |
| Z - | Engine start button |
| Ctrl+Z - | Engine stop button |
| F - | Fire alarm test button |
| H - | Headlight switch ON/OFF |
| Space - | Horn (low tone) |
| B - | Horn (high tone) |
| I - | Instrument lights switch |
| Shift+W - | Master key IN/OUT |
| Shift+M - | Motor Factor INCREASE |
| Ctrl+M - | Motor Factor DECREASE |
| J - | Route indicator lights switch |
| K - | Tail light (A-side) switch ON/OFF |
| Ctrl+K - | Tail light (B-side) switch ON/OFF |
| R - | Train brake handle shutdown pin IN/OUT |
| C - | Train length button |
| Ctrl+Numpad Enter - | Visual aids ON/OFF |
| V - | Windscreen wiper switch LEFT |
| Shift+V - | Windscreen wiper switch RIGHT |

# Features

## Detailed Variants

Out of the 129 locomotives refurbished, many still kept distinctive features from when they were first built, such as lamp brackets or their centre headcode box. As well as that, subsequent modifications have been carried out throughout the years. We have researched to the best of our ability which variations apply to which locomotive and this is automatically applied in-game depending on locomotive number. Please find a comprehensive list below of the variations included.

### *External*

**Centre headcode box**

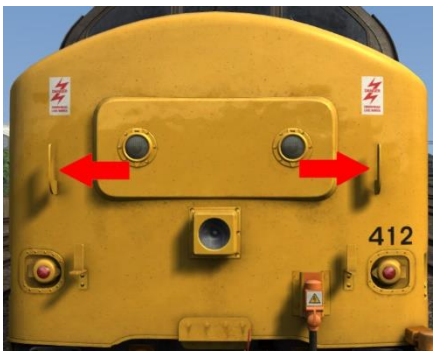
**Centre headcode box (black)**

**Centre headcode box (LED markers)**

**Flat front with door outline**

**Flat front (LED markers)**

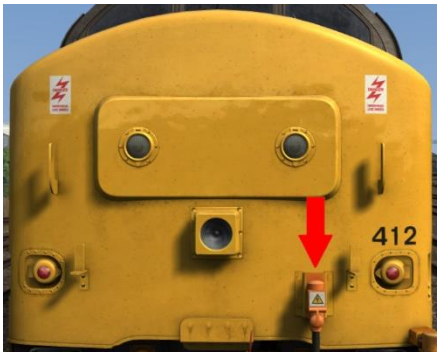
**Western region lamp brackets**



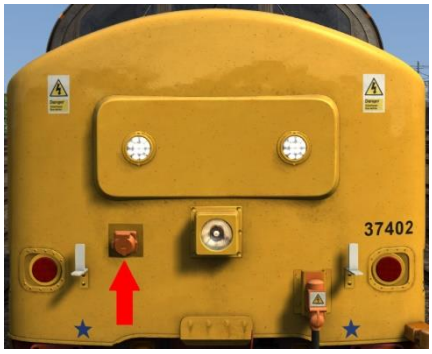
**Top lamp bracket**

**Headboard clips**

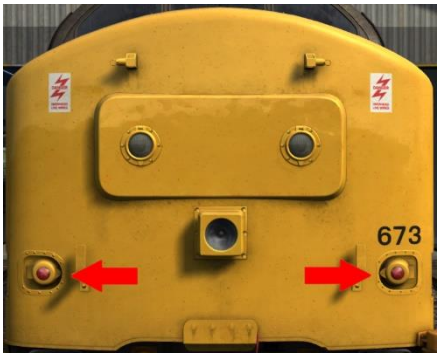
**Electric Train Heating (ETH)**




**Multiple working socket**




**Original tail lights**




**LED tail lights**

**Outer snowploughs**

**Three-piece snowplough**

**Oval buffers**

**Square buffers**

**Standard windows**

**Strengthened centre window**

**Strengthened windows**

**Roof horns**

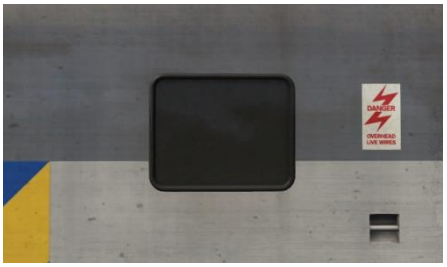
**Nose horns**

**Bonnet horns**

**Fabricated bogies**

**Cast (CP7) bogies**

**Engine room side window**




**Sandite port**

### *Internal*

Two core variants are supplied; one with the NRN radio and another with GSM-R.

On top of that, we have provided coloured variations which are applied on a per livery basis. Class 37 cabs have gone through many variations so these are by no means meant to be 100% realistic for the specific locomotive represented but are indicative of trends over the years that we found in our research.

Finally, there are some functions/visual elements of the cab which can be turned on/off via the locomotive number. Information on how to do that can be found in the 'Numbering' section later in this manual.

**Standard refurbished cab with NRN radio**

**Standard refurbished cab with GSM-R**

**Standard refurbished cab with NRN radio**
**(DB Schenker, EW&S, EWS & Royal Scotsman liveries)**

**Standard refurbished cab with NRN radio (DRS liveries)**

**Standard refurbished cab with GSM-R (DRS & modern BR Large Logo liveries)**

**Standard refurbished cab with NRN radio (West Coast Railway Company livery)**

**Standard refurbished cab with GSM-R (West Coast Railway Company livery)**

## Slow speed control switch and speedometer

## Datacord unit

**Train length button**

**Sandite button between sander & engine start button**

**Radio Electronic Token Block (RETB) unit (non-functioning)**

**Electric Train Heating (ETH) status buttons/indicator (37/4s only)**

## Driver Reminder Appliance (DRA) (DRS with GSM-R cab variant only)

## Traction Physics

Great care has been taken to simulate the traction physics of this locomotive. When recording the sounds used in this pack, we also recorded the speedometer and ammeter and this information has been translated accordingly into Train Simulator. In the past, locomotives of this type have been plagued by a limitation where at speed, the amount of power being applied was not proportional to the power handle and as a result, you could happily maintain a high speed with not much power applied. Using our custom scripting, we bypass this limitation and ensure performance matches the real thing as closely as possible.

On top of this, field diverts have been implemented at the correct speeds of 20 mph & 35 mph. Field diverts allow the locomotive to maximise its acceleration as it gains speed. When these take place, the turbocharger briefly rises before falling back to normal. This is in response to the load being increased on the engine.

Finally, realistic delay times between the power handle being moved and power being applied/removed are implemented. For example, when moving away from 'Off', it takes around 2 seconds for power to be applied, but after that, the response time is very quick. When removing power, there is around a 1 second delay, unless you move to 'Off', which removes power instantly.

# Brakes

## *Westinghouse Brake Handle*

This locomotive is fitted with a dual-brake Westinghouse brake handle which has the following positions:

**Release** (0%) - This is a sprung load position and when using vacuum brakes, speeds up the exhausters to provide a quicker brake release.

**Running** (20%) - Brakes are fully released and the brake pipe pressure will read 5 bar.

**1st Application** (40%) - Minimum possible brake force. This equates to around 25% brake force. The brake pipe pressure will read 66.5 psi.

**Service** (40% to 68%) - Brake pipe pressure can be changed as desired between 48.5 & 66.5 psi.

**Full Service** (68%) - Maximum possible brake force. The brake pipe pressure will read 48.5.

**Emergency** (82%) - Maximum possible brake force applied quicker compared to 'Full Service'. The brake pipe pressure will read 0 psi.

**Shutdown** (100%) - Only accessible by raising the pin (**R** key), the brake handle must be placed in this position when shutting down the cab.

## *Brake Selector Switch*

The brake selector switch on the back wall of the no.2 end cab allows you to choose either air or vacuum brake mode. On top of that, either passenger or goods timings can be selected. Goods timings are slower than passenger and are used when hauling certain wagons to avoid too much pressure on the couplings.

## *Tread Brake Simulation*

By default in Train Simulator, braking performance is constant throughout the speed range so a full brake application at 70mph will have the same level of retardation than at 10mph. This is a fairly good representation of how disc brakes work but for stock with tread brakes, this is not so realistic.

As a result, this pack has scripted brake force to simulate the relatively poor performance at high speed, and the 'bite' at lower speeds where performance increases quite significantly. These tread brake physics are turned on by default as

most rolling stock these locomotives have hauled is fitted with this type of brake. If you are hauling disc braked stock such as Mk3 coaches, you can change the brake type by pressing **Shift+Ctrl+B**.

Also, please note that the rolling stock you are hauling must be especially adapted to work properly with our tread brake simulation. If it is not, the correct physics will still occur on the locomotive, and to some degree on the stock behind, except for the extra 'bite' at low speed.

## Adhesion

Adhesion between a train's wheels and the rails plays a big part in allowing a train to accelerate or brake. Too little of it and the train will slip or slide. There are a myriad of factors that control the level of adhesion and we have attempted to simulate the most important of these to give a varied and realistic driving experience:

### *Season*

Adhesion is generally good in dry conditions during summer and spring. Slightly decreased adhesion during winter to take account of the increased amount of moisture and possible ice on the rails due to cooler temperatures. Much decreased adhesion during autumn due to leaf mulch.

### *Weather*

Adhesion decreases in wet weather, especially so when rain first starts falling before it has had a chance to clean the railhead. If rain is light, it will take longer for the railhead to be cleaned whereas heavy rain will clean it quicker, resulting in adhesion recovering sooner.

When using the drizzle weather pattern in our Sky & Weather Enhancement Pack, adhesion is particularly poor as the rain hasn't enough force to clean the railhead but still makes it sufficiently wet to worsen adhesion.

### *Time of Day*

Adhesion will decrease somewhat after dusk as the air cools and dew is more likely to form on the railhead. This persists throughout the night until around an hour after sunrise when higher temperatures or the sun dry it out. In our simulation, this factor is reduced during summer to account for warmer temperatures, which on average result in less dew.

### *Tunnels*

When adhesion is poor due to external factors such as weather or season, adhesion will generally improve upon entering a tunnel, which is not as susceptible to these factors. When adhesion is good during dry weather and outside of autumn, adhesion may decrease a little upon entering a tunnel due to their damp nature.

### *Wheelslip Protection (WSP)*

During refurbishment in the 1980s, wheelslip protection was fitted to these locomotives. This aids the driver during times of poor adhesion.

When wheelslip is encountered during acceleration, a two-stage process takes place:

1) Power is automatically reduced and the wheelslip indicator light illuminates in the cab.
2) Once the wheelslip stops, power is reapplied to the selected power handle setting and the wheelslip indication light extinguishes. If wheelslip reoccurs, the process starts again.

As a driver, you must assess which power setting is most suitable for the conditions and balance the occurrence of wheelslip with the maximum possible rate of acceleration.

## Cooling Fan Simulation

The distinctive sound and function of the cooling fan has been implemented. It is thermostat operated and activates when the engine reaches a certain temperature.

How quickly the engine's temperature rises and how efficient the fan is at cooling it, primarily depends on the season but also on how hard the engine is being driven. For example, in the summer and with a lot of high speed running, you can expect it to be active a lot of the time. In contrast, during cooler months and with low speed running, it won't be active as much, especially in winter.

On top of this, to reflect the variable nature of each locomotive and its efficiency at cooling, each locomotive is given a random efficiency rating at the start of a scenario, just to provide even more variation.

Finally, the fan is fully animated and visible from the roof of the locomotive.

## Slow Speed Control (SSC)

During refurbishment, some locomotives were fitted with slow speed control to allow movement at a controlled low speed for ballast dropping or 'Merry-Go-Round' (MGR) loading/unloading. Research material is scarce for exactly which locomotives received this equipment and at what time so we have enabled it on all locomotives except for modern liveries where we know it has definitely been removed. Please see below for instructions on how to use it:

1) With the train at a stand and the reverser in 'Engine Only', select the required speed setting on the slow speed control switch. 'Speed 1' for 0.5 mph, 'Speed 2' for 1.0 mph or 'Speed 3' for 2.7 mph. The slow speed speedometer will now be active.
2) To move, move the reverser to 'Forward', release the brakes and move the power handle to 'On' (10%) notch.
3) The load regulator will now automatically regulate the power required to keep the locomotive at the selected speed. Any power handle movement beyond 'On' notch has no effect. If on a downhill gradient, you may need to apply the brake to regulate speed.
4) To deactivate, come to a stand, move the reverser to 'Engine Only' and move the slow speed control switch to 'Off'.

## Dynamic Exhaust Effects

Dynamic exhaust effects mean that the exhaust reacts to what the engine is doing. For example, when on full power, the engine will produce more exhaust than it would when idling. Also, when revving up, exhaust thickens before thinning out when rpm settles. Equally, when revving down, exhaust thins. On top of that, when starting up, exhaust rises in sync with the sound of the engine revving up. Finally, in reality, the smokiness of each locomotive varies depending on how well maintained it is, so to represent this in the simulator, a random 'clag' factor is allocated to each locomotive which ranges from 1 to 10; 1 being the cleanest and 10 being the dirtiest. This can also be controlled on the player locomotive by using **Shift+C** & **Ctrl+C**.

## Variable Power & Brake Performance

Any train driver will tell you that especially on older locomotives, braking and power performance can vary quite noticeably from locomotive to locomotive, despite being within the same class. We have simulated this variance by randomly allocating a 'Brake Factor' & 'Power Factor' every time you drive a locomotive in the simulator. This factor can reduce or increase performance by a maximum of 10% either way. There is no way of finding out what factor your locomotive has been allocated except for assessing its 'feel' when powering or braking; just like a real driver!

## Variable Traction Motor Volume

Much like described above in relation to exhaust, locomotives tend to vary in how loud their traction motors are. To simulate this, we have implemented a random 'motor factor' to each locomotive which ranges from 1 to 6; 1 being barely audible and 6 being very prominent. This can also be controlled on the player locomotive by using **Shift+M** and **Ctrl+M**.

## Variable Turbo Volume

Yet another variation between locomotives is the volume of their turbocharger. To simulate this, we have implemented a random 'turbo factor' to each locomotive which ranges from 1 to 6; 1 being half the volume of 6. This can also be controlled on the player locomotive by using **Shift+T** and **Ctrl+T**.

## Horn Variants

Six horn variations are provided under the guise of 'Horn Factor'. Upon loading a scenario, your locomotive will be randomly allocated one of these horns. If you wish to change it, press **Shift+H** or **Ctrl+H**.

Please see below for a list of where we sourced each horn variant:

**1** & **2** - 37674
**3** & **4** - 37714
**5** - 37116
**6** - 37901

## National Radio Network (NRN)

A simple representation of the NRN radio is simulated and is operational on pre-GSM-R liveries. To set the NRN zone, please follow the instructions below:

1) Turn the radio on by pressing the button below the volume control on the left-hand side of the console.
2) Enter the three-digit zone number by using the numpad.
3) To confirm this, press the green button below the British Rail arrows symbol. The NRN is now successfully set up.
4) If you see an NRN zone change sign (pictured below), you must change the zone number manually. Do this by simply entering the new three-digit zone number on top of the old one.

### *NRN zone placement in scenarios*

NRN zones cover very large areas so it is entirely possible you will not change areas during a scenario but should you wish to do so, a sign is included in this pack and must be placed by the scenario author.

This sign can be found by selecting 'AP/Common' in the 'Object Set Filter' and browsing for 'AP NRN Sign' in the left-hand 'Track Infrastructure' fly-out. To place it, simply place the marker on the track your train will be passing through, double click the sign, and input the three-digit area number in the right-hand fly-out. Please note that this must be three-digits so zone 65 would be '065'.

# Global System for Mobile Communication-Railway (GSM-R)

Beginning in 2013 and completed by 2016, Global System for Mobile Communication - Railway, more commonly known as GSM-R, replaced the existing National Radio Network (NRN) & Cab Secure Radio (CSR) systems. This communication system and its accompanying unit has been simulated to the best of our ability within the simulator. Please see below for how to register & deregister your train:

## *Registering*

1) Move the reverser away from 'Off' or hold down either the 'Registration' or 'Accept' button for 5 seconds. The GSM-R unit will begin a boot up sequence.
2) When 'GSM-R GB' appears, the unit has successfully booted.
3) Press the 'Registration' button in the top right-hand corner.
4) Using the numerical keys, insert your 4-character train reporting number (headcode), followed by the signal number you are standing at in a 3-digit format. For example, signal WH84 would require you to enter '084'. If you wish to delete a character, press the 'x' button.
5) Press the '✓' button.
6) Registration will take a moment. Once it has completed, you will hear a double beep and the train reporting number will appear in the top right-hand corner of the display.

### *Deregistering - Method 1*

If you are closing down the driving desk, use this method.

1) Move the reverser to 'Off'.
2) Deregistration will automatically begin and you will be given the opportunity for a short moment to retain the registration by pressing the '✓' button. Simply do nothing if you would like to continue with the deregistration.
3) Deregistration will take a moment. Once it has completed, the train reporting number will no longer be displayed.

### *Deregistering - Method 2*

If you wish to keep the driving desk active after deregistering, use this method.

1) Press the 'Registration' button in the top right-hand corner.
2) A prompt will appear on the unit saying 'Confirm deregister?'.
3) Press the '✓' button.
4) Deregistration will take a moment. Once it has completed, the train reporting number will no longer be displayed.

## Train Length Button

If the cab you are in has a 'Datacord' unit, it will also feature a train length button between the ammeter and brake cylinder pressure gauge. To use it, press the button once and you will hear a short beep. As soon as the end of your train passes the point at which you pressed the button, you will hear a long beep. This is mostly used to assist drivers in knowing when to accelerate after passing a speed limit sign.

## Trailing Mode

To simulate this locomotive shut down in a consist or with the engine idling but not providing any power, we have provided a 'Trailing' version which can be found in the scenario editor with a '(Trail)' suffix.

By default, the engine will be idling but to have it shut down, add **;Dead=1** to the locomotive number.

## Cold Start

'Cold Start' means the locomotive is in the following state when it loads:

- Main reservoir, brake cylinder pressures are 0.
- Engine is stopped
- Handbrake is applied

To prepare a locomotive from cold, please follow the instructions below:

**1)** Move to the no.2 end cab, which is the opposite end to the cooling fan.

**2)** Turn the master key in by pressing **Shift+W**.

**3)** Move the reverser to 'Engine Only' by pressing **W**. This will start the engine priming pump. Leave this running for 60 seconds.

**4)** Press and hold the engine start button until the engine fires and the engine stopped indicator light extinguishes. Look out for the copious amounts of exhaust and noise as the engine warms up!

**5)** Look at the battery ammeter on the back wall and check there is a positive charge.

**6)** Test the fire alarm by pressing the fire alarm test button on the back wall.

**7)** Lift the train brake handle brake pin by pressing **R** and at the same time, move the train brake handle to 'Full Service' (68%) by pressing **semi-colon**.

**8)** Now wait for the main reservoir to build to 80 psi.

**9)** Move the train brake handle to 'Running' (20%) and confirm the brakes are fully released.

**10)** Move the train brake handle to 'Full Service' (68%) and confirm the brakes are fully applied.

**11)** Release the handbrake by turning it in an anti-clockwise direction until it will turn no more.

After carrying out this procedure, your locomotive will be successfully prepared from cold.

## Bits and Bobs

This section is dedicated to aspects of this pack that don't warrant a dedicated section but are still of note:

- A comprehensive selection of 3D nameplates are included for the 37/4 sub-class.
- Both inside and out, the locomotive's body rolls subtly from side to side (torque roll) whilst starting up and revving up.
- From the cab, the radio antenna on the nose wobbles whilst revving up.
- Compressor changeover switch on the backwall in the no.2 cab changes the compressor used when in vacuum mode. Not applicable for air mode as both compressors are then used.
- Motor cut-out switch on the backwall in the no.2 cab allows one of the three pairs of traction motors to be isolated, which results in reduced performance.
- Engine maintenance switch on the backwall in the no.2 cab allows the engine to be revved up without providing any amps. The reverser must be in 'Forward' or 'Reverse'.
- The backwalls of the no.1 & no.2 cabs are modelled differently to represent their differences.
- 1 second delay between train passing over AWS magnet and AWS warning sound occurring. The F3/F4 HUD will show the warning immediately so you must wait 1 second before trying to cancel it.
- The headlight only provides illumination before sunrise and after sunset. This is to avoid the unrealistic appearance of projected light in broad daylight.
- The compressor and cooling fan are audible from the no.1 cab and relay clicks/clunks are audible from the no.2 cab.
- Fire bell visibly vibrates when tested.
- As per reality, the speedometer needle wobbles when providing a reading.
- Opening cab doors and windows which are also visible from the outside.
- When driving in the summer or autumn, flies will periodically hit the windscreen and leave a splatter mark. They can be cleaned away by using the wipers.
- Snow clings to the bogies and grooves in the bodyside during the winter.

# Setting up the Driver's Cab

Please follow the steps below to set up the cab so you are ready to move:

1) Ensure the master key is turned in. If not, press **Shift+W**.
2) Ensure the reverser is in 'Engine Only'. If not, press **W** to do so.
3) Move the AWS change end switch to 'ON' by pressing **Ctrl+N**. You must ensure the AWS change end switch in the other cab is set to 'OFF'. If it's not, you will receive a warning message.
4) Lift the train brake handle brake pin by pressing **R** and at the same time, move the train brake handle to 'Full Service' (68%) by pressing **semi-colon**.
5) Turn off the tail lights by pressing **K** and **Ctrl+K**.
6) Turn on the route indicator (marker) lights by pressing **J**.
7) Turn on the headlight by pressing **H**.
8) If applicable, register the NRN or GSM-R.
9) If applicable, turn off the Driver Reminder Appliance (DRA) by pressing **Y**.

You should now be ready to move off. For information on this, please see below.

# Driving Guide

The following steps should allow you to drive in a realistic and safe manner:

1) Move the reverser to your desired direction of travel by pressing either **W** for 'Forward' or **S** for 'Reverse'.
2) Move the brake handle to 'Running' by pressing **semi-colon**.
3) As soon as possible, move the power handle to 'On' (10%) by pressing **A**.
4) As soon as you observe a reading on the ammeter, you may increase power as you see fit.
5) When powering down to 'Off' (0%), it is good practice to pause for a few seconds in 'On' (10%) notch to allow the ammeter to drop.
6) To brake the train, use any 'Service' setting on the train brake handle between '1st Application' (40%) & 'Full Service' (68%). To provide a smooth stop, it is recommended to be in '1st Application' as you come to a stop.

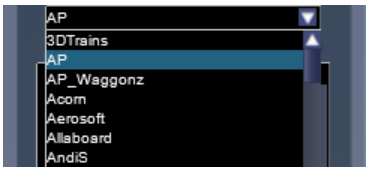
# How to Use in the Scenario Editor

### *How to place*

To place in the scenario editor, please follow the instructions below:

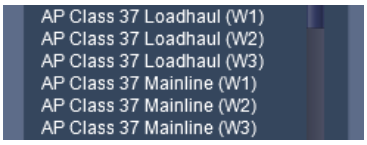
**1)** In the left-hand rolling stock fly-out, click the object set filter which looks like a blue box with an orange arrow to the right of it.

**2)** Go to the right-hand fly-out which should have appeared. Select 'AP' from the drop-down menu.




**3)** Tick the second & third box beside 'Class37Pack01'.

**4)** The liveries should now be visible in the left hand rolling stock fly-out.




## Numbering

When placing in the scenario editor, you are able to control a number of features via the number of the locomotive.

### *Logos*

You can add logos/decals by adding **;L=x** to the locomotive number. Please see what to put as 'x' to receive your desired result on each livery:

- BR Large Logo: **1** = Scottie dog. **2** = Highland Rail. **3** = Welsh dragon.
- BR Railfreight: **1** = Thornaby kingfisher on engine room door.
  **2** = Thornaby kingfisher above number.
- BR Trainload: **1** = Coal. **2** = Construction. **3** = Metals. **4** = Petroleum.
  **5** = Railfreight Distribution.
- EWS: **1** = EW&S. **2** = EWS.
- Regional Railways: **1** = Regional Railways. **2** = ScotRail.
- Royal Scotsman: **1** = EWS with beasties. **2** = EWS without beasties.

Removing **;L=x** will remove the relevant logo/decal.

### *Numbers*

You can control the numbers shown on BR Railfreight livery by adding **;N=x** to the locomotive number:

- Large bodyside numbers. x = **1**
- Large & small bodyside numbers. x = **2**

### *Nameplates*

You can control the nameplate shown by adding **;NP=x** to the locomotive number. The simulator will automatically place the correct nameplate on the locomotive by looking at the number and livery.

- The first nameplate carried by a locomotive in its relevant livery. x = **1**
- The second nameplate carried by a locomotive in its relevant livery. x = **2**
- The third nameplate carried by a locomotive in its relevant livery. x = **3**

For example, for 37424 in BR Large Logo livery, **;NP=1** shows 'Glendarroch', **;NP=2** shows 'Isle of Mull' & **;NP=3** shows 'Avro Vulcan XH558'. Most locomotives will have only carried one nameplate when carrying a particular livery so most of the time, you will only need to use **;NP=1.**

Removing **;NP=x** will remove any nameplates.

### *Plaques*

You can control plaques shown by adding **;DP=x** to the locomotive number:

**BR Trainload, InterCity Mainline, Mainline Grey & Transrail liveries**

- Ripple Lane depot plaque. x =**1**
- Tinsley depot plaque. x =**2**
- Immingham depot plaque. x =**3**
- St. Blazey depot plaque. x =**4**
- Cardiff Canton depot plaque. x =**5**
- Eastfield depot plaque. x =**6**
- Motherwell depot plaque. x =**7**
- Buxton depot plaque. x =**8**
- Thornaby depot plaque. x =**9**
- Stewarts Lane depot plaque. x =**10**

In addition to these, the British Rail plaque can be shown by adding **;BR=1** to the locomotive number.

**Royal Scotsman livery**

- Royal Scotsman plaque. x = **11**
- Royal Scotsman & gold EWS 'beasties' plaque. x = **13**

**EWS livery**

- Gold EWS 'beasties' plaque. x =**12**

## *Overhead line warning stickers*

**BR Trainload, InterCity Swallow, Loadhaul, Mainline, Mainline Grey, Regional Railways & Transrail liveries only**

By default, the older style overhead line warning stickers are applied. To change them to the newer style as seen from around 1998 onwards, add **;OHL=1** to the locomotive number.

## *Brake type physics*

To apply disc brake physics, add **;BT=D** to the locomotive number.

## *Cold start*

To activate cold start mode on a player train, add **;Cold=1** to the locomotive number.

## *NRN*

To have the NRN radio already active when a scenario starts, add **;NRN=x** to the locomotive number. x = 3-digit NRN zone number.

## *Tail lamp*

To add a tail lamp to the no. 1 end, add **;TL=1** to the locomotive number.
To add a tail lamp to the no. 2 end, add **;TL=2** to the locomotive number.

## *Variations configuration*

All locomotive numbers have a **;Config=x** entry and this must be left alone to ensure the correct variations are applied to that numbered locomotive. If desired though, some of these variations can be overridden by adding further entries to the locomotive number. Please see below for more information:

**Snowploughs**

Add **;plough=x** to the locomotive number:

- No snowploughs. x = **none**

- Outer snowploughs. x = **outer**
- 3-piece snowplough. x = **full**

**Black centre headcode box**

Add **;no1front=bch;no2front=bch** to the locomotive number.

**Buffers**

Add **;buffers=x** to the locomotive number:

- Oval buffers. x = **oval**
- Square buffers. x = **square**

**Horns**

Add **;horn=x** to the locomotive number:

- Bonnet horns. x = **nose**

**Bogies**

To change the bogie type from cast to fabricated or vice versa. Add **;bogie=x** to the locomotive number.

- Fabricated. x = **other**
- Cast (CP7). x = **cp7**

**Slow speed control (SSC) & driver reminder appliance (DRA)**

To add or remove slow speed control functionality, add **;ssc=x** to the locomotive number. Please note that for liveries using the DRS cab variant with GSM-R, this controls whether the locomotive has a DRA and slow speed control speedometer blanking plate.

- Add. x = **y**
- Remove. x = **n**

**Datacord/train length button/RETB**

To add the RETB unit, or add/remove the datacord unit and its associated train length button in the cab, add **;datacord=x** to the locomotive number.

- Add datacord/train length button. x = **y**
- Remove datacord/train length button. x = **n**

- Add RETB unit. Remove datacord (except GSM-R cabs)/train length. x = **retb**

**Sandite**

By default in the simulator, no locomotives have sandite equipment fitted. To add it, add **;sandite=y** to the locomotive number.

A red sandite button will now be visible in the cab between the sander and engine stop buttons. To lay sandite, press the button and it will illuminate. To stop laying sandite, press the button again and it will extinguish. The port where sandite is loaded will now also be visible on one side of the locomotive.

Please note that this option is only available in cabs *not* fitted with GSM-R.

### *Example locomotive number*

**37667;Config=Early90s;BR=1;DP=5;plough=full**

Key:
**37667** - Locomotive number
**;BR=1** - British Rail plaque
**;DP=5** = Cardiff Canton depot plaque
**;plough=full** - 3-piece snowplough

# Scenarios

**APC37: 1D77 16:21 Crewe - Bangor**
Route = North Wales Coast Line - Crewe to Holyhead
Track covered = Crewe - Bangor
Traction = Loadhaul 37710
Year = 1999
Duration = 1 hour 35 minutes

**APC37: 1K67 16:00 Holyhead - Stafford**
Route = North Wales Coast Line - Crewe to Holyhead
Track covered = Holyhead - Crewe
Traction = BR Trainload (Petroleum) 37418
Year = 1993
Duration = 2 hours 10 minutes

**APC37: 5K53 05:55 Crewe C.S - Chester**
Route = North Wales Coast Line - Crewe to Holyhead
Track covered = Crewe - Chester
Traction = Regional Railways 37429
Year = 1999
Duration = 40 minutes

**APC37: 1B96 09:11 Rhymney - Fishguard Harbour**
Route = South Wales Main Line
Track covered = Cardiff Queen Street - Swansea
Traction = EW&S 37419
Year = 2004
Duration = 1 hour 5 minutes

**APC37: 6B86 08:35 Llanwern - Port Talbot**
Route = South Wales Main Line
Track covered = Llanwern - Margam Yard
Traction = BR Trainload (Coal) 37702
Year = 1992
Duration = 1 hour 5 minutes

**APC37: 6C20 13:50 Newport A.D.J. - St. Blazey**
Route = South Wales Main Line
Track covered = Newport A.D.J. - Bristol Temple Meads
Traction = Transrail 37412 & 37672
Year = 1997
Duration = 45 minutes

# Credits

**Master Key Simulations** - Modelling & texturing
**Nicolas Schichan** - Scripting
**Strathspey Railway & Wensleydale Railway (37674) & Great Central Railway (37714)** - Assistance in recording sounds