Class 222

Enhancement Pack

AP

Contents

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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 222 Enhancement Pack'. 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.

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Liveries

Italics are what the livery is called in the scenario editor.

Midland Mainline:

      Midland Mainline logo – *MML*

      No logo – *MML (UB)*

      East Midlands Trains logo – *MML (EMT)*

East Midlands Trains:

     East Midlands Trains logo & small front numbers – *EMT1*

     East Midlands Trains logo & large front numbers – *EMT2*

     East Midlands Railway logo – *EMT (EMR)*

East Midlands Trains 222016 with yellow cab – *EMT (222016)*

East Midlands Railway:

East Midlands Railway logo – *EMR*

No logo – *EMR (UB)*

East Midlands Railway 222104 – *EMR (222104)*

Hull Trains – *HT*

Keyboard Controls

Non-standard keyboard controls are listed below:

L -	Cab light switch ON/OFF
Ctrl+T -	Car wash slow speed button
Shift+C -	Clag Factor INCREASE
Ctrl+C -	Clag Factor DECREASE
E -	Deadman's pedal (DVD reset)
F7 -	Destination display NEXT
F8 -	Destination display PREVIOUS
R -	Door close button
U -	Door release buttons (left)
O -	Door release buttons (right)
Y -	Driver reminder appliance (DRA) ON/OFF
C -	Driver to guard buzzer
Ctrl+D -	Driver vigilance device (DVD) ON/OFF
Z -	Engine start button
Ctrl+Z -	Engine stop button
Ctrl+G -	GSM-R REGISTER/DEREGISTER
H -	Headlight switch CLOCKWISE
Shift+H -	Headlight switch ANTI-CLOCKWISE
Numpad Plus -	Hill start button
I -	Instrument lights DIM/BRIGHT
Shift+W -	Master key IN/OUT
Ctrl+N -	NRN radio REGISTER/DEREGISTER
Ctrl+R -	Passenger door operation toggle GO/DOO
Shift+F -	Selective Door Operation (SDO) cars INCREASE
Ctrl+F -	Selective Door Operation (SDO) cars DECREASE
Ctrl+Numpad Enter -	Visual aids ON/OFF
V -	Wiper switch CLOCKWISE
Shift+V -	Wiper switch ANTI-CLOCKWISE

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Features

Traction Physics

Great care has been taken to try and accurately simulate the behaviour of the Cummins QSK19 engine in how it revs up/down and the way traction power is applied.

Fairly unusually for a DMU, the engine acts as an electricity generator to power the traction motors and as a result, the engine revs up depending on the load being demanded by the motors. When departing from a standing start for example, even if you select 100% power, the engine at 0mph will not rev up as it is already revving high enough to provide the motors with enough power. This is why the engine revs up a little when the driver selects forward or reverse, to ensure it is ready to provide the necessary power.

As speed increases, the engine then gradually revs up to match the increasing load being demanded by the motors.

At around 13mph, the engine will rev at its maximum rpm, assuming 100% power is selected, with the turbocharger then spooling up as more load is placed on the engine until 20mph.

At 20mph, peak load is reached and the turbocharger has reached its highest speed.

In contrast to the slow rev up from a stand, if running at 20mph or above, selecting 100% power from idle will have the engine rev up quickly in around 4 seconds.

This difference in engine behaviour depending on speed also changes how power is applied. From a standing start, full power can be applied to the traction motors almost instantly, giving the train the feel of an EMU. However once at 20mph, it will take around 4 seconds from moving the power brake controller to 100% and full acceleration actually being achieved.

Brakes

Friction Brake

Conventional friction braking is blended in below 12.5 mph or under the following conditions:

- During wheelslide
- Emergency brake application
- Driver reminder appliance (DRA) is on

Dynamic Brake

When the friction brake is not being used as described above, dynamic braking uses the traction motors to slow the train.

Hill Start Brake

Pressing the hill start button whilst moving the power brake controller from a brake notch to a power notch maintains a brake application of around 1 bar and ensures the train does not roll back in the time it takes for power to be applied.

Emergency Brake

An emergency brake application is approximately 30% stronger than the 'H' position and occurs in the following circumstances:

- Moving the power brake controller to the 'E' position
- Pressing the emergency brake plunger
- Failure to acknowledge an AWS warning or Driver Vigilance Device (DVD)
- Moving the reverser to 'Off'
- Moving the reverser to 'Neutral' above 4 mph

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

Wheelslip protection aids the driver when powering or braking at times of poor adhesion.

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

1) The 'WSP Activity' indicator illuminates on the fault panel.
2) The traction motors can be heard rising a little in pitch and power reduces to control the slip.
3) To improve adhesion, sand is automatically applied if above 9mph. It can also be applied manually by pressing the 'Sanding' button above 3mph.
4) Once grip is regained, power is reapplied at the notch selected on the power brake controller.

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.

Wheelslide

When wheelslide is encountered during braking, a multi-stage process takes place:

1) The 'WSP Activity' indicator illuminates on the fault panel and sand is automatically applied above 7.5mph.
2) The dynamic brake is disabled and the air brake solely takes over.
3) Brake pressure is automatically reduced to try and control the slide.
4) Once the slide stops, brake pressure is returned to the notch selected on the power brake controller. If wheelslide reoccurs, the process starts again.

As a driver, you must resist the temptation to reduce the brake yourself as the wheelslip protection will offer the best braking performance.

Gradients

By default in Train Simulator Classic, only gradients of 1 in 185 or steeper have a gravitational effect on a train and this is only suitably realistic on gradients of approximately 1 in 125 of steeper. This means on gradients shallower than 1 in 125, the train does not experience the gravitational forces upon it than it should.

With this information in hand, we have managed to get rid of this limitation by making the train invisibly power or brake itself to simulate the effect that gravity has where Train Simulator Classic by default doesn't do so. This is all invisible to you as the player so you won't suddenly find the power or brake handles moving without your say so, but it does mean you have to drive to the gradients of the route a lot more than before, just like a real driver, especially on mainline routes where gradients rarely reach the severity where Train Simulator Classic has them behave realistically. You will also now find that if trying to recreate real timetabled runs, your timings will much more closely match reality.

Dynamic Exhaust Effects

Dynamic exhaust effects mean that the exhaust reacts to what the engine is doing. For example, when selecting 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 vehicle varies depending on how well maintained it is, so to represent this in the simulator, a random 'clag' factor is allocated to each vehicle which ranges from 1 to 10; 1 being the cleanest and 10 being the dirtiest. This can also be controlled on the leading player vehicle by using **Shift+C** & **Ctrl+C**.

Please note that these units aren't very smoky so the effect is more subtle than found on older classes.

Automatic Unit Numbering

When placing a unit in the scenario editor or using one in Quick Drive, all vehicles will automatically be given correct unit and coach numbers instead of you having to select each vehicle and changing their number manually so they match. The unit number is controlled via the DMS vehicle if you wish to change it. Please note that the destination display on all vehicles is also controlled via the DMS vehicle.

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Driver Only & Selective Door Operation (DOO/SDO)

Full door control is featured in this pack to simulate 'DOO' and 'SDO'. Please see below for what the relevant procedure is and how to change the type of operation whilst in-game:

Driver Only Operation (DOO)

1) On the 'SDO' unit below the GSM-R, select the number of vehicles on your train whose doors you would like to open. You can do this by pressing **Shift+F** to increase the number or **Ctrl+F** to decrease the number. This is calculated from the leading cab so if you select '4' for example, only the front 4 vehicles' doors will open.

2) Open the doors by pressing **T+U** (left-hand side) or **T+O** (right-hand side).

3) If at a platform, wait for the 'Platform Duties Complete' message to appear in the top-right corner and press **R** to close the doors. If not at a platform, press **R** whenever you wish.

4) Once the door interlock light illuminates, you may depart.

Guard Operation (GO)

1) On the 'SDO' unit below the GSM-R, select the number of vehicles on your train whose doors you would like to open. You can do this by pressing **Shift+F** to increase the number or **Ctrl+F** to decrease the number. This is calculated from the leading cab so if you select '4' for example, only the front 4 vehicles' doors will open.

2) Open the doors by pressing **T+U** (left-hand side) or **T+O** (right-hand side).

3) The 'Authorisation/TM in Position' button will now illuminate on the cab desk to show that control of the doors has been transferred to the guard.

4) Doors will be closed by the guard once passengers have finished boarding/alighting.

5) Once the door interlock light illuminates, the guard will give two buzzes which you must acknowledge by also giving two buzzes. This can be carried out by pressing **C** twice.

How to Change Operation

The two operations (**GO**/**DOO**) can be switched between by pressing **Ctrl+R**. A visual message in the top-right hand corner of the screen will confirm which option you have selected.

Driver Reminder Appliance (DRA)

The class 222 is fitted with a unique (to our knowledge) 'active' DRA rather than the normal 'passive' version.

It can be used just like the more commonplace 'passive' DRA if you wish. As soon as you set it, it illuminates and traction power is inhibited. This is recommended when approaching a red signal.

In addition to this basic functionality, the 'active' part of the DRA means it will flash under the two following circumstances so as to provide additional prompts to the driver to check the signal:

1) The doors have been released and the AWS sunflower is visible due to having previously passed an AWS ramp protecting a cautionary signal.
2) Power has not been applied 5 seconds after resetting the DRA.

When flashing, traction power is inhibited. Traction power can only be regained by setting, and then resetting the DRA when ready to move.

Driver Vigilance Device (DVD)

When the reverser is in 'Forward' or 'Reverse', the driver vigilance device will sound every 60 seconds. If the power brake controller is moved, the 60 second timer resets. To reset the DVD alarm, you must lift the deadman's pedal by pressing **E**. Failure to do so within 6 seconds will result in an emergency brake application which can only be reset once you've come to a stop.

The DVD is isolated by default. To activate it, press **Ctrl+D**.

Engine Isolation

It's not uncommon for units to run with one or more engines isolated due to faults. To achieve this in the simulator, in the scenario editor, add **;ENG=0** to the number of the vehicle you wish to isolate.

The physics of your train will respond accordingly with proportionally slower acceleration.

Eco Mode

In the early 2010s, these units were fitted with an 'Eco' mode which seeks to reduce fuel consumption. This means that after sitting in a station for over 7 minutes with no master key present in a cab, all engines will shutdown except for the DMF vehicle. If the DMF's engine is isolated then the DMS engine will remain active instead.

This 7 minute timer hasn't been simulated as we think players will rarely, if ever, sit for 7 minutes keyed out of a cab. What has been simulated however is taking over a train which is in 'Eco' mode. This is activated by adding **;ECO=1** to the DMS vehicle number in the scenario editor.

When taking over a train in 'Eco' mode with all but one engine shutdown, you must ensure you have setup the cab and that the reverser is in 'Neutral'. You may then start all engines by pressing the 'Engine Start' button, or **Z** on the keyboard.

Car Wash

Car wash mode limits the train to 3 mph for the purpose of passing through a carriage wash. It can be activated by pressing the 'Car Wash Slow Speed' button (**Ctrl+T**) when train speed is below 3 mph. Upon activation, the 'Car Wash Slow Speed' button will illuminate.

To deactivate, press the 'Car Wash Slow Speed' button again.

Remote Tail Lights

The tail lights on the rear of your train can be turned on by pressing the 'Remote Tail Lights' button.

If you move to the rear cab and insert the master key, the lights will revert to whatever the light switch is set to.

Announcement Chime

When entering the passenger view, there is a 1 in 10 chance that within 20 seconds, you will hear the classic Midland Mainline announcement chime.

In addition, the chime is audible in the cab any time between 30 & 150 seconds of departing a station. How long it will take to sound is randomly selected at each departure. This is realistically muffled as per reality so may not be audible if you have picked up too much speed by the time it sounds.

AI Horns

To blow an AI train's horn in a scenario, you must edit the speed limit properties of the section of the track at which you would like the AI train to sound its horn. Please see below for instructions:

1) In the scenario editor, go to the location at which you would like the AI train's horn to sound, and press **Spacebar** 3 times. The track will now display a certain colour which represent its speed limit.

2) Go to the top-left-hand fly-out and click the 'Select' icon.
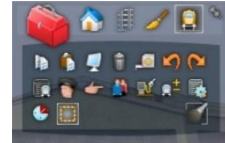
3) Hover your mouse over the piece of track where you like the AI horn to sound. A yellow border will appear around the track when it is selected.

4) Click and drag the yellow box in either direction until the measurement reading at the bottom of the screen says at least '1.0 metres'.
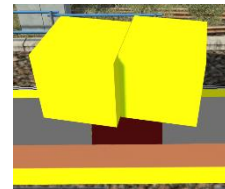
5) Go to the right-hand fly-out and change the two 'Speed Limit' values to '900'.

6) Click outside of any menus and the section of track you selected will now say 'Unspecified'. Any AI train which passes over this section of track will now blow its horn.

The manner in which the AI train blows its horn is randomly calculated each time, meaning no horn is ever the same. You may hear a single tone (any post-2007 liveries only), a two tone, a three tone, or now and then, even the infamous 'Ilkley Moor' sequence.

If you wish to be more specific in how and when the horn is sounded, please see the table below for values other than '900' which can be inputted in the speed limit field for different behaviour:

Speed Limit Value	Notes
900	Random number of tones
901	1 tone (low)
902	1 tone (high)
903	2 tone (low/high)
904	2 tone (high/low)
905	3 tone (low/high/low)
906	3 tone (high/low/high)
907	'Ilkley Moor' sequence
921	Same as 900 but 1 in 20 (5%) chance of horn sounding
922	Same as 900 but 1 in 16 (6.3%) chance of horn sounding
923	Same as 900 but 1 in 12 (8.3%) chance of horn sounding
924	Same as 900 but 1 in 8 (12.5%) chance of horn sounding
925	Same as 900 but 1 in 6 (16.6%) chance of horn sounding
926	Same as 900 but 1 in 4 (25%) chance of horn sounding
927	Same as 900 but 1 in 3 (33.3%) chance of horn sounding
928	Same as 900 but 1 in 2 (50%) chance of horn sounding
929	Same as 900 but 1 in 1.33 (75%) chance of horn sounding
930	Same as 900 but intended for use at platform ends*
931	Same as 921 but intended for use at platform ends*
932	Same as 922 but intended for use at platform ends*
933	Same as 923 but intended for use at platform ends*
934	Same as 924 but intended for use at platform ends*
935	Same as 925 but intended for use at platform ends*
936	Same as 926 but intended for use at platform ends*
937	Same as 927 but intended for use at platform ends*
938	Same as 928 but intended for use at platform ends*
939	Same as 929 but intended for use at platform ends*
940	Whistle boards**
950	Tunnels***

* **Platform ends** - Horn will sound only if train is travelling over 50mph, which at platforms of 12 car length of less, ensures that stopping trains do not sound their horn. Also, the point at which the train sounds its horn randomly varies from 1m to however fast the train is travelling. For example, if a train is passing at 125mph, the maximum possible distance it will sound its horn away from the trigger point is 125m. This simulates the propensity for drivers to sound their horn earlier if they are travelling at speed.

** **Whistle boards** - Intended for use at whistle boards. Pre-2007, trains sounded at least two tones at all times of day. From April 2007, following increasing concerns about noise, drivers were instructed to use only a single low tone and only between the hours of 07:00 & 23:00. This was later changed to between 06:00 & 23:59 in 2016.

To simulate this, any pre-2007 liveries will exhibit pre-2007 behaviour (at least two tones/no time restriction) and any post-2007 liveries will exhibit a hybrid of post-2007 & 2016 behaviour (single low tone/between 06:00 & 23:59 only). The point at which the horn sounds varies randomly from 1m to 40m away from the trigger point.

*** **Tunnels** - Historically, trains always blew their horn when entering & exiting tunnels to warn potential track workers of their presence. With increased health & safety regulations reducing the presence of track workers in 'live' tunnels, and to allay complaints of increasing noise pollution due to louder modern horns, this requirement was removed on Saturday 6th November 2004.

To simulate this, any pre-2004 liveries will sound at least two tones. The point at which the horn sounds varies randomly from 1m to 40m away from the trigger point.

Whilst these tools are primarily intended for use by scenario creators, they can also be used by route editors to 'bake' these features into a route. The platform end, whistle board & tunnel values being of particular use in this respect.

Finally, due to the custom speed limits being of such a short distance, they do not affect AI train performance or appear as the current speed limit on the F3/F4 HUD. Also, assuming the route you are using is configured to only show signed speed limits (the majority do this), custom speed limits will not appear in the part of the F3/F4 HUD which shows forthcoming speed limit changes.

National Radio Network (NRN)

To activate this, you must be familiar with the scenario editor and add **;NRN=x** to the DMS's vehicle number. **x** is the 3-digit zone number you will be driving in. To have the NRN already registered when you start the scenario, add an asterisk, *****, after the number.

If not already registered upon starting the scenario, you may register the radio by pressing **Ctrl+N**. To deregister, press **Ctrl+N** again.

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. A simple version of this communication system and its accompanying unit has been simulated.

To activate this, you must be familiar with the scenario editor and add **;GSMR=xxxxyyy** to the DMS's vehicle number. **xxxx** is your 4-character train reporting number and **yyy** is the signal number you are standing at in a 3-digit format. To have the GSM-R already registered when you start the scenario, add an asterisk, *****, to the end of this.

To register the radio, assuming it is not already registered upon starting the scenario, setup the cab and wait for the GSM-R screen to boot. When 'GSM-R GB' appears, it has booted. You may then register the radio by pressing **Ctrl+G**. To deregister, press **Ctrl+G** again.

Player Changeable Destination Display

The destination display on the front and side of the train can be changed during a scenario by pressing either **F7** or **F8**.

Please see below for a list of the available destinations on each livery and their relevant code if you wish to use them via the unit's number on an AI service:

0 - Blank	**HUL - Hull**	**MMO - Melton Mowbray**
ALF - Alfreton	**ILN - Ilkeston**	**NNG - Newark North Gate**
BNY - Barnsley	**KET - Kettering**	**NRW - Norwich**
BDM - Bedford	**LGM - Langley Mill**	**NOT - Nottingham**
BEE - Beeston	**LDS - Leeds**	**PBO - Peterborough**
BUT - Burton on Trent	**LEI - Leicester**	**RET - Retford**
CHD - Chesterfield	**LCN - Lincoln**	**SCA - Scarborough**
CLE - Cleethorpes	**KGX - London Kings Cross**	**SBY - Selby**
COR - Corby	**STP - London St Pancras**	**SHF - Sheffield**
CRE - Crewe	**LGE - Long Eaton**	**SKG - Skegness**
DBY - Derby	**LBO - Loughborough**	**SVG - Stevenage**
DON - Doncaster	**LUT - Luton**	**WKF - Wakefield Westgate**
EMD - East Midlands Parkway	**LTN - Luton Airport Parkway**	**WEL - Wellingborough**
GRA - Grantham	**MHR - Market Harborough**	**YRK - York**
HOW - Howden	**MAT - Matlock**	

Accurate coach letters are also displayed depending on formation.

The only exception to this is if using a 5 car 222/1 (222/1s have only been 5 car since 2022), or if a 4 car unit is leading a 5 car unit in a 9 car formation. In both of these cases, one coach letter will be incorrect. This can be fixed via the vehicle number in the scenario editor if desired.

On AI trains, an additional limitation is that accurate coach letters will not show in a formation where two units are coupled together until the train has started moving.

Cold Start

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

- Main reservoir & brake cylinder pressures are 0.
- Engines are shutdown

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

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

2) Move the reverser to 'Neutral' by pressing **S**.

3) Acknowledge the AWS self-test by pressing **Q**.

4) Start the engines by pressing **Z**.

5) You must now wait for the main reservoir pressure to build to 6.5 bar. Once it has done so, you will be able to obtain a brake release.

After carrying out this procedure, your unit 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:

- Nameplates omitted from the original pack are included. Nameplates automatically appear depending on unit number.

- High quality head/marker/tail light textures and accurate light combinations.

- Hazard lights option

- Improved bodyside indicator light visuals

- Higher resolution cab visuals where the existing ones were particularly low resolution

- Improved cab gauges with more realistic font used for the markings

- Improved lit versions of gauges with dim and bright variants

- Correct cab number and vehicle number now shown above windscreen

- Door power indicator illuminates below 3mph

- Door release and close buttons are now clickable

- Speedometer moves 1mph at a time rather than completely smoothly.

- In cab 4, 5 & 7 car marker pen scrawls only appear on East Midlands Trains or later liveries.

- A camera view facing the exhaust is provided to allow you to enjoy the sight and sound of the unit at work. This replaces the right-hand 'head-out' view so to access it, press Shift+2 and the Right-hand Arrow key.

- The reverser must be placed in 'Neutral' to start the engine.

- 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 headlights only provide illumination before sunrise and after sunset. This is to avoid the unrealistic appearance of projected light in broad daylight.

- The visible driver automatically moves to whichever cab you are in.

- Visual alarms outside of cab when AWS or DVD are active.

- Wipers operate on AI services if it's raining.

- AI trains accelerate at a more realistic rate

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Setting up the Driver's Cab

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

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

2) Move the reverser to the 'neutral' position by pressing **S**.

3) Cancel the AWS self-test alarm by pressing **Q**.

4) Turn the headlights on by holding **Shift+H** until the correct position is reached on the switch.

5) If applicable, register the NRN or GSM-R.

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

Driving Guide

Once the cab is setup, the following steps will allow you to get on the move:

1) Move the reverser to your desired direction of travel by pressing either **W** for forward or **S** for reverse.

2) Reset the Driver Reminder Appliance (DRA) by pressing **Y**.

3) Within 5 seconds of resetting the DRA, move the combined power controller to your desired power notch by pressing **A**. If you don't apply power within 5 seconds, the DRA will start flashing and you will need to set it before trying again.
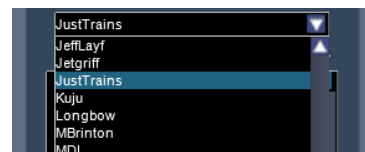
How to Use in the Scenario Editor

How to place

To place a class 222 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 'JustTrains' from the drop-down menu.

3) Tick the second & third box beside 'Meridian'.

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

Formation

4 Car – **DMS+MSRMB+MC+DMF**
5 Car – **DMS+MS1+MSRMB+MC+DMF**
7 Car – **DMS+MS1+MS2+MSRMB+MF1+MF2+DMF**
8 Car – **DMS+MS1+MS2+MS3+MSRMB+MF1+MF2+DMF**
9 Car – **DMS+MS1+MS2+MS3+MS4+MSRMB+MF1+MF2+DMF**

Numbering

When placing in the scenario editor, you are able to control a number of features via the number of the DMS vehicle. Please note that unless otherwise stated, you need only change the DMS number to apply to the whole unit. All other vehicle numbers are simply placeholders.

Cold start

To activate cold start mode on a player train, add **;Cold=1** to the vehicle the driver icon is placed on. This can be either the DMF or DMS.

Eco mode

To activate 'Eco' mode, add **;ECO=1**.

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Engine isolation

To isolate an engine on a vehicle, add **;ENG=0** to the relevant vehicle.

NRN

To have the NRN available to be registered in a scenario, add **;NRN=x**.

x = 3-digit NRN zone number.

Add an asterisk, *****, to have the NRN already registered at the start of a scenario.

GSM-R

To have the GSM-R available to be registered in a scenario, add **;GSMR=xxxxyyy**.

xxxx = 4-digit train reporting number.

yyy = 3-digit signal number in front of locomotive.

Add an asterisk, *****, to have the GSM-R already registered at the start of a scenario.

Nameplates

To remove a nameplate, add **;NP=0**.

Numbers

On East Midlands Railway livery, the alternative style of smaller front numbers can be shown by adding **;N=1**.

Coach letters

To show a different coach letter to the one automatically displayed, add **;CL=X** to the relevant vehicle.

X = uppercase letter you wish to show

Example number

222002;C=7;D=STP;Cold=1;NRN=066

Key:
222002 - Unit number
;C=7 – Number of cars *(do not touch)*
;D=STP - Destination
;Cold=1 - Cold start
;NRN=066 - NRN radio to be registered to zone 066.

Scenarios

APC222EP: 1B26 09:05 Nottingham - St. Pancras
Route = MML - London to Bedford (AP)
Track covered = Bedford – St. Pancras
Traction = East Midlands Trains 222011
Date = 8th July 2015
Duration = 35 minutes

APC222EP: 1D59 17:30 St. Pancras - Nottingham
Route = MML - London to Bedford (AP)
Track covered = St. Pancras - Bedford
Traction = East Midlands Trains 222102 & 222009
Date = 21st July 2017
Duration = 35 minutes

APC222EP: 1E27 16:08 St. Pancras – Bedford
Route = MML - London to Bedford (AP)
Track covered = St Pancras - Bedford
Traction = Midland Mainline 222002
Date = 14th November 2005
Duration = 50 minutes

Credits

Bombardier: Central Rivers Depot - Assistance in recording sounds

Third Party Restrictions

Prior permission must be sought if you would like to repurpose any aspect of this pack on a train that isn't a Class 222.