Class 800-803
Enhancement Pack

AP

Contents

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 800-803 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 requirements installed, as listed on the product page.
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.

AP

Liveries

White:

      without logo - *White*

      with Hitachi logo - *White (H)*

Great Western Railway (800/0):

      without front logo - *800/0 GWR1*

      with front logo - *800/0 GWR2*

Great Western Railway:

    without front logo - *GWR1*

    with front logo - *GWR2*

LNER

Transpennine Express - *TPE*

Transpennine Express Grey - *TPE Grey*

Hull Trains - *HT*

Hull Trains (Unbranded) - *HT (UB)*

Lumo

Keyboard Controls

Non-standard keyboard controls are listed below:

Page Down -	Aux off button
Page Up -	Aux on button
Numpad Plus -	Brake hold button
L -	Cab light button ON/OFF
Shift+L -	Cab light (doorways) button ON/OFF
E -	Deadman's pedal (DVD reset)
F7 -	Destination display DOWN
F8 -	Destination display UP
M -	Diesel button
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
N -	Electric button
Z -	Engine start button
Ctrl+Z -	Engine stop button
J -	Forward preparation button
H -	Headlight switch CLOCKWISE
Shift+H -	Headlight switch ANTI-CLOCKWISE
I -	Instrument lights ON/OFF
Shift+W -	Master key IN/OUT
Shift+P -	Pan down button
P -	Pan up button
Ctrl+R -	Passenger door operation toggle GO/GO (SDO)/DOO/DOO (SDO)
X -	Sander button
Ctrl+. -	Speed set ON/OFF
. -	Speed set adjust UP 5MPH
, -	Speed set adjust DOWN 5MPH
F -	Train fault acknowledge button
Ctrl+T -	Train wash button
Ctrl+Numpad Enter -	Visual aids ON/OFF
V -	Wiper switch CLOCKWISE
Shift+V -	Wiper switch ANTI-CLOCKWISE

AP

Features

Passenger View

The existing passenger view has been improved with realistic seat moquettes for the relevant TOCs featured in this pack.

Great Western Railway

LNER

Transpennine Express

Hull Trains

Lumo

Traction Physics

Great care has been taken to try and accurately simulate the acceleration characteristics of the different sub-class variants in both electric and diesel mode.

In electric mode, real world observation suggests that all sub-classes perform in a similar manner. Acceleration is very swift at a constant rate to around 23 mph before tailing off as speed increases. High speeds can be reached with ease.

In diesel mode, acceleration is around 70% the rate of electric, with it dropping off sooner at around 10 mph. There also appear to be differences depending on sub-class. LNER 800s have been observed to accelerate in the standard manner as originally specified by the Department for Transport, whereas GWR 800s and all 802s appear to have around 15% more power available resulting in improved acceleration.

Finally, LNER 801s have a single emergency 'generating unit' (GU/engine) which has been simulated when selecting diesel mode. As you would expect, performance is much degraded and on the nine car 801/2s in particular, a speed of only 60 mph can be expected on level track... eventually!

Brakes

Friction Brake

Conventional friction braking is blended in below 10 mph or under the following conditions:

- Passing through a neutral section
- During wheelslide
- Emergency brake application
- Driver reminder appliance (DRA) is on
- When in diesel mode on Class 800s

Dynamic Brake

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

Holding Brake

A holding brake is provided to prevent an uncontrolled rollaway whilst the train is at a stand. The holding brake applies a friction brake application of approximately 2.5 bar when speed drops below 0.3 mph and then remains below 0.9 mph for more than 3 seconds. The power brake controller must also not be in a power notch. It is released as soon as traction power is applied.

The holding brake is disabled when the 'Forward Preparation' or 'Train Wash' buttons are pressed.

Hill Start Brake

If the holding brake is not applied for whatever reason, 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 'Max' and occurs in the following circumstances:

- Moving the power brake controller to the 'E' position
- Pressing an 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
- Pressing the door release buttons above 4 mph

When an emergency brake application is initiated. The 'Train Fault Acknowledge' button will illuminate and the train fault alarm will sound. To cancel the alarm, press the 'Train Fault Acknowledge' button by pressing **F**. The 'Train Fault Acknowledge' button will only extinguish once the cause of the emergency brake application has ceased.

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.

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 three-stage process takes place:

1) The sander button illuminates. Sand can be applied by pressing this button for as long as it remains illuminated.
2) The motors can be heard rising rapidly in pitch and power reduces to control the slip.
3) Once grip is regained, power is reapplied at the notch selected on the power brake controller.

As a driver, you must assess which power notch 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 sander button illuminates and sand is automatically applied.
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.

Electric & Diesel Mode

Aside from the 803s, all units are 'bi-mode' with the ability to use the overhead wires on electric mode or the on-board 'generating units' (GUs/engines) away from the overhead wires on diesel mode.

In this pack, the default power mode is electric. For the default to be diesel instead, select the relevant consist in Quick Drive with a '(Diesel)' suffix or if in the scenario editor, see the *Numbering* section later in this manual.

Please see below for how to switch power modes within a scenario. This can be carried out either static or on the move. Please note that the cab does not feature a 'Diesel', 'Engine Start' or 'Engine Stop' button so these are purely controlled via the keyboard. An 'Electric' button is present but not clickable.

Electric to Diesel

1) Ensure the reverser is away from 'Off'.
2) Ensure the power brake controller is not in a power position.
   METHOD 1 (Recommended)
3) Hold the 'Diesel' button down by pressing **M** until a message appears on the top-right of the screen confirming that you have changed to diesel mode. The 'Electric' button will also extinguish on the right-hand side of the cab desk.
4) The pantograph will drop and the GUs will start. They will then rev-up to supply power to the auxiliary power supply (APS). After around 15 seconds, traction power will be available.
   METHOD 2
3) Press the 'Engine Start' down by pressing **Z**. The GUs will start but not supply power to any systems. For all intents and purposes, you are still in electric mode.
4) Hold the 'Diesel' button down by pressing **M** until a message appears on the top-right of the screen confirming that you have changed to diesel mode.
5) The pantograph will drop and the GUs will rev-up to supply power to the auxiliary power supply (APS). After around 15 seconds, traction power will be available.

Diesel to Electric

1) Ensure the reverser is away from 'Off'.
2) Ensure the power brake controller is not in a power position.
   METHOD 1 (Recommended)
3) Hold the 'Electric' button down by pressing **N** until a message appears on the top-right of the screen confirming that you have changed to electric mode. The 'Electric' button will also illuminate on the right-hand side of the cab desk.
4) The pantograph will raise and the GUs will rev-down before shutting down. As soon as the vacuum circuit breakers close and the line light illuminates, traction power will be available.
   METHOD 2
3) Press the 'Engine Stop' button by pressing **Ctrl+Z**. The GUs will rev-down before shutting down. Traction power will no longer be available.
4) Press the 'Pan Up' button by pressing **P**. The pantograph will raise.
5) Hold the 'Electric' button down by pressing **N** until a message appears on the top-right of the screen confirming that you have changed to electric mode. The 'Electric' button will also illuminate on the right-hand side of the cab desk. Assuming the line light is illuminated, traction power will be available.

Pantograph Position

Depending on the formation of your train, the correct pantograph(s) will be raised as per reality. For example, five or nine car units running solo will have the leading pantograph raised. For ten car formations, the pantograph will be raised on the leading and rear vehicle.

The only exception for this is on LNER units which in 2021, begun to use the rear pantograph on five or nine car units. This has been implemented by default on all LNER units in this pack but can be reverted to the pre-2021 setup by removing **;Pan=R** from the DPTS vehicle number. Ten car formations remained unchanged in using both the front and rear pantograph.

Driver Only & Selective Door Operation (DOO/SDO)

Full door control is featured in this pack to simulate 'DOO'. 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) Open the doors by pressing **T+U** (left-hand side) or **T+O** (right-hand side).
2) 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.
3) Once the door interlock light illuminates, you may depart.

Guard Operation (GO)

1) Open the doors by pressing **T+U** (left-hand side) or **T+O** (right-hand side).
2) The 'Train Door Control' button will now illuminate on the cab desk to show that control of the doors has been transferred to the guard.
3) Doors will be closed by the guard once passengers have finished boarding/alighting.
4) 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.

Selective Door Operation (SDO)

A simple form of selective door operation is also available in this pack where the doors will only open on coaches that are next to a platform. This uses the core system in Train Simulator to assert this so is reliant on the platforms on your chosen route having been laid correctly.

How to Change Operation

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

Speed Set

The speed set display is located on the screen in front of the driver on the cab desk. To activate or deactivate speed set, press **Ctrl+.(full stop)** and 'Off' or 'On' on the screen will illuminate accordingly.

To change the selected speed in 5 mph increments, press **. (full stop)** to increase and **, (comma)** to decrease. Your chosen speed is then displayed.

With speed set activated and a power notch selected, the speed set system will automatically control the train speed to the selected value. If the speed drops too far below the target speed, the unit will automatically apply traction power in order to get back to the selected speed.

If the target speed starts to be exceeded in electric mode, such as when the train is on a falling gradient, the speed set will automatically apply the dynamic brake in order to control the speed. When in diesel mode, speed set cannot be used to slow the train.

Neutral Section Functionality

When in electric mode, this pack will react to the neutral sections available on the WCML Over Shap route and any other route which recreates neutral sections in the same manner. On top of this, they will also function when our own markers and signage are placed in a scenario, which are available in the 'AP/Common' object set filter folder.

When passing a neutral section, you shall see the line light extinguish, meaning that traction power is lost and if braking, the friction brake is used opposed to the dynamic brake. The dynamic brake will only be used again by releasing the brake and then reapplying. Traction power will automatically return.

Train Wash

Train wash mode limits the train to 3 mph for the purpose of passing through a carriage wash. It can be activated by pressing the 'Train Wash' button (**Ctrl+T**) when train speed is below 2 mph. Upon activation, the 'Train Wash' button will illuminate and you will hear the cab door seals inflate to prevent water ingress. The saloon door rams will also engage.

To deactivate, press the 'Train Wash' button or in any case, it will automatically deactivate after 300 seconds.

Coupling & Uncoupling Procedure

Coupling

1) Approach the unit you are going to couple to at caution and come to a stop just short of it.

2) Press the 'Forward Preparation' button by pressing **J** which will open the nose cone and activate train wash mode to ensure your speed is restricted. When the nose cone is fully open, the 'Forward Preparation' button will illuminate.

3) Select a low power setting and ease up to the unit. As soon as you have coupled, apply 'Max' brake and shut down the cab.

4) Move to the cab you intend to drive from for the onward journey. If on electric mode, to ensure the correct pantographs are raised, press the 'Pan Down' button by pressing **Ctrl+P**. Then press the 'Pan Up' button by pressing **P**.

Uncoupling

1) On the unit you intend to drive after uncoupling, move to the cab next to the unit you are uncoupling from.

2) Set up the cab and use the F3 or F4 HUD to physically uncouple the unit.

3) Place the reverser into 'Reverse' and use minimum power to move no more than 2 ft from the unit you have just uncoupled from.

4) If the unit you are in is to remain in service, you need not worry about closing the nose cone as it will automatically close above 15 mph. Otherwise, you can close it manually by pressing the 'Forward Preparation' button, which will extinguish once the nose cone is closed.

Player Changeable Destination Display

The destination displays on the side of the train can be changed during a scenario by pressing either the F7 or F8 keys. Please see below for a list of the available destinations and their relevant code if you wish to use them via the unit's number on an AI service:

GWR

a - Blank	m - London Paddington	y - Swansea
b - Bedwyn	n - Newbury	z - Taunton
c - Bristol Parkway	o - Newport	A - Truro
d - Bristol Temple Meads	p - Newquay	B - Westbury
e - Cardiff Central	q - Newton Abbot	C - Weston super Mare
f - Carmarthen	r - Oxford	D - Worcester Foregate Street
g - Cheltenham Spa	s - Paignton	E - Worcester Shrub Hill
h - Didcot Parkway	t - Pembroke Dock	F - Depot
i - Exeter St Davids	u - Penzance	G - Not in service
j - Frome	v - Plymouth	H - Special
k - Great Malvern	w - Reading	
l - Hereford	x - Slough	

LNER/Transpennine Express/Hull Trains/Lumo

a - Blank	r - Hull	I - Peterborough
b - Aberdeen	s - Inverness	J - Preston
c - Berwick upon Tweed	t - Lancaster	K - Redcar Central
d - Beverley	u - Leeds	L - Retford
e - Bradford Forster Square	v - Lincoln	M - Saltburn
f - Brough	w - Liverpool Lime Street	N - Scarborough
g - Carlisle	x - London Kings Cross	O - Selby
h - Darlington	y - Manchester Airport	P - Sheffield
i - Dewsbury	z - Manchester Piccadilly	Q - Skipton
j - Doncaster	A - Manchester Victoria	R - Stevenage
k - Dundee	B - Middlesbrough	S - Stirling
l - Durham	C - Motherwell	T - Sunderland
m - Edinburgh Waverley	D - Newark North Gate	U - Wakefield Westgate
n - Glasgow Central	E - Newcastle	V - York
o - Grantham	F - Oxenholme Lake District	W - Depot
p - Harrogate	G - Penrith North Lakes	X - Not in service
q - Huddersfield	H - Perth	Y - Special

Accurate coach letters are also displayed depending on formation and TOC. If two units are coupled, each unit must be the same orientation for the correct letters to display.

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 'DPTS' vehicle if you wish to change it.

Arcing Pantograph

Special attention has been given to simulating arcing between the pantograph and overhead wire.

From one hour after sunrise to one hour after sunset on a dry day, there is only light arcing.

From one hour after sunset to one hour after sunrise, there is moderate arcing to simulate the moisture that tends to build up on the overhead wire once night falls. There is also moderate arcing when raining at any time of day.

During the winter, from one hour after sunset to one hour after sunrise, there is heavy arcing to simulate ice/frost that tends to build up on the overhead wire once night falls. There is also heavy arcing when snowing at any time of day during the winter.

Finally, arcing becomes more frequent as you gain speed.

When arcing, you will see it on the pantograph which illuminates the area around it to a varying degree with each arc. Please note that the illumination of the surrounding area will only occur after sunset and before sunrise. This is to avoid the unrealistic appearance of projected light in broad daylight.

You will also audibly hear it if the arcing is moderate or heavy.

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.
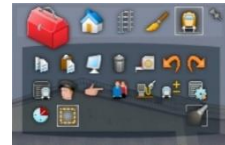
3) Hover your mouse over the piece of track where you like the AI horn to sound. A yellow border will appear around the track when it is selected.

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'.
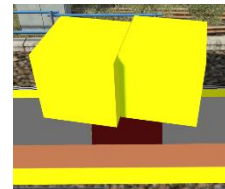
5) Go to the right-hand fly-out and change the two 'Speed Limit' values to '900'.
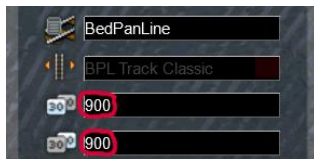
6) Click outside of any menus and the section of track you selected will now say 'Unspecified'. Any AI train which passes over this section of track will now blow its horn.

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.

AP

** **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.

Cold Start

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

- Main reservoir, brake cylinder pressures are 0.
- Auxiliaries are tripped
- Pantograph is down and generating units (GUs/engines) are off

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

1) Hold the 'Aux On' button down for a couple of seconds by pressing **Page Up**.

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

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

4) Cancel the train fault alarm by pressing **F**.

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

6) Select either electric or diesel mode by holding **N** or **M** respectively.

7) If you have selected electric mode, you will now need to wait 3 minutes or so for the auxiliary compressor to build up sufficient air pressure to allow you to raise the pantograph. Once the 3 minutes has elapsed, hold the 'Pan Up' button down by pressing **P**.

8) With either the pantograph raised or GUs started, 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:

- Newly modelled car-to-car cables and corridor connections.

- Detailed underframe visuals specific to each vehicle/sub-class.

- Applicable windows removed on LNER units where there is a buffet.

- Two windows removed on the Hull Trains & Transpennine Express DPTF vehicle compared to the default three windows.

- Pantograph monitoring light illuminates when reverser is in 'Forward' or 'Reverse'.

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

- Improved bodyside indicator light visuals. Now show on both sides when door interlock is lost.

- Screws and horn grille added to front vallance

- Two horn variants - original & KSJ

- In-cab high quality pictorial buttons have been added opposed to the generic block colour ones in the original model.

- New AWS sunflower visuals.

- Brake force gauge amended to look more accurate.

- Speedometer recalibrated so it accurately displays speed.

- Erroneous duplicate electric button hidden.

- Improved instrument lights.

- Headlight proving lights.

- Cab camera position amended so more of the cab desk is visible.

- 4-step reverser with 'Off' notch.

- Power brake controller will not move into a power notch unless the reverser is in 'Forward' or 'Reverse'.

- Reverser will not move if power brake controller is in a power notch.

- Lights automatically revert to tail lights when reverser is moved to 'Off'.

- TPWS lights illuminate during AWS self-test.

- 'Safety System Isolated' illuminates on cab desk when 'DVD' is disabled.

- Correct door open buttons illuminate when doors are open on the relevant side.

- The pantograph will drop if the emergency brake plunger is used.

- Variable wiper speeds. Numbers on switch are the numbers of cycles per minutes.

- Wipers audibly rub against the windscreen when it is not wet.

- Driver to guard buzzer does not function in DOO door mode.

- Train door control button only illuminates in GO door mode.

- Functioning 'Forward Preparation' & 'Rear Preparation' buttons. The former opens the leading nose cone and the latter opens the trailing nose cone.

- Air seals around cab doors can be heard inflating when accelerating at 2 mph and deflating when decelerating at 2 mph.

- Rams on saloon doors can be heard engaging when accelerating at 15.5 mph and disengaging when decelerating at 2 mph.

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

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

- Right-hand 'head-out' view faces the leading pantograph. A great spot to watch arcing after dark!

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

- Wipers operate on AI services if it's raining. Frequency and speed of wiper depends on the intensity of rain.

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 train fault alarm by pressing **F**.

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

5) Check your headlights are set correctly.

6) Set the correct destination by pressing **F7** or **F8**.

7) Turn the Driver Reminder Appliance (DRA) off by pressing **Y**.

You should now be ready to move off.
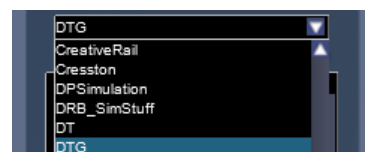
How to Use in the Scenario Editor

How to Place

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

7) 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.
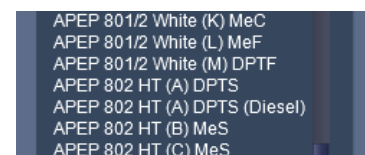
8) Go to the right-hand fly-out which should have appeared. Select 'DTG' from the drop-down menu.

9) Tick the second & third box beside 'Class801Pack01'.

10) The liveries should now be visible in the left-hand rolling stock fly-out. The letters in brackets are coach letters to assist in placing coaches in the correct order.

Numbering

When placing in the scenario editor, you are able to control a number of features via the number of the unit. Please note that unless otherwise stated, the only number you need to change is the DPTS.

Power Mode

By default, the power mode of a unit is set to 'Electric'. For the power mode to default to 'Diesel', add **;P=D**. On a player service, this must be added to the number of the lead driving vehicle (DPTF or DPTS).

Door Mode

By default, the door mode is set to 'Guard Operation'. You can change this default by adding **;D=x**:

- Guard Operation (Selective Door Opening). x =**1**
- Driver Only Operation. x =**2**
- Driver Only Operation (Selective Door Opening). x =**3**

Pantograph

For the pantograph to be raised on the rear vehicle on five and nine car units, add **;Pan=R**.

Horns

To have KSJ horns, which at the time of writing are used on the LNER fleet only, add **;H=K**.

Nose Cone

To open the nose cone on a driving vehicle, add **;N=1** to that vehicle.

Cold Start

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

Example number:

800001h;P=D;Cold=1
Key:
800001 - Unit number
h - Destination
;P=D - Diesel mode selected by default
;Cold=1 - Cold start

AP

Scenarios

APC800EP: 1P13 05:52 Liverpool Lime Street - Newcastle
Route = Chat Moss
Track covered = Liverpool Lime Street - Manchester Victoria
Traction = Transpennine Express 802216
Date = 6th July 2021
Duration = 40 minutes

APC800EP: 1P39 18:54 Liverpool Lime Street - Newcastle
Route = Chat Moss
Track covered = Liverpool Lime Street - Manchester Victoria
Traction = Transpennine Express 802210
Date = 29th October 2021
Duration = 40 minutes

APC800EP: 9M24 11:42 Newcastle - Liverpool Lime Street
Route = Chat Moss
Track covered = Manchester Victoria - Liverpool Lime Street
Traction = Transpennine Express 802204
Date = 17th November 2021
Duration = 45 minutes

Looking for more scenarios? Find more from us at www.trainsimscenarios.com.

Credits

Nicolas Schichan - Advanced scripting
Ben Penhalagan - Modelling of car-to-car cables and corridor connections
Lewis Clowes - Assistance with LNER & Transpennine Express liveries
Hitachi - Assistance in recording sounds