BR Standard Class 4 Advanced 2-6-0

Drivers Guide

Steam locomotive expansion pack for Train Simulator

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INTRODUCTION

The BR Standard Class 4MT 2-6-0 was one of the British Railways engines built to help create a standard set of locomotives from the many hundreds of different designs in service. This design disparity resulted in increased construction and fleet maintenance costs at a time when the separate private railway companies were unified and nationalised into British Railways in 1948, so having a standard set of locomotives would minimise costs and improve efficiency in many areas.

Included Locomotives

76084

This model of 76084 is as she was when the Just Trains crew visited her at the North Norfolk Railway in July 2013. At that time no AWS or speedometer was fitted and there was no tender water level indicator.

76079

This loco is based at the North Yorkshire Moors Railway and is currently under restoration. See www.nymr.co.uk/enthusiasts/restoration for more details. This model is fitted with AWS, speedometer and tender water level indicator.

4MT (custom numbers)

You can number any of the locomotives from the class numbers of 76000 to 76115 using this model. It is equipped with AWS, speedometer and tender water level indicator.

Included coaches

This 4MT Advanced package includes three types of Mk.1 coaches created by Just Trains, all complete with passenger view, a unique leaking steam effect from the coach heating system, and connecting vacuum hose pipes and steam heat pipes. The steam heating can be turned on and off from the locomotive footplate control.

The Mk.1 coaches are in green, maroon, and brown and cream liveries.

Brake Standard Open

First Open

Tourist Standard Open

History of 76084

The following information is courtesy of 76084 Loco. Co. Ltd.

76084 was outshopped from Horwich Works in March 1957 and was among the last new-build steam locomotives that Horwich would produce, completing them in November 1957.

Records show that 76084 initially went to Lower Darwen (24D) along with sister locomotives 76080/1/2 and 3.

All five locomotives were transferred to Sutton Oak, St. Helens, before Lower Darwen closed and 76084 left on March 5, 1965. All but one of them, 76082 (which was scrapped in 1966), were subsequently transferred to Springs Branch, Wigan, when Sutton Oak was closed in June 1967.

76084 was the last BR Mogul to be withdrawn from capital stock in December 1967.

The table below shows how 76084 became something of a guinea pig for three sheds in the North-West to try out the class before it eventually returned to Lower Darwen.

76084 British Railways Shed Allocations

Shed	Code	Date arrived
Lower Darwen	24D	March 1957
Lancaster Green Ayre	24J	October 1958
Skipton	24G	November 1958
Lancaster Green Ayre	24J	March 1959
Lower Darwen	24D	April 1959
Sutton Oak	8G	March 1966
Springs Branch	8F	July 1967
Withdrawn		December 1967
Woodhams	Barry Island	September 1968

76084 arrived at Barry Island in a convoy with 76077, 76079 and 76080. An image dating from April 1974 shows that the E.L.R. (presumably East Lancashire Railway) had reserved her.

Lady in pink

In mid-October 1974 five members of the Hallamshire Railway Preservation Society in Sheffield spent a working weekend at Barry with a view to purchasing 76084, and to prevent further decay painted her with red lead primer. The locomotive was seen soon afterwards proudly standing alone on an empty siding to which she had perhaps been moved in order to

allow the restoration work to proceed. This ultimately turned out to be an abortive preservation attempt but it did make 76084 stand out from the crowd during the remaining eight years of her stay in the yard.

As space at the yard became scarce, 76084 was pushed down her siding almost to the buffer stops.

Thanks to the power of the Internet there are plenty of images of 76084 languishing in South Wales. Over time she was stripped of various parts as Woodhams became a valuable source of steam locomotive spare parts. The full story of Woodhams has been the subject of numerous publications, but the story of 76084 takes a turn for the better in 1982.

Off to Nottinghamshire

In 1982 Phil Rollin concluded his negotiations to buy 76084 for £7,500, and so it was that in January 1983 76084 left Woodhams for a new life in South Leverton near Retford, Nottinghamshire. She had spent 14 years and four months in South Wales and was the 143rd locomotive to leave the yard.

Phil placed 76084 in his back garden and gave her a cosmetic make-over, but sadly Phil died in the early 1990s and the future of the locomotive became a little uncertain. She was bought from Phil's daughter and moved to Morpeth, and that's when the story of 76084 Locomotive Company Limited starts.

76084 restored

The 76084 Locomotive Company Limited has owned the locomotive and tender since 1997, and she returned to traffic in July 2013.

The restoration of 76084 to working order took almost 16 years to the day. This achievement is all the more remarkable for the fact that it has been accomplished by a volunteer-led group of enthusiastic individuals on a site remote from any heritage railway and also somewhat remote in geographical terms.

For the first 13 years the restoration was performed in the open air with little weather protection apart from the usual tarpaulin sheets found at all the railway preservation sites around the country. Indeed, it was often cold and damp at the restoration site and the work proceeded at a steady but none-too-quick pace in the early years, due in part to the limited amount of funding coming in.

Throughout the 16 years of restoration a band of willing hands has been turning up on Saturdays and Wednesday evenings in the summer to transform what was ostensibly a Barry condition engine into the living, breathing machine we now see in action.

The injection of capital with the arrival of a major supporter certainly raised morale and the building of a restoration shed in 2010 helped push 76084 ever closer to completion.

Every year the shareholders of the Company approve the provision of shares to those who have physically worked on the restoration of the locomotive, with each hour worked attracting a £1 share. There are volunteers who have accrued shares in this way which are valued at well into four figures. A list of those who have assisted was read out at the rededication of 76084 on July 21 2013.

76084 restoration team

Dave Husband	Dave Freeman	Phil Champion	John Oldcorn
Mel Rutter	Mal Rutter	Dave Rollo	Stuart Strachan
Steve Alder	Daniel Sargent	Tony Sargent	Gary Hayhoe
Ian Storey	Mathew Storey	Callum Storey	Stuart Mathews
Roger Norris	Adam Dalgleish	Kevin Tait	Ben Shelley
Eddie Irons	Mike Elliott	Mike Corcoran	Kevin Husband
Richard Campbell	Dave Martin	Mike Hawthorn	

Most, if not all, of these names also appear on the Company's Roll of Honour for the sponsorship of parts, so they have given not only their time but also their money in order that 76084 should run again.

Restoration team leader

Every team needs a leader and in this respect 76084's Engineering Director is fully deserving of special mention. Dave Husband, whilst carrying out his full-time professional role as an engineer and often away from home and electronic communication, managed to get the thousands of parts that constitute a working steam locomotive together in one place to make the whole machine. This meant he had to pore over drawings (some of which the National Railway Museum didn't even think existed!), order the parts that were needed and ensure that the parts manufactured to these drawings were dimensionally correct on delivery or, as was more often the case, when he collected them in his spare time away from the restoration site.

At the restoration site he then supervised their fitting or carried out the work himself. The one thing in particular that stands out about 76084 is the very high standard of the restoration work. It was always recognised that the quality of work had to be high to ensure few, if any, failures in service. Dave ensured that the standard of workmanship on 76084 surpassed that which was required and all this effort came with many personal sacrifices to home and family life, especially in the latter stages of the restoration when time pressures on its completion placed an even heavier burden on the team and Dave in particular.

Dave was so committed to the project that he not only gave his time but also bought parts without payment and also paid other craftsmen for their work out of his own pocket when 76084's bank account was low on funds.

What about the money?

In real terms 76084's return to working order cost £750,000. Where did all this come from?

It came from:

- Some 200 shareholders
- Fund raising
- Sale of merchandise
- Over 800 share certificates have been issued
- Sponsorship Roll of Honour with 150 entries

Not bad for a small bunch of people!

Thank you to all who have made 76084's return possible!

INSTALLATION

Installation is handled by Steam after purchase of the product. After purchasing the product the files will be downloaded and installation into the Steam Library will be automatic.

Graphics Settings

In Train Simulator set Dynamic Lighting to ON, in game settings, for the best graphical display.

Depending on your computer's specification, you may wish to increase or lower the various Graphical Detail options to get the best performance.

Updates

Updates to the product will automatically be deployed, downloaded and installed via Steam to all users who own the product.

Technical Support

To obtain technical support (in English) please visit the Support pages at www.justtrains.com. As a Just Trains customer you can obtain free technical support for any Just Flight or Just Trains product.

For support specifically on the Steam version of the add-on please contact Dovetail Games.

https://dovetailgames.kayako.com/

Regular News

To get the latest news about Just Flight products, sign up for our newsletter here: http://www.justtrains.com/subscribe.asp

Advanced Features

We have tried to replicate as far as possible the typical operations of a real steam locomotive. Fully replicating a realistic steam locomotive in Train Simulator is simply not possible, but we have added features which bring that dream closer to reality and give you a genuine feeling of what the real locomotive is like. We believe the Just Trains 4MT Advanced gives you the most authentic experience to date of operating and driving a steam locomotive.

Unfortunately one of Train Simulator's limitations is that you cannot start with a steam loco cold, i.e. without its fire lit, but with the 4MT you have the opportunity to join the loco at the 'warm' stage where it is nearly ready to drive but still requires several operations to be carried out to ensure that it runs properly and efficiently, namely filling the sandboxes, cleaning out the dust and dirt from the smokebox, priming the oil system via the oil distributor pump, and blowing down the boiler to help remove impurities. These may not be a fully accurate set of operations with the engine warm, but they are the most authentic available to us for the reason stated.

The locomotive features include:

Warm mode

You need to carry out the servicing operations before you can drive the locomotive. If you fail to do this, the performance of the locomotive WILL actually suffer.

If you fail to fill the sandboxes: Turning on the sander will have no effect on improving wheel adhesion.

If you fail to clean out the smokebox: This results in a temporary performance problem, with a random degree of severity that will get worse if it is left un-cleaned.

If you fail to turn and thus prime the lubricator: This will slowly and permanently reduce the maximum performance of the locomotive to represent the damage being done.

Hot mode

All the operations which must be carried out in 'Warm' mode are already completed and you are ready to drive.

Operating tender handbrake

This is located on the fireman's side of the tender.

Blowdown

This removes impurities from the boiler which, if left, increase the risk of priming and damage.

Clean the smokebox

Open the smokebox and note the pile of embers in the bottom. Clean it out and you will see ash in the bottom blow out.

Prime the lubricator

Watch as the lubricator handle rotates.

Fill sandboxes
Remove their lids and watch the sand level rise as you fill them**.**

Servicing interlock
If the smokebox door and/or sandbox lids are not closed, the tender handbrake will not release.

Operating left and right rocking grates
Use the handle from the boiler backplate to rock each grate individually.

Ashpan doors
These have to be opened to allow the remainders of the fire to drop out through the ashpan when the grate is rocked to drop the fire.

Shed plates
Individual shed plate codes can be selected.

Opening tender doors
Open the tender doors to view the coal.

Tender water spray
Operate the water spray to keep the coal dust down.

Bardic lamp operation
An operating Bardic lamp is placed on the tender to help illuminate the loco controls and gauges during night operations.

Carriage steam heating
Turn on the steam heating control in the cab and you will see steam leaking from the supplied Just Trains Mk.1 carriages. The gauge will rise to maximum pressure at a varying speed depending on how wide you open the valve. There is a random leak rate which will be slightly different each time you drive, so you should open the valve just far enough to maintain pressure against leaks from the pipe.

Brake linkage
See the brake linkage next to the wheel move as the steam brakes are used.

Reverser lock
The reverser must be unlocked by pulling the locking latch back before the reverser can be moved.

Steam chest
There is a delay between opening/closing the regulator and the subsequent change in steam chest pressure and the supply to the cylinders. There is also a simple implementation of the valve action controlled by the reverser, which brings the simulation a step closer to replicating the real operation.

The first half of regulator travel controls the pilot valve which admits a relatively small amount of steam into the steam pipe and subsequently the steam chest. The second half of regulator travel closes the pilot valve and opens the main valve which admits a much greater volume of steam to the steam chest.

Note that the main valve uses much more steam and is generally a bigger drain on resources such as fire mass and the water in the boiler. It is therefore generally only used to work the locomotive to the maximum when necessary. The pilot valve offers a greater degree of control over the locomotive at slower speeds.

Working steam brake

The locomotive and tender are braked by a steam brake, controlled by the locomotive's graduated steam brake control. This is operated in two ways.

The first is via the vacuum brake used to control the train brakes. The steam brakes will brake the locomotive and tender in conjunction with a decrease in vacuum brake pressure, although they will only start to act when the vacuum brake train pipe pressure is below 19 inches of mercury.

The other method of controlling the steam brakes is to use the steam brake handle to control them directly. This allows you to control the steam brakes independently of the train's vacuum brakes, but on one condition – the vacuum reservoir pressure must be the same as the vacuum train pipe pressure. If the train pipe pressure is less than the reservoir pressure, the steam brakes will apply in proportion to the difference between the reservoir pressure and the train pipe pressure.

Furthermore, it is possible to drive the locomotive on unfitted trains or light engine without creating a vacuum; if the vacuum brake is fully applied with 0 inches on the gauge, and the reservoir vacuum is destroyed with the release button and is also 0 inches, then you are free to drive the locomotive and use the steam brake handle only.

Authentic vacuum brake

The vacuum brake on the Just Trains 4MT Advanced is the standard British Railways set-up across the range of Riddles-designed Standard classes. There is an S.S.J. ejector mounted on the left-hand side of the smokebox which contains the small ejector and large ejector cones. These are operated by two spindles in the cab that control the duplex stop valve in front of the driver's side of the cab.

Press and hold the [J] key to increase and [Shift]-[J] to decrease the small ejector, which you'll be mostly using, and press and hold the [U] key to increase and [Shift]-[U] to decrease the large ejector. Both are used to create a vacuum in the train pipe and overcome any losses in vacuum due to leaks.

The large ejector is normally used to release the brakes more rapidly, particularly with longer trains, and uses more steam. The small ejector can be used to release the brakes fairly quickly when light engine, but may take quite a while on longer trains. The small ejector is also used to maintain the vacuum in the train pipe whilst running and also to maintain the vacuum in the reservoir.

Cylinder drain cocks

These are operated by steam and there is a simulated delay between moving the handle connected to the actuating valve and the drain cocks responding to the change. It is important to start the locomotive with the cylinder cocks open after long stationary periods in order to flush out the simulated condensed water. The cylinder drain cocks are also the only way of preventing the cylinder from blowing up as a result of priming.

Priming

Priming occurs when the water level in the boiler is able to reach the regulator valve, right in the dome. This means that when the regulator is opened, water enters the steam pipe system. As a result, four things can happen all at once:

- Some of the water evaporates rapidly into steam when passing through the superheater and gives the steam chest an enormous boost of steam. (Because of the extraordinarily high concentration of water in the exhaust vapours, the exhaust will turn a brilliant white.)
- The heat shock of relatively cold water on superheated metal can cause the superheater elements to crack, permanently damaging the locomotive.
- Because water is forcing its way through the regulator valve under immense pressure, priming can prevent the regulator from being closed completely. To overcome this, open the regulator as far as it will go and quickly shut it again. This may take a couple of attempts.
- Finally, and perhaps most importantly, some of the water does not evaporate and finds its way into the cylinders. You will know when this happens as water will erupt from the chimney and will be squeezed out of the cylinder drain cocks. It is therefore paramount that the cylinder cocks are opened very quickly to exhaust all the water before the pressure in one of the cylinders becomes high enough to blow out the cylinder cap. If the cylinder blows up, it's game over. You will visually see the blown cylinder.

Realistic injector performance and steam usage

Open the injector water valves first, then open the respective injector steam valves. The flow rate is not changeable. To turn the injectors off, first turn the injector steam valve off, then turn the respective injector water valve off. Whenever the injector steam valves are in use, the injector water valve must already be ON, otherwise the injectors will blow back!

The Just Trains 4MT Advanced is quite a thirsty model, so you will be using the injectors frequently! The live injector uses much more steam than the exhaust injector, but the trade-off is that it has a bigger cone and so the water flow rate is greater.

Use both injectors strategically and plan ahead along your route. They are very useful for keeping boiler pressure under control when coasting or coming to a stop. They will also have a detrimental effect on steam generation, because you are adding relatively cold water to the boiler, so it is not always ideal to use them for long periods when climbing a steep and difficult gradient.

Water gauges

These generally indicate the level of boiler water, but for the first time in Train Simulator the water level is realistically affected by the gradient of the line.

Uphill track gradients increase the water level and downhill gradients decrease it. It is therefore important that you keep a close eye on the water level and have a good idea of your route's gradient profile, because it is important not to overfill the boiler when travelling uphill as you risk priming the locomotive, and even more important when you are going downhill that the water level is not so low that the crown sheet of the fire box becomes exposed, which will melt the fusible plugs and end the scenario. Water is also sloshed back and forth along the boiler when accelerating and decelerating; this will display on the gauges with some sinusoidal behaviour.

Realistic damper behaviour

A set of front and rear operating dampers is fitted.

The dampers are used to control the amount of air going to the fire via the ash pan and up through the fire grate. More air means more oxygen and therefore a hotter and better burning fire.

The Just Trains 4MT Advanced has two working dampers at your disposal. The front damper generally has the greatest effect the faster the locomotive travels forwards, and the back damper has the greatest effect the faster the locomotive travels backwards, but they are tools for you to use as you wish to keep control over the fire.

Also, the fire doors now play a role in controlling the fire temperature. When you are on the move, cold air from the footplate gets sucked through the fire hole and acts as a secondary stream of air for the fire. In real life the effects of this depend on the coal type and the locomotive, but generally the secondary stream has a slightly detrimental effect on the fire temperature. When running under power, therefore, the fire doors should be kept closed or a crack open, and only opened fully to stoke the fire, of course. When closing the regulator, you should open the doors fully while you coast and adjust the main dampers to cool the fire down and prevent too much steam being generated when it isn't required. An important exception to this is when entering a tunnel, where the fire doors must be completely closed because the core simulation of Train Simulator will cause a fatal blowback and end the scenario.

Directional sanders

The sander lever must be pulled to the right to operate the front sanders for when the locomotive operates in forward, and pulled to the far left to operate the rear sanders used when travelling tender first. Using sand depletes the sand level in the sandbox, and when the sandbox is empty the sanders can no longer apply sand to the railhead and improve adhesion. You can stop the train at any time, apply the handbrake and refill the sandboxes as described in the section for preparing the 'warm start' locomotive.

Glowing embers

You will see these coming from the chimney.

Injectors steam feed
Under the cab on the right side you can see the steam feed to the injectors. You will only see it when the injectors are operating.

Steam chest pressure
This oscillates a little in time with the pistons, which is thanks to the simulated valve events.

Cylinder cocks
These emit steam from each side in time with the pistons and wheels.

External animations
External animations such as the regulator rod and reverser pole are present in the locomotive.

Advanced particles
The Just Trains 4MT Advanced features a wide range of scripted photorealistic particle effects, including exhaust from the chimney which changes colour when you stoke the fire and changes velocity and density depending on the blast pipe pressure.

Wheelslip
If the regulator is opened too fast the wheels will visibly spin. In severe cases it may be necessary to open the cylinder cocks in order to release back pressure and close the regulator successfully. The wheels will also lock up if you over-apply the brakes.

Double-header locomotive interaction
There is a basic level of interaction between the player's locomotive and the AI-driven one in a double-header. The regulator and cylinder cocks are synchronised, and if you use the short whistle on the [B] key the other locomotive will whistle back to you in acknowledgement.

Head and tail lights
These are customisable for all conditions.

Cabview camera positions
This locomotive uses the new Train Simulator multi-position cabview camera.

Firing the fire box
Stoking is different from the default operation in that instead of controlling the firing rate, pressing [R] simply turns the firing on and you can watch the fire mass on the [F5] display increase as the fireman throws on shovelfuls of coal, instead of just increasing the fire mass very slowly like in other Train Simulator loco's. Firing should automatically stop whenever the fire doors are closed.

Driving Options

Please read the following chapter carefully before driving the 4MT Advanced.

This Standard Class 4 simulation is probably the most advanced steam loco currently available to drive in Train Simulator and therefore needs to be set up and operated correctly. The locomotive can be in several different states and it is important to understand them so that the correct one is used in specific situations.

This 4MT Advanced simulation is probably the most advanced steam loco currently available to drive in Train Simulator and therefore needs to be operated and set up correctly. The locomotive can be in several different states and it is important to understand them so that the correct one is used in specific situations:

Advanced

This is the default locomotive mode and has complex controls with realistic operations and reactions to give you the most authentic experience possible of driving a steam locomotive.

Warm

This is available in Advanced mode only and means that the required servicing must be carried out on the locomotive to ensure it operates correctly and does not suffer a lack of performance or failure. This mode is selected via the locomotive numbering in the scenario editor (detailed further below) or when employed in one of the included scenarios.

Hot

This is the default state of the loco in both Advanced and Simple mode and means the loco is ready to drive with no need for it to be serviced before setting off. This mode is controlled by the locomotive numbering via the scenario editor or when employed in one of the included scenarios.

Please refer to the KEY COMMANDS AND OTHER FEATURES section of the manual for details on how to switch between Hot and Warm states.

CAB CONTROLS

Please note that although all the cab controls, instruments and indicators are modelled and might be animated, some may not be functional in this simulation. This is due to the limitations of what is possible in the host simulator.

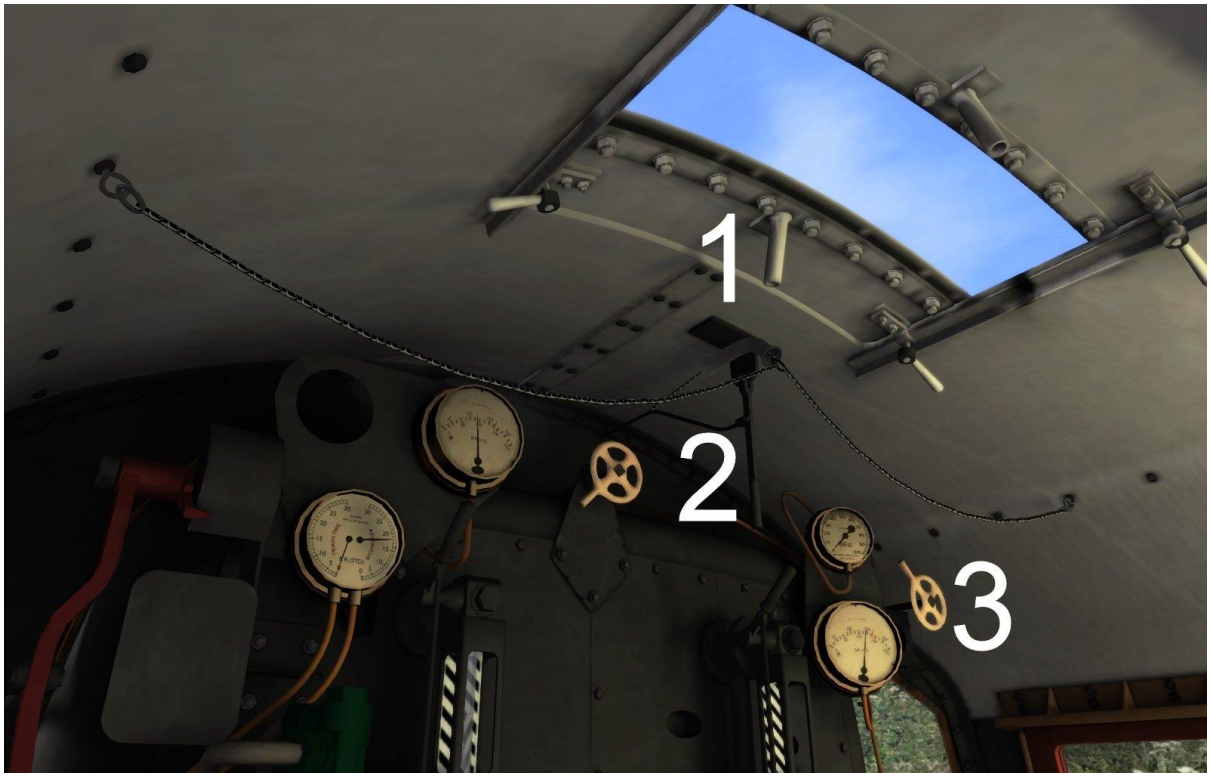
Note: *Some of the cab operations and animations can only be operated manually when the 'Control Method' is set to 'Expert'. You can check this by clicking on the 'Drive' option from the Main Menu and looking at the 'Control Method' slider on the bottom right of that screen.*

To drive the locomotive with Advanced controls, the 'Automatic Fireman' needs to be OFF. You can check this via the Settings>Gameplay menu.

The text in square brackets below refers to the keyboard commands.

The functions of the cab controls are described in the SETTING UP AND DRIVING THE 4MT chapter of this manual.

Many of the controls have mouse-over tips. Briefly hold your mouse over them to see their operation requirements.



1. Sliding roof panels

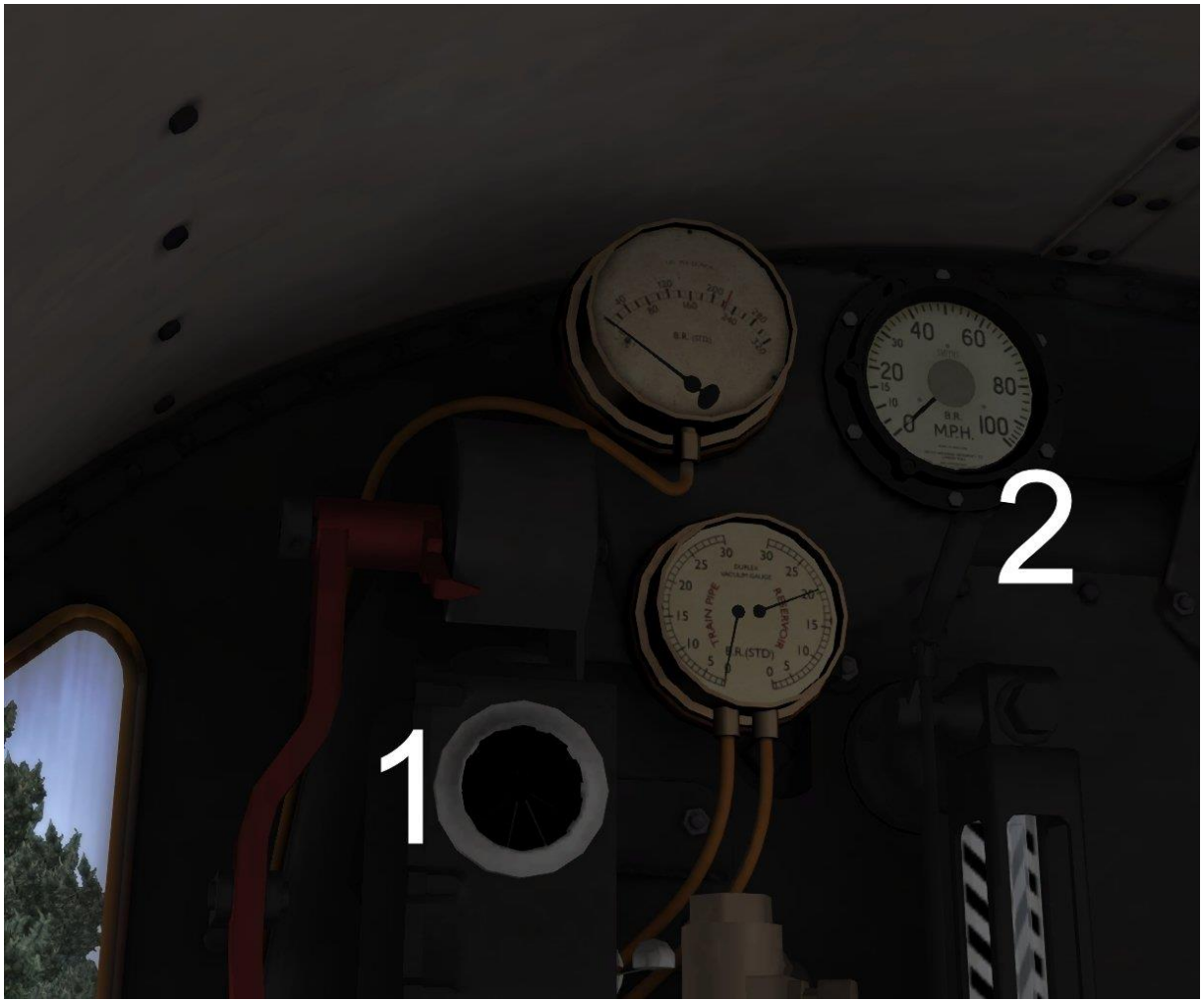
Drag the handles to let light in and heat out!

2. Whistle

Click on the handle or press the space bar to sound the whistle. For a short blast of the whistle, press the [B] key on your keyboard.

3. Coach steam heat control wheel

Rotate this wheel to send steam to heat the coaches. The gauge will rise to maximum pressure at a varying speed depending on how wide you open the valve. There is a random leak rate which will be slightly different each time you drive, so you should open the valve just far enough to maintain pressure against leaks from the pipe.



1. AWS

This indicator will display the sunflower pattern when the loco is driven on an AWS-equipped route and has had the AWS warning cancelled by the driver. This is not fitted to all the locomotives in this pack. Press the [Q] key to reset the AWS when acknowledging a warning, or click on the small reset lever on the right-hand side of the AWS apparatus.

2. Speedometer

Displays the speed of the locomotive. This is not fitted to all the locomotives in this pack.

1. Cylinder drain cocks

These are vital to ensure that water condensation is not trapped in the cylinders, which could result in serious damage to the cylinders. Use the mouse or the [C] key to operate them.

2. Reverser lock

You need to release this lock to allow the reverser wheel to rotate – use the mouse or hold down the [E] key for this purpose. The lock should be re-engaged after each movement of the wheel.

3. Reverser

This is analogous to the gearbox of a car in some respects. The reverser of the locomotive determines how much steam is allowed into the cylinders by controlling the ‘cut-off’. The cut-off is the point along the travel of the piston stroke at which steam stops being admitted into the cylinder.

The greater the cut-off, more steam is admitted to the cylinder and the greater the pressure during the stroke. You need more steam to pull away from a stop, so wind the reverser into ‘full gear’, which on the 4MT is 75% for forwards and -75% for reverse. As you build up momentum, wind the reverser back towards ‘mid-gear’, not setting the reverser to less than 15% in forwards or -15% in reverse. This is to allow for the greater expansion of steam admitted during one stroke, before it is exhausted back out up the blast pipe.

In other words, it is more economical to drive the locomotive on a smaller cut-off. The flip-side of this is that with a smaller mass of steam per stroke, there is less pressure acting on the cylinder head and therefore less tractive force, which is why the reverser is often compared to the gearbox of a car: low gear (high cut-off) provides more torque while using

more fuel per unit speed, whilst high gear (low cut-off) is more economical but could quickly stall the vehicle going up a steep hill if the driver hasn't shifted down (increased cut-off)!

There is a forward section shown in black, and a reverse section shown in white for driving tender first. Use the mouse to rotate or the [W] and [S] keys.

4. Large ejector

The large ejector can be used to release the vacuum brakes more rapidly than the small ejector, at the expense of using more steam. It is therefore useful for making a quick get-away from a stop or for saving the train from stopping short because too much braking was used. Use the mouse or press and hold the [U] key to increase and [Shift]-[U] keys to decrease the large ejector.

5. Small ejector

The small ejector must be opened to allow the brakes to be released and maintain the vacuum in the train pipe. Press and hold the [J] key to increase and [Shift]-[J] keys to decrease the ejector.

6. Regulator

Pull this towards you to allow steam into the steam chest to drive the pistons. The steam chest has an authentic delay built in so do not expect an instant reaction to your movement of the regulator. Push the regulator away from you to close it. The [A] and [D] keys can also be used to move the regulator as well as the mouse.

The regulator takes some getting used to at first, but with practice you will get used to its behaviour. If the cylinder cocks are open, open the regulator a good way (but not into main valve) and leave it until the train begins to move. If the cylinder cocks are closed, pump the regulator a few times while you wait for the steam to reach the cylinders, then as you start to move, leave the regulator open a little bit.

7. Engine brake

Use this brake when driving light engine or an unfitted freight. It operates the brakes on the engine only.

8. Train brake

This affects ALL the brakes on the train, including those on the carriages, and is the brake normally used when pulling fitted rolling stock. Push the handle away from you to release the train brakes, and pull it towards you to apply them. You can also use the [;] key (semi-colon) and [‘] key (apostrophe) to operate it. The brake is quite sensitive, so go steady when you make an application. Listen to the rush of air entering the train pipe and use it to assist your judgement of how much of an application to make, particularly in head-out view.

Note: *You need to open the small ejector to allow the brake to release. Also, the brakes will not release unless you have 21 inches of vacuum showing in the vacuum gauge.*

9. Reservoir release

Pressing this releases all the vacuum pressure in the vacuum reservoir tank. Use the mouse to do this. Note that the reservoir vacuum pressure will fight destruction if the vacuum pressure in the train pipe is greater, and that the small ejector will recharge the reservoir if the vacuum brake handle is left in the fully ON position, so ensure that the small ejector is turned off.

10. Blower

Use this control to blow more air through the fire to make it burn hotter and faster. Use the mouse or the [N] key to increase the blower and [Shift]-[N] to reduce it.

11. Directional sander

The sander lever must be pulled right to operate the front sanders for when the locomotive operates in forward, and pulled to the far left to operate the rear sanders used when travelling tender first. Using sand will deplete the sand level in the sandbox and when this is empty the sanders will no longer apply sand to the railhead to improve adhesion. At any time you can stop the train, apply the handbrake and refill the sandboxes as described in the section for preparing the ‘warm’ locomotive.

1. Fire door handle

Drag the mouse across it or use the [F] key to open the fire box and [Shift]-[F] to close it.

2. Grate rocking operating rod

This is where the rod for rocking the grate is stowed when not in use.

3. Front damper

Use the [M] key to increase the FRONT damper and [Shift]-[M] to reduce it. This allows more or less air into the fire.

4. Rear damper

Use [Ctrl]-[M] to increase the REAR damper and [Ctrl]-[Shift]-[M] to decrease it. This allows more or less air into the fire.

5. Right grate rocking socket

This is used to rock the right fire grate. Click on it to insert or remove the rocking rod. You can use your mouse or [Ctrl]-[R] to rock the grate after the rod has been inserted into the socket.

6. Left grate rocking socket

This is used to rock the left fire grate. Click on it to insert or remove the rocking rod. You can use your mouse or [Ctrl]-[L] to rock the grate after the rod has been inserted into the socket.

1. Exhaust injector

This is used to inject water from the tender into the boiler using exhaust steam. This must be used in conjunction with the exhaust injector cock, otherwise water will not flow.

2. Live injector

This is used to inject water from the tender into the boiler using live steam. This must be used in conjunction with the live injector cock, otherwise water will not flow.

3. Live injector cock

This valve allows water to flow from the tender to the boiler via the live injector and must be opened before the live injector.

4. Exhaust injector cock

This valve allows the water to flow from the tender to the boiler via the exhaust injector and must be opened before the exhaust injector.

5. Tender water spray operating wheel

Operate this to turn on the water spray to keep the coal dust down. Open the tender doors to view this in operation.

Note on using the water injectors

On the 4MT Advanced, as with many other locomotives, the water system is duplicated to ensure there is a back-up if one of the injectors fails. If there was only a single injector and it malfunctioned, the boiler would run out of water and explode.

For the purpose of these instructions we will only operate one injector system.

Each injector has two controls:

- The valve which allows water from the tender to the injector control, known as the water feed
- The injector control itself (the spindle on the steam valve)

The water feed has to be opened to allow water to flow from the tender to the injector control, and then the injector control is opened to release steam into the steam cone and mix the steam and water in the combining cone of the injector using the Venturi effect, which in turn raises the pressure of the water, lifts it up the water feed pipes at the side of the boiler and delivers it into the boiler via the check valve. Both controls have to be operated otherwise no water will reach the boiler!

Normally only one injector system is used to maintain the boiler water level, but it's good practice for the fireman to use each one alternately to ensure even wear and to check that both are operating correctly. You would only use both injectors if you needed to get water into the boiler in a hurry – if you used most of it going up to the summit of a climb, for instance.

Important: *You need to open the water valve first, before you open the injector, otherwise you will get a blowback!*

Try to use the injectors at appropriate times, such as when you are slowing for a speed limit or a station. If you are climbing, just use one injector and adjust regulator/reverser to maintain water level and speed. The best time to turn on the injectors is when the loco isn't working hard, otherwise you will waste valuable boiler pressure. Try and learn the routes you drive so that you know when and where it is possible to turn on the injectors.

1. Bardic lamp

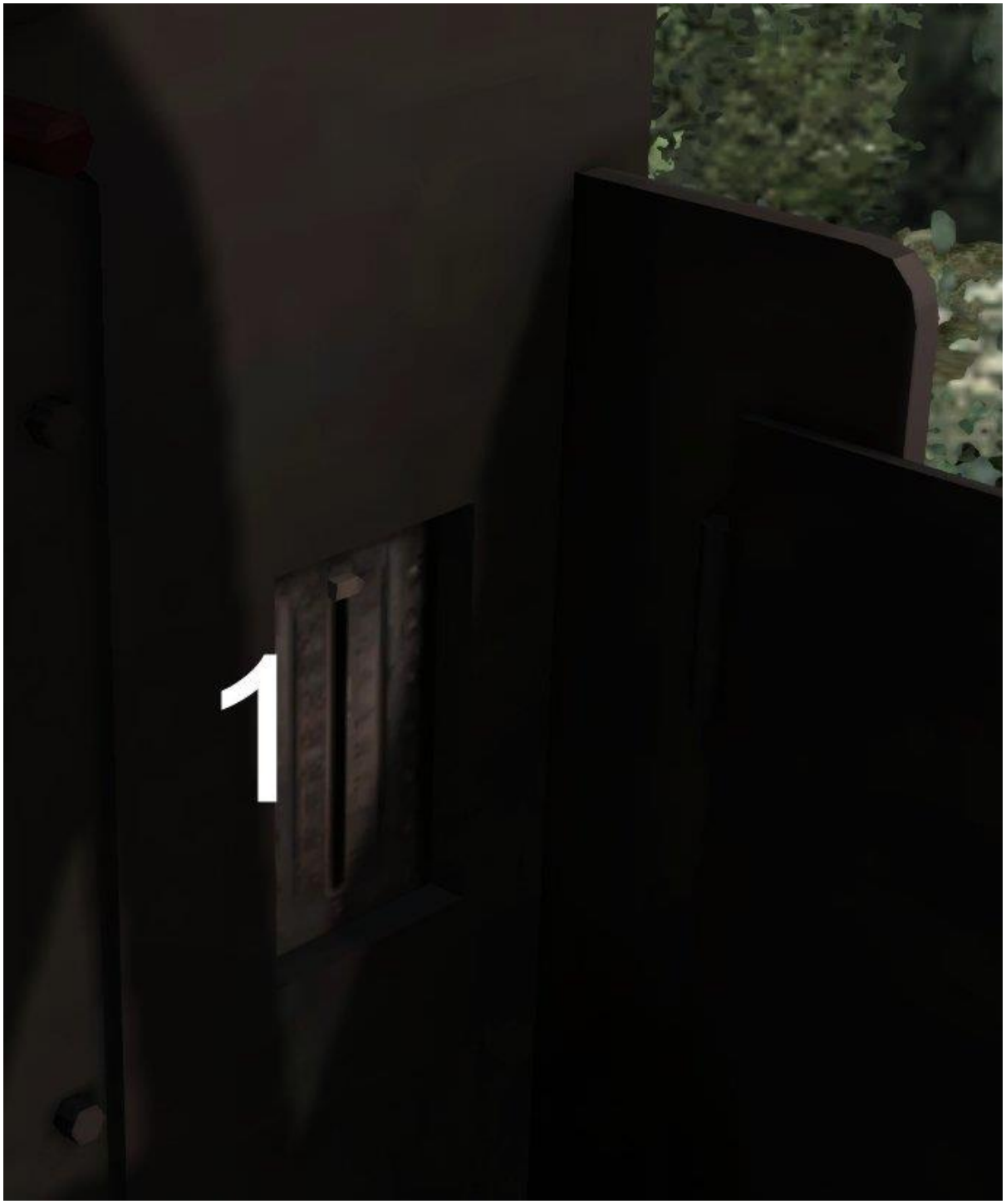
Click on the lamp to turn on/off to help illuminate the cab area for night operations.

2. Tender brake

Use the [/] key to set the brake ON and OFF. We advise against using the mouse on this control as it is less accurate than using the keystroke. The brake has to be ON for all servicing to be carried out. If it will not release, either the smokebox door or the sandbox lids have not been fully closed.

3. Tender coal doors

Click on these to open/close the doors so you can view the coal and see the water spray operating when it is turned on.



1. Tender water level indicator

Where fitted, this show the water level in the tender.

CAB VIEWS

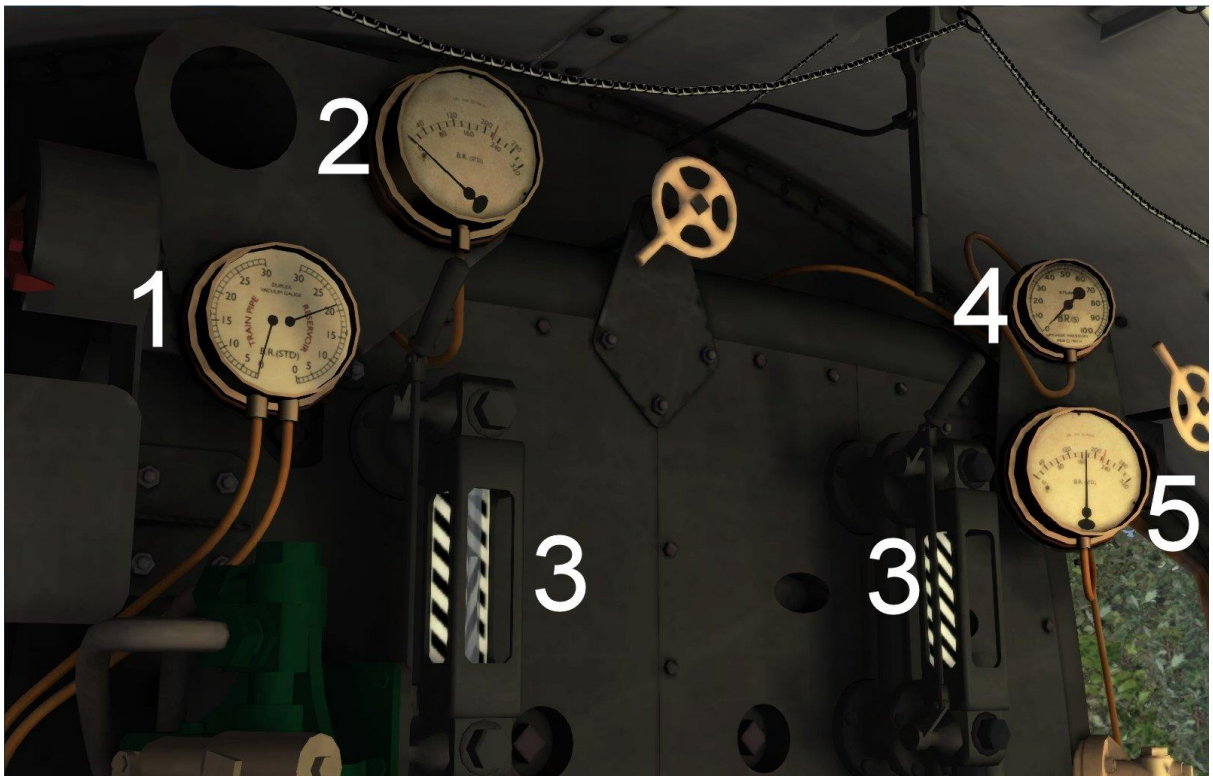
Move view to left and right of the cab – Left and Right arrow keys.

Zoom view in and out – Up and Down arrow keys, or scroll the middle mouse wheel up and down.

Look around the cab – hold the right mouse button down and drag the mouse to move your viewpoint around the cab.

Head out of cab – press [Shift-[2] to move to the ‘head out’ position. Use the Up and Down arrow keys to look forward or backward when in this view. Use the Left and Right arrow keys to change sides of the cab.

CAB GAUGES AND INDICATORS



1. Duplex vacuum gauge for train pipe and vacuum reservoir – indicates the vacuum pressure of the train pipe on the left and the vacuum pressure in the locomotive's vacuum reservoir.

2. Steam chest pressure – shows the pressure in the steam chest.

3. Water level indicators – show the level of water in the boiler.

4. Steam heating pressure – shows the pressure of the steam used for heating the carriages.

5. Boiler pressure – shows the steam pressure in the boiler. Try to keep it just below the red line. Blowing off (hitting the red line) wastes steam and makes an awful lot of noise, so make sure you keep the loco quiet at night!

HEAD-UP DISPLAY (HUD)

IMPORTANT: *When the locomotive is in Advanced mode (as it is by default) operating it via the [F4] HUD (Head-Up Display) controls can result in erratic operation and the HUD will display unrealistic readings. The [F4] HUD is NOT compatible with Advanced mode and we strongly advise that you use the [F3] HUD and [F5] HUD with keyboard and mouse controls to receive more accurate information and to prevent any erratic behaviour. The list of control key commands is provided in the KEY COMMANDS AND OTHER FEATURES chapter of this manual.*

Here is some information about the Head-Up Display:

In Train Simulator the default control display is the HUD, which is enabled with the [F4] key on your keyboard.

This shows the status of the scenario and the train, and also provides mouse-operable controls to allow you to drive the locomotive.

All the function key views and functions from previous versions of Train Simulator are still available as described, but when the HUD is selected the views controlled by the [F3] and the [F5] keys do not display. Turning OFF the HUD (with the [F4] key) will allow the [F3] and [F5] views to display.

The information and controls available via the HUD will differ depending on your current scenario, driving mode (Simple or Expert) and the type of engine that you are driving.

If you hover over a section of the HUD with your mouse you'll see a handy explanation of the feature, but for full information on the HUD and its features please refer to the Train Simulator manual.

To get more detailed information about the engine, turn off the HUD (using the [F4] key), press the [F5] key twice to bring up the engine information and you will see the following indications:

Speed – MPH

Regulator – position in %. In Advanced mode this shows the pressure in the steam chest as a percentage of its maximum. In Simple mode it shows the position of the regulator handle in the cab.

Reverser – forward/reverse position from neutral in %.

Train brake – in Advanced mode, 50% is a dead zone where the smaller the percentage compared to the dead zone, the greater the rate of vacuum creation in the train pipe. The larger the percentage compared to the dead zone, the greater the rate of vacuum

destruction and therefore brake application. In Simple mode, the percentage shows the position of the vacuum brake handle with the notches Release, Running and Apply – ensure the brake is in the Running position after the brakes have been released (Simple mode only).

Boiler pressure – PSI up to a maximum of 220 PSI. Aim to keep the pressure between 210 and 215 PSI under normal running conditions, especially when attacking a climb.

Steam chest pressure – displayed in PSI. The steam chest pressure can be seen on the steam chest pressure gauge in the cab. This pressure is what forces the cylinders, and hence the locomotive, to move. The higher the pressure, the greater the force. Steam is added to the chest by the regulator, and is then exhausted into the cylinders when moving or through the steam chest drain cocks. The steam chest pressure can never exceed or match the boiler pressure, but it can get pretty close in the right circumstances. The higher the pressure the better, generally speaking. Note that this is not the steam chest pressure as modelled on the Just Trains BR Standard Class 6 Advanced; it is part of the host software and, while called Steam Chest Pressure, it is actually a meter for the Work Done (force x distance).

Boiler water level – a low water level spells disaster. Keep the water (shown as blue) well up the tubes. Don't go above 1.00, though, as the loco will waste steam and begin ‘priming’. Aim to keep the water level between 0.5 and 0.75 as much as possible. Note that the water level always starts at 1.0 on a zero gradient, which is a limitation of the host software. If starting and facing uphill, and the water level exceeds 1.1 (Hot mode) or 1.05 (Warm mode pre-blowdown), to avoid priming you MUST keep the cylinder cocks open until the water level has fallen below these critical levels.

Fire mass – displayed in pounds (lb) and referring to the ‘strength’ of the fire. Don't let it get too high as the coal won't burn quickly enough; you generally need to keep it at around 760 pounds.

Steam generation rate – how much steam the boiler is creating.

Steam usage rate – how much steam the engine is using. This must be below the steam generation rate otherwise you will waste steam, but on gradients make sure that the usage rate is as close to the generation rate as possible. When you open the injectors more steam will be used.

Cylinder cocks – open or closed. Open to allow water out of the cylinders to prevent damage. Use them for around 10-15 seconds after standing for more than 5-10 minutes. Make sure that they are open for longer when moving off-shed. In Advanced mode the cylinder cocks are fully operational. Use them to drain any residual pressure from the steam chest after coming to a stop. If you leave the locomotive for a long period of time, condensation will build up, and if the cylinder cocks are not open you risk blowing a large hole through the cylinder cap when you begin to move.

Brake pipe pressure – the pressure in inches of the vacuum in the brake pipe. You need to have 21 inches when the engine is moving. The brakes start to take effect properly below 15 inches. If you are going down a steep hill it is generally a good idea to leave the brakes

applied to maintain a constant speed, although ensure that you give the brakes a ‘breather’ to prevent overheating from overuse, by releasing and re-applying periodically.

Small ejector – open or closed. This creates the vacuum needed for the brakes to function.

Tender water level – displayed in gallons (maximum capacity of 4,250 gallons). You will see the level go down as the water is used. Don’t run out!

Tender coal level – displayed in pounds (lb). You will see the level go down as the fire is stoked. Again, make sure you don’t run out. You can usually fill up with coal at Motive Power Depots, and water columns are available at many stations.

Blower – on/off. Used to blow steam out of the chimney and thereby create a through-draught which will draw the fire through the boiler tubes. Generally this can be turned down when you begin to slow for a station and then increased prior to departure, helping to ensure that you don't ‘blow off’.

Dampers – on/off. Dampers are flaps which regulate the flow of air through the ash pan to the fire. In Advanced mode this shows the ‘overall’ damping of the fire between the front and rear dampers and the fire door. In Simple mode it shows whether the single damper control is NOT closed (off). ‘On’ can mean anything from 1% to 100% open.

KEY COMMANDS AND OTHER FEATURES

Whistle

Click on the handle or press the space bar to sound the whistle. For a short blast on the whistle press the [B] key.

Reverser lock

The reverser must be unlocked by pulling the locking latch back with the [E] key before the reverser can be moved.

Brakes

Use the [/] key to turn the tender handbrake ON/OFF.

Use [;] (semi-colon) to take the train brake OFF and ['] (apostrophe) to apply the train brake.

Small ejector (for brake operation)

Press and hold the [J] key to increase and [Shift]-[J] to decrease the small ejector.

Large ejector (for brake operation)

Press and hold the [U] key to increase and [Shift]+[U] to decrease the large ejector.

Cylinder cocks

Use the [C] key to open/close the cylinder cocks. When the handle is in the backwards position, the cocks are open.

Fire box doors and firing

Use the [F] key to open the fire box and [Shift]-[F] to close it.

Shovelling coal

Use the [R] key to start shovelling coal and [Shift]-[R] to stop.

Water to boiler exhaust feed

Use the [K] key to open the water feed to the exhaust injector from the tender and [Shift]-[K] to close it.

[I] key – turn the exhaust injector to the boiler ON/OFF.

Live feed

Use the [L] key to open the water feed from the tender to the live injector and [Shift]-[L] to close it.

Turn the live injector to the boiler ON/OFF with the [O] key.

Blower

Use the [N] key to increase the blower and [Shift]-[N] to reduce it.

Dampers

Use the [M] key to increase the FRONT damper and [Shift]-[M] to reduce it.

Use [Ctrl]-[M] to increase the REAR damper and [Ctrl]-[Shift]-[M] to decrease it.

Sander

Use the mouse to operate or use [X] for the front sander and [Shift]-[X] for the rear sander:

LEFT = rear sanders ON

UPRIGHT = sanders OFF

RIGHT = front sanders ON

Fire ash pan doors

Open and close the ash pan by using [Ctrl]-[7].

Rocking the fire grate

Click on the right-hand rocking handle socket on the floor in front of the fire box doors. The grate rocking rod will move from the boiler backplate into that socket. Drag your mouse up and down the rod to drop the fire on the right side. Click on the socket to return the rod to the backplate, then click on the left socket and repeat the process. You can use [Ctrl]-[L] and [Ctrl]-[R] to rock the rod after it has been inserted into the socket.

External light operations

Master switch to show or hide the lights:

[H] – show lamp (it's lit)
[Shift]-[H] – remove lamp

The key operations that control the displayed light are mapped to the number pad keys. The number lock key must be ON.

The number keys used to show or hide the lights are:

[Ctrl]-[1] – left lamp

[Ctrl]-[2] – centre lamp

[Ctrl]-[3] – right lamp

[Ctrl]-[8] – top centre lamp

Shed plate and Hot/Warm state operation

You can set the 4MT Advanced locomotive to either a Warm or Hot state and also set individual shed plates to display. These are controlled by the loco number via the scenario editor. Double-click on the engine (not the driver icon) to bring up the correct menu.

The loco number format is: NNNNNSHHH

N = loco number

S = 0 (zero) for Warm state or 1 for Hot state

H = shed code

For single digit shed codes (i.e. 1A) replace the first character with an ‘X’, i.e. 760841X1A.

SETTING UP AND DRIVING THE 4MT ADVANCED

Setting up the 4MT from a ‘Warm’ state

The 4MT can be used in two ways when creating or driving a scenario. A ‘warm’ start is a situation which simulates a loco that is almost ready to leave the depot or yard but still needs final checks to be carried out before it can leave. These checks are shown via messages in two of the supplied scenarios for the 4MT Advanced: *Driver Training* and *Hoo Junction Crew Training*. It is however possible for you to start your own scenarios in a ‘Warm’ state – here are the instructions for getting your loco ready for action:

1. Apply handbrake

Apply the handbrake with the [/] key. Use the [F4] HUD coupling view to confirm the brake is set to ON.

2. Fill the sandboxes

Look outside using the [2] key. Press [Shift]-[Ctrl]-[X] to open the boxes then hold [Ctrl]-[X] to fill them with sand. Hold these keys down for around 60 seconds. You will see the sand level rise in them. Replace the lids by pressing [Shift]-[Ctrl]-[X].

3. Prime the lubricator

The lubricator handle is located near the smokebox end of the running plate. Simply hold the [Z] key and wait until the handle stops turning.

4. Empty the smokebox

Hold [Ctrl]-[6] to open the smokebox door. Then press [Shift]-[6] to empty the smokebox of ash. This should take around 20 seconds. Once this process is completed you can close the smokebox door by pressing [Shift]-]Ctrl]-[6].

5. Conduct blowdown

Press and hold [Y] for five seconds to remove impurities from the boiler which, if left, increase the risk of priming and damage.

Finally, check that everything is replaced (smokebox door shut and sandbox lids closed) and then release the handbrake. If the handbrake will not release, you have not shut the smokebox door or sandbox lids, in which case check them again.

You are now ready to drive!

Driving the 4MT

General information

Tender water capacity: 3,500 gallons

Ideal fire mass: 860lb

Brake pressure when released: 21PSI

Maximum boiler pressure: 225PSI

Recommended maximum trailing load:

7-8 coaches on moderate/light gradients
5-6 coaches on steep gradients
8-9 coaches on the level

Maximum speed: 65mph approx. (depending on load)

Prior to starting a journey

1. If running at night, click on the Bardic lamp placed on the tender to turn it on and help illuminate the cab area.

2. Ensure that the handbrake is released.

3. Check that the boiler is not overfilled with water.

4. Turn on (open) the cylinder drain cocks if you have not already done so.

Moving off

1. Release the train brake (and/or loco steam brake if you are running light engine).

2. Move the reverser to full forward (or full reverse if travelling tender first) (75% cut-off).

3. Turn ON the small ejector (with the [J] key or using the mouse) slightly so that the brakes begin to ease off. Leave the small ejector at this position to hold the brakes off until you next stop. To release the brakes quicker you can open the large ejector (with the [U] key or by dragging the mouse) but close this once the brakes are released. Check the brakes are off by verifying that 21 PSI is shown on the left side of the brake gauge.

4. Open the regulator slightly (with the [A] key or by dragging the mouse). Allow the cylinders time to drain water whilst making a steady departure.

5. Close the cylinder drain cocks and open the regulator as desired and enjoy your journey!

Stopping the train

1. Ensure that the regulator is closed and that the large ejector is closed.

2. Apply the brakes and keep an eye on the brake gauge; the closer the needle on the left side is to 0 PSI, the harder the braking force. To control the pressure you need to apply and

release the brakes and use the large ejector until you find a comfortable PSI reading. Most trains should be stopped with the gauge reading no less than 10 PSI otherwise it can be a rather uncomfortable stop for the passengers. Nobody likes their cup of tea spilt!

3. Turn off the ejectors once you have stopped and return the reverser to full forward or full reverse gear.

Recommended reverser settings

These settings are a guide only, and are only achievable with a hot fire with full boiler pressure and a reasonable load:

0-5mph:	75 cut-off
5-15mph:	65 cut-off
15-25mph:	50 cut-off
25-35mph:	40 cut-off
35-45mph:	35 cut-off
45-60mph:	20-30 cut-off
60+mph:	15-20 cut-off

Filling the boiler with water

1. Turn on both injectors by pressing [I] and/or [O] or by dragging the mouse.

2. Turn on the water feeds by holding [K] and/or [L] for around three seconds or by dragging the mouse.

3. When the boiler water level reaches the desired amount (look in the water level sight glasses) press and hold [Shift]-[K] and/or [Shift]-[L] or drag the mouse to stop the water feed.

4. Turn off the injector(s) by pressing [Shift]-[I] and/or [Shift]-[O] or by dragging the mouse.

IMPORTANT: *Remember that, unlike most steam loco's in Train Simulator, the 4MT Advanced has dynamic water gauges and readings (both in the [F5] fly-out and in the cab). These readings are affected by gradients and braking/acceleration. When climbing a gradient of 1 in 100 or more you must ensure that the water level doesn't go above 0.75, as any ease in the gradient at this point would result in considerable damage (priming) to the loco. When descending a gradient you must ensure that the water level remains above 0.25, as any ease in the gradient would mean the loco could quite easily drop a fusible plug (plugs in the firebox that melt if exposed to overheating and aim to drown the fire with steam and hot water from the boiler), instantly ending your journey. When braking hard, the water gauge will empty completely, so you must take note of how much water you have before you begin to brake.*

Priming

If you should happen to overfill the boiler at any time you will experience problems, namely 'priming'. This affects the loco's performance dramatically and can cause permanent damage, resulting in reduced power for the remainder of your journey or, in a worst case scenario, the explosion of a cylinder.

You will know the loco is priming if:

- The water level in the glass is completely out of sight and the smoke has turned white and fluffy, regardless of the regulator setting.
- The loco is struggling to steam.
- Water emanates from the chimney/cylinders.
- A cylinder blows up!

How to stop the loco priming

If you heavily overfill the boiler or are stood at a station you will need to be patient. You must under no circumstances (and this is even more important at higher reverser cut-offs) open the regulator beyond around 20% (10% if you are waiting to move off). The first operation is to open the cylinder cocks and leave the loco to run with a low regulator setting, the cylinder cocks open and, if possible, the boiler pressure safety valves lifting. Once the boiler water level has returned below 1.00 (or is visible in the gauge glass) then you can shut the cylinder cocks and continue as normal.

Providing steam heat

The 4MT Advanced and Mk.1 coaches are both equipped with steam heat for realistic winter operation. On a winter's day you may wish to provide heat to your passengers. To do this, simply turn on the steam heat with the handle provided and watch the gauge rise towards 100 PSI; you should then notice steam rising from the pipes between the coaches.

At the end of your journey

The Just Trains 4MT Advanced is unique in that it enables you to dispose of the loco at the end of the working day, as per its real-life counterparts.

1. Apply tender handbrake

Apply the tender handbrake with the [/] key.

2. Open ash pan doors

You must open the ash pan doors before you can drop the fire. To do this, press the [Ctrl]-[7] keys.

3. Rock the grate to drop the fire

Click on the right-hand rocking handle socket on the floor in front of the fire box doors. The rocking grate rod will move from the boiler backhead into that socket. Drag your mouse up and down the rod to drop the fire on the right side for around five seconds. Click on the socket to return the rod to the backplate, then click on the left socket and repeat the process. You can use [Ctrl]-[L] and [Ctrl]-[R] to rock the rod if you wish after it has been inserted into the socket. You will see the fire drop below the locomotive.

4. Conduct blowdown

Press and hold [Y] for five seconds to remove impurities from the boiler which, if left, increase the risk of priming and damage.

5. Empty the smokebox

Hold [Ctrl]-[6] to open the smokebox door. You will note that there has been a build-up of debris in the lower part of the smokebox. Next, press [Shift]-[6] to empty the smokebox of ash, which should take around 20 seconds. Once this process is completed you can close the smokebox door by pressing [Shift]-[Ctrl]-[6].

SCENARIOS

Note: All the supplied scenarios have been created using the Advanced version of the 4MT so you must have the locomotive in Advanced mode to drive these scenarios. (The 4MT is set to Advanced mode by default.) If you have used the Swapper utility to swap to the Simple version, the scenarios will not operate correctly. Please note also that not all these routes are included in Train Simulator by default and are not supplied with this product. You can purchase them from the STEAM store (www.steampowered.com).

Standard Scenarios

Great Western Main Line (can be purchased from the STEAM store)

Double Standards

Stock: Maroon (BR) Mk.1s

Drive 76079 and 76084 on a rail tour between Paddington and Reading with stops at Slough and Maidenhead en route.

Somerset and Dorset (can be purchased from the STEAM store)

At the end of the day

Stock: Southern Green Mk.1s

Drive a 4MT on the final service of the day from Radstock to Bath Green Park, calling at all stations. You will be tasked with shunting the stock and disposing of the loco on arrival at Bath.

Driver Training

Stock: Southern Green Mk.1s

Drive a 4MT on a training turn from Shepton Mallet to Templecombe and return.

London to Faversham route (can be purchased from the STEAM store)

Hoo Junction Crew Training

Stock: Maroon Mk.1s

Drive 76079 on a series of EWS crew training runs based around Hoo Junction to familiarise new enginemen with the loco for a series of upcoming rail tours in the area.

Bonus Scenarios

Free Roam scenarios
Click on a train and take it for a drive!
A mixture of Mk.1s is used in these scenarios.

Somerset and Dorset route (can be purchased from the STEAM store)
Templecombe Free Roam

London to Faversham route (can be purchased from the STEAM store)
Hoo Junction Free Roam

ADDING THE Standard Class 4MT CLASS ADVANCED TO YOUR OWN SCENARIOS

By default the Standard Class 4MT Advanced is only available via the supplied scenarios, but you can make it available for other routes, without having to create a scenario, in the following way:

Adding the locomotive

Start Train Simulator.

From the Main Menu click ‘Build’.

Select the ‘Route’ on which you want to use the 4MT Advanced.

Click ‘Scenario Editor’.

Click ‘New Scenario’.

Select the location where you want the scenario to start from in the ‘Set location’ menu.

Select the type of scenario you want from the ‘Select Scenario Type’ menu.

Click ‘Create’.

Enter the name you wish to give your new scenario and click ‘Create’. The Simulator will start to load.

When the simulation has loaded, ensure the padlock symbol is unlocked in the bottom right of the window.

Move to the top left menu (partly hidden in the border). It will slide out. Click on the pin image to lock it out, then move your mouse down to slide out the next partly hidden menu. Again, lock it with the pin.

On the lower, middle left menu, select the blue square with the orange triangle on it (Object Set filter) and a new menu will slide out to the top right of your screen. Once more, pin it to the screen.

Select Just Trains from the drop-down list and ensure that ‘BRStandard4MT’ has been ticked in the middle box.

Once this has been done, click on the blue ‘Engines and tenders’ icon (this looks like a side-on view of the nose of an HST125) in the middle left menu and scroll down until you see the ‘JT – BR Standard Class 4MT 2-6-0’ entries – these are the locomotives from this 4MT Advanced collection.

Select one of these and then click on the area of track in the main window where you want the locomotive to be placed. When you have the right location, left-click, then right-click to deselect it.

You can change the direction it is facing by clicking on it until a large orange arrow appears above it and then clicking on the arrow to change direction.

Adding the tender

To add the tender, perform the same steps above for adding an engine but look for the entry that says ‘JT – BR Standard Class 4MT Tender’ and place it up against the rear of the engine. Ensure that the tender is located with the correct orientation to the engine and that you place it right behind the engine.

To remove the locomotive or its tender, click it so it goes red and then press the [Delete] button on your keyboard.

Adding the driver

You will need to add a driver to the engine so you can drive it. To do this, click on the engine, click on the face with a cap icon on the top left slide-out menu, then click on the engine once more. A white icon with a blue driver image will appear above the engine. Double-click on this icon and a slide-out menu will appear in the top right corner of the screen. Enter a name in the top box, and in the lower drop-down box select ‘Express passenger’.

Adding carriages

If you want to add some Just Trains Mk.1 passenger carriages, select the red ‘Rolling Stock’ icon (this looks like a container wagon) on the middle left-hand slide-out menu, then select the blue square with the orange triangle on it (Object Set filter) and go back to the top right menu and tick the ‘Mark1 coach’ entry.

Move back to the middle left menu, select the red ‘Rolling Stock’ icon and then scroll down until you see the relevant entries, i.e. ‘JT – Mark 1’. Place these behind the tender in the same way you added the engine and tender.

When you have finished all this, click on the bottom right large orange arrow (Drive) and click ‘Yes’ to save your changes.

When the screen reloads, click on the Standard Class 4MT Advanced locomotive and you will now be the driver of the engine.

IMPORTANT: *If you have manually added any 4MT Advanced engines or tenders to an installed scenario that was not supplied with this 4MT Advanced package, be sure to go back into that scenario and delete them and save the scenario BEFORE you uninstall the 4MT Advanced package. Failure to do this will prevent the default scenario from operating.*

CREDITS

4MT Advanced locomotive and tender

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At Just Trains we have invested significant time, effort and money to develop, manufacture and publish all of our rail simulation products. This includes rewarding the programmers and artists whose creativity contributes so much to the products we all enjoy.

A pirate, otherwise known as a thief, makes a profit from the sale of other people's hard work. In some cases he makes more profit than the publishers and developers make from the sale of an original title. Piracy is not just the domain of the casual domestic user in his or her back room, but it is also a multi-million pound business conducted by criminals often with associations with the illegal drugs trade. Buying or downloading pirated copies of programs directly support these illegal operations.

Don't be fooled by a load of old tosh about file 'sharing'. The sites that host these 'shared' files are multi-million dollar operations that cover their backsides with the excuse that they are simply a 'gateway' to the files. In fact, they actively encourage piracy and are often funded by advertising. Most of them are illegal money-laundering operations by another name.

The people who really suffer from game piracy are the artists, programmers and other committed game development staff. Piracy and theft directly affects people, and their families. Loss of revenue to the games industry through piracy means many are losing their jobs due to cut-backs that have to be made to ensure developers and publishers survive. The logical outcome of this is that eventually the supply of flight simulation programs will dry up because developers think it is not worth the hassle.

It's not just copying software that is against the law, owning copied software also constitutes a criminal offence; so anyone buying or downloading from these people is also at risk of arrest and prosecution.

To find out more about the implications of piracy please click on the Piracy link on our website at justtrains.net.