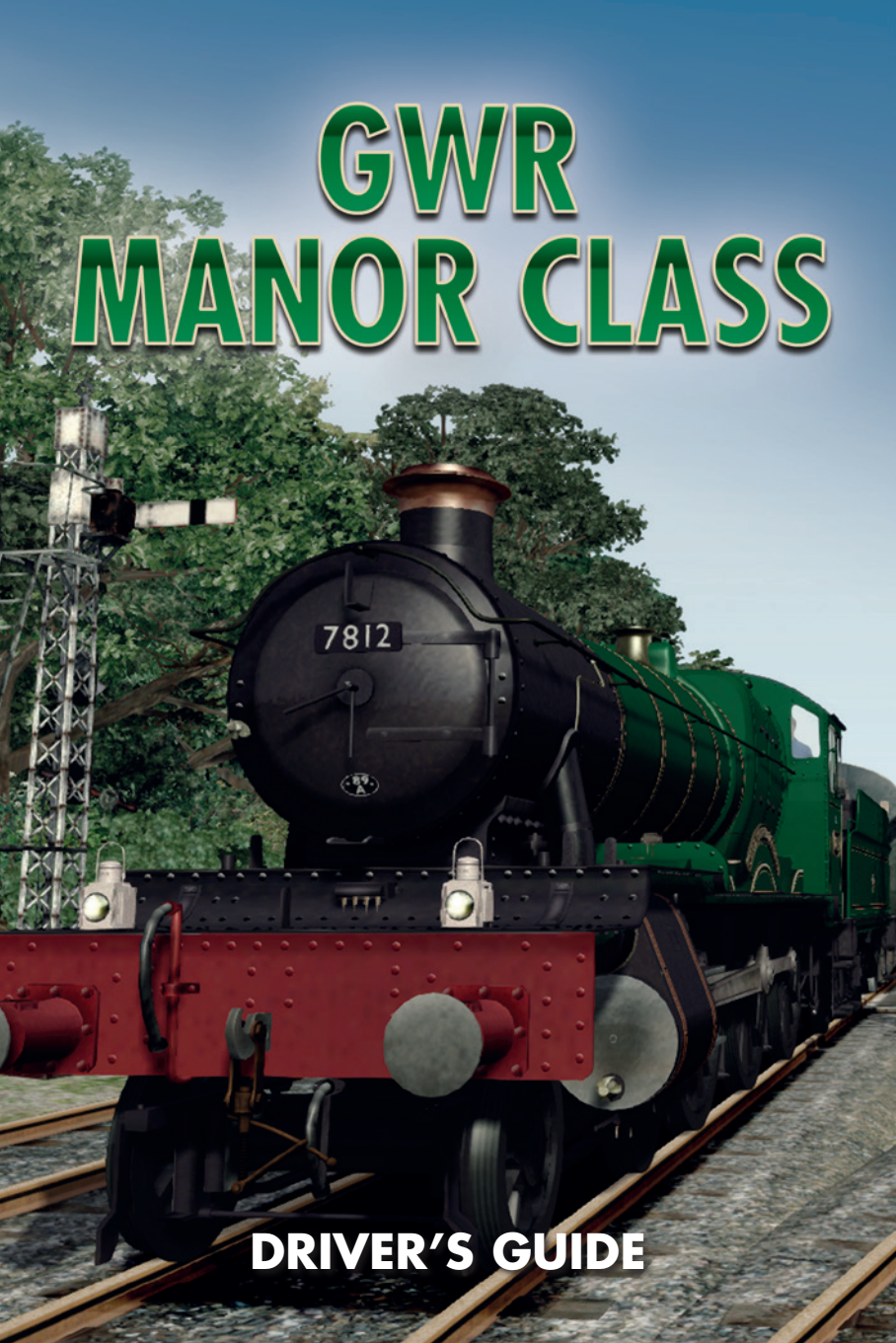
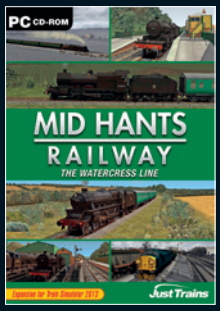
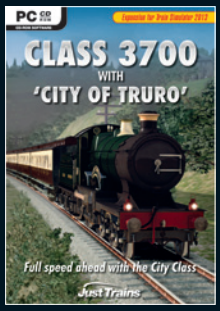
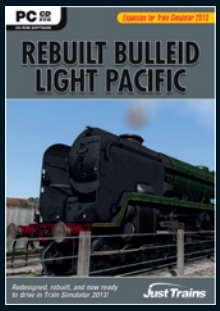
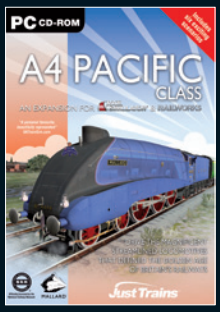

GWR
MANOR CLASS
7812
DRIVER'S GUIDE

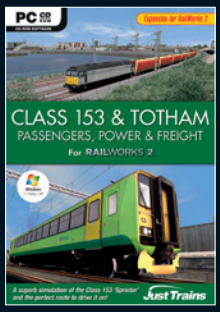
## *The Spirit of Train Simulation*

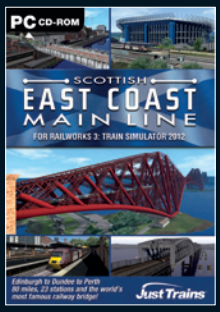


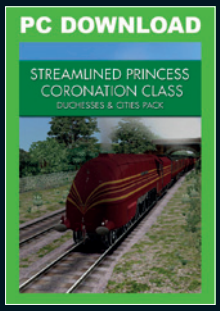



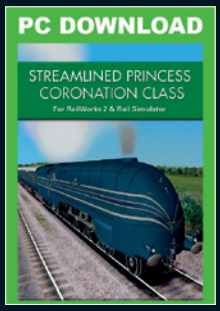





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# GWR Manor Class

## DRIVER'S GUIDE

Steam locomotive expansion for Train Simulator 2013

## CONTENTS

# INTRODUCTION

The 'Manor' or 7800 Class locomotives were designed and built by GWR and 20 were built between 1938 and 1939, just in time to aid the British war effort. The design incorporated GWR's almost customary 4-6-0 wheel arrangement and the class was considered so good that BR built a further ten machines at Swindon in 1950.

All the locomotives were, as you might expect, named after manor houses in the British countryside, mostly those on or near the Great Western Railway network.

The locomotives were designed to be a lighter version of the Grange Class, mainly to allow them to work on lines such as the Cambrian and other weight-restricted routes. This didn't mean, however, that they only worked on secondary lines – they could occasionally be seen hauling prestige expresses when more powerful locomotives were not available.

Manor Class locomotives were a perfect mixed-traffic design and were as happy hauling a coal train as they were a seven-coach stopping train. Although not a hugely powerful design, the locomotives were well liked and indeed 29 of the 30 built made it to 1964/5 (virtually the end of UK steam operations) which undoubtedly helped nine members of the class make it into preservation.

In their early years the 7800 Class loco's could be found across much of the GWR system, but by the end of the 1950s virtually all operations were concentrated in South or Mid Wales, where steam power hung on for a little longer than on the main lines.

## Liveries and models

The GWR Manor locomotive is supplied here in three liveries and a selection of models:

- BR Lined Green
- BR Lined Black

This expansion also includes tenders with both the early and the late style emblems.


DUNSTAT MANOR

**7821 Ditcheat Manor, BR Lined Black, 3,500 gallon early emblem tender**

7821 entered traffic in November 1950 and was first allocated to Oswestry shed before spending around five years based at Tyseley. From there it moved to Newton Abbot before it was withdrawn from Shrewsbury in November 1965.

7821 moved to Barry scrapyard in 1966, then on to the Gloucestershire and Warwickshire Railway before eventually steaming again in 1998 on the West Somerset Railway. It has visited various railways since then and was withdrawn for overhaul in 2005. It is currently on display at the Steam Museum in Swindon.

**7823 Hook Norton Manor, BR Lined Green, 3,500 gallon early emblem tender**

7823 entered traffic in December 1950 and spent a number of years working out of Banbury before spending time allocated to Truro, Machynlleth and Tyseley, from where it was withdrawn in July 1964.

7823 was scrapped at Cashmore's, Great Bridge.


7821

**7828 Odney Manor, BR Lined Green, compatible with 7812 and 7823 tenders**

7828 was the penultimate Manor built and entered traffic from Swindon in December 1950. It was initially shedded at Neath before moving to Shrewsbury for the rest of its career. Its claim to fame is that it hauled the Royal Train in tandem with 7827 in the late 1950s.

'Odney' was withdrawn from Shrewsbury in October 1965 and moved to Barry scrapyard. It was sold initially to the Gloucester and Warwickshire Railway and was re-introduced to traffic in 1987. Since then it has operated widely on the preserved railway network and is now in traffic at the West Somerset Railway as 'Norton Manor' in tribute to the nearby army barracks that has troops serving in Afghanistan.

## Coaches

This expansion includes the following Just Trains Mk1 coaches, complete with passenger view, in the following liveries:

**Brown and Cream – British Railways**

**Brown and Cream – Great Western Railway**

**Crimson and Cream 'Blood and Custard' – British Railways**

The carriages include 'Cornish Riviera' destination boards.


7821


7828

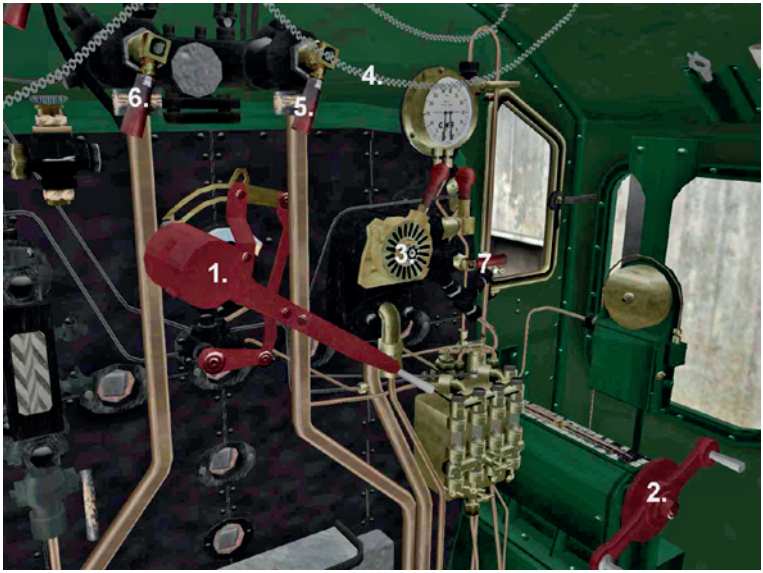
# CAB CONTROLS

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

Some of the cab operations and animations can only be operated manually when Expert control mode is ON in the host simulation and Auto Fireman is set to OFF.

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

The functions of the cab controls are described in the 'Driving the GWR Manor Class' chapter of this manual.



**1. Regulator**

Open – [A]

Close – [D]

**2. Reverser**

Forward – [W]

Reverse – [S]

**3. Brakes**

Release – Semicolon [;]

Apply – Apostrophe [']

**4. Whistle**

Space bar

**5. Live Injector**

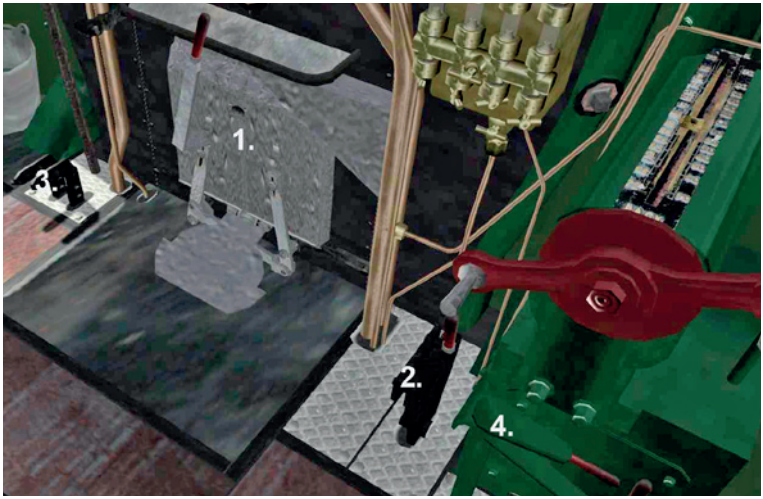
On/Off – [O]

**6. Exhaust Injector**

On/Off – [I]

**7. Ejector**

On/Off – [J]




**1. Firebox door**

Drag the mouse left or right to open and close, or use the [F] key to open and [Shift]+[F] to close.

**2. Cylinder drain cocks**

On/Off – [C]

(No control visible, keystroke operation only)

**3. Damper**

Open – [M]

Close – [Shift]+[M]

(No control visible, keystroke operation only)

**4. Sander**

On – Hold [X] to dispense

Off – Release [X]

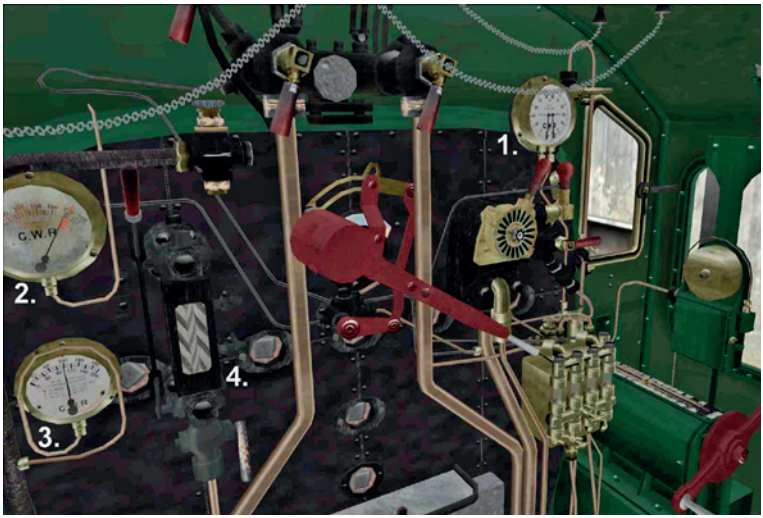
# CAB VIEWS

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

Zoom view in and out – Up/Down arrow keys.

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

# CAB GAUGES AND INDICATORS




**1. Brake vacuum in the train pipe and vacuum chamber**

Indicates the vacuum available for brake operation.

**2. 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!

**3. Steam heating pressure**

Shows the pressure of the steam used for heating the carriages.

**4. Water level indicator**

Shows the level of water in the boiler.

# HEAD-UP DISPLAY (HUD)

In Train Simulator 2013 the default control display is the HUD (Head-Up Display) that 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 previous function key views and functions from previous versions of RailWorks 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 2013 manual.


Press the [F5] key twice to bring up the Engine information. This shows the following indications:

**Speed** – MPH

**Regulator** – position in %. The further this is open, the more steam goes to the steam chest.

**Reverser** – forward/reverse position from neutral in %. This is the 'gearbox' of the engine; it adjusts the amount of time that steam is allowed to the cylinders and affects their travel. The higher the percentage, the more steam goes to the cylinders. As you accelerate, the percentage should be reduced so that you have the locomotive steaming efficiently.

**Train brake** – braking pressure displayed in % and showing whether the brakes are in Apply, Running or Release mode. To save steam and to prevent the brakes potentially leaking on you should release them before you set off and then leave them in the Running position while in motion.

**Boiler pressure** – PSI up to a maximum of 225 PSI. Aim to keep the pressure between 210 and 220 under normal running conditions, especially when attacking a climb.

**Steam chest pressure** – displayed in PSI. The higher the better, generally speaking, but make sure that the pressure does not get so high that it has a negative effect on the boiler pressure.

**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'.

**Fire mass** – displayed in pounds and referring to the 'strength' of the fire. Don't let it get too high as the coal won't burn quickly enough; generally keep it around 1,000-1,200 pounds above the starting mass.

**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.

**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.

**Small Ejector** (called 'Small Compressor' in the simulation menu) – open or closed. This creates the vacuum needed for the brakes to function.

**Tender water level** – displayed in 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.

# DRIVING OPTIONS

The host simulation offers three levels of control over the engine.

Steam engines are complex machines to drive and so we recommend that you start driving these locomotives in Simple mode with the Auto Fireman set to ON.

To check or set the driving options, start the host simulation, click on 'Options' and then see the 'Gameplay Options'.

## Simple driving command keys

**[A]** – release the brakes and increase the engine regulator and engine power to accelerate the train.

**[D]** – decrease the engine regulator and engine power and apply the brakes to slow and stop the train.

**[S]** – change direction. Note that the regulator must be at zero before you can use this key to change direction.

You can check the status of these controls by using the [F4] key to show their indications at the bottom of the screen.

## Intermediate and Expert driving command keys

**Open/close regulator**

[A]/[D]

**Increase/decrease reverser**

[W]/[S]

**Increase/decrease train brake**

[;]/[']

## Expert steam train controls

Driving a steam locomotive in Expert mode is the most complex method, but also allows you the most control.

**Open/close firebox door**

[F]/[Shift]+[F]

**Live injector (Driver's side) water tender feed valve**

On – [L]

Off – [Shift]+[L]

**Live injector steam (Driver's side)**

On/Off – [O]

**Exhaust injector water tender feed valve (Fireman's side)**

On – [K]

Off – [Shift]+[K]

**Exhaust injector steam (Fireman's side)**

On/Off – [I]

**Sander**

On/Off – [X] (only operates while the key is held down)

**Small ejector**

On/Off – [J]

**Increase/decrease damper opening**

[M]/[Shift]+[M]

**Increase/decrease blower**

[N]/[Shift]+[N]

**Increase/decrease coal shovelling rate**

[R]/[Shift]+[R]

**Cylinder cocks**

Open/close – [C]

**Lamps**

On – [H]

Off – [Shift]+[H]

Repeatedly pressing [H] will switch between lamp states if they are available.

# DRIVING THE GWR MANOR CLASS

Driving the GWR Manor Class locomotives is not simply a question of moving the reverser forward, releasing the brakes and slamming the regulator fully open. Getting optimum performance from the locomotive requires correct operation of the controls.

For the purpose of this instruction we will enlist the help of the automatic fireman supplied in the simulation. The Auto Fireman will automatically take care of the firing of the fire and the boiler water levels via the appropriate controls.

You can set the status of the Auto Fireman in the Gameplay section of the Options menu.

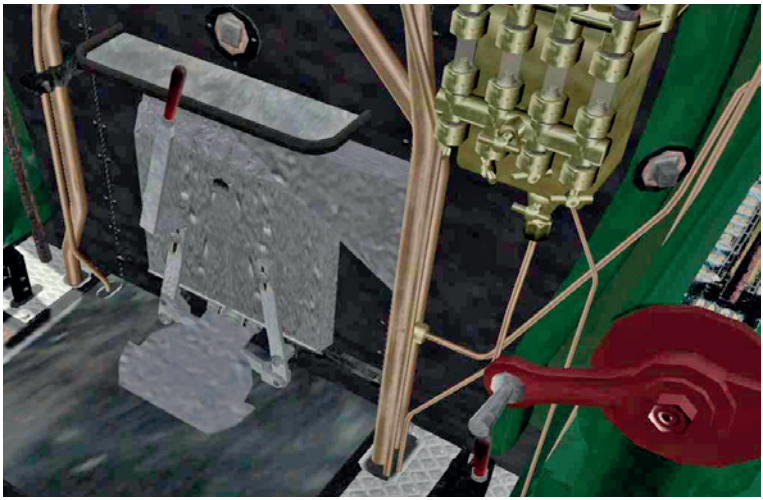
In Auto Fireman mode the vast majority of housekeeping tasks are handled by the Auto Fireman and you have no control over them. In this mode, however, you DO have control over:

- Regulator
- Brakes
- Reverser
- Sander
- Cylinder drain cocks

***Note:*** *In Auto Fireman mode the cab control animations do not animate but the operations do happen.*

For ease and precision we will use the keyboard controls rather than mouse operations.

## Firebox access



Click on the door and drag the mouse left to open the firebox door. Drag the mouse right to close it.

The [F] key can also be used to open the door, and [Shift]+[F] to close it.

***Note:*** *You can only operate the firebox door when you are NOT in Auto Fireman mode. See later sections of this manual for information on how to drive without the assistance of the Auto Fireman.*

## Driving the GWR Manor in Auto Fireman mode

Move into the cab and press the [1] key.

Press [F4] to bring up the simple information bar at the bottom of the screen.

Press [F5] twice to bring up the detailed engine information at the top left of the screen.

***The following settings are approximate – remember that this is a simulation and will inevitably have some limitations.***

Press [W] to move the reverser forward to around 70%. You can see the % in the [F5] information area.

Press the [;] key (semicolon) to fully release the brakes. The brake status is displayed in the [F5] information area.

Press [A] to open the regulator to around 60%. You can see how far the regulator is open (as a percentage) in the [F5] information area.

The engine will start to pull away. As it gets to around 10 MPH press the ['] key (apostrophe) to move the brake status to around 5% so the brakes are in the 'Running' mode.

As your speed increases, bring the reverser back to around 65% at 15 MPH and open the regulator to around 65%.

As you gain speed ensure that you keep within the speed limit, but follow this procedure if you are allowed to go faster:

- As your speed passes 25 MPH bring the reverser back to 55% and increase the regulator to 75%
- As your speed passes 30 MPH bring the reverser back to 45% and open the regulator up to 80%
- As your speed passes 40 MPH bring the reverser back to 35% and open the regulator to 100%

Bring the reverser back to the following percentages at these speeds:

40-45 MPH: 35%

45-50 MPH: 30%

50-60 MPH: 20%

OVER 60 MPH: 15-20%

You should be able to increase your speed to the maximum if you use the following tip.

*The normal speed for mainline running these days is 75 MPH. You can go faster if you wish, but be aware that over a certain speed the rate at which steam is generated will be less than the rate at which it is used (you can monitor this in the [F5] display). The boiler pressure will then decrease, meaning that you will eventually slow down. There is no way around this as the engine does not have the capacity to run constantly above its rated speed.*

*You need to look at the steam chest pressure gauge to help you set the regulator to the correct position. Basically, you can open the regulator more and more as long as the steam chest pressure does not decrease. If it does, then just close the regulator until the steam chest pressure increases again, then wait a while and try to open the regulator a little, all the time keeping an eye on the stream chest pressure. This technique will allow you to get the best performance from the engine.*

*The technique is to keep the steam chest pressure the same as the boiler pressure, not lower.*

*Remember that if you are pulling more weight or travelling up an incline or round a curve, then performance will be lower than when you are running on the level or downhill!*

## Coasting, slowing, stopping and the stopped engine

**Coasting** – Move the reverser to the middle position, but leave the regulator open a little to cushion the pistons and use the brakes to slow down if you wish to reduce your speed.

If you then want to accelerate, move the reverser to the previous running position and re-open the regulator.

**Slowing** – If you wish to reduce speed, reduce the regulator to almost fully closed (keep it open by a few percent to cushion the mechanics) and gently apply the brakes until you reach your desired speed. Release the brakes to 'Running' mode then open the regulator to maintain that speed.

**Stopping** – Reduce the regulator to almost fully closed (keep it open by a few percent to cushion the mechanics) and gently apply the brakes until you come to a halt.

**Stopped** – When stopped, bring the reverser back to its middle position with the regulator fully shut. When you want to move away, move the reverser forward to 70% and use the procedure described above.

## Operating the boiler water controls with the Auto Fireman turned off

If you wish to drive the locomotive with the Auto Fireman mode OFF you will need to operate the boiler water controls manually.

The injectors are used to force water from the water tank in the tender into the boiler. They use a combination of steam and water pressure to overcome the pressure in the boiler itself, and water enters via a non-return (Clack) valve.

On the GWR Manor, as with many other locomotives, the 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 this instruction we will only operate one injector system, the one on the Fireman's side of the footplate.

Each injector has two controls:

- The valve that allows the water from the tender to the injector control
- The injector control itself

The tender valve has to be opened to allow the water to flow from the tender to the injector control, and then the injector control is opened to allow the steam/water mix into the boiler. 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.

## Operating the Fireman's side injector system

Open the tender water feed valve by pressing the [K] key.

Open the injector by pressing [I].

Water will now flow into the boiler – refer to the [F5] display and you can see the water level in the tender going down.

To stop the flow of water to the boiler, close the injector by pressing the [I] key, and close the tender valve by pressing [Shift]+[K].

Check the [F5] display to ensure that the water flow has stopped.

Because the tender valves are mounted on the tender rather than on the engine, these valves are not animated – this is a limitation of the host simulation.

## Driver's side injector system

The keys for the driver's side injector are:

**Water tender feed valve**

[L] – On

[Shift]+[L] – Off

**Injector**

[O] – On/off

## Stoking the firebox with the Auto Fireman turned off

***Important! You need to open the firebox door before you can fire the firebox!***

You can either drag the mouse to open and close the flap as described previously, or use the [F] key to open the flap and [Shift]+[F] to close it.

Coal stoking refers to the firing of the firebox with coal.

Press the [R] key to start stoking (press more to increase the rate).

[Shift]+[R] slows the firing rate and will eventually stop it.

Remember to close the door in between firings.

# ADDITIONAL DRIVING INFORMATION

The Manor Class locomotives are fairly powerful but are not particularly good at climbing at speed. Even with a light train of four or five coaches you will find yourself down to 30 MPH on a moderate gradient. They are, however, able to haul a fair amount of weight at slow speeds; they will generally make it up any incline with nine coaches, but this would only be at around 7-10 MPH on a 1-in-50 gradient.

The 7800s are well suited to mixed traffic work and are equally at home on a semi-fast passenger service or on a moderately loaded freight train. They are not ideal for express passenger services as their relatively small driving wheels mean they are unable to get above 60 MPH without a downhill gradient or a lighter train.

# SCENARIOS

Please note that the scenarios included with this Manor Class add-on will only work on the assigned routes, some of which are not supplied with Train Simulator 2013 and will need to be purchased.

## Somerset & Dorset Railway

**JT Manor – Bad Manors**

A Manor has failed in the platform at Templecombe Lower whilst hauling a rail tour to Bristol. The train is heading for Highbridge and is very heavy. You are to collect it from Templecombe Lower and take it to Evercreech.

**JT Manor – Burnham Goods**

Drive a GWR Manor on an early morning goods pick-up heading from Highbridge and Burnham to Templecombe. You take over at Evercreech Junction.

**JT Manor – Out and Back**

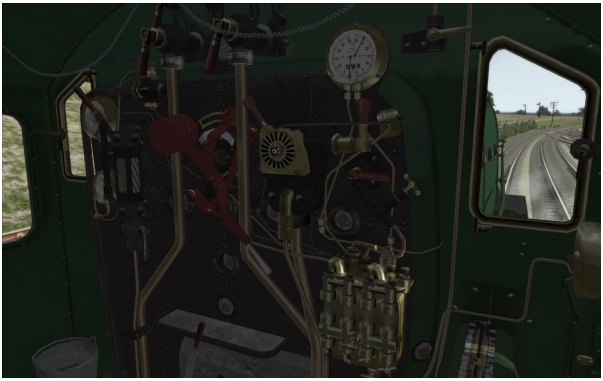
Drive 7812 Erlestoke Manor on a morning service from Evercreech Junction down to Templecombe before returning as far as Evercreech with a train bound for Highbridge and Burnham.

**JT Manor – Sunday Ballast**

Drive a GWR Manor on a ballast train from Radstock up to Midford before returning to take another rake down to Bath. There is a great deal of engineering work taking place tonight and we need to get these wagons into position complete with their heavy ballast.

**JT Manor – Free Roam**

Click on a train and take it for a drive from the Templecombe MPD.



# ADDING THE GWR MANOR TO YOUR OWN SCENARIOS

By default the GWR Manor Class locomotives are only available via the supplied scenarios, but you can make them available for other routes, without having to create a scenario, in the following way:

Start Train Simulator 2013.

Select the 'Route' on which you want to use the GWR Manor.

Select 'Free Roam' or 'Free Play'. Press 'Play' if you have chosen 'Free Roam' – selecting 'Free Play' will start the simulator right away.

When the simulation has loaded, bring up the menu and click on the earth symbol (World Editor) at the bottom centre of the screen.

At the bottom right on the next window, ensure the padlock symbol is unlocked.

Move to the top left menu (partly hidden in the border) and click on the orange train symbol (Scenario tools).

If asked 'Warning…Do you wish to continue' – click on 'Yes'.

On the 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.

Select Just Trains from the drop-down list and ensure that 'GWR_Manor' has been ticked.

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 '78xx(E) XXXXXX' (E for Engine and XXXXXX is the Engine description) entries – these are the locomotives in their various liveries.

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 and then right-click to deselect it.

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

Being a steam locomotive, it will also need a tender to carry the coal and water. To add the tender, do the same as above for adding an engine but look for the entry that says: '78xx(T) XXXXXXXX' (T for Tender) and, as before, 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.

You will need to add a driver to the engine so you can drive it. To do this, click on the engine, then 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. Fill in a name in the top box, and in the lower drop-down box select 'Express passenger'.

If you want to add some passenger carriages, select the red 'Rolling Stock' icon (looks like a container wagon) on the middle left-hand slide-out menu and scroll down until you see the relevant entries, i.e. 'JT – Mark 1'. Place this behind the tender in the same way as you added the engine and tender.

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

When the screen reloads, click on the GWR Manor locomotive and you will now be the driver of the engine.

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

# CREDITS

**GWR Manor Class locomotive and tender**

| | |
|---|---|
| Modelling and textures | Matthew Ivey |
| Sounds, dynamics, scripting | Tom Williams |
| Scenarios | Mark Walker |

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| Leadership | Andy Payne |
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| Manufacturing | The Producers |

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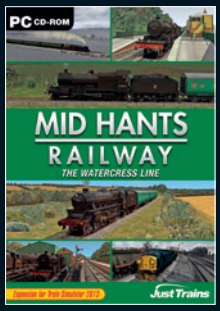
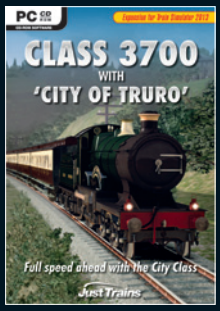
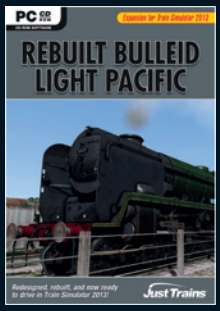
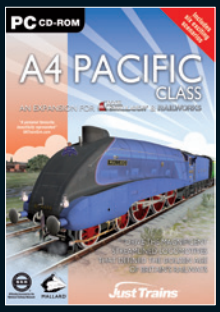
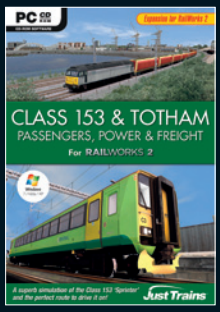
## *The Spirit of Train Simulation*

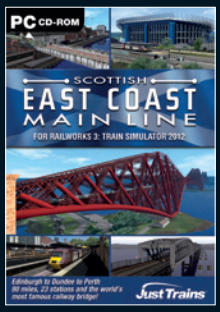


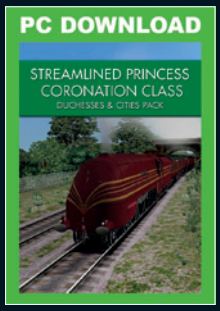



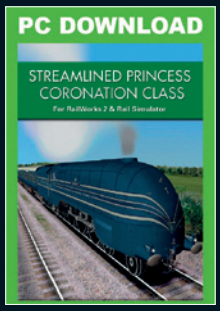





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