GWR SAINT
and Travelling Post Office

Contents

Introduction

Thank you for purchasing the GWR Saint and Travelling Post Office Add-on for Train Simulator.

In the Saint we have again brought together everything we have learnt in the past 7 years to bring you another high quality, detailed add-on which includes every livery it carried for the GWR period and every named member of the class. We have added more advanced features such as the new coaling "by the shovelful" and expanded some of those we know you already love, such as the cab head out views.

We have also finally seen the completion of an idea we have had since 2009, the working Travelling Post Office exchange apparatus in Train Simulator. This has been a dream of ours since we first looked at scripting in Railworks and dreamt of the possibilities and it has taken many hours to finally reach a place where we can say, "We did it!"

We hope you are as pleased with it as we are.

Please read this manual thoroughly, especially to get the best from Advanced Mode, and we hope you enjoy driving this GWR classic.

All the best,
Victory Works

Click on the links below to read about future projects, see Work in Progress pictures and read more about the research, detail and passion that we put into our Train Simulator add-ons.

Features

- Simple, standard and advanced driving modes
- Xbox controller support *SIMPLE AND STANDARD MODES ONLY*

- GWR 2900 "Saint" Class Locomotive
    - All 75 named members of the class
    - Square and curved frame versions with lever and screw reversers
    - GWR Green (all logos spanning the 1906 to 1947)
    - White or red lamps for the correct era
- Optional parts and fittings including outside steam pipes, cab cover, speedometer, running numbers and headboards
- Custom sound sets inside and out based on existing Churchwood locomotives
- Realistic cab with multiple views, including "head out" and fully modelled firebox and coal
- Realistic wheel slip physics and effects *ADVANCED MODE ONLY*
- Simulated steam chest *ADVANCED MODE ONLY*
- Cylinder cock management *ADVANCED MODE ONLY*
- Boiler management with priming possible *ADVANCED MODE ONLY*
- Realistic injector control *ADVANCED MODE ONLY*
- Realistic "by the shovel" stoking with synchronised sound *ADVANCED MODE ONLY*
- Dynamic steam and smoke colour and quantity
- Realistic boiler water gauges effected by gradient, acceleration and speed and with blow down test
- Opening windows with rain effects
- Dynamic lamp setting on both locomotive and tender
- Cab light effects including firebox glow and water gauge lamp
- Tender water scoop compatible with Dovetail Games water troughs as featured in the Riviera Line in the Fifties: Exeter to Kingswear route

- Great Western Coaching Stock
    - Collett "Sunshine" Composite, Third and Brake Third
        - 1934-42 Shirtbutton livery
        - 1942-47 Coat of arms livery
    - Travelling Post Office Sorting coach
        - 1927-34 GW livery

- 1934-42 Shirtbutton livery
- 1942-47 Coat of arms livery
  - o Travelling Post Office Diagram L21 baggage coach
    - 1927-34 GW livery
    - 1934-42 Shirtbutton livery
    - 1942-47 Coat of arms livery
    - Fully functional travelling post office exchange when used with included line side apparatus and compatible locomotive

- 4 scenarios for the Riviera Line in the Fifties: Exeter to Kingswear route
- 12 Quick Drive consists with appropriate Mail Train stock

Background

Between 1902 and 1905 George Jackson Churchward, Chief mechanical engineer of the Great Western Railway, built and tested three prototype 2 cylinder 4-6-0 locomotives before selecting the third as the basis for the production of the 2900 series.
The Saint class, as it became known, appeared in four production series which were built between 1905 and 1913.

The first, the 19 locomotive Scott series, were built in 1905 with 13 of them built in the 4-4-2 "Atlantic" configuration. However this was short lived and by 1913 all of them had been converted to 4-6-0 and were renumbered to 2972–2990. The series name was due to the locomotives being named from Walter Scott's Waverley novels.

The Ladies series followed in 1906 numbered 2901-10 and were named after historical and mythical Ladies.

The Saint series, which became the generic name for all of the class, were built in 1907 and numbered 2911-30. These features a curved frame design rather than the rather angular frame of the previous two series and many of the earlier built locomotives were rebuilt with these in later life.
Saint Martin was rebuilt in December 1924 to become the prototype for the 4900 Hall class.

The Courts were the final series of 2900's, built 1911-13 and numbered 2931-55 and were named after famous Courts (mansions and country houses).

The 29's, as they were often referred to by their crews, performed well as passenger locomotives over all the long-distance routes of the GWR and were used on all but the fastest express trains and became a template for later GWR 2-cylinder 4-6-0 classes including the Modified Hall, Grange, Manor and County classes.
However they were often displaced by these classes and by October 1953 they had all been scrapped.

No 2900's survived into preservation, however the Great Western Society at Didcot is currently converting 4942 Maindy Hall to be a brand new Saint, No. 2999 - Lady of Legend.
www.thesaintproject.co.uk/

Scenarios

4 career scenarios are included for the Riviera Line in the Fifties: Exeter to Kingswear route.

GWR Saint: [1] TPO Exchange Demonstration
Monday 15th July 1929
Drive 2900 class locomotive No. 2909 "Lady of Provence" with a single TPO coach on a demonstration of the GWR TPO exchange process.

GWR Saint: [2] Great Western TPO, Down
Monday 11th August 1947
Drive 2900 class No. 2916 "Saint Benedict" on the nightly Great Western Travelling Post Office Down service, the 22:10 from Paddington to Penzance.
The train is made up of 2 TPO baggage vans, 3 TPO sorting vans, a brake coach and 3 Siphon G vans.

GWR Saint: [3] Local Mail
Tuesday 4th May 1948
Drive No. 2942 "Fawley Court" at the head of the Local Mail service to Kingswear. You will be performing mail bag exchanges at Newton Abbot and Langford Bridge and stopping for passengers at Torquay, Paignton, Churston and terminating at Kingswear.

GWR Saint: [4] Great Western TPO, Up
Friday 16th January 1948
Drive 2900 class No. 2929 "Saint Stephen" at the head of the nightly Great Western Travelling Post Office Up service, the 18:40 from Penzance to Paddington.
The train is made up of a brake coach, 3 TPO sorting vans, 2 TPO baggage vans and 2 Siphon G vans that were added at Plymouth.

Control Modes

There are 3 ways to drive the GWR Saint locomotive.

Simple Mode

This is selected using the menu in Train Simulator and provides a simple stop/go, forwards/backwards set of controls via the simulators built in HUD.

Standard Mode

This is the default mode if you choose to drive in Expert mode using the Train Simulator menu. The locomotive will operate with more complex controls and can be driven using the F4 HUD or an Xbox controller.

Advanced Mode

This is an advanced mode for those who want a more realistic experience and introduces features such as condensed water in the cylinders, overfilling the boiler, realistic wheel slip and a simulated steam chest. To achieve these extra functions use of a keyboard is required, although this can be used in conjunction with mouse operation or the F4 HUD.

To turn on Advanced Mode you can press Control A at any time and this will also turn it off again.
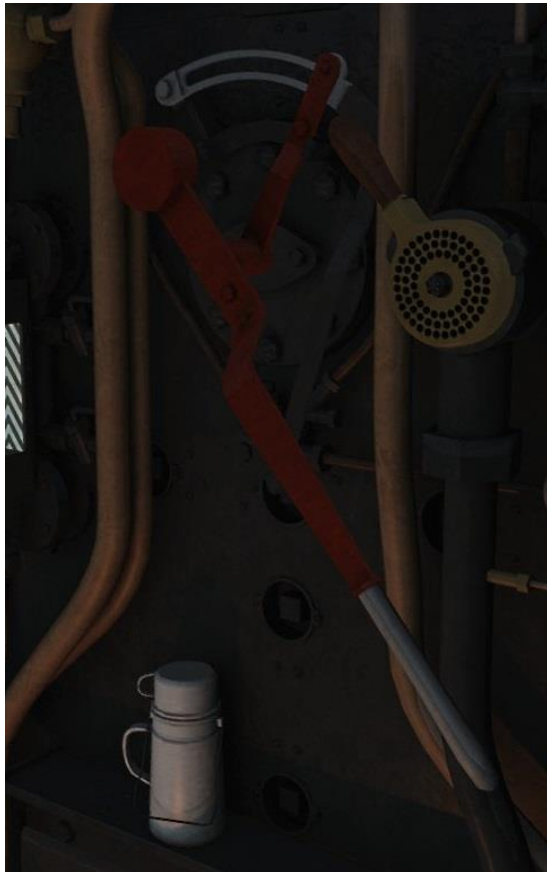
The *Advanced Mode* controls and features are shown below.

Driving Controls

Listed below are the controls available when driving the GWR Saint locomotive in standard and advanced modes.

Also see the next section "Driving in Advanced Mode" for additional information.

1. Regulator

This controls the amount of steam allowed into the cylinders, hence directly controlling the speed in conjunction with the reverser.

Keys: A,D

Advanced Mode

In advanced mode the locomotive steam chest is simulated. This will add a delay and smoothing to the increase and decrease of the regulators power to simulate steam moving through the locomotives pipes and valves. Please note that the F5 HUD regulator value will not reflect the actual position of the in-cab regulator but the value used to simulate the chest.
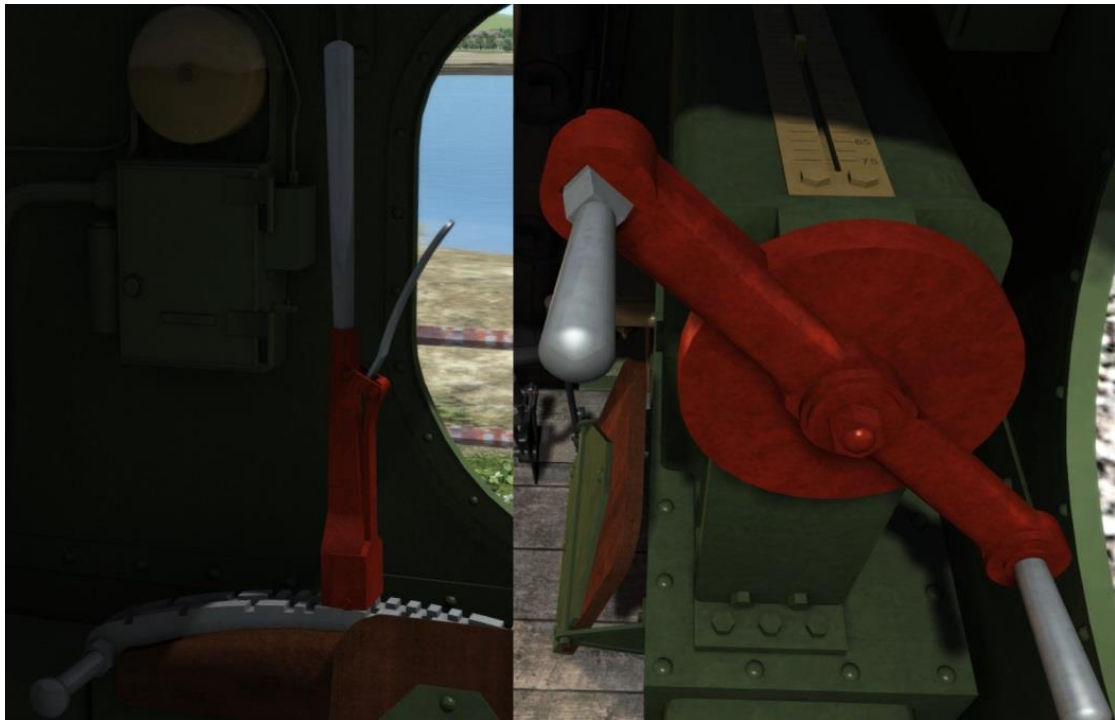
2. Reverser

This is like the gear lever on a car. It is usual to start with the reverser set at 75 percent cut-off (full). As you pick up speed you reduce the cut-off, thereby allowing economic driving as well as good speed whilst hauling a load.

Keys: W, S

Advanced Mode

To move the reverser requires the lock to be taken off. To do this, press and hold the E key on the keyboard, move the reverser to the required position, and then release the lock (let go of the E key).

Key: E

Please note that to move the lever version of the reverser successfully the regulator must be nearer to closed than fully open. Failure to do so will ensure that when the reverser lock is removed the reverser will be thrown out of your hands to the bulkhead putting it in full cut-off.

3. Cylinder Cocks

When a locomotive sits static for any amount of time, water condensation builds up in the cylinders. Thus when the piston is in motion, and because water does not compress, the cylinder will explode. The cylinder cocks are designed to expel this condensed water and should be opened for at least 4 turns of the locomotive wheels when the locomotive sets off after being stationary for some time.

The amount of stationary time varies depending on the time of day (the assumption that most steam locomotives were working from early in the morning) and also the weather. If you stop for more than a couple of minutes it's safer to open them for a few wheel rotations just to be sure, and always ensure they are open when first setting off in a scenario.
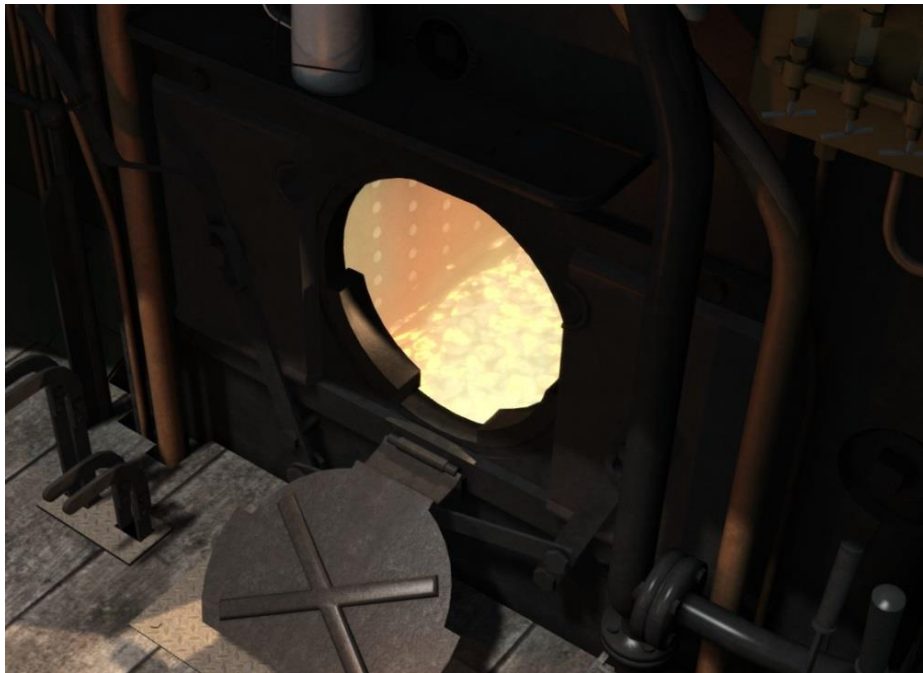
Key: C

4. Sander

The sander assists in starting and stopping without the wheels slipping.

Keys: X, Shift X

Sand is essential in pulling away with minimal wheel slip in wet or icy conditions.

5. Firebox

Ensure the firebox doors are fully open to allow maximum stoking. A related tool is the coal box door in the coal bunker. When the firebox door is open, pull the coal bunker door to regulate the input of coal into the firebox.

Key: F
Keys: R, Shift R (stoking)

Advanced Mode

A new feature from Victory Works for the GWR Saint is stoking by the shovelful. As default in Train Simulator, coal is slowly trickled into the firebox at a steady rate. In reality coal is thrown into the firebox by the shovelful and in Advanced mode this is now the case for this locomotive as well. The shovel still controls the amount of coal although this now varies from approximately half a shovelful to a loaded shovelful.

However with this comes the chance to tire out your fireman! Should you force him to shovel too much in too short a time he will gradually slow down between each shovelful and finally stop shovelling altogether – please note that GWR fireman are tough as nails and it takes a lot to make him do this!
The sound of the shovel is fully synchronised to the actual coal going into the firebox so you will be able to tell if he is slowing down. If he stops completely you will be shown a message to that effect and will receive another when he has recovered enough to continue.

As an additional tool for those who like to drive with minimal or no HUD display the firebox and coal is fully modelled with a specific cab view for checking the fire mass. The coal level is slightly exaggerated over its working range so it can be used as a visual indicator of when firing is needed. The coal level rises and falls gradually but the images below will help in visualising how this can help.
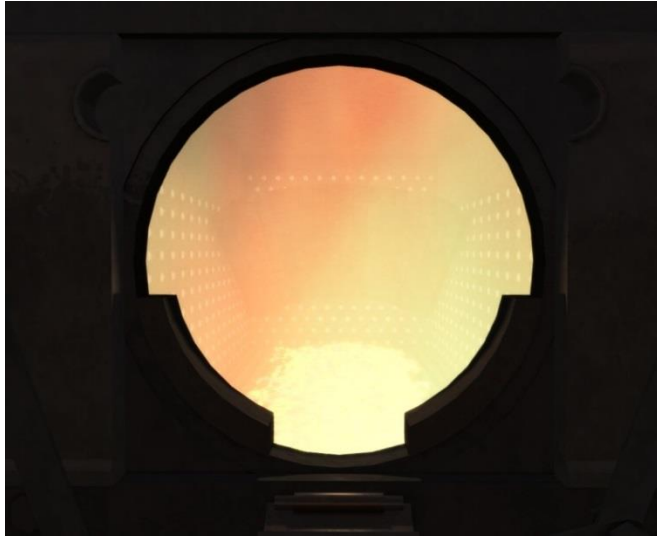
Coal level low *< 43% 840 lbs*
The grate can be clearly seen with a very small amount of coal in the centre.
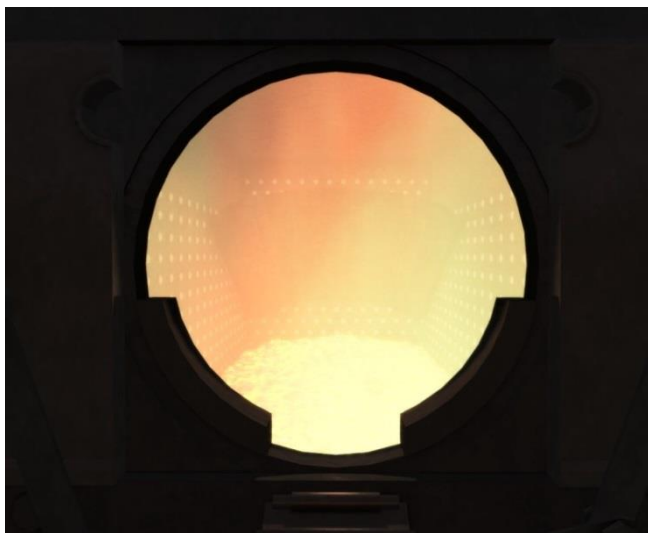
Coal level average *57% 1100 lbs*
The grate is just covered with the coal's centre just on the 2nd rivet down on the back wall.
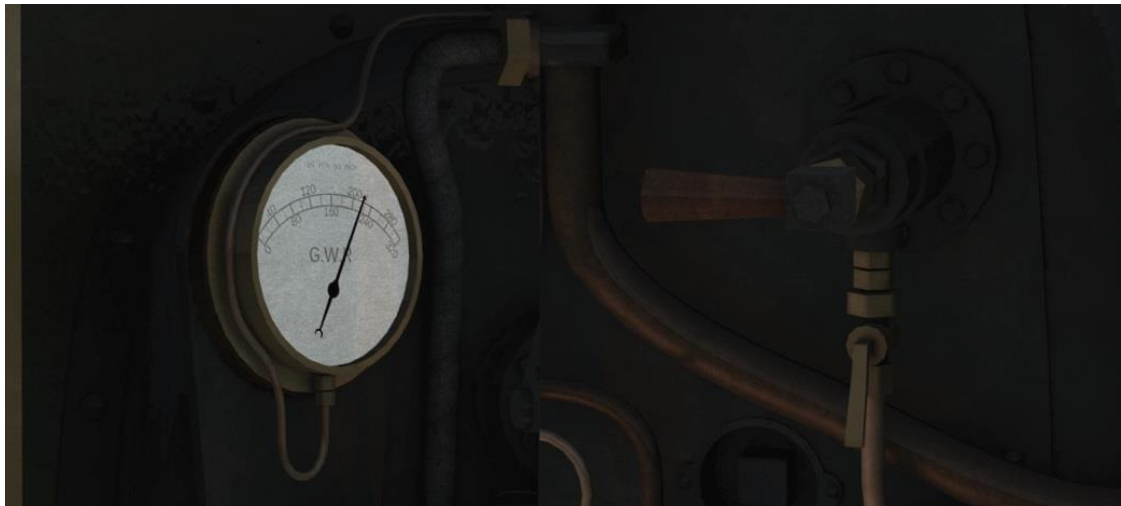
Coal level high *> 70% 1370 lbs*
The grate is deeply covered with the coal's centre almost up to the 1st row of rivets on the back wall.

The shovel on the tender controls the stoking speed/amount.

6. Blower and Boiler Pressure Gauge

The most useful application of the blower is when the regulator is at idle. Since there is no throughput of steam when at idle, air flow is minimised and therefore the fire loses heat. In some circumstances (such as when the safety valve is going off) this is acceptable but if you need to get some pressure into the boiler while the regulator is closed then fully opening the blower will force air over the fire, increasing temperature and then boiler pressure. It is good practice to turn off the blower again when you open the regulator to save on unnecessary steam usage.

Keys: N, Shift N

The boiler runs best at around 220psi. At 220psi the first safety valve will start to hiss and over 222.5psi it will open and the excess steam will vent quickly and noisily. If the boiler is still continuing to gain pressure a second larger valve will open at 225 psi. Both valves close again when the boiler is under 220 psi.

7. Dampers

Another tool related to the firebox. This helps control the heat of the firebox, closing it will reduce the air flow through the fire, thereby lowering heat and steam production. Opening it will allow more air in, hence producing more heat and steam.

Keys: M, Shift M

Advanced Mode

There are 2 damper levers; the left hand is for the front damper and the right hand for the rear damper. Each has 3 notches: closed, half and full. To get the maximum amount of air to keep the locomotive running well you need to set the damper in the direction of travel to fully open (pulled up).

In addition to the dampers you can increase the amount of air entering the firebox by opening the firebox doors and this can be tempered by closing the firebox flap.
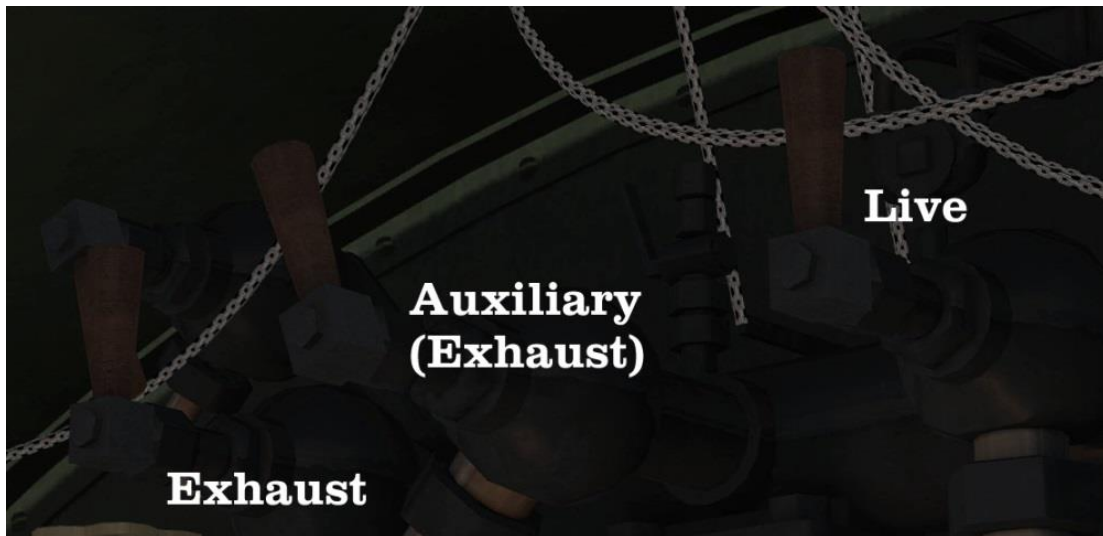
8. Exhaust injector steam (left)

This takes steam from the cylinders and recycles it to blast water from the tanks into the boiler. It is preferable when you are running low on steam.

Key: I, Shift I

Live steam injector steam (right)

The Live injector works the same as the Exhaust injector but uses live steam from the boiler, rather than exhaust steam. This is the preferred method when you have lots of steam and need to fill the boiler quickly.

Key: O, Shift O

Advanced Mode

In Advanced mode the exhaust injector will only work when there is exhaust steam to be used, i.e. the regulator is open and the locomotive is in motion or if the Injector Steam Auxiliary (Exhaust) control is open allowing live steam to be used instead.

9. Live and Exhaust water taps

These are used to adjust the flow of water for the appropriate Live or Exhaust injector control.
Keys: K, Shift K / L, Shift L

Advanced Mode

In Advanced Mode you will need to operate the injectors as the real thing and balance the water and steam to use them properly.
The correct procedure is as follows – for either Live or Exhaust injectors use the appropriately named controls:
1. Fully open the water control tap.
   - You will hear and see water coming from under the left or right hand side of the cab.
2. Turn the injector steam lever until you hear the injector start working.
   - If you hear a hiss and see a jet of steam under the cab you have too much steam pressure and the water is not entering the injector.
   - If you hear running water and see water running from the pipe under the cab you need more steam to force it into the boiler.
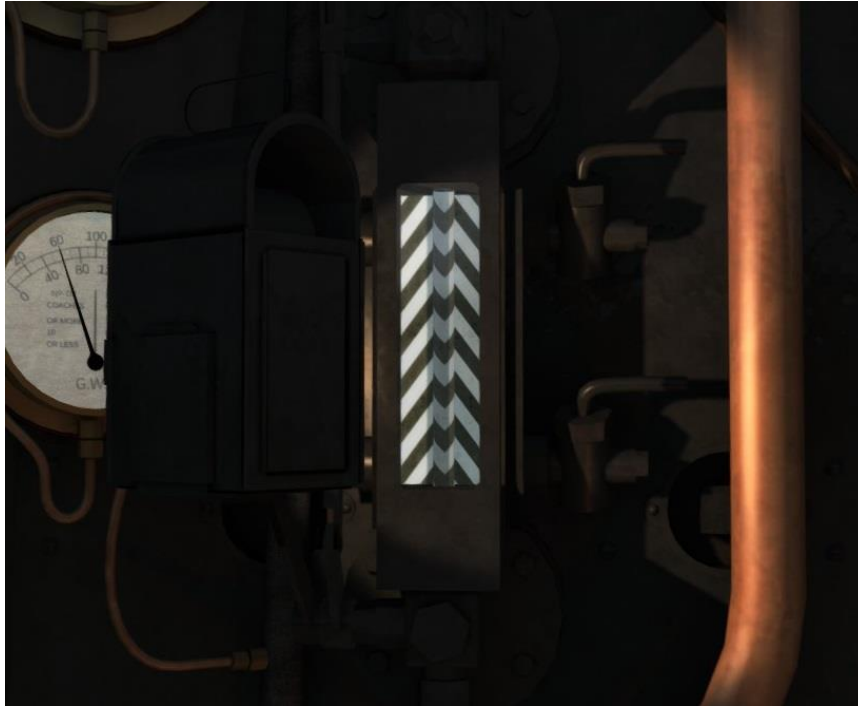
10. Boiler Gauge Glass

Attached to the boiler is a strong glass tube indicating the current level of water in the boiler. If this reaches the bottom then the fusible plugs will melt and relieve the boiler pressure whilst providing a warning to the locomotive crew.

The water level is not static when the locomotive is in motion and will wobble around appropriately. It is also affected by gradients, acceleration and deceleration.

Advanced Mode

Overfilling the boiler (past 110%) at high pressure can force water into the cylinders and cause the same problems as having condensed water from standing still. If you overfill the boiler open the cylinder cocks immediately and leave them open until the water level in the glass falls.

You can also perform a blow down test on the gauge glass by doing the following:

1. Shut off the water supply to the top and bottom of the glass by pulling the lever down.
2. Move the tap at the bottom of the gauge up, the water will empty from the glass.
3. Return the lever and tap to their previous positions by reversing the above process to refill the glass.
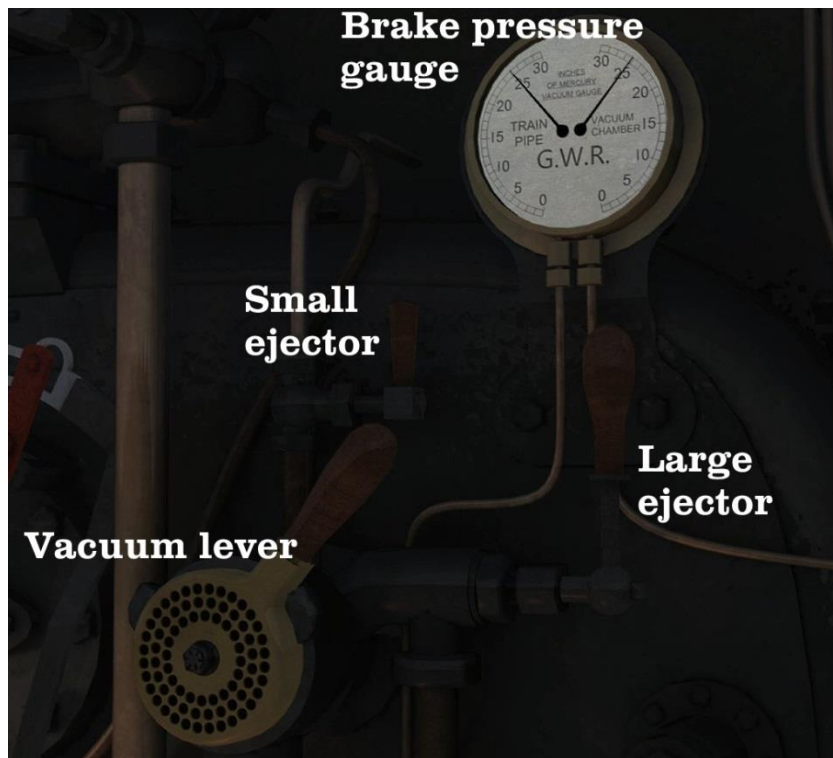
11. Vacuum Brake and Brake Pressure Gauge

The vacuum brake is used to pull the brake shoes away from the wheels by creating a vacuum in the pipes connected to them. The brake has 3 settings, brake off which forces a vacuum into the pipes and takes the brakes off, brake on which lets air into the pipes and applies the brakes, and brake running which holds the vacuum steady at its current pressure.
The brake pressure gauge shows the current pressure in the system, from 0" (on) to 25" (off).
In basic mode all of this can be controlled by the vacuum lever.

Keys: ' (apostrophe), ; (semicolon)

Advanced Mode

In Advanced mode the GWR Saint requires the use of the Large Ejector to release the brake, the vacuum lever being used only to apply it.

In addition the GWR Saint has a mechanical ejector which will start to work when the locomotive is travelling at approximately 18mph which will keep the brake pressure up. At speeds lower than this the brake system will leak slowly when the large ejector is closed. To counter this leak you can use the Small Ejector lever which consumes less steam (and therefore boiler pressure) than the Large Ejector.

Keys: Large Ejector - P, Shift P. Small Ejector - J, Shift J
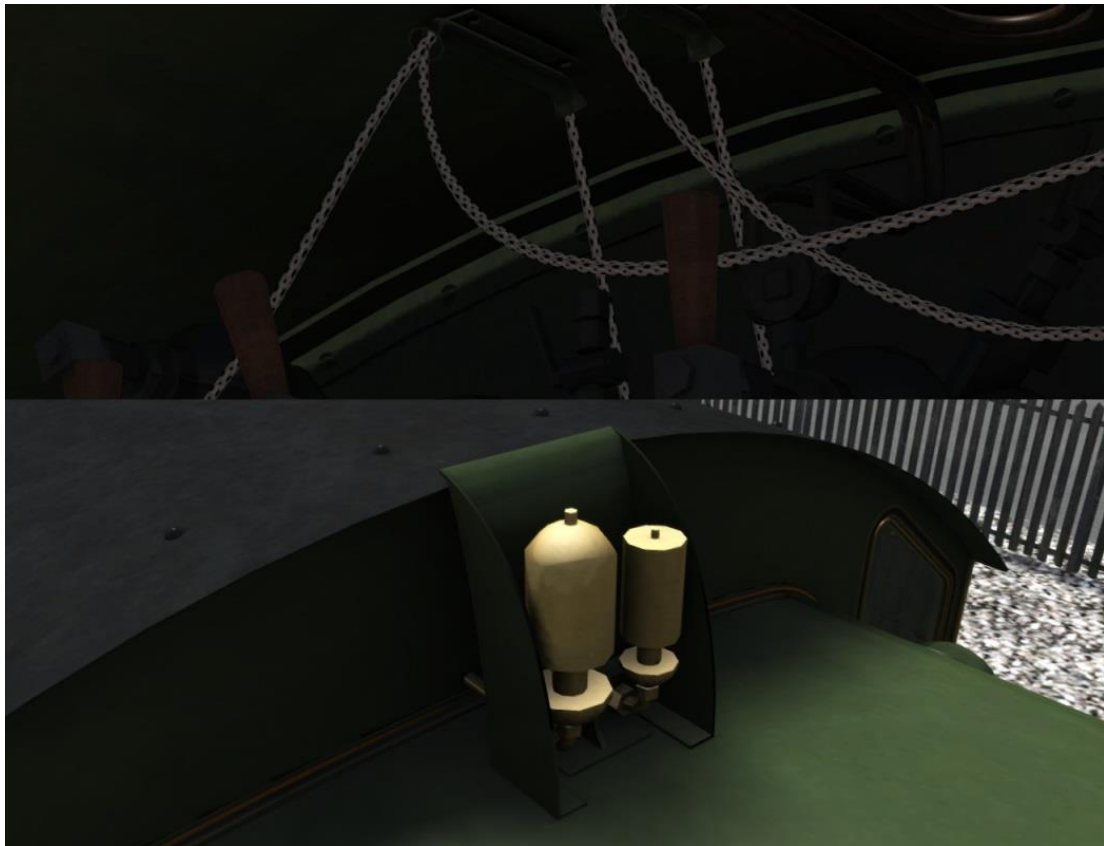
12. Whistles

Steam locomotive whistles are powered by steam from the boiler and are used to signal a trains approach, warn of danger and often to signify departure. The GWR Saint, like many GWR locomotives, has 2 whistles, the second being used to communicate messages to the guard of the train.

The main whistle is operated using the Space key, with a selection of short whistles by holding down Control at the same time. The B key operates the guard whistle.
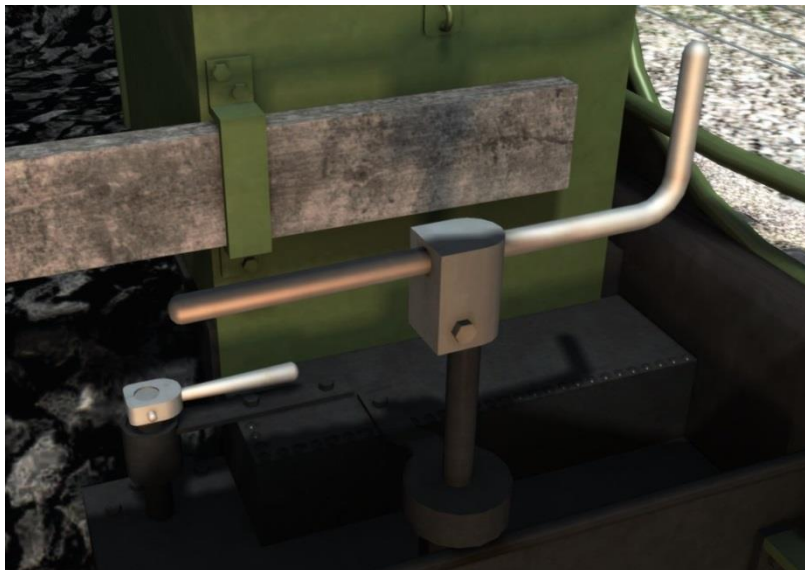
Key: Space, B, Ctrl Space
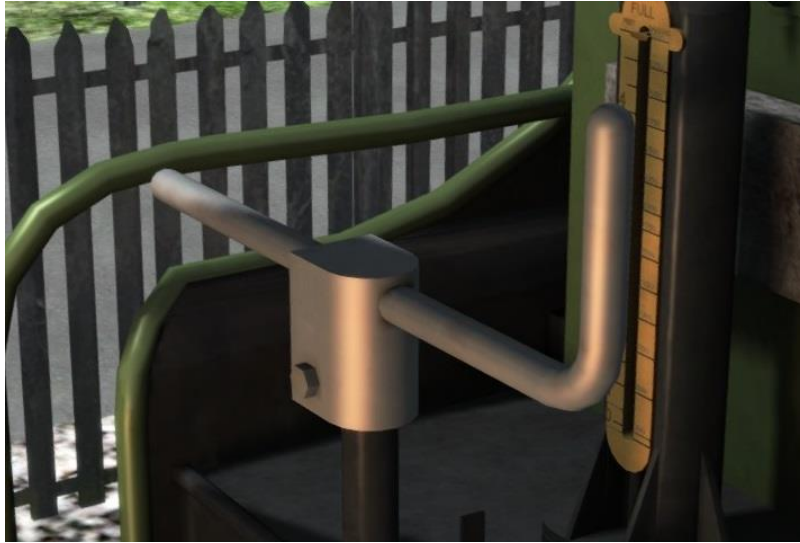
13. Handbrake

A hand operated screw that applies the brakes to the tender without the need to release the vacuum in the brake pipes.

Key: /

14. Water scoop

A hand operated screw that lowers and raises a water scoop under the tender. This can be used to fill the tender from water troughs in the tracks while travelling at speed.

Be careful to raise the scoop before the end of the trough to save from damaging it.

Key: Ctrl-T

15. Windows

You can open any of the windows on the GWR Saint. Click and drag the handles with the mouse.

16. Automatic Train Control (ATC)

This system indicates a signal being either clear or at danger and issues a bell or buzzer tone to the locomotive crew. If a warning buzzer is heard it will need to be acknowledged or the brakes will be automatically applied.

If you are driving on an AWS fitted route you will hear a bell ring if you pass a clear (green) signal. If you pass a signal at danger (red, yellows or distant red) a buzzer will sound and you will have 3.7 seconds to clear the warning or the train will be brought to a stop automatically.

Press the Q key or press down the lever on the side of the ATC box to acknowledge the warning.

Note: For AWS to function the route that the locomotive is running on needs to have been fitted with the relevant scenery markers.

17. Head codes

The GWR Saint has a standard GWR 4 lamp set up for the front and rear – 1 lamp at the top and 3 below – to show the standard GWR head codes (see Appendix 1).

The codes can be pre-set using the scenario locomotive number or changed by the driver at any time.

You can show or hide each lamp by holding the Control key and pressing numbers 1 to 4 on the keypad.

The lamps are also intelligent in that they will not show for each end if something is coupled to the front or rear of the locomotive.

H and Shift H control the locomotive lights as follows:

- 0 – Lights off, forward running
- 1 – Lights on, forward running
- 2 – Lights on, reverse running
- 3 – Lights off, reverse running

Keys: H, Shift H, Ctrl + Numpad 1-4

Driving in Advanced Mode

Advanced Mode ONLY

The following is a summary of how to drive successfully in Advanced Mode. It does not contain hard figures – e.g. set the reverser at 25% and the regulator at 30% - as these are the things you will learn by driving the locomotive.

However there are some realistic features that are incorporated that require some specific knowledge for the best operation.

Before you start

Dampers – make sure you have the dampers set for running in the appropriate direction (see Controls Section 7).

Head Code - If you wish to, set the appropriate head code (see Controls Section 16).

Fire – Assuming you are not using the auto-fireman and not about to run downhill for a long way you will want to start building the fire as soon as possible (see Controls Section 5).

Gauge Glass Test – If you have time at the start of a scenario then you can perform gauge glass blow down tests to pass the time (see Controls Section 10).

Setting Off

Cylinder Cocks – If you are just starting or have been stationary for a while, ensure that the cylinder cocks are open. As you drive off, listen for the change in pitch as the water empties or count 4 full revolutions of the wheels and then close them (see Controls Section 3).

Wheel Slip – In wet or icy conditions due to the accurate wheel slip and simulated steam chest you will need to use the regulator like a real driver would. Primarily on starting (when the reverser cut off is high) this means you must manage the steam entering the pistons to make sure that the power being applied to the rails does not exceed the amount of grip available.
If you open the regulator and just leave it open the pressure will continue to build as will the amount of power being applied to the rail. This will likely cause wheel slipping in icy conditions.

As a real driver would you need to "pump" the regulator to gradually build the pressure in the cylinders as you accelerate. This means opening the regulator for a moment and then closing it again, the residual steam will continue to work and cause the locomotive to carry on accelerating. Continually doing this will allow the locomotive to build speed and pressure gradually and avoid wheel slip.

Once a slow speed is reached you can then leave the regulator open and accelerate and adjust as needed to maintain a constant speed.

The speed at which you can stop pumping varies and is based on how much grip is available – an icy rail will need a much higher speed to allow full power than a dry rail.

The weight of the consist will also affect how long it takes before this speed is reached (simply because a heavier load takes longer to accelerate) which means you will have to manage the wheel slip for longer, therefore making it more likely to occur.

In summary, as you set off do not throw the regulator to full and leave it there! Pump it gradually, increasing the power slowly until you can leave the regulator open. And be aware of the weather, a wet or icy rail provides a lot less grip.

This brings us to:

Sander – The sander helps to provide grip for the wheels on the rail and should be used when starting in wet or icy conditions (see Controls Section 4).

Under Way

Water Filling – You will need to use the water levers and the injector steam levers to fill the boiler (see Controls Section 9).

Due to the water gauge glasses wobbling around and being effected by gradient and acceleration it is normal procedure to try and keep the boiler between half and three quarters full to avoid overfilling the boiler and causing priming to occur.

Locomotive Numbering

When a GWR Saint is added to a scenario the number will be randomly chosen from a list of all members of the class which were available during that era.

These are pre-set with the correct configurations for each number as they were historically outfitted. However if you wish to change any of the components then the setups are listed below.

The correct name is automatically displayed based on the selected 29xx number.

The number has 17 digits in total and each locomotive and livery has different options.

GWR Saint, e.g. 2911###NY0YFYYY4A

1 to 4. 4 digit locomotive number beginning 29
5 to 7. Smokebox mounted reporting number - ### is used for an empty selection
8. Outside pipes– **Y**es or **N**o
9. Canvas cab cover - **Y**es or **N**o
10. Headboard – **0,1,2,3**
- 0 – None
- 1 – Cornish Riviera Express
- 2 – Torbay Express
- 3 – The Mayflower
11. Orange/black Lining – **Y**es or **N**o
12. Top lamp location – **T**op of smokebox or **F**ront of smokebox
13. Power disc shown on cab side – **Y**es or **N**o
14. Speedometer fitted – **Y**es or **N**o
15. Tender has lining – **Y**es or **N**o
16. Tender logo - **0,1,2,3,4,5,6**
- 0 – None
- 1 – Great Western with central garter (-1926)
- 2 – Great Western with central coat of arms (1926-34)
- 3 – Great Western (-1934) *
- 4 – Shirtbutton roundel (1934-42)
- 5 – G W with central coat of arms (1942-47)
- 6 – G W R (1942-47) *
- Note: Liveries marked * were not used on express locomotives but tenders could be swapped around as required leading to express locomotives sometimes using them
17. Head code – Letter of the head code class (see Appendix 1)

Rolling Stock Numbering

Included with the GWR Saint are items of rolling stock which can also be set up with specific options and logos using the stock number.

[Saint] Collett "Sunshine" Composite – GWR
[Saint] Collett "Sunshine" Third – GWR
[Saint] Collett "Sunshine" Brake Third - GWR
All "Sunshine" coaches use a 4 digit code for their number and default to the 1934-42 Shirt button livery. Adding a "**C**" to the end will change to the 1942-47 coat of arms livery.

[Saint] GWR TPO Coach (Diagram L21), 19xx-xx
The TPO baggage coach uses a 6 digit code as follows; e.g. 793A1N
The first 3 digits are the visible coach number.
The 4th digit is the coach letter (A to F).
The 5th digit is the required logo - **1**,**2**,**3**
- 1 – 1927-34
- 2 – 1934-42
- 3 – 1942-47

The 6th digit can be set to Y which will make the coach "dead" and it will ignore any instructions from the line side TPO apparatus. This enables you to add more than one of these coaches to a consist but only have one react correctly to the exchange.

[Saint] GWR TPO Sorting Coach, 19xx-xx
The sorting coach uses a 5 digit code which is the same as the TPO coach but without the 6th digit option to deactivate it as they do not respond to exchanges.
e.g. 790B1

Modification Policy

You are free to create modifications (including but not limited to re-skins, sound updates, "enhancement" packs, etc.) within the guidelines of Dovetail Games current policies (for example, no inclusion of 3D model files) however if they are made public then they must be provided **free of charge**. They can be hosted on a site that asks a nominal membership fee for quicker downloads (e.g. UK Train Sim) but cannot be sold in any way without the express permission of Victory Works.

If you wish to discuss terms for selling modifications please contact us via email at victoryworks@live.co.uk

To summarise – free mods are fine, as long as they adhere to DTG's current policies. If you wish to sell mods then you **MUST** get permission first.

Acknowledgements

I would like to thank the following people for their help and encouragement during this project:

- Steam Sounds Supreme for providing the sound sets
- Stuart Galbraith for his advice, ideas and critique
- Paul Bricklebank for his help with the TPO exchange equipment and process
- Chris Barnes for his smoke/steam textures
- "The Secret Forum" for their critique and constant encouragement

Appendix 1: Head codes

The following are the 1936 GWR head code classes that you can set using the scenario numbering system.

Class A

- Express passenger train.
- Breakdown van train going to clear the line, or light engine going to assist disabled train.
- Empty coaching stock timed at express speed.
- Express streamline railcar.

Class B

- Ordinary passenger or mixed train.
- Branch passenger train.
- Breakdown train not going to clear the line.
- Rail motor car, auto-train or streamline railcar.

Class C

- Parcels, newspapers, meat, fish, fruit, milk, horse, cattle or perishable train composed entirely of vacuum fitted stock with vacuum pipe connected to the engine.
- Express freight, livestock, perishable or ballast. Train pipe with not less than one third of the vehicles vacuum fitted and pipe connected to the engine.

Class D

- Express freight, or ballast train conveying a stipulated number of vacuum braked vehicles connected by the vacuum pipe to the engine and authorised to run at a maximum speed of 35mph.
- Empty coaching stock train (not specially authorised to carry "A" head code).

Class E

- Express freight, fish, fruit, meat, cattle or ballast train.
- Breakdown train not proceeding to an accident.

Class F

- Fast freight conveying through load, all unfitted.

Class G

- Light engine or light engines coupled.
- Engine with not more than two brake vans.

Class H

- Freight, mineral or ballast train or empty train carrying through load to destination.

Class J

- Freight, mineral or ballast train stopping at intermediate stations.

Class K

- Branch freight train.
- Freight or ballast train or Officers special train requiring to stop in section.

Appendix 2: TPO Exchange Set Up

Note: This section assumes the basic knowledge of creating a new scenario, adding a player consist and scenery objects.

The GWR TPO equipment can be added to any scenario and requires a locomotive that is set up to initiate the operation and at least one TPO coach being part of the player train. See later notes on how to edit any TS locomotive to work with the TPO.

Please note that due to Train Simulator AI locomotives not receiving any messages from track equipment it is impossible for the TPO to work with AI consists. It must be the player train. You can of course always use the TPO coaches in any consist or as loose stock, but the exchange can only be performed by a player driven train.

Consist Set Up

Create a new scenario and place down your TPO enabled locomotive as you normally would.
Add as many TPO Coaches and TPO Sorting Coaches to the player consist as you require. If you add more than one TPO Coach you need to disable the ones that will not perform the exchange by changing the 6th digit in their number to "Y" (see section on Rolling Stock Numbering). Only one TPO coach should be allowed to perform the exchange.
You can add as many other coaches, vans, etc. to the consist as you require – there is no requirement for the TPO coach to be next to the locomotive or to have specific rolling stock in between.

Lineside Apparatus Set Up

Under the Miscellaneous tab in the Scenario Tools are 6 items related to the TPO equipment all beginning "GWR TPO" which allow for the setup of an exchange apparatus.

The "GWR TPO Apparatus (Non-working)" is a static scenery item and has the appearance of a TPO Apparatus that is not being used at this time (the lower net is collapsed, the standards empty and facing away from the track). It is placed in the same way as the track linked version but does not interact with the player consist.

The "GWR TPO Apparatus (Track Linked)" is the animated exchange apparatus and will need to be placed carefully as described below for it to work correctly.

The "Sign – Board" and "Sign – Plank" are placed 200 yards in advance of the TPO and are the notice to the post office staff that the apparatus is approaching.
There are also "GWR TPO Hut with Warning" and "GWR TPO Sign – Warning" either of which would be placed by the apparatus to show its location.

Note that there is a very useful "Measure" tool which can be used to help the correct placement of the apparatus links and marker boards.

Decide where you are going to place your TPO apparatus. It should be placed on a piece of track with a clear approach of 200-250 yards (183-229m) with no obstructions at the side within 4' 9" (1.45m).


Select the "GWR TPO Apparatus (Track Linked)" and place it roughly on the track where it will be. You will need to place the 4 track links as well – these should be placed in order with links 0 and 1 before the apparatus and 2 and 3 after it. Do not worry about the location but just the order; they will be placed accurately later. The links **MUST** be facing the direction that the train will be travelling. They can be reversed by holding shift or control and clicking on them.
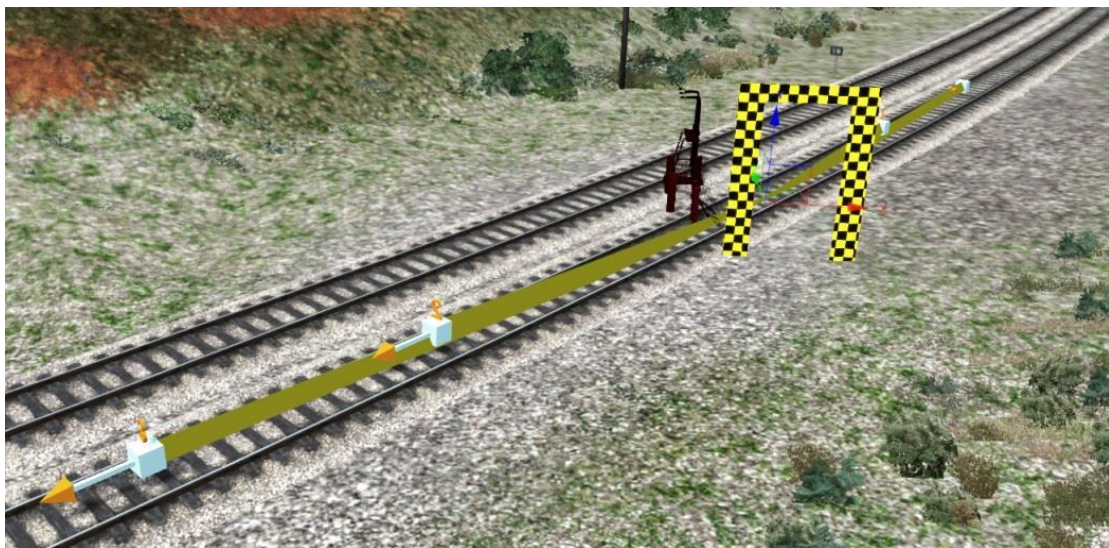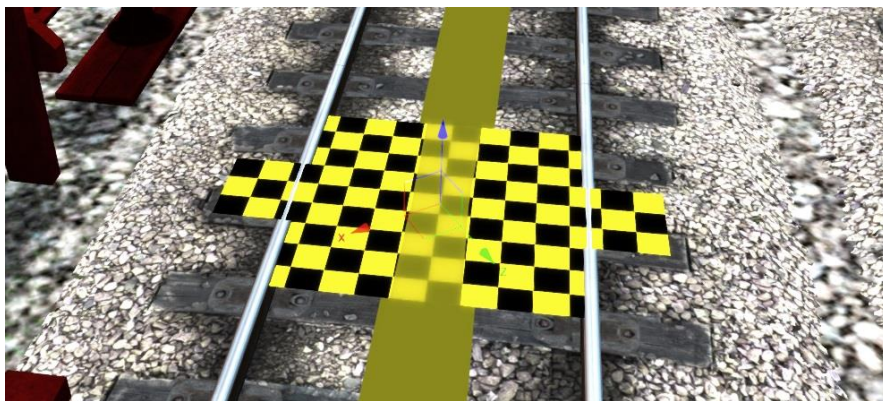
Using the object tools rotate the apparatus so the horizontal chequered marker is between the tracks (you may need to raise it slightly to see the marker).
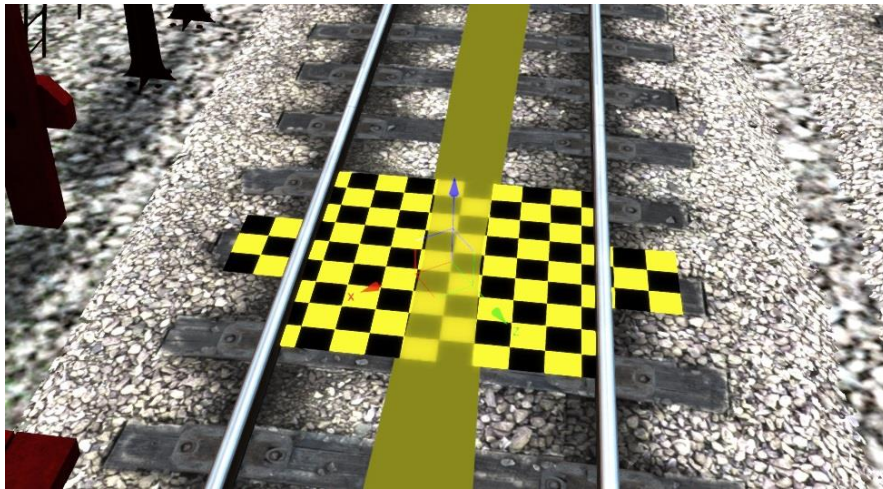

Once it is aligned with the rails raise the apparatus so the sides of the horizontal marker are just on the top of the rails.

At this point it is a good idea to set the number of mail bags that will be collected and dropped off. Double click the apparatus to open the Properties window on the right hand side. In the Identity boxes enter the amounts you would like for the location – smaller areas had fewer bags to collect and the amount to drop off was dependant on how many were being carried from previous collections or the origin of the service.

You can have 1 to 4 bags dropped off, and 1 to 3 bags for collection, placed in the left and right boxes respectively. You can also add a – (hyphen) for no drop off or collection of that type.
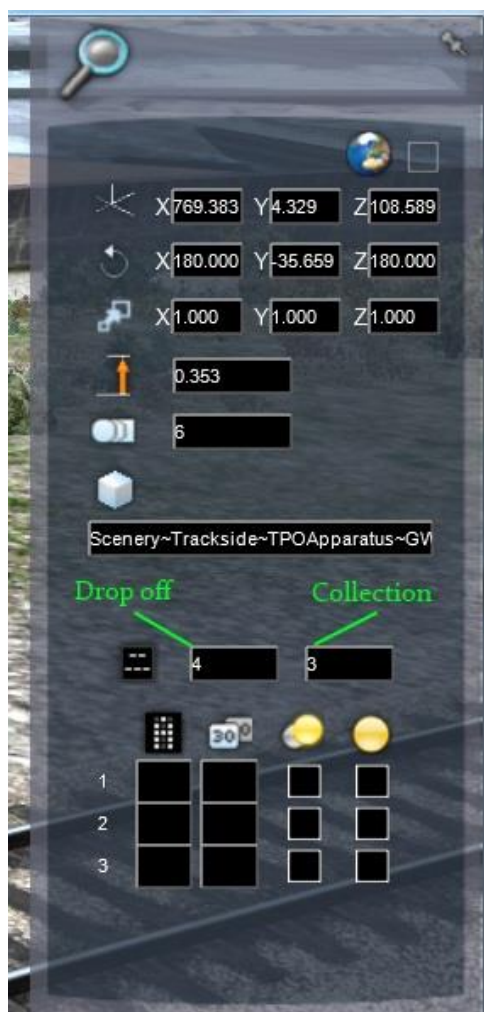
One of the marker boards should be placed 200 yards (183m) before the apparatus location.

The hut or the warning board should be placed just in advance of the apparatus to show its position.

It is now time to place the track links in their correct places.

Link 0 (which has no number above it) tells the coach that the apparatus is approaching and to open the doors and prepare the mail bags INSIDE the coach. Nothing is extended at this stage. This would normally happen a minute or so before the train reached the apparatus so place this marker based on the expected speed of the train with plenty of time for the doors to open before reaching the second marker.
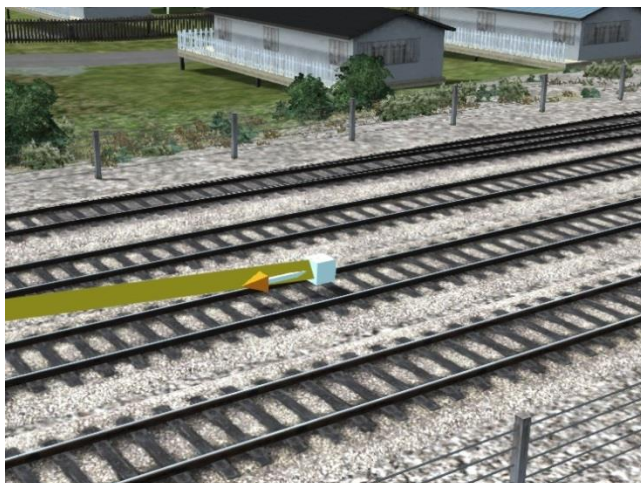
Link 1 tells the coach to extend the traductor arms (which carry the bags to be dropped off) and extend the net to collect the outgoing mail bags.

This needs to be placed just after the 200 yard marker you placed earlier.

The next task is to place the 2 markers after the apparatus. To do this begin by moving the markers away from the apparatus as you will need to place a duplicate of the train on top of the apparatus and you cannot get to the markers if they are underneath it.

Next you need to create a duplicate of the player train. You can do this by either placing down EXACTLY the same locomotive and rolling stock in EXACTLY the same order or you can use the Copy and Paste functions of the Tools.
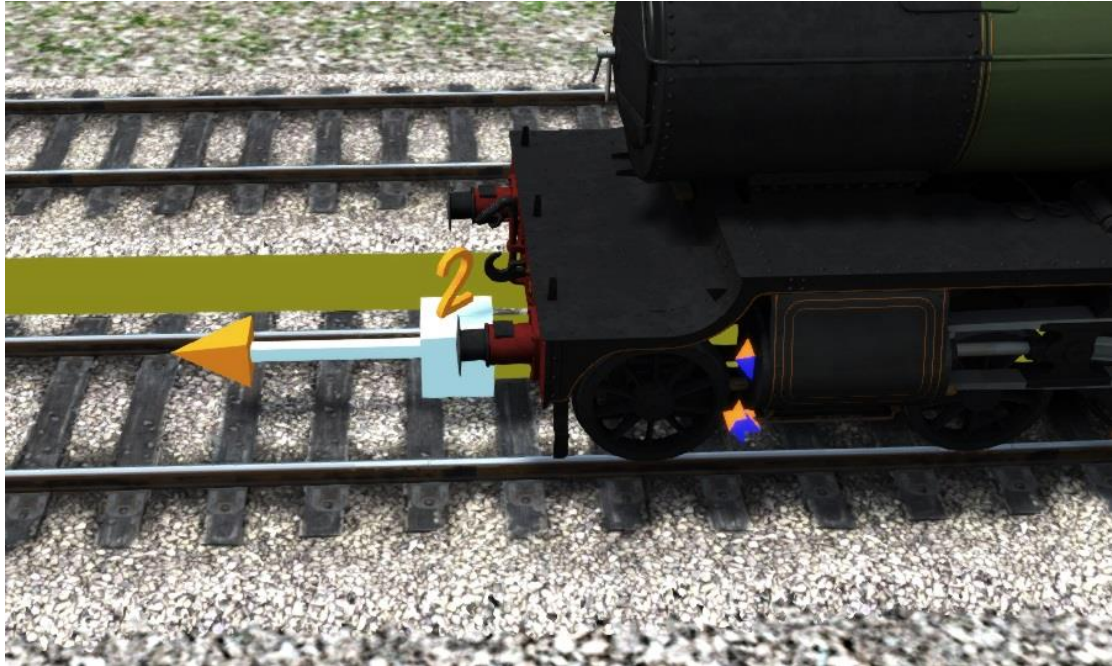

Place the duplicated train so that the vertical chequered markers on the apparatus and the TPO coach that will perform the exchange are **exactly** inline. To make it easier to align you may wish to delete the coaches that come after the TPO coach that will perform the exchange.
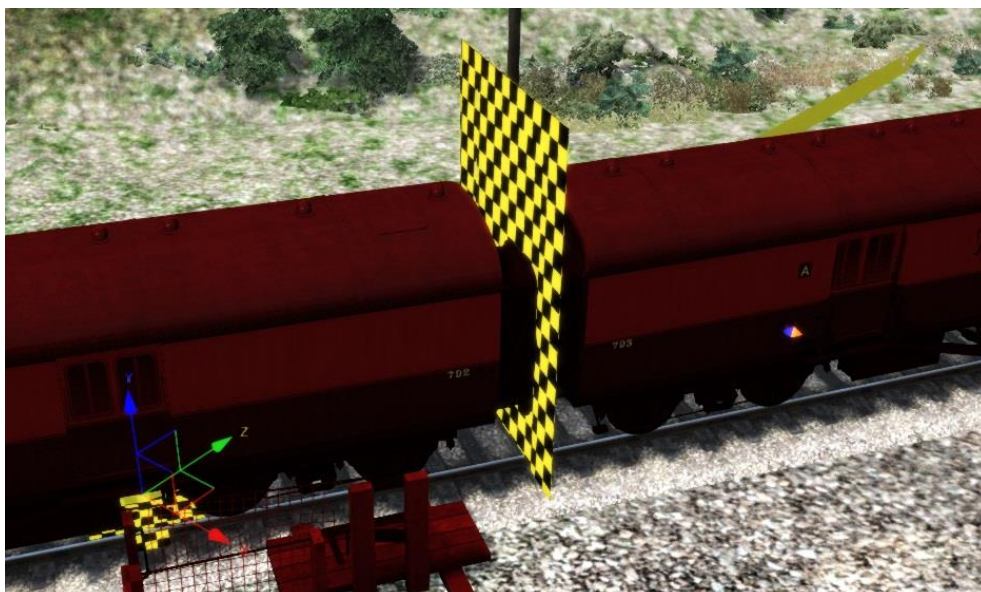
Move Link 2 so that it is between the front buffers of the locomotive.

You can now delete the duplicate train.

The final step is to place Link 3 a short distance after Link 2 – 50 metres is adequate. This is used to reset the locomotive so that it can perform multiple exchanges in a single scenario.

You can place as many exchange apparatus as you wish and they will all function with a correctly set up player train.

Although the instructions that follow allow ANY Train Simulator locomotive to be edited to work with the TPO they require knowledge of how to edit TS files which we are aware that not everybody has.

To this effect we will be uploading a very small file to www.trainsimdev.com/ and http://uktrainsim.com/ which make all of the 4-6-0 GWR locomotives that come with the *Riviera Line in the Fifties: Exeter to Kingswear route* compatible with the TPO coach. Search for the terms "Victory Works GWR TPO EK Compatibility".

Locomotive Editing

The following information assumes that you know how to open Train Simulator ap
files, edit the bin/xml file of a locomotive and to follow instructions to copy/paste
text and to rename files.
Victory Works assume no responsibility for any damage to files or your Train
Simulator installation by providing this information.
Do not attempt this if you are not confident in your ability to edit TS files and do not
contact Dovetail Games support for anything included in this section.

If you are confident to proceed, this is what needs to be done to make any
locomotive work with the TPO coach.

You will need the locomotive bin file and the locomotives lua script file (which may
end .lua or .out). If the locomotive is from Steam you will have to extract the
required files from the ap file.

Navigate to the Assets/VictoryWorks/GWRSaint ap file and copy the following files to
the selected loco folder.
LocoCompatibility/AnyLocoTPO.lua
LocoCompatibility/AnyLocoTPO_ExtraControls.lua

Follow instructions 1 to 4 in the *AnyLocoTPO.lua* file.