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Background

In 1928 Sir Henry Fowler introduced these small 2F 0-6-0T dock tanks for use in dockyards and depots with very tight radius curves. The design was prepared at Horwich but featured a number of Derby features such as cab, bunker and boiler fittings as well as a Derby boiler which made the engine look distinctly like the Fowler 3F 0-6-0 "Jinty". The engines were built at Derby and the first five of the class were sent to Scotland while the remaining 5 were dispatched to Fleetwood and Birkenhead.

The class was able to negotiate curves of two and a half chains by use of a very short wheelbase and a Cartazzi self-centring axlebox on the rear axle. Due to this arrangement inside Stephenson valve gear was somewhat impractical so outside Walschaerts valve gear was provided with short travel slide valves above the cylinders. Withdrawals of the class began in 1959 with the final member 47165 being retired in 1964.

Technical data – LMS 2F 0-6-0T Dock tank:

- Introduced: 1928
- Power Classification: 2F
- Configuration: 0-6-0T
- Total Built: 10
- Length: 27' 6"
- Width: 8' 8"
- Height: 12' 6.5"
- Weight: 43T. 12Cwt
- Coal Capacity: 1.5 Tons
- Water Capacity: 1000 Gallons
- Tractive Effort: 18400 Lbf
- Estimated Power Output: 450 HP
- Fire tube heating surface: 923 Sq Ft
- Firebox heating surface: 85 Sq Ft
- Total Heating Surface: 1008 Sq Ft
- Cylinder Size: 17' x 22'
- Driver Diameter: 3' 11"
- Boiler Pressure: 160 Psi

Features included within the addon:

- Notched reverser with reverser catch
- Realistic steam brake
- Realistic reverser dynamics
- Working hydrostatic lubricator
- Improved gauge glass effects
- Improved wheelslip simulation
- Dynamic smoke & steam effects
- Regulator with steam chest effects
- Exterior animations (Windows/Regulator/Doors)
- Improved injector simulation
- Animated brake rigging

Controls

Each engine has two versions, a standard **[Std]** and an advanced **[Adv]** version. The need for both arose when creating the script as we found that the AI simply could not drive the engine. In addition the loco brake did not function via the HUD. Since the HUD must be fully functioning we had to do two versions standard and advanced engines.

The advanced version contains the advanced scripting which allows for better simulation of the vacuum brakes, two dampers, notched reverser, exterior animations and various other things like controlled emitters. This version is auto fireman compatible, but is not HUD compatible and is not AI compatible.

The standard version has basically had the entire script removed. It is mostly designed for people who want to just hop in and drive without the fuss of notched reversers, vacuum brake leakage and so on. This version is also AI compatible unlike the advanced version.

All scenarios have a standard and advanced version using the respective standard and advanced engines, allowing drivers of any skill to drive them without having any fuss and having to edit the scenarios themselves.

1. **[STD]** Standard mode with Auto-Fireman.
2. **[STD]** Standard mode with Manual Fireman.
3. **[STD]** Standard mode with Simple Controls.
4. **[ADV]** Advanced mode with Manual Firing only.

The Regulator



The regulator controls how much steam from the boiler enters the cylinders; the further it is opened the faster you will accelerate. Essentially, if you want to move the locomotive you will probably want to open this, but be careful how much you open it since the engine may slip. The regulator can be controlled by using either your mouse on the regulator handle or the **A** and **D** key to respectively increase and decrease the regulator setting.

The Reverser



The next important control you will want to learn is the reverser, this works essentially like gears on a car. Moving the reverser closer to the centre is like moving up through the gears of a car meaning you can go faster. It works by limiting the amount of steam which enters the cylinder and allows the steam to expand more efficiently hence you will be able to go faster without emptying your boiler and making the fireman rather grumpy. To move the reverser you must first release the reverser lock by pressing **E**, then the **W** and **S** to move it forward and back.

The reverser on the Dock Tank is of a pole type; it has 6 notches in either direction and a mid-gear notch. It is fitted with a locking mechanism which locks the reverser into a notch and prevents it moving while the regulator is opened. To release the lock the **E** key must be used, but caution must be used to not release the lock while the regulator is open more than a third otherwise the reverser could fly into full forward or reverse taking your arm with it!

Cylinder cocks



The cylinder cocks allow any steam which has condensed in the cylinders to be exhausted out of the cylinder preventing damage since water can't be compressed. A secondary effect of the drain cocks is that it aids warming of the cylinders when the regulator is opened. The drain cocks can be found under the reverser pole. The previous driver will have left the cylinder cocks open to prevent the engine moving while it stands idle (and so you don't forget to open them before moving off). The drain cocks should be opened when starting after being stationary for a prolonged period of time and left open for around 5-6 revolutions of the wheels. They are controlled by the **C** key.

The Handbrake



Despite what some people may say the handbrake is the only truly failsafe brake and will probably work 99% of the time. But let's not worry about brake failures (they won't happen honest). The handbrake is less effective compared with other forms of braking being slower to apply, less effective and requiring the fireman to screw it down. It however doesn't require steam pressure to operate and hence will be your brake of choice when moving about the shed near the end of a long shift.

Blower



The blower is the left valve in the picture above. It is used to create a draught through the boiler when the regulator is shut; it's useful for creating pressure quickly when stationary ready for an assault on a hill! It does absolutely nothing when the regulator is open since that creates a draught as well, so it mainly just wastes steam. Make sure however it is open a bit when shutting the regulator and is wide open when going through tunnels to prevent a blowback of the fire into the cab, which would really ruin your day! To open and close the blower the **N** and **shift N** keys are used respectively

Sanders

The sanders on the Dock Tank are of a steam type, and are bidirectional. Steam is used to force sand in front of or behind the wheels. Sand aids adhesion in poor railhead conditions. The handle has three positions: Up activates the forward sanders, horizontal stops both sanders and down activates the rear sanders. To move the handle up the **X** key is used while to move the handle down the **Shift X** key is used.

Note: There is only a limited amount of sand so use it sparingly. There is enough sand to last for approximately 20 minutes in each direction so make sure you do not waste any!

Injectors

Injectors are used to put water into the boiler. Their operation is as follows: The water regulator is opened for the respective injector; this is located on the far left and right of the cab, being used for the left and right injectors respectively. This can also be open and closed by the **K** and **Shift K** keys for the left injector and **L** and **Shift L** for the right. Next, the steam valve is opened gradually to allow the injector to pick up. This can be done with the **I** key for the right injector and **O** key for the left; the same key is also used to turn them off. Remember to also open the water valve before starting the injector and after you have shut the steam valve otherwise steam will erupt from the injector and make a very loud noise!

Dampers



On the Dock Tank there are two dampers; they are used to allow air into the firebox thereby heating up the firebox through improved combustion. They are located to the left of the firebox doors on the floor. To open and close the left damper the **M** and **Shift M** key are used, and for the right the **Ctrl M** and **Ctrl Shift M** keys are used.

Steam Brake

The Dock Tank is fitted with a steam brake which operates on the locomotive only. It is not fitted with a vacuum brake so it will not be able to apply brakes on coaching stock and fitted wagons. The principle of the steam brake is that the higher the pressure of steam in the brake cylinder the greater the brake force will be.

The brake valve on the Dock Tank has 3 positions; a release position between 0 and 10% of its travel where steam is rapidly vented from the brake cylinder, a hold position where no steam is allowed into or out of the brake cylinder, in this position the steam in the cylinder will slowly condense back into water, reducing pressure on the brake cylinder. This position is located between 10% and 20% of the brake handle's travel. The final position is apply where steam is allowed into the brake cylinder at a rate proportional to the travel on the handle.

Additional

The firebox doors are to be opened with the **F** key and closed using the **Shift F**. To make the fireman shovel coal into the fire use the **R** key and to stop use the **Shift R**. Alternatively the coal door on the floor at the back of the cab can also be used to control the rate of firing by opening and closing it.

The windows and cab doors on the Dock Tank can also be opened and closed to suit your needs by using the mouse.

Liveries

BR Late



BR Mid



LMS Late



BR Late Dirty



BR Standard Wagon



BR 12T Brake Van



Scenarios

All scenarios support the standard version and the advanced version, they are defined using [Std] for standard and [Adv] for Advanced.

The last haul –

Hauling wagons from Newham docks up to Perranwell. You're timetabled to get there at 17:38 so try and keep on top of your shunting.

Truro Falmouth Freight –

You'll be taking the challenge of taking a set of wagons all the way to Falmouth. Be careful to keep an eye on your speed going downhill.

You can smell the fish –

It's the coldest day of the year and you're on duty. You must shunt wagons in the challenging icy conditions, try and keep control!

Reskinning/Sound Policy

Our (Meshtools) reskin policy for the Dock Tank add-on is as follows:

We generally allow reskins of our work to be done. Permission needs to be sought before doing said reskin, to do this contact us at Meshtools by filling in a support form on our website at <http://www.meshtools.co.uk/contact> ,

We would also like for you to inform us how your reskin is going and if any improvements can be made to make reskinning easier. Approval should also be sought before uploading it to any site as a quality control check.

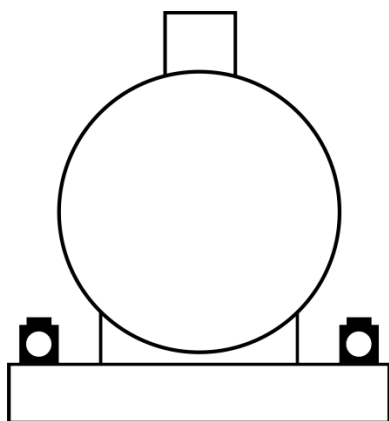
The reskins must not include the shape files, child object files, simulation files, script files, sound files or animation files, but it can include the loco bins if needed.

No modifications at all must be done to the sounds, any sound modifications must be done from scratch and not based on the included sound files (sound files includes: .xml and .bin files). Sound modifications if done must not use or include any audio files such as .wav or .dav files included with the add-on. Permission must be sought before doing any sound modifications.

Please read the EULA by RailSimulator/Dovetail Games for more information.

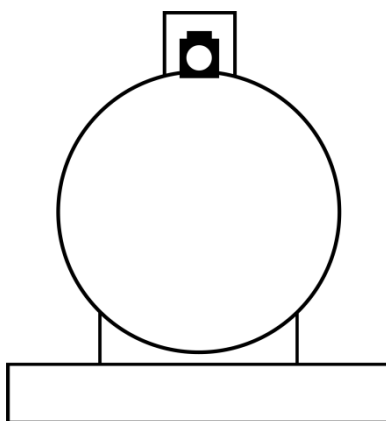
Head codes

The engines also have toggleable head code lamps which can be turned off and on while in play. To do this simply hold down **Ctrl** Key followed by either **1, 2, 3** or **4**.



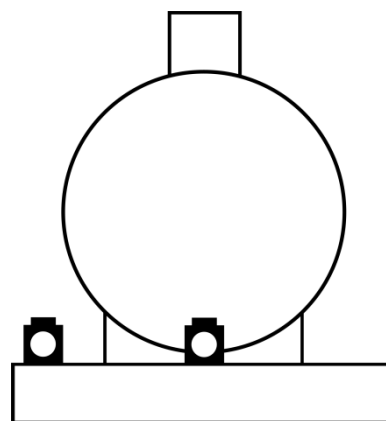
CLASS A

Express passenger or a breakdown train.



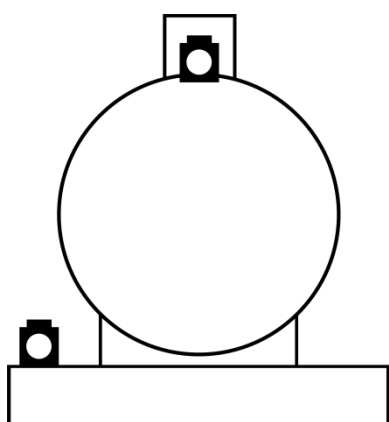
CLASS B

Stopping passenger, rail motor or a breakdown train returning from job.



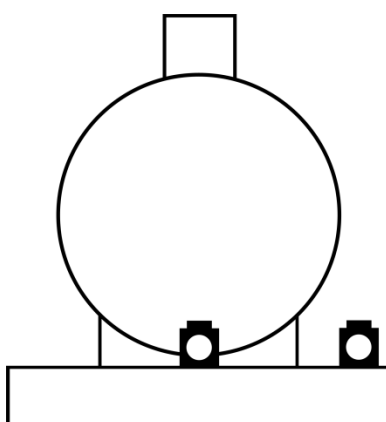
CLASS C

Parcels, fish, livestock, milk, fruit or perishables all XP stock.



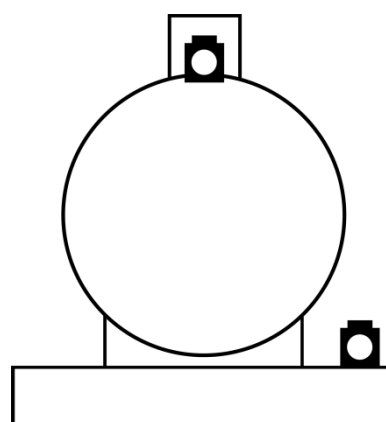
CLASS D

Express freight or livestock with at least 30% XP connected to loco.



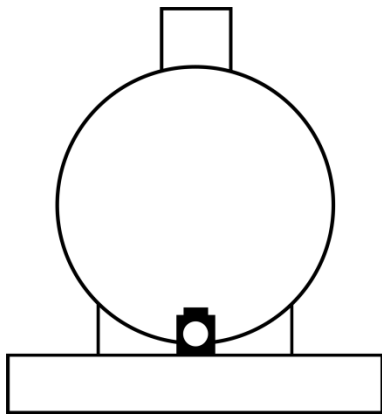
CLASS E

Express freight with at least 4 fitted vehicles connected to the loco or a short unfitted express freight.



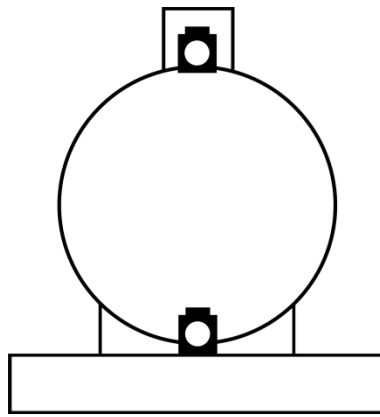
CLASS F

Express freight all unfitted stock.



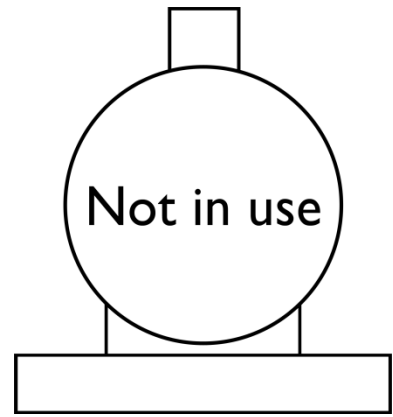
CLASS G

Light engine or engine with one or two brake vans attached.



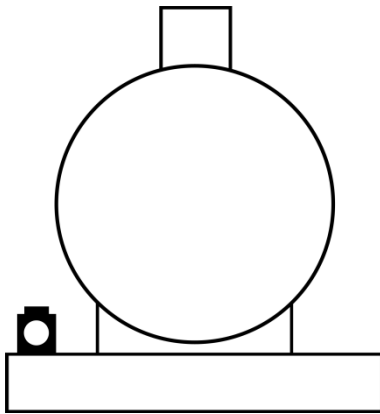
CLASS H

Through freight or ballast train.



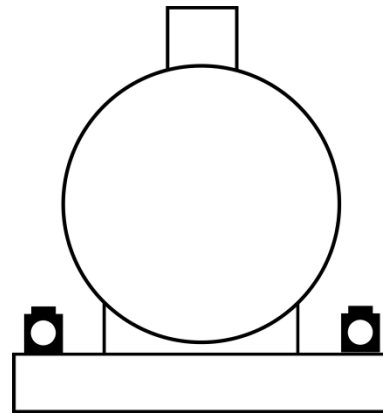
CLASS I

Was not used.



CLASS J

Through mineral or empty wagon train.



CLASS K

Pick-up or branch freight or mineral/ballast train on a short haul run.

Credits

Thank you to all those who those who helped out, contributed and gave their own time in helping out with this project! Without them it wouldn't be where we are today!

Also, thank you for taking some time to go through and read this manual, we hoped it helped answer some of your questions or any problems you've been having! I'd also personally like to thank you for purchasing this add-on and supporting us. We hope to bring you a lot more exciting add-ons in the future!

A MeshTools development.

www.meshtools.co.uk

<https://www.facebook.com/Meshtools>

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Michael Whiteley: 3D modelling, texturing, animation, route building, scenarios, research and live streams.

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Testers:

Our group of enthusiastic beta testers!

Dovetail Games Beta/QA testers

Chris Barnes

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<http://www.eastlancsrailway.org.uk/>

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