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OPERATING INSTRUCTIONS

"GLYN VALLEY TRAMWAY LOCOMOTIVE"

PRODUCED EXCLUSIVELY, FOR ANYTHING NARROW GAUGE AND GARDEN RAILWAY SPECIALISTS, BY ACCUCRAFT UK LTD

SAFETY FIRST

All our locomotives are safe to run, and will give many hours of pleasure, providing the following safety procedures are followed: -

1. **Please read the instructions thoroughly before running for the first time.**

2. **Always do a complete refill of gas, oil and water. Never refill just the gas to prolong the run.**

3. **Never let the engine run out of water.**

4. **When refilling the gas, do not have any naked flame present, and NO SMOKING!**

5. **Do not pick up the engine by the bodywork, chimney or boiler, especially when hot.**

6. **Only pick up the engine by the buffer beams and, when hot, use old gloves or a cloth. Be aware that the buffers hold the body onto the chassis.**

7. **Do not stand over the chimney. Ejected boiling water or steam may cause serious injury.**

General Hints

As with all operating machinery, whether model or full size, wear will occur. In the model steam locomotive much can be done to help prolong its life and decrease the amount of time required in the workshop for servicing.

Keep the engine as clean as possible, and the motion free from dirt and garden debris. The valve gear, axles and crank pins should be oiled sparingly with light oil, e.g. "3-in -1 Oil". Over-oiling attracts dirt and grit, which will increase wear.

Regularly check that all screws and motion bolts are firm. Do not over-tighten, as this strips threads and shears bolts**. When filling the lubricator, always use a high temperature steam oil; this is available from other retailers. FAILURE TO USE THE CORRECT GRADE OF OIL CAN LEAD TO BLOCKED STEAM PIPES, AND WILL INVALIDATE THE GUARANTEE.**

When running your engine avoid excessive speed and acceleration, both will cause premature wear in the valve gear. Prototypically, narrow gauge locomotives ran at a speed of between 10 and 20 M.P.H., and rarely exceeded 25 M.P.H.

Positions of Fillers and Drains etc.

The complete body is removable to give access to all fillers by pulling the buffers out.

The gas inlet valve is on the top of the gas tank turret on the right hand side of the boiler. The gas control valve is in the front offside of the cab and can be operated through the cab opening.

The lubricator is in the nearside front of the cab, just forward of the door and reverse lever. The lubricator drain is directly beneath the lubricator. It is easiest to operate the valve when the body is removed. To drain, un-screw the drain valve through about ½ a turn.

The boiler water filler is on top of the steam turret on the boiler in the middle of the cab. Undo the knurled cap to fill with water. The main steam regulator valve is the lever in the right hand cab doorway opening.

The boiler water level check valve or as is sometimes known, the blow down valve is under the footplate, underneath the right hand side cab door. It is easiest to operate the valve when the body is removed. To open the valve, turn the lever through about one turn.

The direction control is the lever behind the nearside cab door. To operate pull gently outwards and move to the desired direction. The control is "gated", and will therefore hold itself in the full forward or reverse position.

Preparation for Running

Always service the engine in the following order; first gas, oil then water.

To remove the body get hold of the centre buffer heads, which are in fact sprung retaining catches, and pull outwards. This disengages the body shell from the chassis. Lift the complete body shell off the chassis.

To fill the gas tank: invert the gas can and apply the nipple to the gas inlet valve on the top of the tank turret. It is advisable to support the loco under the gas tank whilst filling, to prevent the engine tipping over. You will know when the tank is full; gas will blow back from the inlet valve in a strong jet. A small amount of gas and air will escape during filling, but the difference between this and when the tank is full is always clear. Always keep the gas can vertical when filling the gas tank. We recommend that Butane gas is used whenever possible, but the gas tank is manufactured to accept the extra pressures generated by Butane/Propane mix gases, and the burner system will also perform using this gas.

Filling the lubricator*:* as you will read in the instructions for the end of the run, the lubricator should be empty of oil and water with the drain valve left in the open position. Now close the valve and remove the lubricator filler cap. Fill up the lubricator with steam oil to about ¼ of an inch below the top. Leave the filler cap off for the present, so that any trapped air can escape. It can be refitted after you have filled up the boiler.

To fill the boiler*:* remove the filler cap and also open the water level check valve. Leave the boiler water level check valve open whilst raising steam. Fill up the boiler completely – ideally use filtered rainwater or distilled water using the large syringe provided. Replace the boiler filler cap, check that the lubricator does not need topping up, and then replace its filler cap also. Filler caps should be firm finger tight. They are sealed with a trapped ‘O’ ring and, therefore should not be over-tightened.

Lighting Up

Light your lighter/match etc. and gently open the gas control valve until a gentle hiss is heard in the burner. Apply your light into the opening at the top front of the boiler where the exhaust pipe comes out and the flame should ‘pop’ down the fire tube and ignite the burner inside the fire tube.

If the gas valve is opened too much the flame will not pop back; it will either fail to ignite, will roar in flame out of the smoke box around the exhaust pipe, or there will be a ball of flame around the front of the engine, which will then blow the whole fire out (after giving the driver a fright)!
When the fire sound has stabilised, after about 30 seconds the gas can be turned up gently. Do not turn the gas up high as the flame could damage the paint on the front of the locomotive. Now leave the locomotive to raise steam.

When pressure starts to rise, water will be seen running out of the boiler water level check valve. When the water reaches its correct level steam will be seen. Now screw shut the check valve and let the locomotive raise at least 40 p.s.i.

The body shell can now be carefully re-fitted. Great care must be taken to feed the exhaust pipe into the chimney, otherwise you will damage the pipe – if you do this will not be treated as a warranty issue. Ensure the regulator is fully closed during this operation.

Running

When the engine has raised about 40 psi, you are ready to start running. It is advisable to run the engine in reverse first; it clears the condensed water from the cylinders best this way. Before commencing your first run of the day, it is advisable to put a cloth loosely over the chimney for a few minutes, as condensed water will be ejected from the chimney. This is quite normal; the motion of the engine will be jerky until all condensate has been ejected.

DO NOT stand over the chimney as ejected boiling water/steam could cause serious scalding.

Place the direction lever into the reverse position, and then open the main steam valve. The engine should start to move off in the reverse direction. When starting from cold it will be jerky, this is normal, as it has to clear the condensate from the system. The more the main steam valve is opened, the faster the engine will go; our advice is to start slowly and learn the road with your engine

After a minute or so, remove the cloth and continue running. In running it is correct practice to balance the boiler pressure against the load being pulled and the track conditions. With a light load and level track the pressure may need to be only 25-30 p.s.i. therefore, turn the gas control down to keep this pressure. When running a heavy train with steep gradients, increase the pressure by turning up the gas.

The ideal running pressure can be learnt by experience and is one of the pleasures of running a live steam engine. There is no need to have the safety valve constantly blowing off (it is what its name implies – a safety vent for excess steam pressure). In all our designs, the gas has been programmed to run out just before the water, thus it is important not to refill with gas alone in order to lengthen the run by a few minutes. When the gas runs out a complete gas, oil and water service must be done (remember GOW, also remember to shut the gas regulator before refilling, and **DO NOT** refill with gas near any other live steam loco). When the locomotive slows as the pressure falls at the end of a run, stop the engine. Gently open the lubricator valve and blow out any condensed water. If you intend to continue running, close the drain when you see oil coming out of it and carry out a general refill. If it is the last run of the day, leave the lubricator drain valve open and blow the lubricator completely clean.

End of Run

As previously mentioned, the locomotive will slow (due to pressure dropping) when the fire has gone out, stop at a convenient place, remove the body and open the lubricator drain valve. Blow out all condensed water and the remaining oil. Leave

the drain valve open and allow all the remaining steam to blow out. The locomotive should be allowed to cool. When cool, clean the engine, check the motion and oil if necessary. The locomotive should always be put away in a clean condition as it attracts less dust and is always ready for the next run (or to be shown to an admiring friend). Always leave the lubricator drain valve and the boiler blow down valve open so that the boiler will not be strained if subject to any temperature change. It is advisable to store the locomotive where any residual drips of oil or water do not matter.

Blocked Gas Jets

If the gas jet becomes blocked with particles of dirt within the gas, the jet will have to be removed and cleaned. This can only be done with the body removed. With a spanner or pliers carefully undo the pipe union on the gas control valve. Remove the pipe and jet holder assembly from the burner.

Holding the jet holder gently in a vice, unscrew the jet. To clear, place the jet nozzle against the inverted gas can nozzle and clear the jet with a blast of gas. Under no circumstances use a pricker wire, this will damage the jet hole. Replace the jet in the holder, ideally using a thread sealant sparingly on the threads. Ensure it is tightened up firmly. Replace the assembly into the burner and re-connect the pipe to the control valve. Ensure this is done up tightly, test **CAREFULLY** for gas leaks, first with a 50/50 mixture of washing up liquid and water, and then if no bubbles are showing, with a flame and the gas “just on”. Tighten if required.

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As with all comprehensive models, we strongly recommend a full demonstration (by our agents) before purchase, enabling you to get the best out of your model right from the start.

HAPPY STEAMING

Following its conversion from horse traction to steam, the Glyn Valley Tramway ordered two 0-4-2 tram locos from Beyer Peacock in Manchester. As the railway was a roadside affair the Board of Trade specified this type of design with the motion and everything below the footplate being encased in a curtain plate while above it a casing extended the whole way round the engine embracing the tanks, condensing gear and cab with the smokebox door mounted flush with it. The locos were intended to be driven from the 'front', cab end and turned at each end of the line and condensing equipment fitted to reduce the exhaust, although the latter proved unsatisfactory and was removed from each loco in the 1920's.

Named 'Sir Theodore' and 'Dennis' these 2′ 4″ gauge locos plied their trade in the valley from 1888 onwards, being joined in 1892 by a slightly larger machine named 'Glyn' and by a WD Baldwin 4-6-0T in 1921. Alas the huge traffic in granite carried by the GVT dwindled after WW1 and the railway became one of many casualties in the mass closures that took place in 1935. All the locos were scrapped on site and now we only have photographs and models to remember these unusual machines by.