



# Forney from Accucraft

A development of the much-modded Ruby from the US – a **GardenRail** review.

**A**ccucraft US started live-steam model making with the oft maligned but reasonably priced ‘Ruby,’ and from the start this little locomotive has been the basis for many conversions. Mark Horowitz, the designer of the original Ruby, believed its whole *raison d’être* was to be regularly reworked by those of a kit-bashing nature.

It is one of these conversions that encouraged the production of this recently introduced ‘Classic Range’ model. Forney locomotives came in a multitude of styles, shapes and sizes. All featured a very large cab and an under-cab truck, while some had a forward pony truck and some did not.

The original Forney design was patented by Matthias Forney in the 1860s and was intended to run with the under-cab truck as the leading wheel-set, therefore reversing the normal Whyte notation from 0-4-4 to 4-4-0. Indeed the 0-4-4 arrangement was common to many small tank locos on mainline and narrow gauge operations, and all operated most comfortably with the trailing truck leading.

To complicate things the patent design required that the rear-most driving wheels were flangeless, the result of the long and rigid locomotive frame holding the steam motor, driving cab and water tank/fuel-bunker. The original design was for a small nimble locomotive that could operate on both ground-level and elevated tramway systems. In these circumstances the limited water capacity was of little issue.

## USUAL SERVICE ITEMS

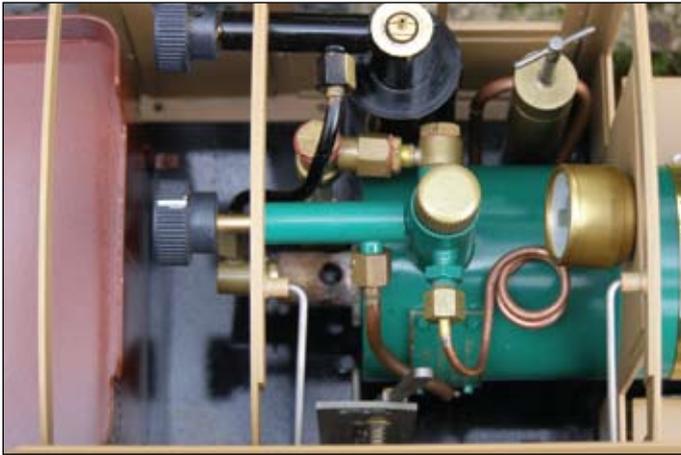
The Accucraft Forney retains a few parts from the original Ruby and the insulated wheels, reverser, valve chest and valve gear

eccentrics are obvious ‘carry over’ components. The cylinders now feature a nice crosshead, a characteristic bound to please many. The original Horowitz design was somewhat hamstrung by the small cylinders which needed rather more than 30psi to generate power to approach that of a Roundhouse ‘Sammie’.

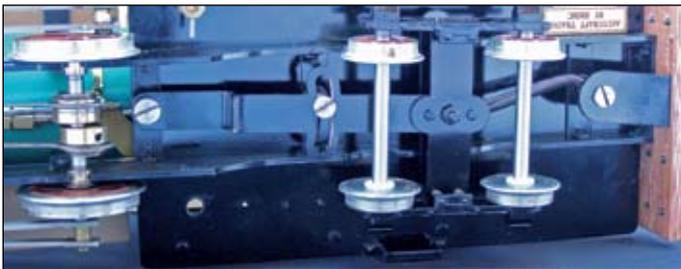
The cab has been much improved and it is no longer the invective-invoking and tantrum-producing lift-off item that was possibly the single most frustrating part ever attached to a model. The new roof lifts and tips to one side while the main cab body has a solid bolt-down fixing to the footplate. With the cab open, access to all the usual service items is pretty much the same as on a standard Accucraft UK live steam model – with a few exceptions. The lubricator, which hides in the left-hand cab corner and makes the loco right-hand drive, is the same unit so familiar to UK Accucraft live steamers with the all important under-floor drain. Owner/drivers need no longer either invert the loco or use a syringe to draw out the oily residue.

The draw out gas tank stands in front of the lubricator, and requires just a standard adaptor to fill. Also present in the cab are the gas-cooker style control knobs, which most UK muddelers will change in pretty short order for something more prototypical – although the knobs as supplied work perfectly well. The gas tank is small to match the equally modest water capacity of the boiler at just 80ml. On the expansive Little Bovey and Heathfield Tramway (LB&HT) this is just enough water to clear the cylinders, shunt to pick up, make one complete circuit of the line and drop stock before returning for servicing.

Direction control is via a reversing quadrant, a somewhat basic



**Above left:** Controls fall easily to hand, with room for 1:1 scale fingers, an Engineer and possibly a Fireman. The design has moved from the Ruby class. Now fittings include a water gauge glass and steam turret with regulator, all adopted from UK Accucraft locos and making the loco less Mamod-esque.



**Left:** The mounting for the rear truck and coupling is not an elegant method of control. Articulated and protruding through the buffer beam, the coupler sits so close that it appears fixed.

**Above:** A long fixed wheelbase encourages couplings to swing well past the railhead on reverse curves, a recipe for disaster. By allowing the coupler to swing through a modest arc, it stays within gauge and keeps the consist on the rails.

but functional item that finds employment in all Accucraft models and works perfectly well on a £300 model through to those costing over two thousand pounds. It is perfectly feasible to operate the locomotive solely via the piston valve reverser using 2.4 Ghz radio, although many would prefer two-channel control.

### MAINE TWO-FOOTER

In common with all other Accucraft locomotives, lighting up is via the opening smokebox door and once the flame has stabilised, the door is closed and the loco left to reach pressure. The burner is quite vocal and with only a small boiler the raising of steam is quite fast at between five to seven minutes, and caught your scribe out a few times. This is slightly embarrassing, because the LB&HT also owns a couple of Ruby locos so the driver really should know better!

Running light engine the Forney moves about quite easily, although the tail swing through LGB R3 geometry is monumental and those with a crowded lineside area will need to check clearances. However, the rear coupler articulates and maintains position between the rails, so there is no coupling over-throw, although it is still a little close for true comfort. The bonus is running in true Maine two-footer tradition of smoke stack first. The Forney's small cylinders provide just enough power to haul the test train around the LB&HT.

There is something not quite right with the design of the trailing bogie, which relies on springs to give articulation and location. With the resultant item about as solid as a jelly, it is not 100 per cent reliable in operation and on test there were more than a few occasions where the wheel-sets parted company with the side frames. Accucraft can build trucks that will handle LGB R3 points/switches without shedding wheel-sets or climbing the 'frog'. It is a great annoyance to hamper a promising locomotive with a lack of attention to detail especially as a working fully suspended truck design rolls out of the factory thousands of times an hour!

This locomotive was tested using a complete US freight train, in this instance a flat car, two boxcars and a twin axle caboose, the latter three constructed of brass and stainless steel and thus substantial items of stock. The whole consist weighs around 6lbs, which given the modest power and small boiler is a decent compromise load.

As with all other Ruby models, the couplers are of a link and pin design. Unfortunately the coupling link pulls the front of the trailed car down and lightens its rear axle sufficient to make it derail

through reverse curves – not a good piece of design. The pin in this case is a chunky 2mm T-section stud rather than the more elegant turning supplied with Accucraft rolling stock and only just connects across the loco coupler jaws. With the pulling and twisting action of the loaded coupling link this can work the loco pin out of its allocated place. At best this means a split train, at worst it means a lost coupling pin! For the test the solid link was changed for a three-link chain and the loco coupling pin for the 'hook' pin supplied with Brandbright couplers. This lifted the coupler height to match the rolling stock and removed the 'nose down tail light' stance.

The original Ruby also has couplers mounted slightly too low but not as low as the Forney. With deeper wooden draught beams and a chance to check against other models, one is somewhat bemused that no-one at Accucraft US had tried to couple loco and rolling stock before the model went into production. Biased towards UK garden railway practice operation and scale verisimilitude, Accucraft UK provides two coupler heights on the Isle of Man stock. This exhaustive and thorough approach seems to be lost on those who produce models for the US.

### A LITTLE LIGHT SHUNTING

Once correctly coupled up and the regulator opened our Forney digs in and after the cylinders warm and condensate clears, we are away. The loco soon settles into the task and responds positively to the opening and closing of the regulator as we approach the long but modest up grade. This checks our speed, but there is just enough oomph to keep some forward motion against the weight of the four cars.

Powering over the summit the falling grade helps accelerate us to an immodest scale 40mph. It is the slight rise into Stover Station acting as a brake that enables us to rumble through this sleepy backwater without attracting the attentions of the yard supervisor. A measured and cautious entry to the Stover loop is the best approach because here the curve radius varies from four to 40ft so our progress remains at a moderate pace, before we once again head out onto the mainline and back to Bovey Mills.

As we approach our start point, experience with the home shed Ruby indicates that a stop for fuel and water is on the cards. A little light shunting ensues and, whilst not ideal for this task, the Forney operates smoothly enough not to ram the buffer stop, which is all you could ask. The run as 'light engine' to the steaming bay, for a well-earned cuppa plus a chance to reflect on our experiences out



**Above:** Someone at Accucraft clearly thought the loco would spend its life in a glass case! The difference in coupler height is very marked here with rolling stock from the same maker. The LB&HT cure uses pins from Brandbright's RSA68 coupler, chain from the local hardware store and thought from yours truly...



**Right and far right:** The loco boasts plenty of detail, note in the head-on view all the nut heads of the smokebox fastening dog-catch bolts nicely modelled. The lantern is not powered or lamped, no doubt the talented will rise to the challenge. The various brass items are supplied wrapped separately for fitment by the owner.

on the mainline with the footplate crew, is all done on the remaining pressure in the boiler, the fire having been extinguished. Experience with the line's original Ruby has the 'hot locomotive' servicing interval down to seven minutes, making it feasible to run the LB&HT all afternoon with two of these locomotives on duty.

It takes about ten minutes to couple up, despatch and return on a non-stop run (at a slightly immodest pace) with a pre-set regulator. Running in this way does concentrate the operator's mind to maintain a service and there is no reason why the Forney could not run to this timetable. With the low daytime temperatures experienced during the test runs there was always a generous plume of vapour from the smoke stack and a feather at the safety valve too. At the close of play, this little locomotive works reasonably well with a small consist. As an interpretation of Matthias Forney's thoughts, it is closer than those commercially produced live steamers have managed so far.

Potential purchasers should not look on it as competition for the output of the Roundhouse Engineering Works – it is not in the same league. Low pressure, small cylinders, and a modest boiler will always mean a compromise. All is not lost however. Accucraft tests the boiler to 150psi, so experienced modellers would find it easy to adjust things to run at 55-60psi, which should improve performance.

**THE PROS**

This is a well priced and nicely detailed adaptation of a basic model into an unusual prototype. It is relatively cheap so appealing both to the beginner and the experienced garden railwayman. A nice steam dome detail pack is supplied as standard.

**THE CONS**

It has a limited water capacity of 80cc, so is best used on short lines where this is no issue, alternatively you could buy several and run them sequentially for an afternoon of dedicated railwayist entertainment. It is best suited for operating lines with a generous ruling radius – reviews elsewhere indicate that ten foot radius curves allow the power available to haul more demanding consists.

Access to the controls is slightly awkward with the roof in position, running with the roof removed is the only option if you do not have a circuit, or own a line with gradients steeper than 1:100. The link and pin couplers are mounted much too low, and do not correctly couple to Accucraft US Rolling stock with the same design! The pony truck design is less than ideal. Larger cylinders

would make a world of difference to the performance of all the Ruby clones, Mr Accucraft US please note.

**CONCLUSION**

Accucraft has produced a believable representation of a Forney. It has a few issues, notably the pony truck to cab relationship; the 12in/ft prototypes shown in photographs seem much shorter in overall length, with the pony truck almost touching the rear driving wheels.

The livery choice is limited to the startling (though prototypical) Malachite Green with gold coloured cab and brown water tank, which may not be to everybody's taste... although it does get less eye-watering, after studying the model on a regular basis.

The model will please the many whose workshop abilities are less accomplished. Whilst Mark Horowitz's original design brief was to provide a loco for modellers to kit bash, factory originality has now provided a 'turnkey solution' for those with ten thumbs.

**Will it fit my Depot?**

Scale/Gauge	1:20.3 scale, 45mm gauge
Total Weight	2.7kg, 4.6lbs.
Length	368.3mm, 14.5in.
Width	114.3mm, 4.5in.
Height	152.4mm, 6in.
Minimum Radius	1.2m, 48in.
Valve Gear	Eccentric, piston valves
Reversing	Piston valve reverser
Fuel	Butane
Boiler	Single flue
Water Capacity	80cc
Working Pressure	40psi
Fittings	Safety valve, water gauge, regulator.

Guide Price: £700-ish. Please check with your dealer for the current prices. Dollar and Pound values slide about like soap in the bath...

**GardenRail Resource**

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