While diesel bodies were considered for this concept, the BTR already has plenty of diesels, large and small. Consequently, only Steam Loco bodies will be dropped over the base unit.



The basis for 2nd Loco built for this MACK base box. The 1st drop on body was the JR in Tawa NZ, "Otto". This next Loco is based on the No.3 from the Trawbreagabay Light Railway in the UK.

The initial Mack Loco as manufactured was stripped down to the base box and the motor block was removed. There was a need to see what we were dealing with and to plan how the components would squeeze in around the motor block. The intention being to get all the RC gear and Battery within the base box, unseen.



End "A" is match marked YELLOW.



Trial fit of components, it was 'dark' down in there.



Components set out over sketched circuit diagram.

Painted interior as it was hard to see where to affix bits.

All parts except the sound card and the speaker are within the perimeter of the base box of the Mack.



Underside reveals, clockwise from LiPo 3S, Turnigy 30 amp ESC, servo direction switch, Rx & aerial [red tube]. A servo sets direction (forward, neutral & reverse) it has a CAM that trips the toggle arm of the DPDT switch. The CAM is made of brass. The DPDT "centre off" switch and the servo are mounted on a styrene base plate.



The metal casing of the DPDT switch [and hence the metal toggle arm] is connected to power supply.

- When the DPDT "centre off" toggle is in the neutral position a 'touch finger' is in contact with the tip of the toggle and sends the voltage to the sound card. The voltage returns via a common wire.
- When forward or reverse are selected, the CAM moves the toggle to make contact with an adjacent 'touch finger' that sends the current to the Chuff sound.
- When the forward or reverse selection is held at the limit of toggle travel for 1 to 2 seconds, the brass CAM is in prolonged contact with the toggle and the current is sent along a wire soldered to the brass CAM out to the Steam Whistle sound.

Brass plate, fretted out with a Jewelers 4/0 saw blade, solder tags are on right of both pieces & are bent up. This plate is screwed to the 2mm thick styrene EDGE PLATE which is glued 'on edge' to the styrene base plate. The three (3) 'touch fingers' are bent over the top edge of the edge plate to contact the tip of the toggle arm.

Speaker and sound card are in the loco Cab for Hiss (neutral) Chuff (forward/reverse) Toot (whistle), wires emerge from base box through cab footplate, plugs & sockets join sound card to power from base box. This allows easy removal when changing "drop on" loco bodies.

This unique Loco has a prototype and an excellently executed model that inspired the BTR model concept.





22nd April 2009. The completed loco finished off with custom works plates, company crests and a headlamp.

Acknowledgment to the admirable job done by the owner of the Trawbreagabay Light Railway as seen on his website referenced in the photo above.







This view very helpful when scaling off and proportioning the various parts.

Construction begins based on photographs on websites.



The hand sketch was all that I needed after 'scaling off' and proportioning from the photographs on websites.



2.0mm styrene is fretted with a 4/0 jewelers saw to form cut outs.



Roof arc is a slice from a PVC drain pipe, Cab assembly is glued together.

Parts are loosely fitted to check alignment.



A circular cut out for the fire box to boiler will be done after checks for fit and level.



Smoke stack and steam dome placement are checked, fairings for boiler fit will be puttied and shaped next.



Smoke box plate is yet to be crafted and fitted to resemble the photo.

This loco has doors in lieu of open access to the Cab sides. This has been done to conceal the foot plate level of the Mack base box. Our pretext being that the BTR loco engine crew felt this would be safer.

The "skirts" that are yet to be fashioned for this unique loco will be fitted below footplate level. They will hide the standard Mack journals, switch, charge points, ladders and undercarriage details.



Coal is stored in side bunkers, either side of the boiler and below the front Cab doors. The side plates are yet to be made and fitted in these photos.



Smoke Box profile plate and door.



Side plates to retain coal and tool kits, jacks, oil cans.



Side "Skirts' as a sub-assembly and the Firebox blank.



Lower legs about to be shortened to fit firebox in cab.

The firebox blank was cut from a length of 42mm PVC pipe, a cut was made to prepare for straightening the vertical side walls of the firebox. An electric heat gun was used to warm the PVC pipe "legs" and they were straightened with tongs and a wood block former held them in place while the piece cooled and the plastic reset to the new shape "U".



Firebox trimmed and fitted inside cab.



"Skirts' and rear buffer plates.



This skirt has a cut-out near the front for the On/Off switch.



Front buffer plates

Next the trim pieces are added, door frames, spectacle surrounds, hinges, skirt flaps etc etc.





The Coal is stored in a box below the cab front left door. The top of the Coal Box.



Water is stored in a Well Tank accessed via the filler cap below and in front of the right side cab front door.



Smoke Box door and fittings are installed.



The grey section above footplate is for Sand Boxes.



Lids for Sand Boxes are yet to be included.



A smoke box band is yet to be fitted at boiler junction.



Track Repairs kit in a box on footplate.



Backhead and firebox door as well as some pipe work fittings. Yet to glue and trim the curved cab cutout trims.





Fitting the curved trims around the cab side openings.

Tried 0.3mm and yet it kept snapping on curves.

Tried warming the styrene to induce curve and more often than not it would kink, warp or slightly burn. In the end it was decided to progressively work 0.5mm thick styrene and 'walk it' bit by bit around the openings, strutting and glueing in stages, about 6 to 8 times progressing around the periphery. That worked best for me.



Yet another trial assembly with some items now glued into place. Sandbox lids are now in place.



Cab entry steps and grab irons are now fitted, whistle is done. Next will be glazing and cab fitout.

Painting will be the last operation.



Masked and primed, set aside to dry, check for blemishes that need fixing, ready for final coat of engine black.



Still drying, noticed a few 'orange peel' blemishes that are to be sanded, not much putty needed here.

Now for the final coat of paint.

Despite thorough mixing, spraying a test piece first, keeping the spray nozzle at prescribed distance from model there is a distinct 'orange peel' finish. This is one of the risks when spray painting. All the time spent in crafting a model, the attention to checking every aspect before pressing that spray nozzle, the result can be a little less than the perfect finish one was hoping for.

Fortunately, as it dried out, the effect was not as pronounced as I first feared. All in all, the result is pleasing. Line work, decals and lettering / numbering then a coat of matte medium will see the job done.



The re-assembled model has the chimney collet fitted, masking removed and touch ups attended to.





A tool box is to be fitted in front of the Coal box.

Glazing is yet to be done in the cab.



Head Lamp is yet to be fashioned and fitted.





