B. Basic Requirements

I realised that the model was going to undergo a fair amount of handling during the conversion and to ensure safe handling I decided to use one of my hardwood display plinths. The plinths are cut from red wood, chamfered along the edges and have two grooves milled along their length to accommodate the wheels of locomotives' or rolling stock.

Display / Carrying plinth

The first major hurdle was to determine how I could persuade a loco with such a potentially long chassis frame to negotiate the 2'6" radius curves on my garden railroad without excessive rear end overhang. Fortunately I have a Hartland Locomotive Works (2-4-4) Forney in my collection and it has an ingenious but simple sliding arrangement for the rear bogie that enables it to negotiate the curves on my railroad with ease. Thus I made a simple two and then three axle mock-ups to represent the extension I would eventually fix to the rear of the Mogul. I tried a few variations on axle and bogie pivot point locations until I found an arrangement that appeared to be satisfactory and not generate too much of a tender overhang on the tight curves.

Taking the Piko Mogul Tender Apart and Test Running a Mock-up

It is nice to start this section by saying that the Piko Mogul is a dream to strip down and reassemble; indeed if every manufacturer could produce a loco with such excellent exploded diagrams, and easy to access screws, kit bashing would lose much of its dread for the uninitiated.

In order to test run the loco with a basic tender mock-up attached it was necessary to remove the main electrical board from the original tender. Removing six screws from under the tender allows the top to be removed (Put the screws back into their posts within the tender to prevent loss and make reassembly easy for yourself).

The two wires for the back-up light were removed from the terminal block and their locations noted. Four easily removed small screws hold the board in place. Not wishing to disconnect the wires from the board I chose to enlarge the wire exit slot in the tender floor to 13/8" x ½" to allow the socket that connects to the loco to be pulled through. The hole is difficult to see once the tender is reassembled. (Impossible to see the hole once the tender is on the track should I ever wish to revert to the original configuration).

Quick reassembly of the tender, and it was placed on a storage shelf – hopefully awaiting another kit bashing exercise.

Two axle test unit.

Three axle test unit

Three axle test unit on a 2’6” radius curve.

The three axle mock-up had shown the long loco chassis could successfully go round the tight curves on my garden railroad and so I was in a position to produce an outline conceptual drawing of my proposed Mason Bogie which would form the basis for subsequent designs.

Having produced the outline drawing, the next task was to produce the six wheel tender truck which would then allow me to determine the actual tender floor height and method of securing the tender extension to the main loco chassis.