

The Flying Wardrobe

Many times at the track the public ask us how long it takes to build a loco and were we all skilled engineers? In many cases the answer is “several years” and “Yes”! Being an awkward sort I felt this needed to be challenged, and in May 2022 I gave a small presentation to the Club proposing a simplistic approach to building the chassis for an electric loco, leaving the choice of bodywork open for the builder to create whatever took their fancy. The target cost for this was around £450. The response to my talk was, to say the least, muted, so I left the meeting feeling a bit dejected. The suggestion was made by one member that without seeing something constructed the way I proposed, it was unlikely to gain much of a following.

This comment stayed with me such that a week or so later, looking round my garage at all the accumulated materials, (or junk as my wife refers to it), I began to wonder just how cheaply I could build something. Now this was a bit of a shift away from my original proposals, where all materials were purchased new, but I felt it was still a valid approach and would help to reduced the amount of stock/junk!

Normally a loco chassis is made of steel, mine was made of wood, oak to be precise, from an old cupboard dismantled many years ago. Normal locos have fancy axle box bearings supported in sliding frames to allow for suspension. Mine used ball bearings supported in simple rings screwed to the inside of the wooden chassis, no suspension on one axle and a slot to allow a bit of movement on the other axle. I trust you are beginning to get the flavour of what I was proposing.



Figure 1 Wooden Chassis

One facility not available to early model engineers was the ability to purchase just about anything under the sun on the internet. I made full use of this modern tool; the 24 volt dc motor was the type used in the scooters that are now so lethal on our pavements, the speed controller was of Far Eastern origin and at that time cost less than £10, (post Ukraine etc they are now nearer £20 but still good value at that). A box of 100 bolts was £8 and nuts were £6 for 1000!

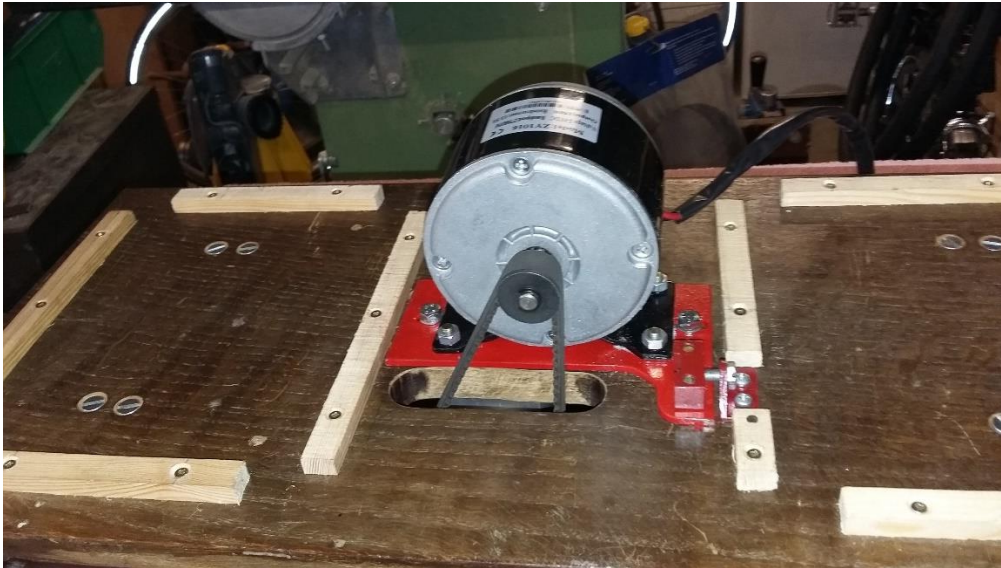


Figure 2 Motor and Battery Mounts

The plan was to build a 4 wheeled loco, driven on one axle by way of modern toothed drive belts and pulleys by the electric motor, Speed control we have already spoken about, Batteries would be two car type 12volt ones; ball bearings, purchased as a set of 10 were about £6 which really left only the wheels and axles. The wheels I machined from a large piece of steel plate, 1 inch thick! This was a time consuming effort generating lots of turnings or swarf, but the price was right. Axles similarly came from stock material of uncertain vintage! In my original presentation I had proposed that Club members should be prepared to help someone if wheels were a problem, and I still hold to that view, but others tell me that finish machined articles are available on the web for circa £60 for 4 wheels and axles.



Figure 3 Belt Drive Arrangement

The motor chosen is rated at 250 Watts and has a full speed of 2000 rpm. To allow sufficient reduction gearing an additional shaft was incorporated in the drive train, which would also make it easier to modify the gear ratios should it prove that my initial calculations were awry!

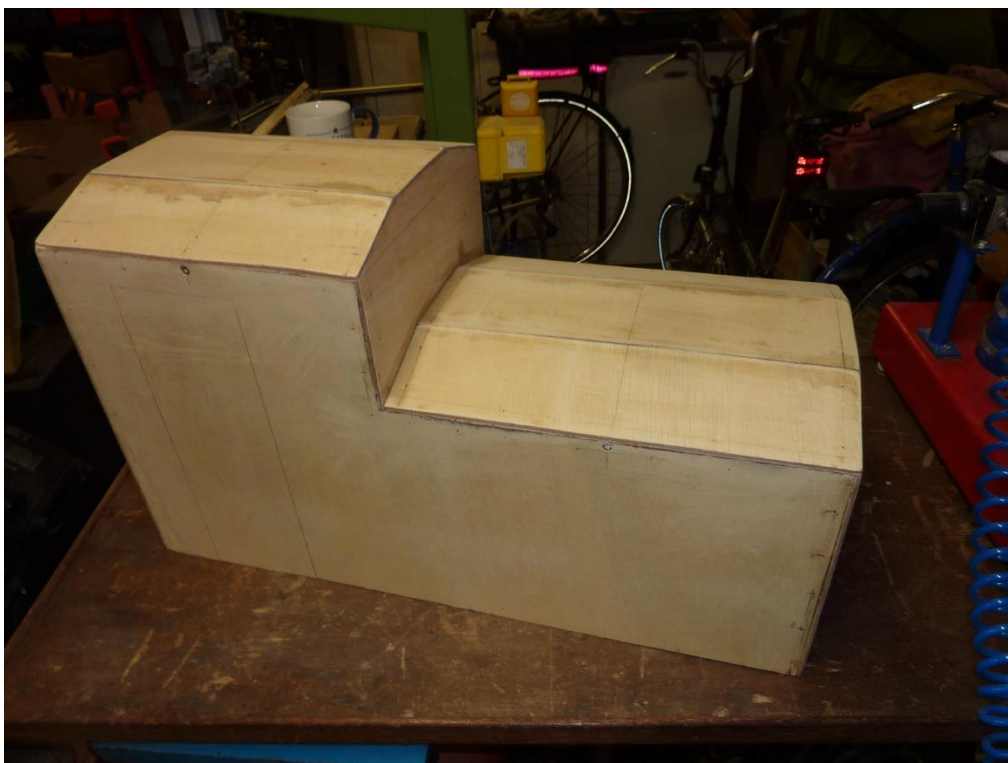


Figure 4 Bodywork



Figure 5 Prime Painted on Chassis

The advantage of making such a simple chassis is that you can put almost any type of bodywork on that you wish. I opted for the outline of a typical contractors loco, as used in many factories and manufacturing facilities. This was fabricated from plywood with battens stiffening the corners and roof sections.



Figure 6 Prime Painted and Light Fitted

Photos show most of these locos had a single headlight, so mine has too, made from a £1.50 LED torch. The addition of some strips stuck on the outside gives the impression of windows, doors and hatches, and in time a few more details such as

an exhaust pipe, number and nameplates will be added for a more realistic appearance.



Figure 7 On Track

Construction started towards the end of May 2022, and with a few delays waiting for parts to arrive or due to other commitments, proceeded until the finished loco had its inaugural run on Sunday 9th December 2022, having been showed to the Club at the meeting the previous Friday. The largest expenditure was on the batteries, costing £100 for the pair, but my parsimonious use of stock meant that it only took another £100 to complete. So for £200 and 6 months working on and off, I had a loco capable of pulling four adults round our track. Despite my protests that the wood came from a cupboard, it has been dubbed “The Flying Wardrobe” by the members, so follow my example, scrounge whatever you can and have a go. You will surprise yourself with what can result.



Figure 8 First Run