THE NORTH STAR CHRONICLES ***– a newsletter primarily for the model railway fraternity***

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Editorial

This edition of the North Star Chronicles continues with the topic of track laying but from a large scale perspective – gauge 1 (45mm) and O gauge (32mm). And to ensure that I continued with my usual approach to life – doing things the difficult way, the track involved is dual gauge. Perhaps I should explain the background to this situation. About 15 years ago I acquired a LGB collection. While one loco ("Frank S") was steam powered (LGB's only steam loco) and the main reason I was keen to acquire the collection, the rest were electrically powered. This meant that if I wanted to run my LGB locos, the track gauge had to be 45mm and wired for electrical power.

With the passage of time several16mm scale steam locos which appealed to me came on the market (e.g. the Accucraft

NGG16 Garratt and the Accucraft NG15). As they run on 32mm track I either had to have two separate tracks – 45mm and 32mm or build dual gauge track. Initially the former approach was adopted (Umkhulu Modules – refer NSC Vol 1 no 8 – August 2013) but now that a permanent layout is being built, dual gauge was the way to go.

Larger Scale Track Building and Laying

One of the main attractions of model railroading is the range of activities involved – we all get our kicks from different aspects of the hobby. Hand laying of HO track – laying individual sleepers and pinning the rail thereto with spikes has never appealed to me. After all we only have one life, but each to his own. My recent track building activities are the nearest I will ever get to hand laying and along the way some techniques have been evolved which may assist others who follow the same tracks – excuse the pun.

To recap, my initial resources were code 200 bullhead brass rail on whitemetal chairs pinned to wooden sleepers on a plywood base. Over the years I also had bought some Tenmille equipment (http://www.tenmille.com/) - gauge 1 track, gauge 1 plastic sleepers and plastic chairs all treated with UV retardants. So let's call that point A. The question is how did I get from point A to point B which comprises dual gauge track laid on a brick base (refer photo on right below)?

Point A Gauge 1 track

Point B Dual gauge track

As stated last month the first step was to lift the gauge 1 track with the wooden sleepers. Despite having been down for a number of years in an unforgiving climate, the sleepers were in fair condition and could have been reused, particularly if they had been tanalised. ('TANALISED' timber has been impregnated with a copper and biocide based preservative solution under high vacuum pressure in an industrial vessel. This treatment process ensures deep penetration into the timber cells for longer lasting protection against fungal decay and termites than the application of a surface coating). However working on the one life principle – pinning individual chairs to individual sleepers (estimated time to build a yard of track – 3 hours) would have been a bit like running Comrades Marathon when the objective was to go for a jog around the block. A decision was made to go the plastic sleeper route. So the wooden sleepers and whitemetal chairs were discarded.

Redundant ***Also redundant***

Unfortunately the latter were still attached to the rail (refer photo in September NSC) and one of the most time consuming tasks was to separate them. Exposure to the sea air had resulted in many of the chairs corroding on to the rail requiring the use of a hammer to persuade them to become detached. The second main problem was the new chairs (Tenmille AG 170) for the 32mm track had to be trimmed as they fouled the existing moulded in gauge 1 chair. Consideration was given to

using a North West Short Line Chopper 2 tool for this task but in the end the easiest and quickest way was to cut off part of the base of the chair with side cutters. So far I calculate I have trimmed 900 chairs!

Chairs as supplied bottom left. Chair showing a bit of leg from below in the middle and “trimmed” chairs front right. Behind is a view of two sleepers from underneath with the chairs fitted and the legs thereof just visible.

The next step was to attach the chairs to the sleepers. An attempt was made to do this with an adhesive after cutting off the chair ‘leg’. Had this worked and using a track gauge it would have been easy to fit the third rail. Unfortunately because polypropylene is the plastic involved there is no glue that will do the job satisfactorily.

So a hole had to be drilled in each sleeper into which the leg of the chair was inserted. To facilitate the drilling process a jig was built for my lathe.

The jig comprises a piece of plywood to which strips of wood glued underneath fit into slots in the milling table. Hence the jig is easily removable – it just lifts out. Raised strips front and back of the jig hold the sleepers (supplied in pairs) firmly while they are being drilled.

Obviously, the number of holes equaled the number of chairs and there are 36 sleepers per length of track. 25 lengths have been positioned so far so this means in addition to trimming 900 chairs I have also drilled 900 holes!
Simplifying this task required some lateral thinking. While the accurate positioning of the sleeper to be drilled in the lathe speeded up the process, placing one set (two) sleepers at a time in the jig was still time consuming.
The solution adopted was to build another jig (see below)
This performs two functions: firstly it holds the sleepers in position while the rails for the 45mm track are being inserted in the chairs; secondly it acts as a ‘feed’ to my Dremel and so enables holes to be drilled on a production line basis.

The sleepers placed in the jig with the rail to be inserted in the “outside” moulded in chairs (for 45mm gauge track) lying on top. If the rail does not slide into the chairs easily the most probable reason is that it is upside down!

After inserting the two outside (45mm) rails the length of track could be slid along to the Dremel in a vertical press which had also been fitted with a jig similar to the one in the lathe i.e. strips of wood glued to the underneath of the piece of plywood fitted into holes in the drill press base.
The result is an efficient and fast system of drilling the holes for the chairs for the third (32mm) rail but constant vigilance is required to ensure the Dremel has not shifted in the drill press clamp as it has a tendency to drift offline resulting in out of gauge 32mm track and a lot of wasted sleepers.

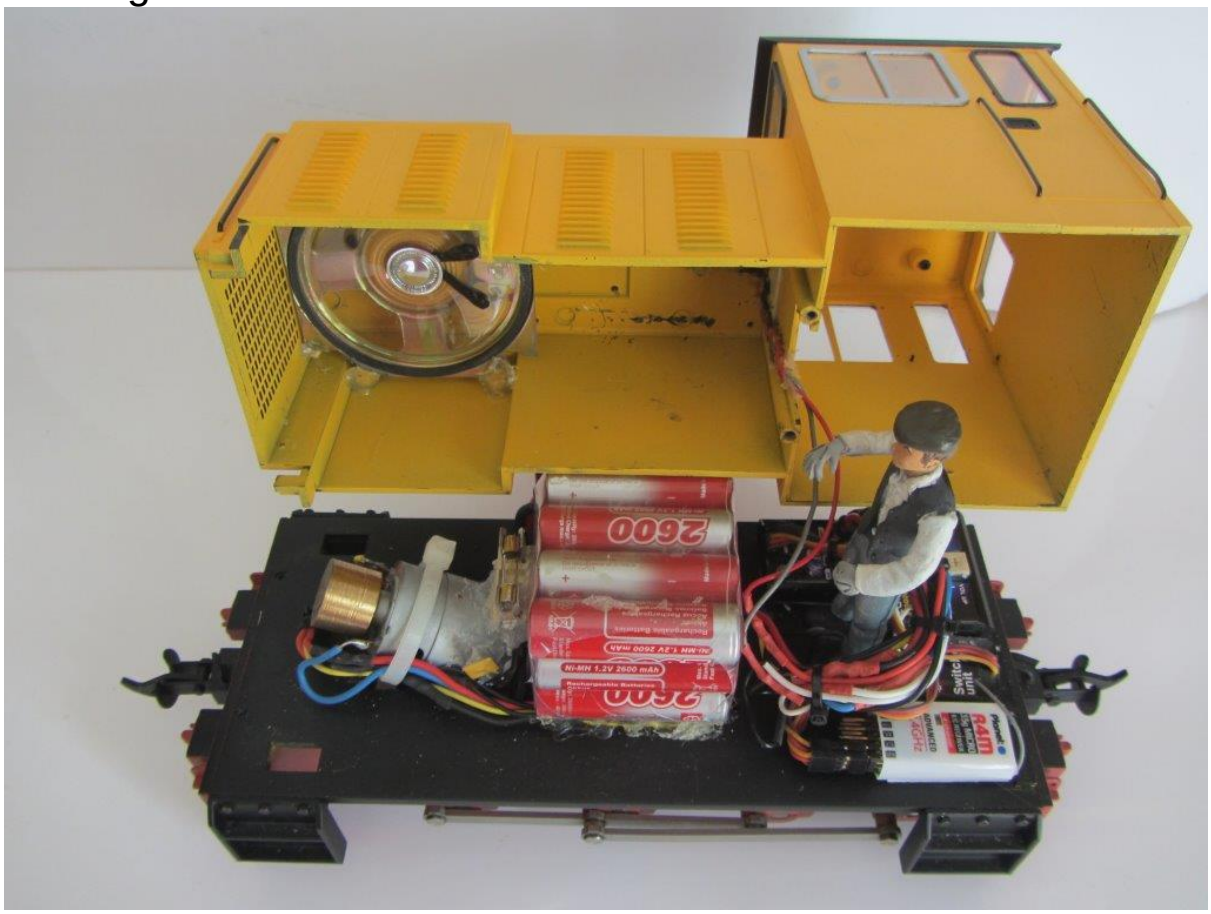
The 45mm rail has been installed, the holes for the 32mm chairs have been drilled and the 32mm chairs have been inserted. The installation of the chairs is another time consuming task. Pity I can't build a robot to do the job. I know, I will bribe my grandchildren!
Finally with the new chairs positioned, the third rail can be slid into position and voila we have another length of dual gauge track ready for laying.

At this stage I should point out that the track I have put down has been positioned rather than laid. There is still a great deal of work to do before the track can be considered as "laid".
Reference was made earlier to electrical power for the gauge 1 track. This will require an electrical cable "bus" to be installed from which feeder wires will be connected at regular intervals to the track. Probably the easiest way to do that is to solder the feeder wires to the rail joiners/fishplates. This will require new fishplates to be used as the old ones are tarnished.
The ends of the rails will have to be polished as they are also tarnished. In addition a paste to improve conductivity will be inserted at each rail joint. A space will have to be left at rail joints to allow for rail expansion in direct sunlight.
Finally a decision has to be made how to secure the track to the brick base. The answer at this stage is probably the use of small rawlplugs.
And still to come is the greatest challenge of all – making dual gauge points. Guildford Model Engineering Society has kindly provided me a 'how to do it book' but I can see lots of 'fun' to be

had before my first dual gauge point is completed. Oh well dual gauge track was my own choice.
However notwithstanding the work still to be done, a loco has already run on the positioned track – well part of it anyway. The evidence is below. The loco concerned is an Accucraft battery powered, radio controlled, 16mm scale model of Vale of Rheidol no 10, fitted with sound. Being 16mm scale and based on a prototype which operates on 2’ gauge, this model runs on 32mm track.

The prototype operates on the Vale of Rheidol line in Wales. Originally intended to be supplied to a sugar estate in Mocambique, the collapse of the Portuguese colonial system put an end to that. VOR no 10 was acquired from Baguley Drewry as a kit of parts by the Brecon Mountain Railway who assembled the loco in 1987. It was brought to the VOR when the company was under the control of the BMR and has a turbocharged, four cylinder, Caterpillar 3304 diesel engine.
The model was originally supplied with a Planet T5 transmitter, a R6M receiver and a Mtroniks Micro Viper Loco Brushed Speed Controller. Details of the controller can be viewed at:

http://www.mtroniks.net/prod/Locomotive-Speed-Controls/Viper-micro-Loco-10.htm
A Mtroniks sound module was added and the result was fine but earlier this year Remote Control Systems of Australia brought out a TX-7 which is a pocket sized replacement for the Planet T5 transmitter. The conversion to the RCS TX-7 (http://rcs-rc.com/pages/dsm2-tx-7s-info) required the replacement of the R6M receiver with a Deltang DSM2. The main benefit of this conversion apart from a major reduction in the bulk of the transmitter is the automatic “binding” of the TX-7 to the receiver.
To finish off, below is a photo of the ‘innards’ of the loco. The only change which has taken place subsequent to the photo being taken is the replacement of the Planet receiver with the Deltang DSM2.



Please note the November North Star Chronicles will be late as I will be overseas until the middle of the first week in November.