THE NORTH STAR CHRONICLES – an occasional newsletter for the model railway fraternity

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Editorial

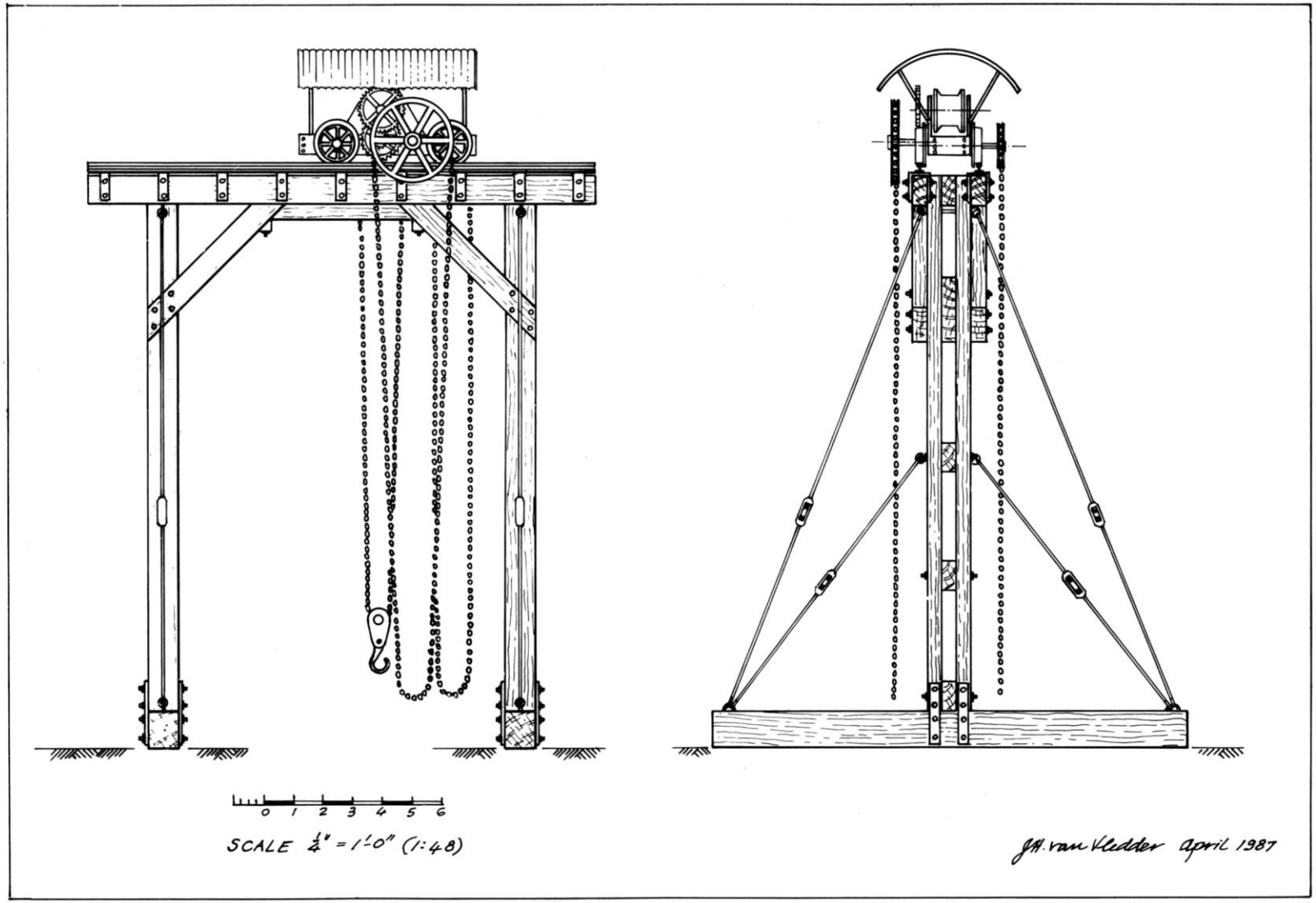
The features this month are an article from John van Vledder on a Gallows Frame Hoist which originally appeared in the Jan/March 1987 Railway Modelling Scene and an article on Umkhulu Modules but first a post script on Gresley A4 Pacifics and A1/A3 Flying Scotsman.

Excerpt from correspondence between the Reverend John Borman and me:
"Many thanks for the North Star Chronicles received today. I was particularly interested in notes of your visit to the NMR at York as I was there myself in the second week of May. I hadn't been for many years and was thrilled to see the new layout and exhibits, especially the two A4s. I also had the thrill of visiting the North Yorkshire Moors Railway a few days earlier and caught a glimpse of their A4. (Sir Nigel Gresley – ed). NYMR were celebrating their 40th Anniversary.
At York I was intrigued in following one of their short tours to see the Royal Coaches and to discover that in the early years it was the demands of royalty that brought innovations that later became standard. Queen Caroline, travelling in one of the early 2-horse coaches stuck together carriage required greater length to lie down and sleep. So they cut out a hole at the back of one compartment and fitted a box onto it so as to accommodate her feet! It was the start of sleeping compartments. Queen Victoria needed a travelling toilet – before which people presumably had to hop out at stations to respond to the call of nature. They designed a toilet for her and they soon became standard! I enjoyed a most wonderful day at the NRM and thought their restaurant on the platform was superb. I share your sentiments on the Flying Scotsman – maybe it was flogged to death instead of having ample maintenance?"

***And my response – excerpt from the engineers report into Flying Scotsman**:*
***"**11 In accordance with Gresley design, A3 class locomotives should have a cylinder liner bore diameter of 19 inches. The bores on all three cylinders fitted to the locomotive currently have been measured, with the middle and left-hand side cylinder bores being 20 inches and the right-hand side being 19.5 inches. The combination of 20 inch diameter cylinder bores and the A4 class boiler working at 250lb pressure fitted to the Flying Scotsman for a long period of time prior to its acquisition by the NRM, has allowed the locomotive to be operated at substantially above its design characteristics. This, along with the middle cylinder misalignment, is in our view, the principal cause of the seriously deficient mechanical condition of the locomotive, discovered during its current overhaul."*

Below is a photo of an O gauge model of Flying Scotsman built locally by Tony Raafe from a kit, mainly etched brass but with a fair number of plastic parts. The project was a joint venture between Hachette, the National Rail Museum and DJH marking the 85th anniversary of the A1 class. (Flying Scotsman was completed in 1923 as an A1 but emerged from Doncaster works in January 1947 having been upgraded to A3 specifications). The model was built from parts supplied over 125 weeks (total cost in the UK £617.50 plus paint and decals) in a publication sold via the CNA in South Africa. Although a motor and gearbox to power the loco was available Tony's model is unpowered. It would be interesting to learn if anyone else in South Africa completed a powered model.
There is a good blog describing the building of the same kit in the UK:
http://www.rmweb.co.uk/community/index.php?/topic/17121-hachette-flying-scotsman/


A PROTOTYPE*
GALLOWS FRAME HOIST
By John van Vledder
Drawing and Photos by the Author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SCALE ¼" = 1'-0" (1:48)
J.H. van Vledder April 1987

One of the 'definitely must have' structures for my locomotive service module is a hoist for lifting locomotives or rolling stock to enable bogies or wheels to be changed/repaired. I waded through my collection of 'Model Railroaders' and found what I considered to be a suitable prototype in the August 1976 issue. It fulfilled my usual parameters, i.e. it had to be of timber construction, it had to be unusual and it had to be small. I made photo copies of the article and for the next few weeks went through my usual practice of 'imagineering' the construction. This is a sound approach to good scratch building for by carefully studying the drawings and imagining that you are actually building it, you have a chance to iron out most of the snags and also determine your construction methods and sequence.

I started the actual construction by enlarging the basic drawing to 'O' scale, and then cutting all the wood to size, that is to exact length with all skew cuts, notches, etc. incorporated. My next step is to weather the wood to give it the appearance of having spent years exposed to the elements. Those who are familiar with my previous articles in the S.A.R.M.S will know my methods, but for the benefit of newcomers, and stubborn disbelievers, here is the process.

1. Take out all your paints and stains, put them in a stout box and seal it, for we are going to age the wood, *not* paint it.
2. Obtain from your local hobby shop a bottle of A. West's 'Weather-it' (if it is not in stock, get it placed on order for you, for nothing else will do).
3. Having obtained your ageing chemical, pour some into a small container, (I use an old T.V. dinner tray), and place the cut pieces of wood in it to soak for about fifteen minutes.
4. While it it soaking, switch on the grill of your oven and position one of the trays with the roasting dish upside down on top of it so that the flat surface is about 50 mm below the grill element.
5. Carefully drain the excess liquid from your wood and arrange the pieces on the upside-down roasting dish.
6. Now comes the fun part — and if you are not a smooth talker, the cause of domestic strife! slide the tray under the grill element, switch on the oven light, and closely observe your wood.

After a short while it will start to steam as the wet wood dries, and shortly after that it will start to smoke. I pull the tray out as soon as I see the first signs of steam, and study my wood. I look for signs of the wood changing colour as it toasts under the grill. The purpose of the exercise is to let the heat accelerate the ageing of the wood without charring it, or, heaven forbid, igniting it! Fortunately it is easy to monitor the process, as you can simply pull the tray out as often as you wish and put it back for further treatment. When you can see a distinctive darkening of the wood, you have to rotate the pieces to enable all four edges of each piece to receive the treatment. It is better to be alone in the kitchen while all this is taking place for you will be muttering some choice curses as you rotate the wood and your sensitive fingertips brush against the hot roasting dish. (Keep your tongue a safe distance away, as you may ignite the wood!!)

You will find that some pieces age quicker, and can be removed while others need to be toasted longer. You do not want an even colour, but rather a blending of darker and lighter areas.

When you are satisfied with the results, open the kitchen door to ventilate the room while you bandage your toasted fingertips. When you examine your wood under a good light, I am sure that you will gloat with satisfaction. Any areas that are too dark can be lightly brushed with a suede brush (you know, those brass-bristled brushes for cleaning suede shoes) until you obtain the effect you like. Now you will see why we locked away those paints and stains. They do come in handy though when we are turning white plasticard into a representation of aged metal.

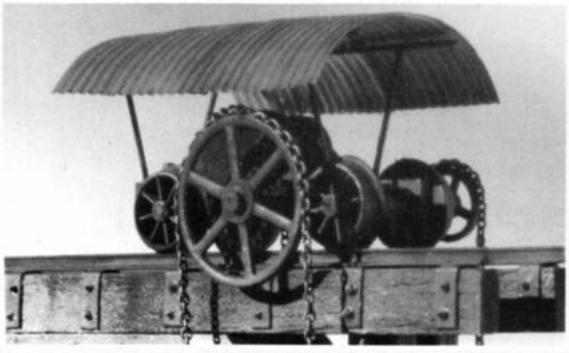
Having prepared my wood, I started the assembly. This is usually the most fun, as work can now progress fairly rapidly. However, in this case, I started having misgivings as soon as I saw the various sub-assemblies. It somehow wasn't quite what I wanted. It looked good in the photographs in the Model Railroader article, but the translation into a large scale model did not impress me. It looked cumbersome and I found it difficult to accept structurally. I promptly dropped the project and let my subconscious take over. I place great trust in my instincts, and again they came to my rescue, albeit some months later.

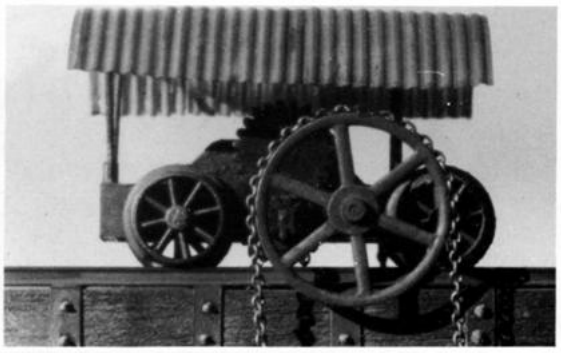
I have been doing a lot of work in my full-time job on portal frames, which are an advance on the gallows frame of yesteryear. A quick sketch on a piece of scrap paper, and the new project was born. Some clearance dimensions were taken, and a scale sketch was then produced. In this case my progress was excellent, all the ideas seeming to just fall into place, and work, which is most unusual for me!

The hoisting mechanism is a hand-operated lift with a hand-operated travel, both driven by endless chains. I must stress here that I did not build a model. What I created is a prototype — see footnote. After I had assembled the structure, with the rails on top of the beams, I scratched around in my scrap boxes, and found two pairs of wheels that fitted the gauge perfectly — what luck! I also found an old flywheel mechanism that I had got from my grandson from one of his broken cars (he has strict instructions to save any wheels, gears, etc.), and found to my delight that it fitted in perfectly with the wheels and the scale was good. With a bit of fiddling I replaced the flywheel with a drum made from two wheel hubs suitably sanded down and glued together, and further scratching turned up some gears from an old watch which I re-arranged into a believable mechanism. The large chain wheel is a sheave wheel by Grandt Line and the smaller one for the travel mechanism is from an old ship kit. I fashioned a brass wire frame to support the curved corrugated sheeting, and then blended the lot together with a sprayed coat of gunmetal which I then hassled to death with dabbed on chalks, spittle, more chalks, more spittle until I got the upper hand and achieved a well-weathered, dirt-and-rust encrusted mechanism.

I know this all sounds rather glib, and that all you neophyte scratch builders out there will be saying "it's alright for you, you have all that experience to guide you", but I can honestly say that when it comes to creating something from bits and pieces, well!, to me, an old paper clip, a scrap of plastic and two beads looks exactly like that to me. I do not have a good imagination, but I do have perseverance. I keep that picture of the finished project in my mind, I literally live it, study it, toss it around, stare at my module and imagine how it will look with the added model. In short, I 'imagineer' it until it becomes a reality — but then, aren't we railway nuts all the same?

* The original thing or person in relation to any copy, imitation, representation, later specimen, improved form, etc.





UMKHULU MODULES

"Ex Africa semper aliquid novi" Pliny the Elder AD 23-79 would have us believe. Roughly translated this means there is always something new from Africa. Well, not in this case. It has all been done before, many times and probably better but this is how a portable (?!) modular layout to run live steam on 32mm and 45mm tracks Was planned and built. The layout is called Umkhulu Modules reflecting my domicile in KwaZulu Natal.

It all started when my wife went out to buy a loaf of bread and returned with a townhouse. My dearly beloved had run in to an estate agent at the shop who asked if we were thinking of moving house as she had this divine townhouse for sale. WE were certainly not thinking of moving. WE had a rondavel which had been custom built as a billiard room. It was 28 feet in diameter and had a high thatched roof. The previous owners of the house had kindly sold the billiard table leaving the room empty but it did not stay that way for long. After a short spell as an exercise studio, the room had accommodated the layout of Durban Modular Railroaders (DMR) for some 17 years. In addition I had laid a 45mm track running around our swimming pool to run my live steam locos so you could say that I was happily ensconced on the property. But to be fair, our lives were changing. Our children had flown the nest and maintaining a large, thatched property for just the two of us began to make little sense so after humming and hawing over the townhouse a decision was made to move. This obviously involved dismantling the HO/Hon3 layout (still in storage nine years after our move) and digging up the track around the swimming pool.

The townhouse did not have a suitable room to accommodate the DMR modules. Several possibilities for creating one were investigated but nothing gelled. In the meantime I had become increasingly interested in live steam. Unfortunately, apart from the larger gauges (mainly three and a half and five inch) there was nobody else in the Durban area whose interest in live steam had extended to building a 32mm or 45mm track so if one was to eventuate it was a case of do it yourself.

After reading widely on the subject and holding a number of planning meetings with former members of DMR the following broad criteria were compiled:

- Portable, so that the layout could be exhibited to the public
- Robust construction. DMR modules lasted for over 20 years. I am now 68 so if Umkhulu Modules do the same that will see out my remaining time on this planet!
- As weatherproof as reasonably possible
- Where ever possible use left over wood arising from the dismantling of the DMR layout so saving costs
- Radii of curves to be as large as possible (2.1m in the case of 45mm and 1.9m for 32mm) and to corporate easements (transitions) on curves so that speeding locos did not derail and fly off the boards
- Separate tracks to enable both 32mm and 45mm gauge locos to be run.

The main materials for the modules comprise 18mm, 9 ply shutterboard and 2x1 and 3x1 pine. As the name suggests shutterboard is used in the building industry for concrete shuttering. This material was chosen for the baseboards because of its

robustness and weatherproof nature as it has already been treated to resist water. It is supplied in 2440mm x 1220mm sheets.
There are 18 boards in total, 3 straight ones on each side which are straight (1220mm x 610mm) and the curves which comprise 2 lots of 6 rhombic shaped boards cut to 15 degrees at the end of each board by the supplier giving a length of 1220mm on the outside and approximately 900mm on the inside. The boards were braced with 2x1 ‘T’ beams down the centre which are secured into 3x1 end pieces running crosswise (refer photograph below).

The 3x1 crosspieces at the ends of the boards are recessed sufficiently so that when the boards are joined the trestles sit in between them and are interlocked with carriage bolts and butterfly nuts. A jig was used to drill the holes for the carriage bolts so that any trestle can be used for any two boards.
As shown in the photo below, there are two types of trestles. For the first, 2x1 pine was used for the legs and cross bracing with two 3x1 cross members back to back at the top. The second type comprised two 3x1 cross members back to back and a single 3x1 leg.

All legs are adjustable via an extension with a central slot which slides up and down two securing bolts and butterfly nuts at the end of the legs.
Baseboard and trestle construction involved the use of over 600 screws. Thank goodness for “posidrive” screws and an electric screwdriver!
A weatherproof acrylic paint, ‘Wall and All’ was used to coat the trestles and baseboards after priming with wood pink primer.
Turning now to the track, despite already having spent several years outside, the 45mm track was still in fairly good condition and could thus be reused. I should perhaps explain that this track had been produced in South Africa. The rail had the same profile as LGB and so could be used with LGB points. However unlike LGB where the rail is brass, the local product was made of copper. There are advantages and disadvantages with copper but in this instance the former prevailed, mainly that the use of a rail bender was unnecessary. The ends of the 45mm track on each module are wired with banana plugs to enhance electrical continuity. This enables electrically powered locos (mainly LGB) to be run at exhibitions.The 32mm track and points are Peco SM32 nickel silver.
The technique used to lay and secure the track was the result of trial and error. A friend kindly worked out the geometry on his computer and a trammel was used to draw the approximate position of the track on the boards. Some articles on the subject recommend using a piece of string at the end of which is tied a pencil for this purpose but I prefer a trammel made of a long piece of wood with a nail as the pivot and a pencil fixed in a drilled hole at the other end. This gives greater accuracy.
Having drawn the curves on the baseboards, easements were incorporated by visually sighting along the track gradually decreasing the curvature as the straight track was neared. This is not a scientific approach but it worked for me. Those who wish to obtain insight to the geometry of curves are referred to three articles on the subject in Garden Railways by Christopher Mills (December 1995, February and April 1996). Harold Fuller’s article in the October 1996 Garden Railways on “Easy Easements” is also a useful reference.

Having decided on the track layout, styrene “locators” were placed under the sleepers to hold the track in position (refer photograph left). The styrene locators were fixed to the baseboards with brass cabinetmakers pins and then the track was pinned through the sleepers into the locators/baseboards.

The result is a robust system which stands up to a fair amount of punishment experienced with erecting/dismantling/ transport.
When the modules have been erected and bolted together and the baseboards levelled using a spirit level, the track is joined with fishplates as normal.
One final feature visible from the photographs is that each baseboard has four short legs located at the corners which facilitate vertical stacking of the modules.
I hope those who suffer from the same problems as me (no readily available permanent track on which to run my locos) will find a useful idea or two in the foregoing.
Please contact me at shares@iafrica.com if you want any further explanation of constructions methods used on Umkhulu Modules.
By the way, Umkhulu is Zulu/Xhosa, literally for grandfather but colloquially for old man…….

Set up with the late Sheldon McGlone on the right

Accucraft NG15 (front) and NGG16 (rear)

And finally some photos (courtesy Hannes Paling) taken when the layout was set up at Pietermaritzburg Model Engineering Society 'Wings Wheels and Whistles' Exhibitions in previous years.

Peter Angus Renishaw no 4 Heisler

Accucraft NG15 ("Kalahari")