

Modelling Wholestick Trucks on the Sugar Cane Railways



Part 2: Working in larger scales

Lynn Zelmer

The first part of this article (in the January 2009 edition) looked at building wholestick cane trucks in HOn30/OO9. In this second part we look at modelling similar trucks in On30 and larger scales.

Well-weighted On30 models of timber-type cane trucks can operate well. The RJ Models' Moreton Mill timber-type truck has been cast in white metal with brass bearings and metal wheelsets. This ensures it has good operating weight both empty and loaded.

The weight problem is more easily overcome in the larger scales. Tootle Engineering's SM32 wholestick trucks (pictured in NGDU issue 24), with several white metal castings, also operate well. Models cast in any of the resins, or fabricated using stripwood, styrene, or brass would need additional weight for good operation.

I've not seen many successful steel-type trucks. Due to the method of construction these may need extra weight. This could be provided by filling brass square tube stock with lead, using metal wheel sets and white metal castings for some components.



TITLE PHOTO: A Fiji Sugar Corporation worker reloads the cane from two derailed wholestick trucks onto replacement trucks standing on the main line near Lautoka, August 2007. Shown here right side up, the heavy duty steel frame is almost as large as a four ton cane bin and would be relatively easy to model with commercial brass shapes. Lynn Zelmer photographer.

RIGHT: Moreton Mill steel wholestick truck at Nambour Museum, 2006. Lynn Zelmer photographer.

BOTTOM RIGHT: One of two restored Racecourse Mill wooden wholestick trucks now on display outside the mill. Brian Millar photographer.





ABOVE: The underside of a FSC steel wholestick truck showing the centre beam and how the wheelsets are mounted, Lautoka Mill, September 2007. The top side of a similar truck appeared in NGDU 24. Lynn Zelmer photographer.

BELOW: Close-up of ratchet system for Moreton Mill steel wholestick truck at Nambour Museum, 2006. The chain was thrown over the load of cane, attached to a hook at the far end, and then tightened to hold down the load. Lynn Zelmer photographer.



BELOW: Scratchbuilt SM32 wooden wholestick truck in the general style of Racecourse Mill, during construction, Brian Millar model builder and photographer.



Wheels and couplers

As noted in Part 1, wheelsets can be a problem for scratchbuilders in any scale since 13-15" diameter wheels are not common, especially if you want spoked wheels. Most smaller scale modellers simply select the smallest commercial wheelsets available. I've used Roy C Link's spoked 2 foot gauge wheelsets, regauged to 16.5mm, for an experimental steel-type On30 model. The wheels are plastic, rather than metal, thus add little weight to the model, and are expensive. However, they roll well, have wheel spokes and result in a model that is prototypically close to the ground.

For coupling in the larger scales it's quite reasonable to stick to centre buffers and some form of link and pin coupler. HO scale knuckle couplers set at 'normal' HO scale coupling height are also common for On30 models. Kadee or equivalent couplers with the 'trip pin' cut short (as there are no brake lines on cane trucks) leave On30 cane trucks further apart than is prototypical, but allow them to operate around sharp curves.

Designing around compromises

The compromises required to adapt a 24 inch prototype to 30 inch equivalent gauge are much more obvious in On30 and larger scales than in HOn30. For example, Brian Millar suggests that any direct scaling of the tiny Racecourse truck to 1/4" scale (1:48) would result in a totally unacceptable appearance. Since this wholestick truck is so small he recommends building the truck in 1:38 scale (half of the 16 mm scale as drawn) to more easily accommodate 16.5 mm gauge wheelsets. This also results in a more 'normal' coupling height without compromising the appearance of the truck.

Detailed drawing of a Racecourse Mill
wholestick truck as constructed by the
Bundaberg Foundry c 1954.

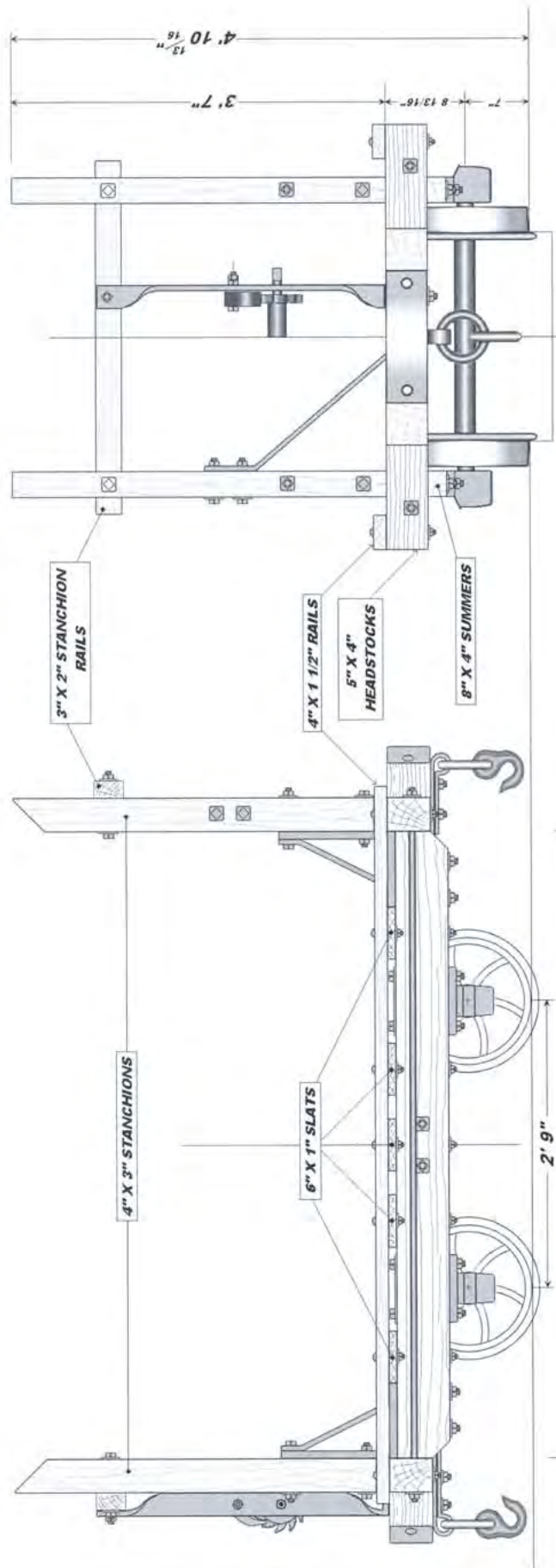
Redrawn from a scanned copy of a
Foundry drawing by Brian Millar.

*Per Bundaberg Foundry
Drawing Sketch No. 1494
5/11/1954*

*Drawn By: Brian Millar
19th September 2008*

**RACECOURSE MILL
WHOLESTICK TRUCK**

SCALE: 1/19th 16mm. = 1 Foot



TOPSIDE PLAN VIEW

UNDERSIDE PLAN VIEW



Adding loads

Modelling realistic cane becomes more important in the larger scales. Depending on the variety, stalks of mature cane vary in length from roughly two metres to over four metres. In the earliest days cane was cut green, however the hazards of rats and snakes resulted in much of the cane being burned before cutting. As well as removing vermin, the burn reduced the amount of dry leaves and other trash around the cane, but left the cane blackened with soot. Broom straw can be used to represent wholestick cane but some thought should be given to blackening the cane stalks and accentuating the segment joints.

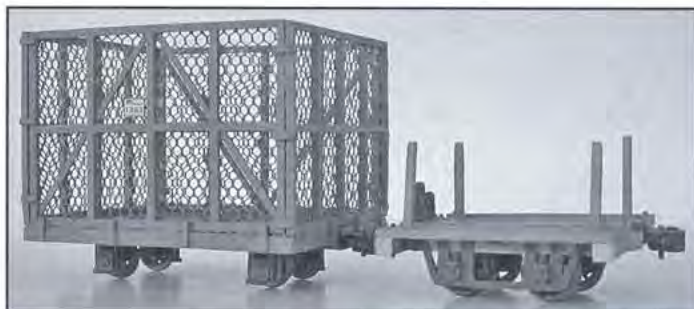
Finally, a few wholestick cane trucks have survived to operate in the twenty-first century, even in Australia. As well as the restored or preserved trucks in several museums, most Queensland mills likely have at least some navy or shop wagons that were built on old wholestick trucks, making their modelling even more useful.

Acknowledgments and References

Part 1 of this article included several references that are equally relevant for larger-scale models. Additional photos, plans, dimensions and modelling details can be found on the CaneSIG web site (<http://www.zelmeroz.com/canesig>). →

TOP: RJ Models On30 Moreton Mill wooden wholestick cane truck with a 4 ton bin for size comparison purposes. Both are commercially available models from ANGRMS, Bergs, etc. Kadee couplers leave the trucks too far apart for some modellers but the spacing helps ensure reliable operation. Lynn Zelmer model builder and photographer.

RIGHT: Scratchbuilt SM32 steel wholestick truck in the style of Marian Mill. Brian has used the same underframe, 7" 6" over the buffers and 9' 6" wide, to build an early Marian Mill chopped cane bin. The nylon wheelsets are from Binnie Engineering in the UK. Brian Millar model builder and photographer.



ADDITIONAL NOTES

Both David Mewes and Tom Badger contacted us with additional information on the unusual cane basket pictured in Lynn Zelmer's article in our January issue. Thanks to both!

Dear sir,

I have just received my January 2009 Issue of Narrow Gauge Downunder. I must congratulate you on another excellent magazine.

In the article Modelling Wholestick Trucks on the Sugar Cane Railways by Lynn Zelmer, there is an error in one of the photograph captions. The basket shown was not used for the transport of sugar cane to the Isis Mill, or any other mill. The basket is made out of tubular steel and is (as stated) lightweight. The wagon concerned was to be found at a sugar cane pest and diseases facility located in the old Childers Mill yard.

Farmers would bring wholestick cane that they had cut specially to be used as plant cane for a new crop. The bundle of cane would be taken off the farmer's vehicle and placed in the basket. The wagon would then be pushed by hand under a small overhead crane gantry. This would then be used to lift the basket of cane and place it in a tank filled with hot water. This treatment involved immersion in water at around 50-51 degrees C entigrade for half an hour to three hours. The process killed certain diseases that could be present in the cane. The basket of cane would be removed and the cane then loaded back on the farmer's vehicle for him to take back to the farm to begin planting.

Regards,

David Mewes
Acting Curator, The Workshops Rail Museum

Dear Lynn,

I have been reading your article in Narrow Gauge Downunder #32, about wholestick canetrucks. As usual, a most well-presented item.

One thing that I would question though, is the caption to the picture on the top left of page 26. I would suggest that the "baskets" on these trucks are in fact the most modern of all the photos, rather than being the earliest. Look at the construction of the baskets - welded pipe. WELDING???, in the 1880s ??? I think not.....

I think that these baskets are in fact of relatively modern construction, and are captive to the mill yard. The baskets are separate to the truck underframes, and are used for handling bundles of wholestalk cane, just not for milling purposes. They are not unloaded at the carrier.

Farmers planting material ("seed cane") is often grown in special plots. In order to attempt to control the spread of certain cane diseases, the seed material for these plots is subjected to treatment by a timed soaking in a hot water bath. These treatment baths are generally located at the sugar mill, where steam is readily available to do the water heating. The pipe-frame baskets are used to hold the cane stalks while they are lowered vertically into the bath - hence the loops at the tops of the corner staunchions for crane hooks. The truck underframes merely provide a convenient method of moving the baskets to a line in the mill yard where the growers can reclaim the cane. We still use a very similar system here at Proserpine, but with mesh baskets to suit the chopped cane.

I agree with your comment about most of the smaller scale bin models being too high; disagree though that it is less noticeable on loaded wholestalk trucks. I am old enough to have seen wholestalk trucks in service for real - with longer cane on "narrow" cane trucks, the ends would sag down and you could not readily see the underframe when viewed from the side. If the cane was long enough, it would sweep the ground either side of the track.

Modern photos from Fiji do not necessarily show this effect; their modern cane trucks are wider, more like the truck seen at Fairymead House.

Regards... Tom Badger