

# Getting Started with On30 Model Railways

CaneSIG: The Sugar Cane Railway (Tramline) Modelling Special Interest Group



Four On30 wagon kits: a pewter RJ Models *Moreton Mill* 4 ton cane bin (left), two Chivers styrene open wagons (adapted from 7mm, one with brake gear removed) and a pewter RJ *Innisfail Shire* brake van. All are fitted with Kadee brand HO couplers with the uncoupling arm cut short.

## Capricorn Sugar Railway Museum

This micro-layout is composed of three modules made by mounting a foamcore sheet in stainless steel picture frames. The hand-laid On30 track uses nickel silver rail spiked to wooden sleepers. The scenery base is plaster impregnated cloth finished with a coloured plaster/grout mix and commercially available scenery materials (grass, etc.). Trees are a combination of commercial and scratchbuilt (flexible caulking compound on a fine copper wire frame with a flock-covered netting for the leaves).

While the layout can be operated automatically using an electronic reversing circuit and infrared detectors, it uses standard DC for power and can also be operated manually.

Most shire tramways and sugar cane railways in Queensland used 'narrow gauge' track (see below), with only 2' between the rails, making them an ideal subject for this size of layout. Cane railway equipment is small, generally less than 20' (6m) in length, and often half that size. Equipment can be 8' or more in width and equipment is as tall as required for a loading appropriate to the type of track being operated on. Modelling a railway museum allows me even more flexibility in choosing locomotives, rolling stock and other display items.

## Gauge and Scale

'Standard' gauge generally refers to the distance between the rails of the dominant freight and passenger service in a particular state or country. New South Wales, for example, uses a gauge of 4' 8.5" (1435mm), the same as the majority of North American railroads.

However many local and/or industrial railways use a 'narrow' gauge, generally chosen because of cheaper construction costs. Queensland Rail operates on 3' 6"

(1067mm) gauge track, while many of the shire and sugar cane railways settled on 2' (610mm) gauge.

There are a variety of common scale/gauge choices available for modellers. Someone who is modelling long freight or passenger trains, for example, might choose N scale (1:160) with its 9mm track gauge or HO scale (1:87) with its 16.5mm track gauge while a railway in the garden might use G (45mm) track.

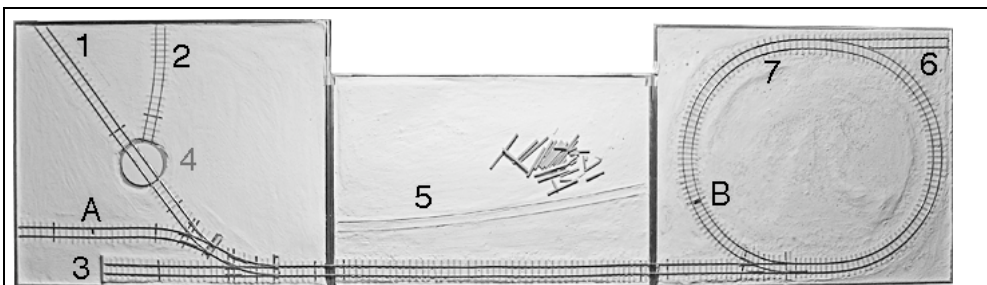
On30 (1:48 or 1/4"=1' with 16.5mm gauge) scales out to 2' 6" gauge for narrow gauge modellers who want reasonable sized models (big enough for convenient handling but small enough for transport) with a good range of commercially available items. Many On30 modellers scratchbuild some of their models, but kits and ready-to-run models are also readily available. On2 (1:48 with 1/2" gauge) might be more accurate for modelling Queensland's sugar cane railways but the On2 modeller must scratchbuild almost everything.

## Layout Design

On30 models are large enough that detail is readily visible, but small enough that a reasonable layout can be built in the kind of space typically available in an Australian home. Most modellers build something larger than a micro-layout but a very large space is not required.

Designing a layout is similar to developing a business plan—it requires you to know what you want to accomplish and the resources available to do that.

- What is the purpose of your railway? (Industries? Operation? etc.)
- What geographic area and time period? (Local/overseas? Modern/historic?)
- What space and financial resources do you have available?



Legend: 1 site of loco shed; 2 display track and future bin repair/workshop; 3 truck transfer (cane bin loading); 4 turntable; 5 buried HO track for equipment display; 6 short display track; 7 operating oval for Museum train rides; A-B auto-reversing segment for continuous back and forth operation. All points (switches) are fixed, when finished this will be an animated display layout, not a layout for operating trains.

The two end modules are 20" x 24", with the centre module 16" x 24". Minimum radius is roughly 8.5", ensuring that only 4 wheel equipment can operate on the micro-layout.

The CSR Museum layout has an operating oval so that museum visitors can have a train ride; it has an engine servicing area, and tracks for displaying museum artefacts (models). The choice of foamcore board in picture framing was made to minimise weight for transport.

### **Track Options**

Hand-laid track and points on sugar pine sleepers (scale 5" x 7" x 6') are used for most of the layout. In some places rails are soldered to sleepers cut from printed circuit board to ensure that the track gauge remains fixed. Points (switches) are all fixed, hopefully ensuring smooth exhibition operation.

Other options include commercial On30 track with plastic sleepers (more costly and less flexible), burying standard HO track in scenery to hide the sleepers (one section of track on the module has been installed this way), or carefully removing every other sleeper from standard HO track to make it appear more like narrow gauge track.

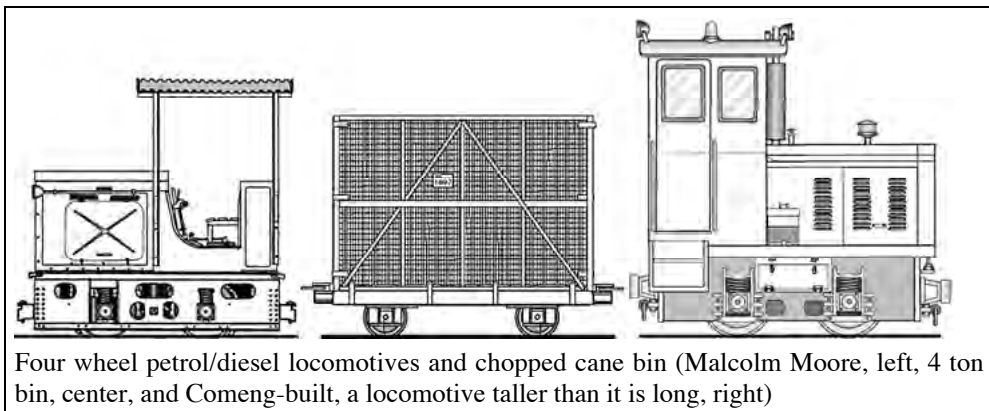
### **Locomotives and Rolling Stock**



Tiny ComEng-built 4wDM locomotive shunting a rake of empty cane bins at the mill.

Although the newest cane railway locomotives are converted mainline locomotives, cane locomotives have traditionally been quite small compared to their mainline counterparts. The locomotives chosen for the layout are representative

of those small locomotives that now can now be found shunting or heading navy trains but once performed more glamorous duties.



Four wheel petrol/diesel locomotives and chopped cane bin (Malcolm Moore, left, 4 ton bin, center, and Comeng-built, a locomotive taller than it is long, right)

Chopped cane bins, just as the wholestick trucks which preceded them, are likely to be as wide as they are long. They may be taken into the fields for filling directly from the cane harvester and will often have at least part of their trip from mill to field and back again by tractor- or truck-hauled trailer.

Other small wagons are used for navy duties: crew wagons, ballast and cane mud wagons, compressors and welding gear, etc.

### **Structures and Scenery, Track Power and Electronic Control**

The physical setting for this fictitious railway museum is Central Queensland. A mix of temperate and tropical vegetation sets the scene, with buildings inspired by local construction methods and materials. Since this is a display layout the backdrop posters are used to help set the scene.

The choice of regular DC power, rather than DCC (Digital Command Control) helped minimise costs. DCC would have the advantage that two trains could operate independently but the fixed points limit potential operation.

### **Costs**

The cost of building a model railway is a direct function of how much work you do yourself! Wagons, for example, can often be built for little more than the cost of trucks and couplers, while ready-to-run versions are much more expensive. Likewise, mass-market locomotives are far less expensive than an imported brass locomotive with sound and individually controlled lights.

### **Other Resources**

The best resource for modelling sugar cane railways, regardless of scale, is the CaneSIG web site ([www.zelmeroz.com/canesig](http://www.zelmeroz.com/canesig)). The site includes modelling tips, 'how to' articles, plans, photographs and industry information.