Modelling The Narrow Gauge Sugar Cane Locomotives Of Queensland

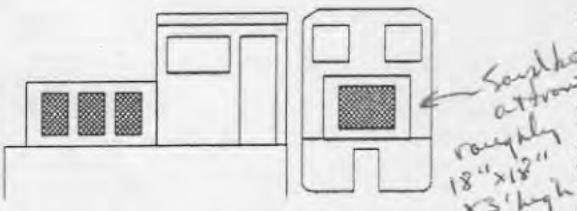
By Robert B. Dow

Introduction

Until the 1950's steam was the principal motive power on the sugar tramways of Queensland. Some early rail tractors (petrol mechanical) were introduced in the 1930's but it was the introduction of a number of Baguley-Drewry 0-6-0 diesel mechanical locomotives by CSR in the early 1950's that was the beginning of the end of the reign of steam. The various mills now operate large fleets of diesel locomotives. Some of the steam locomotives and the early diesels have been restored. This session is directed at outlining an approach to modelling the cane locomotives.

As there is only a very limited range of cane locomotives available commercially it is necessary to consider other options to obtain a reasonable roster of locomotives. One approach is to scratchbuild superstructures on commercially available chasses. For HO scale it is convenient to use 9 mm gauge (N gauge chasses) - HOn2½. In a similar fashion 16.5 mm gauge chasses (HO/OO gauge) can be used for On16.5 scale. During this session some examples of modelling narrow gauge locomotives using this approach will be discussed.

Freelance 0-6-0 Diesel



The first locomotive described is a freelance 0-6-0 diesel locomotives typical of the smaller cane locomotives used in the fields. The material chosen to build the locomotive is styrene. Styrene is an excellent material to use. It is cheap, strong, easier to work with and is fast to glue and fix. The main disadvantage is its relatively light weight.

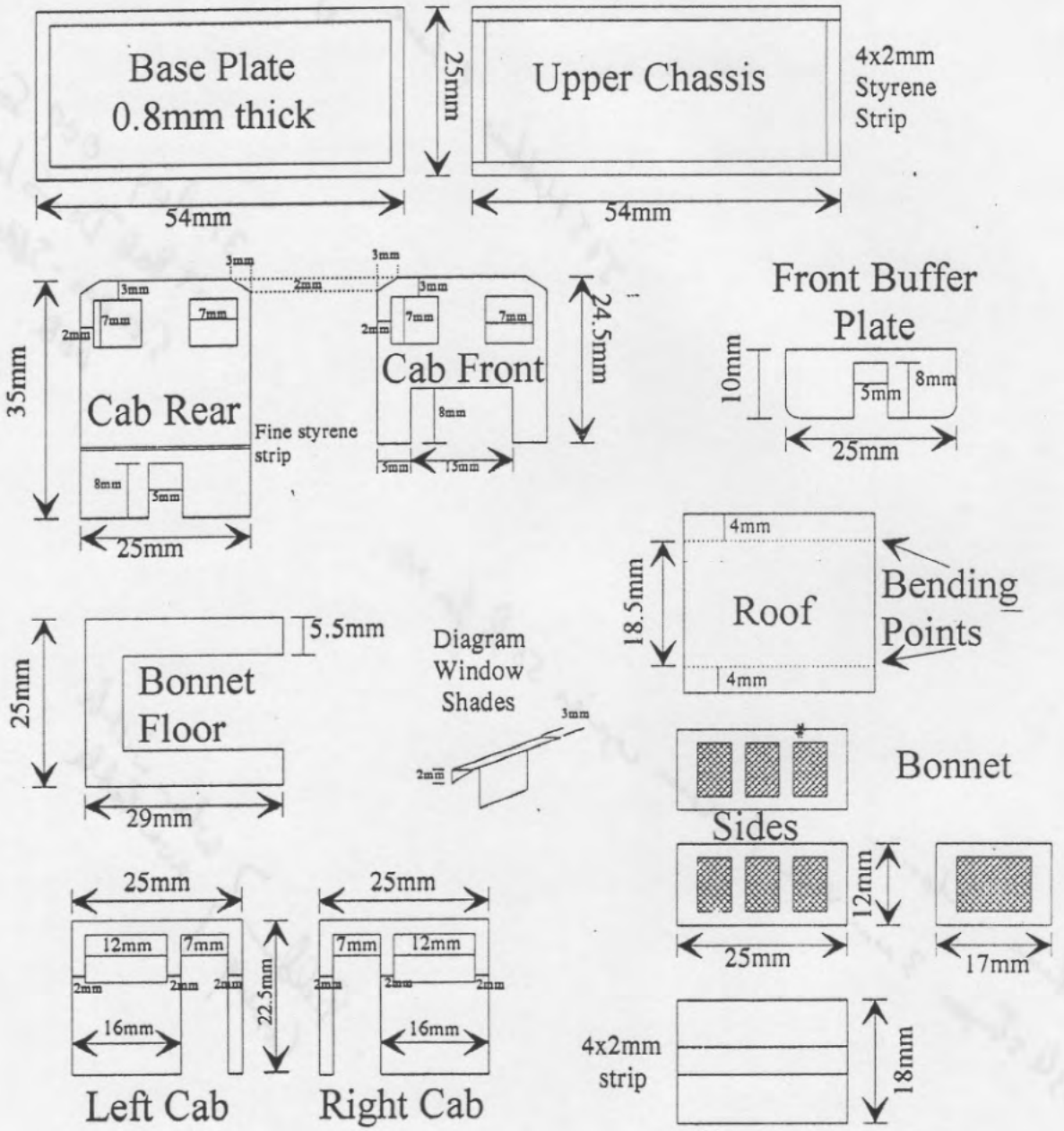
Bachmann models produce a N gauge Plymouth 0-6-0 Diesel (# 60052/66) which despite its low cost (approximately $35) is a surprisingly good mechanism. It is heavy for its small size (a desirable characteristic) and has an efficient system of electrical pick up. Basic construction is carried out as follows. Using 0.020" styrene sheets draw the components onto the styrene using a pencil. Ensure the components are square. Cut out using a Stanley knife and steel rule. Windows are cut out by careful use of knife and steel rules or by use of a small chisel. If using a knife make multiple passes with the knife until windows can be gently pushed out. Smooth edges with needle files. The main frame is constructed from 2 x 4 mm strip.

For the main frames cut the styrene strip into the correct lengths and glue, ensuring square and flat. Glue sides and front and back of cab together. Note that the sides go within the cab ends. Glue cab onto frame. Take floor piece and test fit. Trim and file until perfect fit and then glue onto frame. Assemble the bonnet, glue and then glue onto body of locomotive. When gluing ensure that all components sit squarely on the chassis. At this stage fit the window shades. Cut 3 mm wide strips from 0.010" styrene 2 mm longer than the windows. Cut small triangular support pieces from 3 x 2 mm strips. Glue into position over windows (see diagram). Fit and glue front buffer plate. At this stage it is best to paint interior of cab and outside of locomotive. Paint base colours, two coats is generally sufficient. Allow plenty of time between coats for proper drying (24 hours is best). Fit and glue roof into position. Note that the sides of the roof slope down at an angle to fit onto walls and sides of cab.

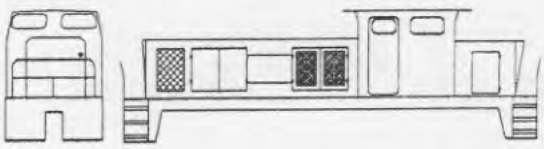
Cut pieces of clear acetate for windows. Fix into position with PVA glue. This glue is water based and will not cloud window material as do solvent based glues. The PVA glue also dries to a clear colourless finish so it is not visible when dry. The body is held onto to the chassis by 1025 MicroTrains N gauge couplers. Cut two pieces of styrene strip (2 x 4 mm) about 5 mm long. Trim so that when glued onto body into gap of buffer plates they project about 1 mm below frame. This provides the support for mounting of the couplers. Mount the couplers using 12 BA screws. Fit final details - foot rests, hand rails, lights, exhaust and horn. Number as required. Dazzle strips may be fitted to front and rear buffer plates if desired, an alternative is to paint the plates red. This locomotive is an ideal one to start your sugar empire railway. It may be painted after a prototypical fashion or in your own mill colours. Crew are easily fitted to the finished loco.

Freelance Cane Locomotive
for Bachmann N gauge Plymouth Switcher chassis
All dimensions are in mm for HO

0.020" Styrene except where indicated



EIMCO Locomotive



The next example is the EIMCO locomotive. These locomotives were built in 1990 in response to demands for more powerful locomotives to haul longer and heavier cane trains as systems expanded. They were built at EIMCO's Alexandria plant, and when built were the most powerful 2'0" (610 mm) units world wide. They are of a B-B wheel arrangement. The model construction of this locomotive is a good demonstration of the general approach to modelling any prototype locomotive.

Firstly, obtain photographs and plans. Examine carefully and attempt to draw the main component pieces. At this preliminary stage make rough sketches until you are satisfied that the basic component pieces are clearly defined. Seek out a suitable chassis. Some compromise may have to be made with respect to bogie wheelbase, but generally it is possible to find a suitable chassis with correct bolster centres. Draw the component pieces to scale e.g. 3.5 mm to the foot. In some cases it is easier to draw to a larger scale e.g. 7 mm to the foot and even 10 mm to the foot. It is then a simple matter to photo reduce the drawings to correct scale with a photocopier. Once satisfied with chassis and drawings actual construction can commence.

For the EIMCO I chose a Bachmann EMD F7A/B N gauge chassis (# 11263/9). This is a dual fly wheel chassis that is a good slow speed runner and is reasonably priced (approx. $55). Steps in construction are as follows. Draw out the component parts on to 0.020" styrene sheet. Base plate is cut from 0.030" sheet. Cut out all components. File smooth. Glue sole bars to base plate. Score cab ends 13.5 mm from bottoms bend outwards along score line. Score cab sides 13.5 mm from bottoms bend inwards along score line. Trim cab sides to exact fits glue piece by piece. Position cab on base plate - 66 mm from edge of base plate to rear of cab. Glue onto base plate - ensure square. Score roof along central lines bend and glue into position on cab. Assemble front and rear bonnets, glue into position. Cut end plate supports 3 strips of 2.2 x 4 mm styrene strip 20.5 mm long for each end. Glue into position at end of base plate. Build steps in place from styrene strips (see plans). Glue front and rear end plates in correct position on the strip supports. Fill any gaps with modelling putty, sand smooth. Support blocks for the superstructure are attached to the Bachmann chassis. Cut 4 strips of 2 x 4 mm strip approx. 10 mm long and glue to chassis such that the superstructure sits square and a distance from bottom of chassis and top of strip is 5 mm. At this stage basic painting is undertaken. Glue windows, attach end hand rails and details. I use MicroTrains 1025 N gauge couplers.

Cane locomotives usually have dazzle strips. A simple way of achieving a good result is to make a master using red 3 mm pin-strip car duco tape (simple parallel lines). Colour copy this to what ever scale you then require. Draw out the required shapes using a protractor and rules cut and glue into place.

Steam Locomotives

Steam locomotives can be modelled in a similar general fashion. That is utilising N/HO gauge mechanisms and building superstructures from styrene or brass. A few kits are presently available for HOn2½/OO9 e.g. Chivers Finelines Hudswell Clarke that uses a Bachmann 0-6-0 chassis. As of writing there are no external frame chassis kits presently available specifically for sugar steam locomotives though the NA kit (HOn2½) may be adaptable. For freelance locomotives, the Roco 0-6-0 steam locomotives can be easily converted to a cane appearance with a repaint, cab and funnel modification.

Conclusion

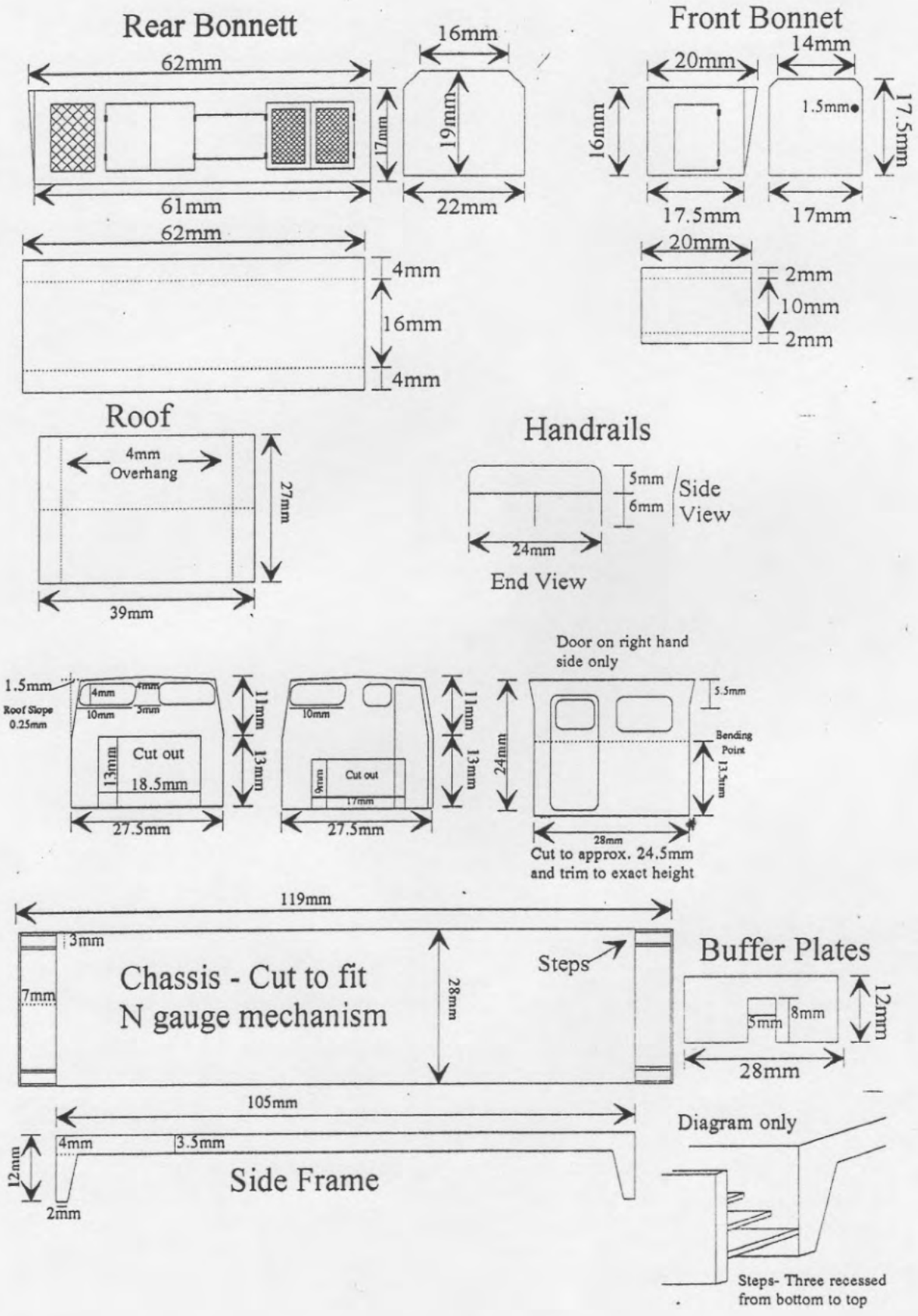
There are many approaches to modelling. The methods presented above are straightforward and only require basic tools. A further development is to use polyurethane castings.

* Chains on front bumper

locos
distinctive colour schemes
dazzle stripes
window shades
window clutter
flashing lights
. lots of loco clutter - ropes, tools
re-railing
end-of-rake markers.

- well maintained, often varied.

EIMCO Locomotive
as drawn by Bob Dow 14 June 1995
All dimensions in mm for HO scale



MU/locotrol/pusher

Nambour lowering
yellow; grey roof
red wheel weights
black top on hood.
white steps.

Bingera - bins have white stripe
along bottom rail - reflective.

Yellow top green stripe, yellow
then green bottom. Black below foot.

Millaquin Baldwin - Yellow w white below
(732) foot plate - luminous.

Farleigh Mill
Eimco

Yellow top red stripe
green lower with
yellow band below
foot plate
Red/white striped
foot plate dazzle
stripes

Marian Mill
Eimco

Nambour - lowering
Yellow - grey roof