

Modern Cane Railways of Queensland

Carl Millington's presentation at the Modelling the Railways of Queensland Convention, 2004

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Part 12: Locomotives

Sugar cane locomotives came in many different sizes, weights, styles and horsepower depending upon the requirements of the purchasing mill. This article reviews the various types from both overseas and local manufacturers and includes photographs of representative locomotives.

Early Internal Combustion

The first half of the Twentieth Century saw overseas manufacturers like Fowler, Malcolm Moore, Simplex and Motor Rail produce small locomotives that were ideal for shunting and hauling small loads over the lightly laid tramlines. These early locomotives were powered by small petrol engines with chain drives to the axles through mechanical transmissions. Many later had their working life extended by being rebuilt with diesel engines.

Early DM Types

As tonnages and train lengths became bigger, the need to have heavier and more powerful locomotives developed. Manufacturers like the Drewry Car Company, Walkers and Bundaberg Foundry offered light weight but powerful locomotives. These and future rigid locomotives were powered by diesel engines driving mechanical or hydraulic/hydrostatic transmissions to an axle or a jackshaft, where side rods would transfer power to the driving axles.

Domestic Expansion

As tramway systems started to modernise there again became a need for more powerful locomotives to haul the ever increasing tonnages. Around this time three Australian companies began offering locomotives to the sugar industry: Clyde Engineering Company, Commonwealth Engineering (ComEng), and EM Baldwin and Sons (EMB).

Clyde offered two models, the DHI-71 and the later HG-3R. The only choices offered to buyers were the engine and transmission, weight and several cab heights. These locomotives proved very popular and nearly every mill has, or had, at least one example of a Clyde loco. All Clyde locos are of the 0-6-0 arrangement.

ComEng offered several designs over the years with the overall design of each type looking very similar to each other. Again weight, engine,

transmission and some heights were the only real choices offered to buyers. ComEng made only one 0-4-0 and a couple of four wheeled locos. The mainstay of locomotives produced were of the 0-6-0 arrangement.

EMB, on the other hand, built its locomotives around the buyer's specifications by offering a variety of engines, transmissions, weights and overall lengths and heights. They also built several locomotives equivalent to Clyde and ComEng lengths and running gear for mills who operated all Clyde or ComEng fleets and who required a loco to similar designs.

Several EMB locomotives built were built on the frames of locomotives from other or closed narrow gauge systems, such as the Snowy Mountains Scheme, thus saving money in having to build frames and running gear.

Bogie and Remote Controlled Locomotives

As cane railway systems grew and the standard of track improved to handle the heavier and faster speeds that were being applied to them all, so did the need for bigger and more powerful locomotives. EMB answered this call in 1972 with a bogie cane locomotive for Kalamia Mill. The unit weighed 26 tonnes and could travel at speeds in excess of 30 km/h. Power was transmitted from a diesel engine to a hydraulic transmission, which then supplied power to a reversing box, which in turn supplied mechanical power via drive shafts to the bogies. This design of locomotive signalled the end of manufacturing of the rigid frame locomotive for Queensland cane fields.

EMB were also involved with the first remotely controlled locomotives to be used in the sugar industry. In 1975 Baldwin delivered three 26 tonne bogie locomotives fitted with locotrol equipment designed by the Sugar Research Institute to Bingera Sugar Mill. The locomotives operate over the mill's Wallaville line with a 'master' unit at the front and an unmanned 'slave' located mid-train. A couple of Mackay Sugar's Baldwins have also been fitted with locotrol equipment.

ComEng was the only other locomotive manufacturer to offer a bogie cane loco during the Seventies. The unit (classed NA) was built for the

now closed Cattle Creek Mill at Finch Hatton near Mackay. Unfortunately for ComEng, it proved to be a one off, and they received no more orders for their bogie loco.

As the price of sugar fell during the late Seventies and early Eighties sugar mills couldn't afford to buy new locos. This in turn had an effect upon the manufacturers who relied on these orders to survive. It wasn't long before manufacturers started shutting up shop. ComEng built its last cane loco in 1977 (Cattle Creek No 4). Clyde built its last in 1975 (D9 Isis Mill) and EMB in 1983 (No 7 for Tully Mill).

As sugar prices and growing areas increased mills started looking once again at replacing their older locomotives with newer units. By this time ComEng no longer existed, Clyde weren't interested, and the rollingstock side of EMB had been sold to a company that built underground mining locomotives.

1990s Bogie Locomotive Manufacturing

A Sydney-based company by the name of Eimco Australia built three bogie locos for Marian Mill and one for Fairymead Mill (which was later sold to Farleigh Mill) in 1990. A copy of the Eimco locomotive was built under licence by Prof Engineering of Zimbabwe for South Johnstone Mill. This loco proved to be a real lemon, has been rebuilt several times by Eimco and the mill and now performs well.

The three Marian units are fitted for slave operation.

Bundaberg Foundry Engineers Ltd (BFE) built two very similar locomotives under licence from the British firm of Hunslet. One locomotive was built for Fairymead Mill and the other for Babinda Mill. There are so far (2004) the only 'new' bogie diesel locomotives built by BFE.

Westfalia Becorit, under the name Westfalia Baldwin, who obtained the rollingstock side of EMB, built a new bogie locomotive for Invicta Sugar Mill in 1991. Known as 'Strathalbyn' on the mill roster. the

loco is a 'modernised' and improved version of EMB's earlier bogie locos.

Mainline DH Conversions

Around the early 1990s, several mills were looking for a cheap way of obtaining a new loco and it happened that the Queensland and New South Wales government railway systems were disposing of their Walkers built Bo-Bo shunting locos for a very cheap price.

June 1991 saw the first regauged former QR DH loco enter service at Isis Sugar Mill. Another followed for Victoria Mill. These conversions were undertaken by their original builder, Walkers Ltd. It was a simple conversion, with regauging from 3' 6" and lowering the coupler height.

These conversions proved to be a success and soon other manufacturers, like Bundaberg Foundry and Tulk Goninan, were offering conversions. These conversions would include new cabs, engines and running gear. Several mills have also converted these locos in their own workshops. Needless to say, the original two DH conversions were later rebuilt to match later conversions. Some of these conversions have been fitted out for slave and driver only operation.

Modifications and Rebuilding

As stated before, no one cane locomotive is the same as another, as over the years the mills have added bits and pieces to suit local conditions. An example of this was the replacing of Clyde cabs with ones made by EMB and other manufacturers in order to give crews a better soundproof cab. Several locomotives that have suffered damage in major derailments or crashes have been returned to their original or another manufacturer for rebuilding.

Photos

The photos below are presented in the same order as the text above.



Moreton Mill's Malcolm Moore 'Jimmy'.



Pleystowe Mil's Simplex 'Barney Bull'



Mulgrave Mill No 1, Drewry.



Mourilyan Mill No 11, Walkers



North Eton Mill D1 (six wheel, chain drive), Bundaberg Foundry. P Ford, photographer.



Clyde DHI-71 'Tantitha' of Fairymead Mill



Clyde HG-3R 'Ingham' of Victoria Mill.



Comeng 4 wheeled GA model, Fairymead Mill's 72



Comeng 0-4-0 CA model, Invicta Mill's 'Invicta'.



Comeng 0-6-0 AA model, Moreton Mill's 'Jamacia'



EM Baldwin, DH8-PS 'Albany', Victoria Mill



EM Baldwin, DH12 '9', Plane Creek Mill



EM Baldwin, DH20 '70', Fairymead Mill



EM Baldwin, DH23B '7', Tully Mill



EM Baldwin, DH24B 'D10', Isis Mill



EM Baldwin, DH26B 'Iona', Inkerman Mill



ComEng's only bogie locomotive; now based at Racecourse Mill carrying the name 'Finch Hatton'. T Badger, photographer.



Eimco '19 Narpi' of Marian Mill



Prof Engineering (rebuilt) "Nyleta", South Johnstone Mill.



Fairymead Mill's BFE-built 'Booyan'



Westfalia 'Strathalbyn', Invicta Mills. T Badger, photographer



Isis Mills 'D1', Walkers



Victoria Mills 'Clem H McComiskie', Walkers



Isis Mill D3, former QR DH18



Farleigh Mill 'Ceaders', former NSW SRA 7331



Invicta Mill 'Scott', former NSW SRA 7310