Colour in the Can
Diesel Liver

Part of the Victoria Mill fleet sitting idle at the loco shed due to wet weather that halted cane harvesting in late 2005. The front loco is Hobart (EM Baldwin 0-6-0 DH), the first loco on the next track is likely Gowrie (EM Baldwin B-B DH) and is followed by Gowrie BV 9 (brake van). Raymond Mewes, photographer.

e Fields: es

Lynn Zelmer

Colourful locomotive liveries, more or less different for each mill, are one of the attractions of the sugar cane railways. While yellow in whole or part could be found on most mill fleets over the years, the various shades of yellow/cream, and in combination with green, blue, maroon, grey or black, makes each fleet fairly identifiable at a distance.

Even within a mill there can be significant differences. This can occur because of gradual fading over time, with older locos not being repainted, with loco ownership or use shifting from one mill to another, changes in management, or simply experimentation for safety or cosmetic reasons. These differences provide a modelling challenge as the paint schemes may vary from locomotive to locomotive and certainly changed over time.

New or rebuilt locomotives are likely painted by the manufacturer using their normal paint brands and its interpretation of the purchaser's livery. Locomotives obtained from another mill likely come in their existing livery. Mills cannot afford to repaint locos loaned for a season and a mill that is closing isn't going to repaint its locomotives before disposal. Eventually owned locomotives may be repainted at the mill, but often not until a major refit or repair after an accident.

Some livery changes appear to be based on health and safety considerations. A matte grey or black hood, for example, should be less tiring on a driver's eyes than a bright gloss paint, even one that has been dulled by the weather. Others almost appear to be the result of decisions taken by individual painters.

The table overleaf, taken from John Browning's sugar industry locomotive lists, shows the liveries for mainline locomotives at Queensland's mills as they were in 1978 and 2005. As John notes, people see colours differently, and mills sometimes had locomotives that didn't fit the normal colour scheme. In recent years locomotives from closed mills may not have been immediately repainted when sent to other mills in the same ownership or sold outright. As well, navvy locos were often painted differently, perhaps simply because they were not repainted when a new livery was adopted.

The head photo shows some of the variation possible within a mill fleet, Victoria Mill in this case. Since Victoria and Macknade Mills operate as a single enterprise (CSR Herbert River) some of the locos here may normally operate from Macknade Mill but they were all at Victoria Mill loco shed on that day in late 2005.

The current CSR Herbert River livery is nominally yellow and green, but the colours have been applied differently to individual locos. While the shape of the green stripe is perhaps the most obvious difference, variations also occur in bonnet colour, etc. Most have some variation of yellow, green and grey with the green outlined in red, but the loco at the right end of the front row has what appears to be a blue stripe outlined in red. Different paint batches and the effects of weather, likely mostly sun fading, mean that the green also varies from loco to loco.

Incidentally, Victoria Mill's livery was pale yellow in 1978, with the newer bogie locos pale yellow and green. Macknade's 1978 livery was yellow and grey, with yellow bogie locos. Their current livery appears to be the result of evolutionary change, rather than a distinctive new corporate image.

Diesel Liveries in Queensland Over the Decades

Mill	1978 Livery	2005 Livery
Babinda	Various	Yellow (5)
Bingera	Yellow (Tegege is Orange) (1)	Yellow with Black hood top (5)
Cattle Creek	Yellow	Mill closed 1990
Fairymead	Maroon & Yellow (1)	Mill closed 2004 (2000: Yellow with black hood top) (1)
Farleigh	Grey & Yellow	Red, Green & Yellow; Green & Yellow; Yellow & Red (6)
Goondi	Yellow & Grey; 4 is Orange (2)	Mill closed 1986
Hambledon	Grey & Yellow (2)	Mill closed 1991
Inkerman	Various (3)	Yellow & Green (2)
Invicta	ComEng: Cream; EMB: Yellow (2)	Yellow (2)
Isis	Yellow	Yellow & Cream
Kalamia	Yellow (2)	Yellow (bogie locos have green hood tops) (2)
Macknade	Yellow & Grey; Bogie: Yellow (2)	Yellow & Green (2, 7)
Marian	Steam: Green; Diesels: Yellow & Grey	Red, Green & Yellow; Green & Yellow; Yellow & Red (6)
Millaquin	Yellow (1)	Yellow with Black hood top (5)
Moreton	Yellow (some with grey engine compartment doors) (4)	Mill closed 2003 (2000: Yellow with Black hood top) (1)
Mossman	Light Blue and Yellow	Lemon & Royal Blue (cane haulage)
Mourilyan	Yellow & Grey (4)	Yellow (5) (Mill closed 2006)
Mulgrave	Dark Blue	Peppermint Green & Yellow with thick red line; Yellow & Green (some ex Hambledon units)
North Eton	Yellow	Mill closed 1988
Pioneer	Yellow (3)	Yellow (some with colour trim) (2)
Plane Creek	Yellow & Grey (3)	Blue & Cream; Yellow & Green (2)
Pleystowe	Dark Green, Dark Red & Yellow (2)	Red, Green & Yellow; Green & Yellow; Yellow & Red (6)
Proserpine	Red & Yellow	Red & Yellow
Quanaba	Yellow & Maroon (1)	Mill closed 1985
Racecourse	Green & Yellow	Red, Green & Yellow; Green & Yellow; Yellow & Red (6)
South Johnstone	Baldwin & Ex-Innisfail Tramway: Yellow; Others: Yellow with Green bonnet top	Yellow (5)
Tully	Red & Yellow	Red & Yellow
Victoria	Pale Yellow, Bogie: Yellow & Green (2)	Yellow & Green (2, 7)

Notes

1. Bundaberg Sugar
2. CSR
3. Pioneer Sugar
4. Howard Smith Industries
5. Finasucre (Bundaberg Sugar)
6. Mackay Sugar (indiscriminate loco transfers between mills)
7. Interconnected systems with indiscriminate loco transfers.

ABOVE: Proserpine Mill No 6 stabled near the Navvy Shed, March 2002. While it may simply be a faded yellow, the top of the hood appears to be a matte cream colour. The skirting around the frame and the side safety striping provides another variation while the rear stripes appear to be white. Note the triple lights, high enough to shine over the bins, the 'V' safety striping on the rear and the striping on the frame. David Rowe, photographer.

ABOVE: Proserpine No 3, north of the Proserpine River in October, 1997, appears to have a more consistent paint scheme with the safety stripes even matching the yellow of the loco itself. Note that the air conditioner, handrails and steps are all white and the loco does not appear to have a radio antenna. Greg Stephenson, photographer.

ABOVE: Tully No 5 at the mill's bin yard, October 2005. Note the inverted 'V' safety striping. Rob Nesbitt, photographer.

ABOVE: Outside the Mulgrave Mill shed during the off season in 1993. Most of the locos are in Mulgrave's then distinctive Yellow and Blue livery, however at least one is in Yellow and Green with Red trim (No 15 came from Hambledon Mill in 1991, it and others are still in Hambledon livery). Note also the difference in the treatment of the safety striping. Lynn Zelmer, photographer.

ABOVE: Mulgrave Mill No 6 outside the loco shed during the off season, 1993. Lynn Zelmer, photographer.

ABOVE: Mulgrave Mill's Clyde #13 in the mill's current livery (Peppermint Green and Yellow, with wide red stripe) at Redlynch, 2005. Health and safety would normally require safety screening when operating the locomotive with the engine compartment doors open or removed. Rob Nesbitt, photographer.

LEFT: Fiji Sugar Corporation has one of the more complex liveries with grey and yellow, and a pale yellow/cream stripe. The rectangular radiator screen on the front bonnet is also outlined in the pale yellow. The lower side stripe/steps look to be orange and the yellow/orange above the buffer plate striping is yet another colour and very weathered. The water bags are/were a common sight on locomotives with 'natural' air conditioning but are not appropriate with mechanical air conditioning. No 16 (EM Baldwin 0-6-0 DH) was photographed in the Lautoka Mill yard in 2007 as it prepared for an all-day run delivering empty cane trucks. Never getting above 30 kmph, it should return overnight with a rake of full loads. Lynn Zelmer, photographer.

ABOVE: Mossman Mill's 'Douglas' and 'Faugh-A-Balaugh' at Killaloe, October 1999. Note that safety striping is used on the sides, but not the ends of the locos. Greg Stephenson, photographer.

ABOVE: Mossman Mill's 'Daintree' at Mowbray River Road, September 1996. Note that the safety striping appears on both the sides and ends of the loco. The light steps and white panels on the cab back presumably make the loco more visible at night. Greg Stephenson, photographer

ABOVE: Mackay Sugar B-B DH loco No 16 Charlton (EMB 9562.1 6.81 of 1981), with an alternate location for the 'One Team' logo, 2005. The loco frame also appears to have a reflective stripe down its length for better night visibility. Jonathan Bayliss, photographer.

ABOVE: Mackay Sugar 0-6-0 DH No 54 Oakenden (Com-Eng FB3169 of 1963) with the 'One Team' logo, 2005. The white frame and steps helps with night visibility, a particular concern when crossing public roads. Jonathan Bayliss, photographer.

ABOVE: Moreton Mill's livery, Yellow with Black hood top, is perhaps the best known of the sugar mills because of its proximity to Brisbane. Bli-Bli (EM Baldwin, 0-6-0 DH of 1965) gets an early morning start in the mill yard, September 2003, during the last crushing season before the mill's closure. Contrary to general industry practice, the loco has its name on the rear of the cab as well as the sides. Bli-Bli, also known as Bli Bli, was on loan to Millaquin Mill for a short period in 1999 and following Moreton Mill's closure was sent to Bingera Mill. Lynn Zelmer, photographer.

ABOVE: Petrie, the locomotive: Moreton Mill's Petrie (EM Baldwin 0-6-0 DH of 1968) approaching the mill in September 2003, just months before the mill was closed. The loco was built on the frame of a 915mm gauge loco used by a Snowy Mountains Scheme contractor but is quite similar to Bli Bli. It appears to have a light grey cab roof and visors, with a darker grey on the top of the bonnet to reduce glare for the driver. Lynn Zelmer, photographer.

Modelling colour in the cane fields

As noted, paint schemes changed over time and individual locomotives varied from the general scheme. It is important, therefore, to refer to dated photographs and locations if you are modelling a particular locomotive, time or place. Matching colours exactly should not be critical as the original colours will have differed slightly from brand to brand and batch to batch, and will both fade and lose their lustre quickly in the tropical sun. Consider the normal lighting for your models and select/mix colours accordingly.

As can be seen, there is no reason for you to have exactly the same paint scheme on every loco in your fleet. The exchange of locos from one mill to another, although generally within the same corporate ownership, can be used to justify a 'foreign' loco that has a different livery while other locos, even within the same general type and similar numbering, can have subtle differences.

Yellow is a particularly difficult colour to get even coverage, especially when hand painting. I've sometimes done an undercoat of a slightly darker colour (sand or tan, for example) to make the yellow coverage easier. Spray painting may give a better result -- and there are several relatively inexpensive airbrush systems available through a good hobby shop or artist's supply store. However, spraying water droplets with the paint doesn't result in a smooth finish, so in some climates you either need a special air drying attachment or restrict your spray painting to the drier seasons of the year.

Large scale models may be painted using hardware store spray cans but the thickness of the paint will often hide the detail in smaller scales. Remember to use an appropriate face mask when spraying acrylic paints and an organic solvent rated respirator with solvent based paints. It's also good practice to use an appropriate extractor fan. Old-timers can probably remember getting their nasal passages clogged with paint and lungs full of solvent when spray painting but that isn't good for one's long term health prospects.

BELOW: Petrie, the Model: Morton Mill's Petrie, a not quite finished On24 modification of the Badger Bits Baldwin 0-6-0 DH, is shown here on Ron Aubrey's Sugar Valley cane tram system at the 2009 Brisbane Train Show. The etched brass loco has been spray painted and weathered, likely with solvent-based paints. The grills on the engine compartment are common on cane locos in the tropics to provide needed cooling and safety. Ron's second On24 0-6-0 DH is identical except for the lettering (Bli Bli) and weathering.

The model was designed for On30 and has been re gauged to the more prototypical cane railway 2' gauge. It needs a driver, plus something to represent the engine components behind the grill, for a more realistic appearance. Ron's couch grass cane stalks, described in NGDU #35 (October 2009), can be seen in the background. Paul Rollason, photographer.

Separating Colours

Separating the different colours, especially when painting narrow stripes, will be the biggest challenge and almost certainly require spray, rather than brush, painting. When I custom spray painted locomotives back in the 1960s I used strips of masking tape laid out on a sheet of glass and cut with a very sharp knife to ensure straight edges and somewhat reduce the stickiness of the tape. Unfortunately paint tends to creep under masking tape if it isn't pressed down hard, and worse, underlying paint tends to lift when the tape is removed. Today I'd likely use a low tack tape such as 3M's removable Magic Mending tape.

Safety stripes are a relatively new innovation and are the result of increasing concern with health and safety, particularly accidents involving motor vehicles. While some mills use black for the stripes, red and white appears to be more common in Australia and often only on the ends of locos. In the future it is likely either safety striping or reflective strips will be applied to the sides of all locomotives and bins in an attempt to reduce road crossing accidents.

The safety stripes might be spray painted with appropriate masking, or applied with decals. This is an area where making your own decals is useful. Decal paper for use in laser printers or colour laser copiers is readily available from Walthers, Micro-Mark and other suppliers and a suitable 'master' can easily be created with almost any image manipulation software.

I generally use Tamiya matte acrylic colours when brush painting and cut any decals very close to the lettering to minimise the decal film. Dry brush weathering helps disguise the uneven finish resulting from hand painting. I finish the loco with an artist's matte spray (from a can) to further hide the decal edges and to protect the finish and weathering. A final spray of 'workable fixative' provides a base for additional weathering using cosmetic powders. →

Acknowledgments and References

Browning, John (1978). *Australian Sugar Industry Locomotives*, Australian Narrow Gauge Railway Museum Society (ANGRMS).

Browning, John (2005). *Australian Sugar Industry Locomotives - June 2005*, Light Railway Research Society of Australia (LRRSA). Available from www.lrrsa.org.au.

Additional photos of both models and prototype can be found on the CaneSIG web site: www.zelmeroz.com/canesig, try using a locomotive type or manufacturer, eg DH or Clyde, as an initial search term in the prototype image collection.

TOP: This 7/8" scale model of Mackay Sugar's rebuilt 73 class 'Netherdale' is receiving its final coats of paint. Note how the separation of colours and lining can be achieved with masked spray painting. Model and photograph by Jim Russell of the USA.

RIGHT: A hand painted HOn30 model of a Bundaberg-built Jenbach 0-6-0 DM locomotive, one of the earliest diesel locomotives built for the Queensland canefields. The scratchbuilt styrene superstructure is on a N scale Bachmann mechanism. The model's white styrene proved almost impossible to cover with a bright yellow, thus the use of the dry brush weathered Tamiya matte acrylic 'sand'. Model and photograph, Lynn Zelmer.

RIGHT, BELOW: The mechanism for this On30 Comeng Model G (Fairymead Mill) inspired 4w DM cane loco is a Bachmann bogie power unit with a Boulder Valley resin chassis frame. A significant part of the space under the bonnet is occupied by the Circuitron HO flasher.

The superstructure and many of the details are hand-painted styrene. It took more than three coats to get reasonably even coverage using Tamiya matte red and yellow acrylic. Getting separation between the colours on the bonnet was easy as the top is removable for access to the flasher battery. The safety striping is a commercial decal on the white painted buffer. The gauges are also a commercial decal but a safety poster on the rear inside wall is a home-made decal (Walthers decal paper and a colour laser copier). Model and photograph, Lynn Zelmer.