PASSENGER TRAINS ON THE NARROWER GAUGE



Presented by Greg Stephenson and David Mewes

Despite the large areas of coastal Queensland that the sugar industry railways covered, the majority has always solely been used for the transport of sugar cane to the local mill and, in some cases, raw sugar to a local wharf for forwarding to larger ports by coastal steamers or lighters.

One writer, some fifty years ago, surmised that the rail network around one particular sugar mill had been developed almost solely for the purpose of transporting local people to and from town and cane cutters to and from their labors in the canefields. Nothing could be further from the truth as the transport of passengers by these railways has been relatively rare. Passenger trains for the use of cane cutters, unlike places like Cuba, were certainly non-existent.

It is hoped that this talk may generate ideas for modelling a cane railway/tramway system by demonstrating that cane railways did not always just transport sugar cane. Whilst these operations were rare they were never-the-less interesting and an important part of our social and cultural heritage.

1. Douglas Shire Tramway

On the 1st November, 1897, the Douglas Divisional Board decided to petition the Government for a loan under *The Tramways Act* to build a two feet gauge line from Port Douglas to Mossman with a branch line to the Mowbray River. The Chairman of the Divisional Board, Mr Andrew Jack opened the tramway, on the 1st August, 1900. Construction of a branch line along Cassowary Creek was commenced in 1909 but not completed until 1916. This branch was intended for the haulage of sugar cane only.

The Board's first locomotive was a typical John Fowler 0-6-0T built in 1901 and named FAUGH-A-BALLAGH, which is Welsh and literally means "Clear the way". The second locomotive to be purchased was one of only three of its type to come to Australia and was unique in Queensland. Named DOUGLAS, it was a Mallet compound locomotive built by Orenstein & Koppel. It was a powerful machine, yet weighed little more than the Fowler loco. It could haul 124 tons of bagged sugar from Mossman to Port Douglas compared with the 104 tons hauled by FAUGH-A-BALLAGH. The DOUGLAS was scrapped in 1948 and replaced by an 0-4-2T named R. D. REX, built by Perry Engineering.

There were at least two passenger cars on the Douglas Shire Tramway. One was a cross bench toastrack style vehicle with doorways fitted with canvas blinds and a

combined baggage/ toastrack coach. This latter vehicle still exists today, preserved at Port Douglas along with the Fowler, FAUGH-A-BALLAGH.

The Douglas Shire Council tramway workshops converted an International bus into a rail motor in the 1930s for use in the slack season. The rail motor did not last long. The completion of the Cook Highway in 1933 ended Mossman's isolation and doomed the passenger train service.

The Shire tramway then became a sugar cane tramway for hauling cane to the mill and bagged raw sugar from the mill to the wharf. The changeover in the late 1950s to palletising the bagged sugar saw a change to road transport as well and the Douglas Shire Tramway was sold to the Mossman Mill in 1959. The section from Ferndale Junction, on the line to Mowbray, and Port Douglas was pulled up. The line now hauled harvested sugar cane only.

2. Mourilyan Mill

The earliest recorded use of a cane railway being used to provide a passenger service is perhaps that of Mourilyan Mill. The *Queenslander* on the 22^{nd} March, 1884 reported on a special train that was run from Mourilyan Harbour to the Mourilyan Mill about 7 miles away to convey the Governor and his party to the mill. It mentions that the carriage had been built especially the previous day for the use of the Governor. The description given said that it had a canvas awning and was not unlike the style of an Irish jaunting car – if you know what that is. There were several other visits by Government Ministers and various dignitaries over the next few years and each time a passenger train was provided from the harbour to the mill.

3. Geraldton Tramway/Innisfail Tramway

The Johnstone Divisional Board was another local authority who took advantage of the State Government's *Tramways Act of 1882*.

The Board commenced building a tramway from Geraldton in 1899 with the consulting engineer, George Phillips, supervising. The line was built to Nerada with a branch towards South Johnstone. Two John Fowler 0-6-0Ts were purchased along with two bogie passenger cars built by Orenstein & Koppel having a capacity of 20 passengers each. A number of bogie open wagons and 4-wheel log bogies were also produced by Arthur Koppel.

The tramway was taken over by the Queensland Government and passed to the Queensland Government Railways in July, 1914. The tramway was extended to connect with Mourilyan Mill's line to Mourilyan Harbour which had also been acquired by the Government.

The lines were used to provide a passenger and goods service as well as haulage of sugar cane and raw sugar in the season. During the early 1920s the line was an important link in the construction of the North Coast Line. Passenger services were operated between Innisfail and Garradunga over both the Innisfail Tramway and the tramlines of the Colonial Sugar Refining Company's Goondi Mill whilst the railway bridge was being built over the North Johnstone River. During 1921-22 the highest number of passengers were carried at 108,458. Goods traffic carried in that period amounted to 61,049 tons. Almost 20,000 tons of this was sugar cane and the remainder was made up of general merchandise, flour, coal, timber and raw sugar.

Goods traffic had risen to almost 130,000 tons in 1934 but 95% of this was now sugar cane and raw sugar. Regularly scheduled passenger services disappeared from the advertised services in 1937 although services gained some popularity during the Second World War. However, by 1948, passenger services ceased altogether.

Over the years, the two former Geraldton Tramway locomotives were supplemented by further Fowler 0-6-0Ts and several ex-British War Dept. Hunslet 4-6-0Ts. The last steam locomotives purchased were three Fowler 0-6-2 tender engines. These were all classed using the standard Queensland Government Railway steam locomotive classification scheme – 6D8 ½ for the Fowler 0-6-0Ts, 6D9 ½ for the Hunslet 4-6-0Ts and B9 ½ for the Fowler tender locos.

Three open "toastrack" style bogie coaches were built for the tramway at Ipswich Railway Workshops in 1915. Ipswich also built a total of six enclosed coaches and Townsville Railway Workshops built a further two. Two dainty little 7 foot long brake vans were built at Townsville Workshops around 1923. Ipswich and Townsville Railway Workshops also supplied all the goods rolling stock.

The Innisfail Tramway became a sugar cane and raw sugar carrier only and in 1977 it was sold to the two sugar mills that it served – South Johnstone and Mourilyan.

4. Hinchinbrook Shire Council/Stone River Tramway/Victoria Mill

The Hinchinbrook Divisional Board, based on the township of Ingham, was formed in 1879. Several sugar plantations existed in the district as early as 1873. The Colonial Sugar Refining Company's giant Victoria Mill entered the local scene when it first crushed in 1883. The Company introduced two foot gauge tramways for the haulage of sugar cane right from the start. The tramway was also used to remove bagged sugar to a wharf at Halifax where it was collected by lighter and forwarded to Dungeness. It would then be transferred to larger coastal vessels for shipment. Transport was becoming a serious problem by 1895, as the Herbert River began to silt up reducing the accessibility of lighters even as far as Halifax. In that year the Colonial Sugar Refining Company and the Hinchinbrook Divisional Board reached an agreement where the Company would construct a tramline from Halifax to Lucinda Point and extend its line from the Victoria Mill to the township of Ingham. The Divisional Board obtained a loan from the Government to build a jetty at Lucinda Point and erect sheds. The Board also agreed to provide the right-of-way for the tramline. The line and jetty were ready for operation by September, 1896.

In 1898, the Hinchinbrook Divisional Board and the Colonial Sugar Refining Company again reached agreement regarding the construction of a further tramway. Tin was being mined in the hills west of Ingham and farms were being developed along the Stone River, also to the west of the town. The Company agreed to purchase the firewood from land clearing and also purchase sugar cane grown by the Stone River farmers. The State Government approved a further loan to the Board, and construction of this 17 ½ mile long tramway was begun immediately and the line was completed in July, 1900.

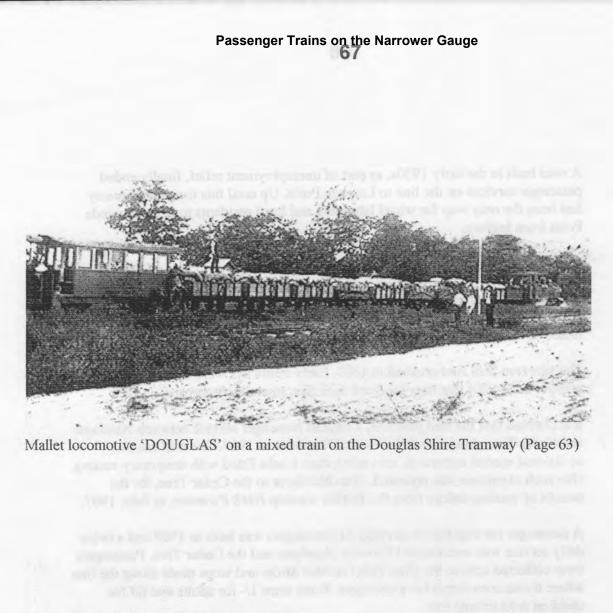
The tramway was the only reliable means of transport in the district for many years. As well as passengers, it carried commodities such as tin, wolfram, hides and tallow to Lucinda and timber for the local sawmills in Ingham.

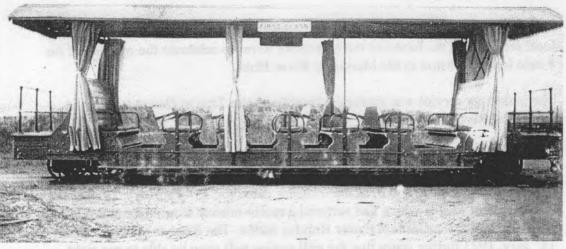
Locomotives used on the Shire Tramways were supplied by the Company from its Victoria Mill. There were three bogie coaches available for passengers on the Lucinda Point Tramway. One was an open vehicle and the other two were roofed. These were the days of segregation and the roofed vehicles were available for whites only whilst the open carriage was known as the "nigger" carriage. A 4-wheel coach fitted with cross seating was generally used on the Stone River Tramway. The locomotive crews were supplied by the Company as were staff at the various depots (goods sheds) but the train guard was supplied by the Board.

A 4-wheeled insulated box wagon was used for transporting perishable foodstuffs to farmers. This vehicle, known as the "bread and meat van" and one covered coach still exist to day. The former is preserved at the Illawarra Light Railway Museum Society's site at Albion Park in New South Wales and the latter is preserved along with the Hudswell Clarke locomotive "HOMEBUSH" at Victoria Mill. This coach is purported to have been built by Decauville.

The opening of the Government Railway line between Townsville and Ingham on the 1st December, 1919 meant the end of much of the passenger traffic to Lucinda Point, as it was more convenient to travel by train direct to Townsville rather than by tram to Lucinda Point and then coastal steamer.

The Hinchinbrook Shire Council's tramways were sold to the Colonial Sugar Refining Company in 1929.





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Decauville Coach used by the Colonial Sugar Refining Company, Victoria Mill, Ingham (Page 66)

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A road built in the early 1930s, as part of unemployment relief, finally ended passenger services on the line to Lucinda Point. Up until this time the tramway had been the only way for wharf labourers and local residents to get to Lucinda Point from Ingham.

5. <u>Moreton Mill</u>

The Moreton Mill appears to have been the only sugar mill to seriously develop a passenger train service. Perhaps, even in those early years, the attractions of the future "Sunshine Coast" was already evident.

The Moreton Mill first crushed in 1897. Early tramways were horse worked and it was not until 1904 that they received their first steam locomotive.

It is claimed that the mill provided a limited passenger service between Nambour and Cedar Tree about 5 ½ miles east of Nambour in 1907. The mill ran an occasional special excursion train using cane trucks fitted with temporary seating. One such excursion was operated, from Nambour to the Cedar Tree, for the benefit of visiting sailors from the British warship *HMS Pyramus*, in July, 1907.

A passenger car capable of carrying 32 passengers was built in 1909 and a twice daily service was commenced between Nambour and the Cedar Tree. Passengers were collected next to the Club Hotel in Mill Street and stops made along the line where it was convenient for passengers. Fares were 1/- for adults and 6d for children with infants free.

A special excursion ran in August, 1911 conveying visitors from Brisbane and local residents to the banks of the Maroochy River to celebrate the opening of the 4 mile long extension to the Maroochy River Flats.

The passenger service was extended from the Cedar Tree to Deepwater on the Maroochy River in 1912.

Following the opening of the "River Bridge" (Lift Bridge) in 1921 and the completion of the line to Coolum Beach in 1923 a regular passenger service to Coolum was initiated. The *Brisbane Courier* dated the 15th February, 1923 states that the petrol engine which had suffered a recent mishap would be running in time to cater for the Coolum Easter Holiday traffic. The *Brisbane Courier* for the 13th July, 1923 further states that the mill engine will soon be able to run right through to Nambour (from Coolum).

A passenger service was still being provided to Deepwater on the Maroochy River in 1924 but this was facing stiff competition from motor buses. It was found that there were decreased passenger and freight on these services because of this competition. Passenger traffic to Coolum however, seemed to be quite good as there were virtually no roads in the area with auctioneers Isles, Love offering land for sale in the area next to the magnificent Coolum Beach.

The Coolum Beach Syndicate, in 1925, offered the mill £150 towards the £230 needed to extend the Coolum line a further 20 chains closer to the beach and passengers and goods were being transported to the new terminus by December that year. In 1927, the Coolum Beach Progress Association, using material donated by the Moreton Mill built a shed and platform at the Coolum Beach terminus.

Steam locomotives "COOLUM" and "EUDLO" generally operated the passenger services but the "VANGUARD" petrol locomotive, built by Purcell Engineering in Sydney would also be used from time to time.

Little is known about the coaches used other than from photographs. The builder/s and how many vehicles were employed or whether some were part of the Maroochy Shire Council's Mapleton Tramway stock is uncertain. They all appear to be bogie vehicles and mostly are "toast rack" style open coaches with cross bench seating. Many excursions were run using these purpose built coaches and the ubiquitous four wheel cane trucks fitted with temporary seating.

The Mill Company ceased making locomotives and rolling stock available for these services in 1936. In 1939, the mill company refused a request to operate an excursion tram to Deepwater as they considered the use of cane trucks as "too dangerous".

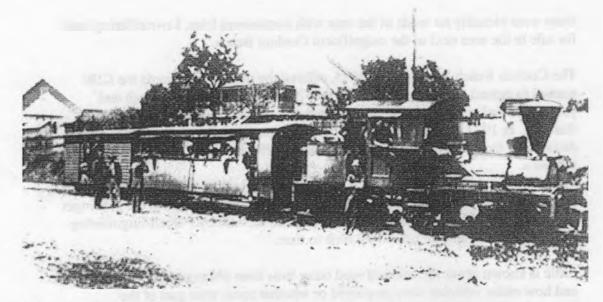
6. <u>Mapleton Tramway</u>

In 1914, the Maroochy Shire Council, purchased from the Moreton Mill all the tramlines to the west of the mill, a Shay locomotive, two passenger cars and a number of other wagons. The mill line already climbed one escarpment to the Dulong district, was now extended up a second range to link with the township of Mapleton.

The line was worked with two small 12 ton Shay geared locomotives. The first was built in 1908 for the Moreton Central Mill and named "DULONG". It was taken over in 1914, with the tramways west of the mill. The Maroochy Shire Council who also purchased a second Shay in that year, named "MAPLETON".

In 1921, it is recorded that the Mapleton Tramway had two passenger carriages and 11 goods and livestock wagons. The passenger carriages were similar to those used on the Moreton Mill tramway system. One passenger carriage was enclosed at one end with cross bench seating for passengers and the other half was open for the carriage of cream cans and other commodities.

Passenger Trains on the Narrower Gauge 70



A passenger train on the Mapleton Tramway (Page 69)



A picnic train at South Johnstone Mill in 1922 (Page 73)

There was undoubtedly, at least one "toastrack" style coach whilst some bogie flat wagons could be fitted with temporary seating for use when an excursion train was required.

The Mapleton Tramway closed on the 31st December, 1944.

7. Buderim Tramway

The Maroochy Shire Council undertook another tramway project at the same time it was developing the Mapleton Tramway. This line started at Palmwoods, on the main Government railway line, about xx miles south of Nambour. The line ran eastwards up the mountain to Buderim. Strangely, this line was built to 2'6" gauge on the recommendation of the distinguished engineer, George Phillips, who oversaw the project.

Two locomotives were used on this line being a 2-cylinder Shay geared engine and a Krauss 0-6-2T. The Krauss was by far the most popular locomotive on the line with the Shay suffering technical difficulties. Both engines were fitted with Westinghouse brakes.

When the line opened in 1915, rolling stock consisted of one bogie passenger carriage and a bogie guard's van each 20 feet long. These were also fitted with Westinghouse brakes. There were also seven 4-wheel open wagons with a 5'0" wheelbase. They were fitted with the piping necessary to carry the air through the train for the Westinghouse brakes but were only fitted with handbrakes themselves. Shillito and Sons of Ipswich built all nine vehicles.

The Buderim Tramway was closed in 1935.

8. Stannary Hills/Irvinebank Tramway

The Stannary Hills Mines and Tramway Company built a 2'0" gauge railway from Boonmoo, on the Chillagoe Railway, along Eureka Creek to Stannary Hills and then Rocky Bluff, 21 miles from Boonmoo. An amendment to the *Mining Act* in 1902 permitted the carriage of goods and passengers on mining tramways. Public traffic to Stannary Hills commenced on the 9th May, 1902 and to Rocky Bluff on the 18th November, 1902.

The Irvinebank Mining Co then built a tramway from Stannary Hills to Irvinebank which opened on the 29th January, 1907.

Whilst ore traffic and mining supplies were the main traffic, passengers were also catered for. Prior to 1911, two passenger trains per day operated between Irvinebank, Stannary Hills and Boonmoo. This was reduced to one train a day after 1911.

These tramways had some interesting locomotives including two 2-6-0Ts built by the Falcon Engine & Carriage Co, a 4-4-2 built by Borsig in Berlin, an Avonside 0-6-2T and several Krauss locos.

The Stannary Hills company's first passenger carriage was a small 4-wheeler converted from a tipping wagon through fitting a roof and seats. The company's workshops at Stannary Hills built two bogie coaches having a capacity of 24 passengers and 26 passengers respectively. These both entered service in 1902.

Little is known of the Irvinebank Tramway rolling stock. There is an excellent local museum in the old Irvinebank Tramway station building at Irvinebank where more information can be found.

9. Flood Times – Herbert River District

The cane railways have, in the past, provided services to isolated districts during flood times. The introduction of Rail Safety Accreditation has meant that it is highly unlikely that such services will ever operate again.

In March 1967 and again in January 1968 the Abergowrie district, west of Ingham, was isolated due to flooding and damage to road bridges. The Colonial Sugar Refining Company made a locomotive and rolling stock available to the Hinchinbrook Shire Council to enable continued public access to the district pending repairs to the roads. The Abergowrie district then had a population of about 1,500 people who had been isolated. The tram used was a Simplex diesel locomotive fitted with an extended cab, a Decauville coach used on the former passenger service on the Lucinda Point Tramway, the 4-wheel "bread and meat" van and a couple of bogie flat tops formerly used for the transport of bagged sugar. Traffic included provisions for the local community, passengers and motor vehicles. A small International truck was even carried on one of the flat wagons at times. A timetable was operated for 6 days per week. The base of operations was McKell's Depot, a marshalling yard and locomotive depot on the Abergowrie Line.

Other mills, such as South Johnstone Mill, near Innisfail, have also operated a special passenger trams in flood times. Special ambulance trolleys have also operated at a number of sites including the Innisfail Tramway (based at South Johnstone) and on the Douglas Shire Tramway. Both these trolleys were built by the Ipswich Railway Workshops.

10. Excursions/Picnic Trains

A few mills, in earlier times, would operate an end of crush picnic train to a local area where a party would be held to celebrate the end of the crushing season and the approaching Festive Season. Rolling stock used would vary depending on the mill.

The Mourilyan Mill ran special picnic trains, usually to Liverpool Creek, for many years. These were generally organised by the Mourilyan School of Arts. They were always well attended with people coming from all over the district. The mill would provide the locomotives and fuel, the crews would donate their time and the Queensland Government Railways would provide "H" wagons from their Innisfail Tramway fleet. Three trains were necessary with one from the mill, one from Boogan and one from the Harbour Line. Steam locos were generally used and later diesel locomotives were utilised. These trains ceased when the Government Railway could no longer provide "H" wagons due to the changeover to bulk sugar (about 1961).

Some mills, such as Plane Creek at Sarina, fitted wooden planks as temporary seating on four-wheel wholestick cane trucks to carry the partygoers to their destination. Passengers were generally the mill workers and local cane farmers with their families.

The Moreton Mill has made available a few excursion trains since the demise of its passenger services in 1935. Two in particular, are of interest. In 1957, the Queensland Division of the Australian Railway Historical Society and the Australian Model Railway Association ran an excursion from Brisbane using one of the new 2000 Class railmotors and then over the Moreton Mill tramway to Bli Bli using the Shay locomotive. Narrow gauge enthusiasts from the Light Railway Research Society of Australia and The Australian Narrow Gauge Railway Museum Society ran an excursion from Howard Street Yard to Dunethin Rock in more recent times. The vehicles used were ex-Mapleton Tramway flatcars fitted with new timber sleepers covered with plastic bags (to protect the passengers from splinters!) as temporary seating and a bogie navvies coach. Motive power was in the form of an EMBaldwin 0-4-0DH.

The Victoria Mill at Ingham continues to offer a short steam train ride for children at their staff Christmas parties, sing the venerable Hudswell Clarke 0-6-0 "HOMEBUSH". This locomotive is used in September every year on a section of line near the mill for the annual Maraka Festival. Queensland Transport under the Transport Infrastructure Act has specially accredited the section of track and these operations.

11. <u>Tourist Trains</u>

The operation of tourist passenger trains over cane railway networks has been mooted for decades. Proposals for such operations had been put forward by the Maroochy Shire Council for Moreton Mill tramways at Nambour in the 1960s.

The severe financial downturn in the sugar industry of the 1980s, saw a number of mills diversify into a number of different projects from flower growing to tourism. The Mossman Mill started its Ballyhooley Tourist Train service in 1981

using a second-hand Bundaberg Fowler steam locomotive they had bought from the Millaquin Sugar Co. at Bundaberg. It proved so popular that a further Bundaberg Fowler and a Hudswell Clarke locomotive were also purchased and the line from Ferndale Junction on the Mowbray Line, was rebuilt to Port Douglas along its original route almost 30 years after it had been pulled up. The coaches were built locally using canetainer wagon frames and bogies.

The Mulgrave Mill started its *Mulgrave Rambler* tourist service in 1989. The bogie coaches were specially built for this project. Rising Public Liability Insurance forced this operation to close down in 1995.

A theme park was set up near Hambledon Mill called *Sugarworld*. It used an EMBaldwin 4wDH loco and a number of converted 4-wheel cane trucks for a short ride around the park. It was not a great success and closed soon after the Hambledon Mill closed in 1991. The area is now occupied by a housing estate.

12. <u>Navvies</u>

Most railways have used various types of rail transport for their track maintenance staff at some time. The sugar industry in Queensland has been no different and an assortment of vehicles has been used for the transport of track workers to their task.

These days track workers are transported to their work sites in dual cab trucks and 4-wheel drives. In earlier years they used everything from converted cane trucks to purpose built carriages and, in some cases former passenger cars.

Modeling

The previous part of this paper discussed some of the areas where narrow gauge passenger equipment was used. The challenge then becomes how to represent these in model form. The most likely scale/gauge combinations that are used for Queensland narrow gauge modeling are HOn2½ and On16.5. Commercial models of this equipment are not readily available however with some modifications/conversions reasonable approximations can be made by using some of the commercial kits typically sourced from the UK. However, truly accurate representations will require scratch building. The following notes offer some suggestions to consider when representing narrow gauge passenger equipment.

Shire and Company Tramways

The peak period for passenger services would be from around 1900 to the late 1930's and probably no later than the Second World War. Most of these services operated as mixed trains with one or two passenger carriages. In periods of peak demand such as excursions and picnics, the normal passenger carriages would be supplemented with covered goods wagons – typically open wagons. For example,

the canvas seats from the Mossman picture theatre are known to have been used on at least one occasion in open wagons of the Douglas Shire Tramway.

The normal passenger carriages appear to fit into two broad categories - the fully enclosed coach often with longitudinal seating and the open "toast rack" carriages with transverse seating. Some operators had both types. Equipment from German and French manufactures is represented and it could be assumed that their equipment used their "standard" construction techniques. Local manufactures are also represented and their equipment would be strongly influenced by current British and QGR practices.

All the passenger carrying ventures set out with an air of over enthusiastic optimism and it would be expected that the passenger rolling stock would have been finished to a high standard and typically had the tramway name embellished on the side. The reality of falling passenger revenue suggests that minimal maintenance would have resulted in the passenger stock being in poor condition by the end of its life. There also appears to be examples of passenger stock being converted to a dual passenger/goods role.

Excursions

Typically excursions used available goods rolling stock fitted with temporary seating and occasionally temporary canvas roofing. From a modeling perspective, the tramways' typical rolling stock could be used in a similar manner, the big challenge being to suitably populate the train with figures from the correct period. Early excursions would have been very special events requiring the finest Sunday dresses and suits and hats for the men. Later excursions were perhaps a little less formal. The motive power should match the period of the excursionists.

Tourist trains were a feature of North Queensland of the 1980s and 1990s. Passenger rolling stock was purpose built typically with cross bench seating and enclosed to the waistline but open above with roll-down blinds. Typically, they used steam locomotives that were painted to match the passenger carriages. It could be expected that children would predominate the passengers and, being in tourist areas, casual dress would be in order. For the modern era cane modeler they offer a "prototype" excuse for a steam locomotive or two

Navvies

For mills that operated passenger services, it is possible that the passenger rolling stock finished its days in navvy service. These would tend to be neglected and in poor condition with minimal maintenance. Another option would be to convert existing goods stock to navvy use. Flat or open wagons used for bagged sugar transport and cane tracks are known to have been converted to navvies transport by the addition of seats and roofs. There are many interesting one off prototype wagons however these will remain the province of the scratch builder.

Conclusion:

This has been a very brief overview of the history and operation of passenger services on the narrower gauge railways of Queensland. We hope that we have demonstrated that there is a lot more out there that would interest modelers of sugar cane railways than just locos hauling long loads of cane trucks. There are also opportunities to build models of mining railways that also provided passenger and goods services. The richness of the scenery changes from the southern coastal regions to the tropical north and then out to the rugged mountainous region around Stannary Hills.

Information Sources:

Whilst preparing this paper, it has become apparent that passenger rolling stock on narrow gauge railways has received a low priority from railway historians and researchers. Most equipment was operated by private companies and Shire Councils and archival information is not readily available in the public domain. Much of the information contained in this paper has been drawn from a variety of sources such as accounts in local newspapers and information contained in local histories as well as photographic evidence.

The best documented of these tramways is covered in the book "The Innisfail Tramway" by John Armstrong and Gerard Verhoeven republished by the LRRSA in 2000. Drawings of some of the Innisfail Tramway equipment from the QGR era is available in the State Archives. Although specific to the Fijian sugar industry, the book "Cane Train" by P. Dyer and P. Hodge gives a good account of the type of equipment used CSR, some of which was common to their Fiji and Australia Mills.

With a few exceptions, the vehicles no longer exist and not available for measuring to produce drawings for modeling purposes. Jim Fainges has produced drawings of some equipment based on photographs using photogrammetry techniques and these provide a useful guide to the general appearance and proportions of the equipment. Copies of some are available from internet sources.

Our thanks must go to those people who have allowed us to use their photographs and drawings to illustrate this talk.

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