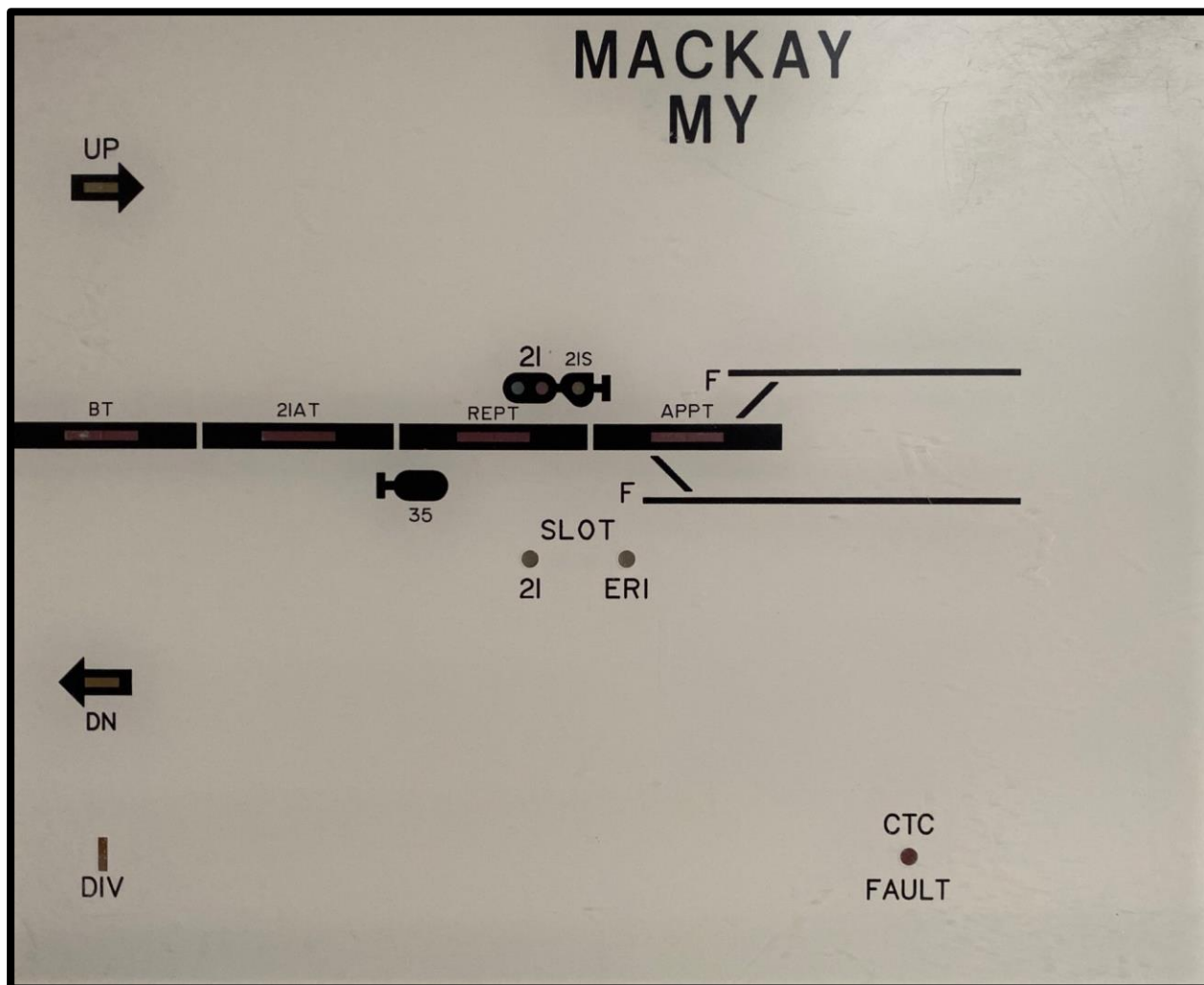


# PROCEED ORDER

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*The CTC mimic panel tile for Mackay at the time when this was the interface point between the CTC north of Mackay and Mackay signal cabin. The feature article this issue begins to explore the various designs of CTC mimic panel tiles used by Queensland Railways from 1971 to their replacement with Visual Display Units (VDU's)/computer monitors.*

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# CTC Mimic Panel Designs (1)

Centralised Traffic Control or CTC has been used by railways around the world for many years, the first installation was commissioned on 25th July 1927. This first installation was on the New York Central Railroad along a 40-mile section of track between Stanley and Berwick Ohio USA. The central control office, with the CTC control machine, was located at Fostoria, Ohio. The concept of CTC was not introduced to Queensland until 1971 when the Moura Short Line and a small portion of the North Coast Line were commissioned.

One fundamental part of the CTC system is the mimic panel which is located in the control office so that the Train Controller can monitor the position of trains, points and signals. The mimic panel, as its name implies, mimics the status of the equipment outside the control office. This series of articles will detail some of the design characteristics used in Queensland for the various mimic panels that have existed.

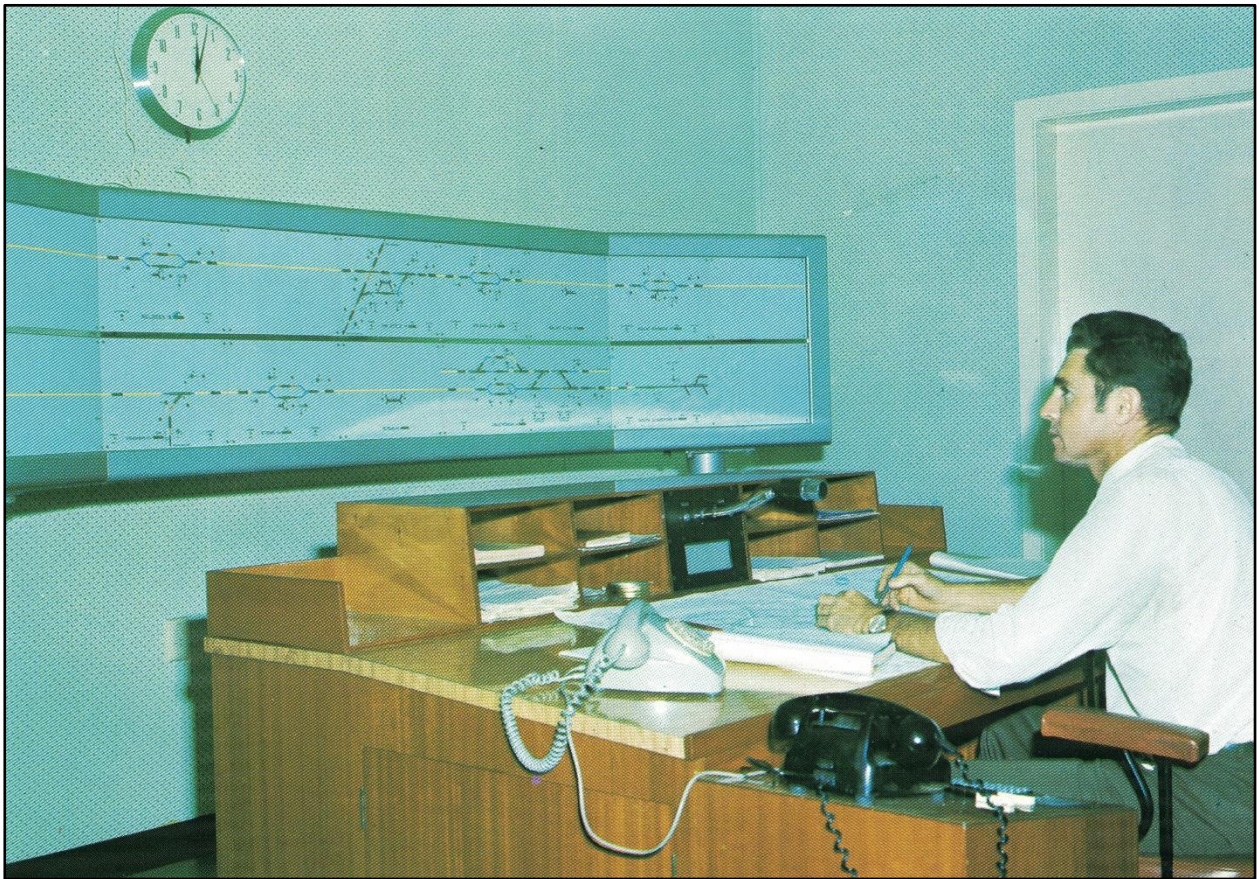
The first installations of CTC in Queensland operated on two sperate lines that had a common station where movements from one line to the other could take place. As such there were two Train Controllers in two different offices, each with a control panel and mimic panel. Both mimic panels were similar in the design and technology used, but one was considerably larger than the other.

The Moura Short Line mimic panel consisted of 12 controlled stations with each station having a separate tile in the mimic panel allocated to it. All the tiles were the same size except for Callemondah and South Gladstone where the tile used was twice as wide as all the other stations. Blank tiles with no indications and only a line to represent the track were provided for future expansion when additional stations were added.

In all there were 16 tiles laid out in two rows, with nine tiles on the top row and seven on the bottom row, Callemondah and South Gladstone (with double width tiles) filling the additional spaces. Nothing appears to remain of this mimic panel so no actual dimensions of the various tiles can be made. It can be said that photographic evidence shows that the smaller tiles were slightly rectangular in shape.

The diagram below shows the layout of the mimic panel tiles when the system was commissioned with a basic line drawing to show if the station was a terminal station, crossing loop, a junction station, or if a blank tile was inserted.

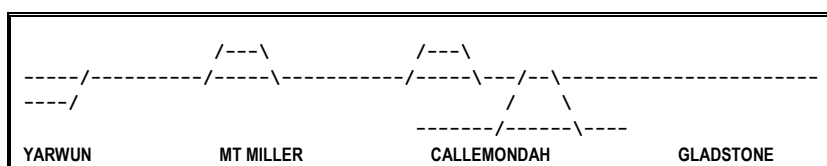
-----  -----  <b>MOURA MINE</b>	----- ----- -----	-\-----/ \---/ <b>BELLDEEN</b>	----- ----- -----	/ ---/----- / <b>EARLSFIELD</b>	-\-----/ \---/ <b>ANNANDALE</b>	----- ----- <b>BALLAST SIDING</b>	-\-----/ \---/ <b>MT RAINBOW</b>	----- ----- -----
-\-----/ \---/ <b>CLARKE</b>	----- ----- -----	-----/--- ---/ <b>GRAHAM</b>	-\-----/ \---/ <b>STOWE</b>	----- ----- ----- <b>BURRA</b>	-----/----- /  \ ---/---/-----\ \--/ <b>CALLEMONDAH</b>	----- --- ----- <b>SOUTH GLADSTONE</b>		



Above: The Moura Short Line mimic panel at Rockhampton when first commissioned. Image: QR Annual Report 30-6-1971

This layout for the Moura Short Line mimic panel proved to be a logical one as the blank tiles were later replaced and rearranged when additional stations were provided. Construction of three additional stations began in 1979 with Dumgree added between Annandale and Mt Rainbow, Fry added between Mt Rainbow and Clarke and Stirrat added between Clarke and Graham. This tiled design also meant that if track or signalling changes took place at a station, only that specific tile had to be replaced.

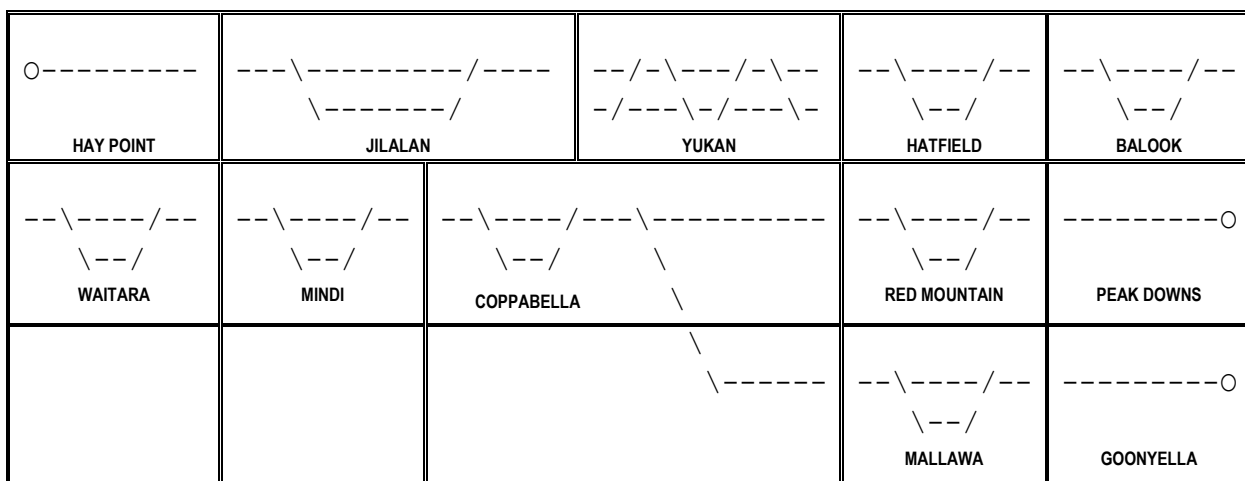
The corresponding mimic panel for the North Coast Line that was commissioned at the same time was much smaller as only four stations were involved. Unlike the Moura Short Line mimic panel, the North Coast Line mimic panel appears to have consisted of one large horizontal tile with all four stations on it. Again, only photographs appear to remain so no measurements can be made. The diagram below shows the layout of the mimic panel when the system was commissioned with a basic line drawing to show the approximate layout.



This was an interesting design choice as it would have been highly likely that the North Coast Line CTC system would be extended, yet no provision for extending the mimic panel was made. There was also no scope to make signalling alterations at one station without completely replacing the entire mimic panel with a new one.

Both the Moura Short Line and North Coast Line mimic panels used incandescent lamps for illumination with the lights shining through plastic fittings to display the signal aspects, track circuit occupancies, point positions, and a few other indications. While neither of the CTC mimic panels remain the local signal panel from Moura Mine did survive and is in a private collection. The construction technique is thought to be similar to the CTC mimic panels and has an engraved plastic surface with the engraved lines filled with paint of various colours. The engraved plastic was placed over a wooden backing and the fittings to hold the lamp indications were screwed onto the wood from behind.

The second CTC system to be commissioned was for the Hay Point to Goonyella and Peak Downs coal lines, the CTC system being placed into use the following year in 1972. The mimic panel in the control room at Mackay was similar to the Moura Short Line mimic panel however three rows of tiles were provided. Twelve stations were controlled from here and displayed on the mimic panel. The only blank tiles were on the bottom left of the panel and no gaps for additional intermediate stations were provided. Photographic evidence suggests four different sizes of tiles were used based on the complexity of the station concerned. The mimic panel tiles for the three balloon loop stations (Hay Point, Goonyella, Peak Downs) as well as the six crossing loops (Hatfield, Balook, Waitara, Mindi, Red Mountain, Mallowa) all appear to be the same size. Yukan station, the interchange station that is also part of the North Coast Line has a larger tile, and Jilalan the train storage and maintenance station has a larger tile again. Coppabella station which is the junction for the two branch lines has a mimic panel tile larger than all the others. The approximate size of the mimic panel tiles and their layout is shown in the diagram below.



Like the Moura Short Line mimic panel as shown in the previous photo, the outermost tiles are angled inwards to face the Train Controller more squarely. Again, nothing seems to remain of this mimic panel so no measurements can be made to record the sizes of the various tiles.



Above: The Hay Point to Goonyella and Peak Downs CTC mimic panel in the control room at Mackay. Image: QR Annual Report 30-6-1973

Within three years some changes had been made to the mimic panel tiles. Hay Point balloon loop had been duplicated and was now shown on one tile and part of the adjacent tile. Jilalan had also been split to be shown partly on two tiles, and one of the spare tiles in the bottom left had been used for the extension of the line from Peak Downs to Saraji. One of the new tiles for Jilalan was a different size again and was smaller than all other tiles. The modified layout of the mimic panel tiles is shown in the diagram below.

/----- \----- <b>HAY POINT</b>	-----\-- -/ \- <b>JILALAN</b>	---/--- ---/ <b>JILALAN</b>	--/\---/\-- -/\---\--/\-- <b>YUKAN</b>	--\---/\-- \--/ <b>HATFIELD</b>	--\---/\-- \--/ <b>BALOOK</b>
--\---/\-- \--/ <b>WAITARA</b>	--\---/\-- \--/ <b>MINDI</b>	-----\---/\----- \--/ \- <b>COPPABELLA</b>		--\---/\-- \--/ <b>RED MOUNTAIN</b>	--\----- \--○ <b>PEAK DOWNS</b>
-----○ <b>SARAJI</b>			\--- <b>MALLAWA</b>	--\---/\-- \--/ <b>MALLAWA</b>	-----○ <b>GOONYELLA</b>

To be continued....

# Silkwood Cabin

Passengers travelling on the Sunshine Express train would have seen vast areas of sugar cane as the train passed through areas of Queensland. At the right time of year, they would have seen sugar cane fires, and sugar cane being harvested and transported to the various sugar mills located throughout the region. Sugar cane trains would have been seen plying the two-foot gauge networks through the cane fields and occasionally crossing the Queensland Railways main North Coast Line.

One place where this happened was Silkwood, between Tully and Innisfail, in the northern part of Queensland. In the 1950's the Sunshine Express passed through Silkwood somewhere roughly from midday to the early afternoon. Whilst passengers may have noticed the tramway crossing just north of Silkwood station, few if any would be aware of the signalling and interlocking put in place by Queensland Railways to protect both trains and sugar cane trams. Where the two-foot sugar cane tramways crossed the Government railways lines at stations, the main line signals at the station were worked from small lever frames which also operated or controlled the tramway crossing.

This was the situation at Silkwood where in 1928 a six-lever signal cabin was erected and placed into use to protect the tramway crossing. Five signals all with lattice masts and located on the right hand side of the line were provided to control the station and tramway crossing as listed below:-

- Down Distant - 350 yards from Down Home
- Down Home - 200 yards from loop points
- Down Stop - 12 yards from signal cabin
- Up Home - 200 yards from loop points
- Up Distant - 400 yards from Up Home

These five signals were worked from the lever frame in the signal cabin, with the one remaining lever being a bolt-lock for the tramway crossing. Only when all five signal levers were put back to Normal in the lever frame could the bolt-lock lever be pulled to free the tramway lever, located adjacent to the tramway crossing.

The tramway lever, released by operating the bolt-lock lever in the signal cabin, was a non-reversible lever operated by a tramway employee. The tramway employee held down the lever until the tram train had cleared the crossing.

The 1935 and 1950 General Appendices both mention the tramway crossing at Silkwood which is listed as being 141 miles 35 chains from Townsville. The crossing was situated near the station and was operated by levers from the signal cabin; the lighting of signals in connection with this crossing was attended to by the station staff when necessary.

The 1962 General Appendix describes the signalling at the Silkwood tramway crossing when the station was attended or unattended.

(A) *When the station is attended:-*

*All main line signals are operated from the cabin and the crossing lever is bolt-locked from the cabin. When it is desired to cross a tram train, the Station Master shall restore all levers to the Normal position except the bolt-lock lever, which he shall pull to Reverse. The Station Master must then supervise the crossing of all tram trains over the crossing.*

(B) *When the station is unattended:-*

*A two-lever ground frame, keylocked with the cabin, is provided with signal wires spliced to the Up Home and Down Stop signal wires. Before the Station Master goes off duty, he shall place all levers in the Normal position, except the bolt-lock lever, which he shall pull to the Reverse position. He will then take the key from the main frame, insert it in the ground frame, and pull both levers of the ground frame to Reverse. This leaves the crossing lever free to be operated by the tramway employee. Further it leaves the Up Home in the "clear" position and this signal can be placed to "stop" from the two-lever frame, when it is necessary for guards to protect their trains.*

The 1969 Working Timetable shows Silkwood was a Partly Attended Ordinary Staff station, and the 1976 Working Timetable Supplement shows the Ordinary Staff sections between Tully and Innisfail as follows:

Tully - El Arish	OS	red diamond
El Arish - Silkwood	OS	white square
Silkwood - Boogan	OS	blue round
Boogan - Innisfail	OS	red diamond

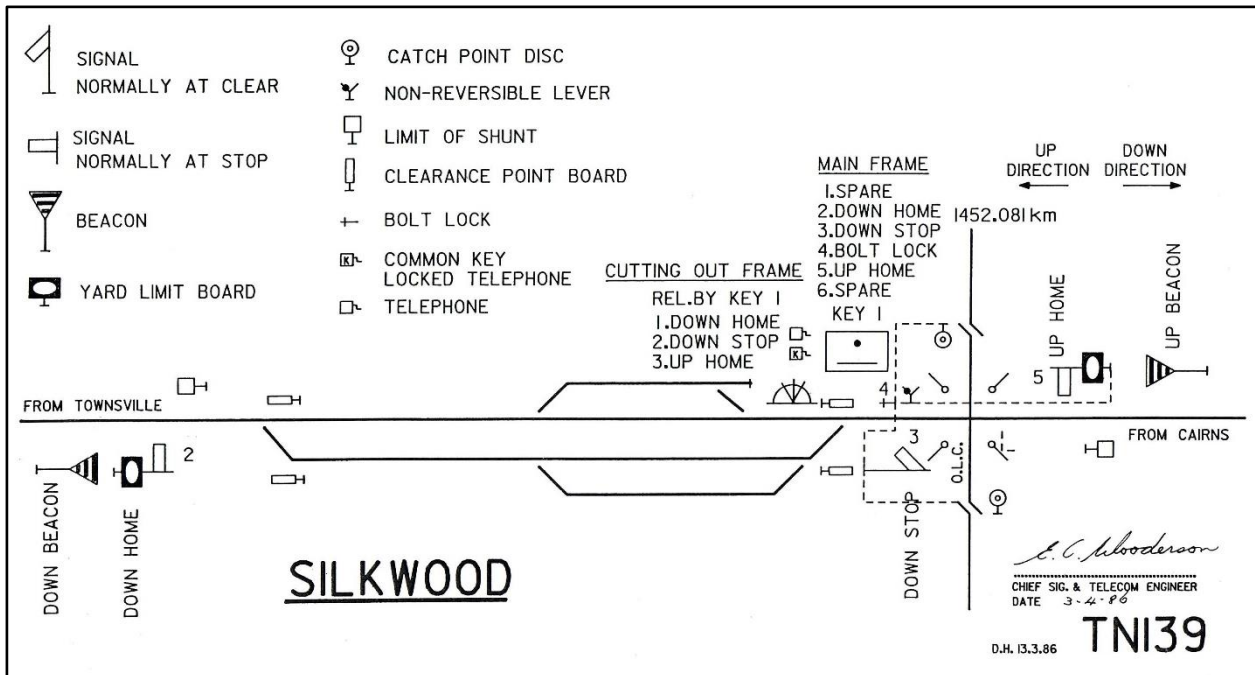
The adjacent diagram shows the signalling arrangement in 1986 where it can be seen that Train Order Working has replaced Ordinary Staff Working. Levers No.1 and No.6 in the signal cabin have become 'spare' with the Down and Up Distant signals being replaced by reflectorized Beacons. Otherwise, the allocation of levers in the signal cabin appears to be the same as it was when installed in 1928. Note how the non-reversible (tramway) lever is bolt-locked by signal cabin lever No.4, and the tramway lever is directly connected to the Down Stop, Up Home and tramway catch points and discs. Also note that the small lever frame to be used when the station is unattended is now a three-lever ground frame, keylocked with the main signal cabin, with the Down Home now also worked from this ground frame.

No date has yet been found to determine when Silkwood's signal cabin was decommissioned however it would have coincided with one of the changes mentioned below.

In 1988 trailable facing points were installed at both ends of Silkwood and the crossing loop was extended to 169 units. In 1989 the positions of Station Master El Arish and Silkwood were withdrawn and replaced by

a Station Master (Area Supervisor), based at El Arish, who controlled both El Arish and Silkwood.

In 1992 Silkwood is listed as being an unattended Train Order Station with the sections being El Arish-Silkwood and Silkwood-Boogan. During February 2000 Direct Traffic Control was implemented through Silkwood and the signalling diagram issued at that time shows the signal cabin has been abolished. The tramway crossing still exists as do the Up and Down Stop signals and the tramway lever to operate the signals as well as the tramway catch points and discs. At some stage the lattice signal posts were replaced with tubular steel posts, now common at tramway crossings in Queensland.



As an interesting aside, the following reference was discovered while researching Silkwood for this article. The Queensland Railways competition encouraging staff to beautify their station is well known, but in 1942 another type of competition was run. This competition was called the "Grow More Vegetables Competition" and the objective was to encourage by example that the growing of vegetables by the public (was) generally in the national interests.

In the Northern Division the efforts of Silkwood Station Master Mr. C. Halford was rewarded with the first place prize of £5, while the second prize of £2 was awarded to Fettle Mr. C. R. Vaughan from El Arish. Third place sharing the £1 prize were Station Master Mr. F. Dorfield and Night Officer Mr. J. C. Fay from Kuranda.

## Contact Us

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