Modern Cane Railways of Queensland

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

CaneSIG: http://www.zelmeroz.com/canesig

Part 6: Diamond and Drawbridge Crossings

Where cane railways cross Queensland Rail tracks they use either a diamond crossing or a drawbridge.

Diamond crossings are made two ways by either joining rails with fishplates or by a solid 'casting', where the rails are all welded together. The major disadvantage with diamond crossings is the speed limit applied to QR trains, normally 25-40 km/h although the newer cast type crossings allow QR trains to travel over them at 80 km/h.

The non-cast type are also very costly on maintenance as opposed to the cast type crossing. A couple of mills allow QR to remove some of the crossings during the slack so as to allow QR trains to traverse the section at normal road speed.

Diamond crossings are always set in favour of QR, the exception being Victoria mill's crossing of the QR at Ingham where, due to the location of the mill's tramway through town, normal crossing operation would cause severe delays to motor traffic.

Cane railway crews manually operate all diamond crossings. Normal practice is for the cane train to stop at the stop signal, offsider to proceed to QR running line and look for any QR traffic. With no traffic in sight the offsider will pull the Kangaroo point lever over changing the QR signals to stop, cane railway signals to proceed and closing the catch points. [Editor: Explicit permission from QR, via radio or telephone, may also be required.]

The cane train will then proceed over the crossing until told to stop by the offsider. Once clear, the offsider lets go of the points lever, which returns all signals and catchpoints back in favour of QR. Several crossings have been fitted with the same type of point levers found in QR yards, thus saving the offsider having to hold the kangaroo lever over for the entire operation.

Drawbridges were installed in an attempt to overcome the high maintenance costs of diamond crossings and increase track section speeds for QR trains. Drawbridges also speed up the crossing of cane trains over QR lines, as they are fully automatic and don't require the crew to hold any point levers over.

Drawbridges consist of two rails secured to a frame either side of the QR lines that are raised and lowered electrically through 90 degrees. Activation is by remote signal sent from the cane locomotive or at a switch box near the drawbridge. Coloured light signals are located both on the QR and cane railway to show who has right of way.

Once activated, a siren sounds to warn persons nearby that the drawbridge is about to lower. When down and locked the signals are cleared for the cane train. A track circuit registers when a cane train is clear of the crossing and raises the drawbridge.

The disadvantage with drawbridges is the high cost involved in maintenance, and for this reason there are only a handful of them installed and some have since been removed. Drawbridges are always set in the raised position to favour QR trains.

The diamond crossing at Ingham on Victoria Mill's system.

Drawbridge on the Racecourse mill system.