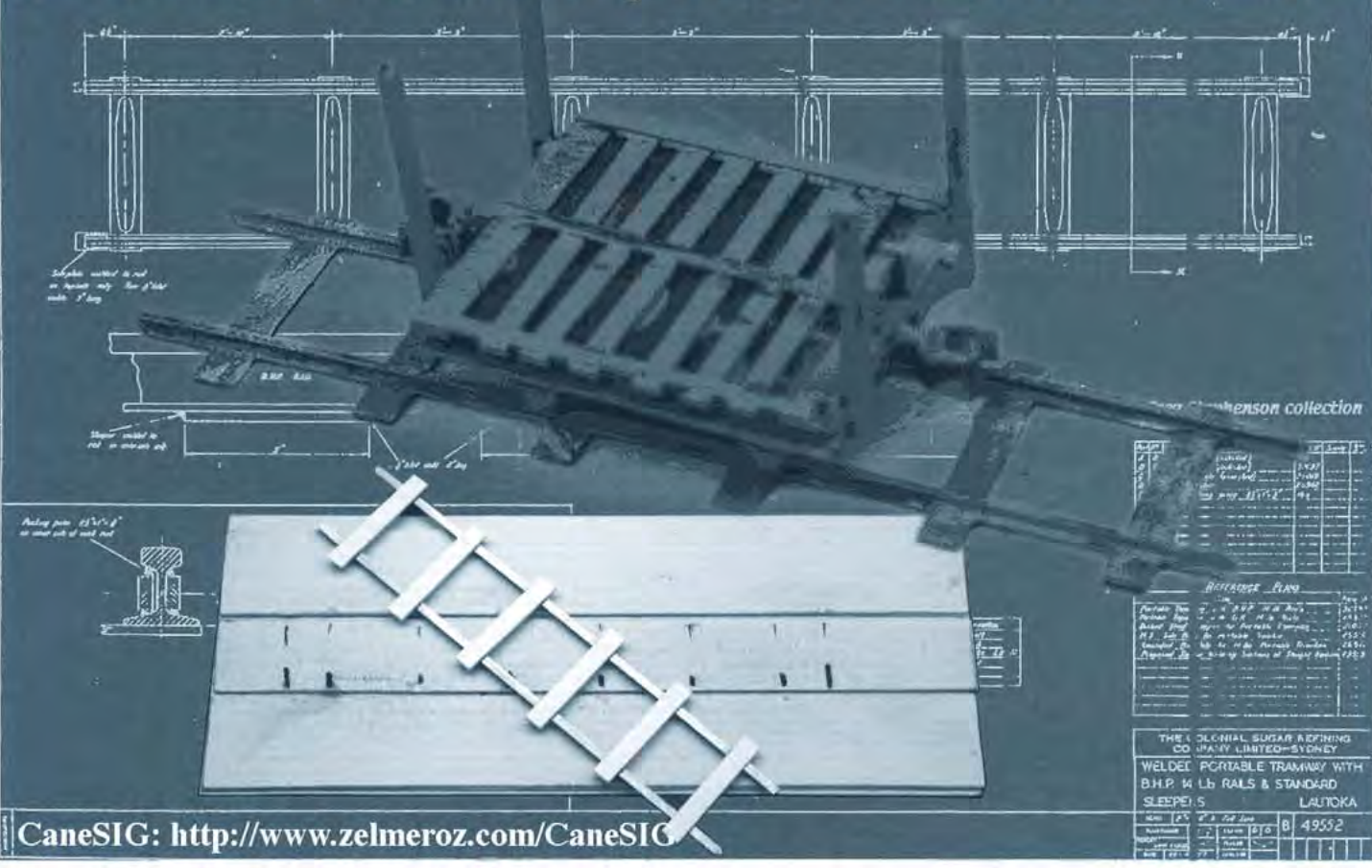


# Portable Track for the Cane Fields



**CaneSIG:** <http://www.zelmeroz.com/CaneSIG>

Cane railways were/are almost always owned by the sugar mill that they were built to serve and constituted a major part of the infrastructure cost when building a mill. In the late 1800s and early 1900s portable track sections helped minimise infrastructure costs, extended the rail systems and allowed wholestick cane trucks to be loaded in the cane fields.

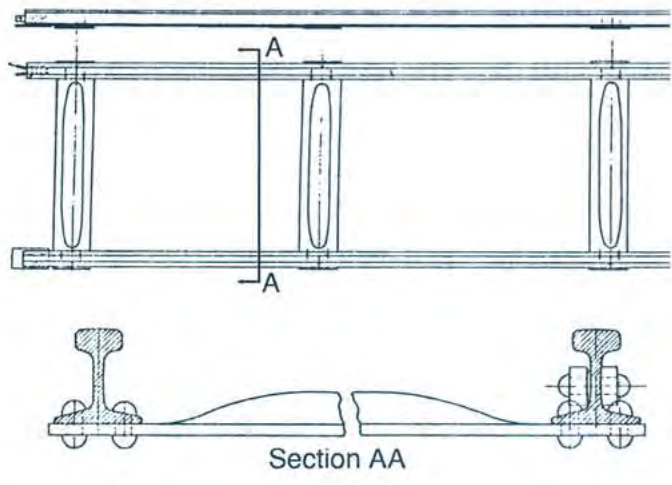
Track sections were manufactured by the major locomotive and wagon manufacturers or by the mill itself, using pressed metal sleepers riveted directly to short lengths (typically 15-18") of lightweight rail. While every manufacturer had its own designs, all were limited by the need for the track components (straight and curved sections, portable points and crossings, inclined sections, etc.) to be robust, light enough for carrying by 1-2 workers, and modular for quick assembly and disassembly.

CSR (Colonial Sugar Refinery Co Ltd, Sydney, mill and cane railway operators in Australia and Fiji) standard sections were fabricated with 16' 6" lengths of 14 lb BHP rail. A sole plate was attached to one end of each rail and fishplates bolted to either side of the opposite end formed a 'U'. Each end had a consistent arrangement of sole plate and fish plates (see CSR drawing) so that the rails could be quickly aligned and bolted together.

During harvest season, track sections would be transported to a field being cut, laid out and bolted together. Wholestick trucks were pushed into the field, loaded by hand and hauled back to the permanent line for transport to the mill. Since the temporary lines lacked ballast or other roadbed preparation, and were too light for locomotive use, the four wheel trucks were shifted by hand or animal power. As soon as a field was cut the portable track would be disassembled and moved on to the next field.

The total length of portable track in use might be more than the mill's permanent way, but over time most lightweight track was replaced by heavier track, thus expanding the permanent way and allowing heavier loads to be hauled. Eventually harvesting machines and in-field transporters replaced the temporary in-field lines with haul-outs to a nearby siding on the now-upgraded permanent line.

TITLE PHOTO: Composite image showing scratchbuilt HOn30 wholestick truck with portable track sections fabricated from code 40 rail and slyrene sleepers. The cardboard jig helps with the fabrication but does not ensure consistent spacing of the sleepers.



ABOVE: Colonial Sugar Refinery Co Ltd fabricated lightweight tramway with 16' 6" BHP 14 lb rails and 6 pressed steel sleepers. Track is riveted to sleepers, sole plates and fish plates as shown. Sections are intended to be bolted together once laid in the field with sole plates and fish plates on opposite rails at each end to facilitate joining sections. The end sleepers are closer together (2' 10" centre-centre) than intermediate sleepers (3' 3") and are located 9 1/2" from the end of the rail (centre line to end). Partial plan and section adapted from CSR Ltd, Sydney, plan 30397, Greg Stephenson Collection.

RIGHT, TOP: Standard Orenstein & Koppel 5 metre length portable railway section with 5 inverted "W" type sleepers. Curved sections of 5 metres length were fitted with 6 sleepers to meet the heavier strain on them. O&K supplied portable railway sections in any required length, with any particular number of sleepers, and in any gauge required, with 500 and 600 mm gauges recommended. Source: O&K, p 14.

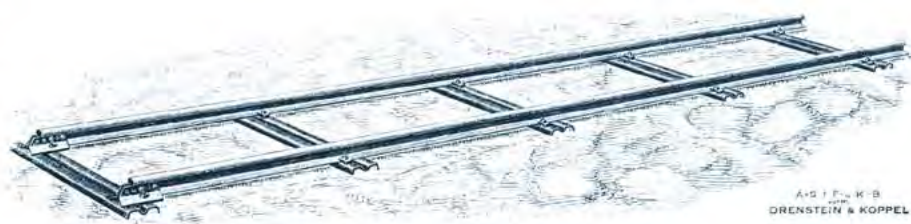


Fig. 3081.

RIGHT, LOWER: Orenstein & Koppel adjustable inclined plane consists of a curved section of track 3 1/2 metres long, a pair of ascending tongues connected by a tie rod and a straight section 1 1/2 metres long. The turning point of the inclined section needs to be placed on a sleeper of the main line, providing a simple turnout without requiring any bolting or other permanent fixing to the permanent way. A variety of portable switches (points), etc., were also available, as well as a full selection of permanent track components. Source: O&K, p 26.

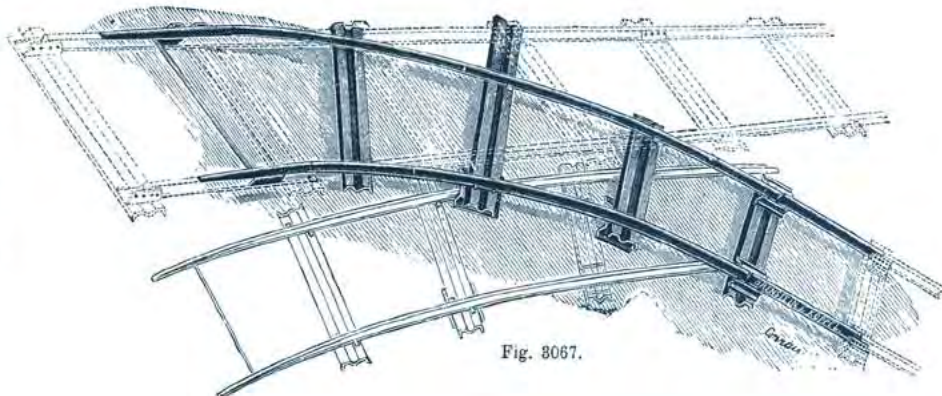
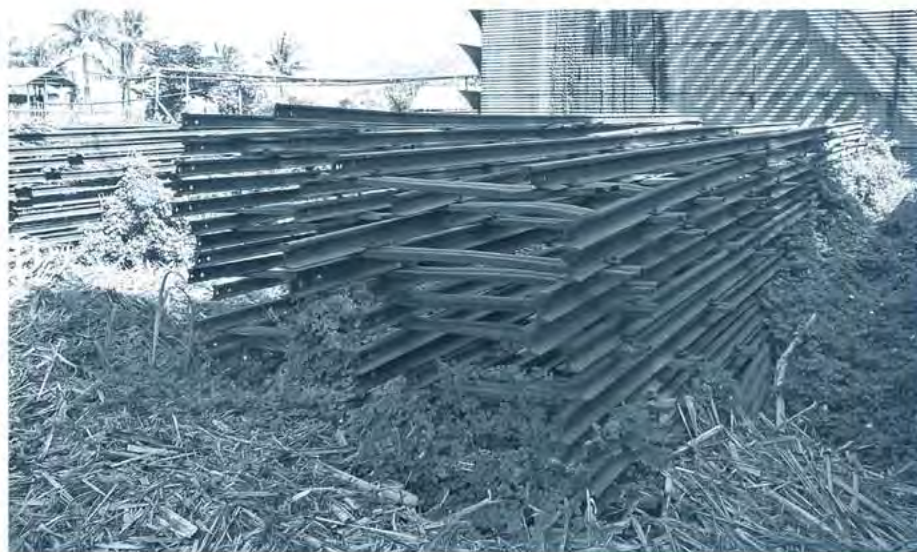


Fig. 3067.

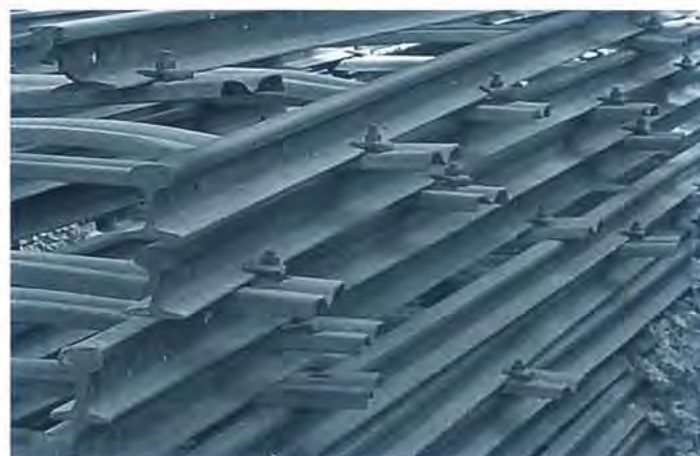
Portable track sections may still be in use in Java and India but their use disappeared decades ago in Australia. However it is still occasionally possible to see stacks of abandoned track sections along a shire road, behind a farmer's shed, or in a mill junk yard. Undoubtedly some of the rail has been reused for fence posts, cattle grids and similar applications.

Interestingly, the concept of horse lines extended well into the chopped cane bin era with lighter weight or poorly maintained lines that could only be worked with animal power or the lightest locomotives. In the late 20th century such lines could be worked with tractors shifting bins along the horse line to the nearest main line collection point.

Portable track was also used in a wide range of other industries including salt works, slate and peat mines, and banana plantations. A British Standard eventually evolved for a heavier weight of portable track that could handle heavier loads. This catered for small 0-4-0 Welsh slate mine steam locomotives; or internal combustion engines such as those from Ruston & Hornsby or Lister. This heavier track, built by Robert Hudson of Leeds and others, is detailed in the Link handbook in the references below.



ABOVE: Portable rail sections with shallow inverted "W" shaped sleepers, PG Karangsuwung, Java, 2008. The sleepers extend beyond the rails and are bolted in place, rather than being riveted. John Browning photographer.



ABOVE: Close-up of portable rail sections with shallow inverted "W" shaped sleepers, PG Karangsuwung, Java, 2008. The bolt and square washer perform the same function as a spike or track clip. There appears to be some variation in sleeper spacing as well as bent sleepers and wear on rail ends. John Browning photographer.



LEFT: Lightweight portable rail sections stacked beside the road near South Johnstone Mill, 2003. Rob Nesbitt photographer.

# Modelling

The model track in the photos with its overhanging sleepers is more typical of the heavier British Standard sections than the lighter CSR or O&K sections. Eighteen foot lengths of code 40 rail were placed head down in the jig and six 4 foot lengths of scale 2 x 8 styrene were superglued in place. The assembly was quickly weighted down and left for at least 30 minutes to cure. Flexing the jig permitted the completed section to be removed for painting. Rusted metal was the intent with the painting as plain steel seems to have been the universal construction material.

The jig was constructed from three strips of poster board (cardboard) glued to a poster board base. Fixed stops to consistently align and centre the sleepers would be needed in larger scales but inked marks for the centre of each sleeper and alignment by eye worked well enough for these HOn30 models.

Similar techniques could be used for other scales. For On30 I'd likely use code 40 rail and lengths of scale 1 x 6 styrene, trimming the sleepers off roughly 1 scale inch outside the rail after the glue has cured. This would provide a more realistic looking CSR-type lightweight track section. Brass strips of correct length soldered in place would be more robust but would also require more work and expense than is justified for a static model.

Alternatively a more realistic pressed steel sleeper could be created using strips cut from a sheet of the soft brass or copper embossing material available from artist's supply stores. An embossing pattern, created from a fine grained wood or styrene, would be easy to shape with small files and sandpaper. Trim the sleeper blanks to size after embossing. This would be most effective in a larger scale and might be worth trying with code 70 rail for SM32 (1:19 scale). Fake rivet heads would need to be glued in place prior to painting.

The only commercially available portable rail sections appear to be the Roy C Link components in O-14 (7mm scale with 2' gauge). Hudson pattern injection moulded sleepers with pre-drilled holes for 2' gauge (7mm scale) are available for constructing points as well as straight or curved sections. Dummy fishplates are available to dress up a line representing several portable sections bolted together. Rail joints in such a model can be represented by a shallow cut in the top of both rails every portable section length.

## Acknowledgments and References

Link, Roy C (1994). *Industrial Narrow Gauge Catalogue and Handbook*, Link: Norfolk, UK. The Handbook also contains templates for point construction and other examples of industries using portable track.

Orenstein & Koppel (c 1900). *General Export Catalogue Nr 600 of Portable and Permanent Railways, Wagons, Locomotives, etc.*, Berlin: Aktiengesellschaft fur Feld-und Kleinbahnen-Bedarf vormals Orenstein & Koppel.

Portable track specifications and photos of hand cutting, loading and portable track use can be found in a number of archives and publications, including the Noel Butlin Archives Centre at ANU (CSR Collection), John Oxley Library (State Library of Queensland), Bishop Museum and Archives (Hawaii), and the State Archives of Hawaii.

Models and uncredited photos are by the author. Additional photos of both models and prototype can be found on the CaneSIG web site: [www.zelmeroz.com/canesig](http://www.zelmeroz.com/canesig), try using "portable track" (without the quotes) as an initial search term in the prototype image collection. →



TOP: Overhead view of scratchbuilt HOn30 portable track sections, both piled in a small stack and loaded on a scratchbuilt wholestick truck without the normal vertical stakes.



ABOVE: Close-up of HOn30 portable track section and jig. Reference to the CSR diagram will show that the oversize sleepers aren't close enough to the end of the rails and are evenly spaced, rather than the end sleepers being closer together.