

Troubles with the Rails for the Old Ghan (Great Northern Railway)

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The first rails were purchased from Hopkins Gilkes & Co. and were made from wrought iron. Many were defective and failed. See picture below.

The rails were eventually replaced by steel rails from the Barrow Hematite Steel Co. Ltd. They proved to be satisfactory. See picture below.

The story (Adapted from refs. 1,2 & 3)

Deliveries of the Hopkins Gilkes rails from Britain had been arriving punctually in 1878 at Port Augusta. The laying of the rails, starting from Port Augusta to beyond Saltia (about 19km from Port Augusta) initially went smoothly. Then trouble developed, and for a time it seemed that construction might be halted.

A ganger reported faulty materials and the Engineer-in-Chief stated tersely: "The rails which have been received for this section are of a most inferior quality, and the majority will be unfit for use."

Following this disturbing discovery, about 1,500 rails were tested. The test consisted of dropping a wedge-shaped iron block weighing about 500 pounds, from a height of sixteen feet on to a rail placed across iron supports three feet apart.

Only about 250 rails were considered to have withstood the test satisfactorily. About 140 broke in half. Many of the others became so seriously bent as to be useless.

An enquiry into this matter was held in the Courthouse at Port Augusta. The proceedings were *in camera*, but soon leaked out. The Government had instructed the Agent-General in London to appoint inspectors to examine the rails before they were shipped. This had been done, but the inspectors were incompetent or corrupt and they were deliberately misled with such practices as presenting specially prepared 'test rails' when the inspectors requested tests, or by filling cracks and holes in the rails with white lead, boring dust and lampblack.

Compensation was demanded from Hopkins Gilkes & Co. for 6,000 tons of rails at £6 per ton. However Hopkins Gilkes & Co. was declared insolvent. It seemed that about £36,000 had been lost. However, eventually a refund of £20,000 was obtained. Since defective rails could be used in sidings and on sections of line that were free of curves the S.A. colony was less out of pocket.

Who made the rails?

The original were 40 lb/yd wrought iron rails manufactured by Hopkins Gilkes of Middlesborough, Yorkshire in England. Wrought iron was made from Pig Iron by a "puddling" process and the billet was hammered to remove the slag. However the slag content was still high.

The final rails were 41 and 50 lb/yd steel rails manufactured by Barrow Steel in Barrow-in-Furnace, Lancashire, England. The Pig Iron was converted to steel using "Bessemer converters" which oxidized the carbon and silicon impurities then the resulting steel bars were rolled and contained only about 5% slag and as a result were of superior strength.

Other companies also made steel rails, which were used on the Ghan.

Acknowledgements

I acknowledge valuable help from Lisa Southon, Museum Manager, Pichi Richi Railway.

References

1. Basil Fuller. The Ghan, The Story of the Alice Springs Railway.
2. The enquiry at Port Augusta.
<<https://trove.nla.gov.au/newspaper/article/43152840?searchTerm=hopkins%20gilke%20rail>>
3. Jack Babbage and Rodney Barrington The History of The Pichi Richi Railway.



Above Rail: Giles Wilkes & Co. 1878.
Near the underground Bakery at Farina.

Right Rail: Barrow Steel 1880 PA & GG
Ry. Near the Gangers House at Farina.

