

RE-APPRAISAL OF RAIL WELD STRAIGHTENING

The report is a follow-up to the weld straightening trials completed in 1985/86. Whilst the straightening gained an immediate improvement to track geometry, many of the anticipated benefits, e.g. improved track quality, reduction in tamping requirements, longer ballast life, fewer wet spots and fewer weld failures, would be realised over the longer term. Thus the aim of the project was to determine which of the benefits had been realised, and whether any other benefits or problems had occurred.

Track Recording Coach measurements of track top standard deviation were examined for four sites where rail straightening was conducted. A questionnaire was also sent to permanent way maintenance staff to obtain their subjective opinion of weld straightening. Difficulty was experienced in obtaining maintenance records for these sites, as maintenance records are not normally kept for long periods of time; therefore it has not been possible to determine all maintenance activities that have occurred.

The study gained positive results, including

- Weld straightening can reduce track deterioration rates by roughly 50% on average, and therefore tamping requirements are approximately half.
- The benefits originally envisaged have been realised at most of the sites.
- The occurrence of wet spots has been virtually eliminated on straightened sections.
- Weld failures after straightening are much less frequent than for equivalent un-straightened track.

The report concludes that the best results will be achieved if the track is straightened when it is installed. Long term benefits may not be realised on track laid on poor ground such as embankments prone to slippage, areas with inherently poor drainage or areas where subsidence occurs.