

## REDUCTION OF TRACKSIDE NOISE AND VIBRATION

Noise and vibration are major environmental considerations for both new and existing track. A major cause of track related noise is the occurrence of irregularities / discontinuities in the relatively smooth running surface of the rail, for example, rail joints (especially bolted joints) and switch and crossing work.

There are a number of approaches to minimise noise and vibration, e.g.:

- Minimising radiating area and introducing damping
- Reducing noise and vibration generation at source
- Deflecting sound by barriers

The study focuses on two methods of reducing noise/vibration at bolted rail joints, these being:

- Low cost conversion to Continuous Welded Rail (CWR) by in-situ welding of existing rail ends.
- Shimming and packing of the joints to improve geometry.

The improvement from low cost CWR conversion was found to be significant and comparable to that from installing CWR conventionally. Shimming and packing was found to be potentially useful, achieving a modest but temporary improvement.