

Lessons Learnt from a Formal Investigation



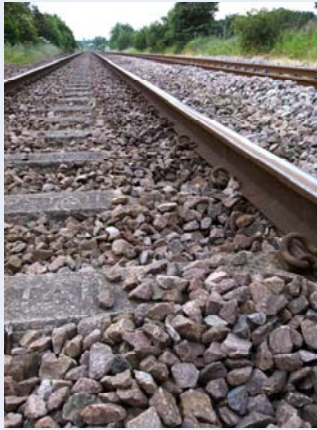
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Title: Displacement of Pandrol clips at Mansfield Woodhouse on 10/11 June 2012

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Left: ballast profile resulting from tamping at speed

Right: partially displaced pandrol clip

Photographs taken from investigation evidence



Overview of Event

- On the night of 10/11 June 2012, tamper 75409 was undertaking maintenance tamping of the Up Mansfield line in the vicinity of Mansfield Woodhouse Station.
- During the course of the shift, part of the tamper intermittently came in to contact with the Pandrol clips that retain the rail in position on a sleeper. This contact occurred as the tamper moved forward from sleeper to sleeper without its tamping banks fully retracted.
- 465 Pandrol clips were hit by the tamper; 140 of these were fully displaced from their housings. While the pattern of displacement was random, at one location ten consecutive clips were fully displaced.
- Checks conducted during the shift failed to identify the displacement of the clips. Consequently the line was reopened to traffic at line speed without the components being reinstated and without anybody being aware that the track required urgent attention.
- Displacement of the Pandrol clips was discovered by an individual placing protection for a possession six days later.
- The immediate cause was that the speed at which tamper 75409 was operated was above the speed at which it had been designed to operate. The increase in operating speed reduced the time available in the tamping cycle for the tamping bank to withdraw from around each sleeper. At the time in the cycle that the tamper came to move forward to the next sleeper, the tamping bank had not withdrawn sufficiently to clear the Pandrol clips.

Underlying Causes: Supervision and Management

- The Track Quality Supervisor (TQS) did not take action to slow the working rate of the tamper to an acceptable level.
- The TQS attempted to deliver the full extent of the planned tamping despite a late start to the possession as he perceived a shortfall in tamping yardage would be ill-received.
- The TQS took on additional work that others were expected and available to deliver. He consequently was not able to adequately supervise the tamper at work or the quality of its work.

Work Environment

- The tamper crew raised concerns that the planned yardage was not achievable within the time. The TQS instructed them to continue.
- An adequate site walkout did not occur as a result of ambiguity in reporting lines resulting from informal local agreements.

Knowledge, skills and experience

- No consideration was given to cancelling the tamping shift when difficulty was encountered in identifying a suitable site.
- Studying of the track recording trace at the correct line speed would have established no benefit was to be gained by tamping.

Key Message: Without detailed planning, good site knowledge and diligent supervision, On Track Machines are capable of causing wear and damage to the infrastructure that outweighs the benefits gained from their operation.