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Memorandum

To: Peter Erwin
NDS
Senior Fleet Engineer

From: Bob Cummings
Title: Head Of Track Engineering
Tel:

cc File.

Date: 26th September 2006

NR/BS/LI/057 Letter of Instruction

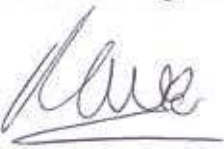
Train Based Grinding Specification For Plain Line Grinding

This is a Letter of Instruction. In accordance with Section 16, of Network Rail Business Process Document, NR/SP/STP/090 – *Managing Change to Network Rail Standards*, I give notice that the following changes shall be made with effect of **17th August 2006**.

The instructions are to outline the requirements for train borne plain line grinding, in relation to delivery, quality control and performance of grinding.

This instruction does not change any requirements for compliance with the any other standards and health and safety requirements.

Further advice and guidance on the application of these changes may be sought by contacting Mark Allen, Rail Management NST, Grinding & Lubrication Engineer.


N Bob Cummings
Head of Track Engineering



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Train Based Grinding Specification For Plain Line Grinding

Rail Grinding Specification for train bourn Plain Line Grinding

1. Introduction

The principal objectives of grinding rail are as follows:

- To produce a regular and consistent running band on the crown of the rail.
- To impose and maintain a profile that reduces contact stresses on the gauge corner and shoulder of the rail.
- To remove localised misalignment at welds and other track features.
- To remove the fatigue damaged surface of the rail, which has or is likely to initiate rolling contact fatigue cracks.

The priorities for current train based grinding should be as follows until such time as grinding resources are available to control the initiation and early propagation of rolling contact fatigue.

- Rails with light or moderate RCF – to reach the target profile as quickly as possible.
- Rails with heavy or severe RCF – to reach the target profile as quickly as possible.
- Rail in a curve that has been previously re-railed due to rolling contact fatigue – to reach the target profile as quickly as possible.
- Rails with severe corrugation – to reduce peak-to-peak amplitude of the corrugation.

Grinding should be targeted so that the highest priority curves are ground approximately every 10 to 15 EMGT and straight track every 25 to 30 EMGT of traffic.

2. Target Profiles

The target (or reference) profile to which the rail shall be ground is the NR HR 1 for the high rail of rail curves or NR 113A profile, equivalent to a new 113A or 56 EI rail profile for the low rail and all straight track. These are the target profiles for all rail sections and are expected to change from time to time based on the latest knowledge of wheel and rail interaction. They have an inclination of 1:20 and will be applied to all existing rail profiles such as 113A, 60EI, 60E2 etc.