THE PROBLEM

Rotary car dumpers are used extensively across heavy-haul railways to unload open wagons. Trains are indexed using an automated positioner arm. Higher indexing speeds lead to greater production throughput but also increase coupler loading and damage.

The damage inflicted on coupling systems by the indexing operation can exceed that experienced during mainline travel, leading to an increase in service failures and costly delays.

The problem is to balance production throughput with coupler damage.

PROCESS

Instrumented wagons and computer simulation are used to:
• establish current coupler load spectra from field data;
• evaluate alternative indexing profiles; and
• validate the optimum indexing profiles once implemented.

Field data is used to ensure accurate simulation results and the simulations reduce the number of field tests required.

BENEFITS

Optimised indexing strategies balancing production with delays and costs due to coupling failures.