

Justification:
Instruction

(Operational)

**Private Owner
Circular Letter
572 Issue 3b**

Title

Wheelchex®

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AUTHORISATION

Authorised by:

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J.Collinson, Principal Traction & Rolling Stock Engineer

1. **INTRODUCTION**

POCL 572, Issue 3b 'WheelChex[®]' has been produced to provide Owners with more information on WheelChex[®] and also guidance on additional action required when the wheel rail force exceeds 350kN as well as speed restrictions to be applied in such cases.

2. **BACKGROUND**

WheelChex[®] is a track mounted device that measures and records the impact forces imparted to the rails by passing vehicles. Limiting values of impact forces are set by Network Rail in order to prevent damage to the track (e.g. broken rails). High impact forces are also likely to have detrimental effects on the vehicle e.g. axle bearing damage.

3. **SCOPE**

This POCL is applicable to all PWRA vehicles that operate on Network Rail managed infrastructure.

4. **IMPACT FORCES**

Vehicles that register impacts in excess of 350kN shall be stopped for examination and remedial action carried out to reduce the impacting force. Typically* it is undesirable wheel features that cause high impact forces. Such features would include flats, cavities and out of round wheels. Since it has been shown that the impact level from wheel flats increases if they are left in service, it is assumed many of those that register 350kN and above have progressed up to that level. This instruction requires wheelset attention for those that register above 275kN as a means of identifying any damaged wheels before they progress to cause the damage and disruption resulting from impacts above 350kN.

*Note: Whilst undesirable wheel features are the main cause of high impact forces, it should be borne in mind that excess speed, overloaded (or unevenly loaded) vehicles or suspension faults may contribute and should also be examined.

The WheelChex[®] reports are supplied directly to Private Owners by:

Network Rail Data
Engineering Support Centre
Trent House
rtc Business Park
London road
Derby
DE24 8UP

Tel: 01332 264695/264667
Fax: 01332 264698

It is the Owner’s responsibility to ensure that their latest contact details are supplied to the Network Rail Data, Engineering Support Centre.

In order to assist Private Owners in interpreting reports and fulfilling their requirements, a typical example of a report diagram and some explanatory notes are included in this document.

5. ACTIONS REQUIRED

The actions are dependent upon the level of the impacting force and are as follows:

5.1 Impact force greater than or equal to 350kN

Impacts detected at this level shall receive immediate attention by the Private Owner. The vehicle shall be subject to restricted speed until it can be detached from its train at a suitable intermediate point in its present journey.

The management of any further movement e.g. to unload and/or to an appropriate maintenance location, shall be dealt with by the Private Owner in conjunction with the relevant Freight Operating Company (FOC). Unless a defect has been identified that prevents onward movement, a vehicle that has been detected in the laden condition and subsequently unloaded may generally be moved as follows:

Wheel Rail Force	Speed Restriction	Additional Action Required
350kN to 400kN	30 mile/h	Wagon to proceed at 30mile/h or less to the location agreed between the RU and Network Rail Control Staff at which point it shall be removed from service.
401kN to 500kN	20 mile/h	Wagon to proceed at 20mile/h or less to the location agreed between the RU and Network Rail Control Staff at which point it shall be removed from service.
Over 500kN	10 mile/h	Wagon shall be stopped for inspection by a Rolling Stock Technician before being allowed to proceed.

The vehicle shall not be offered for further service unless the cause of the high impacting force has been identified and rectified.

The PWRA Management Group’s Senior PWRA Engineer may receive an initial report via a third party, e.g. the FOC. However, the Private Owner shall always provide a report to the Senior PWRA Engineer confirming what rectification has been carried out and details of any defects found.

5.2 Impact force greater than or equal to 275KN and less 350KN

For wheelsets detected at this impact level the Private Owner shall:

- Inspect the wheel(s) for tread defects.
- Remove the wheelset(s) for reprofiling if defective.
- Inspect the vehicle for defective suspension components.
- Investigate what else might have caused detection e.g. an overloaded or offset loaded wagon.

In the event that no defects are found, the vehicle may be returned to service. However, Private Owners are advised that the vehicle could continue to be detected by WheelChex[®]. Therefore further investigations would be a precaution e.g. checking the 'out of roundness' of wheels using a Dial Indicator Gauge and/or changing the wheelsets.

5.3 Impact force greater than or equal to 200KN and less 275KN

Such reports may be regarded as for information only, at this detection level, however, Owners may wish to carry out inspection of the wheels and suspension for defects as detailed above.

6. VEHICLES PRESENTED FOR SERVICE

Owners are reminded that vehicles shall be presented for service with wheels which do not infringe the requirements for wheel tread damage and radial run-out for new or reprofiled wheels.

7. WHEELCHEX[®] RECORDS & SAFETY PERFORMANCE MONITORING

Owners are reminded that review of WheelChex[®] detections (and actions taken) are within the scope of their Safety Performance Monitoring and that full records shall be retained for this purpose.

8. WHEELCHEX[®] INFORMATION – USER GUIDE

In order to provide Owners with more information a copy of document WheelChex[®] Information User Guide (Ref. PRD-WCHX-DOC-077, Issue 3) is attached.

9. IMPLEMENTATION

This document shall be implemented immediately.

In the event of any query arising, or clarification required, please contact:

Senior PWRA Engineer
PWRA Management Group
Room 207 Derwent House
rtc Business Park
London Road
Derby
DE24 8UP