

## Route Access Condition Notice

### 17-00019

<b>Distributed To:</b>	ARTC Website
<b>Distribution Date:</b>	29-05-2017
<b>Requested By:</b>	ARTC
<b>Subject:</b>	Addition and removal of Wayside Devices
<b>Effective Period:</b>	Until Published
<b>Amendment Type:</b>	Permanent (to be added to RAS)

*Note: Permanent Route Access Condition Notices (RACN) are periodically updated in the ARTC Route Access Standard (RAS), at which time the relevant RACN is withdrawn.*

**RAS Reference:**

**Section:** General Information 2.9      **Version No.:** 1.5      **Page/s:** 32-36

**ARTC Network Location:**

**Line Sections & Kms:** Wayside devices

**Details of RACN:** Addition and removal of wayside devices and addition of new limits set, as below.

## 2.9 Wayside Monitoring Devices

A number of wayside monitoring devices are installed on the ARTC Network. These devices have been implemented to provide a variety of performance statistics and where necessary, operational alarms.

Table 2.9.1 – Wayside Monitoring Devices

DEVICE	DESCRIPTION
DED	DRAGGING EQUIPMENT DETECTORS  USED TO IDENTIFY AND REPORT ON VEHICLES WITH PROTRUSIONS BELOW THE VEHICLE AT OR NEAR THE HEIGHT OF THE RAIL HEAD, TYPICALLY A DRAGGING BRAKE HOSE OR CHAIN.
HBD	HOT BEARING DETECTORS. THESE DEVICES ACCURATELY MEASURE THE TEMPERATURE OF BEARINGS AS THEY PASS OVER THIS DEVICE UNDER NORMAL OPERATING CONDITIONS. HOT BEARINGS ARE TRADITIONALLY REFERRED TO AS "HOT BOXES"
HWD	HOT WHEEL DETECTORS. THESE DEVICES ACCURATELY MEASURE THE TEMPERATURE OF WHEELS AS THEY PASS OVER THIS DEVICE UNDER NORMAL OPERATING CONDITIONS.
OOG	OUT OF GAUGE DETECTOR  SPECIFICALLY MONITORS THE HEIGHT OF INTERMODAL TRAFFIC TO ENSURE ADEQUATE BRIDGE CLEARANCE, TYPICALLY WHERE DOUBLE CONTAINER STACKING IS PRACTISED.
WEIGHBRIDGES	USED TO VERIFY THE DECLARED WEIGHTS OF VEHICLES OPERATING ON THE ARTC NETWORK, BOTH FOR SAFETY AND BILLING PURPOSES.
WILD	WHEEL IMPACT LOAD DETECTOR  USED TO MEASURE IN KN TERMS THE EFFECT OF WHEEL IMPACTS ON THE RAIL SURFACE UNDER DYNAMIC CONDITIONS.
WHEEL PROFILE	WHEEL PROFILES MONITOR. THIS SYSTEM RECORDS WHEEL PROFILE INFORMATION BUT DOES NOT NOTIFY ALARMS TO THE NETWORK CONTROLLER OR TRAIN TRANSIT MANAGER.
RAILBAM	RAILWAY BEARING ACOUSTIC MONITOR. USED TO DETECT TRENDING RAIL WHEEL BEARING FAULTS AND EMERGENCY WITHDRAWALS FROM SERVICE. THIS SYSTEM DOES NOT NOTIFY ALARMS TO THE NETWORK CONTROLLER OR TRAIN TRANSIT MANAGER.
RAILSQAD	RAILWAY SQUEAL ACOUSTIC DETECTION SYSTEM. TRACKS TRENDING INDIVIDUAL WHEELS SETS MAKING EXCESSIVE NOISE. STATISTICS ARE ANALYSED AGAINST OPERATING PARAMETERS, ROLLING STOCK CONDITIONS AND ENVIRONMENTAL CONDITIONS. THIS SYSTEM DOES NOT NOTIFY ALARMS TO THE NETWORK CONTROLLER OR TRAIN TRANSIT MANAGER.
AOA	ANGLE OF ATTACK DETECTOR, RECORDS THE AXLE ALIGNMENT IN RELATION TO THE RAIL TO ALLEVIATE WHEEL FLANGE CLIMB AND RAIL SQUEAL.

*Note: Specific limits for WILD are set out in the following tables 2.9.2.*

Table 2.9.2 – Wheel Impact Load Detector Limits

<b>RESPONSE TO WILD IMPACT LOADS – EXETER/WEST CORRIDOR &amp; NORTH/SOUTH (PORT GERMEIN, LARA, PARKESTON, COCKBURN, METFORD MAIN)</b>	
<b>WHEEL IMPACT LOAD</b>	<b>REQUIRED ACTION</b>
UNTAGGED ≥325KN TO 400KN (NORMALISED)	TRAIN SLOWED TO THE SPEED AS ADVISED IN THE EMAIL NOTIFICATION UNTIL THE VEHICLE CAN BE SAFELY INSPECTED BY THE TRAIN CREW. IF DEFECT CONFIRMED, VEHICLE TO BE DETACHED AT NEXT SUITABLE LOCATION. IF THERE IS NO DEFECT, THEN AT THE DISCRETION OF ARTC OPERATIONS INSTRUCT THE DRIVER TO RECOMMENCE OPERATIONS TO TRACK SPEED WHEN IT IS ESTABLISHED THAT THE TRAIN CAN SAFELY CONTINUE IN SERVICE. OPERATOR IS NOTIFIED AND TCR IS RAISED.
HIGH LEVEL ≥400KN TO 500KN (NORMALISED)	TRAIN SLOWED TO THE SPEED AS ADVISED IN THE EMAIL NOTIFICATION UNTIL THE VEHICLE CAN BE SAFELY INSPECTED BY THE TRAIN CREW. IF DEFECT CONFIRMED, VEHICLE TO BE DETACHED AT NEXT SUITABLE LOCATION. IF THERE IS NO DEFECT, THEN AT THE DISCRETION OF ARTC OPERATIONS INSTRUCT THE DRIVER TO RECOMMENCE OPERATIONS TO TRACK SPEED WHEN IT IS ESTABLISHED THAT THE TRAIN CAN SAFELY CONTINUE IN SERVICE. OPERATOR IS NOTIFIED AND TCR IS RAISED.
EXTREME LEVEL ≥500KN (NORMALISED)	TRAIN SLOWED TO 60 KM/H UNTIL THE VEHICLE CAN BE SAFELY INSPECTED BY THE TRAIN CREW. IF DEFECT CONFIRMED, VEHICLE TO BE DETACHED AT NEXT SUITABLE LOCATION. IF THERE IS NO DEFECT, THEN AT THE DISCRETION OF ARTC OPERATIONS INSTRUCT THE DRIVER TO RECOMMENCE OPERATIONS TO TRACK SPEED WHEN IT IS ESTABLISHED THAT THE TRAIN CAN SAFELY CONTINUE IN SERVICE. OPERATOR IS NOTIFIED AND TCR IS RAISED.
<b>RESPONSE TO WILD IMPACT LOADS – HUNTER VALLEY COAL (METFORD COAL)</b>	
<b>WHEEL IMPACT LOAD</b>	<b>REQUIRED ACTION</b>
UNTAGGED ≥325KN – 400KN (NORMALISED)	TRAIN SLOWED TO THE SPEED AS ADVISED IN THE EMAIL NOTIFICATION UNTIL THE VEHICLE CAN BE SAFELY INSPECTED BY THE TRAIN CREW. IF DEFECT CONFIRMED, VEHICLE TO BE DETACHED AT NEXT SUITABLE LOCATION. IF THERE IS NO DEFECT, THEN AT THE DISCRETION OF ARTC OPERATIONS INSTRUCT THE DRIVER TO RECOMMENCE OPERATIONS TO TRACK SPEED WHEN IT IS ESTABLISHED THAT THE TRAIN CAN SAFELY CONTINUE IN SERVICE. OPERATOR IS NOTIFIED AND TCR IS RAISED.
HIGH LEVEL ≥400KN (NORMALISED)	TRAIN SLOWED TO THE SPEED AS ADVISED IN THE EMAIL NOTIFICATION UNTIL THE VEHICLE CAN BE SAFELY INSPECTED BY THE TRAIN CREW. IF DEFECT CONFIRMED, VEHICLE TO BE DETACHED AT NEXT SUITABLE LOCATION. IF THERE IS NO DEFECT, THEN AT THE DISCRETION OF ARTC OPERATIONS INSTRUCT THE DRIVER TO RECOMMENCE OPERATIONS TO TRACK SPEED WHEN IT IS ESTABLISHED THAT THE TRAIN CAN SAFELY CONTINUE IN SERVICE. OPERATOR IS NOTIFIED AND TCR IS RAISED.

*Note: Normalised refers to the process of normalising vehicle impacts by using 120kN normalisation offset as a fixed value.*

*Untagged alarms: Wayside equipment scans tagged vehicles for registration and tracking purposes. An alarm is raised if an un-tagged vehicle appears in a trains consist.*

*When defects are confirmed the required remedial action must be initiated by the train operator in conjunction with the Network Controller.*

Table 2.9.3 – Wheel Profile Monitors

<b>RESPONSE TO AUTOMATIC KLD WHEEL PROFILE MONITOR LEVELS – EXETER AND PORT GERMEIN</b>				
<b>PROFILE</b>	<b>OPTIMAL</b>	<b>WARNING</b>	<b>CONDEMN</b>	<b>EXTREME</b>
Flange Thickness	≤24mm, >21mm	≤21mm, >18.75mm	≤18.75mm, >17mm	≤17mm,
Flange Height	≥33mm, <34mm	≥34mm, <35.25mm	≥35.25mm, <37mm	≥37mm
Tread Hollowing	≥2mm, <2.5mm	≥2.5mm, <3.25mm	≥3.25mm, <4mm	≥4mm
Rim Thickness	≤24mm, >22mm	≤22mm, >19.75mm	≤19.75mm, >18mm	≤18mm

Table 2.9.4 – Hot Bearing Detector Alarms

<b>HOT BEARING DETECTOR ALARMS</b>	
<b>TEMPERATURE ALARMS</b>	<b>REQUIRED ACTION</b>
HOT ALARM SST SITE 100C	THE TEMPERATURE HAS PASSED THE CRITICAL LEVEL AND THERE IS A POSSIBILITY OF BEARING DAMAGE. TRAIN TO BE STOPPED IMMEDIATELY AND VEHICLE INSPECTED. OPERATOR NOTIFIED AND TCR IS RAISED.
WARM ALARM SST SITE 93C AT 20C AMBIENT VARIED BY 50% OF AMBIENT TEMPERATURE.	THE TEMPERATURE IS HIGHER THAN NORMAL AND THE BEARING MAY NEED ATTENTION. TRAIN TO BE STOPPED IMMEDIATELY AND VEHICLE INSPECTED. OPERATOR NOTIFIED AND TCR IS RAISED.

Table 2.9.5 – Hot Wheel Detector Alarms

<b>HOT WHEEL DETECTOR ALARMS</b>	
<b>TEMPERATURE ALARMS</b>	<b>REQUIRED ACTION</b>
HOT ALARM SST 300C	THE TEMPERATURE HAS PASSED THE CRITICAL LEVEL AND THERE IS A POSSIBILITY OF BRAKE ISSUES AND WHEEL DAMAGE. TRAIN TO BE STOPPED IMMEDIATELY AND VEHICLE INSPECTED. OPERATOR NOTIFIED AND TCR IS RAISED

WARM ALARM SST 270C	THE TEMPERATURE IS HIGHER THAN NORMAL AND THE BRAKES AND WHEEL MAY NEED ATTENTION. TRAIN TO BE STOPPED IMMEDIATELY AND VEHICLE INSPECTED. OPERATOR NOTIFIED AND TCR IS RAISED.
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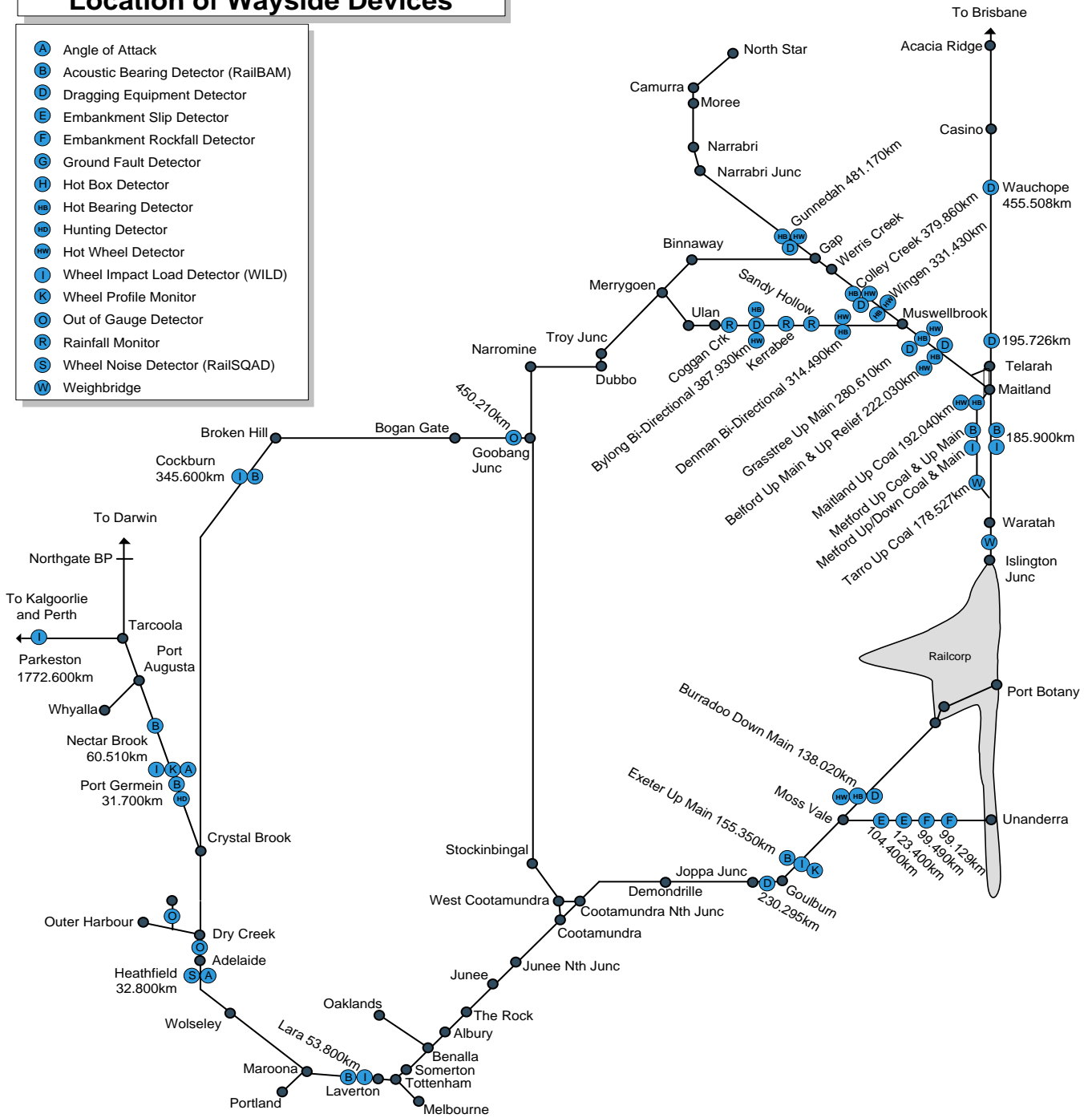
Table 2.9.6 – Dragging Equipment Detector Alarms

<b>DRAGGING EQUIPMENT DETECTOR ALARMS</b>	
<b>ALARMS</b>	<b>REQUIRED ACTION</b>
DRAGGING EQUIPMENT DETECTED	TRAIN TO BE STOPPED IMMEDIATELY AND VEHICLE INSPECTED. OPERATOR NOTIFIED AND TCR IS RAISED.

Figure 2.9.1 – Wayside Monitoring Devices on the ARTC Network

## Location of Wayside Devices

- A Angle of Attack
- B Acoustic Bearing Detector (RailBAM)
- D Dragging Equipment Detector
- E Embankment Slip Detector
- F Embankment Rockfall Detector
- G Ground Fault Detector
- H Hot Box Detector
- HB Hot Bearing Detector
- HD Hunting Detector
- HW Hot Wheel Detector
- I Wheel Impact Load Detector (WILD)
- K Wheel Profile Monitor
- O Out of Gauge Detector
- R Rainfall Monitor
- S Wheel Noise Detector (RailSQAD)
- W Weighbridge



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