

# SAFE Notice *2019* 1024

## Telegram

**SYDNEY**

**12 SEPTEMBER**

**1200 HOURS**

**TO:**

**SYDNEY TRAINS**

Deputy Executive Director Network  
Operations  
Head of Service Delivery  
Area Operations Managers Signal Box  
Operations  
ROC Sydney  
Signal Box Operations  
Deputy Executive Directors Train Crew  
Crew Managers Train Crew  
Shift Managers Train Crew  
Deputy Executive Directors Train Crew  
Associate Director Compliance & Assurance  
Train Crewing  
Senior Project Manager Operational  
Mobilisation Readiness  
Professional Head Fleet Engineering Sydney  
Trains  
Rolling Stock Engineering Manager TfNSW  
Crew Managers Train Crew  
Shift Managers Train Crew  
TTU test Train Crew

## **Minimum operating standards for TTU upgraded Tangara trains during operational testing**

Effective from 1200 hours, Thursday, 12 September 2019, this SAFE Notice Telegram introduces the Minimum operating standards for upgraded TTU II Tangara trains during operational testing.

These instructions must be read in conjunction with the relevant Train Working Procedures (TWP) and Operation and management of electric trains procedures.

## **Introduction**

This document describes the minimum operating standards required for Tangara Technology Upgrade (TTU) II upgraded Tangara trains to enter the Network or remain in the Network for operational testing.

## **General requirements**

If an item seems to be defective and does not have a minimum operating standard listed, tell Mechanical Control, and follow their instructions.

Even if the minimum operating standard is met, all faults must be reported to:

- if at a Maintenance Centre, the Maintenance Centre Supervisor, or
- if at an out depot or in service, Mechanical Control.



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### **NOTE**

Minor faults that do not affect safety or the operation of the train can be reported on a Train Status Report (TSR) or by creating a fault in Transport Equip .

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## Minimum operating standards

### **If a train is not to enter service from an out depot**

If a train at an out depot is not to enter service, the Driver must tell the Signaller and Mechanical Control.

### **Working trains out of service**

If a standard not being met requires a train to be worked out of service, act in accordance with *TWP 192 Working trains out of service*.

### **Disabled trains**

If a standard not being met requires a train to be treated as disabled, the Train Crew must:

- tell the Signaller and Mechanical Control, and follow their instructions
- act in accordance with *TWP 152 Disabled train*.

### **If a Guard must move to another workstation**

If a Guard is required to move to another workstation, they must act in accordance with *TWP 100 Responsibilities of Train Crews*.

# Minimum operating standards

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## Minimum operating standards

### Air springs

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><i>Standard</i> All must be inflated.</p> <p><i>If not met</i> Do not enter service.</p>	<p><i>Standard</i> All must be inflated.</p> <p><i>If not met</i></p> <ol style="list-style-type: none"><li>1. Tell the Signaller and Mechanical Control, and follow their instructions.</li><li>2. If directed to enter service, do not exceed 65km/h.</li></ol>	<p><i>Standard</i> All must be inflated.</p> <p><i>If not met</i> Continue in service but do not exceed 65km/h.</p>

# Minimum operating standards

## Air conditioning



**NOTE**

Each car has two units. The No.2 end unit in driving trailer cars serves the crew compartment and customer areas, other units serve customer areas only.

If temperatures are not uncomfortable for Train Crew, the train might not need to be worked out of service.

Crew cab windows and fresh air vents can be opened for fresh air.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be working.</p> <p><b>If not met</b> If a terminal car's No. 2 end unit is not working, do not enter service. If both units in a car are not working, do not enter service. For other faults, the train may enter service.</p>	<p><b>Standard</b> All must be working.</p> <p><b>If not met</b> If a terminal car's No. 2 end unit is not working, do not enter service. For other units:  <ul style="list-style-type: none"> <li>• if one unit is working in each car, enter service</li> <li>• if both a car's units are defective:                             <ul style="list-style-type: none"> <li>– lock off the car from customer use</li> <li>– if uncomfortable, the Guard may move to another workstation.</li> </ul> </li> </ul> </p>	<p><b>Standard</b> All must be working.</p> <p><b>If not met</b> If a terminal car's No. 2 end unit is not working, tell Mechanical Control and follow their instructions. For other units:  <ul style="list-style-type: none"> <li>• if one unit is working in each car, enter service</li> <li>• if both a car's units are defective:                             <ul style="list-style-type: none"> <li>• lock off the car from customer use</li> <li>• if uncomfortable, the Guard may move to another workstation.</li> </ul> </li> </ul> </p>

## Minimum operating standards

### Air vents and diffusers

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>All must be clean, secure, safe and fit for purpose.</p> <p>Must not generate any loud noise.</p> <p><b>If not met</b></p> <p>Do not enter service.</p> <p>Tell the Maintenance Centre Supervisor, and follow their instructions.</p>	<p><b>Standard</b></p> <p>All must be clean, secure, safe and fit for purpose.</p> <p>Must not generate any loud noise.</p> <p><b>If not met</b></p> <p>Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b></p> <p>All must be clean, secure, safe and fit for purpose.</p> <p>Must not generate any loud noise.</p> <p><b>If not met</b></p> <p>Tell Mechanical Control, and follow their instructions.</p>

# Minimum operating standards

## Air pressure gauges in Drivers console

Air pressure gauges include:

- main reservoir air pressure
- brake pipe air pressure
- parking brake status
- brake cylinder pressure.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All air pressure gauges must work in all workstations.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All air pressure gauges must work in all workstations.</p> <p><b>If not met</b> If defective in a Drivers trailer car and air pressure information is available on the train operating system (TOS), the train may enter service.  If the TOS air pressure information is also unavailable, do not enter service.  If defective in a Guards trailer car, the train may enter service.</p>	<p><b>Standard</b> All air pressure gauges must work in all active workstations.</p> <p><b>If not met</b> If defective in a Drivers trailer car and air pressure information is available on the TOS, continue in service.  If the TOS air pressure information is also unavailable, work the train out of service at the first suitable location.  If defective in a Guards trailer car, continue in service.</p>



## Minimum operating standards

### Ammeters

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be working.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be working.</p> <p><b>If not met</b> If both the analogue and TOS ammeters are not available in a Drivers trailer car, do not enter service.</p>	<p><b>Standard</b> All must be working.</p> <p><b>If not met</b> If both the analogue and TOS ammeters are not available in a Drivers trailer car, work out of service as directed.</p>

### Axle boxes

This standard is assessed by Maintenance Staff. Unless directed, Train Crew are not required to inspect axle boxes.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Must not show signs of:</p> <ul style="list-style-type: none"> <li>• lubrication loss</li> <li>• overheating (discolouration or paint blistering)</li> <li>• water damage or penetration.</li> </ul> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must not show signs of:</p> <ul style="list-style-type: none"> <li>• lubrication loss</li> <li>• overheating (discolouration or paint blistering)</li> <li>• water damage or penetration.</li> </ul> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> Must not show signs of:</p> <ul style="list-style-type: none"> <li>• lubrication loss</li> <li>• overheating (discolouration or paint blistering)</li> <li>• water damage or penetration.</li> </ul> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

# Minimum operating standards

## Bells

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If Guard’s bell is not working change workstations if possible and enter service. If Driver’s bell is not working do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If Guard’s bell is not working change workstations if possible and continue in service. If Driver’s bell is not working Tell Mechanical control and work out of service as directed.</p>

## Bogies

This standard is assessed by Maintenance Staff. Unless directed, Train Crew are not required to inspect bogies.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> No bogie components that are missing, loose, damaged or broken.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> No bogie components that are missing, loose, damaged or broken.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> No bogie components that are missing, loose, damaged or broken.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

# Minimum operating standards

## Brakes

### Automatic brakes

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service if:</p> <ul style="list-style-type: none"> <li>any bogies are isolated on a terminal car, or</li> <li>more than 4 bogies are isolated on the train.</li> </ul> <p>For all faults tell Mechanical Control, and follow their instructions.</p> <p>Isolate defective bogies in accordance with <i>TWP 124 Automatic brakes</i>.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Act in accordance with <i>TWP 124 Automatic brakes</i>.</p>

## Minimum operating standards

### Brake cylinders

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>Must not leak more than 35kPa per minute when brakes are fully applied.</p> <p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>Standard</b></p> <p>Must not leak more than 35kPa per minute when brakes are fully applied.</p> <p><b>If not met</b></p> <p>Do not enter service if:</p> <ul style="list-style-type: none"> <li>any terminal car bogies are affected, or</li> <li>more than 4 bogies are affected.</li> </ul> <p>For all faults, tell Mechanical Control, and follow their instructions.</p> <p>Isolate defective bogies in accordance with <i>TWP 124 Defective brakes</i>.</p>	<p><b>Standard</b></p> <p>Must not leak more than 35kPa per minute when brakes are fully applied.</p> <p><b>If not met</b></p> <p>Isolate defective bogies in accordance with <i>TWP 124 Defective brakes</i>.</p> <p>Tell Mechanical Control, and follow their instructions.</p>

### Electro-pneumatic brakes

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>All must be operational.</p> <p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>Standard</b></p> <p>Must pass a power against electro-pneumatic brake test.</p> <p><b>If not met</b></p> <p>If the fault cannot be fixed:</p> <ul style="list-style-type: none"> <li>work the train using the automatic brake</li> <li>tell Mechanical Control, and follow their instructions.</li> </ul>	<p><b>Standard</b></p> <p>All must be operational.</p> <p><b>If not met</b></p> <p>If the fault cannot be fixed:</p> <ul style="list-style-type: none"> <li>work the train using the automatic brake</li> <li>tell Mechanical Control, and follow their instructions.</li> </ul>

## Minimum operating standards

### Parking brakes

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> At least two bogies must be working on each four-car block. At least one bogie must be working on each terminal car.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> At least two bogies must be working on each four-car block. At least one bogie must be working on each terminal car.</p> <p><b>If not met</b> Tell Mechanical Control and work out of service at the first suitable location</p>

### Compressors

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Three compressors must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Three compressors must be operational.</p> <p><b>If not met</b> Try to fix the fault in accordance with <i>OMET 234 Defective compressors</i>. Tell the Signaller and Mechanical Control. If the fault cannot be fixed, do not enter service.</p>	<p><b>Standard</b> Three compressors must be operational.</p> <p><b>If not met</b> Try to fix the fault in accordance with <i>OMET 234 Defective compressors</i>. Tell the Signaller and Mechanical Control and follow their instructions.</p>

# Minimum operating standards

## Couplers

### Scharfenberg couplers

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational. Electrical heads must not be exposed.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> All must be operational. Electrical heads must not be exposed.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

### Emergency couplers

This standard is assessed by maintenance staff. Unless directed, Train Crews are not required to inspect transition couplers.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Each train must have a complete and operational emergency coupler.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Each train must have a complete and operational emergency coupler.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Each train must have a complete and operational emergency coupler.</p> <p><b>If not met</b> Work the train out of service as directed.</p>

## Minimum operating standards

### Crew compartment items

#### Blinds

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell the Maintenance Centre Supervisor.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Continue into service. If vision is impaired, travel at a speed such that the train can be stopped within the distance of clear line that is visible ahead. Tell Mechanical Control.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Continue in service. If vision is impaired, travel at a speed such that the train can be stopped within the distance of clear line that is visible ahead. Tell Mechanical Control.</p>

#### Crew compartment lighting

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> At least one must be operational.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> At least one must be operational.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

## Minimum operating standards

### Crew doors

Includes transverse doors and side doors.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service if:</p> <ul style="list-style-type: none"> <li>• there are no crew compartments with working doors on both sides, or</li> <li>• if a side door in an active Guards workstation does not latch open, or</li> <li>• any door cannot be locked.</li> </ul>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Work the train out of service as directed if:</p> <ul style="list-style-type: none"> <li>• there are no crew compartments with working doors on both sides, or</li> <li>• if a side door in an active Guards workstation does not latch open, or</li> <li>• any door cannot be locked.</li> </ul>

### Data loggers (event recorders)

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> At least one must be operational in each four car block.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> At least one must be operational in each 4 car block.</p> <p><b>If not met</b> Work the train out of service at the first suitable location.</p>



## Minimum operating standards

### Demisters

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational in terminal cars.</p> <p><b>If not met</b> Enter service. If vision is impaired, travel at a speed such that the train can be stopped within the distance of clear line that is visible ahead.</p>	<p><b>Standard</b> All must be operational in terminal cars. .</p> <p><b>If not met</b> Tell Mechanical Control. Enter service. If vision is impaired, travel at a speed such that the train can be stopped within the distance of clear line that is visible ahead.</p>	<p><b>Standard</b> All must be operational in terminal cars.</p> <p><b>If not met</b> Tell Mechanical Control. Continue in service. If vision is impaired, travel at a speed such that the train can be stopped within the distance of clear line that is visible ahead.</p>

### Door open indicator lights (DOILs)

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Guard must move to another workstation. If defective in both Guards trailer cars, do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Guard must move to another workstation. If defective in both Guards trailer cars, work the train out of service as directed.</p>

# Minimum operating standards

## Draughts

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All crew cabs must be secure and free of damage that causes draughts.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Crew cabs must be secure and free of damage that causes draughts.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> Crew cabs must be secure and free of damage that causes draughts.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

## Guards IEDR control panel

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Guard must move to another workstation.  If defective in both Guards trailer cars, do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Guard must move to another workstation.  If defective in both Guards trailer cars, work the train out of service as directed.</p>

## Minimum operating standards

### Heaters



#### NOTE

If temperatures are not uncomfortable, the train may enter or continue in service.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service if heating will be required.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If the Guard is cold, they may move to another cab when time permits. If the Driver is cold, finish the run and then work the train out of service. Tell the Signaller and Mechanical Control.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If the Guard is cold, they may move to another cab when time permits. If the Driver is cold, finish the run and then work the train out of service. Tell the Signaller and Mechanical Control.</p>

### Horn/whistle

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Must be operational in terminal cars.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must be operational in terminal cars.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must be operational in terminal cars.</p> <p><b>If not met</b> Tell Mechanical Control. If the fault cannot be fixed, work the train out of service at the first suitable location in accordance with <i>NTR 408 Using whistles</i>.</p>

## Minimum operating standards

### Indicator lights

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

### Intercom

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Must be working between Driver and Guard.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must be working between Driver and Guard.</p> <p><b>If not met</b> Tell Mechanical Control. The Guard may move to another cab. If the intercom does not work in any workstation and the fault cannot be fixed, do not enter service.</p>	<p><b>Standard</b> Must be working between Driver and Guard.</p> <p><b>If not met</b> Tell Mechanical Control. The Guard may move to another cab. If the intercom does not work in any workstation and the fault cannot be fixed, work out of service as directed.</p>

### Public address

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell the Maintenance Centre Supervisor and follow their instructions.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

## Minimum operating standards

### Seats

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be clean, secure and fit for purpose.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be clean, secure and fit for purpose.</p> <p><b>If not met</b> Tell Mechanical Control. If the Drivers seat in a terminal car is damaged, do not enter service. If the Guards seat is damaged, the Guard is to move to another cab.</p>	<p><b>Standard</b> All must be clean, secure and fit for purpose.</p> <p><b>If not met</b> Tell Mechanical Control. If the Drivers seat in a terminal car is damaged, work the train out of service at the first suitable location. If the Guards seat is damaged, the Guard is to move to another cab.</p>

### Speedometer

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must work.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must work.</p> <p><b>If not met</b> Act in accordance with <i>NTR 410 Defective equipment</i>.</p>	<p><b>Standard</b> All must work.</p> <p><b>If not met</b> Act in accordance with <i>NTR 410 Defective equipment</i>.</p>

### Train operating system (TOS)

#### *TOS display screen*

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Work the train out of service as directed.</p>

## Minimum operating standards

### TOS

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Work the train out of service as directed.</p>

### TOS printer

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Use the TOS printer in another cab. If both are defective, do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Use the TOS printer in another cab. If both are defective, use the TOS TRAIN CERTIFICATE screens.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Continue in service.</p>

### Windscreen wipers and washers

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Must be operational on terminal cars.</p> <p><b>If not met</b> Tell the Maintenance Centre Supervisor and follow their instructions.</p>	<p><b>Standard</b> Must be operational on terminal cars.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> Must be operational on terminal cars.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

## Minimum operating standards

### Destination indicators

The following standards apply to both internal and external destination indicators.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell the Maintenance Centre Supervisor. Enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If the fault cannot be fixed, the train may enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If the fault cannot be fixed, the train may continue in service.</p>

### Digital train radio system (DTRS)

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must be working:</p> <ul style="list-style-type: none"> <li>• in both Drivers trailer cars</li> <li>• in at least one Guards trailer car.</li> </ul> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must be working:</p> <ul style="list-style-type: none"> <li>• in both Drivers trailer cars</li> <li>• in at least one Guards trailer car.</li> </ul> <p><b>If not met</b> If the fault cannot be fixed in an active driving cab, act in accordance with <i>NTR 410 Defective equipment</i>.</p>

## Minimum operating standards

### Digital voice announcement (DVA) system

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Must be fully operational.</p> <p><b>If not met</b> Tell the Maintenance Centre Supervisor, and follow their instructions.</p>	<p><b>Standard</b> Must be fully operational.</p> <p><b>If not met</b> If the fault cannot be fixed, tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> Must be fully operational.</p> <p><b>If not met</b> If the fault cannot be fixed, tell Mechanical Control, and follow their instructions.</p>

### Door warning device (DWD)

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Must be operational in all active cabs.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must be operational in all active cabs.</p> <p><b>If not met</b> Make door warning announcements using the public address (PA) system.  If the PA system is also defective, tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> Must be operational in all active cabs.</p> <p><b>If not met</b> Make door warning announcements using the PA system.  If the PA system is also defective, tell Mechanical Control, and follow their instructions.</p>



## Minimum operating standards

### Driver safety systems

Driver safety systems comprise:

- Vigilance control.
- Operator enable (deadman) pedal.
- Operator enable (deadman) handle — power controller T bar.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational in terminal cars.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational in terminal cars.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational in terminal cars.</p> <p><b>If not met</b> Act in accordance with <i>TWP 122 Failure of the driver safety systems</i> Work train out of service at first suitable location.</p>

### Electrical wiring

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Must not be exposed to or accessible by passengers.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must not be exposed to or accessible by passengers.</p> <p><b>If not met</b> Be aware of vandalism. Lock off the affected car. Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> Must not be exposed to or accessible by passengers.</p> <p><b>If not met</b> Be aware of vandalism. Lock off the affected car. Tell Mechanical Control, and follow their instructions.</p>

# Minimum operating standards

## Emergency door releases (EDRs)

### External emergency door releases (EDRs)

This standard is assessed by maintenance staff. Unless directed, Train Crews are not required to inspect EDRs.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be secure and operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be secure and operational.</p> <p><b>If not met</b> If possible, repair or secure damaged or loose EDR covers. If defective:  <ul style="list-style-type: none"> <li>lock off the affected car</li> <li>tell Mechanical Control, and follow their instructions.</li> </ul> </p>	<p><b>Standard</b> All must be secure and operational.</p> <p><b>If not met</b> If possible, repair or secure damaged or loose EDR covers. If defective:  <ul style="list-style-type: none"> <li>lock off the affected car</li> <li>tell Mechanical Control, and follow their instructions.</li> </ul> </p>

# Minimum operating standards

## Internal emergency door releases (IEDRs)

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If one IEDR per car is inoperable, isolate door and continue in service If both IEDR in one car inoperable, lock off car and work out of service as directed If the whole system has failed, do not enter service. If other faults cannot be fixed, tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If one IEDR per car is inoperable, isolate door and continue in service If both IEDR in one car inoperable, lock off car and work out of service as directed If the whole system has failed, work out of service as directed. If other faults cannot be fixed, tell Mechanical Control, and follow their instructions.</p>

# Minimum operating standards

## Emergency equipment lockers



**NOTE**

If emergency equipment lockers are locked and sealed, this indicates that the contents are complete.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be sealed and tagged.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be sealed and tagged.</p> <p><b>If not met</b> Tell Mechanical Control. Make sure that the contents of the locker in the active cab are complete in accordance with <i>TWP 100 Responsibilities of Train Crews</i></p>	<p><b>Standard</b> All must be sealed and tagged.</p> <p><b>If not met</b> Tell Mechanical Control. At the first suitable location:</p> <ul style="list-style-type: none"> <li>• check if the contents of the locker in the active cab are complete in accordance with <i>TWP 100 Responsibilities of Train Crews</i>.</li> <li>• If necessary, get items from other lockers to complete the contents of the locker in the active cab.</li> </ul>

## Minimum operating standards

### Fire extinguishers



#### WARNING

If a fire extinguisher does not meet the standard, the train must not enter a tunnel or covered space longer than 90 metres.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>All must be charged, sealed, secured in cradle and within 6 months of last inspection.</p> <p><b>If not met</b></p> <p>Tell the Maintenance Centre Supervisor.</p> <p>If more than 7 months since last inspection, do not enter service.</p>	<p><b>Standard</b></p> <p>All must be charged, sealed, secured in cradle and within 6 months of last inspection.</p> <p><b>If not met</b></p> <p>Tell Mechanical Control.</p> <p>If necessary, get an extinguisher from another cab.</p>	<p><b>Standard</b></p> <p>All must be charged, sealed, secured in cradle and within 6 months of last inspection.</p> <p><b>If not met</b></p> <p>Tell Mechanical Control.</p> <p>If necessary, get an extinguisher from another cab.</p>



#### NOTE

A train may enter service with a fire extinguisher that is within 7 months of last inspection.

### Guards blue lights

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>All must be operational.</p> <p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>Standard</b></p> <p>All must be operational.</p> <p><b>If not met</b></p> <p>Tell the Signaller and Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b></p> <p>All must be operational.</p> <p><b>If not met</b></p> <p>Tell the Signaller and Mechanical Control, and follow their instructions.</p>

## Minimum operating standards

### Guards brake pipe pressure gauges

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met in a Drivers trailer car</b> If there is an alternative means of checking the brake pipe pressure, the train may enter service. If the brake pipe pressure cannot be checked by any means, do not enter service.</p> <p><b>If not met in a Guards trailer car</b> The Guard should use the gauge on the Drivers desk. If brake pipe pressure cannot be checked by any means, do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met In a Drivers trailer car</b> If there is an alternative means of checking the brake pipe pressure, continue in service. If the brake pipe pressure cannot be checked by any means, work the train out of service at the first suitable location.</p> <p><b>If not met in a Guards trailer car</b> The Guard should use the gauge on the Drivers desk. If brake pipe pressure cannot be checked by any means:</p> <ul style="list-style-type: none"> <li>• the Guard should move to another workstation</li> <li>• work the train out of service at the first suitable location.</li> </ul>

## Minimum operating standards

### Guards keyswitch

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Work from a workstation with a working keyswitch.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Work from a workstation with a working keyswitch.</p>

### High-speed circuit-breakers (HSCBs)

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Three HSCBs must be operational.</p> <p><b>If not met</b> If the fault cannot be fixed, do not enter service.</p>	<p><b>Standard</b> Three HSCBs must be operational.</p> <p><b>If not met</b> If the fault cannot be fixed, work the train out of service at the first suitable location.</p>

### Lights - Exterior

#### Headlights

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational in both high beam and low beam.</p> <p><b>If not met</b> Tell the Maintenance Centre Supervisor.</p>	<p><b>Standard</b> All must be operational on terminal cars in both high beam and low beam.</p> <p><b>If not met</b> Tell Mechanical Control and act in accordance with <i>NTR 406 Using train lights</i>.</p>	<p><b>Standard</b> All must be operational on terminal cars in both high beam and low beam.</p> <p><b>If not met</b> Tell Mechanical Control and act in accordance with <i>NTR 406 Using train lights</i>.</p>

## Minimum operating standards

### Visibility (fog) lights

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>At least one must be operational on terminal cars.</p>	<p><b>Standard</b></p> <p>At least one must be operational on terminal cars.</p>	<p><b>Standard</b></p> <p>At least one must be operational on terminal cars.</p>
<p><b>If not met</b></p> <p>Tell the Maintenance Centre Supervisor.</p>	<p><b>If not met</b></p> <p>Tell Mechanical Control and act in accordance with <i>NTR 406 Using train lights</i>.</p>	<p><b>If not met</b></p> <p>Tell Mechanical Control and act in accordance with <i>NTR 406 Using train lights</i>.</p>

### Marker lights

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>All must be operational.</p>	<p><b>Standard</b></p> <p>One must be operational on terminal cars.</p>	<p><b>Standard</b></p> <p>One must be operational on terminal cars.</p>
<p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>If not met</b></p> <p>Act in accordance with <i>NTR 406 Using train lights</i>.</p>	<p><b>If not met</b></p> <p>Act in accordance with <i>NTR 406 Using train lights</i>.</p>

### Coupler and step lights

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>All must be operational.</p>	<p><b>Standard</b></p> <p>All must be operational.</p>	<p><b>Standard</b></p> <p>All must be operational.</p>
<p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>If not met</b></p> <p>Tell Mechanical Control and work as directed.</p>	<p><b>If not met</b></p> <p>Tell Mechanical Control and work as directed.</p>



## Minimum operating standards

### Pantographs

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Three pantographs must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Three pantographs must be operational.</p> <p><b>If not met</b> Tell Mechanical Control and work out of service as directed.</p>

### Passenger doors



#### NOTE

Defective doors might affect traction interlocking. Act in accordance with *TWP 172 Traction Interlocking in C, K, L, R, S, V sets and Tangara trains*

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If any cannot be closed, do not enter service. Close and isolate defective doors.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> If any cannot be closed, tell Mechanical Control and work out of service. If no more than two door pairs are isolated on one side, the train may continue in service.</p>

# Minimum operating standards

## Passenger lights

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> At least 90% must be operational in each car.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> During darkness, or when passing through tunnels, passenger cars must be lit by the passenger saloon lights or emergency lights.</p> <p><b>If not met</b> Tell Mechanical Control and follow their instructions.</p>	<p><b>Standard</b> During darkness, or when passing through tunnels, passenger cars must be lit by the passenger saloon lights or emergency lights.</p> <p><b>If not met</b> Tell Mechanical Control and follow their instructions.</p>

## Passenger emergency intercom (PEI)

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell the Maintenance Centre Supervisor, and follow their instructions.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Continue into service</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Continue in service</p>

## Minimum operating standards

### Passenger seats

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be clean, secure and fit for purpose.</p> <p><b>If not met</b> If unusable or unsafe, do not enter service.</p>	<p><b>Standard</b> All must be clean, secure and fit for purpose.</p> <p><b>If not met</b> If unusable or unsafe:</p> <ul style="list-style-type: none"> <li>lock off the affected car</li> <li>tell Mechanical Control, and follow their instructions.</li> </ul>	<p><b>Standard</b> All must be clean, secure and fit for purpose.</p> <p><b>If not met</b> If unusable or unsafe:</p> <ul style="list-style-type: none"> <li>lock off the affected car</li> <li>tell Mechanical Control, and follow their instructions.</li> </ul>

### Skirts and steps, side and front

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be secure. Crew and passenger side steps must be in place and operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be secure. Crew and passenger side steps must be in place and operational.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> All must be secure. Crew and passenger side steps must be in place and operational.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

# Minimum operating standards

## Static inverters

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Three static inverters must be working.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Three static inverters must be working.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> Three static inverters must be working.</p> <p><b>If not met</b> Tell Mechanical Control, and follow their instructions.</p>

## Surveillance system

### Internal CCTV surveillance System

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> System and all internal cameras must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> System and all internal cameras must be operational.</p> <p><b>If not met</b> Tell Mechanical Control and follow their instructions.</p>	<p><b>Standard</b> System and all internal cameras must be operational.</p> <p><b>If not met</b> Tell Mechanical Control and follow their instructions</p>

### CCTV image recorders

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell Mechanical Control and follow their instructions.</p>	<p><b>Standard</b> All must be operational.</p> <p><b>If not met</b> Tell Mechanical Control and follow their instructions.</p>

## Minimum operating standards

### CCTV monitors

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>All must be operational.</p> <p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>Standard</b></p> <p>All must be operational.</p> <p><b>If not met</b></p> <p>Tell Mechanical Control and follow their instructions</p>	<p><b>Standard</b></p> <p>All must be operational.</p> <p><b>If not met</b></p> <p>Tell Mechanical Control and follow their instructions</p>

### Traction interlocking

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <ul style="list-style-type: none"> <li>• Traction must not be available while passenger doors are open</li> <li>• Traction must be available while passenger doors are closed.</li> <li>• Drivers TRACTION INTERLOCK light must be working.</li> </ul> <p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>Standard</b></p> <ul style="list-style-type: none"> <li>• Traction must not be available while passenger doors are open</li> <li>• Traction must be available while passenger doors are closed.</li> <li>• Drivers TRACTION INTERLOCK light must be working.</li> </ul> <p><b>If not met</b></p> <p>If the fault cannot be fixed, do not enter service.</p> <p>Tell the Signaller and Mechanical Control.</p>	<p><b>Standard</b></p> <ul style="list-style-type: none"> <li>• Traction must not be available while passenger doors are open</li> <li>• Traction must be available while passenger doors are closed.</li> <li>• Drivers TRACTION INTERLOCK light must be working.</li> </ul> <p><b>If not met</b></p> <p>If the Drivers TRACTION INTERLOCK light is not working, work the train out of service as directed</p>

## Minimum operating standards

### Traction motors

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Seven bogie pairs must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Six bogie pairs must be operational.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Six bogie pairs must be operational.</p> <p><b>If not met</b> Act in accordance with <i>OMET 264 Minimum tractive effort requirements</i>.</p>

### Train presentation

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> The train interior must be clean, dry and not have wet or offensive graffiti. The train exterior must not have offensive graffiti. Floors must not present trip or slip hazards due to defects. The train interior and exterior must be free of etching fluid.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> The train interior must be clean, dry and not have wet or offensive graffiti. The train exterior must not have offensive graffiti. Floors must not present trip or slip hazards due to defects. Must be free of human waste, blood and sharp objects.</p> <p><b>If not met</b> If considered unfit for use, lock off the affected car. Tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> The train interior must be clean, dry and not have wet or offensive graffiti. The train exterior must not have offensive graffiti. Floors must not present trip or slip hazards due to defects. Must be free of human waste, blood and sharp objects.</p> <p><b>If not met</b> If considered unfit for use, lock off the affected car. Tell Mechanical Control, and follow their instructions.</p>

## Minimum operating standards

### Trip gear

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Must be operational in terminal cars.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must be operational in terminal cars.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Must be operational in terminal cars.</p> <p><b>If not met</b> Act in accordance with <i>TWP 122 Failure of the drivers safety systems</i> Work train out of service at the first suitable location.</p>

### Water inside train



#### NOTE

Pooled water is often an indication of leaking or defective air conditioning. Act in accordance with *TWP 148 Defective air conditioning*.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b> Passenger contact surfaces must be dry. No pooled water on floors.</p> <p><b>If not met</b> Do not enter service.</p>	<p><b>Standard</b> Passenger contact surfaces must be dry. No pooled water on floors.</p> <p><b>If not met</b> Lock off the affected car. Tell Mechanical Control. If water collects in light fittings, tell Mechanical Control, and follow their instructions.</p>	<p><b>Standard</b> Passenger contact surfaces must be dry. No pooled water on floors.</p> <p><b>If not met</b> Lock off the affected car. Tell Mechanical Control. If water collects in light fittings, tell Mechanical Control, and follow their instructions.</p>

## Minimum operating standards

### Wheels

This standard is assessed by maintenance staff. Unless directed, Train Crews are not required to inspect wheels. Fault categorization is described in *TWP 136 Defective wheels*.

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>No Class 4 or Class 5 wheel scale.</p> <p>No Class 4 spalling.</p> <p>No Class 4 or Class 5 thermal cracks.</p> <p>No Class 4 damage.</p> <p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>Standard</b></p> <p>No Class 4 or Class 5 wheel scale.</p> <p>No Class 4 spalling.</p> <p>No Class 4 or Class 5 thermal cracks.</p> <p>No Class 4 damage.</p> <p><b>If not met</b></p> <p>Do not enter service.</p>	<p><b>Standard</b></p> <p>No apparent damage or defect.</p> <p><b>If not met</b></p> <p>Act in accordance with <i>TWP 136 Defective wheels</i>.</p>

### Windows

<i>At a Maintenance Centre</i>	<i>At an out depot</i>	<i>In service</i>
<p><b>Standard</b></p> <p>All must be fitted and undamaged.</p> <p><b>If not met</b></p> <p>Act in accordance with <i>TWP 150 Damaged or missing window glass</i>.</p>	<p><b>Standard</b></p> <p>All must be fitted and undamaged.</p> <p><b>If not met</b></p> <p>Act in accordance with <i>TWP 150 Damaged or missing window glass</i>.</p>	<p><b>Standard</b></p> <p>All must be fitted and undamaged.</p> <p><b>If not met</b></p> <p>Act in accordance with <i>TWP 150 Damaged or missing window glass</i>.</p>



## Minimum operating standards

### Related documents

### Effective date

12 September 2019

<i>NTR 406</i>	<i>Using train lights</i>
<i>NTR 408</i>	<i>Using whistles</i>
<i>NTR 410</i>	<i>Defective equipment</i>
<i>OMET 234</i>	<i>Defective compressors</i>
<i>OMET 264</i>	<i>Minimum tractive effort requirements</i>
<i>TWP 100</i>	<i>Responsibilities of Train Crews</i>
<i>TWP 122</i>	<i>Failure of the drivers safety systems</i>
<i>TWP 124</i>	<i>Automatic brakes</i>
<i>TWP 124</i>	<i>Defective brakes</i>
<i>TWP 136</i>	<i>Defective wheels</i>
<i>TWP 148</i>	<i>Defective air conditioning</i>
<i>TWP 150</i>	<i>Damaged or missing window glass</i>
<i>TWP 152</i>	<i>Disabled train</i>
<i>TWP 172</i>	<i>Traction Interlocking in C, K, L, R, S, V sets and Tangara trains</i>
<i>TWP 192</i>	<i>Working trains out of service</i>

**SYDNEY, 12 SEPTEMBER 2019**

**DIRECTOR SAFETY AND STANDARDS SYDNEY TRAINS**

Returned to Controlling Manager: Date: ..... Signed: .....



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*(Cut along this line and forward the detached receipt to your Controlling Manager)*

To Controlling Manager:.....

Received SAFE Notice No. 1024 – 2019 Date:..... Signed: .....

Name (print): ..... Location: .....

*(Controlling Manager to retain this Acknowledgement of Receipt of the SAFE Notice for record purposes for 90 days)*