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Version	Author	Reviewed	Reference
A	SMS Work party	Committee	TRG-002
12/12/2018			
On the ground shunter training			

Document Status

Version	Date	Revision	Prepared	Reviewed	Approved
A	12/12/2018		SMS Working Party	Committee	12/12/2018

Revision Record

Revision	Date issued	Description of Changes

On the ground Shunter Training

TRG-002

1: Introduction:

This training module will teach a OTHR RSW the skills required to gain accreditation in the role as 'on the ground shunter'.

2: Responsibilities:

It is the responsibility of all OTHR RSW to carry out their tasks in the rail corridor in a safe manner and that they don't endanger themselves or other RSW.

3: Related Documents:

- IND-006 Induction General
- TB-001 Tool Box meeting
- SOP-005 Shunting – Yard Operation
- SOP-006 Clipping Points – Yard Operation
- SOP-007 Hand Signals
- Risk assessment shunting with a Loco
- SOP-012 Shunting with a tractor
- Two Way Radios

4: Scope:

OTHR RSW will be taught:

- Where to walk and be safe
- The use of Hand Signals to alert the driver and or H/H Radios
- How to set points and the different type of point operation
- How to clip points
- How to apply the handbrake correctly and release the handbrake
- How to chock wheels
- How to couple and uncouple rollingstock and the different type of couplings

5: Safety Factors:

The rail corridor has lots of hazards and the RSW must ensure that he / she minimises the risk to these hazards by working safely and don't put oneself in a dangerous situation. Be safe Be seen.

Safe shunting depends on all workers involved and all Rail Safety Workers shall undertake a pre-shunt briefing (Tool Box Meeting) identifying risks, roles & responsibilities and planned movements. If the planned shunt is in the yard, the shunting crew should walk the planned path identifying any hazards, such as moving through turnouts. Also ensuring that the vehicle to be shunted has a working handbrake if not a match wagon with a working handbrake must be used in the shunting process.

6 Equipment risks:

The uncontrolled movement of rollingstock by either not applying the handbrake correctly, not chocking the wheels or loose shunting can be dangerous to other RSW, cause considerable damage to the rollingstock itself and / or other rollingstock, infrastructure or public property.

7: Tasks

- 7.1: Where to walk and be safe

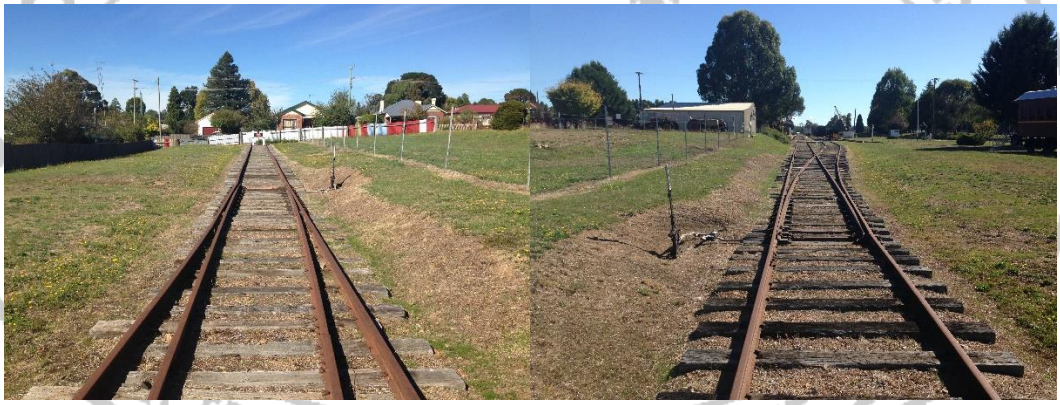
  The 'on the ground' shunter should only walk in either the 'six foot' or 'the cess' depending upon track configuration in the yard. The 'on ground shunter' should only go into the 'four foot' when the shunting vehicle / loco has come to a complete stop and the driver has confirmed that the brakes have been applied and the vehicle is in neutral. Always practices 'Be safe Be seen'.

- 7.2: The use of Hand Signals to alert the driver and or H/H radios

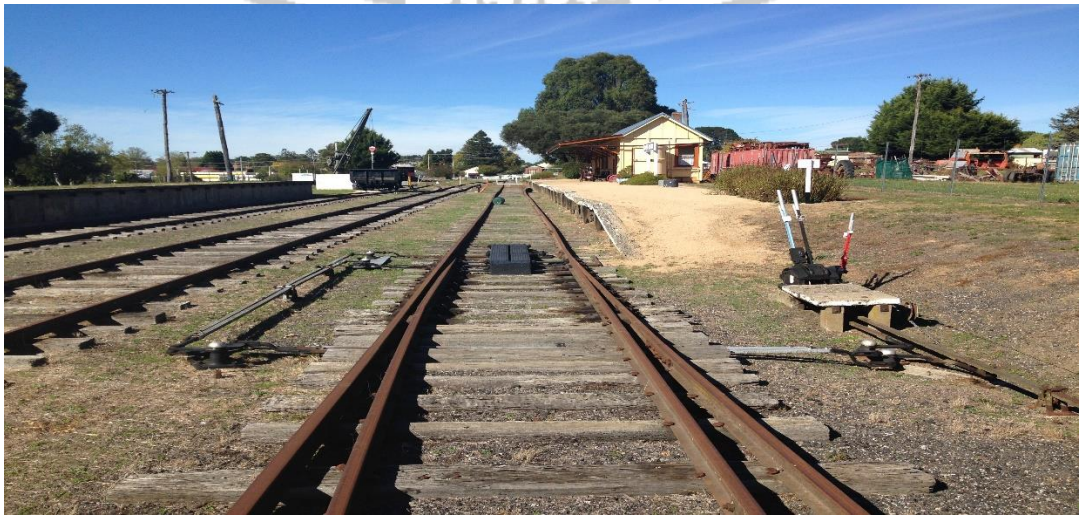
  Refer to SOP-007 Hand Signals

- 7.3: How to set points and the different type of point operation

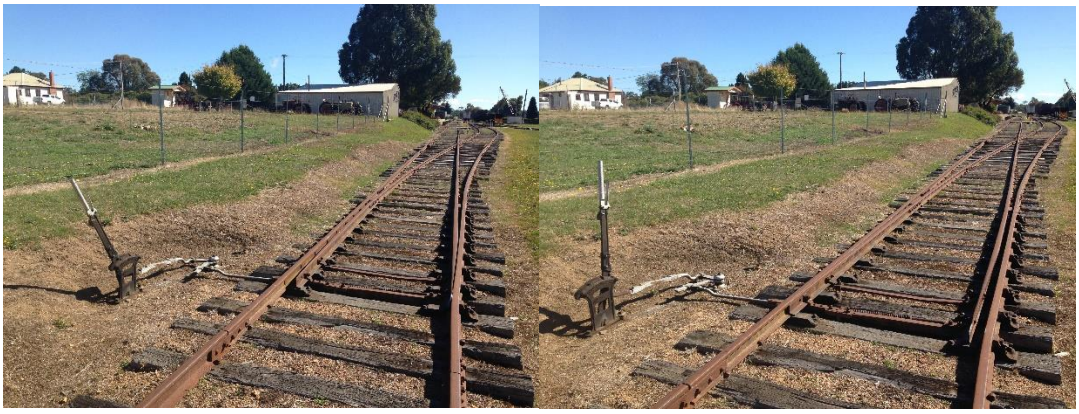
  The Oberon Yard has three different type of point operation, a catchpoint and a derailer.



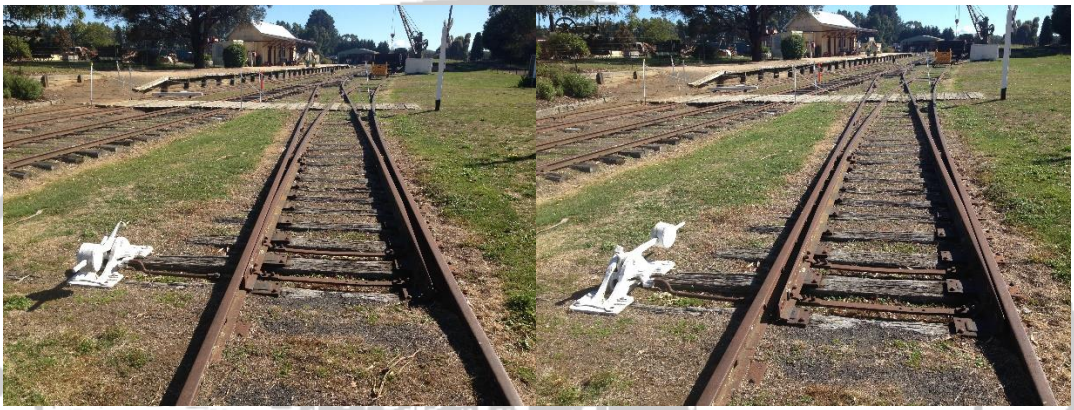
Trailing Points Facing Points



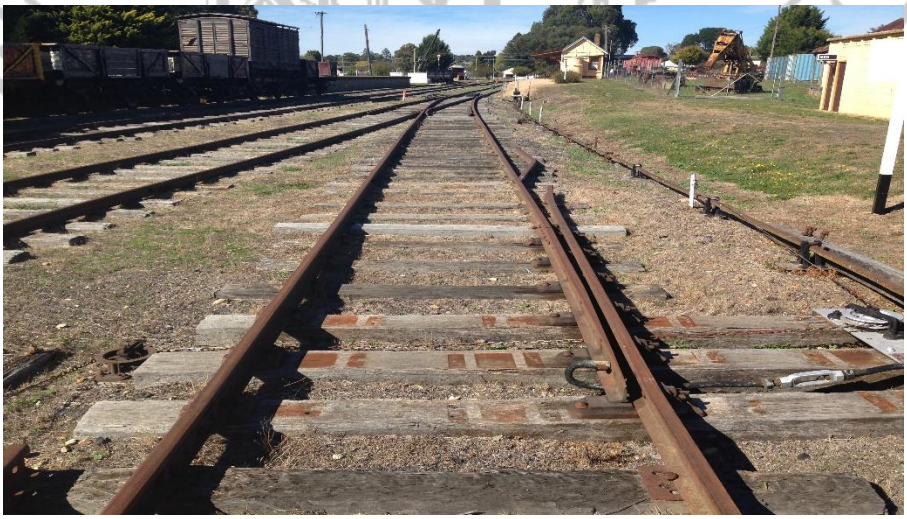
Frame points controlled by the lever 1 frame 'B' on the right



Points changed by a ‘Ball’ Lever



Points changed by a ‘Throw over’ lever



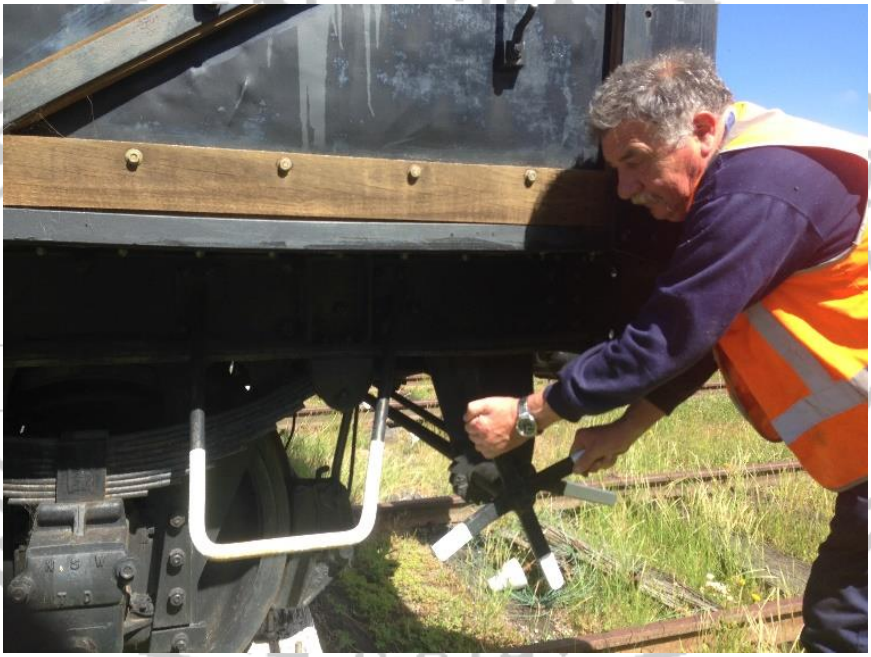
Catchpoints controlled by Lever 2 at the “B” frame

- The levers for changing the points are usually left in the home position or forward position and are pulled towards the operator and lock in to change the points. To return the points to the home push the lever away until it locked into the home position.
- 'B' Frame at the end of the station has key function to unlock the frame and the levers are marked 1 and 2. They need to be pulled 1 then 2 and when returning to the home position push 2 the 1 and lock the frame and remove the key.
- Points changed by the 'throwover' lever, just lift the lever and throw it over.

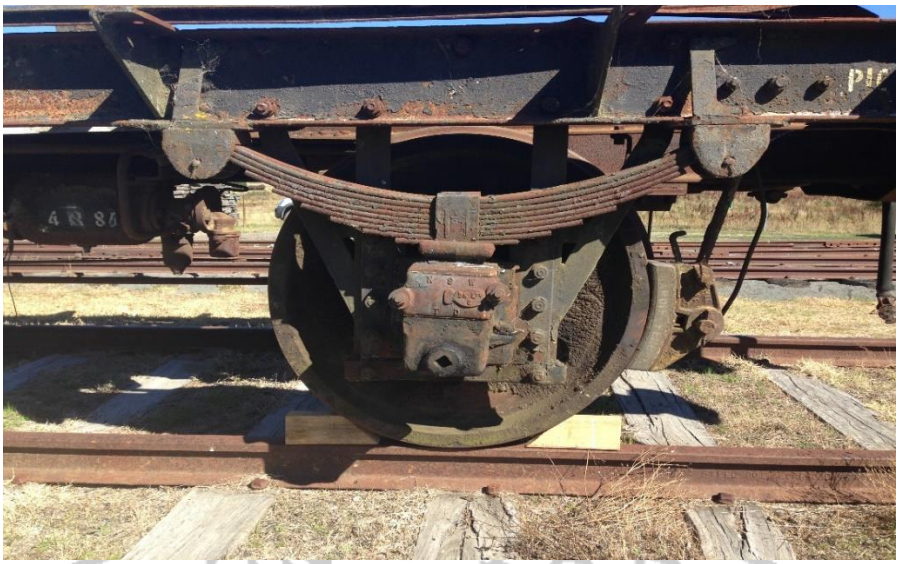
- 7.4: How to clip points

  Refer to SOP-006 Clipping Points – Yard Operation

- 7.5: How to apply the handbrake correctly and release the handbrake



- 7.6: How to chock wheels

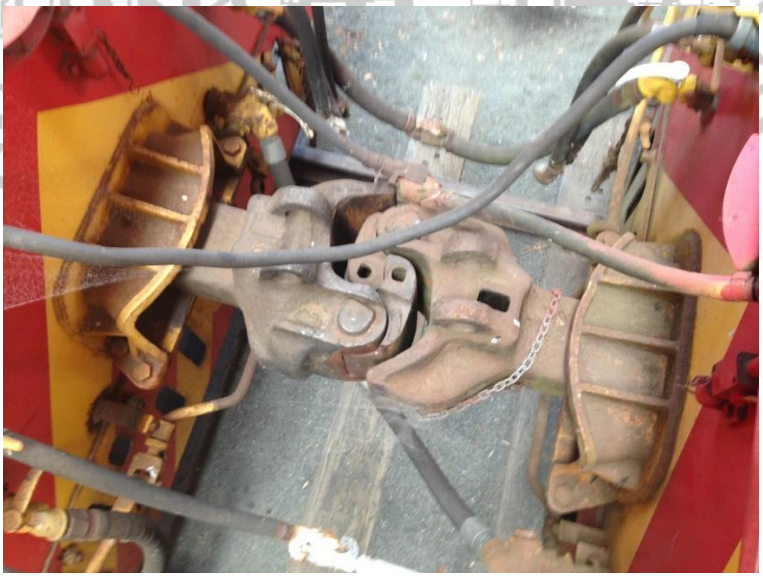


Place chocks either side of one wheel

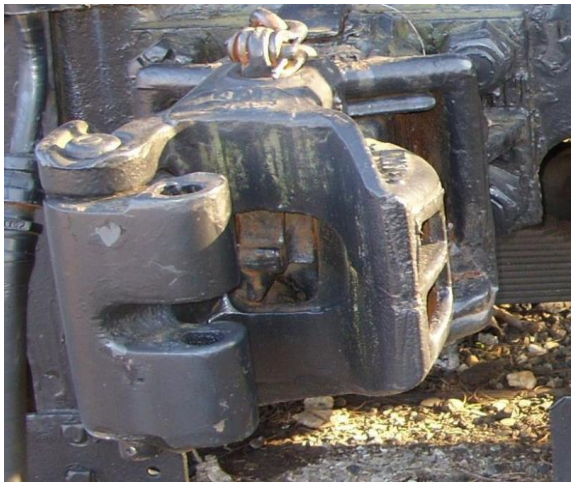
- 7.7: How to couple and uncouple rollingstock and the different type of couplings

  OTHR has three different types of couples, Auto, Drawhook and links and intermediate coupling such as used between the two end platform cars.

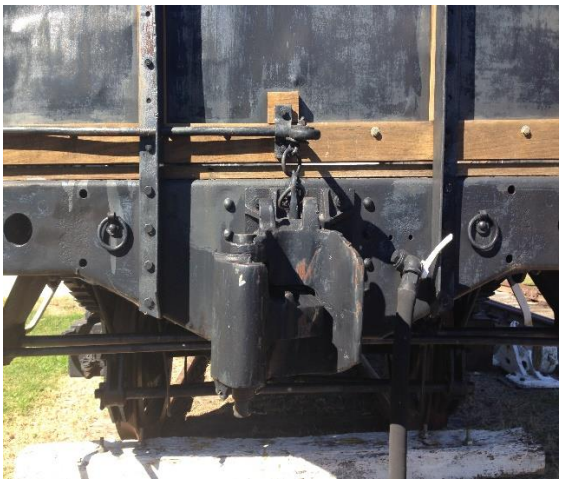
- 7.7.1: Auto couplers are used on all rollingstock now days



An example of two vehicles connected to with auto couplers



Auto coupler (closed)

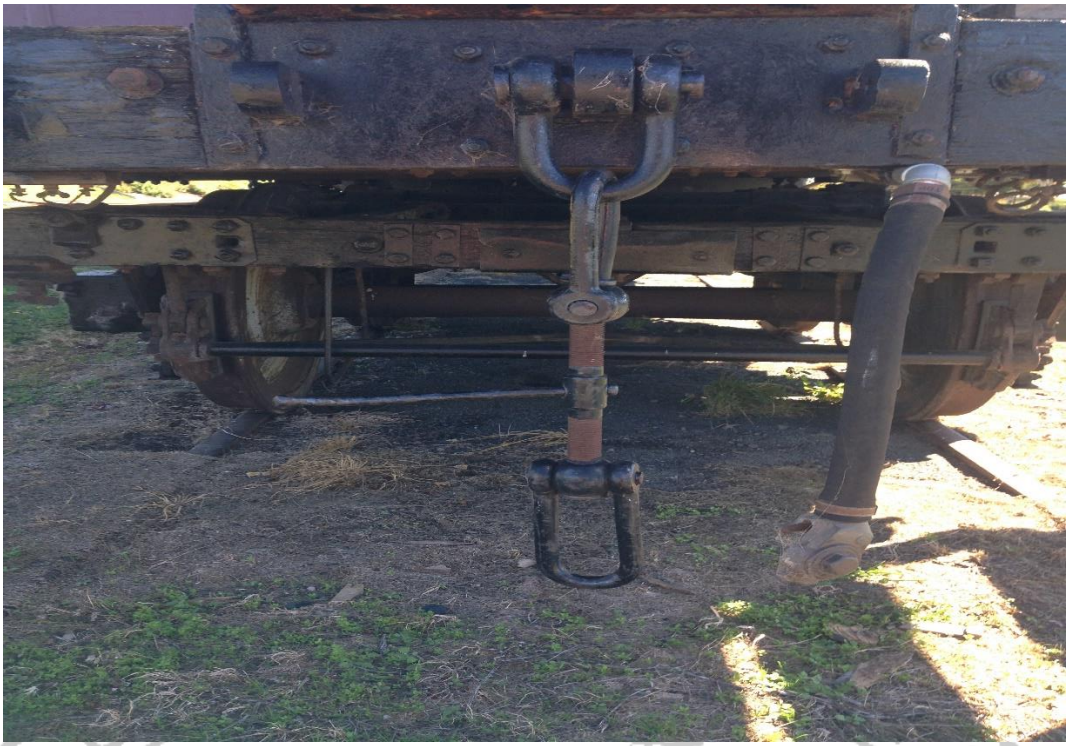


Auto coupler (open)

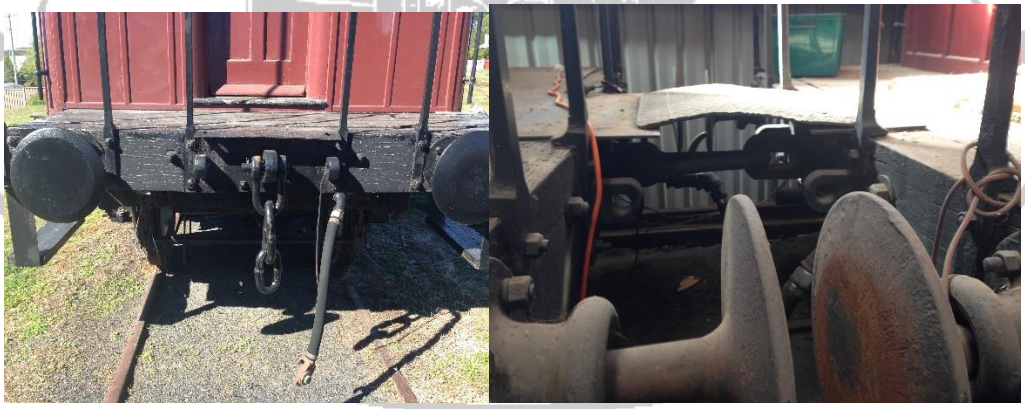
Release one handle to open the auto coupler

The three passenger carriages that OTHR has got access to are the exception. The auto coupler is much safer with the release handle on the side of the vehicle. Simple pull the release handle up on one of the vehicles and the couple will open and disconnect from the other vehicle. To connect auto to auto one auto coupler must be open.

- 7.7.2: Coupling Rolling Stock with drawhooks and links: OTHR operates a variety of rolling stock which includes vehicles equipped with drawhooks and links. On 19 May 2006, the ITSRR (ONRSR) issued a Prohibition Notice intended to ensure that the risks associated with the use of these couplings are minimised. A copy of the Prohibition Notice was issued with a General Order on 20 May 2006 and will be made available on request. The instructions contained in this Procedure are intended to give effect to the ITSRR (ONRSR) Prohibition Notice and replace the content of the General Order dated 20 May 2006. This Procedure is intended to ensure that there are no risks to personnel engaged in coupling or uncoupling rolling stock.



The link is connected to the hook on the other vehicle



Examples of 'Intermediate' links

Operational Requirements: When a vehicle fitted with buffers, vestibules or diaphragm buffer plates and drawhooks is required to be coupled to another vehicle similarly equipped using an intermediate type link connection, the operation must not be performed unless;

- the buffers are in contact and
- the vehicles are stationary and
- are secured by the handbrake or air brake. Coupling operators must not stand in the rolling stock outline and must wait until the vehicles have been brought to a stand with the handbrake before attempting to couple the vehicles. When uncoupling a vehicle, the coupling operator, after closing the air taps, disconnecting the air hoses and applying the air brake or hand brake on the vehicles being uncoupled, must not stand in the rolling

stock outline, but must come from between the vehicles before signalling the driver to ease up. When this movement has been completed and the vehicles are held in position by means of the air brake or hand brake, with buffers closely compressed, the coupling is to be removed. It is important that the air brake or hand brake is applied on both vehicles to ensure no movement is made while the coupling operator is engaged between the vehicles being uncoupled.

Care in shunting buffered rolling stock: Drivers and coupling operators are to exercise extreme care when moving vehicles and together to compress buffers to avoid risk of undue shock or damage to rolling stock.

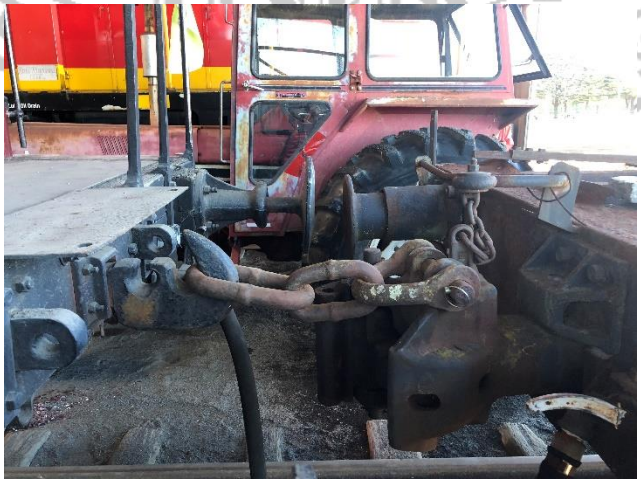
Restricted clearances Coupling operators are to be aware of restricted clearances when stepping back from within the rolling stock outline during coupling and uncoupling operations.

Specific instructions for coupling drawhook types:

Coupling vehicles with ordinary buffers and drawhooks When coupling together, engine screw couplings must be used; when coupling to vehicles, the vehicle coupling is to be used, unscrewed to its full extent and the buffers compressed sufficiently to allow the coupling to be passed over the point of the drawhook. In all cases the vehicle coupling is to be tightened only sufficiently to provide for contact of the buffers.

Coupling ordinary drawhook to

- buffered automatically coupled vehicles (e.g. S truck as a matched wagon)



- vestibule gangway buffer-equipped vehicle (e.g. FS carriage) or
- diaphragm buffer plate-equipped vehicle When coupling these vehicles, the transition links fitted to the automatic coupling head must be used and the length of the links selected between ‘long’ or ‘short’ to control the amount of slack between the buffers.

8. Equipment:

- RSW must wear PPE, carry H/H radio, Keys- SL Keys, point clips and SL locks may also be required for some shunting, deploy red flags or traffic cones if the road is blocked by an obstruction or rollingstock that may be worked on.

9. Air Brakes

Air Brake Basics

The brake system on a train is known as the "automatic brake system" because, should the train become parted due to derailment or couplers coming apart, the brakes on the train will automatically apply on both halves and the train will come to a stand.

In order to understand how the braking system works we need to look at the system in two parts, firstly as a train and secondly as individual wagons.

As a Train

The locomotive supplies air to the brake pipe through the driver's brake valve.

The brake pipe is coupled continuously throughout the entire train. This brake pipe supplies an air pressure of 500 KPa (70 psi) to each wagon brake system and is also used to control the application and release of each wagon brake throughout the train. The minimum allowable brake pipe pressure is 425 KPa (60 psi).

To apply the brakes, the air pressure in the brake pipe is reduced. This is normally controlled by the locomotive brake valve.

The amount of air pressure released directly reflects how hard the brakes are applied.

To release the brakes, the brake pipe is recharged back to the original starting pressure. This is also controlled by the locomotive brake valve.

It is imperative that the brake pipe is coupled continuously throughout the entire train so that all vehicles are controlled by the locomotive brake valve at the front of the train.

Individual wagons

The basic wagon brake system consists of 5 main components. The brake pipe, the brake pipe through cocks (end cocks), triple valve, auxiliary reservoir and brake cylinder.

The Brake Pipe carries compressed air through each wagon. The brake pipe end cock terminates / closes the brake pipe at each end of a wagon. The Triple Valve controls the application and release of the brakes on a wagon. The Auxiliary Reservoir stores the compressed air supplied by the Brake Pipe. The Brake Cylinder converts the stored energy in the compressed air into mechanical energy for applying the brake shoes against the wheels.

When charging the system, brake pipe air passes through the triple valve into the auxiliary reservoir and is stored until both pressures are equal.

Once the system is fully charged, the triple valve continuously compares brake pipe pressure against auxiliary reservoir pressure.

When the brake pipe pressure is reduced lower than auxiliary reservoir pressure (due to the driver making a brake application or should the train become parted) the triple valve will sense this difference and direct the higher air pressure stored in the auxiliary reservoir to the brake cylinder and apply the brakes.

To release the brakes, the driver must again charge the brake pipe through the driver's brake valve to the original starting pressure.

As this recharging begins, the triple valve senses the increase in brake pipe pressure and will again begin to recharge the auxiliary reservoir whilst simultaneously releasing the air in the brake cylinder to atmosphere until the brakes are released and the auxiliary reservoir is again recharged.

Section 1- General				
C = Competent NYC = Not Yet Competent N/A = Not Applicable				
Task or Procedure	**C**	**NYC**	**N/A**	**Comments**
Does the trainee hold a current RISI card or equivalent?				
Is the trainee wearing all correct PPE				
Is the trainee current with OTHR shunting procedures?				
Describe the emergency procedure for shunting Oberon Yard and intermediate sidings.				
Describe the authority required and identify the boundaries when shunting Oberon Yard and any intermediate sidings.				
Display the 6 basic hand signals. Stop, Clear, Come towards me, Go away from me, Ease up, Ease off Also demonstrate the correct use of a Tri Coloured torch.				
Demonstrate the correct use of a Hand-Held radio used by OTHR and identify the correct Radio Channels used.				
When shunting with Hand Held Radios, describe the 10 second rule used by OTHR and the reasons for its importance.				
Correctly identify the different types of point levers used by OTHR and demonstrate their correct use.				

Demonstrate correct use of a point clip and identify any hazards involved in its use.				
Describe or display correct planning for a shunt and identify who can participate in the shunt.				
Explain 3 step protection and identify when it is to be used.				

Section 2a- Shunting				
Shunting with a Shunting Tractor - Non-Air				
C = Competent NYC = Not Yet Competent N/A = Not Applicable				
Task or Procedure	**C**	**NYC**	**N/A**	**Comments**
Identify any hazards involved with shunting and describe how to manage those hazards.				
Identify the wagon(s) and the required locations to be shunted to.				
Identify that the intended motive power is appropriate for intended movements.				
Correctly set the intended route for the movement.				
When using the shunting tractor, identify any hazards involved and describe how to best manage those hazards identified.				
Demonstrate the correct attachment of the Tow Tractor draw bar to a wagon.				
Identify the main basic wagon components.				
Identify any potential hazards operating a hand brake and explain a method to manage those hazards.				
Identify the main hand brake components and demonstrate correct application and release of the hand brake including correct placement of wheel chocks.				

Identify the different couplings used by OTHR and explain their correct use.				
Identify hazards shunting wagons non-air and describe precautions to be taken.				
Demonstrate how to release an applied air brake on a wagon when required to be moved non-air.				
Demonstrate uncoupling and re coupling wagons with automatic couplers and correctly identify that the couplers are successfully locked together by a stretch test.				
Demonstrate uncoupling and re coupling wagons with Hook and Link couplers and correctly adjust the link when required.				
Demonstrate the correct fitting of a transition coupling and identify its compatibility with other couples used by OTHR.				
Describe the correct procedure when moving wagons with a defective hand brake.				

Section 2b- Shunting				
Shunting with a Locomotive With Air brake				
C = Competent NYC = Not Yet Competent N/A = Not Applicable				
Task or Procedure	**C**	**NYC**	**N/A**	**Comments**
Identify additional hazards involved when shunting wagons using air brake.				
Identify the main components that make up the air brake system on a wagon.				
Identify the air brake on a wagon when it has been applied and when it has been released.				
Demonstrate in the correct sequence, securing, then uncoupling wagons with air brake ensuring the wagon brake pipe has been correctly exhausted to atmosphere.				
Demonstrate re coupling of wagons and safely making the brake pipe continuous.				
Explain in basic form what happens to the brakes on a wagon when the brake pipe through cocks are closed before uncoupling and opened after coupling.				
Explain or demonstrate a modified and full brake pipe continuity.				

Name of participant _____

Is the participant competent Yes / No (circle)

Name of Certificate 4 Trainer _____

Signature _____ Date_____