

Safe Work Instruction	Issue date: 22/12/09
Train Body System (01): Safe Working	Review date: 15/03/11



Document no. SMS-06-SW-1284	Work description This document describes safe work practices related to the maintenance of components within the Train Body system
	Scope This document describes the hazards and controls for work by RSD staff on Rollingstock train body systems This document does not replace technical "how to" documents such as Engineering Instructions, Manufacturers instructions etc
Review date 15/03/11	References <ul style="list-style-type: none"> • OHS Act 2000 • OHS Regulations 2001 • Rail Safety Act 2008 • SMS-12-OI-0886 Red Flagging Trains in stabling yards, depots and Maintenance Centres • SMS-06-SW-1151 Overhead Travelling Crane - Safe Operation • SMS-06-SW-0400 Forklift Trucks • SMS-06-SW-1160 Working on High Roads • SMS-06-SW-0836 Isolating 1500V DC OH using an Annett Key • SMS-06-SW-1133 Guard's Emergency Cock Lock-Out • SMS-06-SW-0838 Pantograph Raising and Lowering • SMS-06-SW-0891 Train Radio Isolation • SMS-06-GD-0268 Working Around Electrical Equipment • SMS-06-PR-0173 Plant and Equipment Lock-out Tag-out • SMS-06-SW-0405 Handling Sharps • SMS-06-GD-0240 Working At Heights • SMS-06-PR-0104 Workplace Risk Management • SMS-06-GD-0001 Guide to Manual Handling • SMS-06-SW-0487 Entering Trains from Ballast • SMS-06-SW-0488 Climbing out of Trains onto Ballast • SMS-06-SW-0809 Pneumatic Tools • SMS-06-SW-1130 Electrical Isolation Diesel Fleet • SMS-06-SW-0264 Portable Ladders, Stepladders and Step Platforms • SMS-06-SW-1290 Fibreglass Repairs - Safe Working • SMS-06-GD-0323 Personal Protective Equipment



Responsible supervisor	PPE and precautions	Competencies or qualifications	Licences or permits required
Line Manager	<ul style="list-style-type: none"> • High visibility vest or clothing • Safety Footwear • Protective gloves, as required • Safety Eyewear, as required • Respiratory protection, as required 	<ul style="list-style-type: none"> • Rail Industry Safety Induction (RISI) • Site specific induction • Electrical Safety Awareness • Competent in the use of this SWI • Competent in the use of relevant technical documents (eg. EIs) • Competent in body work • Manual Handling Training • Working at Heights Training as required 	




Tools and equipment required

- Red Flag
- Personal Locks, Multi-locks (Hasps) and/or Danger tags, as required
- Power tools & Hand tools

IF CONTROL MEASURES ARE NOT SUITABLE AND MAJOR CHANGES ARE NEEDED, CONDUCT A RISK ASSESSMENT AND DEVELOP NEW CONTROLS ACCORDING TO [SMS-06-PR-0104 WORKPLACE RISK MANAGEMENT](#).

	Note Pre work brief and task risk assessment Ensure a pre-work brief and detailed task risk assessment is undertaken with all team members involved in the work activity. If any new/additional team members arrive any time later they must be briefed before they commenced work.
	Warning <i>The following warnings apply throughout this SWI:</i> <ul style="list-style-type: none"> • <i>Working with power tools can be hazardous. Where possible use non-powered or battery operated tools.</i>





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	<p><i>If power tools are required, always work in accordance with the relevant SWI or manufacturers instructions, if no SWI is available</i></p> <ul style="list-style-type: none"> <i>Beware of syringes and other contaminated items that may be hidden within body components such as under seats, behind panels etc. Never reach into an area you cant see, wear gloves, as required and only handle sharps in accordance with SMS-06-SW-0405 Handling Sharps</i> <i>Body system components can be heavy and / or awkward to manipulate. Where possible use manual handling aids and/or seek assistance. Whenever manually handling, work in accordance with your training</i> 	
Competency	<p>Staff are to be trained and supervised to ensure they:</p> <ul style="list-style-type: none"> Transport required parts, tools and equipment to and from the work area using manual aids (such as trolleys) so as to minimise the risk of manual handling injuries Carry out the tasks in accordance with relevant Engineering and Operational Instructions Implement necessary controls, in accordance with this document Work with Line Manager to identify any additional hazards and implement controls in accordance with relevant SWIs and other SMS components 	
Place Red Flag	To notify persons that work is being carried out in or around the train you must place a Red Flag in accordance with SMS-12-OI-0886 Red Flagging Trains in stabling yards, depots and Maintenance Centres	
Investigate Work Required	<p>Once the red flag is in place, inspect the body component(s) to determine the work required</p> <p>Identify the relevant tools, equipment and parts that will be required</p> <p>Identify any other relevant SWIs (eg. SWIs for relevant tools) that will document hazards and their controls</p> <p>Collect identified items from the store and transport to the location using manual handling aids (eg. trolleys)</p> <p>Where possible, climb in and out of the train from platforms. If using steps or stairs provided always use 3 points of contact when climbing in or out of trains. If it is necessary to access from ballast always do so in accordance with SMS-06-SW-0487 Entering Trains from Ballast and SMS-06-SW-0488 Climbing out of Trains onto Ballast</p>	
Isolation	<p>Before commencing any work on the body, isolation is required to protect from injury or death. The isolation required may vary, depending upon the work, and should be determined in conjunction with line management, however the following is mandatory</p>	
<i>For Electric Fleet</i>	<p>To protect from the movement of Electric Trains always</p> <ul style="list-style-type: none"> Lower the pantograph(s), in accordance with SMS-06-SW-0838 Pantograph Raising and Lowering, SMS-06-GD-0268 Working Around Electrical Equipment and / or Isolate the road, in accordance with SMS-06-SW-0836 Isolating 1500V DC OH Using an Annett Key, and / or Isolate the guard's emergency cock, in accordance with SMS-06-SW-1133 Guard's Emergency Cock Lock-Out 	
Check	Visually inspect that the pantograph(s) has been lowered from the overhead power supply	
	<p>Warning</p> <p><i>Ensure all pantographs are lowered in accordance with SMS-06-SW-0838 Pantograph Raising and Lowering. Visually check that the pantographs are lowered. Do not simply rely on the pantograph air pressure gauge, this will not guarantee that the pantographs are lowered. Failure to confirm that pantographs are lowered correctly may lead to serious INJURY or DEATH.</i></p>	
<i>For Diesel Fleet</i>	<p>To protect from the movement of Diesel Trains always:</p> <ul style="list-style-type: none"> Shut down the engine and apply the park brake fully Apply local road isolation (e.g. lock the boom gate, position the stop board and position chocks) 	
	<p>Warning</p> <ul style="list-style-type: none"> <i>Failure to correctly isolate all energy sources could result in serious injury or death. Always verify that isolation has been achieved and, if in doubt, seek assistance from your Line Manager</i> 	
Isolation – Electrical Energy	<p>Additional isolation may also be required. The specific isolation required may vary, depending upon the work, and is to be determined in conjunction with relevant technical documents and the Line Manager</p> <p>However, to protect from electrical energy within the body system always:</p> <ul style="list-style-type: none"> Isolate electrically by switching the relevant circuit breaker and / or electrical switch. Refer to: SMS-06-GD-0268 Working Around Electrical Equipment 	

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	<ul style="list-style-type: none"> Confirming overhead power and / or shore supply is isolated, as necessary, and Apply personal locks, multi-locks and/or tags to all isolations, in accordance with <u>SMS-06-PR-0173 Plant and Equipment Lock-out Tag-out</u> <p>For Diesel Fleet:</p> <ul style="list-style-type: none"> Ensure relevant isolations are carried out in accordance with <u>SMS-06-SW-1130 Electrical Isolation-Diesel Fleet</u> 	
	<p>Note</p> <p>If due to its design, it is currently not possible to apply a lock or tag to a switch or circuit breaker:</p> <ul style="list-style-type: none"> Isolate the circuit Lock or seal (using tape) the Control Panel Attach a Danger Tag to the Control Panel door 	
	<p>Warning</p> <ul style="list-style-type: none"> Train antennas generate a radiation field that can be hazardous to your health. Work on the train body can expose you to this radiation if the antenna is not isolated, always confirm the antenna has been isolated in accordance with <u>SMS-06-SW-0891 Train Radio Isolation</u> before working in proximity to an antenna 	
Carry Out Body System Work	Once isolation and other relevant controls have been put in place, carry out the body work and always ensure the safety of yourself and others	
	<p>Warning</p> <p>Some body work has unique hazards. These include:</p>	
<i>Nose Canopy or Nose Cone & Cow Catcher Removal & Replacement</i>	<p><i>Electric Fleet:</i></p> <ul style="list-style-type: none"> Various hazards associated with working from high roads. Always work in accordance with <u>SMS-06-SW-1160 Working on High Roads</u> Fall from heights. Always use an approved, appropriate height step ladder and work in accordance with <u>SMS-06-SW-0264 Portable Ladders, Step Ladders, and Step Platform</u> Manual handling injury when handling the canopy. To prevent injury seek assistance, use manual handling aids. Always work in accordance with your manual handling training <p><i>Diesel Fleet:</i></p> <ul style="list-style-type: none"> Electric shock hazard. Confirm all electrical connections to the lights are dead before disconnecting overhead crane hazards. This task may involve the use of an overhead Crane to lift parts. Always work in accordance with <u>SMS-06-SW-1151 Overhead Travelling Crane - Safe Operation</u> Air blast injury. Always isolate the air supply and apply a personal lock and/or tag, in accordance with <u>SMS-06-PR-0173 Plant and Equipment Lock-out Tag-out</u>. Then, bleed all downstream air before disconnecting hoses. Additionally, wear eye protection refer to: SMS-06-SW-0323 Personal Protective Equipment Forklift hazards when lifting and moving parts. Forklifts present a serious crush hazard. Ensure the operator has a clear path to travel and work at all times. Hydraulics can creep so never allow anyone to work beneath lifted equipment. Only trained/competent forklift operators are to drive or otherwise use forklifts in accordance with <u>SMS-06-SW-0400 Forklift Trucks</u> 	
<i>Car or Set Change</i>	<ul style="list-style-type: none"> Hazards from unexpected train movement. Ensure persons are clear of the train, unless train movement isolations are in place (see page 2, under headings isolation, isolate the road and warning, failure to correctly isolate all energy sources etc) To prevent incidents ensure continuous communication between the shunter and the train driver is maintained Electric shock hazard. Confirm all electrical jumpers/connectors are dead before disconnecting (see page 2, under headings isolation and warning, failure to correctly isolate all energy sources) Air blast injury. Always isolate the air supply and apply a personal lock and/or tag, in accordance with <u>SMS-06-PR-0173 Plant and Equipment Lock-out Tag-out</u>. Then, bleed all downstream air before disconnecting hoses. For further protection, wear eye protection Slip, trip & fall hazards when walking on ballast and climbing into and out of trains. Where possible, climb in and out of the train from platforms. If using steps or stairs provided always use 3 points of contact when climbing in or out of trains. If it is necessary to access from ballast always do so in accordance with <u>SMS-06-SW-0487 Entering Trains from Ballast</u> and <u>SMS-06-SW-0488 Climbing out of Trains onto Ballast</u> 	

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<i>Glass Removal & Replacement</i>	<ul style="list-style-type: none"> • Injury from falling glass. Ensure all persons are clear of the potential drop zone and that the glass is clean and free of contamination, so suction cups can attach correctly • Fall from heights. Always use an approved, appropriate height step ladder and work in accordance with <u>SMS-06-SW-0264 Portable Ladders, Step Ladders, and Step Platform</u> • Manual handling injury when handling glass, especially if it is above chest height. To prevent injury seek assistance (team lift), source an approved, appropriate height step ladder and make use of suction caps. Always work in accordance with your manual handling training. Refer to: <u>SMS-06-SW-0001 Guide to Manual Handling</u> • Lubricant hazards from spray mist, vapours & spillage of lubricants in liquid form can present hazards such as; slips from spillage of lubricants and mist particles on floor, eye injuries from vapours and mist. When using lubricant to install glass use a minimal amount and to further protection always wear safety eyewear, protective gloves and respiratory protection. For further information on hazards & controls refer to local risk assessment process, refer to <u>SMS-06-SW-0323 Personal Protective</u> • Cuts from glass and knives used to trim seals. Always wear cut resistant gloves
<i>Drivers Chair Removal & Replacement</i>	<ul style="list-style-type: none"> • Air blast injury. Always isolate the air supply and apply a personal lock and/or tag, in accordance with <u>SMS-06-PR-0173 Plant and Equipment Lock-out Tag-out</u>. Then, bleed all downstream air before disconnecting hoses. For further protection, wear eye protection during this step • Manual handling injury when handling the chair. To prevent injury seek assistance, use manual handling aids, keep your back straight and avoid stretching, bending and over reaching. Always work in accordance with your manual handling training. Refer to: <u>SMS-06-SW-0240 Working at Heights</u>
<i>Fibreglass Repairs</i>	<ul style="list-style-type: none"> • Multiple hazard exposure when working with Fibreglass. Always work in accordance with <u>SMS-06-SW-1290 Fibreglass Repairs – Safe Working</u> and refer to; <u>SMS-06-SW-0323 Personal Protective</u>
<i>Floor & Sheet Metal Maintenance</i>	<ul style="list-style-type: none"> • Cuts from sheet materials, associated hardware and hand tools used. Always wear protective gloves • Injury from power tools used. Always work in accordance with the tools SWI or manufacturers instructions if no SWI is available. Never use a tool that is defective instead tag the equipment out, in accordance with <u>SMS-06-PR-0173 Plant and Equipment Lock-out Tag-out</u>, and notify your Line Manager as soon as practicable • Using pneumatic tools can be hazardous always work in accordance with <u>SMS-06-SW-0809 Pneumatic Tools</u> • Some of the glues and solvents used present a risk of acute (short term) and/or chronic (long term) illness. Ensure personnel are familiar with the controls identified in relevant risk assessments • Manual handling injury when handling floor & metal sheets. To prevent injury seek assistance (team lift), use manual handling aids. Always work in accordance with your manual handling training refer to: <u>SMS-06-SW-0001 Guide to Manual Handling</u>
<i>Internal Fittings& Fixtures Removal & Replacement</i>	<ul style="list-style-type: none"> • Working with electric or pneumatic powered tools can be hazardous. Where possible use non-powered or battery operated tools. If power tools are required, always work in accordance with the relevant SWI • Stick injuries from hidden syringes or other contaminated sharps hidden in compartments, or other concealed areas. Never reach into an area you cant see, wear gloves, as required and only handle sharps in accordance with <u>SMS-06-SW-0405 Handling Sharps</u> • Hand injuries from protrusions and sharp edges on components. Always wear protective gloves • Working with spray lubricant can be hazardous. These include slip, spray mist & fume hazards as well as an eye injury hazard. When using Liquids to install Decals use a minimal amount and for further protection always wear safety eyewear, protective gloves and respiratory protection. Refer to: <u>SMS-06-GD-0323 Personal Protective Equipment</u> and for further information regarding hazards & controls refer to local risk assessment process • Cuts from scrapers and knives used to remove decals. Always wear cut resistant gloves
<i>Working on the Roof</i>	<ul style="list-style-type: none"> • Electric shock from failure to carry out the isolation of the Over Head Power and of relevant roof equipment circuits, including the placement of a lock and/or tag in accordance with <u>SMS-06-PR-0173 Plant and Equipment Lock-out Tag-out</u>, before any work on electrical components commences. Failure to correctly isolate electrical equipment before interacting with it could result in injury or death. Always verify isolation has been achieved before proceeding with work in accordance with Isolation Electrical Energy on page 2 • Various hazards associated with working from high roads. Always work in accordance with <u>SMS-06-SW-1160 Working on High Roads</u>

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	<ul style="list-style-type: none"> Overhead crane hazards. Work on the roof may involve the use of an overhead Crane to lift equipment. Always work in accordance with <u>SMS-06-SW-1151 Overhead Travelling Crane - Safe Operation</u> and relevant task SWIs Air blast injury. Always isolate the air supply and apply a personal lock and/or tag, in accordance with <u>SMS-06-PR-0173 Plant and Equipment Lock-out Tag-out</u>. Then, bleed all downstream air before disconnecting hoses. To further protection, wear eye protection Injury from falling items e.g. tools, hatches, etc. Ensure all persons are clear of the potential drop zone and that items are positioned and secured to prevent falls from height, Refer to: <u>SMS-06-SW-0240 Working at Heights</u>
	Warning <ul style="list-style-type: none"> A hatch opening unexpectedly can cause a serious incident. On completion of work in this area, ensure all hatch pins are secured correctly and seals attached
Side Skirt Removal & Replacement	<ul style="list-style-type: none"> <i>Potential finger or hand-crush injuries. To prevent injury, seek assistance when removing and replacing skirts, also ensure all supporting struts are serviceable to prevent unexpected movement. For further protection against hand injury, wear protective gloves</i> Manual handling injury when handling side skirts. To prevent injury seek assistance (team lift). Use manual handling aids, keep your back straight, and avoid stretching, bending and over reaching. Always work in accordance with your manual handling training, Refer to: <u>SMS-06-GD-0001 Guide to Manual Handling</u> <i>Electric shock hazard from contact with equipment conductive components and wiring when working on side skirts. Ensure electrical isolation is in place and verified before commencing work</i>
	Warning <ul style="list-style-type: none"> An unsecured skirt opening unexpectedly can cause a serious incident. On completion of work in this area, ensure all sluice pins are secured correctly
	Note <ul style="list-style-type: none"> Always carry out any "body work" in accordance with relevant Engineering and Operational Instructions
Clean Up	Once work is complete, remove tools, equipment & parts and dispose of rubbish in waste disposal containers / bins
Remove Isolation	Once area is safe, remove all previously applied isolations , in accordance with the referenced SWI
	Warning <ul style="list-style-type: none"> <i>Only remove your own isolation. The removal of another persons lock and / or tag may result in their injury or death. Offenders will be subject to strict disciplinary action and may be subject to prosecution by the regulator</i>
Remove Red Flag	Remove your Red Flag, in accordance with <u>SMS-12-OI-0886 Red Flagging Trains in Stabling Yards, Depots and Maintenance Centres</u>
Notify	Notify Line Manager (supervisor or foreman) of completion, as required
Additional controls	
<p><i>Other controls may be necessary, depending upon the work being carried out. Refer to relevant SWIs</i></p> <p><i>If you identify additional hazards and / or controls relevant to this SWI, notify your Safety Facilitator or Line Manager as soon as practicable, so they can be noted and used to continuously improve this document</i></p>	