



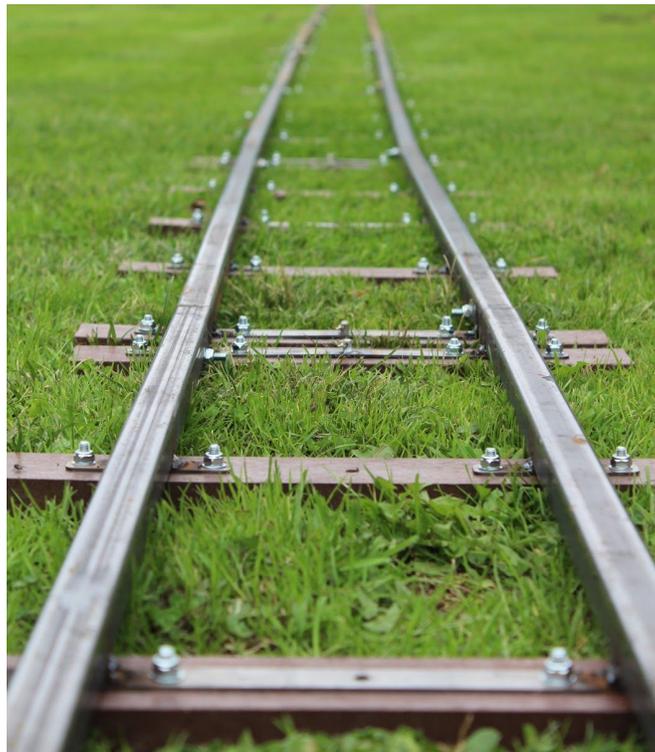
Miniature Railway Workshop Limited.

www.miniaturerailwayworkshop.com

Registered office; 38 High Street, Watton, Norfolk, IP25 6AE

Email. miniaturerailwayworkshop@gmail.com

Tel. 07591 006642



Operating instructions for the range of Portable Jubilee Track.

Version 4 (24/06/2020)



Preface

Miniature railways are not a toy, the power of a miniature locomotive is significant and the momentum of a moving train is equivalent to that of a car. They should be treated with the respect and caution that they deserve. We have outlined as much guidance as we are able, but it is down to you to implement your own risk assessments and put in place safe working practices. Please also remember to use a good amount of common sense and most of all enjoy using your track.

Content table

General Operating Instructions For The Portable Jubilee Track.	2
Introduction	2
The Track	4
Monitoring Wear and Tear	5
Yes it Will Rust	5
Maintenance	5
Assembly of Jubilee Portable Track	6
Track Panel Tie Bar	6
Ensuring The Jubilee Track Is level	7
Packing	8
Periodic checks	9
Storage	9
Transportation	9
PPE	10
End of life	10
Product Specific Guidance	11
Buffer Stops	11
Using the buffers	12
Curves	13
Points	13
Loading ramp	13
Safe Use	13
Alignment	14
Locating Lugs	15
Supporting the ramp.	15

General Operating Instructions For The Portable Jubilee Track.

Introduction

MRW Jubilee Track is a range of portable miniature railway track designed to be regularly laid and taken up. It is not the intention of the design to be a scale model railway track, but instead to make a reliable safe product that balances the constraints of scale against that of safety to produce a design that is fit for its purpose. This document outlines some general instructions and advice for using the Jubilee Track and specific product guidance for MRW products such as buffers, points and loading ramps.

Why is it called Jubilee Track? Jubilee Track is a common name given to portable narrow gauge railway track dating back over a century. Narrow gauge railways were used in many forms of industry including: mines, quarries, construction sites, archaeological sites, tunnelling, military campaigns, farms, peat workings, engineering workshops, sugar plantations, canal dredging, salt works and sewage works. The track MRW produces is a scaled down version of that early portable track and therefore we use the name Jubilee. You can use the MRW Jubilee track for both industrial use and passenger carriage but today we tend to focus on the movement of people rather than sewage.

A standard Jubilee Track straight section weighs approximately 6.9kg; we recommend that only one panel is carried at a time. We advise the use of appropriate Personal Protective Equipment (PPE) when handling the track, during laying, transportation and storage. For more information consult the [PPE section](#).

It is the operators responsibility to ensure the day-to-day safety of the railway. This includes tasks such as 'walking the track' before operating to ensure all rolling stock and track is in a suitable condition. For more information about this please consult the HS2020 guidelines from the Passenger Carrying Miniature Railway Safety Group (PCMRSG). Consult the following website for guidance :- www.pcmrsg.org.

Please take a moment to read this document through thoroughly and refer back to the MRW website of any updates.

MRW products are not for children, any person under the age of 16 must be supervised.

The Track

The track has a number of named components and these are shown in the below figure, these are referred to throughout this document.

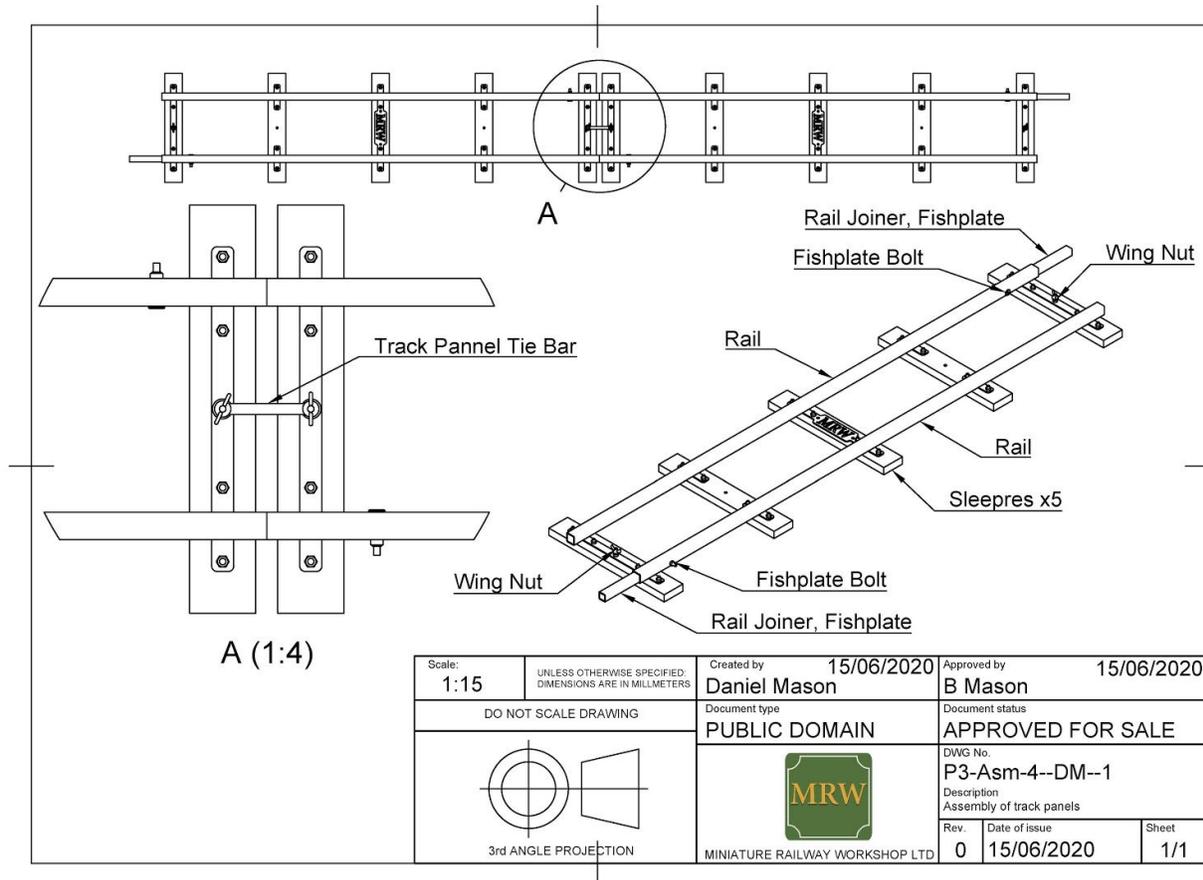


Fig (1) General assembly drawing of Jubilee Track assembly and component names, PDF available on the [“Technical”](#) page of our website.

The track is made from mild steel with plastic wood sleepers, more information on the design is available through the website: www.miniaturerailwayworkshop.com

Prior to dispatch, the Jubilee portable track is assembled to ensure accurate alignment. We also often test it in our workshop by running a train over it, in order to assess its effectiveness.



Monitoring Wear and Tear

We are not aware that any MRW portable track has suffered a significant amount of wear, however we do recognise that you might love using your track so much that you are out running trains on it every day! Therefore we recommend that you monitor the possible wear on the rail, particularly where the wheel comes into contact with the track and make sure this is not excessive. If the contact section of the rail wears significantly it will impair the structural rigidity of the track panel and could lead to failure. Panels should be replaced if significant wear is visible; see [end of life section](#).

The track should also be closely inspected periodically for signs of failure; such as failed nuts and bolts, weld failure and stress fractured steel.

WARRANTY: Defective items will be repaired/replaced free of charge within one year from the date of sale, provided there is no misuse of the product to cause the defect.

Yes it Will Rust

The track is designed to be lifted when not in use and stored inside to minimise rust.

We have chosen not to paint the rail as this would quickly wear away with the passage of trains, therefore the rail will pick up surface rust through its use. This should be monitored by the operator to ensure that this rust does not become excessive and impair the structural integrity of the track panel.

WARNING: The steel has been coated in oil, this is classed as a carcinogenic and the user should avoid contact with skin/eyes and ingestion.

Maintenance

Jubilee Track is designed to be portable and as such easy to assemble and disassemble. It may be necessary to make an application of heavy grease to the Fishplate, this will assist in assembly and disassembly of your railway. If the track is to be left outside for prolonged periods (weeks or months) we recommend that you ensure it has a generous amount of grease applied before being laid otherwise the track rail joints may rust together and make disassembly difficult.

If the track is to be used outside for prolonged periods (multiple months) we recommend that you lift the track periodically, to re-grease the joints and inspect the track closely for signs of damage. (NOTE: Always read and follow grease manufacturers' instructions).

WARNING: Ensure that no grease is able to reach the contact edge of the rail with the wheelsets, as this could cause impaired braking to trains.

Assembly of Jubilee Portable Track

To assemble the Jubilee Track the first section should be laid on a suitably flat surface. The next section to be laid should be placed as shown in the image below. By inserting the Fishplate into the opposing rail, the track will then become joined.

Caution: Risk of trapping fingers in the joints during assembly, keep hands clear from fishplate when assembling and wear gloves.

You may receive the Jubilee Track in a 95% assembled state, we occasionally remove Fishplates to reduce courier costs, to attach the Fishplate; simply slide them inside the rail and fit the Fishplate Bolt, Nut and Washer provided. A 10mm spanner and 4mm allen key can be used to tighten the bolts so that the nut rests against the rail.

Track Panel Tie Bar

On straight sections of track the likelihood of sections becoming detached is very minimal and the tie bar really is not needed. On curves, points and buffer stops where trains may cause the track to separate, the tie bar is recommended to ensure your railway stays firmly connected.

Caution, if it is possible for the track panels to separate with the passage of trains, then “Track Panel Ties” (see below) **must be fitted** in order to prevent this.

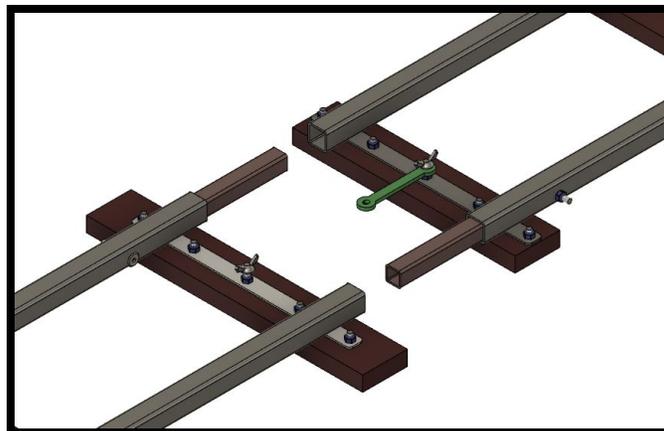


Fig (2) Joining of Jubilee Track panels. Note: The Tie bar isn't normally Green.

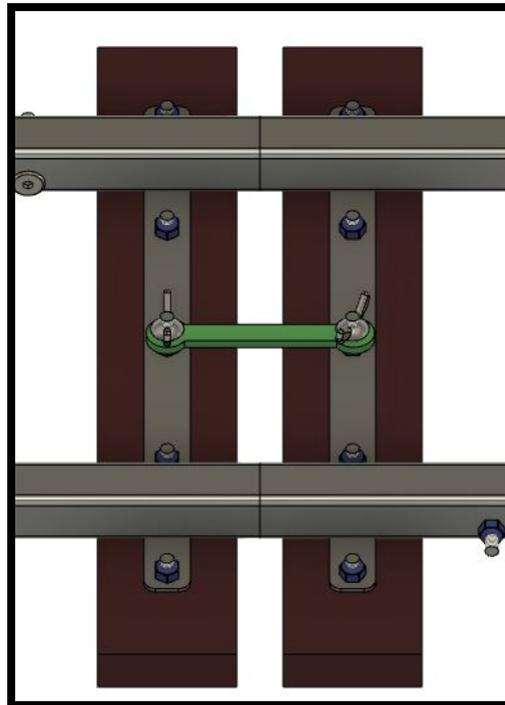


Fig (3) Use of Track Panel Ties. Note: The Tie bar isn't normally Green.

Wing-nuts are provided to hold the "Track Panel Tie" in place, these should be used.

Ensuring The Jubilee Track Is level

Before laying any track, consider the site and the ground conditions some surfaces are not suitable due to soft ground or uneven surface. The smoother the surface the less packaging is needed which significantly reduces set up time.

The track should be kept as level as possible, with a short spirit level check at the camber of the track. Further check the track with a visual inspection by getting down low to track level and looking along its length. Run test trains along the track to ensure it is level before taking passengers. Regularly re-check the level of the track and make adjustments to packing where needed.

On curves a slight super elevation may be beneficial (where the outside rail is higher than the inner) this is for the operator to decide, we do not recommend a difference greater than 5 mm of height between rails. To achieve super elevation additional packing is commonly used (see section below).

Packing

Packing is the term used for supporting the track to make it level when laid on uneven surfaces. We recommend that you carefully consider the surface you intend to lay your Jubile Track to reduce the amount of packing needed. Packing normally comprises of small pieces of plywood approx 15 x 15 x 1cm that can be placed under the sleeper to provide appropriate support. If needed; packing pieces should be under any sleeper that does not touch the ground due to a dip in the surface under that section.

If packing is to be used we recommend that the track is inspected regularly during use to ensure that the packing pieces have not moved with the passage of trains (if necessary check more frequently). We do not recommend the use of more than three packing pieces or a height exceeding 3 cm of total packing under any one sleeper.

The placement of the packing should be directly under the rail and sleeper as shown in the image below, this will ensure the weight of the train passing above is transmitted directly onto the ground.

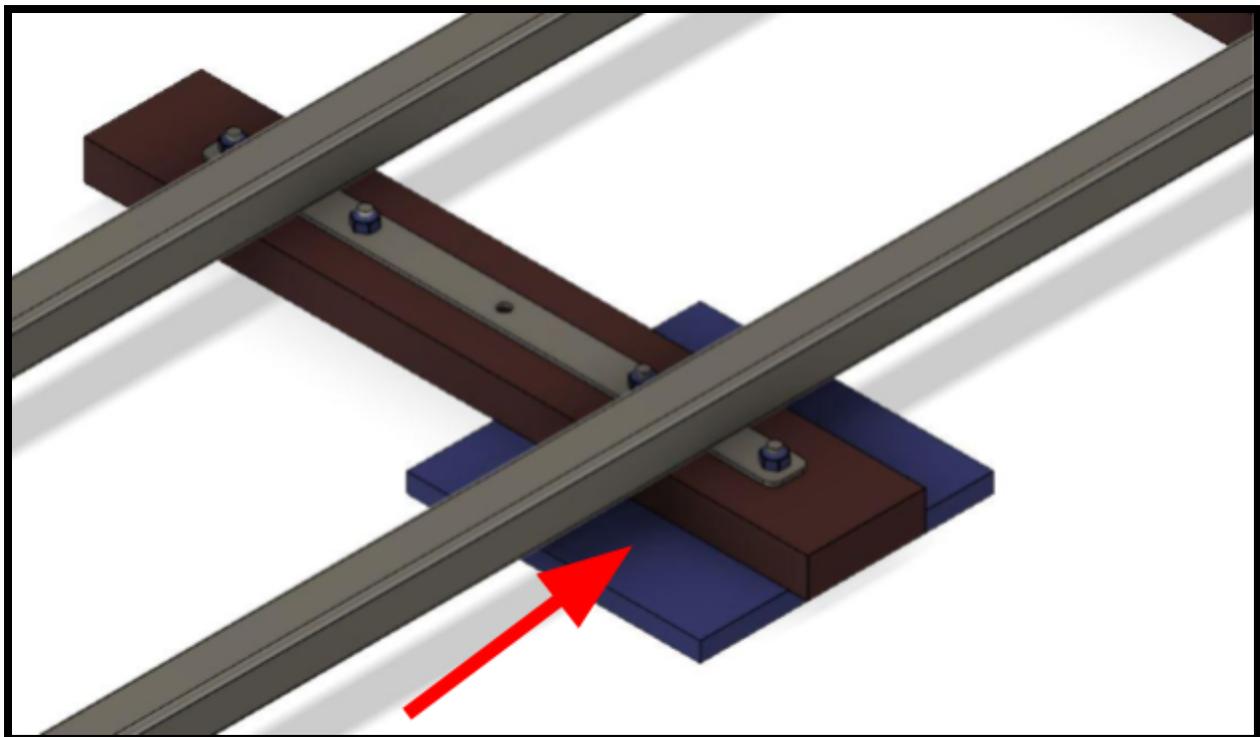


Fig (4) Placement of Packing piece.

If multiple packing pieces are required then it should be done, and if necessary use packing under more than one sleeper.

Periodic checks

Portable track requires continuous monitoring to ensure it is safe for use. The track is not normally ballasted and can therefore move with the passage of trains. The operators should regularly check that the track is in safe condition for use.

Where no “Track Panel Tie Bar” is used on straights, attention should be given to check that the panels have not become significantly separated as shown in the below image.



Fig (5). Example of excessive gap.

If an excessive gap forms in a joint the track should be moved to close the gap.

Storage

When storing the track, it is common to stack the sections on top of one another. A useful tip is to stack them alternatively with one track panel facing up then the next panel facing down as this will reduce the overall height of the track pile. Care should be taken to ensure that the track is safely secured and there is no risk of the pile of track falling over. The track should not be stacked higher than 0.5m and should be kept as low as possible to reduce its potential energy. It is strongly recommended that track is stored under a cover, preferably somewhere dry.

Applying some oil or grease to the track before storage will help in reducing surface rust.
(NOTE: Always read and follow grease manufactures instructions).

Transportation

When lifting and moving the track panels, we recommend you do this one panel at a time and take care to avoid those around you. We advise using appropriate [PPE as listed](#). The straight

track panels weigh approximately 6.9kg, with other sections weighing more. When transported in a vehicle, care should be taken to ensure that the track is safely secured during transportation and will not move in the case of an accident.

PPE

Personal Protective Equipment (PPE) should be used when laying or moving the track. We recommend wearing the following:

- Rigger style gloves.
- Steel toed boots or shoes.
- Overalls.
- If necessary high visibility clothing should be worn.

Please note: this is not an exhaustive list of PPE, please consider any possible risks whilst moving/laying/operating/taking-up the Jubilee Track, and take appropriate action to reduce the risk.

WARNING: The steel has been coated in oil from the manufacturer, this is classed as a carcinogenic and the user should avoid direct contact with skin/eyes and ingestion.

End of life

The panels are made to last many years but if they should reach the end of their useful life they can be recycled. Separate the plastic wood from the steelwork with a 4mm allen key and 10mm spanner. The plastic wood can be recycled at the end of its useful life as can the steelwork can be separated from the other components and recycled at a local recycling center.

Product Specific Guidance

A number of products produced by MRW as part of the Jubilee track range fall outside the standard operating guidance.

These are contained within this section:

1. Buffer Stops
2. Curves
3. Points
4. Loading Ramp

1. Buffer Stops

The buffer stops are designed to suit both Narrow and standard gauge locos and rolling stock.



Fig (6).Buffer stop connected to track panels with Track Panel Tie Bar highlighted in green

They join to other track components as normal and have a wing nut for the locking bar so they can be joined to the track permanently.

Using the buffers

The buffers are made from the same box steel used for the rails and are of sturdy construction to take the impact of a train at low speed.

Although we hope that you never need to use the buffer stops for the purpose of stopping a train, we have some recommendations in case it should happen.

We recommend that the buffers are attached to only one section of track with the “Track Panel Tie Bar” as shown in the below image. This setup means that in the unfortunate scenario where a train impacts with the buffers, the first track section should detach and soften the impact. This separation is not guaranteed but has been tested here at MRW and worked well during simulation. It should be noted that the buffers and track section will move during the impact, hence a risk is presented to a person if they were stood behind the buffers.



Fig (7). Buffer stop connected to track panels with Track Panel Tie Bar.
Bar used at **Red** arrowed joint, no tie bar used at **Blue** arrowed joint.

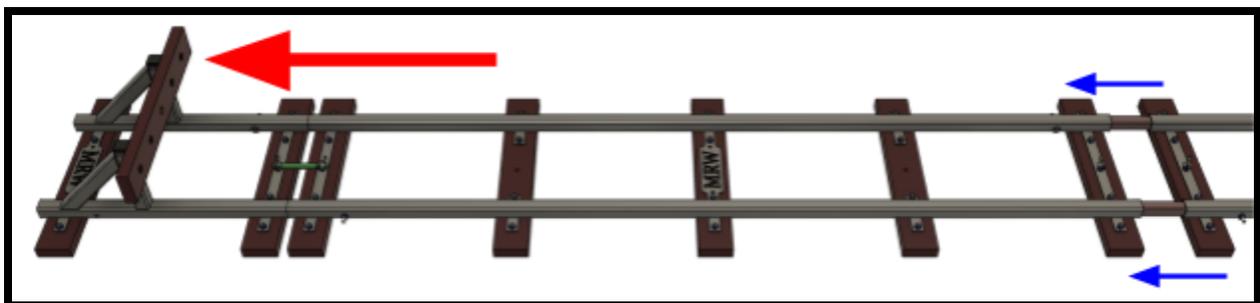


Fig (8). Buffer stop connected to track panels with “Track Panel Tie Bar”.
Red arrows show force applied by the heavy impact of a train.
Blue arrows show the movement of the trackpanel at the joint.

2. Curves

MRW supplies a range of different curves with more under development.

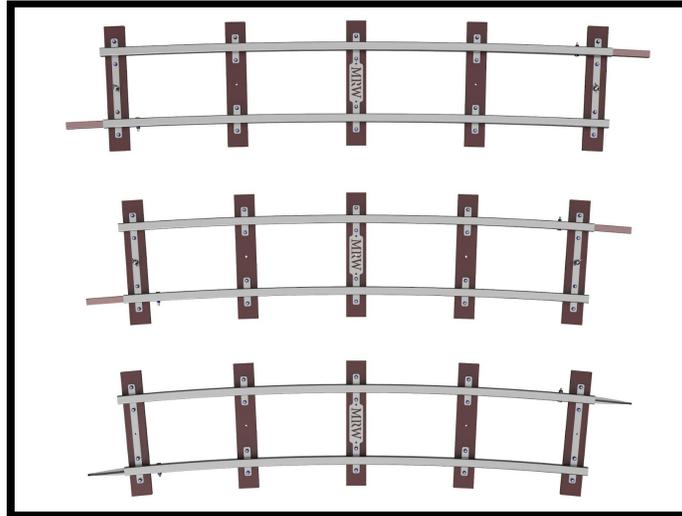


Fig (9): (A), (I) and (O) curve comparison.

The curves assemble in the same manner as the straights. On curves where the passage of trains may cause the track to separate the “Track Panel Tie Bar” is recommended to ensure your railway stays firmly connected.

3. Points

The points are currently under development, this document will be updated when the product is released.

4. Loading ramp

The loading ramp is designed to be used to move locos and rolling stock on and off permanent tracks and onto the Jubilee track sections. The ramp is made so that the wheels of the train can be rolled up the wedge shape and onto the box steel. The loading ramp then joins directly to standard Jubilee track sections.

Safe Use

Miniature Locomotives and rolling stock can be very heavy and hence the safe use of this ramp is essential in reducing the likelihood of damage to the loco or user. The Ramp should only be used at very slow speeds 1mph or less. The ramp should never be used when a person is riding in or on the vehicle being moved. The ramp should be close to the ground to reduce risk.

Alignment

Alignment of the wedge shape is critical when using the ramp.

It is necessary that the ramp is properly situated and aligned with the rails it is resting on, this is shown in the below figures.

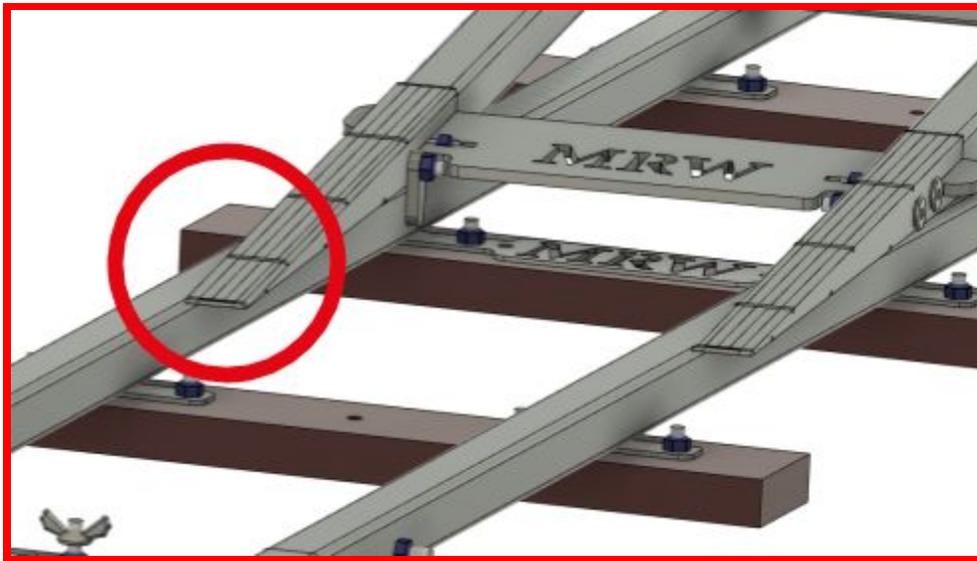


Fig (10). **In-correct alignment** of the wedge with the rail circled in Red.

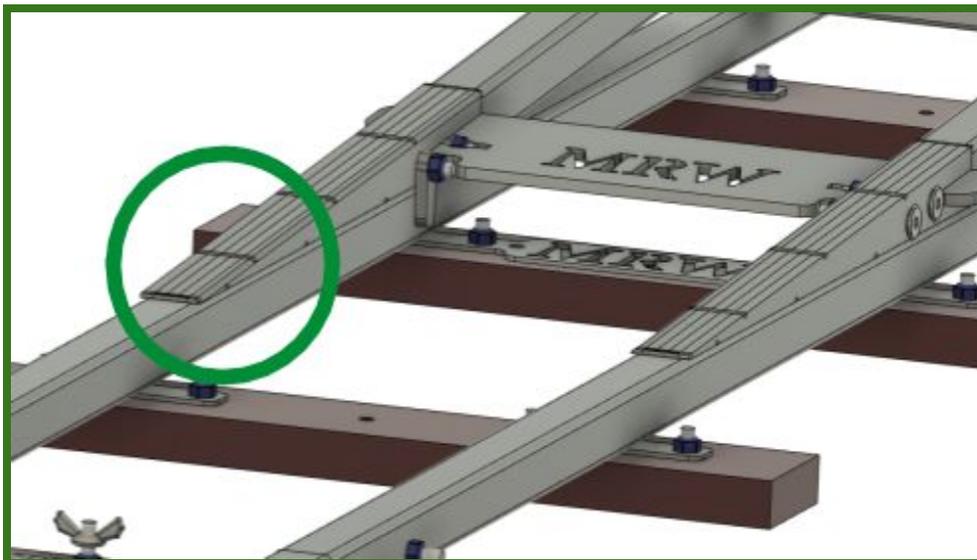


Fig (11). Correct alignment of the wedge with the rail circled in green.

We advise having two people when using the ramp, one watching the wheels to check for derailments and the other moving the vehicle.

Never place your hand or any other part of your body near the wheels or under the vehicle when using the ramp.

Locating Lugs

When the ramp is lowered on top of another track section the locating lugs provided drop down below the rails and help with locating the ramp.

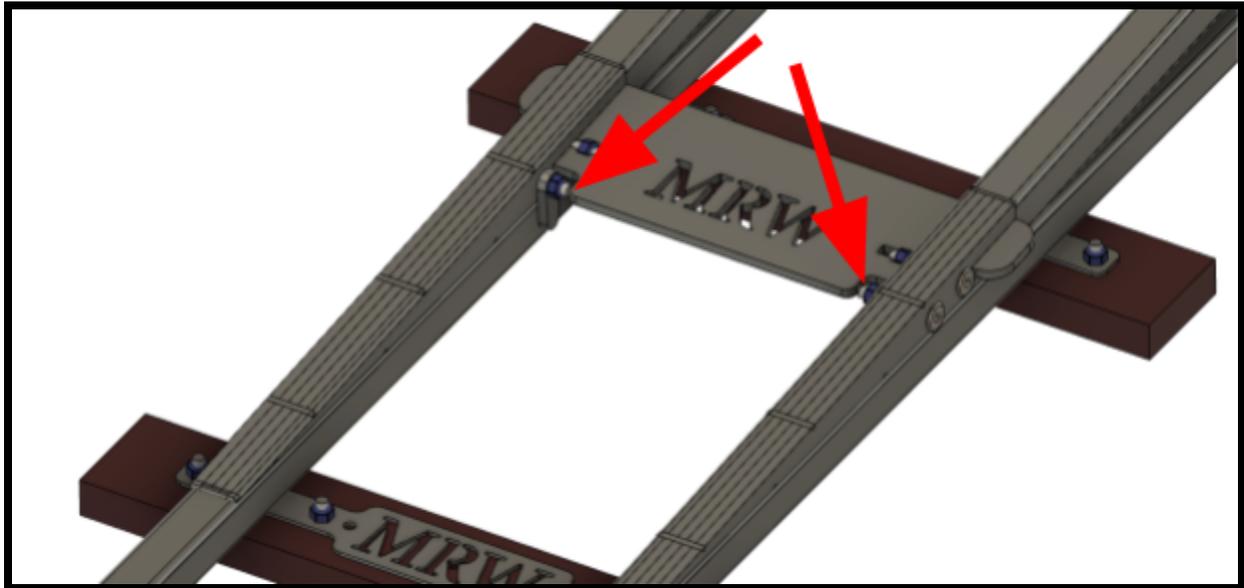


Fig (12).Red arrows pointing the Locating Lugs on the ramp.

Supporting the ramp.

Wherever possible the ramp should sit directly on a firm flat surface when being used.

If possible use the ramp on rails that are sunk into the ground, for example in a level crossing.

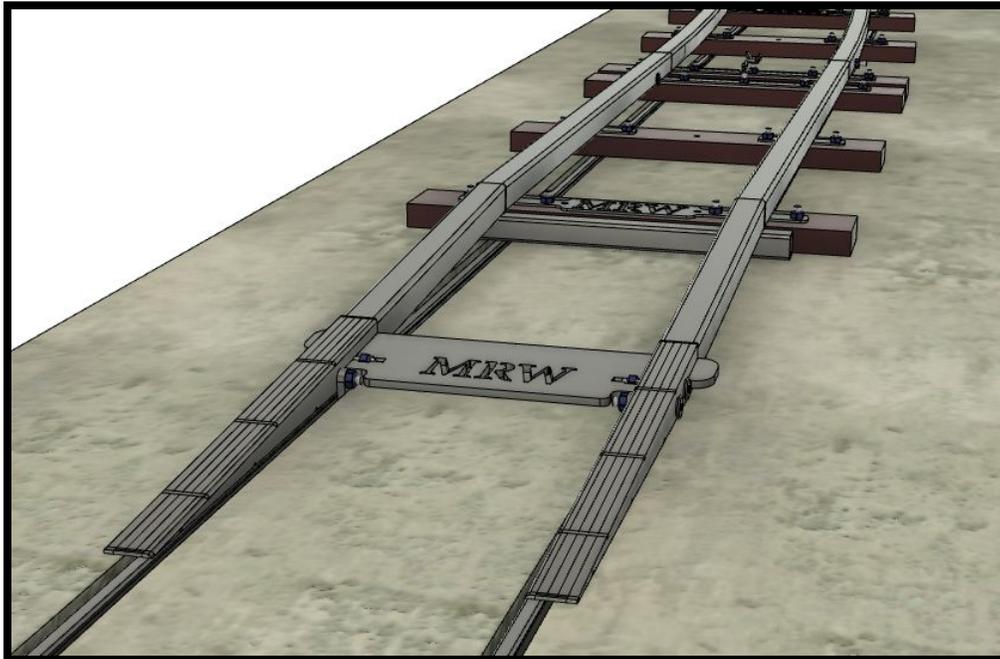


Fig (13). Example of how to use the loading ramp. Here the ramp has been placed on top of concrete where rails are sunk into the surface similar to a level crossing.

As the ramp is being used for non-passenger carriage, more packing can be used than normally recommended, an example is shown in the below figure. MRW recommends that the packing is checked to ensure that it is firm and able to take the expected weight before moving any rolling stock over the track.

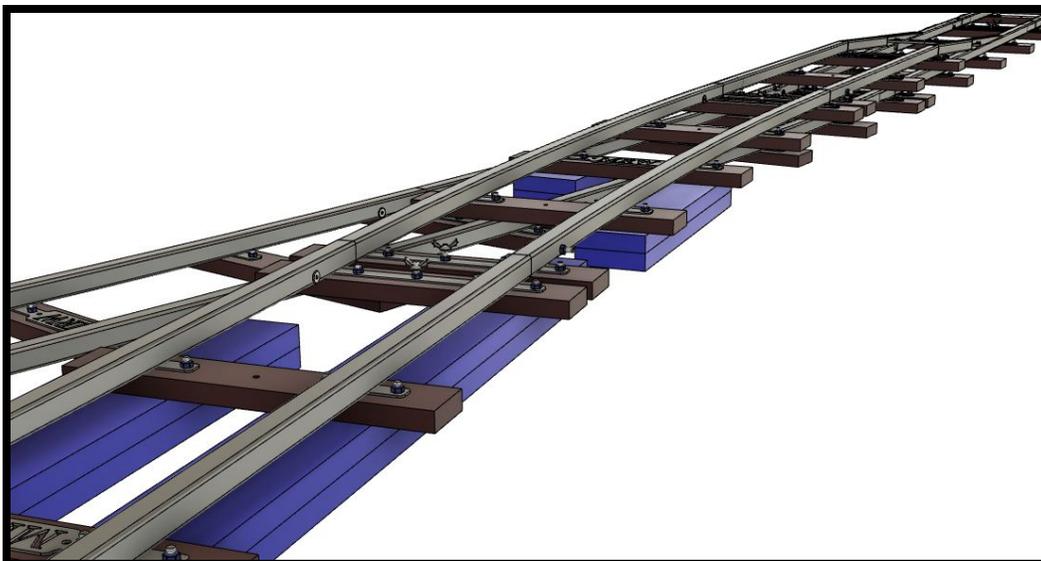


Fig (14). Example of how to use the ramp where packaging is needed. Packing pieces highlighted in Purple.

The ramp should be supported under all sleepers and the wedge when in use and is not recommended for use at height. Example of proper use is shown in the below figures.

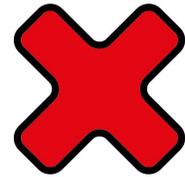


Fig (15). Example of how **NOT** to use the ramp; here inadequate support has been provided. Packing pieces highlighted in Purple.

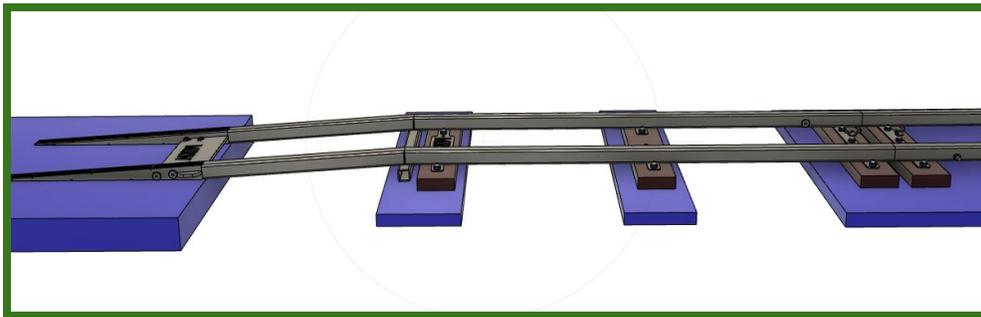


Fig (16). Example of how to use the ramp when packaging is required. Packing pieces highlighted in Purple.

End of operating instructions for Jubilee Track.

Jubilee Track Risk Assessment

NO.	Hazards anticipated	Risk level		Person at risk	Control measures	Residual Risk
1	Injury when during laying/transportation/storage.	8	Moderate	Operators	Advised on PPE in Operating Instructions	3
2	Injury from laying the track due and carrying track panels.	3	Low	Operators	Recommended that only one panel is carried at a time. If necessary, wear high visibility clothing.	3
3	Cuts from possible steel edges.	3	Low	Operators	Wearing of rigger style gloves and overalls.	1
4	Finger traps when joining track panels.	2	Low	Operators	In the Operating instructions, advise the people laying the track to keep hands well clear of joints when slotting together sections. Wearing of rigger style gloves	1
5	Injury form stacked piles of track	12	High	People within close proximity, during storage.	Recommend that the track panels are safely secured during storage with adequate restraints, such as cargo ratchet straps. These should not be stacked excessively high (more than 0.5m)	3
6	Injury form transportation, from unsafe restraint of track panels	15	High	People within close proximity, during transportation.	Track panels are safely secured during transportation with adequate constraints, such as cargo ratchet straps.	3
7	Injury from derailment, resulting from uneven track.	15	High	Operators, Passengers, People within close proximity	The use of the Operating manual outlines multiple measures to reduce this risk. Advice following the PCMRSG guidance.	3
8	Carcinogenic exposure from steel coated in oil	5	Moderate	Operators	Highlighted warnings, Guidance for PPE.	1

Summary

Risk is low when used products are used in accordance with correct operating procedures laid out in manual and following the guidance of the Passenger Carrying Miniature Railway Safety Group (PCMRSG).

Recommendations/Further actions

Follow the user guide, use appropriate PPE and follow (PCMRSG) guidelines.

References

User guide, (PCMRSG), <https://www.miniaturerailwayworkshop.com/>

Risk Assessment Matrix

Likelihood	Consequences				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
	No injuries	First aid treatment	Medical treatment	Hospital	Death
Almost Certain (5)	5	10	15	20	25
Often occurs / once a week					
Likely (4)	4	8	12	16	20
Could easily happen / once a month					
Possible (3)	3	6	9	12	15
Could happen or known it to happen / once a year					
Unlikely (2)	2	4	6	8	10
Hasn't happened yet but could / once every 10 years					
Rare (1)	1	2	3	4	5
Conceivable but only on extreme circumstances / once in 100 years					
	Residual Risk				
	Low	Moderate	High	Catastrophic	
	1 - 3	4 - 9	15 - 25	15 - 25	