

Wirral Model Engineering Society

A company limited by guarantee

Founded 1961

A Member of the Northern Association of Model Engineers

THE OPERATION OF THE RAISED 7 ¼”, 5” AND 3 ½” GAUGE TRACK

**OPERATING, SAFETY AND TRAINING
CONSIDERATIONS**

CONSTRUCTION AND MAINTENANCE DETAILS

As approved by Committee
24th JANUARY 2001

Updated and approved by Committee
25th March 2004, 24th August 2006 and 10th March 2010

Updated and Approved by Committee
Xxth June 2011

Updated and Approved by Committee
Sept 19th 2018

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WIRRAL MODEL ENGINEERING SOCIETY

Health and Safety policy statement

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THE WIRRAL MODEL ENGINEERING SOCIETY (WMES) INTENDS TO
CONDUCT ITSELF IN MINIATURE RAILWAY OPERATION IN ROYDEN PARK
IN SUCH A WAY THAT THERE IS NO UNACCEPTABLE RISK TO THE HEALTH
AND SAFETY OF EMPLOYEES, MEMBERS, VISITORS, OR OTHERS WHO MAY
BE AFFECTED.

MEMBERS OF THE SOCIETY SHOULD REALISE THAT THEIR ACTS OR
OMISSIONS COULD AFFECT THE HEALTH AND SAFETY OF OTHER PEOPLE
AND OTHER MEMBERS OF THE SOCIETY. THEY THEREFORE SHOULD
COMPLY WITH THE SOCIETY'S OWN RULES, REGULATIONS AND CODES
OF PRACTICE.
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Background

WMES have operated a Miniature Railway in Royden Park since 1966. During the intervening years many changes and improvements to the raised track railway have taken place. The Society has always ensured that safe operation and passenger safety were priorities, particularly in latter years with increasing numbers of passengers being carried.

The provision of a ground level track has increased the Society's involvement with the public and with the Council, and also current Health and Safety requirements. Risk assessments for both tracks have been carried out and will be updated at regular intervals. The content of the risk assessments has been discussed and implemented with both the Park Ranger and the Council HSE representative.

One of the major factors that came out of the risk assessment discussions was that WMES now operate the largest mechanical 'ride' in the whole of Wirral. This has implications for all Society members. WMES have been asked to implement a more formal method of training so that there are no doubts as to the competence of those who operate the railways in Royden Park. The training will be recorded thus ensuring that standards are maintained. Training will be freely provided and help given to ensure that members complete the requirements at their own pace.

Approached in a positive manner WMES will benefit from this course of action.

The Wirral Model Engineering Society (WMES) was formed in 1960 and established the raised track site in Royden Park, Frankby, Wirral in 1966. The current track accommodates 3.1/2", 5" and 7 1/4" gauges. Its present length is around 1200 feet in a 'folded loop' configuration. In 2004 a carriage storage facility was built on the site. In 2005 a scissor-lift was installed to assist reception of locomotives.

The attached details cover the operation of the Raised Track.

Code of Practice for Society activities

1 General

Registered Address: The Sidings, Royden Park, Frankby, Wirral, CH48 1NP

Company Number 3154024

1.1 All Society members are responsible for society equipment and facilities. Equipment and facilities should be maintained and kept in good order. Record books are kept for the various facilities. Details of any incidents, accidents, inspections, maintenance, faults or repairs should be recorded in the relevant book and brought to attention of committee as soon as practicable.

1.2 Members should familiarize themselves with the location of safety equipment, including fire extinguishers and first aid boxes. After use, safety equipment should be returned to their storage location and replenished as necessary.

1.3 The Society rules provide for the appointment of event stewards. The steward will represent Society interests during the course of the event.

2 Boilers

2.1 All boilers operated at any society function or activity shall comply with the requirements of 'The examination and testing of miniature steam boilers' revised edition 2018 and must be in date prior to running. Except for boilers being steamed for official inspection and certification.

2.2 The Society boiler inspector should be consulted before a boiler is manufactured to ensure compliance with the boiler test code or if there is any doubt regarding the suitability of boiler design, pipe work and fittings.

2.3 The decisions taken by the boiler inspector shall be final.

3 Society activities

3.1 Members are responsible for the safe operation of any activity they undertake on behalf of the Society. Members should also be aware of their duty of care to all participants, bystanders and public when carrying out any activity.

3.2 At the conclusion of any event all society equipment should be put away, cleaned where required and all facilities and services secured.

4 Visitors

4.1 Visitors should sign in the visitor's book. Details of boiler certification (where applicable) and third party liability insurance should also be recorded. Before operating on the track or the Society's facilities visitors, and any WMES members who have not driven in the last 2 years, should be familiarized with all relevant operating procedures and information.

4.2 Children on the Society premises or using Society equipment must be supervised at all times. A child in law is a person under the age of 18.

See section 5(2)

5 Passenger carrying activities should comply with HSG 216. The following sections also apply to WMES facilities.

- 5.1 Passengers are carried at the driver's discretion. In the case of visitors passenger carrying is also at the discretion of the event steward as well as the driver.
- 5.2 Drivers and those assisting where the public are involved should be members of the Society, competent and should be at least 16 years of age.
- 5.3 Members using the Society facilities are responsible for all aspects of their operation.
- 5.4 Society passenger trucks are provided for public hauling. Members should ensure that the trucks used are in good order and free from defects. Trucks that have any defect should not be used until repaired and deemed fit for service. Any defects should be noted in the record book and brought to committee attention.
- 5.5 When towing multiple passenger trucks on the raised track solid links must be used between the trucks. A guard should be employed to assist with passenger control and train braking.
- 5.6 Visiting driving and passenger trucks should be inspected before use to ensure they are suitable for use on society tracks.
- 5.7 Drivers should maintain a safe distance between trains and not exceed the track speed of approx. 2mins per lap which equates with a speed of 8mph. Should the signal system be/become defective then drivers should aim to keep approx. 20 meters apart.

6 Society locomotives and rolling stock.

- 6.1 The Society locomotives may only be operated by competent drivers, those under training or invited guests who are the responsibility of the host member.
- 6.2 It is the responsibility of those operating the locomotives and rolling stock to clean, lubricate and maintain them.
- 6.3 It is Society policy that all members, particularly those who do not own locomotives, should have the opportunity to drive Society locomotives.
- 6.4 Any faults or problems with the Society locomotives or rolling stock should be noted in the appropriate record book and committee be advised of the problem.

RAISED TRACK OPERATIONS

General.

The raised track is a continuous folded loop 1200 feet long to cater for 3.1/2", 5" and 7 1/4" gauge rolling stock. Curves have a super-elevation of approximately 3 degrees. Maximum gradient is 1 in 70. The track base is made up of concrete beams mounted on concrete mushroom supports. The continuously welded track rails are mounted on steel sleepers welded to the rail, the steel sleepers are secured to plastic sleepers and track panels are secured to the concrete beams at intervals. The track is fitted with tubular anti-tipping rails at each side. The track is divided into 3 unequal sections by Red/Green light signals operated in sequence by rolling stock breaking a beam which actuates the signal relays. This is designed to protect the rear of any rolling stock in a section from the following rolling stock. **Normal** running is in a **clockwise direction** and the signals are only of use in that direction. There is a station which has a guided approach for passengers to the Platform In gate, and an adjacent straight forward Out gate. There is a separate padlocked gate in the sandstone wall from the main field.

Rolling Stock Reception.

At present, rolling stock is received on to one raised track adjacent to the metal gates in the site boundary fence. Vehicles can reverse up to this track for the purpose of sliding or rolling of stock from/to the vehicle. Rolling stock locomotives are lifted by means of a scissor-lift to align with the track and then moved to one of the appropriate steaming bay sections which are serviced by a transporter section which moves between adjacent rows of steaming bays. To provide safe location of the transporter with a steaming bay it has a drop-down tongue which locates with a slot in the end of the steaming bay, thus ensuring the rails are correctly aligned. At the underside of each steaming bay there is a small panel with 3 pins which provide Neutral; 12 volt and 24 volt DC electrical supply for use with blowers for steam raising. The Neutral pin is indicated with a black line on the cover above it.

A water stand pipe tower is situated in the steaming bay area which also provides compressed air and a 240V 13A supply. Water connections are also provided at the carriage store and both ends of the station.

Track Access.

When stock is ready to access the track from the steaming bays, it is conveyed by the transporter to one of the two service link tracks. Access to/from the carriage shed is via two separate service links. Access for rolling stock to the track is gained by means of a centre-pivoted swing bridge which is located to the track with sliding lockbars at each end. Opening of the lockbars causes the station release signal to show Red. When the swing bridge is swung to one of the four service link tracks it can be locked in position by use of a hinged locking plate which keeps the track in alignment for safe transfer of stock to and from the main track. As soon as this manoeuvre has been completed the swing bridge must be returned to its normal position as part of the track and the sliding lockbars closed. The Reset switch on the back of the left-hand column is manually operated to restore the station release signal, ONLY when leaving the track.

START-UP ROUTINE

- Power (12 & 24 volt DC) is turned on in the Lower Workshop (for signals).
- All padlock keys for gates; traverser; carriage store and scissor-lift are secured to a short length of sturdy chain and stored (when R T site is not in use) in the Lower

Workshop. Triangular keys for water connection boxes/signals/passenger gates are retained in the carriage store.

- Collect Donations box from club house.
- On opening the site steel gates put the padlock in a safe place.
- After gaining access to the site through the double gates they should be closed as soon as reasonably practicable, to deny access to the public and dogs.
- Open the carriage store doors to access operating equipment. Put keys for this in a safe place.
- Fit into place the removable bridge rail from carriage store to service link line.
- The following items are stored in the carriage store:-
Watering can(s); brushes and shovel; hose(s); buckets of coal; information boards; 'clock'; WMES information leaflets; triangular key.
- Visitor; Track and Truck Maintenance and Accident Books are located in the Long Workshop.
- **NOTE** ensure that there is sufficient coal prepared for operations.
- Hang the WMES 'members only' sign on the gate.
- Turn on the power for the signal and blower supply in the carriage store.
- Walk the full length of the track and clear all debris from and between the running rails, including bird droppings from the top of the rails, checking that no branches/twigs/leaves can foul the footboards of the passenger trucks. Check that any sleeper packings are secure. Check that signal reflectors are clean.
- Whilst walking the track check the condition of the perimeter fencing for missing staves or other damage. Record any maintenance required in the Track maintenance log book.
- Remove the signal head front cover plates using the short triangular key and check that the Red and Green lamps show.
- Brush debris/leaves from the station area.
- Install water standpipe(s) in ground box(es) at the station (these are accessed by use of the triangular key). Turn water supply on at carriage store and run water to check that it flows clean. Open up stand pipe cabinet.
- Place bucket of coal at the station, adjacent to the furthest standpipe from the signal.
- Fit steaming bay water hose to tap outside carriage store. Run water to check that it flows clean.
- Check the swing bridge and its sliding lockbars for free operation, with lever provided, and ensure that mating with the servicing link lines is free. This lever is left at the base of the swing bridge pivot during running operations.
- Unlock the transporter. There is one padlock at each side at ground rail level.
- Unlock and remove steel covers (stow adjacent to receiving track) from scissor-lift base and fit handle to jack. Fit adapter plate to scissor-lift track with removable pin provided.

PUBLIC RUNNING ROUTINE

- If passenger running is envisaged then the information boards and clock should be displayed at the station. The donation box should be carefully mounted at the station entrance gate. Unlock the platform gates with the triangular key. Unlock the gate in the sandstone wall.
- It is desirable that at least three WMES members are available to run a service, one to man the station, one to drive the train and one to assist in the event of an incident

e.g. a derailment. N.B. the member at the station should not leave the station unattended.

- The number, age and condition of passengers carried is solely at the discretion of the driver, but must include an adult at the rear of the truck.
- Before boarding the train passengers with bulky objects should be invited to leave them at the station till their return from the ride.
- No passengers should be allowed to ride 'side-saddle', all must be astride the seat and facing forward. No dogs will be carried.
- Before the train sets off passengers should be informed to "please keep your feet on the footboards, hands in, and sit still. Thank you".
- Any locomotive should be driven at a reasonable speed, commensurate with the prevailing conditions. Not less than 2 minutes per lap is the norm. This equates to 8mph.
- On completion of the ride the train must stop in the designated area for unloading passengers. Passengers are directed out of the station through the exit gate.
- For safety reasons, only one train should be loaded with passengers in the station. This loading must take place in the defined loading area.
- At all times, other than at loading /unloading of trains, the gates should be kept closed.
- It is very important that signals are observed and acted upon, not only for safety reasons but the public are very perceptive and are also aware of the meaning of the signals.
- Prior to the agreed closure time, advise the public, close the gate and put up the 'No More Rides' sign.
- All accidents should be recorded in the Society Accident Book, no matter how minor. Any accident resulting in a member of the public being taken to hospital for treatment must be reported to the HSE. Full details, together with names and addresses of witnesses should be recorded, on the HSE Accident Report Form, as soon as possible following the incident.
- Any operational incidents or train problems that arise should be noted and reported at the end of the operating session. However, serious incidents must be dealt with immediately and assistance sought from other WMES staff. Serious incidents may include train derailments, vandalism occurring around the track, etc..
- It is the drivers responsibility to ensure that water and/or oil from their engine is not leaked on to the rails.
- There is a Day Sheet for recording operations. Details should be recorded during the session, or no later than the end of the operating session, and signed as correct by another WMES member. Any comments, suggestions or advice that can be applied to the running of the railway are welcome.

CLOSING DOWN ROUTINE

- Shut and padlock the wall gate, and the station gates with the triangular key, and remove the donation box.

- Water standpipes to be turned off and disconnected, the box lids to be locked with the triangular key. Remove the steaming bay hose and shut off the water supply tap inside the carriage store.
- Turn off the power supply to the signals in the carriage store.
- Secure the front covers to the 3 signal heads with the triangular key.
- Passenger trucks to be returned to the carriage store. Ensure that they are coupled **before** pushing into the store; this will aid retrieval. Ensure all coupling pins are present. 3 large trucks on LHS, 2 light weight and 2 large on RHS.
- Remove and store removable bridge rail inside the carriage store.
- Return and store, neatly, all loose equipment from station and steaming bay areas in the carriage store and bunker.
- When all stock is removed from the track secure the swing bridge to the **track** (not the service link lines) using the long key. Return key to carriage store.
- When all stock has been removed from the steaming bay area the transporter should be locked in position with the two padlocks provided.
- Shut and lock the carriage store doors, ensuring top bolt is home.
- Scissor-lift. Remove adapter plate & pin (1); lower the lift; remove jack lever (2); stow 1 and 2 in base; refit base steel covers and lock with padlock.
- Lock stand pipe tower.
- Vacating the site - check that all items have been recovered/put away, close the metal access gates, with floor bolts engaged and ensure that the padlock is secure.
- Power for the raised track should be turned off in the Lower Workshop. **NOTE** before doing this - **check** that the ground level track personnel do not require this service.
- Return the bunch of keys to the Lower Workshop.
- The Day Sheet, duly completed, to be filed in the Records drawer in the Long Workshop.
- If entries have been made in the Track or Truck Maintenance Books awareness of such entries should be made to Committee members to enable any required action to be taken.

SAFETY ROUTINE

Passenger Trucks.

All passenger trucks must be thoroughly checked before being brought into service. Some WMES trucks have an hydraulic braking system and should be checked in the following manner, on the steaming bays, before being put on the running track :-

- Remove squab.

- Check that all wheels are correctly located on the rails.
- Check that there are no indications of hydraulic leaks and that the wheel backs are free of oil and dry.
- Check that there is a good level of brake fluid in the screw-top reservoir, if necessary top-up.
- Push the brake lever forward and note that the brake pads bear on the wheel treads and that wheel lock-up occurs when attempting to move the truck along the rails.
- Replace the squab.
- Ensure removable backrest is firmly in place.
- If there are any faults, or rectifications, they should be noted in the Truck Maintenance Book, and if any arise during use they should be similarly noted, with notifying persons name and date.
- Other trucks have Bowden cable operation and should be tested in a similar manner.

Track Access and Usage.

- Visiting drivers must sign the Visitors Book, show their current Club membership card (if appropriate) and current Boiler Certificate for the locomotive being used (to indicate their Insurance status). The boiler certificate should be matched with the identity stamped on the boiler and this information recorded in the visitors book. This signing-in of visitors must be witnessed by an authorised WMES member.
- Visiting drivers should be shown/given a copy of WMES Safety and Operating procedures for their information.
- Visiting drivers should be given the opportunity to be appraised of the track layout and be accompanied by a qualified member of WMES till they are familiar with the complete system. These drivers should not take the public on the familiarisation circuits.
- It is **important** that the Day Sheet records drivers and engines, giving times of going on and coming off the track, which enables tracking of reportable incidents.
- Before accessing the track drivers must check and ensure that the track is SAFELY available and that all station staff and drivers on the track are aware of the intention to access and they indicate that it safe to do so.
- Similarly, to leave the track the driver must acquaint the station personnel, and the driver of the following train, of the intention. Having exited the track onto the servicing link line and secured the swing bridge to normal position the driver should indicate to station personnel that the track is clear at that point and operate the reset switch to change the station signal.
- Any locomotive going on the track for the first time in a session on the track should complete at least one circuit, without taking public, to check that the operating systems of the locomotive, truck(s), track and signals are all satisfactory. **Note** that the **first** locomotive negotiating the track will automatically set the signals to their correct sequence, but after one circuit a check should be made to ensure that the signals have reset correctly.
- If the signals do not operate correctly it may be due to dirt on the reflector sensors and steps should be taken to rectify the matter.
- If two or more locomotives are circuiting the track the signals **must** be complied with. At the signal positions it is possible to be aware of where other trains are. In the event of a train having difficulty and causing a long delay it is permitted to move forward very slowly under **Caution** to ascertain the problem after giving 3 long blasts on whistle/horn.
- Any locomotive should be driven at a reasonable speed, commensurate with the prevailing conditions. (recommended at least 2 minutes per lap).

- An internal combustion engined locomotive must not be re-fuelled on the track but be taken off the track to the steaming bays for the purpose of re-fuelling.
- Any coal-fired locomotive should be fitted with a spark arrester/deflector when the public are being carried.
- Carrying of the public is entirely at the discretion of the driver.
- Coupling between locomotive and trucks should be a rigid link.
- In the event of two or more passenger trucks being pulled by a locomotive each truck, after the one the driver is riding on, must have an authorised guard at the front. This is necessary to provide additional braking capacity above that which the driver can supply and to make the gap between trucks safe from the public. Passenger trucks must be coupled to each other with a rigid link.
- Any passenger truck, which is not WMES property, being used for carrying the public must be checked by an authorised WMES member before such use. This must be recorded on the Day Sheet.
- All accidents should be recorded in the Society Accident Book, no matter how minor. Any accident resulting in a member of the public being taken to hospital for treatment must be reported to the HSE. Full details, together with names and addresses of witnesses should be recorded, on the HSE Accident Report Form, as soon as possible following the incident.
- Any operational incidents or train problems that arise should be noted and reported at the end of the operating session. However, serious incidents must be dealt with immediately and assistance sought from other WMES staff. Serious incidents may include train derailments, vandalism occurring around the track, etc.
- The scissor lift has a weight limit of approx. 200Kg (440lb). Any member/visitor with a heavier engine, wishing to use the Raised Track, must consult with the Raised Track committee before attempting usage..
- At present there are 7 passenger trucks available for club members to use. In the event of more than 7 trucks being needed at any one time, if more than 2 hours of running has taken place, those drivers longest on the track should offer to come off and give their truck to a waiting driver.

TRAINING PROGRAMME

Part 1 Entry and Exit of the public in the Station area.

This is a most important job - our contact with the public from which they perceive our attitude to them and our handling of the railway. Because we operate in a

public park it is in everyone's interest to ensure that there are no complaints. We should endeavour to keep the public informed of our activities and intentions.

Remember - a smile lights up more than the owners face!

The station set-up prior to operation should include:-

1. Any notice boards or items to provide information, 'clock' for last train time.
2. Any safety items that may be necessary to protect the public.
3. The donation box.
4. Check that the signals are operational.
5. Check that water and coal supplies are available at the station.
6. Check track is clear of obstructions.

The Station in operation:-

1. Check with train drivers that they are ready to receive passengers. A driver may be checking the engine and might appreciate not having passengers shaking the train.
2. Members of the public should only be admitted to the station platform to board the train. Discretion is to be used where photography permission is sought, care being taken that the photographer is not in danger in taking up position(s).
3. The entry gate should be closed as soon as the complement of passengers is aboard.
4. Only one train should be in a loaded condition in the station.
5. Passengers must sit astride the carriage seat and face the direction of travel. Passengers having difficulty in achieving this position should be carefully assisted. Sitting 'side-saddle' is not permitted. Young children must not be sat at the rear of the train; an adult must be in that position. WMES Members should not handle children under any circumstances, it is a rule that children under 18 must be accompanied by a parent or guardian and it is their responsibility to seat the child/children.
6. Before the train leaves the station passengers are to be instructed "please keep your feet on the footboards, hands in, and sit still. Thank you".
7. Passengers with awkward objects like large bags, bats, footballs, rucksacks, etc. are to be requested to leave them in the care of the station personnel. Anything which, when dropped during the ride, could cause involuntary reaching out is a risk.
8. Passengers are accepted at the driver's discretion.
9. When the driver and the station personnel are happy with the train and its loading, the driver should be given the 'right away' either orally or by means of whistle.
10. The station release signal must be obeyed.
11. Any locomotive should be driven at a reasonable speed, commensurate with the prevailing conditions. E.g. 2 mins per lap max. which equates with 8mph.
12. Station personnel are responsible for checking access from the steaming bays to the track and that drivers are made aware of such situations. Where a driver wishes to leave the track for the steaming bays this should be communicated to the station personnel and to the driver of the following train.
13. When a returning train arrives at the station the exit gate is opened long enough to enable passengers to leave the station. If a passenger, large or small wishes to talk to the driver or look at the engine - this should be dealt with helpfully.
14. The entry and exit gates must be closed except when loading or unloading trains.
15. Prior to the agreed closure time, advise the public and put the 'No More Rides' sign on the gate.
16. Ensure the wall, and station entry and exit, gates are locked with the triangular key. Remove the donation box into safe keeping, usually at the main building. All items brought to the station must be returned to the carriage store and all services on the site shut/switched off. See **Start-up Routine** and **Closing Down Routine**.

17. If a passenger has personal issues which may affect their safety or other peoples safety then they should be advised to see if the GL track can cope with them in a safe way.
18. Prior to carrying members of the public the driver must have satisfactorily completed the training programme.

Part 2 Guarding duties on trains.

This is applicable when additional carriage(s) are added to the original single carriage on a train. A guard would be required for each additional carriage. A WMES member should perform this duty and should sit at the front of the additional carriage(s) so as to be able to operate the brake lever. Driver and guard(s) should establish their method of communication and braking before loading the train and setting off.

W.M.E.S MEMBER'S AGREEMENT

MEMBER'S COPY

This is to confirm that I have received a copy of the operations document (No.) and agree to abide by the contents there of.

Signed

Date

W.M.E.S MEMBER'S AGREEMENT

WMES COPY

This is to confirm that I have received a copy of the operations document (No.) and agree to abide by the contents there of.

Signed

Date