

MANUKAU LIVE STEAMERS Inc

HEALTH – SAFETY **AND** **HAZARDS**

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This document is to provide a guide to assist club members to operate all facets of the miniature railway club in a safe and enjoyable way.

There are two things can close us down, lack of money and lack of safety. The following information details Initiatives and Guidance to all club members to ensure the success of this enterprise.

Included are sections on general safety around the club site, general safety when operating the miniature trains, the safe use of tools commonly encountered building and maintaining a miniature railway site and ways to reduce or eliminate hazards on site. Hazard, Incident & Accident forms are also included at the back of the document.

Manukau Live Steamers Inc.

Clubrooms and railway – Centre Park

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Manukau City

Auckland –

New Zealand

MANUKAU LIVE STEAMERS – HEALTH – SAFETY & HAZARDS

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1. GENERAL

Miniature railroad sites present several areas where both club members and members of the public can be subjected to hazardous situations –

There are two main types of hazard -

i.e.: The broken board on the foot bridge which needs to be replaced - 24 / 7

or, the type that exists only while the railroad is operating – i.e.: hot steam loco boilers or hot ashes in the ash pit or the dangers to be aware of when fuelling a petrol powered loco -

It is the responsibility of every club member at all times to ensure the safety of others, the visiting public and club members present on site –

2. DUTIES REQUIRED OF CLUB MEMBERS

- Take care to ensure their own health and safety by actions and inactions
- Ensure that nothing they do may harm any other person on site
- Ensure the public are kept a safe distance from steaming bays where hot locos are being readied for service and behind barriers when trains are running.
- When running the trains, advise passengers to remain seated, sit still and do not lean out to the side when the train is in motion.
- When driving the trains adhere to recommended speed limits and slow down at any sections where maintenance work is being done on or near the track
- Slow down when approaching all facing points, this is an area where derailments can occur if the point blades are not set over correctly.
- When refuelling petrol or Gas (LPG) fired locomotives this must be done well away from naked lights or steam locos which have a fire in their boilers – No Smoking.
- In the event that any hazard is noticed, report it to the day manager and then if possible repair the hazard straight away, or enter it in the hazard register so it can be attended to ASAP by a repair crew. If really serious, close the railway.
- Ensure the public are kept away from any maintenance or repair work being done around the club site – i.e. drilling, grinding or welding, etc.
- When using any power tools, welders, disk grinders or other machinery on site ensure the correct safety gear / clothing is used / worn by the members involved.
- Ensure that the daily log book is filled in.
- Ensure that the power is switched off at the mains, ensure that items around the site such as turntable, traverser, tunnel, fuel bunker and storage sheds are all secured.
- Ensure all windows are closed and shuttered, set the alarm and lock the clubrooms before you leave for the day.

3. DAY MANAGER or THE OPERATOR

Date Day Manager

The Day manager is responsible to make sure that the club is operated in a safe and orderly manner
–Tasks may be assigned to other members present and full cooperation is expected

- Upon arriving at the club check for evidence of break in, or major vandalism. If damage is evident notify the police and report the incident in case insurance is sought
- Turn on power / hot water – check; first aid cabinet; fire extinguishers; toilet supplies
- Once a minimum of 4 members are present and the decision is made to run, unlock the shutters on the windows, set out the passenger cars and the club DX diesel locomotive and proceed to couple up the train with only two passenger cars for a start
- Check the club locomotive engine oil, hydraulic oil, battery electrolyte level –
- Top up liquids as necessary and enter any abnormalities in the locomotive log book
- Check the fuel level – Refuel loco well away from naked lights or locos in steam.
- Check the passenger cars for any visual damage and ensure the safety chains and brake lines are connected and the brakes are actually working. Ensure that the safety bars at the front and rear of the passenger car seats have been set in operating position.
- Place any passenger information signage and any other safety barriers or ropes in place.
- Notify the ticket office personnel that you are making a track inspection run – Be vigilant, check for “mower strike” damage which may have occurred and clear any obstructions such as sticks, rocks or other debris which have appeared on the railway track since the last running day.
- Check the operation of the various turntables and yard points - oil as required.
- Greet any visiting members from other clubs and confirm that their steam locomotive has a current boiler ticket and their passenger hauling drivers licence are both current –
- If they are new to the track give them a familiarisation tour of the facilities and ensure they know the track operating procedures.
- Ensure that all drivers are operating their locomotives in a safe and responsible manner.
- Ensure that the passengers are given clear instructions on riding the trains safely – Remain facing the front, No standing up, No leaning out to grab at passing objects, etc.
- Trains of three or more passenger cars require a guard at the rear of the train.
- At the end of the days running ensure that all hot ashes from steam locos are extinguished and all water hoses, signage, passenger safety barriers are put away.
- Ensure that all turntables; traverser; storage sheds; point operating switches; toilet block; signal towers; window shutters etc are properly locked.
- Fill in the daily log book with members / visitors attending and the locomotives running
- If there has been any incident or accident fill in the appropriate form so the safety committee can deal with it at the next meeting committee meeting.
- Were any hazards / incidents / accidents reported today - YES NO
Brief details
- Check that the bookkeeping requirements are completed the days takings are secured.
- Ensure that the power is switched off and the alarm is set before locking up for the day

Day Manager

Date

4. OPERATING THE RAILROAD

Members should be familiar with the club rules, the MEANZ operating procedures and the TRAINCRAFT information booklet with regard to the safe operation of the railroad.

5. SAFETY WHEN RUNNING THE RAILROAD -

- All club members must ensure that care givers keep children behind any yellow safety 'No Go' lines, barrier tapes, chains or ropes while waiting in line for train rides
- Members of the public are not to enter the 'steam up bay' areas unless accompanied by a club member –
- Passengers who appear to be under the influence of drugs or alcohol will not be allowed to ride the trains –
- When loading several passengers on a ride car place the heavier passenger at the rear of the car with the smaller lighter passengers in front –
- If only one passenger is riding on a ride car, have them sit near the centre of the ride car to keep the car in balance –
- Before a train is despatched, instructions should be given to passengers to sit still, face forward, keep feet on the foot rest boards – Passengers must not stand up or lean out to the side as it may unbalance or de-rail the passenger car.

6. TRAIN DRIVERS RESPONSIBILITIES -

- Train drivers must ensure their passengers are seated correctly facing forward before leaving the station. The driver should look back at his passengers at every opportunity to ensure they are behaving –
- If any passengers are seen to be misbehaving the driver must stop the train and the offender/s should be asked to leave the train –
- Recommended speed limits must be observed.
- 4 km / hour in the station yard area or when approaching a road crossing or facing points
- 8 km / hour on all sections of track with curves : ie: MLS mountain spiral hill track
- 12 km / hr on straight sections of ground level tracks. ie: MLS Prairie track around the park
- Remember at all times the driver must be ready to STOP!
- Drivers **MUST NOT** follow too close to the train in front in case it makes an unscheduled emergency stop – **If any train has to make an unscheduled stop on the main line the driver must send the guard or a passenger rearward to warn and stop the following train –**

7. FIRST AID CABINET – GREEN CROSS ON LID -

This should be in a prominent position in the clubrooms or station area –
The contents should be checked for quantity and quality on a regular basis and any items that have been used be replaced –
Any accident requiring First Aid treatment must be recorded in the ACCIDENT REGISTER -
If the accident is a result of any equipment on site being faulty or contributing to the accident the offending item must be repaired or quarantined as deemed necessary by the manager of the day.

8. DERAILMENT CAUSING INJURY -

In the event of a derailment causing injury the driver must get the name and contact details of the injured, the type of injury and the name and contact details of a witness. The driver must offer first aid at the station if this is required. The driver is not to admit any liability whatsoever and any correspondence from the injured passenger is to be directed in writing to the club secretary. The driver is to notify the day manager and file a report in the accident register. If a doctors visit is necessary a club member should accompany the injured to the doctor and as a gesture of goodwill, without prejudice, the club should settle the account.

9. LADDERS – SIGNIFICANT HAZARD

Ladder safety has become a major concern as many people have received serious injuries, some of which have resulted in prolonged health issues and in the worst cases broken necks and death –

HAZARD CONTROL

- Alloy ladders should have rubber boots fitted to the legs to prevent slipping
- Ladders should be free from any contamination such as grease or paint which would make the steps slippery
- Never attempt to work from the top step of a ladder
- Always face the ladder when using a ladder
- Always lock / fasten the two stays on a step ladder
- Never lean or overreach to the side when using a ladder
- Ensure the ladder is on firm level ground before using
- If any damage is noticed when using a ladder have it repaired or replace the ladder and dispose of the damaged one in a safe way

10. SLIP – TRIP – FALL - SIGNIFICANT HAZARD

These are among the most frequent type of accident. Most injuries are sprains, strains and heavy bruising – 10 percent of all bone fractures are the result of same level falls –

HAZARD CONTROL

- Any spillage of oils or other liquids must be cleaned up immediately
- Keep walking areas, entry and egress clear of debris and obstacles
- No running whatsoever in work areas
- Try to eliminate uneven floor or path way areas
- Use appropriate signage if a hazard cannot be eliminated
- Ensure lighting is adequate
- Replace floor mats if the edges curl up and present a trip hazard

11. STORAGE – SIGNIFICANT HAZARD

- Obtain Material Safety Data Sheets (MSDS) from the supplier of the hazardous substances and file in the MSDS Register if there any of these on site.
- Comply with storage requirements (especially observing any incompatibility)
- Comply with spillage requirements
- Comply with first aid requirements
- Goods stored on shelves must not protrude beyond the edge of the shelf
- Heavy items must be stored at low levels
- Mezzanine floors used for storage must have a hand rail along the edge
- Sharp objects must not protrude beyond the end of shelves
- Try to leave walkway clearance between stored equipment
- All hazardous substances must be clearly and correctly labelled
- If de-canting substances into other containers ensure that these are clearly and correctly labelled

12. HAZARD MANAGEMENT

- With every task and activity these following steps must be followed:
 1. Stop identify hazards
 2. Assess the hazards
 3. Control the hazards (Eliminate – Isolate – Minimise)
 4. Establish recovery requirements
 5. Monitor controls

13. MANUAL HANDLING

- Do not lift heavy or awkward loads – seek assistance from other members or consider using mechanical means
- Ensure heavy goods are stored near ground level and keep walk ways clear
- Remove sharp or bulky objects from walk ways
- Flag any items which cannot be made safe

14. PERSONAL PROTECTION EQUIPMENT

When using power drills, disk grinders or bench grinders safety glasses and hearing protection must be worn.

When spraying weeds gloves and a face shield must be worn.

15. SOLVENTS AND FUEL – SIGNIFICANT HAZARD

Most Solvents and fuel vapours are highly explosive - Vapours can cause irritation to the eyes and also they can cause dizziness if inhaled. Common solvents are paint and paint thinners and some glues. Petrol, methalyted Spirits kerosene and diesel are all flammable liquids and should be handled with the utmost care –

HAZARD CONTROL

- NO SMOKING when handling solvents / fuel
- Try to avoid skin contact with solvents / fuel
- Always have the correct labels on any solvent and fuel containers
- Store solvents / fuel well away from naked lights, fire places heaters etc
- Ensure the caps / lids are replaced on the container as soon as refuelling is finished to prevent accidental spillage.
- Do not leave solvent or fuel soaked rag in any confined space as it gives off very explosive vapour.
- Do not use solvents / fuel to remove grease or paint from your skin
- Ensure adequate ventilation when using solvents or fuelling machinery
- Wash hands before eating food after using solvents or fuelling machinery.
- When fuelling locomotives ensure you are well away from any naked lights, steam locomotives or welding equipment which may give off a spark.

16. AIR COMPRESSOR – SIGNIFICANT HAZARD

Compressed air is very dangerous if it enters the bloodstream, death can result
The high velocity air leaving the gun nozzle can also cause debris to enter the eyes when blowing swarf out from a blind hole or any other confined space

HAZARD CONTROL

- Turn off main power switch and release the storage tank pressure before attempting any repair work on the compressor and hose system
- Do not set the pressure release valve at a higher pressure than the storage tank makers recommendations
- Drain the water from the storage tank at regular intervals
- Check the oil level in the compressor pump unit at regular intervals
- Wear safety glasses or a face shield when using air to blow out cavities
- Never direct compressed air towards another person or towards your skin
- When using air tools, pencil grinder etc always wear safety glasses
- If using a spray paint gun ensure there are no naked lights in the vicinity
- When using a spray paint gun wear a suitable breathing mask and face shield
- Ensure the compressor is turned off once you have completed your task

17. BATTERY CHARGING – SIGNIFICANT HAZARD

Wet batteries or Lead acid batteries are classed as a hazardous substance – They give off highly explosive HYDROGEN gas when being charged and they also contain highly corrosive SULPHURIC ACID which can destroy most metals and all clothing.

HAZARD CONTROL

- Always wear safety glasses before checking electrolyte levels in a battery or when connecting or disconnecting a battery charger.
- Always ensure the battery charger is turned off at the mains before connecting or disconnecting the battery charger – even a small spark can cause the hydrogen gas being given off the battery cell vents to violently explode
- Always have good ventilation when charging batteries
- Facilities for water drenching the face and eyes should be available in case of any splashes of acid getting on the face, eyes or other body parts
- The charging rate should never exceed 25 % of the amp hour rating of the battery being charged – i.e.: 40 amp hour battery – max charge rate 10 amp.
- Keep metallic tools well away from battery terminals to avoid the accidental short circuit should the tool fall and make contact with both terminals.
- When mixing new battery electrolyte always add the acid to the water, never add the water to the acid – It can react and splash up violently.
- Any minor spillage of acid can be neutralised by mixing baking soda in water and washing the area to dilute and neutralise the spillage before mopping it up.

18. GREASE GUNS –

SIGNIFICANT HAZARD

High pressure needle point grease guns have sufficient pressure to penetrate the skin. Grease entering under the skin and into the blood stream can result in a serious poisoning and amputation of the limb if not treated immediately –

HAZARD CONTROL

- Ensure the protective shield is installed over the needle point on the grease gun
- Make sure the grease nipple is clean and in good condition before attempting to apply grease to the nipple. If leakage of grease occurs replace the nipple
- Never aim a high pressure grease gun near your skin or any one else's skin

19. ELECTRICAL OUTLETS & CORDS –

HAZARD CONTROL

- Don't use damaged power outlets – have them replaced
- Don't overload power outlets – continuous use - 2000 watts per circuit
short term intermittent loading - 2400 watts per circuit
- Check extension cords for damage – do not use damaged extension cords wound with insulation tape.
- Do not operate electrical equipment in wet conditions
- Use a RCD or isolating transformer when using power tools outside
- Do not use extension cords when they are coiled on a drum – They can overheat
- If a cord or plug is running warm you are overloading it – have a spell and let it cool off.
- Do not remove plugs from sockets by pulling on the cord -

20. BENCH GRINDERS –

HAZARD CONTROL

- Check wheel for damage and stand out of danger line when starting grinder
- Ensure grinding wheel is dressed flat and at 90 degrees to the sides
- Ensure the face guard is in place and the work rest adjusted close to the wheel
- Always wear safety glasses when using grinders
- Do not overload & stall the motor, the wheel needs to be running at full speed

21. DISK GRINDERS –

HAZARD CONTROL

- Inspect the grinding wheel / cut off wheel for damage – replace if necessary
- Ensure the guard in place and the handles are in a comfortable position
- Never fit a larger wheel than the machine is designed for. The surface speed will be too high and it may disintegrate.
- Wear safety glasses and use hearing protection when using noisy power tools
- Take care where you are aiming the sparks – they are hot and may cause fire
- Wait until the grinding wheel has stopped rotating before placing the grinder on the bench or floor
- Always disconnect the power when changing a grinding wheel

22. EYES – EARS - BURNS –

SIGNIFICANT HAZARD

There are many times when members are working around a club site using hand tools, power tools, grinders, welders, spraying weeds and pruning trees etc.

It is essential that members use the correct protective gear designed for the project being undertaken.

HAZARD CONTROL

EYES

- When using portable drilling or other cutting tools, safety glasses or full face shields must be worn – They must be clean and fit the wearer properly.
- When spraying weeds a full face shield should be worn.
- Any injuries must be reported to the “Day Manager” and professional treatment sought if required. Record the injury in the Hazard / Accident register.

EARS

- If the job being undertaken is noisy such as using a skill saw or disk grinder hearing protection must be worn as well as the safety glasses.

FEET

- Where members are working on site with heavy metal or wood, safety footwear must be worn to prevent foot injury from falling objects.
- In the event that a foot injury occurs on site it must be reported to the day manager, professionally treated and recorded in the Hazard / Accident register.

BURNS

- These can be caused by a number of items found around a club site – Heat guns – Cooking stoves – Gas welding equipment – Electric welding equipment Lighting and operating steam locomotives – Refuelling petrol locomotives – Gas fired BBQ’s – Acid from battery burns –
- Members must be aware of the potential for burns when working with any “HOT” or dangerous items or devices around the club site.
- Keep members of the public away from any potential source of hot items.
- In the event of a burn, isolate the electrical source, gas or other heat source and apply cold water to the burn area for 15 minutes to take away the heat.
- In the event of an acid burn, dilute with copious quantities of water, notify the day manager, get professional treatment and record the details in the Hazard /Accident register.
- Do not attempt to remove clothing that is stuck to the burn area – Report the burn to the day manager and get professional first aid treatment.
- Record the burn in the Hazard / Accident register.

23. BAND SAW – POWER HACK SAW –

SIGNIFICANT HAZARD

If a blade breaks pieces of blade debris and swarf can easily penetrate the eyes or face
Hands / fingers must be kept well clear of the blade when the machine is operating.

HAZARD CONTROL

- Wear safety glasses when using any type of power saw.
- Isolate the power supply when adjusting or replacing the blade on the saw
- Ensure all guards are in place on the drive belts and the blade guards before using the saw.
- Check blade for wear and tension before starting your cut – blunt blades do not cut straight
- Ensure the blade has stopped before removing your work from the machine
- Do not wear any jewellery or loose clothing when using metal cutting saws
- Gloves must not be worn when using power / band saws

24. DRILLING HOLES – HAND HELD – DRILL PRESS –

Wear safety glasses when using any type of drilling machine.

- Check the drill bit is the correct size and is sharp before proceeding
- If drilling brass remove the rake angle on the cutting edge of the drill point
- Ensure the power is off before fitting the drill bit into the drill machine chuck
- Ensure that you have no jewellery, loose clothing or long hair which could become tangled in the rotating chuck
- Ensure your work is secure or clamped before starting to drill
- Never try to grab swarf from a rotating drill bit
- Clear the material build up around the bit by regular withdrawals of the bit from the hole during drilling
- When drilling hard materials use a slow RPM speed, high pressure & cutting fluid
- Reduce feed pressure as the drill starts to break through to prevent a jamb
- When drilling into a wall or cavity check for pipes or wiring before drilling
- When using a portable drill on mains power with use a RCD device or isolating transformer to eliminate the chance of shock should you drill thru the cord.
- Never stop the machine at the finish of drilling by grabbing the drill chuck
- Clean the work area with a brush, never wipe away swarf with your hand

MANUKAU LIVE STEAMERS – HEALTH – SAFETY & HAZARDS

- MANUKAU LIVE STEAMERS INC. –

- HAZARD REPORT -

Date Time

PERSON REPORTING HAZARD

PHONE OR CONTACT DETAILS

HAZARD TYPE 24 / 7 or only when trains are running

LOCATION OF HAZARD

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TYPE OF HAZARD – Track Bridges Trees Equipment

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ACTION NEEDED TO REMOVE, REPAIR OR REDUCE HAZARD

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.....

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DATE RECTIFIED

BY

.....

File in hazard Register

Date Reported – MLS Committee MLS General meeting

**- MANUKAU LIVE STEAMERS INC –
- INCIDENT REPORT -**

Date Time

PERSON REPORTING INCIDENT

PHONE OR CONTACT DETAILS

LOCATION OF INCIDENT

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TYPE OF INCIDENT

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.....

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ACTION NEEDED TO REDUCE POSSIBILITY OF REPEAT INCIDENT

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File in Incident Register

DATE RECTIFIED

BY

Date Reported - MLS Committee **MLS General Meeting**

**MANUKAU LIVE STEAMERS INC –
-ACCIDENT REPORT -**

Date Time

VICTIM OF ACCIDENT

PHONE AND CONTACT DETAILS Ph

ADDRESS

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WITNESS TO ACCIDENT

PHONE OR CONTACT DETAILS

PERSON REPORTING ACCIDENT

PHONE OR CONTACT DETAILS

TYPE OF ACCIDENT

.....

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TREATMENT REQUIRED – FIRST AID ON SITE - DOCTORS SURGERY

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ACTION NEEDED TO REDUCE POSIBILITY OF REPEAT ACCIDENT

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File in Accident Register

Date reported - MLS Committee **MLS General meeting**

COSTS INCURRED

REFUND DUE TO