

MELBOURNE AND METROPOLITAN TRAMWAYS BOARD

ENGINEERING DEPARTMENT

WORKSHOPS AND RUNNINGSHEDS BRANCH

SAFETY PRECAUTIONS IN RUNNINGSHEDS.

I. DRIVING OF TRAMCARS IN DEPOTS.

1. Safety First:

- (i) On no account must a tram be moved if a danger disc or notice is displayed thereon, or if the lifeguard trip gate is held horizontally by means of the trolley rope. In all such cases the Depot Foreman or his Leading Hand must be informed, and the person responsible for the danger notice must remove it before the tram may proceed.
- (ii) Keep a good lookout for any personnel, vehicles, or any obstruction which may damage or foul the vehicle being driven.

2. Speed:

Speed must not exceed 4 m.p.h.

3. Procedure in Preparing to Move Vehicle:

- (i) (a) Check that there are no personnel under, around, or within the tram.
- (b) Check that the trolley pole is in the trailing position.
- (c) Switch on air compressor.
- (d) Switch on line breaker.
- (e) Check air gauge to see that a minimum of 40 lbs./sq.in. is showing before moving the vehicle.
- (ii) Check that hand brake is free.
- (iii) Place controller key in forward position.
- (iv) Sound gong.
- (v) Apply sufficient power to move tram at a speed not exceeding 4 m.p.h.
- (vi) On no account must a tram be driven in reverse except with the approval of the Depot Foreman or his Leading Hand who must attend such an operation. In all other cases, the control handles must be removed and taken to the leading end of the tram and the trolley pole must be in the trailing position.

4. Procedure to be Adopted when Reversing Trolley Poles in Depot:

The pole on the overhead wire must first be placed under

5. Berthing:

When berthing the tram, all switches must be placed in the "off" position, the controller key must be removed and placed on top of the controller. Special instructions will be given on any variation of this instruction.

6. Points:

When it is necessary to shunt over points within the depot, it is the responsibility of the driver to ensure that the tram is taken clear of the points with both trucks, and that the points are correctly set before attempting to move the tram over the points.

7. Driving Outside Depot Yard:

All movement of trams authorized by these instructions should take place within the depot yard. In cases where it is necessary to drive outside the depot yard, the Depot Foreman must be notified, and he will make arrangements accordingly.

8. Car Wash:

Any employee driving a tram into or through a wash bay must stop the tram, and check that the gate is properly latched back, before entering the wash bay.

9. "Collision - Not To Be Moved" and "Refer Depot Starter" Boards:

Trams that have these boards attached are not to be moved unless authorized by the Depot Foreman.

II. TRADESMEN.

1. Danger Discs:

Tradesmen and their assistants working on electrical equipment of trams must have both trolley poles under the hooks and danger discs attached to bottom loop of both trolley ropes. On no account must a trolley pole be placed on the overhead wire when danger discs are attached to trolley ropes.

2. Wandering Leads:

When a wandering lead has to be used from the trolley wire or other part of a live circuit, the connection to the live wire must always be the last to make and the first to break.

3. Earthing Wires:

Employees must not disconnect earthing wires without authority.

4. Controllers:

5. Braking Equipment:

- (i) When working on brake valves, Tradesmen must not use two brake handles (i.e. one at each end).
- (ii) Before removing any brake equipment, Tradesmen must place both trolley poles under the hooks and attach danger discs to the ropes.
- (iii) Before checking brake valve adjustment Tradesmen must ensure that no person is working on the electrical or brake systems and must sound the gong on each occasion and pause before the brakes are applied.

6. Roofs:

- (i) Any person before working on the roof of a tram, must see that both trolley poles are placed under the hooks and trolley ropes secured to roof hooks so that the poles cannot be released from below. It is the employee's duty to see that trolley ropes are returned to normal position after completion of job.
- (ii) Oil and grease spilt on roof must be removed immediately.

7. Route Boxes:

Ladders used for repairs or maintenance on trams, roofs and route boxes, must be fitted with safety feet, and be securely tied to frame work of trams. Lights must be turned off.

8. Wheeled Trolleys:

Wheeled trolleys used for repairs on trams must have one wheel wedged on each side with wooden wedges.

III. PITMEN.

1. General:

- (i) When adjusting or servicing tram brakes, Pitmen should endeavour to complete the operation before leaving a tram.
- (ii) If, in an emergency, a tram must be left in an unroad-worthy condition, a "Danger - don't move" board must be attached to the tram, and the Depot Foreman or Leading Hand notified.

2. Axle Box Saddle Brass:

Saddle brasses must be removed with steel hooks until end of brass is clear of axle box.

3. Lubrication of Gears:

Tram must be stationary before gear grease is inserted in gear cases.

IV. PROCEDURE TO BE ADOPTED WHEN USING LIFTING JACKS IN PREPARATION FOR REPAIRS ON TRAMCAR TRUCKS.

Jacking Tram Bodies:

1. In all cases where jacks are to be used, the trolley poles must be placed under the hooks and "Danger Discs" attached to trolley pole ropes.
2. Location:- Tram to be placed in a position where base of jacks can be placed on a level concrete or wood block floor.

Where it is impossible to place tramcar on a level position, the jacks must be aligned to a level plane by using wooden wedges under flat wooden base board.
3. Foot of jack to be placed on flat wooden base board.
4. Wooden wedges to be placed on both sides of wheel.
5. After lifting body of tram to the required height, the jack handles are to be removed.
6. Suitable wooden blocks are to be placed between the floor and under the side sill of the body of the tram. In order to make sure that the wooden packing blocks are a tight fit, drive wooden wedges in opposite directions between top of wooden block and sill of tram body.
7. Trawalla Jacks (German Jacks) are not to be used for lifting tram bodies.
8. When using German Jacks, where possible use wood blocks on top of the jack or the lifting foot.
9. Any loose bolts or set screws, worn pawls or damage to jacks must be immediately reported to the Leading Hand or Depot Foreman.
10. On completion of the job, the jacks are to be stored in the fully lowered position, with the pawls in the "UP" position.

V. SAFETY RULES TO BE OBSERVED BY WHEEL GRINDERS.

1. It is the responsibility of the top man to:-
 - (a) Remove trolley pole from the overhead and place it under the hook.
 - (b) See that the controller is in the off position and then place reverse key in neutral position.
 - (c) See that the required motors are cut out and that the required motor brushes are removed.
2. The bottom man shall not insert the bridging stick in the linebreaker until he has seen the top man and been told

3. The loose rail section MUST NOT be removed until the tram has been lifted and wheels tested for direction and then stopped.
 4. Machine must not be operated until all grinding stone guards are correctly adjusted.
 5. On completion of grinding of each pair of wheels, replace the loose rail pieces and lower the wheels. It is again the responsibility of the top man to:-
 - (a) Place the controller in the OFF position.
 - (b) Place the reverse key in neutral.
 - (c) Ensure that the loose rail pieces have been replaced.
 - (d) Ensure that all tools, gauges and other materials have been removed from the rails.
 - (e) Ensure that all motors have been cut in and brushes replaced, before he places the trolley pole on the overhead wire.
 6. The compressor switch must be left in the ON position during grinding operation.
 7. Face shields or goggles must be worn during grinding.
 8. Respirators should be worn during the grinding operation.
 9. Brakes must be re-adjusted after completion of grinding.
 10. The hands and fingers must be kept clear of the tram wheels at all times whilst they are in motion.
 11. Wandering leads must not be connected without first making sure that both poles are off the overhead wire and under the hooks.

When a wandering lead is attached to a tram a warning notice must be attached to the pole at the other end.
 12. Motor brushes must not be removed or replaced without first making sure that both poles are off the overhead wire and under the hooks.
 13. Trams 750, 751 and 980 are not to be prepared for grinder except under the supervision of the Shed Foreman.
- FACE SHIELDS, GOGGLES & RESPIRATORS ARE ISSUED FOR YOUR PROTECTION - USE THEM!
14. Grinding machine, equipment, steps, rails, floor and pits to be kept clean and free from debris.
 15. Grinding dust in separators and ducts to be cleaned at regular intervals.
 16. Except by the use of suitable stick, an employee must not change a belt from one pulley to another whilst a machine is running, and in no circumstances are main belts to be changed.

VI. GENERAL SAFETY PRECAUTIONS.

1. All passage ways must be kept clear of obstructions.
2. All steps must be kept clean and free from oil.
3. Rails and stringers must be kept clean and free from oil. "Day-in" service roads must be cleaned and lightly sanded each day.
4. Stepping or jumping over the pits is forbidden.
5. All equipment, such as hand tools, handlights, wandering leads, ladders, trestles, protective clothing must be kept clean and in good condition. Damaged or broken equipment or protective clothing must not be used, but must be reported immediately to the Depot Foreman.
6. When guards or shields are provided with any equipment, they must be correctly used.
7. Any protective clothing issued must be used at all times for the purpose provided.
8. An employee must not test the alignment of, or clear out a hole in a plate or casting, etc., with his finger.
9. Employees must not strike case hardened metal with steel hammers. Only Rawhide, lead or copper hammers provided for the purpose should be used.
10. Employees must not use chisels, chisel bars, punches, snaps, drifts, etc., with mushroom heads, or hammers with loose or defective shafts.
11. Employees must not use defective pinch bars with worn ends, or defective spanners with strained or worn jaws.
12. An employee must not perform any class of work where there is an element of danger to his eyesight without first applying to his Depot Foreman for a pair of safety goggles or glasses.

VII. REGULAR CLEANING SCHEDULES.

1. A place for everything and everything in its place, includes such things as:-
 - (i) return unwanted material to store,
 - (ii) use bins for rubbish,
 - (iii) scrap shoes to be piled in pits as close as possible to the rail.
2. Mess Room:
 - (i) Place rubbish in bin, not on floor.
 - (ii) Leave sink and stove clean and tidy, clear away utensils.
 - (iii) Don't tip tea

3. Change Room:

- (i) Keep lockers clean and tidy - throw out all old clothes and boots, etc.
- (ii) Don't place rubbish on top of or below lockers.
- (iii) Keep gumboots in the cleaners locker or room, and brooms in clips.

4. Toilets and Showers:

- (i) Use regulation toilet paper.
- (ii) Leave handbasin and surrounds clean.
- (iii) Make sure all taps are turned off, particularly hot water - remember your mates.
- (iv) Don't wash on towels - use water and soap first.
- (v) Don't wear greasy boots in shower room.
- (vi) Don't leave newspapers on the floor.

5. Store:

- (i) Keep store tidy.
- (ii) Return unwanted materials, but not worn washers, bolts etc., scrap them.
- (iii) Keep oil and kerosene drums clean and turn off taps.

6. Shed:

- (i) Keep ramp, steps, pits, rails and floors clean and clear of obstructions, e.g. keep new and worn brake shoes in pits as close to rail as possible.
- (ii) Wipe up all spilt oil and grease.
- (iii) "Day-in" rails must be swept, wiped and lightly sanded daily, other rails to be cleaned as necessary.
- (iv) Don't handle trolley ropes with dirty hands.

VIII. PROTECTIVE CLOTHING.

Bump and safety helmets, dust masks, gloves, safety glasses are issued to employees for their protection and should be worn.

Employees must report worn tread on gumboots.