MINNESOTA STREETCAR MUSEUM
COMO-HARRIET STREETCAR LINE
EXCELSIOR STREETCAR LINE

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March 14, 2025

Policy No. 14

SAFETY

1.0 Overview.

1.1 The purpose of this document is to establish uniform policies and procedures to ensure safe streetcar operations and industrial activities in all Minnesota Streetcar Museum streetcars and facilities. The safety policies apply to all individuals (including museum members, volunteers, contract workers, customers, visitors, etc.) on Museum property or doing Museum sponsored work at all times to ensure a safe environment for our members and guests.

1.2 This policy supports and in no manner replaces applicable sections of the current edition of the MSM Operating Rules and Regulations Governing the Operations of Streetcars at the Como-Harriet Streetcar Line (CHSL) and Excelsior Streetcar Line (ESL). If there is a discrepancy between this safety policy and the MSM rule book, the rule book will take precedence.

2.0 Responsibilities - General

2.1 The MSM Superintendent for Safety will establish and maintain a comprehensive safety policy for all activities in the museum. The Safety Superintendent will periodically review compliance with the policy and procedures and coordinate safety training as specified in this policy. The Superintendent for Safety is authorized to appoint assistants to help with museum safety activities.

2.2 Museum officers, superintendents, directors, managers, and volunteers are responsible for implementing and enforcing this policy.

2.3 The Museum's Training Department will incorporate safety training into the museum's streetcar operator training curriculum and for operator recertification training.

2.4 In ALL cases where there is a serious accident and as appropriate, a museum member must call 911 as soon as possible.

3.0 Responsibilities - Streetcar Operations

3.1 The Shift Foreman will ensure adherence to the operating rules and procedures as set forth in the Museum's Operating Rules and Regulations Governing The Operations of Streetcars At The Como-Harriet Streetcar Line and Excelsior Streetcar Line.

3.2 The Shift Foreman is responsible for reminding all crews of safe operating practices. The Foreman will counsel a crewmember if deviation from the operating rules one-on-one out of the earshot of other crew members and any passengers.

3.3 The Shift Foreman will check the first aid kit on their streetcar. If kit is missing or depleted, the Foreman will contact the Museum Superintendent for Safety or ESL Superintendent to replenish or replace the kit.

4.0 Responsibilities – Mechanical/Maintenance Operations

4.1 Shop Foremen will ensure that each person who enters any Museum carbarn or shop understands the requirements for safe maintenance work. The Shop Foreman may designate a person or persons to help monitor and maintain compliance with safe practices.

4.2 Shop Foremen will ensure there is an adequate amount of safety equipment and supplies needed to work safely and/or to provide first aid in the event of minor injuries.

4.3 Shop Foreman will periodically check the supplies in the first aid kit in the shop. If the kit is missing or depleted, the shop Foreman will contact the Museum Superintendent for Safety or ESL Superintendent to replenish or replace the kit.

5.0 Responsibilities – Maintenance of Way (MoW)

5.1 The Foreman directing a work crew working on the overhead lines, maintenance of way (MoW) and buildings and grounds will ensure that each person assigned to a work crew understands the requirements for safe maintenance work. The crew Foreman may designate a person or persons to observe compliance with safe work practices.

5.2 The crew Foreman will check the supplies in the first aid kit on the work car at the beginning of a work session. If the kit is missing or depleted, the Foreman will contact the museum Superintendent for Safety or ESL Superintendent to replenish or replace the kit.

6.0 Incident (including medical) Response. Crew members need to be sure the streetcar or area is safe before attending to injuries. Injuries to crew and passengers/visitors must be attended to before all else, while at the same time, other crew members should attend to any immediate hazard such as fire.

6.1 Museum volunteers will call 911 <u>immediately</u> for injuries occurring on Museum property that require professional medical attention. Volunteers must give 911 emergency responders the exact location of an incident and relate the point to the shop address, approximate distance from a street intersection or landmark to minimize delay.

6.2 Minor injuries that are not life threatening or require professional medical attention shall be attended to by crew using first aid kits provided.

6.3 All injuries to a volunteer or visitor and/or damage to Museum facilities or streetcars must be reported immediately to the Superintendent for Safety, the ESL Superintendent, or the General Superintendent. A written report should follow the verbal report by submitting MSM Form 2-INCIDENT REPORT as soon as possible following the incident/ accident. The Foreman on duty is responsible for this task but may require the assistance of the crew members or work crew who were involved in the incident or who have information pertaining to the incident.

6.4 The General Superintendent or Safety Superintendent are responsible to ensure that the incident is communicated to the appropriate Museum officers, such as the Chairman of the Board, Board members, Mechanical Superintendent, etc.

7.0 Procedures.

7.1 Towing a Streetcar with Another Streetcar.

7.1.1 Before towing a streetcar, the Superintendent for Safety, ESL Superintendent (or Assistant Superintendent), Mechanical Superintendent, General Superintendent, or another qualified leader should be contacted to assemble a crew to tow the disabled car.

7.1.2 A crew of four persons is required, with one designated as the Foreman. Prior to any work being started, the Foreman will discuss in detail with the crew members the procedures to be followed including any signals or other communication requirements.

7.1.3 The towbar shall be affixed to the car that is being towed. No one may stand between the cars to manually lift the towbar into the pocket of the towing car. Instead, two crew members will stand a safe distance away on either side of the track and use a board or rope to maneuver the tow bar into place.

7.1.4 Stepping between the cars to make the final coupling will only be permitted after the Foreman has ensured that all crew members are aware, and no unexpected movement of the towing car can occur.

7.1.5 Once the towbar is in place, the Foreman will assign crew members to the front and rear of each car, with specific instructions on how the move will be done. This will include who will operate the controller, the brakes, and monitor the tow bar, and what pre-arranged signals will pass between the crew members to ensure that the move is made safely.

7.2 Line Inspection Trip (after a storm).

7.2.1 (CHSL) Before making the first revenue trip following a storm, high wind or multiple days without service, the Foreman will operate an inspection trip to ensure that there are no downed trees, objects on the overhead wire or obstacles on the track. This includes looking for close clearance obstacles at the Park Board maintenance building. Foreman should operate such an inspection trip sufficiently early not to delay the start of revenue operations.

7.2.2 As part of normal operations, it is expected that the Foreman make the initial trip in the forward position of the car and in the rear on return to look for obstacles to the overhead or track.

7.3 Whenever there is snow and ice, extreme care will be taken to avoid operating on rails covered with ice, or with ice-filled flangeways. Ice-filled flangeways must be cleared prior to operation.

7.4 Tower Car.

7.4.1 Before moving the tower car.

7.4.1.1 Never use the tower car for the first time by yourself. Always have someone who has experience working on the tower car show you how to use it.

7.4.1.2 Safety glasses, work gloves, and hard hats will be always worn.

7.4.1.3 Always lock out and tag out the main power supply at the back of the cold barn (CHSL) or in the warm barn (ESL) before attempting to move the tower car. Carry the key with you, and do not turn on the power unless all workers are accounted for. If possible, all workers should apply their own lock to the lock out, and each worker should only remove his/her own lock.

7.4.1.4 (CHSL) Disconnect the speeder from the battery charger before attempting to move the speeder.

7.4.1.5 At CHSL ensure the speeder shed roll-up door is in the fully open position before attempting to move any equipment.

7.4.1.6 Remove any chocks under the wheels of the tower car and speeder and securely connect the two together with a tow bar. Be careful to do this at slow speeds on flat ground to avoid being pinched between the tower car and speeder.

7.4.2 Moving the tower car.

7.4.2.1 When operating the speeder, always go at dead slow speed. Do not exceed 5 mph.

7.4.2.2 Confirm that all track switches are manually thrown in the direction of travel. The speeder will not spring open a switch that is not thrown in the direction of travel.

7.4.2.3 Ensure that all passengers are securely seated on the speeder before moving it. Do not attempt to dismount the speeder while it is moving. Do not ride the tower car while it is moving.

7.4.3 Operating the tower

7.4.3.1 Securely chock both the tower car and speeder before attempting to climb on the tower car. If necessary, use the rail hold-down clamps.

7.4.3.2 (CHSL) Do not raise or lower the tower car with any people on it.

7.4.3.3 Always keep three points of contact with the tower car while climbing. Do not carry up any tools or equipment with you while climbing up or down the tower car; use a rope, pulley, and bucket instead.

7.4.3.4 Safety railings must be raised to work on top of the tower car. Do not attempt to lean outside the perimeter of the safety rails.

7.4.3.5 The overhead line may be under tension. Keep this in mind whenever loosening clamps to avoid injury.

7.4.3.6 Whenever possible, use non-conductive tools to avoid possible risks of electrocution.

7.4.3.7 The overhead trolley wire will be grounded to the rails while work is being done on the trolley wire.

7.5 Jacking or Lifting of Streetcars. Planning and coordination of any streetcar jacking operation is extremely important. This must include a thorough and detailed plan before starting any jacking operation. Ensuring that everyone is prepared, and everything is where you will need it beforehand is critical to safety and success. Know what each step of the job is well before you get there. Be extremely critical of your plans. Look at them from every angle and get as many experienced eyes to look at it as you can. Detailed instructions on streetcar jacking and lifting is found at Safety Protocol IV – Jacking or Lifting of Streetcars.

APPROVED BY THE BOARD OF DIRECTORS:
DATE: March 14, 2025

ATTEST: James A. Vaitkunas
Corporate Secretary

Appendices:
Safety Protocol I – Museum Streetcar Operations
Safety Protocol II – Museum Shops (Ready Barns and Maintenance Barns)
Safety Protocol III – Museum Streetcar Lines and Stations (Maintenance of Way (MoW), Track, Overhead)
Safety Protocol IV – Jacking or Lifting of Streetcars

Reference and Source Documents:
1. Heritage Rail Alliance Recommended Safety Practices for Tourist Railroads
2. Seashore Trolley Museum Safety Policy—Volunteer Handbook
3. Seashore Trolley Museum Employee Safety Policy
4. Minnesota Streetcar Museum Operating Rules and Regulations Governing The Operations of Streetcars At The Como-Harriet Streetcar Line and Excelsior Streetcar Line.

SAFETY PROTOCOL I – Museum Streetcar Operations

PREVENTION

1. Instruction.
   a. MSM's Training Department will train operating volunteers in safe operation of the streetcar(s) on which they are qualified to operate. Streetcar Operator's licenses will indicate the specific streetcar(s) the operator is qualified to operate. MSM's Training Department will conduct operator re-certification training annually.
   b. Operating volunteers shall be instructed in proper emergency response during initial operator training and annual recertification training.
2. Identification of Potential Hazard. Operating volunteers will be vigilant for potential hazards to the customers or the crew. See something? Then say something. Report safety concerns to the shift Foreman promptly. The Foreman in turn should address the situation, if possible, or escalate it as appropriate.
   a. Warn people or animals seen on or near tracks. Be prepared to stop. Use streetcar warning devices.
   b. Crossing a public street or trail crossing creates a special safety hazard. At CHSL and ESL, Operators will be governed by special operating procedures for each railway. In all cases, streetcars will proceed at a dead-slow speed (4 mph) across any roadway or trail crossing.
   c. Operating Volunteers engaged in grade crossing flag duty shall wear a yellow reflective safety vest.
   d. Operating Volunteers engaged in depot, ticket booth, or platform duty shall keep all walking areas clear of debris or obstructions,-warn customers to avoid any such hazards, keep customers back from edge of platforms, and monitor the platform for any unsafe behavior.

INCIDENT (including medical) RESPONSE

1. In the event of an emergency incident/accident immediate action procedures are as follows:
   a. Determine the extent of any injuries. If the injuries are not serious, provide basic first aid using the first aid kit found at the front of the streetcar, under the POS counter at the Depot or Ticket Booth, or in the carbarn/shop.
   b. If there are people with injuries or a health crisis requiring professional medical attention.
      1) Ask passengers on the streetcar if anyone is a qualified medical person or if they are qualified to render CPR aid. Museum members should provide CPR only if they are qualified.
      2) Call "911" to report the incident. Be sure to provide the nearest address or street intersection or trail name and location to the 911 dispatcher.

3) Provide basic first aid, as appropriate, using the first aid kit found at the front of the streetcar, under the POS counter at the depot (CHSL) or ticket booth (ESL), or in the carbarns.

4) If an accident/incident occurs in an area that has limited access, the streetcar should be moved if it can, to an accessible point to allow access by emergency response personnel.

c. Report the incident to the Foreman.

1) The Foreman is responsible to contact the Superintendent for Safety, the ESL Superintendent/Assistant Superintendent, or the General Superintendent as soon as practicable to report the incident.

2) Complete and submit MSM Form 2 INCIDENT REPORT by Foreman promptly for property damage or injuries.

SAFETY PROTOCOL II – Museum Shops (Ready Barns and Maintenance Barns)

PREVENTION

1. Instruction. Shop Volunteers shall be instructed about safe shop practices by the Shop Foreman or their designee and trained in the safe and proper use of all shop tools and machinery.
    a. Wear protective clothing/footwear/eyewear/hard hats when working in the shop as designated by the Mechanical Superintendent and Shop Foreman.
        1) Wear ear protection when operating on or near noisy machines.
        2) Wear hard hats in designated areas.
    b. Wear safety harness when working more than 8 feet above the floor.
    c. Evacuation plans for shops and ready barns in case of a fire or other emergency will be developed by the Chief Mechanical Officer and shop Foremen and posted as necessary.
2. Identification of Potential Hazard. Museum volunteers must be vigilant for potential hazards. See something? Say something. Report safety concerns to the shift Shop Foreman promptly. The Shop Foreman in turn should address the situation, if possible, or escalate it as appropriate.
3. Flammable Substances.
    a. Tools and materials, including use of flammable substances, will be properly stored in suitable containers and/or lockers.
    b. Whenever flame producing tools or equipment are used, a fire extinguisher will be readily available at the work site with a volunteer standing-by to use it if necessary.
4. Overhead Power. The shop Foreman will determine when overhead line power will be turned on or off. If power will be turned on, the shop Foreman will ensure that coordination with any crews working on the railway is done before power is turned on.
5. Inspection Pit. The inspection pit cover will be placed over the pit when a streetcar is not standing over it.

INCIDENT (including medical) RESPONSE

1. In the event of an emergency incident/accident immediate action procedures are as follows:
    a. Determine the extent of any injuries.
    b. If the injuries are not serious, provide basic first aid using the first aid kit found at the front of the streetcar or above the eye wash station in the shop.
    c. If there are people with injuries or a health crisis requiring professional medical attention.

1) Determine if anyone in the shop is a qualified medical person or if they are qualified to render CPR aid. Museum members should provide CPR only if they are qualified.
2) Call "911" to report the incident. Be sure to provide the address to the 911 dispatcher.
3) Provide basic first aid, as appropriate, using the first aid kit found at the front of the streetcar or above the eye wash station in the shop.

2. Report the incident to the Foreman.
   a. The Shop Foreman is responsible to contact the Superintendent for Safety, the ESL Superintendent/Assistant Superintendent, or the General Superintendent as soon as practicable to report the incident.
   b. Complete and submit MSM Form 2 INCIDENT REPORT by shop Foreman promptly for property damage or injuries.

SAFETY PROTOCOL III – Museum Streetcar Lines and Stations (Maintenance of Way (MoW), Track, Overhead)

PREVENTION

1. Instruction. Volunteers will be trained in the proper and safe operation of the speeder, tower car. Volunteers will also be instructed in proper emergency response during initial onboarding and through an annual attestation process.
   a. Wear protective clothing/footwear when working with heavy equipment and power tools.
   b. Wear hard hats in designated areas such as on or near the speeder or tower car and while working on the railway right-of-way.
   c. Reflective vests shall be worn by all overhead line, MoW and buildings and grounds maintenance crews while working on the railway.
   d. Wear safety harnesses when working more than 8 feet above the ground.
   e. Protective handrails will be fully deployed whenever overhead line maintenance volunteers are on top of the tower car.
2. Preparing for a Work Session.
   a. Overhead line, maintenance-of-way (MoW) and buildings and grounds maintenance volunteers shall be briefed on safe work practices by the crew Foreman before a work session begins.
   b. Work crew Foremen shall check that a first aid kit is on board the speeder or work car before departing for railway maintenance work.
3. Work Session.
   a. The overhead line, MoW or buildings and grounds crew Foreman will determine if/when power needs to be turned off from the main line overhead.
      1) (CHSL) If power is turned off, a safety bar (CHSL) will be placed over the power switches and locked.
      2) (ESL) The power is locked off by adding a second (or more) padlock(s) to power switch #3. The key or keys are held by the crew member adding the padlock. Power remains locked off until the crew member(s) remove the padlock(s).
   b. Trackside maintenance activity warning devices (traffic cones, flags and the like) will be placed 100 feet on either side, and immediately adjacent to, the work site to alert streetcar operators to the work zone.
   c. If an operating streetcar approaches the work area, the work will immediately stop, and the work crew will move away a safe distance from the approaching streetcar and face towards the track while the streetcar passes.
   d. Whenever flame producing tools or equipment are used, a fire extinguisher will be readily available with a volunteer standing-by to use it if necessary.

e. When work is done on the overhead trolley wire, the trolley wire will be grounded to the rails.

f. Identification of Potential Hazard. Museum volunteers must be vigilant for potential hazards. See something? Say something. Report safety concerns to the shift Foreman promptly. The Foreman in turn should address the situation, if possible, or escalate it as appropriate.

INCIDENT (including medical) RESPONSE

1. In the event of an emergency incident/accident immediate action procedures are as follows:
   a. Determine the extent of any injuries. If the injuries are not serious, provide basic first aid using the first aid kit found at the front of the streetcar, on the speeder, under the POS counter at the Depot (CHSL) or Ticket Booth (ESL) or in the carbarn.
   b. If there are people with injuries or a health crisis requiring professional medical attention.
      1) Determine if anyone in the shop is a qualified medical person or if they are qualified to render CPR aid. Museum members should provide CPR only if they are qualified.
      2) Call "911" to report the incident. Be sure to provide the address to the 911 dispatcher.
      3) Provide basic first aid, as appropriate, using the first aid kit found at the front of the streetcar, on the speeder, under the POS counter at the Depot (CHSL) or Ticket Booth (ESL), or in the carbarn.
   c. Report the incident to the Foreman.
      1) The Foreman is responsible to contact the Superintendent for Safety, the ESL Superintendent/ Assistant Superintendent, or the General Superintendent as soon as practicable to report the incident.
      2) Complete and submit MSM Form 2 INCIDENT REPORT by shop Foreman promptly for property damage or injuries.
2. Overhead line, MoW and buildings and grounds maintenance volunteers shall always be vigilant for potential hazards, such as obstructions, tripping hazards, spills in their work area, or other situations that could cause an accident. See something? Then say something. Report safety concerns to Foreman promptly.

SAFETY PROTOCOL IV –Jacking or Lifting of Streetcars

GENERAL SAFETY GUIDELINES

Planning and coordination of any streetcar jacking operation is extremely important. This must include a thorough and detailed plan before starting any jacking operation. Ensuring that everyone is prepared, and everything is where you will need it beforehand is critical to safety and success. Know what each step of the job is well before you get there. Be extremely critical of your plans. Look at them from every angle and get as many experienced eyes to look at it as you can.

1. Do not put any part of your anatomy between the streetcar and anything it could fall on.
2. Have an escape route planned for all personnel during the jacking operation. Stay out of areas where the streetcar is likely to fall, if it does.
3. Clear communication is essential to safe operation. Be sure everyone understands what is to be done and their specific task before starting any jacking operation.
4. During the jacking operation, focus only on the operation, not on anything else.
5. Streetcars on jacks must always have blue flag protection. No other streetcar may approach a streetcar on jacks on the same track
6. Keep all non-essential people away from the immediate area while jacking.

JACK USE GUIDELINES

1. Screw-type jacks are preferred for all streetcar jacking operations. Pneumatic and scissors-type jacks are not suitable for streetcar jacking. When hydraulic jacks are used, they must be always monitored for any loss of hydraulic pressure. Some screw jacks may have electric powered screws.
2. Always try to use matching jacks to make it easier to jack the streetcar evenly.
3. The jacks must be in good condition, clean, and properly lubricated with the nuts and screws not excessively worn
4. Whenever possible, use four jacks to jack up a streetcar, one placed symmetrically on each corner. If the jacks are not to be located symmetrically under the streetcar, be sure to understand the uneven loading and other consequences that may occur.
5. Before placing the jacks under the streetcar, test each jack for proper operation. This should be done in both the extending and contracting motions while under some load.
6. Always put plywood spacers between the cement floor and the jack, between the top or foot of the jack and the streetcar body or frame, and between a transfer plate and the base of the jack.

CRIBBING GUIDELINES

1. All cribbing and any other wooden pieces that will support the streetcar's weight must be inspected to ensure they are sound, not rotten, have matching geometry (square or rectangular), be in good condition, and are appropriate for the operation

2. Cribbing used is usually 24" long. It may be constructed of 2" X 4", 4" X 4", or 6" X 6" material. Stacks are constructed in an overlapping "Lincoln Log" style with 2 pieces per tier of cribbing.
3. "Half-size" cribbing (no more than 3" high) should be constructed to aid jacking operations.
4. Since lumber is not always the same size, it is helpful to paint cribbing of the same size a consistent color when it is bought or to match the size of current inventory.
5. Each layer in the cribbing tower should be inspected for stability as it is built. Damaged blocks must be scrapped and discarded. Neatness counts and blocks must be adjusted to align as best as possible as the cribbing tower is built. Having uniform blocks greatly improves stability and makes the operation more efficient.

JACKING PROCEDURE INSTRUCTIONS

1. One person is designated as the "lead person" for the complete jacking operation. This person controls the jacking and is responsible for coordinating the operation of all the jacks.

2. Turn off power to the overhead wire for the streetcar.

3. Remove the trolley pole from the overhead wire.

4. Streetcars on jacks must always have blue flag protection placed around the work area. No other streetcar may approach a streetcar on jacks on the same track.

5. If a streetcar is being jacked, the relevant area is closed to everyone except the jacking staff until the streetcar is on "hard" (i.e. cribbing or trucks) support.

6. Whenever possible, use four jacks to jack up a streetcar, one placed symmetrically on each corner. This helps to avoid developing an angle between the jack and the carbody that occurs when jacking just one end.

7. Always use screw jacks when possible. Pneumatic or scissors-type jacks are not reliable for jacking a streetcar. Some screw jacks may have electric powered screws.

8. When using electrically operated jacks, one person should be at each corner to monitor the operation and ensure that all jacks turn in unison. The lead person must always watch the jack tenders to be sure all the jacks are turning as needed. Some electric streetcar jacks have indicators that can be seen spinning when the jack is running.

9. A steel I-beam may need to be placed under some streetcars to support its weight, provide clearance, and facilitate jacking operations. It is best to clamp the I beam to either the jack ram or streetcar frame in this situation.

10. When jacking only one truck on the streetcar, do not chock the wheels on the other truck. The truck remaining on the tracks will move toward the end that is being raised during the jacking operation. Similarly, when the streetcar is being lowered, the truck on the tracks will move away from the truck that is being lowered.

11. Build a tower of cribbing under each streetcar "corner" before jacking. Take extra time to ensure the towers are straight and well aligned. Use smaller pieces of plywood as shims between cribbing layers. Having uniform blocks greatly improves stability and makes the operation more efficient.

12. Position the jack rams on the bolsters or similar structural streetcar element.

13. Position the cribbing tower as close to the bolster as possible. If a truck is to be removed as part of the operation, position the tower as close as possible to allow for this removal. If a truck does not have to be removed, it may be possible to build cribbing towers around the journal boxes to move the support point further inboard. In either case, if you can't center the sill on the tower, have a solid pattern of wood directly under the sill to the floor. If you build around a journal box, use a broad base as high as possible, and then hold whatever spacing the journal box allows for clearance the rest of the way. Avoid "3 by 3" layers, as these can "high center" and become unstable.

14. Pre-cut "shoes" with relief that fit around bolts/pipes/casting ribs is very helpful to protect delicate features during jacking. These shoes are placed between the cribbing and carbody.

15. Before the jacks move, the lead person will call the jacks to be moved, the direction, and the distance (“jacks 1 and 2 are going up 2 inches"). The personnel assigned to tend each jack reply "ready on [number]" when they are in position and ready. The lead person calls this back ("ready on 1 and 2"), visually checks the jack tenders are ready, and calls the move ("going up on 1 and 2"). Jacks are operated in unison slowly and deliberately in the direction planned. The jack tenders have cribbing blocks of the correct thickness ready to slide into the gap created by jacking. Once they can slide them in, they call "good on [number]". The lead person calls this back and calls to stop the motion. If further jacking is required to get the blocks in, the lead person calls this ("going up with jack 1, about a quarter inch") and goes through the same calls as above. Once the blocks are in place, the ram is lowered slightly to place weight on the cribbing towers and calls this as above.

16. Repeat step 15 as needed by raising the streetcar in about 3” increments to the desired height. This is sometimes referred to as "chasing the streetcar up" by placing thinner cribbing stacks in the gap created by jacking, lowering the carbody onto the cribbing, repositioning the cribbing under the jack, and jacking the carbody again. If the streetcar is raised more than 3" on one end it may lose contact with much of the support tower.

17. Thin wooden wedges of sufficient width may be placed between the pieces of cribbing to make slight adjustments on each side to keep the streetcar level.

18. At some time during the jacking operation, a situation may arise where all the load is supported on just two diagonal jacks. The lead person must monitor this situation and safely adjust the jacks to keep the streetcar properly supported at all times.

19. Once the jacking operation is complete, the streetcar is left on cribbing at the lowest possible height to accommodate whatever work is to be done. If it's possible, place the streetcar back on its "natural support" (i.e. if only one truck is to come out, set the streetcar back on the other truck). This is done as soon as possible.

20. After the lifting is finished, proper cribbing is placed under the streetcar to support its weight, and the situation has been inspected and found secure, people may be allowed to work under the streetcar on an "as needed" basis.

21. A streetcar supported by jacks or resting on cribbing must not be hit, pushed, pulled, etc. to ensure the streetcar is not knocked off the supports. Any operation near the streetcar must be closely supervised.

22. Never leave a streetcar on jacks overnight. Set the streetcar on secure cribbing support before the end of each day.

23. If the trucks have been removed, or the jacks are individually controlled, it is not uncommon for the center plates not to line up when the streetcar is lowered. If this may be the situation, transfer plates should be placed under the jacks to allow for lateral movement of the streetcar body. Any sideways movement of a streetcar on the transfer plates must be done carefully to ensure both transfer plates are moving sideways at the same rate and in the same direction.