

CAUSTIC TANK CAR LOADING PROCEDURE
1990

SL 086922

The caustic car loading rack is a goggle area.

NOTE WEAR YOUR GOGGLES AT ALL TIMES IN THE AREA.

1. The railroad crew switches and spots the cars. On occasion our people will have to do the switching.
2. After the cars are spotted make sure of the following:
 - CHOCKS ARE IN PLACE
 - HAND BRAKE IS SET
 - DERAILS ARE CLOSED
 - BLUE FLAGS ARE IN PLACE BOTH ENDS OF RACK OR SWITCHES LOCKED EAST END OF THE RACK.
3. Tankerman with the assistance of the helpers will inspect all the cars to be loaded. IMPORTANT: Read very carefully the section on tank car inspection at the back of this procedure. Actual training in inspection will be provided.
4. Some of the inspection details should include:
 - A. Check for "CAUSTIC SODA" which is stenciled in 4" letters on both sides of the car. Also check for "Not For Flammable Liquids" and "Test/Due Test Dates" stenciled on the car.
 - B. If the car initials begins with anything other than PPGX check with the car shop or traffic to verify we are to load it. If it is a car leased to us, we must stencil "Leased to PPG", on the car.
5. Helpers will remove the outlet plugs and open the outlet valve. Make sure there is a minimum of a 12" clearance from the top of the rail to the plug in the bottom outlet valve.

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CAUTION: Open valve slowly as some cars return with material remaining in them. It could cause a potential splash or spill when you open the valve. If the car last contained 70% caustic, it may be difficult to open the valve. Steam may have to be applied to thaw the valve. See bottom outlet arrangement at the back of this procedure.

6. Tankerman working from the rack will perform the following duties with the assistance of a helper.
 - A. Lower ramp onto the car. Open the dome, inspect gasket and make any necessary repairs.
 - B. Inspect the rupture disc (replace if necessary).
 - C. Open the protective housing cover (see unloading arrangement No. 375.)
 - D. Remove the plugs from the 2" unloading valve (Part #276B).
 - E. Remove the plug from the 1" air valve (Part #276A).
 - F. Run hot water through the open valves into the car, visually check to see if the lines and valves are open (Clear).
 - G. Place the hot water hose and "tee" down to the bottom of the car. Place "tee" so that water will spray to the ends of the car.

- H. Cars that last contained ET or MC 50 caustic need a minimum amount of washing. The main thing is to see if the stand-leg and outlets are open and the inside valve operates properly. If a car is going from ET to MC 50 service more washing is needed. Make a visual inspection of the lining.
- I. You may have some difficulty turning the top operating rod handle (to open the inside valve) especially on cars that last contained 70 % caustic. DO NOT TRY TO FORCE OR HAMMER OPEN. Hot water can be used to wash around the seat of the inside valve to free it up. If 70% is to be loaded back into the car allow the car to drain and inspect the lining.
- J. Any lining problems should be brought to the your Foreman's attention.
- 7. Position the loading spout in the dome of the car and secure it with a chain.
- 8. After the car is clear, let it drain and close the inside valve.
 - A. If the car has an outside cock valve, it must remain open during loading.
 - B. For the cars without an outside valve, leave the plug out, close the inside valve.

NOTE: ALL CARS IN PPG'S SERVICE MUST HAVE AN OUTLET COCK.

8.A. and 8.B. are to insure the inside valve is not leaking.

9. Obtain the loading tank levels from the caustic production foreman each day.
10. Call the Traffic Department and give them the car numbers that are spotted to be loaded and the car numbers that are not good to load. They will in turn give you your loading orders and the grades of caustic to load. The following grades of caustic can be loaded:

- ET-70%
- ET-50%
- MC-50%

Hands-on-training will be completed by an experienced trainer for tank line up, rack line up, pumps, etc.

11. When 70% caustic is to be loaded the section lines, rack lines and loading valves will have to be pre-heated (steamed).
12. Check the rack line up to make sure the proper car is lined up. Check to be sure the car steam coil nipple threads are serviceable. If not, clean with a wire brush or chase the threads. If this doesn't work and nothing else is wrong with the car, load it, scratch from the switch list and notify the Car Shop.
13. Complete the loading line and storage tank line-up. Check the inside valve and make sure it is shut.
14. Start the loading. SAFETY NOTE: One helper will stand by to stop the pump at the remote cutoff switches in case a problem occurs. The pump cut off switches are located on the east and west sides of the loading rack.

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- A. Check all cars for leaking inside valves.
 - B. Stop loading the car to correct any leak or problem.
 - C. If a leak cannot be corrected, do not continue to load. Call the foreman to decide if the car will be loaded. NOTE: Report any spill on the ground or any excessive amount of caustic to the drains, as this will have an effect on the outfall PH reading. Call your supervisor.
15. When the desired level in the car is reached, shut the car off. Do not shut off against the loading pump.
- A. Have the next car lined up, open into it, then shut the car off that is full.
 - B. If you are loading the last car, shut the loading pump off first then the loading valve.
 - C. For 16,000 gallon cars use the use the strapping tables to determine the proper filling level.
NOTE: 16,000 gallon cars with 70% caustic cannot be filled to the 2% because of the maximum load limit of 263,000 pounds.
 - D. For 10,000 gallon cars use the fixed 2% mark in the car.
16. Precautions must be taken to prevent spillage or dripping of caustic on the exterior of the car.

17. Each 73% car is sampled after loading. The first and last car loaded from each ET-50 and MC-50 tank is sampled. Tag the sample and put it at the delivery station for delivery to the Lab.
18. After the car is loaded steam the loading line and spout into the car. Remove the spout and secure it.
 - A. Check the gasket, close the dome and secure it and close the eduction pipe cock and the air cock.
 - B. Complete a leak test by pressurizing the car up with air to 20 pounds (all cars).
 - C. If any leaks are found, correct them.
 - D. Insert and tighten the air and eduction cock plugs.
19. Finish securing the car and apply the seals. Record the seal numbers.
 - A. Apply the bulk transportation safety data tag so that it must be removed when the housing is opened.
 - B. Apply valve stem housing and insert the car seal on the cars so equipped.
20. Wash any spillage off the dome or body of the car after loading.
21. Do final inspection - all tags, bottom valves, plugs and placards are in place. PLACARDS AND TAGS MUST BE LEGIBLE.
 - A. Complete loading and inspection report.
 - B. Notify the car shop in advance if you will need another switch.

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CAUSTIC TANK CAR PRE-LOADING INSPECTION

The following requirements of inspection are to be completed by the tankerman working the caustic rack job.

This inspection must be completed prior to the loading of a caustic tank car.

The person completing this inspection should be aware that he will be signing an inspection form to the effect this task has been done. This is part of the DOT requirements. Record all defects found on the bottom of the Loading and Inspection form if the car is to be loaded. The "Cut-away" and "Exploded" views and important points of inspection will be included in the following section. The Steps of inspection will be divided into four sections:

- I. Trucks
- II. Under Frame and Visual Inspection (General)
- III. Safety Appliances
- IV. Key Points

I. Trucks

1. Check for broken or worn brake shoes. Brake shoes with 1/4" of pad or less should be replaced.
2. Check the side bearings (Parts 123, 127) on each side of the car for missing or broken rollers or blocks. There should be some clearance between the top of the side bearing and the shim plate above it. (See drawing this section on trucks).

3. Check for missing or broken blocks or rollers and signs of incorrect clearance between blocks or rollers and wear plate above. Also, look for broken or missing side bearing shim bolts and shim plates.
4. Friction wear plate problems are common because of the pounding of the suspension system. The wear plate serves a very important function by allowing the truck bolster to move freely up and down. Problems exist when the wear plate falls down and is visible next to the springs.
 - A. Look for cracked or broken welds. Some wear plates will have two bolts or a weld securing them to the truck side frames.
 - B. As notes in Step #4, when a wear plate is completely broken away from the side frame it will usually be found resting on the bottom of the frame or sometimes it will be missing.
5. Roller bearing wedge - The roller bearing wedge is the key to the roller bearing operating in the correct position. One of the main factors that can affect its alignment is a derail. Also, the wedge should not be out resting on the lip of the bearing casing. (See wedge part No. 81, Roller bearing Part No. 4).

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NOTE: If you have knowledge of a car involved in a derailment, you must report the car number to your supervisor and inform the Tank Car Shop. The car must not be shipped until it has been inspected by the Tank Car Shop personnel.

6. Check for broken or missing truck springs (inner and outer). See drawing Part No. 69.

II. Underframe and Visual Inspection (General)

1. General Appearance:

- A. Check for any jacket corrosion, the condition of the paint, any peeling or any evidence of product spillage.
- B. Is all stenciling legible.
- C. Check test dates.
- D. Any obvious railroad damage such as dents, end sill damage parts missing or hanging, etc. Check for "Bad Order" tags, "Home shop for repairs", or "Do Not Load". These tags will generally be brightly colored and easily visible.
- E. Check for missing or defective placard holders.
- F. Make sure all cars have top and bottom shelf couplers. (See drawing this section-couplers).

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- G. Check center plate, look for missing bolts, rivets, or cracked or damaged center plate or bowl. (See drawing this section).
- H. Remove cap and chain from Steam jacket outlet nipples. (See drawing Part No. 161-458).

III. Safety Appliances

1. Most safety appliances are best inspected by touch for unsafe conditions (shake um!).
 - A. Check the top dome railing and bottom guard rails for missing bolts or broken rails.
 - B. Check for loose or missing bolts on grab irons, sill steps, running boards, side ladders and dome platform. Also make sure none of these areas are bent or broken, etc.
 - C. Check uncoupler rod for proper operation.
2. Check the hand brake and the hand brake release. Inspect for defective brake chain and any loose or hanging brake parts. NOTE: Most hand brakes can be applied by turning the wheel to the left or to the right.

IV. Key Points

1. Report any AAR cards to your foreman and or the Tank Car Repair Shop.
2. Problems than can develop from not inspecting a car prior to loading:

- A. the possibility of having to unload the car.
 - B. Delay of shipment enroute to the customer to make repairs in the plant.
 - C. Complaints from the customer.
 - D. Person getting injured due to some defective part.
 - E. Possible cause of a derailment.
 - F. Release of a car in need of repair and it being delayed in transit by the railroad to repair.
3. Notify your foreman as to any defect you find upon inspection so the car can be repaired before it is shipped. CAUTION: Some repair work cannot be completed on a loaded tank car. If in doubt, call your foreman before loading the car and point out the defect to him.