

# **SAFETY AND OPERATING RULES**



Adopted February, 2012 by the Board of Directors of

## **CHESAPEAKE & ALLEGHENY STEAM PRESERVATION SOCIETY, INC.**

**These Safety and Operating Rules govern the operation of trains of the Chesapeake and Allegheny Live Steamers (CALs). They take effect March 2012 superseding previous Rules and Instructions where they may be inconsistent with these rules.**

**Special Instructions may be issued by the Board of Directors of CALS which will supplement or supersede these Rules**

## **GENERAL NOTICE**

**SAFETY is of the first importance in the performance of our duties.**

**Understanding of and practice of the rules is essential to SAFETY.**

**Safety and Operating Rules have evolved from the experience of many people on many railroads over many years. This process continues, and constructive suggestions to improve these Rules should be submitted to the CALS Board of Directors.**

### **RUN DAYS**

It is our obligation and duty as a tenant of the City of Baltimore Parks Department to offer service to the Public on one Sunday each month during the operating season. Also, the Board of Directors may designate other days as a formal Run Day. On all Run Days the accommodation of the Public shall be our first priority. These Rules in their entirety apply to such formal Run Days.

These Rules are to be applied in a common sense manner on member run days.

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## CALS GENERAL RULES

- A. Members whose duties are prescribed by these rules must provide themselves with a copy.
- B. Members must understand and practice the Safety and Operating Rules. If in doubt as to their meaning, apply to a CALS Board Member for an explanation.
- C. Members and Operating Guests must either attend the annual CALS Safety Meeting or be instructed in the Safety and Operating Rules by a CALS Board Member. The list of persons so qualified shall be maintained at Hamilton Station.
- E. Members are encouraged to constructively assist fellow Members in their understanding and practice of these Rules.
- F. Accidents are to be attended to in accordance with **CALS EMERGENCY AND SPECIAL INSTRUCTIONS** and shall be documented and reported to a CALS Board Member by quickest means.
- G. The use of alcohol within the City of Baltimore Parks is prohibited.
- J. Members serving the Public are advised to wear a CALS patch, pin, or name tag. A name tag will be provided by CALS.
- K. Members and Operating Guests in the presence of the Public shall conduct themselves in a polite and courteous manner. Coarse language in the presence of the Public is prohibited.
- S. In case of doubt or uncertainty, the safe course must be taken.

## NOTICE TO CALS MEMBERS

There are many responsibilities to be fulfilled on Run Days. If you are not acting as an Engineer or Stationmaster, you must determine if you can be of service as a Conductor or a Station Assistant.

Those positions must be filled in order to comply with these Safety Rules, and therefore your cooperation is needed.

## CALS ENGINEER'S DUTIES

### GENERAL

The primary responsibility of a passenger train Engineer is to ensure (1) the safety of his passengers and persons on the right-of-way and (2) the safety of his locomotive and train at all times.

### SPECIFICS

1. All model steam locomotives operated in the State of Maryland must possess a valid inspection certificate as provided for by Maryland Department of Labor, Licensing, and Regulation (DLLR).
2. Only a qualified Engineer shall operate a locomotive while pulling a train with or without passengers.
  - a) Engineers shall be qualified by the owner of the locomotive.
  - b) The owner is responsible for training the relief Engineers.
3. The Engineer shall be completely familiar with (1) the locomotive, (2) the characteristics of the train and the CALS track system, (3) the hand and other operating signals used by the Stationmaster and the Conductor as illustrated in **CALS SIMPLIFIED TRAIN SIGNALS**, and (4) shall observe the operating mode of the day for the track system as specified in **CALS STATIONMASTER'S DUTIES**.
4. The Engineer shall ensure that passenger car couplers are secured with pins.
5. The Engineer shall ensure that trains operating between the hours of sunset and sunrise shall have a continuously illuminated or flashing red light displayed from the rear of the last car.
6. If a passenger train consists of two or more cars, the train shall carry a qualified Conductor.
  - a) On shorter trains in the absence of a Conductor, the Engineer is responsible for the Conductor's duties.
  - b) If up to two passenger cars are being pushed, the Engineer is responsible for the Conductor's duties.
7. The Engineer is responsible for enlisting a Conductor when one is required.
8. When approaching the Bell-Slayton Station, the Engineer shall stop the train at the 'boards' to permit passengers to detrain and/or await the Stationmaster's signal to proceed into Bell-Slayton Station.
  - a) The engineer shall blow one long blast to indicate that the stop is complete.
9. The Engineer shall not allow the train to move until a signal to Proceed has been received from the Conductor. EXCEPTION: When entering the Bell-Slayton Station upon Stationmaster's signal.
10. When preparing to leave Bell-Slayton Station, the Engineer must look out for opposing train(s) arriving with passengers and must yield to allow those passengers to detrain and cross the track safely.
11. If an engine or train not carrying a Conductor stops on the main line the Engineer must post a warning flag 100 feet behind the train.

12. Engineer shall keep his eye and mind on the engine, the track, and any trains ahead and shall remain alert for signals from the Conductor and from other extraordinary sources.
13. Engineer shall stop his train upon hearing any blast from a Conductor's horn or either the STOP or HELP signal from a whistle as illustrated in **CALS SIMPLIFIED TRAIN SIGNALS**. The Engineer shall proceed only after having ascertained that it is safe to do so under the following conditions:
  - a) The signal was not from his Conductor and the way is clear.
  - b) The signal was from his Conductor and the problem has been resolved.
  - c) Recognizing that the incident may cause fouling of his track by opposing traffic.
14. Engineers shall maintain a safe speed at all times. The maximum speed on the road shall not exceed an actual six (6) miles per hour and all trains shall approach Hamilton Station at dead slow speed from either direction.
15. Moving trains shall maintain at least 200 foot distance from the train ahead and be no closer than a safe stopping distance.
16. Trains shall stop at least fifty (50) feet behind a standing train carrying passengers except when directed otherwise by the Stationmaster in Bell-Slayton Station.
17. Any locomotive other than a coal burner must have the fire extinguished or the motor stopped before refueling.
18. "Diesel" locomotives shall not be left unattended with the motor running. Steam locomotives may be left for a short time with fire banked, reverse lever in neutral and a good supply of water in the boiler, except for #8 above.
19. Before blowdown, the Engineer must always assure the safety of all bystanders. Use of a 45° elbow is suggested.
20. Members under the age of 18 shall not at any time operate a train carrying non-guest (general public) passengers.
21. On Run Days, during operating hours, Members under the age of 18 shall not operate a train without an adult, trained Engineer closely assisting.
22. On Run Days, during operating hours, new Engineer training shall not take place on the mainline unless approved by a majority of the CALS Board Members present at the time.

## CALS CONDUCTOR'S DUTIES

### GENERAL

The primary responsibilities of a passenger train Conductor shall be (1) to ensure the safety of the passengers and (2) to protect the rear of the train at all times.

### SPECIFICS

1. The requirements for a train carrying passengers to have a qualified Conductor are described in **CALS ENGINEER'S DUTIES**.
2. A Conductor must be at least 14 years old and acceptable to the Engineer.
3. The Conductor shall be seated behind the last passenger or may be seated behind the Engineer on the first car and riding backwards.
4. Before entering service, the Conductor shall ensure that his train is equipped with:
  - a) A red flag (or lantern at night).
  - b) An operable gas-powered horn.
  - c) A Conductor's whistle
  - d) An accident reporting kit.
5. The Conductor's horn shall be used only for the following reasons as described in **CALS SIMPLIFIED TRAIN SIGNALS**:
  - a) To alert the Engineer to STOP the train.
  - b) To call for HELP.

NOTE: Warn passenger in front and hold horn high to preclude harming passenger's ears.

6. The Conductor's whistle shall be used to inform the Engineer to Proceed, either forward or reverse, as described in **CALS SIMPLIFIED TRAIN SIGNALS** or as a backup for the horn only when it is not possible to use the horn.
7. When performing the Conductor's duties on a moving train, the Conductor shall have the gas-powered horn at hand.
8. The Conductor should assist Bell-Slayton Station personnel in loading and unloading the train.
9. The Conductor shall ensure that the safety announcement, containing the following statements, has been made to the passengers before giving the Engineer a signal to Proceed:
  - a) Everyone must remain seated until the end of the trip.
  - b) Hands and feet must be kept inside the car and everyone must hold on to the car with both hands.
  - c) Passengers should not lean out of car, stand up, turn around or grab at anything while on the train.
  - d) Train will be stopped if any passenger disobeys these safety rules while the train is moving.

10. When at the Bell-Slayton Station, the Conductor shall not signal the Engineer to Proceed until the following actions are complete:
  - a) The train is properly loaded.
  - b) The safety announcement has been made.
  - c) Permission to Proceed has been given by the Stationmaster.
11. When a train carrying the Public is stopped during a run, the Conductor or a passenger appointed as Flagman must first protect the rear of the train by going back no less than 100 feet and showing a red flag for any train which may approach.
12. If a derailment or other event occurs or conditions are found that may endanger trains or persons, the Conductor shall immediately STOP his train by use of the Conductor's horn and/or other signals as required. The procedure outlined in the **CALS EMERGENCY AND SPECIAL INSTRUCTIONS** [part (A)] is to be followed.
13. In the event that a passenger violates safety instructions of 9(a) thru (d) above while the train is running, the Conductor shall give a verbal warning to cease the misconduct.
14. If a passenger continues to violate safety instructions after a verbal warning, the Conductor shall STOP his train by use of the Conductor's horn and/or other signals as required.
  - a) The Conductor shall inform the passenger(s) of the infraction.
  - b) The Conductor shall request the passenger to obey the safety instructions or leave the train.
  - c) Should the offending passenger refuse either request, the Conductor shall not give a signal to Proceed until the unruly person agrees to obey the safety announcement instructions or leaves the train. The procedure outlined in the **CALS EMERGENCY AND SPECIAL INSTRUCTIONS** [part (B)] is to be followed.
15. After the Conductor has caused the train to STOP, he shall not signal the Engineer to Proceed until the condition which required the stop has been corrected.
16. When on a running train, if a Conductor hears any blast from a Conductor's horn or either the STOP or HELP signal from a whistle and the Engineer fails to stop the train, the Conductor shall STOP the train.
17. When the train is stopping at Bell-Slayton Station to unload the passengers, the Conductor shall wait for the single long blast from the Engineer before directing the passengers to detrain.

## CALS STATIONMASTER'S DUTIES

### GENERAL

The primary responsibilities of the Stationmaster are (1) to ensure the safety of the passengers while loading and unloading in the Bell-Slayton Station area and (2) to manage the movement of all trains so as to achieve safe train operations at all times when any train or locomotive is entering into, moving or standing within, or departing from the station area.

### SPECIFICS

1. Before each Run Day the Stationmaster shall specify the running mode of the day for the track system and post it on the door of Hamilton Station and at Brace Junction.
2. On a Run Day, the Stationmaster, his deputy, or other qualified CALS Member shall be on duty at the Bell-Slayton Station area continuously while any train is carrying passengers, normally from 11 AM to 3:30 PM.
3. The Stationmaster shall ensure the following conditions to the best of his ability:
  - a) that only qualified Engineers and Conductors man all trains carrying passengers
  - b) that all couplers have safety pins
  - c) that all passenger-carrying cars in use have been inspected
4. The Stationmaster shall direct the movement of all trains primarily by the use of hand signals between himself and the Engineer or Conductor.
5. The Stationmaster shall signal the Engineer when to enter Bell-Slayton Station.
6. The Stationmaster shall ensure that passengers are loaded in accordance with **CALS PASSENGER LOADING RULES**.
7. The Stationmaster shall be responsible for giving the safety message, either by playing the recording or speaking it to the passengers. See **CALS CONDUCTOR'S DUTIES** for message contents.
8. Only when the Stationmaster considers the train properly loaded and crewed and the main line traffic conditions permit shall the Stationmaster indicate to the Conductor to proceed.
9. If the Stationmaster is aware of a problem on the main line, he shall hold all trains and/or locomotives in the Bell-Slayton Station area and release them only as they avoid further congestion on the main line. He shall inform the train crews of the reason for the delay.
10. The electrically-operated switches at Bell-Slayton Station shall be operated only by the Stationmaster or his deputy.
  - a) On Run Days the switches shall be tested prior to the operating session.
  - b) A switch shall not be activated when a moving train is approaching less than 20 feet from the switch or the train is less than 6 feet past the switch.
  - c) A switch may be activated when an approaching train is less than 20 feet from the switch when the train has stopped and the Engineer has acknowledged that the train is not fouling the switch.



## CALS PASSENGER CARRYING REQUIREMENTS

### GENERAL

It is required that we ensure the safety of the Public. It is also necessary that we ensure the safety of our train crews, our trains and all of our facilities.

### SPECIFICS

1. All locomotives and all classes of trains shall enter and depart the loading area only upon signal from the Stationmaster.
2. All passenger trains shall carry brakes according to the description in the **CALS BRAKE POLICY**.
3. Only cars that have passed an annual Maryland DLLR safety inspection may be used to carry the Public; a list of qualified cars is maintained in Hamilton Station.
4. Only qualified Engineers and Conductors shall man trains while carrying passengers.
5. Couplers on passenger cars are to be secured with pins.
6. Passengers shall normally be loaded and unloaded only in the Bell-Slayton Station area.
7. Passenger trains are discouraged from stopping at Hamilton Station unless required by traffic conditions or an emergency. Passenger trains may stop at Brace Junction provided the flagging rules are complied with. Please be aware that stopping at Brace Junction may create delay for other trains.
8. Trains shall not pick up or load Passengers along the right-of-way but shall direct them to the Bell-Slayton Station area for boarding.
9. Any passenger may be discharged at any place in case of a personal emergency.
10. When an engine or train requires service it shall discharge its passengers at the Bell-Slayton Station area, if possible, and shall return empty to the yard for servicing.
11. Cars which are not capable of carrying passengers and not used for operational purposes must be at the rear of the train.
12. The passenger-carrying complement of cars shall be no longer than 60-feet on Run Days.

## CALS PASSENGER CAR LOADING

### GENERAL

The safe loading of passengers should not be overlooked even in the event that many people are waiting for rides. The Public willingly waits for rides so there is no excuse for not loading the cars properly.

### SPECIFICS

1. Load cars so as to equalize the weight on both car trucks.
2. It is recommended to load no more than three adults per car. There should be no more than 4 passengers total except for tots who can sit between the legs of an accompanying parent or guardian or when there are only children in the car with parent/guardian in the following car.
3. Load trains from front to back.
4. All passengers must face forward.
5. Babes-in-arms are not permitted on trains; however, front-mounted baby carriers will be allowed and the parent warned that it is possible for a passenger to roll a car off the track.
6. Small children must sit on the car floor or on car seat in front of a parent and the parent warned that it is possible for a passenger to roll a car off the track.
7. Disabled persons generally requiring mobility assistance must have an experienced assistant ride behind them and to aid them on and off the train.
8. A person whose behavior may be unpredictable must be accompanied by an experienced adult capable of maintaining physical control of the person at all times for his or her own safety
9. Passengers with cameras must be warned to keep the camera pointed forward within the limits of their shoulders and not to turn or lean while the car is moving.

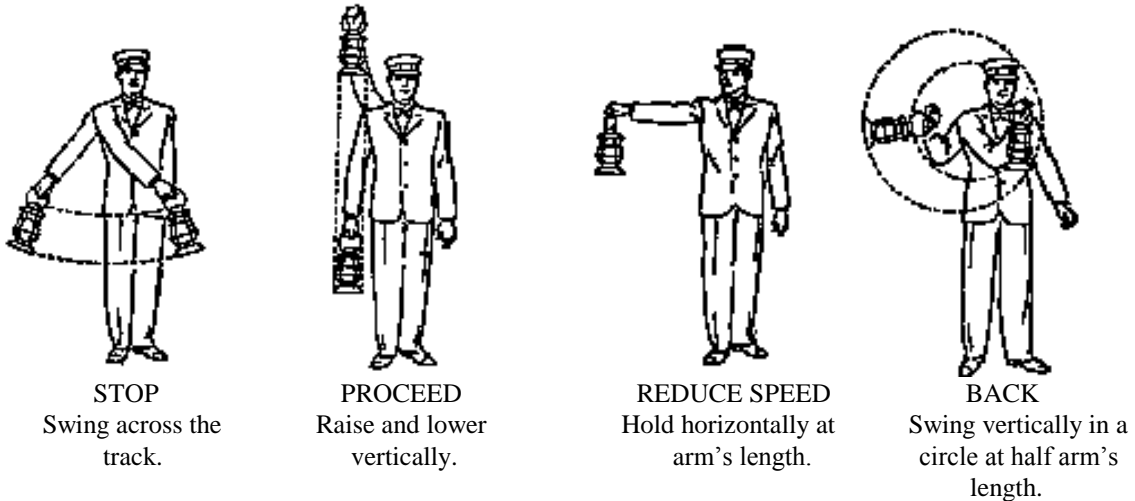
## CAL S SIMPLIFIED TRAIN SIGNALS

### GENERAL

The following hand, whistle, horn, or flag signals shall be properly used on all Run Days while trains are in operation. It shall be the responsibility of all Engineers, the Stationmaster or his deputy, and all Conductors to know, to observe, to use, and to comply with these signals when passenger trains are operating. Hand signals must be given where they may be plainly seen so that they cannot be misunderstood.

**If there is doubt as to the meaning of any signal, it must be regarded as a STOP signal.**

### HAND SIGNALS:



### LOCOMOTIVE WHISTLE/HORN OR CONDUCTOR'S WHISTLE OR HORN:

- ● Two short blasts from Locomotive, when standing – Proceed forward.  
Also, Engineer's answer to any signal not otherwise provided.  
From Conductor's whistle – Proceed forward.
- ● ● Three short blasts from Locomotive, when standing – Back up.  
From Conductor's whistle – Back up.
- ● ● ● Four short blasts from Locomotive – Call for signals from the Conductor or Stationmaster.
- ● ● ● ● Succession of short blasts from Locomotive – Alarm for persons on the track.  
From Conductor's horn or whistle (as backup to horn) – A call to all available personnel for HELP.
- Single long blast from Locomotive, when stopping – STOP completed.
- — Two long blasts from Locomotive, when running – STOP at once.  
From Conductor's horn or whistle (as backup to horn) – STOP at once.
- — ● — Two long, one short and one long blasts from Locomotive – Approach a crossing.
- — — — Four long blasts from Locomotive – Flagman may return.

## CALS BRAKE POLICY

### 7-1/2" Gauge

1. Any train planned for operation on the Society's tracks must have a successfully operating brake system. Cars carrying the Public must have an annual safety inspection per Maryland DLLR guidelines.
2. All locomotives and/or tenders must have operating brakes. (Steam, vacuum, air, electric, hydraulic, or mechanical)
3. Society owned cars must have operating brakes. Note: These car brakes are vacuum operated; therefore any locomotive (steam, diesel, or electric) must have a vacuum operated brake system in order to operate with the Society's cars.
4. For trains pulling 3 or more passenger cars, at least 60% of the cars (including a locomotive's tender) must have brakes operated by the locomotive, with a minimum of three braked cars.
5. For trains pulling or pushing fewer than 3 passenger cars, at least 2 of the cars (including a locomotive's tender) must have brakes operated by the locomotive.
6. EXCEPTION: Locomotives without train brakes may pull or push up to two passenger cars if the train successfully passes a running brake test with loaded cars.
7. At the beginning of a day's operations and before accepting passengers, each train must perform successful brake tests. These tests must consist of the following steps:
  - a) setting the brakes 'ON' and checking all brake shoes to ascertain the shoes are tight on the wheels
  - b) setting the brakes to 'OFF' to be sure all of the brake shoes have released
  - c) operating the train and making a brake application to ensure stopping ability
8. Periodically during the day (and whenever a relief Engineer assumes control) a running brake test shall be made.

### 4-3/4" & 3-1/2" Gauges

1. 4-3/4" and 3-1/2" gauge trains must have brakes if carrying passengers.

Note - The general Public is not allowed to ride on the 4-3/4" & 3-1/2" gauge trains.

## CALS EMERGENCY AND SPECIAL INSTRUCTIONS

### (A) EMERGENCY PROCEDURE

- FIRST ATTEND TO THE CONCERN OF THE PERSON(S) IMMEDIATELY INVOLVED.
  - DO NOT DISCUSS THE CAUSE OF THE EMERGENCY WITH ANYONE AT THE TIME OF THE INCIDENT, INCLUDING CALS MEMBERS.
1. In the case of a derailment the Conductor should ask a passenger to protect the rear of the train with a flag as soon as it is stopped.
  2. Derailed equipment and the track involved are to be inspected, and a report of the incident written in the Conductor's accident reporting kit.
  3. If any passenger is injured in a derailment or other moving incident, the following actions must be taken:
    - a) The Engineer or Conductor shall summon assistance, if needed.
    - b) Offer to treat minor scratches using the FIRST AID KIT in the Brace Junction or Hamilton Station buildings or at Bell-Slayton Station.
    - c) If medical attention is required, have a Board Member call 911.
    - d) The Engineer shall assist the Conductor in obtaining names, addresses and phone numbers of person(s) involved and of those persons who witnessed the event.
    - e) Full details shall be written in the Conductor's accident reporting kit and provided to a Member of the Board of Directors.
  4. For a non-moving injury to the Public or a Member, a Member witnessing the event shall summon help from other Members and follow the applicable procedure as given above.

### (B) UNRULY PASSENGERS

1. The passenger may be asked to get off a train but shall not be told to leave the park.
2. The Engineer shall not leave his locomotive with any tool in hand.
3. In case an unruly passenger must be removed from a train, the Engineer shall be in agreement with the Conductor that safety is involved.
4. NO CALS MEMBER SHALL AT ANY TIME USE OR THREATEN TO USE FORCE TO REMOVE AN UNRULY PASSENGER FROM A TRAIN UNLESS THE PASSENGER'S ACTION(S) CLEARLY ENDANGERS HIMSELF, OTHER PASSENGERS, THE TRAIN CREW OR THE TRAIN. IF NECESSARY, THE TRAIN CREW SHOULD SOLICIT HELP FROM OTHER PASSENGERS IN REMOVING AN UNRULY PERSON FROM A TRAIN.

### (C) SPECIAL ITEMS

1. The outside lift at the steaming bays and the Hamilton Station lifts shall not be operated by operators who are either unqualified or under the age of 18.
2. The Hamilton Station lifts shall not be operated above the second level or at the second level with heavyweight coaches, unless there are at least two operators present.
3. MOTOR VEHICLES shall not be backed across any grade crossing.

## **CALS CAR INSPECTION PROCESS for Passenger Carrying Cars**

### GENERAL

The primary responsibilities of CALS shall be (1) to ensure the safety of the passengers and (2) to protect the equipment of the trains at all times. The primary concern in this respect is to ensure that the brakes and running gear of the passenger-carrying cars are in good running order. The following is a basic description for performing the annual car inspection.

### SPECIFICS

1. COUPLER Inspection
  - a) Ensure that the knuckle of the coupler locks when closed.
  - b) Ensure that when a safety pin is installed, knuckle cannot be opened.
2. Turn car/coach upside down for inspection.
  - a) Gondolas and smaller cars may be placed on saw horses or as follows.
  - b) Coaches will be rolled over from track onto ground.
    - i. Use tarp(s) to keep car off of ground and to keep dirt from parts.
    - ii. Use padding/carpet under points of contact with ground.
    - iii. Take care of steps and light fixtures when rolling car onto tarp.
    - iv. Use wood/ties to ensure the car is blocked so it cannot roll onto its side.
3. CAR TRUCK Inspection
  - a) Inspect trucks for worn bearings and for loose, worn, or missing hardware.
  - b) Check trucks for proper lubrication.
    - i. Check pivot point and bolster rub points for grease.
      - a. If dry or worn, wipe off old grease and re-lube.
    - ii. Put ½ squirt of grease into each Zerk fitting found.
4. BRAKE Inspection
  - a) Inspect brake lines, brake shoes, and hardware for worn or missing parts.
  - b) Activate brakes.
    - i. Plug one end of main line by, for example, attaching rubber tube with golf tee in one end.
    - ii. Connect a Vacuum Hand Pump with Hg Gauge to the opposite end.
    - iii. Evacuate line by pumping to 15" Hg.
    - iv. Check vacuum gauge reading.
      - a. Perfect reading would be to hold at 15" Hg.
      - b. Acceptable reading is to slowly leak to 0" Hg in more than 10 seconds.

- v. Adjust or repair as needed.
- c) Test brakes at 15" Hg.
  - i. Each axle should require significant effort to turn by fingers.
  - ii. Vacuum diaphragm/piston should have 25% or more travel available.
  - iii. Adjust or repair as needed.
- d) Replace car upright on a track with a 1% to 2% grade.
  - i. With no vacuum applied, car should be able to roll freely.
  - ii. Apply brake with hand pump.
    - a. Brakes should be able to slow car at 10" Hg.
    - b. Brakes should be able to stop car at 15" Hg.
  - iii. Repair and/or adjust brakes as needed.
- 5. Log results of the inspection.
  - a) Enter the results for each car in a standard log file.
  - b) The current log is an electronic file.

**NOTE:** Vacuum brake system on locomotives should NOT exceed 25" Hg as Car Brake diaphragm(s) may be damaged if more than 25" Hg is applied.