



# CALIFORNIA STATE RAILROAD MUSEUM INTERPRETIVE HANDCAR PROGRAM.



## TEACHER'S AID





# HANDCAR PROGRAM MANUAL



## Welcome to the Interpretive Handcar Program.

This program is designed to provide students with a safe experience while operating the most basic railroad equipment. Students will learn the history of Maintenance of Way (MOW) crews and the equipment used in maintaining railroad tracks, and the evolution of MOW equipment from the early days of rail to today. Following a Railroad safety presentation, students and their adults will experience pumping a handcar 100 yards on the Museum’s tracks and take a 1/8-mile ride down the rails and back again behind a vintage Fairmont motorcar. In the interest of everyone’s safety, students exhibiting unsafe behavior can be restricted and/or pulled from the program at the discretion of the program lead.

**Cost: \$150.00. This program must be paid for in advance. Payable in person by cash or check payable to CSRMF or by credit card with on line application.**

[www.parks.ca.gov/railroadschoolprograms](http://www.parks.ca.gov/railroadschoolprograms)

**Dress:** Prepare for weather. This is an outdoor activity, rain or shine. **NO open-toed or slick-soled shoes;** tennis shoes are recommended.

**Reminders:** No gum, food, candy or drinks other than water allowed. Please silence cell phones for the duration of the program. Photographs are permissible when not involved with an activity. The program takes place within an active railroad yard. **NO WALKING ON THE RAILS.**

**Meet:** Please have your group meet at the “1849” scene, located directly West towards the river from the museum. . **Please be on time.** If you are running late, please call the Museum at 916-323-9280.

**No Show No Call.** Groups later than 15 minutes after their scheduled time will be cancelled.

**Interpretive Handcar      Date:                      Grade:**

<b>Group/School Name</b>		
<b>Group/School Email address</b>		
<b>Group/School Phone #</b>		
<b>Leader’s/Teacher’s Name Phone # &amp;</b>		
<b>Amount of Adults (Including teacher)</b>	<b>Time:</b>	
<b>Amount of Students</b>		

Teachers:  
Please fill out this form and bring it with you to the program.



## CALIFORNIA STATE RAILROAD MUSEUM INTERPRETIVE HANDCAR PROGRAM

The Handcar program provides a hands-on approach to give students the opportunity to experience the trials, tribulations, and hardships associated with the heavy labor performed by track maintenance workers.

The 1-hour Interpretive Handcar Program will be held on the Sacramento Southern Railroad tracks between the Discovery Museum and the Central Pacific Railroad Passenger Station in Old Sacramento. Museum staff members will meet your group at your scheduled time at the covered picnic area of the Central Pacific Passenger Station located within the 1849 Scene of the Old Sacramento State Historic Park.

### Meeting History - Social Science Content Standards for CA Public Schools

#### **4.4 Students explain how California became an agricultural and industrial power, tracing the transformation of the California economy and its political and cultural development since the 1850s.**

1. Understand the story and lasting influence of the Pony Express, Overland Mail Service, Western Union, and the building of the transcontinental railroad, including the contributions of Chinese workers to its construction.

#### **8.6 Students analyze the divergent paths of the American people from 1800 to the mid-1800s and the challenges they faced, with emphasis on the Northeast.**

1. Discuss the influence of industrialization and technological developments on the region, including human modification of the landscape and how physical geography shaped human actions (e.g., growth of cities, deforestation, farming, and mineral extraction).
2. Outline the physical obstacles to and the economic and political factors involved in building a network of roads, canals, and railroads (e.g., Henry Clay's American System).

The presentation is divided into five parts:

1. History of the railroad handcar, motorcar and other Maintenance of Way Equipment.
2. Rules and regulations for operation of railroad equipment---Safety First!
3. Hands-on experience of pumping the California State Railroad Museum's Interpretive Handcar over 200 yards along the Museum's Sacramento Southern Railroad track.
4. Roundhouse/turntable interpretation.
5. The motorized track vehicle. Experience the 1/8-mile ride down the rails, being pulled by a Vintage Motorcar and back again.



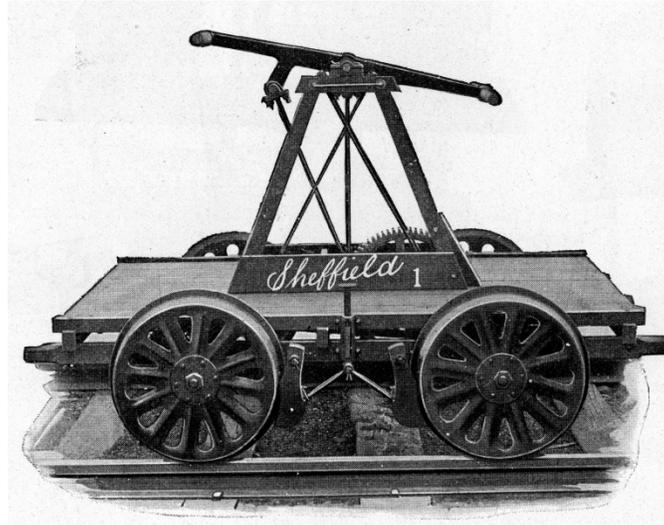
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# CALIFORNIA STATE RAILROAD MUSEUM INTERPRETIVE HANDCAR PROGRAM PROGRAM REQUIREMENTS

- Age Group: School groups Grades 4, 5, and 6
- Class Size: A maximum per reservation of 45 students plus 1 adult chaperone for every 10 students.
- Program Schedule: Wednesdays only March 1-April 26 2017  
10 a.m., 11 a.m. and 1 p.m.
- To Schedule: Participation in the Interpretive Handcar Program is by reservation and prepayment only. All classes meet for 1 hour. Groups more than 15 minutes late will forfeit their reservations. To schedule a reservation visit the web page [www.prks.ca.gov/railroadschoolprograms](http://www.prks.ca.gov/railroadschoolprograms)
- Dress: The Interpretive Handcar Program is an outdoor activity Dress appropriately for an outdoor physical activity. NO OPEN TOE SHOES.
- Inclement Weather: For safety reasons, all Interpretive Handcar reservations will be canceled in case of inclement weather. Interpretive Handcar Program staff will determine the necessity for cancellation.
- CANCELLATIONS: If you are unable to keep your reservation, please call us at (916) 323-9274. **\*Groups cancelling 24 hours prior to visit will receive full refund of total fees paid less \$25.00 processing fee. No shows and cancellations made less than 24 hours prior to program will forfeit all fees paid.**

## CALIFORNIA STATE RAILROAD MUSEUM INTERPRETIVE HANDCAR PROGRAM



### SAFETY RULES

1. Play it safe. Don't horse around!
2. Keep the tracks clear. No walking on the rails.
3. Use the steps to get on and off the Handcar. No jumping.
4. Keep hands on the pump handle at all times during the ride.
5. Keep both feet on Handcar deck at all times during the ride.
6. Don't climb on railroad equipment unless instructed to do so by Museum staff.
7. Pump the Handcar handle slowly.
8. Do not play with rocks or put them on the track.
9. Keep hands on the pump handle at all times during the ride.
10. Bend your knees while pumping the Handcar.
11. Place all purses and packages on the Handcar deck.
12. Do not get off the handcar until you are instructed to do so.

**TEACHERS: Please go over the SAFETY RULES with your students before your visit.**



# HANDCAR PROGRAM MANUAL



## INTERPRETIVE HANDCAR PROGRAM Post-Evaluation Form

School: \_\_\_\_\_

Date of visit: \_\_\_\_\_

Grade: \_\_\_\_\_

Teacher: \_\_\_\_\_

Dear Teacher:

After your class has participated in the Interpretive Handcar Program, please take a few minutes to fill out this form. It is important that we have your feedback, as it will enable us to continually improve our Museum's educational programming. Forward the completed form to the address shown at the bottom of this page.

1. List two important facts your class learned from this field trip.

a. \_\_\_\_\_

b. \_\_\_\_\_

2. What did your class enjoy the most about their interpretive handcar Experience?

\_\_\_\_\_  
\_\_\_\_\_

3. Did you feel the trip was worthwhile? (Check one) Yes \_\_\_ No \_\_\_

Comments:

\_\_\_\_\_  
\_\_\_\_\_

4. Was the historical data presented to the class informative? Yes \_\_\_ No \_\_\_

Comments:

\_\_\_\_\_  
\_\_\_\_\_

5. Do you have any suggestions for improving the Interpretive Handcar Program?

\_\_\_\_\_  
\_\_\_\_\_

Thank you for your assistance in this matter. Please forward your completed form to:

Interpretive Handcar Program Attention Karen Walker  
California State Railroad Museum  
111 "T" Street (916) 323-9274  
Sacramento, CA 95814



# A History of the Railroad Hand Car

By J. H. White, Jr.

Since the beginning of the railway, the humble hand car has been omnipresent and essential to the everyday workings of the industry. It is said to be the oldest railroad vehicle of any type. With the coming of the steam railroad it was relegated to the maintenance-of-way crews and came to symbolize the drudgery associated with the heavy labor of the track repairer. It was the maid-of-all-work for track gangs, signal, fence, water tank and bridge repair crews and has proved a handy conveyance for innumerable inspection parties. It surely lacks the glamour of the steam locomotive or the Pullman and this is why, we suppose, its history has been ignored, if not despised even into the present age when nearly every other facet of the railroad story has been romanticized and recorded in lavish detail.

The most elementary hand car was the push car. It was nothing more than a tiny, four wheel flat car, devoid of all non-essential encumbrances and it is still with us today. Surely it wasn't long before some Stone Age track gang figured that a free ride was available by coasting down grade. But what of propulsion on the level? Pushing was a drag. Some bright track man must have thought of sitting on the rear edge of the car and kicking the ties. This time-honored method was still employed when W. R. Camp wrote his classic work *On Track* (1903). With several well booted track men kicking, it was said to be a fairly effective means of propulsion. Some other ancient, wise in the ways of boating, must have tried poling. Any alert yeoman who had seen a flat boat or ferry would have observed this method. An early example, but not likely the first, was a "train" on the Sacramento Valley Railroad which ran on August 11, 1855. It consisted of a hand car "poled" down R. Street in Sacramento by Theodore Judah and three other men.

The knack of running a hand car fast is to get force to the handles, and this cannot be done as easily by trying to bear down and pull up hard against them while they are moving rapidly as it can by using moderate strength and trying to make the hands race with the handle. In this way more force can be put to the lever while it is moving rapidly than by trying to exert so much strength.

The three wheel pump car has popularly been credited to George S. Sheffield of Three Rivers, Michigan. According to the story, Sheffield, a poor mechanic, found that no suitable train service was offered between Three Rivers and his farm home seven miles down the track. The walk was too much for him after a ten hour day and besides it meant that much less time with his family.

It occurred to Sheffield in the winter of 1877, to build a simple rail scooter as the solution to his commuting problem. In his spare time he produced a little home made three wheel car that served his needs nicely. One evening while pumping homeward he noticed a break in the track. He borrowed a lantern from a nearby farmer and stopped the night freight. His action not only saved the train but brought his tripod car to the attention of the local Michigan Central officials. Some were inclined to prosecute Sheffield for unauthorized use of the Michigan Central track but one officer suggested instead that the mechanic had something useful in that little velocipede and why not adopt it for switch tenders and other

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one man crews. And so the story ends with Sheffield being set up in a profitable business. An engaging example of folklore but as such the tale ignores the real history of the rail velocipede.

\* *Pioneers in Industry, the Story of Fairbanks Morse & Co. 1830-1945, no author listed, pp. 45-48.*

*Lives and Works of Civil and Military Engineers of America, C. B. Stuart, 1871, pp. 137-138.*

*Welch, important to rail design and railroad civil engineering matters was a long time executive of Camden and Aniboy R.R. His hand car patent is dated Dec. 13, 1859 (No. 26453).*

*R. R. Gaz., Feb. 28, 1879, p. 107. The correspondent may have been referring to William rather than Samuel Romans. The former was known to be a Master Mechanic of Pennsylvania Railroad at Columbus, Ohio in 1870's. Reference is made to lever car inventor "now" living at that place.*

## Standard Gauge

Railroad track around the world have many different sizes or gauges. The gauge of a railroad track is measured from the inside of one rail, to the inside of the parallel rail. The most common gauge for the United States is called Standard Gauge. Standard gauge is four feet, eight and a half inches (4' 8 ½"). In the United States prior to 1862, many railroads had their own different gauges which made difficulty for passengers and freight as they had to be moved to another train on a different railroad for long journeys. In 1862 the United States passed the Pacific Railroad Act which created the Union Pacific Railroad, allowed for the UP and the Central Pacific to start building the Transcontinental Railroad, as well as to officiate a standard gauge of four feet, eight and a half inches.

There is a also popular rumor that Standard gauge originated from the width of wheels from Roman war chariots. However, there is no evidence to support this claim and this rumor should be disregarded as just an old myth and untrue.