

# SAN DIEGO ELECTRIC RAILWAY ASSOCIATION



## Trolley Lines

October 2014

**“I am ready for my closeup Mr Demille”**



On August 11, 2014 the scaffolding was finally taken down, and you can now see the beautiful paint job of Plum, cream, and San Diego Electric Railway Green, which has been applied to this unit.

PCC #539 started out in 1946 as St. Louis Car #1777, and later ran on the Muni as #1170. Originally this car was bought from the Tahoe Valley Lines by the San Diego vintage Trolley system to run on the downtown “Silver Line” loop. SDERA volunteer workers will remember this car as the 531, but MTS said that they wanted to retain that number for their roster, so the number was changed to # 539. The car needed a lot of restoration, before the painting.

Continued on page 11



## PRESIDENT'S MESSAGE

BY TOM CARNES

We have many exciting events occurring at the National City Depot.

Work on the car barn for Car 54 continues. Mike Reading, Eddie McCann, Mike Reneau, and others have been shuffling several pieces of equipment from the North lot to the South lot and will be for the next couple of weeks. The moves are necessary to make room for the full size trailer to bring the trusses for the barn into the North lot and get them into place. Mike is waiting for the barn plans to arrive so he can take them over to the city and we hope will be approved in short order. We still have money left for the restoration of Car 54 but it will probably take more than we have to get it in prime condition.

Car # 539, our PCC, in the South lot, is fully painted inside and out. We look forward to getting the seats recovered soon. It will cost about \$5000, and we have \$2200 in our checking account. Donations to complete this great restoration will be much appreciated.

Many thanks to the Matson family for donating 30 boxes of materials including books, periodicals from several local trains groups, signage, streetcar transfer slips and other relics all from Tom Matson's extensive collection. Thanks also to Chuck Bencik for spearheading the acquisition and Mike Reading for providing much of the leg work in the transportation of the boxes.

Randy Butler and his son contributed several hours cataloging and carrying the collection up stairs at the depot. Many of the books will be added to our library and others will be available for sale at the depot. We look forward to acquiring some of Tom's photograph collection which the Matsons are separating from their own personal family collection.

Many thanks to the anonymous donors of \$4000 dollars which will match with the \$6000 from the 20th Century Streetcar group. We hope they will respond with the funds shortly and these will be used to add track to our South lot. This will make room for additional equipment for display.

In November, at our regular monthly program on the 8th, we will have an election for President and 4 board members. Anyone interested in filling any of the available positions please let us know. A nominating committee has been formed. Interested members can call the depot and leave a message. Calls will be returned.



San Diego Electric Railway Association  
DBA San Diego Electric Railway Co. Inc  
922 West 23rd Street  
National City, CA 91950  
(619) 474-4400

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SDERA operates the historic National City Depot museum which is located at 922 West 23rd Street, National City, CA 91950 and is open Thursday through Sunday from 9 a.m. to 5 p.m. Or visit us on the web at: [www.sdera.org](http://www.sdera.org)

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### San Diego Electric Railway Association, Inc

- ❖ Tom Carnes - Interim President
- ❖ Jody Surowiec - Secretary
- ❖ Jeff Trimble - Treasurer
- ❖ Dave Slater - Past president
- ❖ Jim Anderson - Director
- ❖ Mitch Beauchamp - Director
- ❖ Eddie Mc Cann - Director
- ❖ Mike Reneau - Director
- ❖ Mike Reading - Director
- ❖ Chris Higgins - Web Master
- ❖ Sam Judd - Legal Counsel
- ❖ Richard Finch - Editor
- ❖ Jody Surowiec - Editorial Staff
- ❖ Tom Sapien - Librarian
- ❖ Jim Anderson - Curator of Special Collections Gift Shop Manager/ Facilities Director
- ❖ John De Lalla - Special Events/ Docent Coordinator/ Membership Director
- ❖ Bill Steinmetz-Groundskeeper



## A Salute To Our Volunteers!

They are as follows:

Dave Slater  
 Tom Carnes  
 Chris Higgins  
 Jim Anderson  
 Jim Price  
 Chuck Bencik  
 Randy Butler  
 Robert Butler  
 Mitch Beauchamp  
 Jeff Trimble  
 Mike Reneau  
 Richard Finch  
 George Geyer  
 Dan Kelly  
 Gary Johnson  
 Sergio Lopez  
 Mike Reading  
 Eddie McCann  
 Jody Surowiec  
 John DeLalla  
 Robert Baxter  
 Missy Cheeseman  
 Anthony Carideo  
 Sean McColgan  
 Patrick McColgan  
 Scotty Lewis  
 Tim Lewis  
 Tom Sapien  
 "Pete" Pearson  
 Mike Quigg  
 Matt Zacharzuk  
 Bill Steinmetz  
 Conrad Gomez  
 Hubert Jansen  
 Steve Mitton  
 WE COULDN'T  
 OPERATE WITHOUT  
 YOU!

## URGENT REQUEST FOR VOLUNTEER DOCENTS AND CASHIERS

Please consider sharing your interest in railroads and San Diego's historic streetcars with our visitors.

Our dedicated group of docents needs your help to ensure that the Depot is properly staffed. Sunday mornings can especially use your help.

Docents guide our visitors through the depot and the grounds.

Training and support are provided by our docent coordinator and other experienced docents. Reference material is on hand, including talking points for the tour, and general procedures for operating the depot. Shifts are for 4 hours: 9:00 AM to 1:00 PM, and 1:00 PM to 5:00 PM.

Please contact John DeLalla at: [docents@sdera.org](mailto:docents@sdera.org) or 858-847-3138 for additional information and to join our group of docents.

## BOARD OF DIRECTORS MEETINGS

All members and the general public are invited to attend the Board of Directors meetings at the National City Depot. The meetings begin at 7:00 PM on the second Monday of each month. The meetings for the next 3 months will be held on October 13, November 10, and December 8.

## HELP WANTED!

Currently, The following volunteer positions are available:

### 1. Assistant Treasurer-

working with Treasurer, Jeffrey (Jeff) Trimble. Candidate should have an interest in learning accounting. (I learned the program Quick Books at the depot, and this has allowed me to get a job, which I have now held for almost 2 years.)

### 2. Assistant Web Master-

working with Web Master, Christopher (Chris) Higgins. We have a large website at [www.sdera.org](http://www.sdera.org). Candidate should have this appropriate background.

### 3.Docents/Cashiers-

A very pleasant way to work a 4 hour shift on a rotating basis. Training provided by Docent Coordinator/Trainer, John De Lalla.

### 4.Assistant Librarian-

This candidate works with Librarian, Tom Sapien in our Reference Library at the Depot Museum Library.

### 5. A Welder-

Works with Dave Slater on various projects as needed. This candidate should have their own welder. Interested parties, please contact Tom Carnes President at : [Roseway@cox.net](mailto:Roseway@cox.net) OR (619) 267-8424



*Come visit,  
and enjoy all the improvements  
in your Museum!*



## PRIMAL ELECTRIC TRANSIT IN SAN DIEGO

By Richard V. Dodge



Perhaps it's Sunday morning on Fourth Street. Passengers on this Electric Rapid Transit Street Railroad Company car may be churchgoers from the First Methodist Church (marked by the steeple) two blocks south at Fourth and D (Broadway) Streets. Note the man with the broom and the second car waiting on a siding. First cross street is B St. (Fred Reif picture)

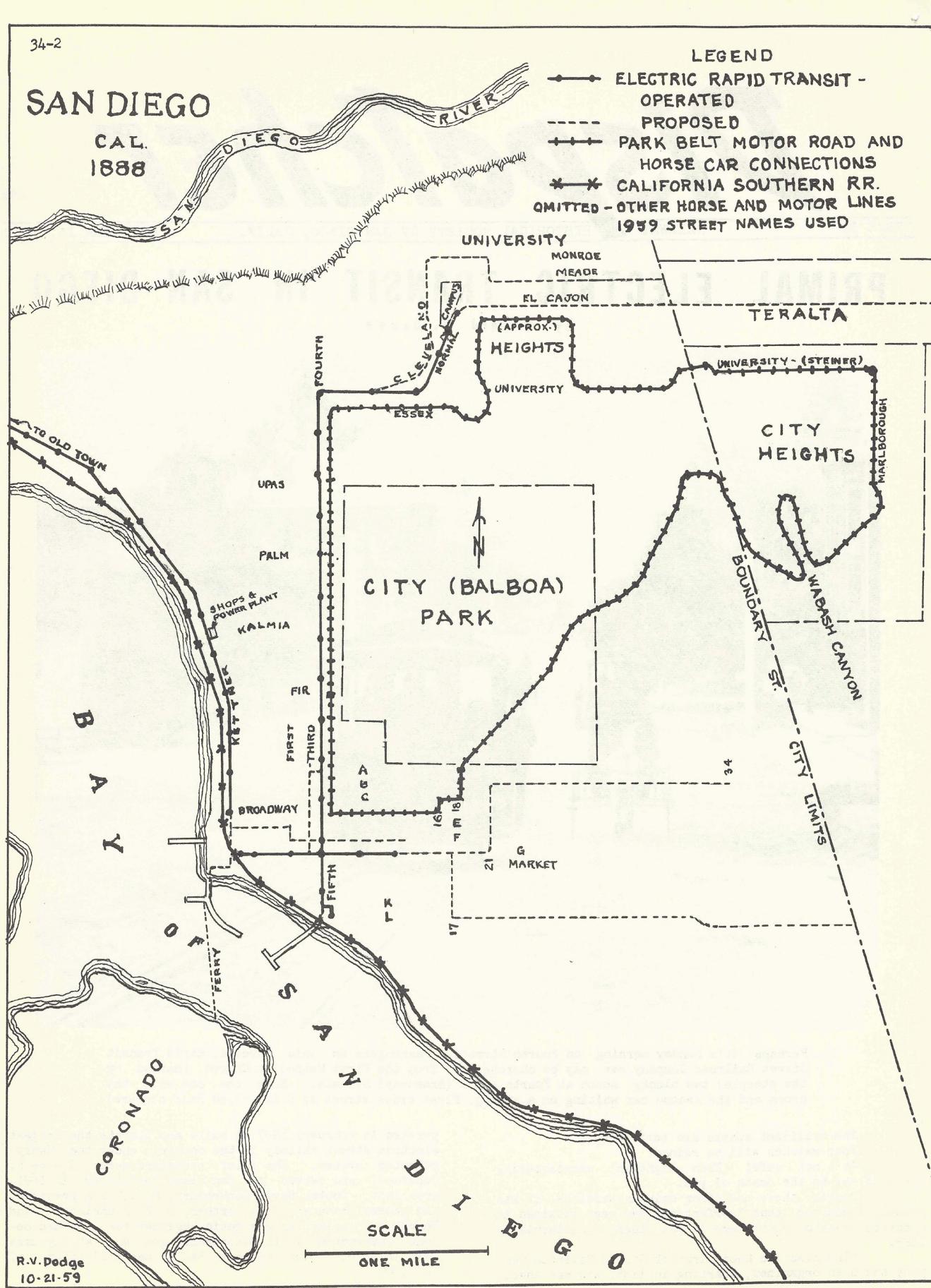
The brilliant sparks are terrifying!  
Your watches will be ruined! It's not safe!  
Them lightnin' manufacturing machines may be  
the death of you!

Despite these and other ominous warnings,  
it was proudly announced that "perfection" had  
been attained in electric traction right here in San  
Diego, California, by 1888.

The Electric Rapid Transit Street Railroad Company had been organized, starting in 1886, and was incorporated in February 1887 to build and operate the largest electric street railway in the country under the "Henry" patented system.

The chief promoters were: George D. Copeland, who served as San Diego Postmaster in 1881, president; Doctor David Gochenauer, M.D., vice president.

**Continued to page 8**





Maintenance of way speeders temporary home in the south yard



Moving storage containers building materials

## Thanks to our Donors

On June 3, 2014 we put out a request for two parts needed for our PCC trolley. I am pleased to announce that one of our members, Don Brown, from Winchester, Ca has donated one of the two needed items, which is a builders plate.

Ed Lindstrom MTS, Light Rail Maintenance Supervisor and Dave Slater, former Restoration Project Manager for the San Diego Vintage Trolley, and former President of SDERA, got together, and Dave arranged the temporary loan of a pair of headlight wings for us to use as a pattern for casting! These were removed from former New Jersey Transit PCC# 10, now to be PCC# 531, currently in the body shop undergoing restoration. Longtime member Gene Calman, has volunteered to cast these historical artifacts, using #10's as a pattern, and they will be mounted on PCC# 538. Gene made the ones we began with for #529 and others. Thanks to the donors, lenders, and the volunteers!

## WE CAN NOW ACCEPT ON-LINE DONATIONS!

You can now donate using your credit card  
Safely and Securely on-line!

Click on the Donate button on the left center on the front page of our website ([www.sdera.org](http://www.sdera.org))

You don't need a PayPal account to use this feature. Near the bottom of the PayPal page, look for the "Don't have a PayPal account?" section. You can use any major credit card! If you would like to see how easy it is, try a donation towards the body work and painting of our new PCC car!



Thank you, Jeff Trimble, Treasurer,  
San Diego Electric Railway Association, Inc.

HAPPY  
AT  
DEI



# N INGS T HE P OT



ers to make room for the  
for the new car barn



The track maintenance equipment that was stored in the north yard  
is now in the South yard

## VOLUNTEERS BUSY AT THE DEPOT

by Mike Reading

Friday, Chuck Bencik and I picked up thirty (30) boxes containing Tom Matson's collection, newsletters from many rail organizations, lots of photographs, rail related magazines, lots of books, videos, SDERy transfers and five (5) destinations signs! Thank You Matson family for this wonderful donation! The family has to sort through stacks of family photos and sort out any and all rail related photos and will donate these also!

Saturday, Sunday and Monday, Mike Reneau, Eddie Mc Cann, and myself began the task of "Musical Equipment" to move equipment out of the north end of the lot to make room for our new building. The tamper and three panels of track are now in the south lot, the storage container has been moved over close to the east fence, sure opens up the middle of the north lot! Future moves will take the ballast regulator and one or both of the Austrian trams to the south lot! This work is being done to have better access in to the building site for deliveries and construction.

Monday evening, I received an email from the company supplying the new building and received the plans for review and approval. I double checked everything against the invoice and approved the plans! The hard copies will now be printed and I hope to have them this week or next! Then on to the City for permit approval! We are making progress on providing a home for Car 54 and enhancing the public view of our facility!!

**Continued from  
primal electric on  
page 4**

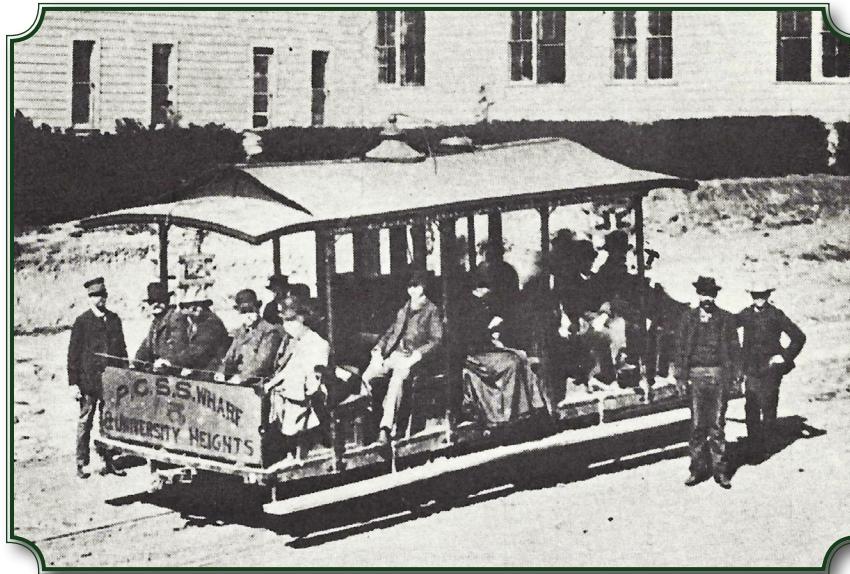
Mr. Gochenauer was also the general manager. His partner, C. F. Francisco and George B. Hensley, an energetic business man who had become interested in the Stonewall gold mine at Cuyamaca Lake in 1870. The company had a capitalization of \$200,000.

Professor John C. Henry, Francisco called him "the electrician", had invented a means of vehicular propulsion using the "mysterious power" through an overhead wire,

His method for the San Diego installation utilized the running rails for the negative return of the direct electric current. He had formed the Henry Electric Railway Company and had built experimental set-ups in the suburbs of Kansas City, Missouri in 1884 and 1885.

There details of construction were worked out and tested. His first commercial electric street car line was established on East Fifth Street in Kansas City with a length of about one mile. Two cars were operated. According to an article in the Street Railway Journal, double trolley wires were used, one for the positive and the other for the negative current. If this is correct it differed from the local practice,

Henry achieved success in the operation of this car line and



This car is on Fourth street near Fir, alongside the Florence Hotel  
(Fred Reif photo)

"Kansas City has the only electric railroad in the world which is operated on a street of general traffic".

It proved that the public will accept the mode of transportation for the cars were crowded on every trip and many were standing in the rain waiting for an opportunity to ride.

The company intended "at once to complete the contract of the road over the route held by the old Fifth Street Railway, which extends from Fifth Street and Grand Avenue; east to Lydia Avenue; and thence north to East Bottoms; thence east to the distillery".

*(Quotations are from The San Diego Union of June 17, 1887.)*

San Diego offered favorable conditions, Contracts had been signed with the Henry Electric Railway Company in April 1887 to build several railroads, the principal one to be in San Diego.

**A BRIEF CHRONOLOGY  
OF ELECTRIC TRACTION**

The first known application of an electric motor to drive a car in the United States dates back to 1835 when Thomas Davenport, of Brandon, Vermont built a circular track with a primary battery in the center of the circle. Power was drawn through flexible wires to energize a crude motor on a

homemade car. Gradual improvements

followed, using batteries, until 1861 when Pacinotti, in Italy, invented a reversible, continuous-current dynamo.

Subsequently demonstrations of experimental electric powered cars and locomotives were conducted, mostly at expositions. American originators and developers included, among others: Professor Moses Farmer in 1867; George F. Green in 1875; Stephen D. Field and Thomas A. Edison in 1880; Charles J. Van Depoele and Leo Daft in 1883.

At the Railroad Exposition in Chicago in June 1883, the possibilities of electric street railroads as business enterprises were demonstrated by Edison and Field. Professor Henry's installations featured in 1884.

In 1885, Leo Daft built and demonstrated a 4-wheeled locomotive on the Ninth Avenue Elevated Railroad in New York City and, also, hauled a horse car with a small locomotive using a center third-rail in Baltimore.



The next year saw Frank J. Sprague, rightly recognized as "The Father of Electric Traction", enter the field with a center third-rail demonstration in New York City with the world's first "nose-suspended" motors mounted in the truck and regenerative braking.

Later in 1886, Van Depoele built an electric street railway system in Montgomery, Alabama with the motor set up on the front platform of a horse car connected to one axle. He introduced the first overhead wire with an under running trolley, pressed up against the wire by springs and used the running rails for the return.

*(Note: Most of the historical data given above were adapted from "Ride Down Memory Lane", The Story of the Branford Trolley Museum in Connecticut.)*

## DENVER'S SERIES SYSTEM

Denver, Colorado had a conduit line called the "Series System", using variable high voltage. Dr. Gochenauer inspected the layout and, according to an interview published in The San Diego Union

of June 17, 1887, "The system operates successfully." He described the construction in which the underground conductors are "broken" into a series of short segments. "The motor upon the car is thrown into the circuit by two arms, one reaching forward from beneath the car a distance of seven or eight feet and the other from the rear. On the ends of these arms are shoes that slide along the iron plates that form a slot between the tracks and from these shoes extending down to the copper conductors a projection of metal which closes the electric circuit. As the car moves onward the circuit is again opened and no current can be felt except close to the car".

"The most serious objection to the use of this system is that the current used is necessarily one of high volt pressure and therefore dangerous to man and beast. No animal can tread on the iron plates forming the slot without being killed instantly. I learned that several valuable horses have been killed this way in Denver".

How street cars could be operated in electrical series could not be determined from Dr. Gochenauer's account.

The question was intriguing and additional research in the Denver Public Library and the Colorado State Museum's Library in Denver furnished the answers.

The ingenious designs should be of sufficient general interest to warrant the inclusion of descriptions.

Professor Sydney H. Short, then Professor of Physics in the University of Denver, had contrived an electric car to operate on a circular track using conductors placed underground in 1885.

The newly-formed Denver Electric and Cable Company investigated Short's layout and adopted a modified version of it, Short called in Mr. John W. Nesmith, head of the Colorado Iron Works, to perfect the "mechanical appliances".

One-half mile of track was laid on Fifteenth Street from the Court House to Larimer Street. Two cars were ordered and were run. Thus Denver claims the honor of having the second commercial electric street car line, Kansas City being the first.

Difficulties were encountered in the winter of 1885, 1886.

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In 1886 a reorganization resulted in the name Denver Tramway Company and a total of three and one-half miles of track, part double, from east of Grant Avenue on Capitol Hill, on Colfax Avenue; to 15th Street; to Central Street in North Denver, was constructed and equipped.

The power house was built at 15th and Tremont Streets. One 20 "horse power" dynamo, driven by a 25 horse power steam engine, furnished the theoretically constant direct current.

Seven bob-tailed (horse car type having closed bodies with four windows per side and open platforms) cars were operated more or less irregularly for about one year, then the \$200,000 system was abandoned.

A newspaper clipping explained the "improved" (*over Dr. Gochenauer's version*) type of construction. An underground conduit was made between the rails, two iron plates forming a slot one and one-half inches wide.

A series of contactors, called "circuit breakers", was installed in the conduit, spaced every 17 feet. The feeder wire from the generator was connected to one wing or blade of the first contactor, say the left side. A wire connected the right wing to the left wing of the next contactor, and so on, snake-like, to the end of the line.

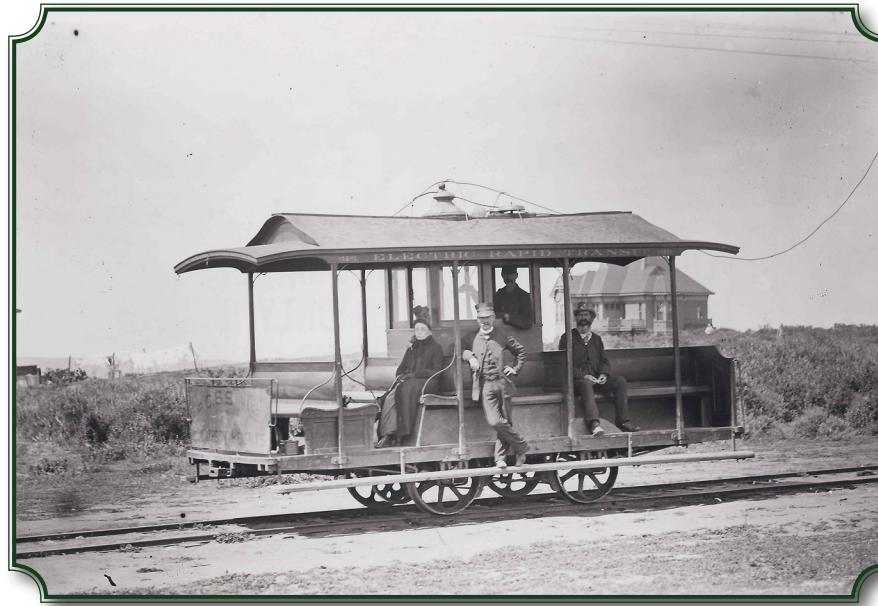
From there an overhead wire returned the current to the generator. The wings were curved to the shape of a segment of a circle, convex to convex. When the two wings of each breaker were in contact, the electrical circuit was complete.

The motor of each car was mounted between the axles of the single truck and was double-reduction gear-connected to drive on one axle. Controls were run to the front platform. A plow extended from the truck frame out several feet ahead of the dash and its two shoes slid along the slot rails. A vertical plow was attached at the rear end. Hangers from the plows supported the ends of a "brush", which was an eighteen foot long hickory slat  $\frac{7}{8}$ ths of an inch thick. On each side of the slat was a piece of rubber cloth insulation and a continuous brass strip. The brass strip one side was connected to one motor terminal. The other terminal was wired to the brass strip on the opposite side.

Thus; as the car advanced, the brush spread the wings of a contacter apart and the brass strip, in contact with the wing, picked up the current, passed it through the motor and it was returned through the other strip to the opposite wing of the contacter, restoring the closed circuit. "At one end

of the motor is a switching coil box for increasing or decreasing the speed by levers connecting with the platform under control of the driver." This must have provided a by-pass when the car was stopped, otherwise all other cars would be halted.

Consider the difficulties in trying to maintain 310 circuit breakers per mile, underground, with teams driving over the wide slot, causing dirt, stones and trash to fall into the conduit. And when it rained, everything was "hot".



Early San Diego Rapid Transit car possibly near Campus street and Normal  
( Historical collect of Union Title Insurance Co. )



## FIRSTS IN THE WEST

Thus it is evident that electric traction was still in its infancy when the Electric Rapid Transit Company was proposed. San Diego's electric street railway was the second one on the Pacific Coast. The Pico Boulevard-Maple Street line in Los Angeles, using the Daft System, ante-dated the San Diego Electric Rapid Transit by only ten months.

H.L. Story, of the Coronado Beach Company, who had proposed to construct an electric railway from San Diego to National City, made an inspection of the Los Angeles Electric Railroad. According to his report, it was about five miles long. His impressions were that it appeared to work well but had no steep grades and there was only one car. Mr Story, with Elisha Babcock, Jr. and others, had formed the Coronado Beach Company. That organization had acquired the North and South Islands and named the latter "Coronado". They established the San Diego & Coronado Ferry Company, had built the Coronado Beach Railroad from the ferry landing to the ocean front, and started construction of Hotel Del Coronado. It was also responsible for extending the railroad to belt the bay to San Diego.

This ends Part 1 of Mr. Dodge's article on early electric traction development, and how it relates to San Diego's early transit System.



Interior operator's seat and controls are next on the list to be restored

## Car # 539 from page 1

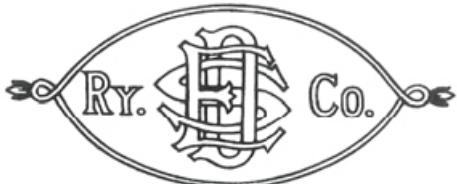
This included body straightening and restoration of some body sheet metal, replacement of the rub rails above the aprons, and some repairs to the roof. This is an all professional job, with the high gloss automotive finish on top of the color paints.

She is a static display, and is not going to be operated, although she has had her motors reworked and her trucks also. She will be on display and accessible inside and out, at the National City Old Santa Fe Depot, which is also the museum and headquarters of San Diego Electric Railway Association.

This PCC is special in that all other 1946 vintage St. Louis Car Co. PCCs have double seating only in the front right, and both sides of the back half. PCC # 539 has double seats throughout, because she was always a Training Car, and it was less likely that people would fall if seated. She still needs to have her upholstery renewed, and currently, we have \$2,200 in a special fund for that. Also, she needs to be rewired, but, that can come at a later date.



The seats and interior awaits restoration



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San Diego Electric Railway Association  
d.b.a. San Diego Electric Railway  
PLEASE ADDRESS ALL WRITTEN  
CORRESPONDENCE TO  
922 WEST 23RD STREET, NATIONAL  
CITY, CA 91950

SDERA is at the historic National City Depot,  
off I-5 at Mile of Cars Way - take Bay Marina  
Dr. west, right on Cleveland, go one block and  
left on W. 23rd St and straight into the Depot  
Open Thursday through Sunday, 9 AM — 5 PM.  
Depot phone: call (619) 474-4400

**To submit items to the Newsletter, contact : Richard Finch via e-mail ([editor@sdera.org](mailto:editor@sdera.org))  
Items need to be submitted by the 10th of the month prior to publication. -- Next issue in December  
Please send all photos in the largest size as possible. 2 or 3 meg file (about 1000 pixels on the longest side)  
also include the names from left to right of people in the photos.**

Attention Members: Please look carefully at the mailing label. If your membership has expired, or will expire soon, and you wish to renew your membership, or become a new member, we offer the following levels: Life, (for a single member) \$400; Family, \$35 (please include names); Regular(or Individual) \$25; Senior age 60 and up, \$15; Junior for ages 17 and below, \$15.

Checks can be made out to, SDERA and mailed to  
SDERA, 922 West 23rd Street, National City, CA 91950

## Upcoming Events

Monthly meetings are normally held at 7:30 PM on the 2nd Saturday at the National City Depot. Optional no host dinner at The Barbecue Pit Restaurant - 920 E. Plaza Blvd, National City at 5:30PM about 1 block east of Highland Ave. and Plaza Blvd.

Plan to arrive at 7PM to see the Gift Shop, chat, and buy raffle tickets. The raffle starts at 7:15 PM.

### October 11th.

SDERA member Gene Calman will present a video on the last remaining steam saw mill and box plant in the U.S.

### November 8th.

SDERA Officers and Board of Directors annual election: Please see the announcement for this important matter in this issue of Trolley Lines.

YOU CAN NOW FIND US ON:



[https://www.facebook.com/pages/  
San-Diego-Electric-Railway-Association/  
241154262614173](https://www.facebook.com/pages/San-Diego-Electric-Railway-Association/241154262614173)

### The Pumpkin Express Sat & Sun from Oct 11 through Oct 26,

The Great Pumpkin is hosting its Tenth Annual Pumpkin Express at the The Pacific Southwest Railway Museum's Campo facility located on Highway 94 at Forrest Gate road in Campo, California.

Join in the fun as we board the Pumpkin Express at the historic Campo Depot and travel to the Great Pumpkin Patch. Children and their parents will enjoy the one hour train ride, then tour the Haunted Train, where each child gets to pick out his or her own pumpkin and decorate it inside our Display Building.

For more information see their web site at:  
<http://www.psrm.org/pumpkin/>