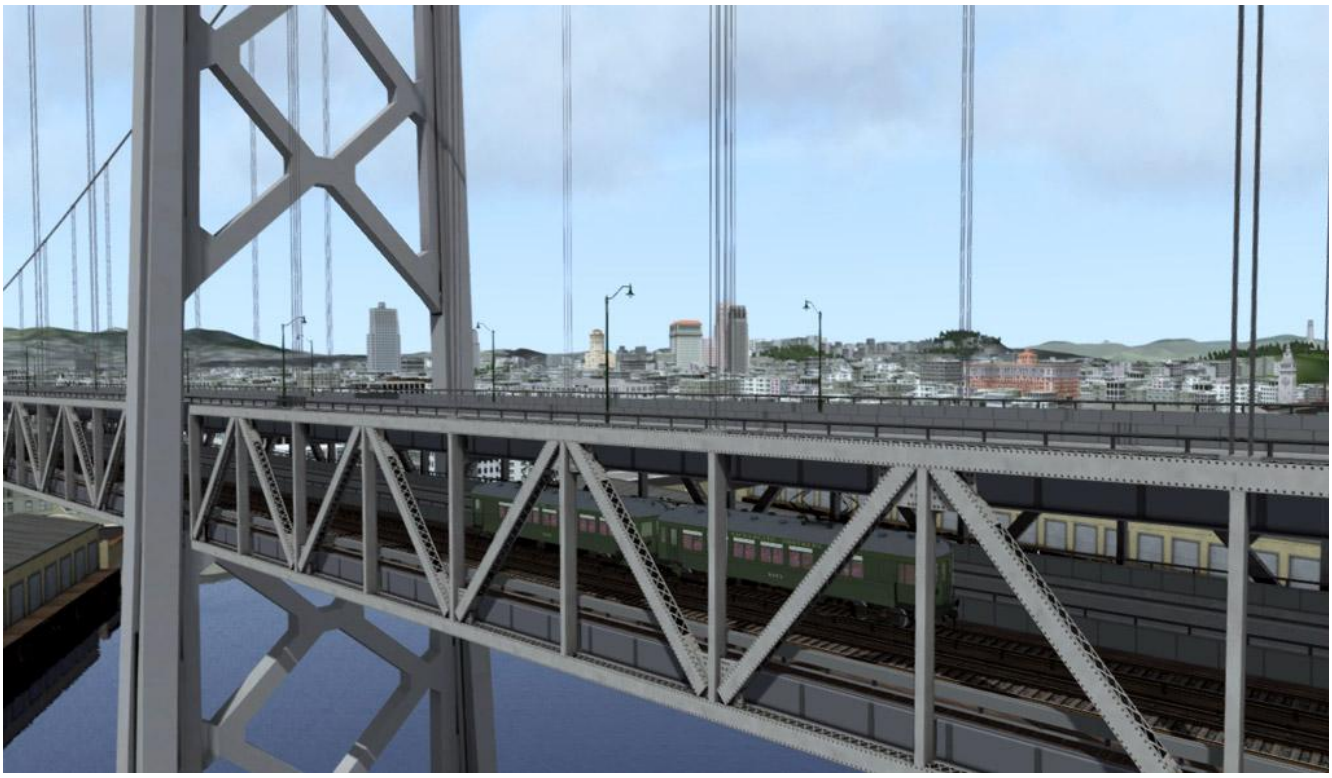
Sacramento Northern, South End

Suisun Bay to San Francisco



a route for Train Simulator 2017 by

G-traX SIMULATIONS

USER MANUAL

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History

The Sacramento Northern Railway (SN) was an electric interurban railroad that operated in northern California, USA from 1905 to 1965. The SN was formed in 1925 as a result of the merger of two railroads: the Northern Electric Railway, which ran northward from Sacramento to Woodland, Colusa, Marysville, Oroville and Chico; and the Oakland, Antioch and Eastern which ran from Oakland to Sacramento, with a mid-route ferry crossing at Suisun (suh-SOON) Bay. Upon completion of the merger, the Sacramento Northern came under the control of the Western Pacific Railroad, which operated it as a separate entity.

The SN ran both passenger and freight trains. In the early days, passenger service continued across the bay to San Francisco using ferry boats operated by Oakland's Key System. Direct service to San Francisco's Transbay Terminal was initiated in 1939 following the opening of the newly constructed San Francisco-Oakland Bay Bridge. The SN shared tracks on the bridge's lower level with Key System's articulated interurbans, and the Interurban Electric Railway (IER). The IER was a Southern Pacific subsidiary that operated what were popularly known as the "Big Red Cars."

Due to competition from buses and private automobiles, the SN and IER both terminated passenger service in late 1940. The Key System continued to operate until 1958, and the SN provided electric freight service until 1965.

The Route

The modeled route begins on Mallard Island at the south terminus of the Suisun Bay ferry crossing. Branch trackage running eastward, parallel to the waterfront, serves a steel mill at the town of Pittsburg. Heading westward along the main line, we reach an interchange point with the SP and ATSF at Port Chicago. The railroad then turns southward (railroad westbound) and inland, calling at the then-agricultural towns of Concord and Walnut Creek.

Passing through walnut and pear orchards in the shadow of nearby Mount Diablo, we climb steadily through a wooded canyon, reaching a 1000 meter tunnel through the Oakland Hills. We emerge from the tunnel at the railroad's highest point in a sparsely populated, forested section of Oakland. Continuing downhill on a grade that exceeds 4% in some places, the surroundings become increasingly more suburban. Eventually we depart the private right-of-way and begin the final run down residential Shafter Avenue to SN's tiny yard at 40th Street in Oakland.

Shafter Yard marks the west end of the Sacramento Northern, but we're not done yet. The SN had running rights on the Key System's C-Line tracks which ran along 40th Street. Turning west onto 40th, we traverse through North Oakland and pass briefly through the city of Emeryville, home of Key System's car-building and maintenance shop complex. Continuing westward we descend into a

'subway' beneath SP and ATSF tracks and soon arrive at the massive Bridge Yard which was the cross-bay staging area for the three interurban railroads.

The Bay Bridge is just ahead and we quickly begin the climb along the east span trusses to a tunnel through Yerba Buena island in the middle of the Bay. We continue the bay crossing on the west span, a double suspension bridge, making landfall in San Francisco at Rincon Hill. From there it's just a short ride over an elevated track loop to the downtown Transbay Terminal.

Route Features

- Custom signals throughout
- Special "transponder" signal system on the Bridge Railway
- Vintage autos and characters; historic buildings
- Dense, far-field urban-suburban scenery representing San Francisco, North Oakland and Berkeley
- San Francisco-Oakland Bay Bridge—two spans, four miles, with lower-level tracks.
- Quick Drive compatible

Rolling Stock

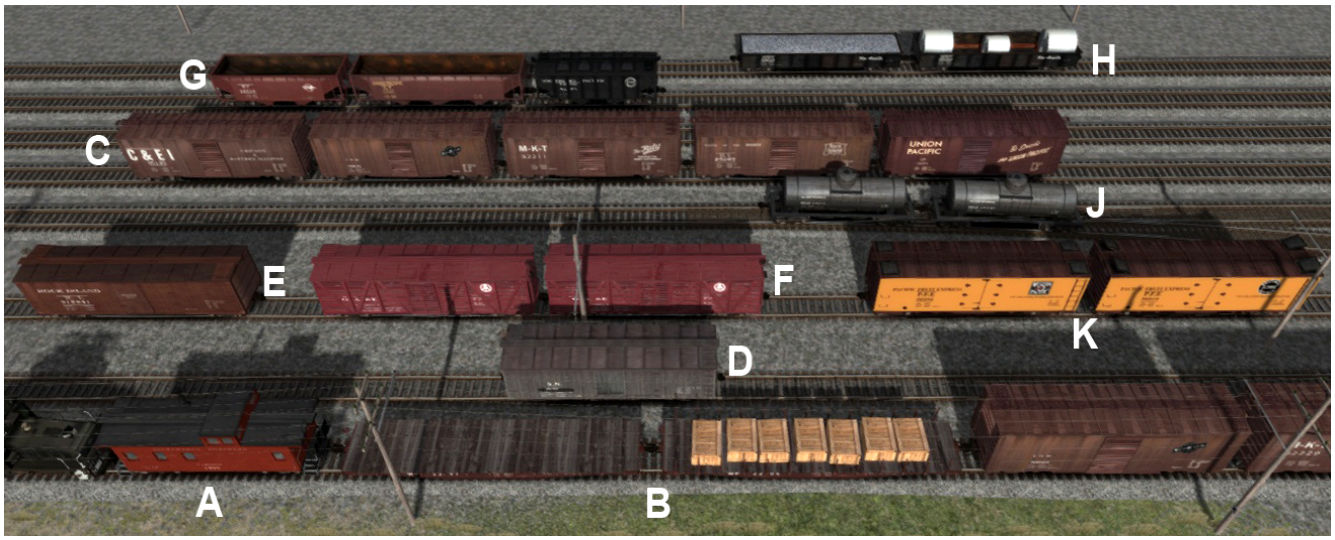
Holman 1003 Class Interurban — motor and trailer. Includes cab view, passenger view and prototypical in-cab signal system. This is the "star of the show". The W. L. Holman Car Company of San Francisco built the original four cars in 1912. Several more cars of the 1003 Class were subsequently provided by other builders. Car number 1005 has been restored to working order and makes regular excursion runs at the Western Railway Museum in Rio Vista Junction, California.

GE 650 Class Steeple Cab electric locomotive in pre- and post-war (safety-striped) livery. Includes cab view. This is your freight workhorse. GE delivered the first steeple cab to SN in 1923, followed by four more over the next few years. Car number 654 has been restored to working order and makes regular excursion runs at the Western Railway Museum. Car number 652, partially restored, is also on display at the museum.

Key System articulated Bridge Unit. For AI use on the Bridge Railway. The Bridge Units were built by Bethlehem Steel beginning in 1937, with finish work performed at Key System's Emeryville shops.

IER "red car" interurban — motor and trailer. For AI use on the Bridge Railway. These cars were built by Pullman Standard beginning in 1912. The porthole end windows were a later modification designed to afford better protection to the trainmen in the event of a train-car collision.

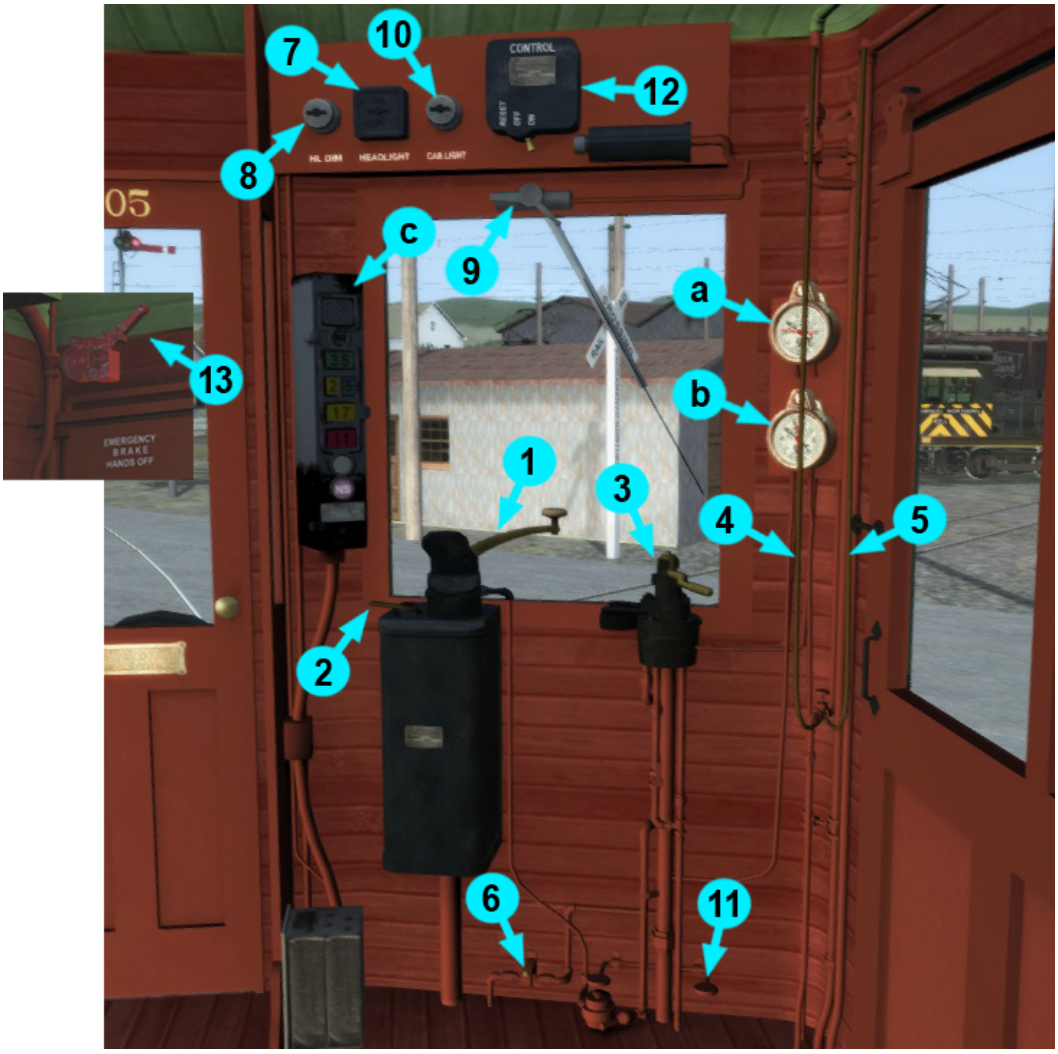
In addition to the motive power, an assortment of mid-century freight cars is included.



A Sacramento Northern Caboose
B Flatcars, various loads
C Pullman Standard 40ft Boxcars
D M-O-W Boxcar
E USRA Double-Sheathed 40ft Boxcar
F Livestock Cars
G Hoppers: 55t, 70t, 55t covered
H Gondolas, various loads
J Tank car
K Refrigerator cars, open and closed ice hatches

Cab Controls

Interurban Controls and Keyboard Shortcuts



Controls

1 Speed Controller (**A** / **D**)
2 Reverser (**W** / **S**)
3 Train Brake (**;** / **'**) (*semicolon / apostrophe*)
4 Horn (**Space Bar**)[1]
5 Whistle (**CTRL Space Bar**)[1]
6 Gong (**B**)[2]
7 Headlights (**H**)
8 Dimmer Switch
9 Wipers (**V**)[3]
10 Cab Lights (**L**)
11 AWS Reset (**Q**)
Penalty Braking (**Ctrl D**)[4]
12 Controller Reset[5]
13 Emerg. Brake Valve (**Backspace**)[5]
Cab Doors[6]

Gauges and Displays

a Red – Brake cylinder
Black – Brake pipe
b Red – Main reservoir
Black – Equalizing reservoir
c Cab Signal Display

Notes

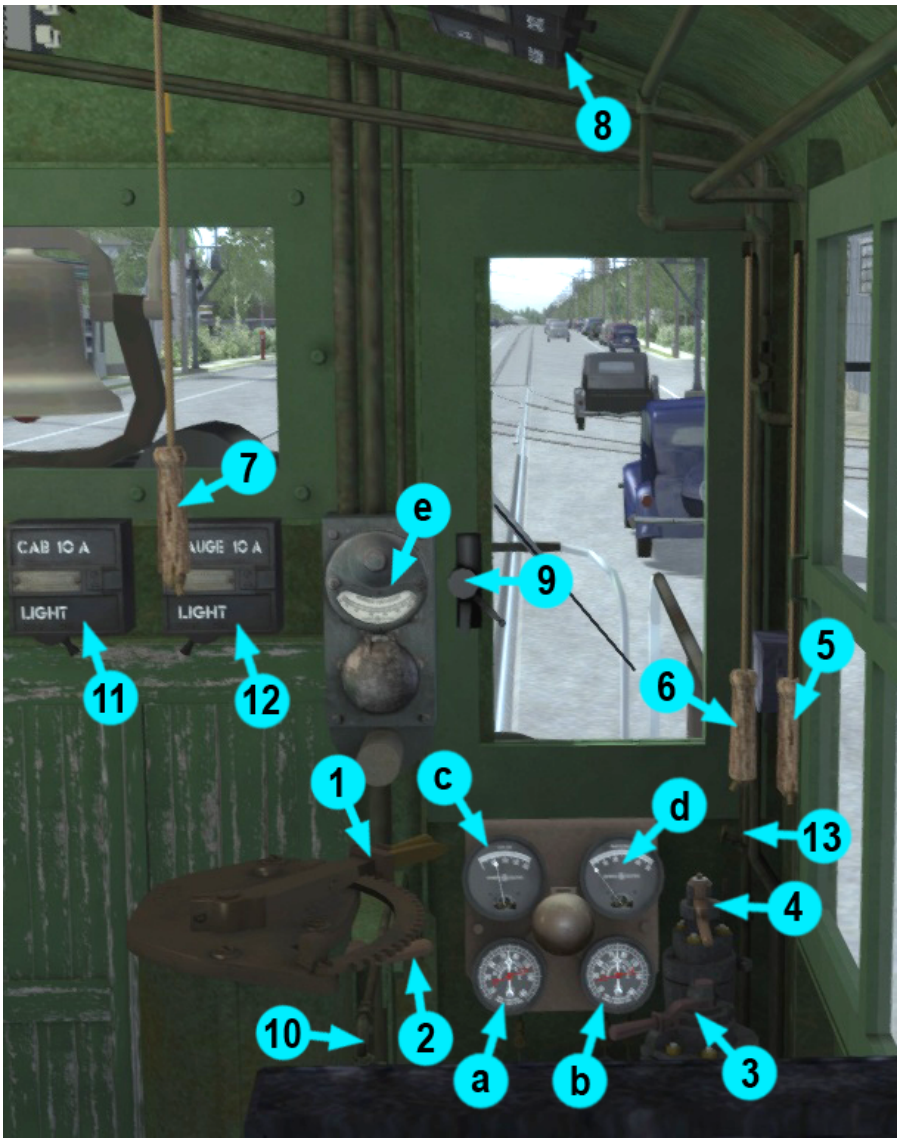
1. Sound the horn or whistle with one long blast when approaching stations, grade crossings, junctions, and subways. The horn may only be used east of Rockridge. Use the whistle from Rockridge and points west including densely populated areas of Oakland and San Francisco. When using the whistle, make sure the **Ctrl** key is pressed when releasing the **Space** bar.
2. Sound the gong each time the train is about to be moved, or when necessary to warn vehicular traffic and pedestrians.
3. Click on the wiper motor to start and stop the wipers.
4. Penalty braking is enabled by default; press **Ctrl D** to de-activate. When penalty braking is enabled, a small, red indicator light on the cab signal display will glow. Penalty braking is in effect on the Bridge Railway only. The Bridge Railway extends from San Francisco to San Pablo Avenue at the east end of the Emeryville yard. Penalty braking will occur if you exceed the speed on the cab signal display for more than 20 seconds. See also next item.
5. System-activated penalty braking or manual activation of the emergency brake valve disables the interurban's control circuits, applies the emergency brake, and locks out the motor controls. The main controller switch will be set to the OFF position. In order to restart, you must reset the main controller. Drag the main controller switch to the left (RESET position) and release to reset the controller, then drag the switch to the right (ON position) to re-energize the controls.
6. The doors on either side of the cab can be operated with the mouse.

Cab Signal Display

All trains operating on the Bridge Railway were required to be equipped with a cab signal system. The four numbered lights indicate the current speed limit, which is based on track conditions as well as your proximity to other vehicles. If the "Red 11" indicator is lit, a buzzer will also sound. That means you're too close! If you exceed any of the indicated speeds, a bell will ring and the lunar light just beneath the speed indicators is lit. Slow down! If penalty braking is enabled, your train will stop if you exceed the indicated speed for more than 20 seconds. Inside the Transbay Terminal, and east of the Emeryville yards, the purple NS (no signals) indicator is lit.

Other than the cab signal display, the Holman interurbans were not equipped with speed indicators.

Steeple Cab Controls and Keyboard Shortcuts



Controls

1 Speed Controller (**A** / **D**)

2 Reverser (**W** / **S**)

3 Train Brake (**;** / **'**) *semicolon / apostrophe*)

4 Independent Brake (**[** / **]**)

5 Horn (**Space bar**)[1]

6 Whistle (**CTRL Space Bar**)[1]

7 Bell (**B**)

8 Headlights (**H**)

9 Wipers (**V**)[2]

10 Sander (**X**)

11 Cab Lights (**L**)

12 Gauge Lights (**K**)

13 Pantograph (**P**)

Cab Windows[3]

Gauges and Displays

a Red – Main reservoir
White – Equalizing reservoir
b Red – Brake cylinder
White – Brake pipe
c Voltage Meter
d Current Meter
e Winding-Temperature Meter

Notes

1. Sound the horn or whistle with one long blast when approaching stations, grade crossings, junctions, and subways. The horn may only be used east of Rockridge. Use the whistle from Rockridge and points west including densely populated areas of Oakland and San Francisco. When using the whistle, make sure the **Ctrl** key is pressed when releasing the **Space** bar.
2. Click on the wiper motor to start and stop the wipers.
3. The windows on either side of the cab can be operated with the mouse.

The GE steeple cabs were not equipped with speed indicators.

Dual Cab

The cab has two control positions, one facing in each direction. In Train Simulator only the controls in the primary position are operable; however, you can use the **Ctrl +** key combination to reverse the cab orientation as if you were operating from the secondary control position.

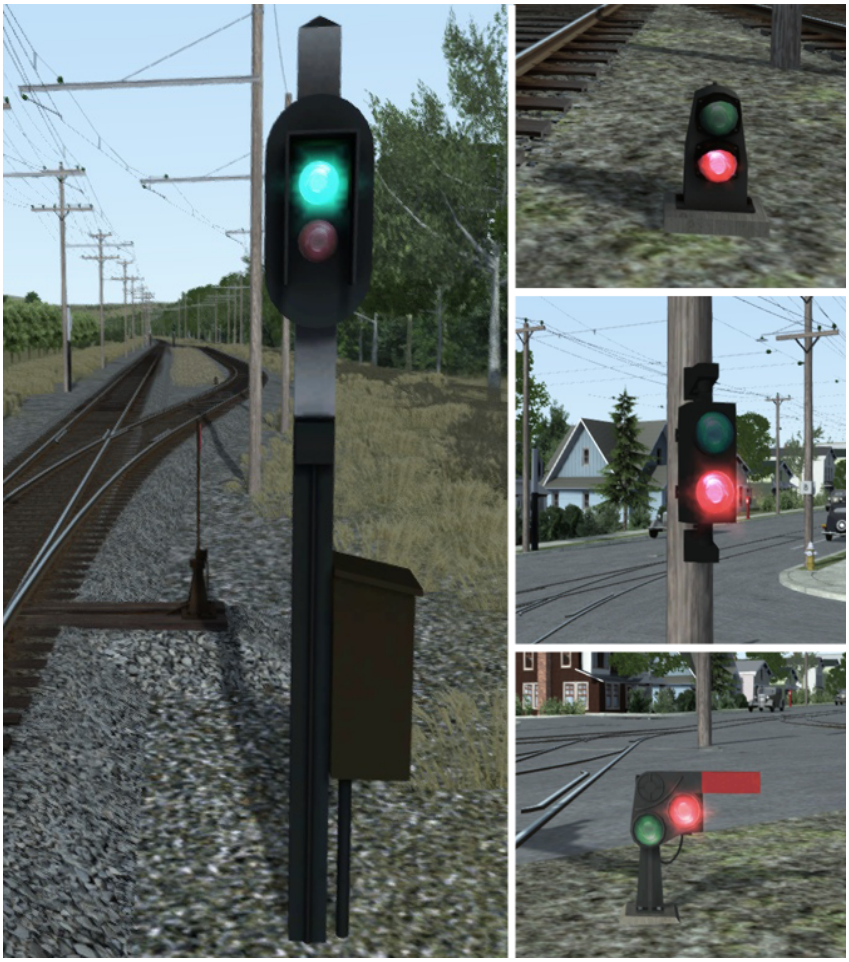
Signals and Signage

Signals

See the discussion under “Cab Signal Display” above for information about cab signals on the Bridge Railway. There were no physical signals on the Bridge Railway except in YerbaBuena/Emeryville yard.

Two-Color Signals

The Sacramento Northern used two-color signals throughout most of its system. Two-color signals in yards were typically either dwarf, pole/wall mounted, or dwarf semaphore.



Indications:

Green – CLEAR
Red – STOP
Flashing Red – Proceed with caution at a lower speed.

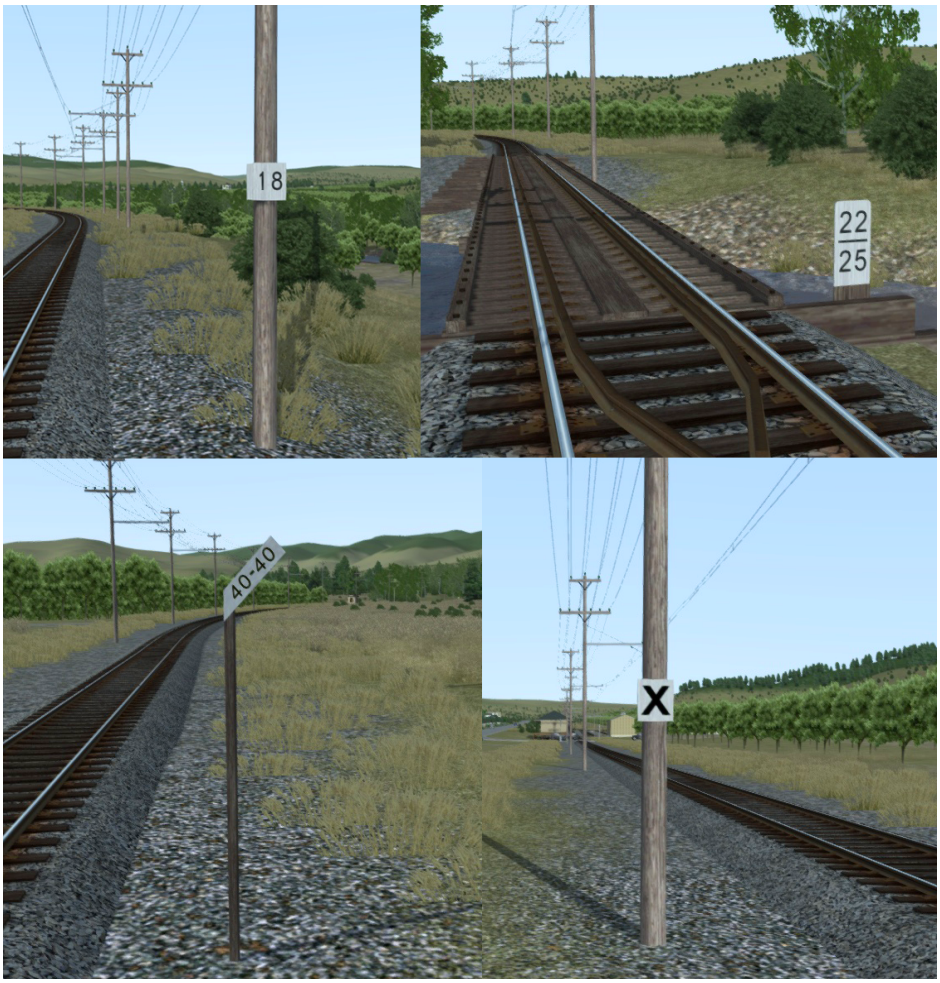
Three-Color Signals

The Key System used three-color, platform mounted semaphore signals at the entrance to Shafter yard on 40th Street. Base-mounted color-light and semaphore signals can also be seen in YerbaBuena/Emeryville yard, and along the SP and ATSF tracks running near the SN.

Indications:

Green – CLEAR
Red – STOP
Yellow – Proceed with caution at a lower speed.

Signage



Clockwise from upper left:

– Milepost, as measured from San Francisco. Usually mounted on the nearest catenary pole. SN right-of-way only, beginning with MP 8 at Shafter and 41st.
– Milepost, with hundredths, used at bridges.
– Grade crossing ahead. A number board is sometimes present beneath the 'X' when there will be a series of closely spaced grade crossings.
– Speed Sign, typically used for congested areas or at sharper than normal curves. Legend: Passenger train speed limit – Freight train speed limit.

Sharing the Road

Automobile traffic in North Oakland is fairly heavy, especially along 40th Street. In your role as a Sacramento Northern motorman, you'll need to be especially watchful. Even now, in 1939, private automobiles are relatively new on the scene and some drivers—well, you know!

When crossing lanes of traffic, for instance when entering or leaving Shafter Yard, slow down until road traffic has stopped for you or until the road is clear.

Interurban vehicles must obey all traffic lights. When approaching a traffic light, slow down. If the light is red, it will usually change to green as you get nearer. Allow any traffic that was in the intersection when the lights changed to clear before accelerating.

Scenarios

Career Scenarios

[SN1003] 1 Driving the SN Interurban Tutorial

Learn the skills necessary to successfully drive the SN interurban motor and navigate the Bridge Railway using the historically correct in-cab signal system. The new system, required for all trains on the Bridge Railway, makes this training necessary for all SN motormen.

Duration – 15 minutes	Motor – SN Interurban
Weather – Summer/Clear	Departure – 10:00 am

[SN1003] 2a SN Tour Part 1

Part 1 of 4. This begins a four-part informative tour of the Sacramento Northern. In Part 1 explore the SN trackage rights from downtown San Francisco, across the Bay Bridge, and into Emeryville.

Duration – 20 minutes	Motor – SN Interurban
Weather – Summer/Clear	Departure – 10:00 am

[SN1003] 2b SN Tour Part 2

Part 2 of 4. Now we move from Emeryville to North Oakland's Peidmont neighborhood on Key System tracks. We would normally turn into Sacramento Northern's Shafter Yard, but this time only we will bypass it. The line through the Broadway Cut is not a normal route for the SN, though it was used for rail fan tours.

Duration – 10 minutes	Motor – SN Interurban
Weather – Summer/Clear	Departure – 10:20 am

[SN1003] 2c SN Tour Part 3

Part 3 of 4. Travel from Piedmont through North Oakland via SN's Shafter yard, which marks the entry to the Sacramento Northern right-of-way. We will make the steep climb into the Oakland Hills, pass through the Redwood Tunnel, then continue through picturesque Redwood Canyon into the foothills of Contra Costa County.

Duration – 25 minutes	Motor – SN Interurban
Weather – Summer/Clear	Departure – 10:40 am

[SN1003] 2d SN Tour Part 4

Part 4 of 4. And now for the remainder of Contra Costa County. This part covers a lot of territory. We'll start at Pinehurst and travel all the way to Mallard. In the future this area will be a bedroom community for the Bay Area, but today (1939-1940) it is quite different.

Duration – 40 minutes	Motor – SN Interurban
Weather – Summer/Clear	Departure – 11:30 am

[SN1003] 3a The Meteor Pt 1 - Smooth Sailing

Train 3, The Meteor, is a daily first class express train running from Sacramento to San Francisco. We take over the train on-board the ferry *Ramon* as it arrives at the slip on Suisun Bay. The slip is located in a marsh appropriately named Mallard (SN transports quite a few duck hunters). Start by re-assembling your four-car train.

Duration – 55 minutes	Motor – SN Interurban
Weather – Spring/Clear	Departure – 11:58 am

[SN1003] 3b The Meteor Pt 2 - Twisting Hills

The Meteor is a daily first-class express train running from Sacramento to San Francisco. In Part 2 we travel through the Oakland Hills and navigate the twisting right-of-way as the rails find their way to Sacramento Northern's Shafter Yard.

Duration – 25 minutes	Motor – SN Interurban
Weather – Spring/Clear	Departure – 12:53 pm

[SN1003] 3c The Meteor Pt 3 - City Streets

The Meteor is a daily first-class express train running from Sacramento to San Francisco. In Part 3 we leave the Sacramento Northern right-of-way in Oakland and proceed first on Key System in-street tracks, and then on the Bridge Railway to reach our final destination in downtown San Francisco.

Duration – 30 minutes	Motor – SN Interurban
Weather – Spring/Clear	Departure – 13:20 pm

[SN1003] 4a SN Train 10 Part 1

The drive is a daily passenger train departing from San Francisco. In this three-part scenario you will drive Train 10 as far as Mallard. In Part 1 we cross the Bay on the lower deck of the San Francisco-Oakland Bay Bridge and travel through North Oakland to Sacramento Northern's Shafter Avenue passenger station.

Duration – 30 minutes	Motor – SN Interurban
Weather – Spring/Cloudy	Departure – 8:09 am

[SN1003] 4b SN Train 10 Part 2

Train 10 Eastbound - 1939 Timetable: In Part 2 we go from SN's Shafter Avenue station, through the Oakland Hills, to the first sizable community in Contra Costa County - Walnut Creek.

Duration – 40 minutes	Motor – SN Interurban
Weather – Spring/Clear	Departure – 8:39 am

[SN1003] 4c SN Train 10 Part 3

Train 10 Eastbound - 1939 Timetable: In part 3 we complete our assignment, driving to the end of SN's First Division at Mallard. A Sacramento-based crew will then take the train across Suisun Bay aboard the ferry *Ramon*.

Duration – 30 minutes	Motor – SN Interurban
Weather – Spring/Cloudy	Departure – 9:25 am

[SN1003] 5 Back to the Barn

The small city-block-and-a-half yard at 40th and Shafter became inadequate as SN traffic grew. Part of the solution was to rent a couple of tracks in the new Bridge Yard, once the Bay Bridge was opened to rail traffic. Deadhead moves (no passengers) to and from this yard were a part of SN's operating schedule.

Duration – 15 minutes	Motor – SN Interurban
Weather – Summer/Cloudy	Departure – 7:45 pm

[SN1003] 6 Inbound Challenge

Traffic into San Francisco is against you and a “pea soup” fog makes for very limited visibility. Just right for a challenge!

Duration – 25 minutes	Motor – SN Interurban
Weather – Autumn/Heavy Fog	Departure – 12:00 noon

[GE 650] Cattle to Oakland - Part 1

Deliver Cattle from Concord and Moraga to Oakland. In this part you’ll pick up the first of two cattle shipments and take them to Moraga.

Duration – 40 minutes	Motor – SN Steeple Cab
Weather – Spring/Clear	Departure – 9:00 pm

[GE 650] Cattle to Oakland - Part 2

Deliver Cattle from Concord and Moraga to Oakland. In this part you’ll pick up the second of two cattle shipments and take them to Oakland.

Duration – 40 minutes	Motor – SN Steeple Cab
Weather – Spring/Clear	Departure – 9:40 pm

[GE 650] Freight Delivery to Shafter Yard

In Oakland, the Key System was responsible for collection and distribution of freight carried by the Sacramento Northern. Deliver a set of freight cars to SN’s Shafter yard for transfer to the Western Pacific.

Duration – 25 minutes	Motor – Leased Steeple Cab
Weather – Spring/Clear	Departure – 7:00 pm

[GE 650] Walnuts to Market

It's autumn and the fruit and nut harvest is in. Most freight moves on the SN were scheduled at night to avoid interfering with passenger traffic. However, given the need for boxcars and the relatively short sidings at Walnut Creek, the railroad has agreed to this short re-supply during daytime hours, in between scheduled passenger trains. We pick up a string of empty box cars at Saranap wye, exchange the empty box cars for filled ones at Walnut Creek, and then take the filled box cars to Meinert to await the nighttime through freight.

Duration – 60 minutes	Motor – SN Steeple Cab
Weather – Autumn/Cloudy	Departure – 2:20 pm

Railfan Scenario

[RailFan] San Francisco Transit Jam

All the trains at the Transbay Terminal have been held up due to a careless driver stopping on the tracks. The all-clear has just been given and both in- and outbound trains need to clear the area as soon as possible.

Quick Drive

The Sacramento Northern route is Quick Drive ready. Choose from a selection of interurban or steeple cab freight motor lashups, running eastbound or westbound.

Notes for Scenario Writers

1. This route is about the Sacramento Northern. However, it's impossible to escape the fact that three interurban companies shared some of the same tracks. Therefore, trains of the Key System and the IER are included for use in AI consists only. Key System and IER tracks are included only where they are visible in the immediate vicinity of the SN. The same is true for tracks of the Southern Pacific and ATSF. Except for the shared tracks, non-SN tracks are dead ended or, as in the case of the transfer table in Emeryville, non-functional. Nevertheless, feel free to place AI trains and static consists on these tracks, but do it with the primary goal of enhancing your Sacramento Northern scenarios.
2. SN interurbans ran with pantographs on the Key System, and trolley poles on the SN itself. Train Simulator does not directly support trolley-pole operation, so pantographs are used throughout. SN's GE steeple cabs used pantographs only.
3. The ferry *Ramon* won't be crossing Suisun Bay to Chipps anytime soon, but you can *very carefully* load cars onto and off of it.

4. SN's steeple cabs began to be painted with orange safety stripes in the mid-1940s, a few years after passenger service ended. Accordingly, only the black-painted steeple cabs should be used in scenarios that feature both interurban and freight traffic.
5. Passenger service on the SN was timetabled. Freight trains, which were always second class extras, generally ran at night to avoid interfering with passenger trains. Freight trains began to operate during the day after passenger service was discontinued.
6. Steeple cab motors were sometimes operated in tandem, depending on the length of the train. Freight trains always ran with a caboose. A steeple cab motor was always used at the rear of the train, either before or behind the caboose, while operating on the on the grade between Shafter Yard and Havens.
7. SN was not allowed to operate its steeple cab freight motors on 40th Street. However, SN leased a couple of box cab electrics to the Key System. These are represented in the simulation by "Leased" steeple cabs numbered 440 and up. Westbound SN freight trains terminated at Shafter yard. The SN motor was uncoupled and a leased motor coupled in its place. A Key System crew would then take the train to destinations in Oakland over Key System and Oakland Terminal Railroad tracks.
8. Freight trains were not operated on the Bay Bridge or in the Bridge Yard. Freight trains can be operated on the Oakland Terminal Railroad tracks along the south side of the Bridge Yard.
9. Tracks 5 and 6 of the Transbay Terminal were for use by SN and IER trains. Tracks 1 through 4 were for Key System trains only.
10. Several crossovers can be seen on the Bay Bridge. These were manually operated and were used in emergency only.
11. SN trains were entitled to use one service track in the Bridge Yard, distinguished by the small, tunnel-like building near the control tower.
12. SN trains were entitled to use the three storage tracks at Yerba Buena yard, just east of the control tower, to stage trains for the morning commute out of the Transbay Terminal.
13. SN trains were entitled to use the balloon track at Yerba Buena yard for turning trains around.
14. Both catenary and third rail can be seen on the Bridge Yard mains, on the bridge itself and into San Francisco. This was due to incompatibility between the IER and Key motors. IER equipment was 1200 volts only and Key equipment was 600 volts only. Therefore, to accommodate both types of equipment, third rail, energized to 600 volts, was installed for the exclusive use of Key trains. On Key trains, changeover from 600 volt catenary to 600 volt third rail was done on the fly using a tripping device next to the tracks. The overhead catenary was energized to 1200 volts wherever there was a third rail and wherever the IER trains exclusively went, specifically in the west half of the Bridge Yard and the two tracks IER used to access the yard. SN trains were capable of operating under 1500 volts, 1200 volts or 600 volts, so the voltage differences were not an issue. In summary:
    – Catenary in third rail territory and in the IER (west) portion of the Bridge Yard was energized to 1200 volts.
    – Catenary in the Key (east) portion of the Bridge Yard was energized to 600 volts.
    – Catenary over the EB and WB Bridge Yard mains was energized to 600 volts, except where a third rail was present.
    – Yerba Buena/Emeryville yard (Key System) was all 600 Volts.

– 40th St (Key System) was all 600 Volts.
– Though it was owned by SN, Shafter yard was all 600 Volts.
– Outside of Shafter yard, i.e. everywhere north of it, the SN was energized to 1500 volts.

15. Steeple cab locomotives use a “hidden” car number to set their initial voltmeter reading. Car numbers are automatically assigned by the scenario editor; however, you may wish to change the voltage code depending on where in the route your scenario begins. See item 14 above for the applicable voltage at the steeple cab’s starting location. To change the starting voltage, in the scenario editor, double-click on the locomotive and revise the four-digit number in the right-hand flyout. Car numbers are listed in the format NNNV, where NNN is the actual three-digit car number and V is the voltage code. Voltage codes are 1 (600 volts), 2 (1200 volts) and 3 (1500 volts). When a player train being driven by a steeple cab passes from one voltage territory to another, the volt meter should automatically update itself.
16. Bridge Units use a “hidden” car number to set the destination board and large Key System Line letter. Car numbers are automatically assigned by the scenario editor; however, you may wish to change the destination code. To do this, in the scenario editor, double-click on the bridge unit and revise the four-digit number in the right-hand flyout. Car numbers are listed in the format DNNN, where D is the destination code and NNN is the actual three-digit car number. Destinations are coded according to the following table.

Code	Line	Destination
a	A	San Francisco
b	B	San Francisco
c	C	San Francisco
e	E	San Francisco
f	F	San Francisco
g	A	12th & Oak Sts (Oakland)
h	B	Underhills (Oakland)
j	C	Piedmont
k	E	Domingo Ave (Berkeley)
l	F	Berkeley via Shattuck Ave

17. The number on the B unit of a Bridge Unit was always the same as the number on the A unit. The B unit number is automatically assigned by the scenario editor, but you may wish to change it to match the A unit’s number. To do so, follow the procedure in item 16 above.

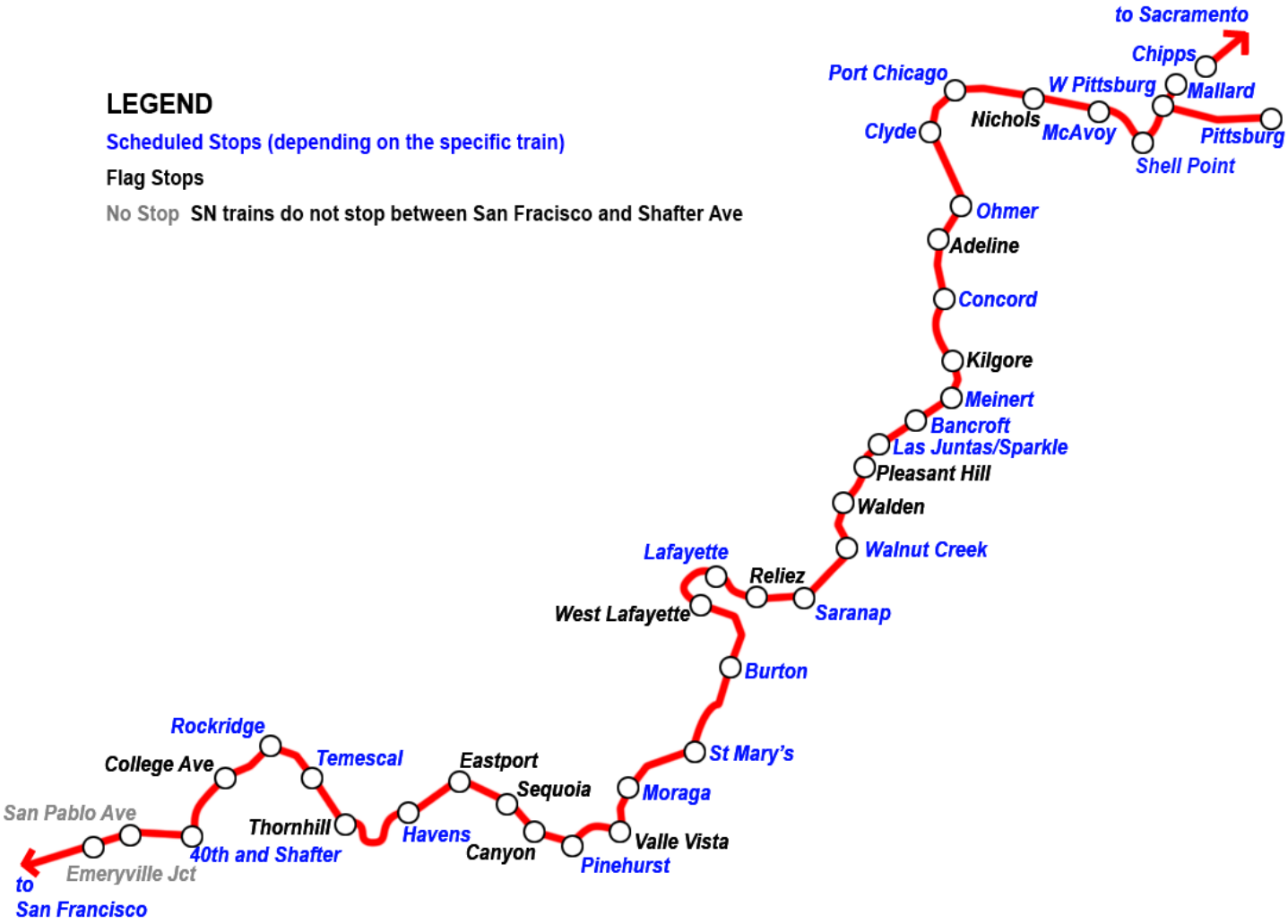
Maps and Schematics

Vicinity Map

Points of Interest:

A	Transbay Terminal
B	Yerba Buena and Treasure Islands
C	Bridge Yard
D	Yerba Buena/Emeryville Yards
E	Shafter Yard
F	Havens, Redwood Tunnel, Eastport
G	Port Chicago
H	Mallard and Ferry *Ramon*

Route Map



Acknowledgments

Route by Rick Grout and Jim Friedland

Additional contributors: Wayne Campbell, Chris Gerlach, Tim Muir, Barry Munro, Tomasso Pallen, Michael Stephan

Thanks to the volunteers at the Western Railway Museum in Rio Vista Junction, California (http://www.wrm.org/): Allan Fisher (access to archives); Evan Werkema (photo documentation); Al Stangenberger (operational information). The WRM regularly operates excursions along the last remaining stretch of Sacramento Northern trackage, featuring fully restored interurban motor 1005 and steeple cab 654. There are many other static displays of rolling stock from the SN, the Key System and other Bay Area electric railroads.

For an excellent and thorough photographic tour of the SN during its heyday, visit the East Bay Hills Project at http://www.eastbayhillsproject.org/ The web site is managed by Stuart J. Swiedler and is regularly updated.

For additional information about the Sacramento Northern, visit http://www.wplives.org/sn/

