

State Belt Railroad

San Francisco's waterfront once boasted a small railroad, known as the State Belt Railroad, that shuttled freight cars along the Embarcadero. The line went into rapid decline, in the 1970s, after the City of San Francisco took control of the port from the State of California, and lost most of the shipping business to Oakland. By the 1990s the port was moribund, and the Belt Railroad was discontinued. The main tracks of the line have been replaced by a new waterfront streetcar line, though remnants of the Belt line trackage may be seen on many of the piers between the Ferry Building and Pier 45. The Belt line's roundhouse still stands along the Embarcadero near Pier 27.

The Port's Railroad Has the Best Connections

The link between the piers of the Port of San Francisco and the railroads that carry its cargoes to market and to ship is the State-owned State Belt Railroad.

Any San Franciscan who drives the Embarcadero with any frequency has had to pull up now and then and wait for the black and white Diesels pulling a string of freight cars.

The Belt Railroad is a terminal switching railroad, meaning that it makes connections only. It does not perform any service other than switching service.

Its equipment consists of six 1000-horsepower Diesels.



The entire system of trackage is operated as a single yard. The equipment and crews do not go beyond the tracks owned or operated by the Belt Railroad. They provide necessary connection with the four line-haul carriers serving San Francisco.

The Southern Pacific Company has a direct connection with the Belt Railroad. The Atchison, Topeka and Santa Fe Railway Company, the Western Pacific Railroad Company and the Northwestern Pacific Railroad Company interchange with the [Belt rail]road via car ferry barges.

Cars are interchanged directly with Southern Pacific at least nine times per day and more frequently if necessary. Cars are interchanged with Northwestern Pacific five times a day, the Santa Fe at least six times a day, the Western Pacific four times a day and oftener when necessary.

Ordinarily the State Belt does not hold loaded cars on its tracks, but has a limited amount of siding available for such holding if necessary. The distribution of empty cars to facilities on the State Belt is controlled by the trunk line carriers furnishing the equipment. A limited accumulation of empties is occasionally allowed in the yards when a particularly heavy demand for empties occurs.

The State Belt Railroad levies charges on a per car basis regardless of the length of haul. Demurrage accruing on cars moving on the system is collected by the line haul carrier controlling the equipment. The only exception is the so-called special demurrage provided by the Belt tariff for cars moving entirely from one location on the Belt to another location also on the Belt.

San Francisco Chronicle World Trade Section May 22, 1953



State Belt Railroad – Switching Freight on S.Francisco Embarcadero
State Belt Locomotive #7 switching at Pier 43 near Fisherman's Wharf (c. 1940)

The State Belt Railroad of California was a shortline that served San Francisco's waterfront until the 1980's. Its tracks extended the length of the Embarcadero from south of Market Street to Fort Mason and the Presidio. Although locals nicknamed the line the Toonerville Trolley and the Wooden Axle Line, the State Belt had an illustrious career.

The first trackage of the State Belt was built by the **Board of State Harbor Commissioners** in 1889. At that time, the lands along waterfront were owned by the State, not San Francisco. These lands were once under water, so they were not included in the original survey of the City.

The original tracks were dual-gauged, to allow transfer of narrow gauge freight cars from the **North Pacific Coast R.R.** (Marin County) and the **South Pacific Coast R.R.** (Alameda, Santa Clara, Santa Cruz counties), as well as standard gauge cars. These first tracks did not yet connect to the outside world - all cars were ferried in from around the San Francisco Bay. Belt tracks finally connected with Southern Pacific tracks in 1913 at a small interchange yard located at Townsend and Berry Streets.



The Roundhouse at Sansome and Embarcadero (c. 1978)

The State Belt built a five-stall concrete-reinforced roundhouse at Sansome and the Embarcadero. (This historic structure still stands today as an office building). This engine facility housed a modest number of oil-fired steam switchers (mostly 0-6-0's), and later, ALCO S-2 diesels. The railroad also owned four freight cars - [idler flatcars](#) that were used to prevent the heavy engines from rolling onto the car ferries.



The State Belt roundhouse in early 1965: Note that there is no turntable. Although the tracks have been gone for many years, the structure still exists today (2003) as a somewhat bizarre office building. That's Alco S-2 #24 peaking around the side, and across the Embarcadero to its left stands the waterfront piers that it served.

State Belt's ferry slips were located near Fisherman's Wharf. The railroad transferred cars from the **Santa Fe**, the **Northwestern Pacific**, and the **Western Pacific**. In the twenties, the Santa Fe built its own car ferry operation in China Basin, and State Belt tracks were extended over Third Street and the Mission Creek drawbridge to make a connection.



Fort Mason Tunnel East Portal and Trestle in 1913

Construction at the 1915 Panama-Pacific World's Fair and traffic to Fort Mason justified the construction of a tunnel, 1500 feet long, 15 feet wide and 22 feet high underneath the Fort Mason Military Reservation. Eventually tracks were extended across what is now the Marina District to Crissy Field to serve the Presidio.

World War II generated a large amount of trans-Pacific traffic, and the State Belt contributed greatly to the
San Francisco – State Belt Railroad

movement of materials during the War. Army and Navy switchers were added to provide enough locomotive capacity. The State Belt also delivered trainloads of fresh troops to debarkation points, and picked up hospital trains and returning troops. The railroad moved 156 troop trains and 265 hospital trains in 1945 alone.

Operations slowly wound down as shipping moved across the Bay to Oakland. In 1969, with the State wanting to get out of the port business, San Francisco voters approved a bond issue to buy the Port of San Francisco. The State Belt R.R. thus became the San Francisco Belt Railroad. Later in 1973, the City offered to sell the railroad to any operator for \$1. After more than half a year, a 20-year contract to operate the railroad was signed with Kyle Railways. Total trackage had fallen from 67 miles in 1950 to 58 miles in 1973.

The end of the railroad came in 1993. By then, most trackage north of the Ferry building was gone or inactive. The only activity took place at Pier 96, a newly built container facility near Hunter's Point. ALCO S-2 #23 was chosen to serve the facility, complete with the new number 49 and a new paint job in 49er colors. [Engine #49](#), along with [#25](#) are now on long term loan to the Museum from the Port of San Francisco. They join State Belt [Steam Engine #4](#) as part of the GGRM's San Francisco Railroading Heritage collection.

Text by Thomas Beutel



State Belt Railroad # 1 Idler Flatcar
Builder: State Belt Railroad (Originally Union Oil Tank). Year Built: circa 1915

Idler Flatcar #1 is one of four idler flatcars used by the State Belt Railroad of California (later known as the San Francisco Belt Railroad). Flatcars 1, 2 and 3 are identical, with the exception that #1 has the addition of end steps for the brakeman. These cars were rebuilt from turn-of-the-century oil tank cars. Curved tank braces still exist underneath the cars just over the truck bolsters. State Belt #1 was converted from Union Oil tank car UOX #94 (renumbered UOCX #921).

These cars still retain their original arch-bar trucks, even though these were prohibited in the 1930's for interchange to other railroads. Since these cars were not intended for interchange, there was no need to change the trucks to a more modern type.

Idler flatcars had a very specific purpose in life - they were used as spacers between the locomotive and freight cars that were being pushed onto barges. This was done to prevent the heavy locomotive from running onto the barge and accidentally sinking it. Since the freight cars were now several idler cars away from the locomotive, two idler cars had steps at the ends for the brakeman to stand on.

The State Belt Railroad serviced several ferry slips along San Francisco's Embarcadero waterfront, the most famous being pier 43 near Fisherman's wharf. This ferry slip still stands today just a short walk from Pier 39, although it is now disconnected from the railroad tracks. (If you look carefully, you can still see tracks underneath the lawn in front.) The State Belt Railroad received freight cars here from the NorthWestern Pacific R.R. (from Marin County), the Santa Fe (from Richmond), and the Western Pacific (from Alameda).

All four State Belt Railroad idler flatcars are preserved at the Golden Gate Railroad Museum in San Francisco. The GGRM considers these cars to be an important part of San Francisco's railroad heritage.



The roundhouse on Embarcadero still stands. At the time this photo was taken, they were remodeling the interior to rent out for office space.



Members of the Board of Harbor Commissioners and officers of the U.S. Coast Guard pose with a new Diesel electric switch engine acquired to handle the wartime burden of waterfront traffic, in front of the Belt Line Railroad along the Embarcadero (August 30, 1943)

Photo courtesy of San Francisco History Center, San Francisco Public Library

buildings are simple utilitarian buildings of this period, constructed with reinforced concrete and plaster. The buildings were altered in the 1950s replacing five main doors with industrial type roll-up doors set back from the façade. Renovation work done in 1984 included replication of the original doors and reinstallation in their original location.

In 1914, the State Belt tracks were extended on a wooden trestle across a shallow stretch of the Bay known as Black Point Cove. There, at the end of Van Ness Avenue, a new railroad tunnel built by the Army took the track under Fort Mason to the dock area on the fort's western edge. The Army's railroad went on to the Presidio, and was used through World War II and beyond to transport supplies, and occasionally troops.

Belt Railroad Engine House and Sandhouse

The State Belt Railroad of California was a shortline that served San Francisco's waterfront until the 1990s and played an important role in World War II. Its tracks extended the length of the Embarcadero from south of Market Street to Fort Mason and the Presidio. The Belt transferred cargo between ships and main line railroads such as the Southern Pacific, Western Pacific and the Santa Fe. It also loaded trains onto car ferries for ports across the Bay. Although locals nicknamed the line the Toonerville Trolley and the Wooden Axle Line, the State Belt had an illustrious career. The first section of the State Belt was built by the Board of State Harbor Commissioners in 1890. In 1913, the State Belt built the Belt Line Engine House, a five-stall roundhouse at Sansome Street and the Embarcadero in San Francisco. This engine facility housed a modest number of oil-fired steam switchers, and later, ALCO S-2 diesels. An accessory building to the engine house, the sandhouse, was built the following year. Both

The State Belt contributed greatly to the movement of materials during the war. Army and Navy switchers were added to provide enough locomotive capacity. The State Belt also delivered trainloads of fresh troops to debarkation points, and picked up hospital trains and returning troops. The railroad moved 156 troop trains and 265 hospital trains in 1945 alone.



Belt Railroad Engine House and Sandhouse

Photo courtesy of National Trust for Historic Preservation

[National Historic Park](#), [Fort Mason](#) and the [Presidio](#).

Today, the former Belt Line Railroad and Sandhouse have been converted into office space. Although the Belt Line ceased operations in 1993, the success of the recently established Market Street Railway F-Line along the Embarcadero to Fisherman's Wharf has prompted a movement to extend the historic streetcar line to serve several historic attractions beyond the current terminal, including [San Francisco Maritime National Historic Park](#), [Fort Mason](#) and the [Presidio](#).



Belt Railroad Engine House and Sandhouse

Photo courtesy of National Trust for Historic Preservation

The Belt Railroad Engine House and Sandhouse is bounded by Lombard, Sansome and the Embarcadero in San Francisco. The building is now private office space, and is not open to the public.



State Belt 236 at Ferry Building 1942



State Belt Railroad # 23 ALCo S-2 Switcher
Builder: American Locomotive Company . Year Built: 1944

This 1,000 horsepower workhorse was built for the State Belt Railroad of California and is on long-term loan from the Port of San Francisco. The State Belt Railroad at one time operated a fleet of six of these diesels, numbered 20-25, purchased new between 1943 and 1945.

The 23 (along with sister 22) was delivered new in March 1944 while the 25 was delivered new in July 1945 along with her sister 24. The 23 has the less common horizontal shutters on the front of the engine. Most S-2's were delivered with vertical shutters. The American Locomotive Company's Schenectady, NY plant built both units. General Electric manufactured the unit's electrical components.

Each of the units produces 69,000 pounds of tractive effort and weighs approximately 230,000 pounds. When built and delivered to the State Belt Railroad, these 6 diesels replaced the 12 oil-fired steam locomotives, similar to State Belt #4 which is also in the collection of the GGRM.

The new State Belt diesels were a big help in World War II. The war generated a large amount of trans-Pacific traffic, and the State Belt contributed greatly to the movement of materials. The State Belt also delivered trainloads of fresh troops to debarkation points, and picked up hospital trains and returning troops. The railroad moved 156 troop trains and 265 hospital trains in 1945 alone.

Operations continued during the 50's and 60's but slowly wound down as shipping moved across the Bay to Oakland. In 1969, with the State wanting to get out of the port business, San Francisco voters approved a bond issue to buy the Port of San Francisco. The State Belt R.R. thus became the San Francisco Belt Railroad. Later in 1973, the City offered to sell the railroad to any operator for \$1. Total trackage had fallen from 67 miles in 1950 to 58 miles in 1973.

The end of the railroad came in 1993. By then, most trackage north of the Ferry building was gone or inactive. The only activity took place at Pier 96, a newly built container facility near Hunter's Point. ALCO S-2 #23 was chosen to serve the facility. The 23 was spruced up and was completed with the new number 49 and a new paint job in 49er colors. The activity at Pier 96 has been less than successful and the Port agreed to give the GGRM a long-term loan of the locomotives in exchange for their care and in December 1995 the locomotives arrived at the GGRM. The GGRM appreciates the Port's generosity in allowing us to preserve and operate these two locomotives. Both #49 and #25 are now operational and available for operation in the Museum's unique rent-a-locomotive program.



State Belt Railroad # 25 ALCo S-2 Switcher
Builder: American Locomotive Company . Year Built: 1944

This 1,000 horsepower workhorse was built for the State Belt Railroad of California and is on long-term loan from the Port of San Francisco. The State Belt Railroad at one time operated a fleet of six of these diesels, numbered 20-25, purchased new between 1943 and 1945.

The 23 (along with sister 22) was delivered new in March 1944 while the 25 was delivered new in July 1945 along with her sister 24. As far as spotting features go, this locomotive has the more common vertical shutters, while the 23 has the less common horizontal shutters. The American Locomotive Company's Schenectady, NY plant built both units. General Electric manufactured the unit's electrical components.

Each of the units produces 69,000 pounds of tractive effort and weighs approximately 230,000 pounds. When built and delivered to the State Belt Railroad, these 6 diesels replaced the 12 oil-fired steam locomotives, similar to State Belt #4 which is also in the collection of the GGRM.

The new State Belt diesels were a big help in World War II. The war generated a large amount of trans-Pacific traffic, and the State Belt contributed greatly to the movement of materials. The State Belt also delivered trainloads of fresh troops to debarkation points, and picked up hospital trains and returning troops. The railroad moved 156 troop trains and 265 hospital trains in 1945 alone.

Operations continued during the 50's and 60's but slowly wound down as shipping moved across the Bay to Oakland. In 1969, with the State wanting to get out of the port business, San Francisco voters approved a bond issue to buy the Port of San Francisco. The State Belt R.R. thus became the San Francisco Belt Railroad. Later in 1973, the City offered to sell the railroad to any operator for \$1. Total trackage had fallen from 67 miles in 1950 to 58 miles in 1973.

The end of the railroad came in 1993. By then, most trackage north of the Ferry building was gone or inactive. The only activity took place at Pier 96, a newly built container facility near Hunter's Point. ALCO S-2 #25 was intended as a backup to the #49 (ex #23), and so was used very little during this time. The activity at Pier 96 has been less than successful and the Port agreed to give the GGRM a long-term loan of the locomotives in exchange for their care and in December 1995 the locomotives arrived at the GGRM. The GGRM appreciates the Port's generosity in allowing us to preserve and operate these two locomotives.

Both #25 and #49 are now operational and available for operation in the Museum's unique rent-a-locomotive program.



State Belt Railroad # 4 0-6-0 Switcher
Builder: Vulcan Iron Works . Year Built: 1911

What is The State Belt #4?

Built and arriving in July 1911, the #4 was purchased by the State-run waterfront belt line-or switching railway. In a high point of San Francisco's industrial times, the engine and accompanying flat cars-took boxcars of freight on and off the piers to the industries in San Francisco. In 1932 it was sold to a Modesto railroad but returned to the bay again in late 1930's, this time on treasure island, helping supply the World Fair. Escaping the scrapping of nearly all old railroad engines through the 40's and 50's, the engine made a long trip to Utah before returning to San Francisco in 1998.

The following work has been accomplished: Repair of cylinders, sand blasting and repairing of engine frame. Renewal of axles journal and restoration of driving wheels, casting of new running gear parts.

The Golden Gate Railroad Museum is proud to have in its collection this steam engine, State Belt Railroad of California #4, an important piece of San Francisco's railroading and maritime history.

The State Belt Railroad served San Francisco's waterfront in the years that San Francisco was a major world port and manufacturing center. The Belt transferred cargo between ships and main line railroads such as the Southern Pacific, Western Pacific, and the Santa Fe. It also loaded trains onto car ferries for ports across the Bay.

The Belt has been dieselized for many years, but there is one survivor from its fleet of 12 steam locomotives. Number 4, a small 0-6-0 type steam locomotive, was built in 1911 by the Vulcan Iron Works in Wilkes-Barre, Pennsylvania. Total weight was 118,000 pounds, and the locomotive developed a tractive effort of 25,000 pounds. As built, it carried the inscription BOARD OF STATE HARBOR COMMISSIONERS on the cab, while the locomotive number was located on the steam dome. In later years, the locomotive number was placed on the cab and the words STATE BELT RAILROAD OF CALIFORNIA were written on the tender.

When the switcher was retired it was sold to the Modesto and Empire Traction RR in Modesto, California as their #5. It was later sold to the A. D. Shrader Company and used in the construction of the 1939 World's Fair on Treasure Island. The locomotive eventually found its way to a scrap yard in Stockton, California, where it sat for many years until it was donated to the Promontory Chapter, National Railway Historical Society. In 1971 the old #4 was shipped to be cared for by the Wasatch Mountain Railway in Heber, Utah (later the Wasatch Railway Museum, Salt Lake City, Utah).

The Golden Gate Railroad Museum eventually contacted the Salt Lake City based museum, whose directors agreed that the locomotive was more suited to our historical collection than theirs. GGRM members are extremely grateful to the Wasatch Railway Museum for having taken such good care of the locomotive and agreeing to its return home to San Francisco.

The GGRM plans to restore the #4 to operating condition. In doing this, we will accomplish two things. One - help preserve the skills necessary to maintain steam locomotives and Two - provide a tool which will allow training in the operation of a steam locomotive. However, this does not come cheap. The estimate of acquisition, shipping, and restoration is expected to be about \$125,000.

STATE BELT RAILROAD

• Locomotive Roster

| Number | Type | Driver Diameter (in.) | Cylinder Size (in.) or Horse Power | Weight (lbs.) | Boiler Pressure (lbs./sq.in.) | Tractive Effort (lbs.) | Builder | Builder's No. | Built (mon./year) |
|---------|----------|-----------------------|------------------------------------|---------------|-------------------------------|------------------------|-------------|---------------|-------------------|
| 1 | 2-4-2ST | 50 | 17x24 | 96,000 | 130 | 15,330 | Baldwin | 12017 | 7/1891 |
| 1 (2nd) | 0-6-0 | 51 | 19x26 | 145,000 | 175 | 27,380 | Baldwin | 32607 | 1/1908 |
| 2 | 0-4-2ST | 50 | 17x24 | 92,700 | 160 | 18,866 | Baldwin | 18618 | 1/1901 |
| 3 | 0-4-2ST | 50 | 17x24 | 100,000 | 160 | 18,866 | Baldwin | 23897 | 3/1904 |
| 4 | 0-6-0 | 51 | 19x24 | 118,000 | 175 | 25,270 | Vulcan | 1759 | 7/1911 |
| 5 | 0-6-0 | 51 | 19x24 | 119,000 | 145 | 21,600 | Baldwin | 38036 | 7/1912 |
| 6 | 0-6-0 | 51 | 19x26 | 145,000 | 175 | 27,380 | Baldwin | 39339 | 2/1913 |
| 7 | 0-6-0 | 51 | 20x24 | 143,000 | 175 | 28,000 | Alco-Brooks | 54563 | 4/1914 |
| 8 | 0-6-0 | 51 | 20x24 | 145,200 | 175 | 28,000 | Baldwin | 43670 | 7/1916 |
| 9 | 0-6-0 | 51 | 20x24 | 146,000 | 175 | 28,000 | Alco-Brooks | 61021 | 5/1920 |
| 10 | 0-6-0 | 51 | 20x24 | 147,900 | 175 | 28,000 | Baldwin | 57209 | 9/1923 |
| 11 | 0-6-0 | 51 | 20x24 | 150,000 | 175 | 28,000 | Baldwin | 60102 | 7/1927 |
| 20 | Model S2 | - | 1000 hp. | 230,000 | - | 57,500 | Alco | ? | 7/1943 |
| 21 | Model S2 | - | 1000 hp. | 230,000 | - | 57,500 | Alco | 70204 | 7/1943 |
| 22 | Model S2 | - | 1000 hp. | 230,000 | - | 57,500 | Alco | 70156 | 2/1944 |
| 23 | Model S2 | - | 1000 hp. | 230,000 | - | 57,500 | Alco | 70157 | 3/1944 |
| 24 | Model S2 | - | 1000 hp. | 230,000 | - | 57,500 | Alco | 73602 | 7/1945 |
| 25 | Model S2 | - | 1000 hp. | 230,000 | - | 57,500 | Alco | 73603 | 7/1945 |

Source: A State Belt Pictorial, by McMorris Dow and Joseph A. Strapac, The Western Railroader, Vol. 51 Number 533, February, 1988.

BIENNIAL REPORT OF BOARD OF STATE HARBOR COMMISSIONERS, 1914.

The following is the verbatim text of the Biennial Report of the Board of State Harbor Commissioners (State of California), for the period July 1, 1912 to June 30, 1914. Only sections relating to the operation and construction of the State Belt Railroad are included.

This report is interesting for two reasons: One is the basic history of the development of the railroad during this period. The other is the tone of the report. The commissioners had taken over operations from a prior board, and therefore were anxious to show how they better met the needs of their customers. They placed special emphasis on pier track alignments, new extensions, a new roundhouse and increasing the number of locomotives. Also consider that this period was less than 10 years after the destruction of San Francisco by the Great Earthquake and fire of 1906, and was also a few years before World War I.

Belt Railroad.

The development and extension of the state belt railroad have been an especial care of the Board. San Francisco undoubtedly now has the most complete harbor belt line railroad switching system in the country.

The railroad is located on The Embarcadero, a marginal thoroughfare 200 feet wide, located just behind the seawall, and the system is intended and is used to connect up, for the switching of freight cars, the various piers, the yards of other railroads, and private warehouses and industries generally.

The spur track permits for use on city streets fall under the jurisdiction of the municipal authorities, but the construction, maintenance and operation of the belt railroad around the water front are wholly under the jurisdiction of the Board.

Bringing Ship and Rail Together.

As stated in our former report, few harbor improvements are more sought by all ports than the bringing of ship and railroad car close together, side by side, if possible, so as to promote despatch and cheapness in transferring freight. This modern trend finds one of its best illustrations on the San Francisco water front.

Railway Spurs on Piers.

It has been the policy of the Board not only to equip all new piers with spur tracks running the full length of the piers, but also, wherever the water slip spaces beside the old piers were sufficiently wide to permit of it, to widen existing piers and place spur tracks thereon.

Railway Spurs on Old Piers.

In addition to the widening of old piers Nos. 9, 11 and 12, and the running of spur tracks along one side of each throughout its full length, as stated in our former report, this Board has since widened piers Nos. 25 and 27 and built spur tracks on one side of each pier, full length.

Railway Spurs on New Piers.

On the new piers, spur tracks, full length, have been placed on both sides of piers Nos. 26, 28, 30, 32, 39, 41 and 46. On the other piers under contract, tracks on both sides of piers 140 feet wide or over, and on one side of piers under 140 feet in width, will be placed. Where there are tracks on both sides of the pier, the usual practice is to make one a surface track, and the other is depressed so as to bring the floor of the railroad car on a level with the floor of the pier, thus facilitating trucking of certain classes of freight. Our practice is to accommodate the proposed tenants in this regard according to their preferences.

Center Tracks Not Favored.

It was a practice of former Boards to install railway spur tracks down the center of the pier. This was done on piers Nos. 34, 36, 38 and 40. But experience has demonstrated that the center arrangement is a mistake, because it interferes very seriously with teaming and trucking. The arrangement of the tracks along the sides of the piers and outside the pier sheds is now universally demanded by shippers. This arrangement has been followed in all our constructions.

Belt Railroad Connection Across Market Street.

Our last biennial report referred to the fact that we had begun the construction of the necessary link, extending from Folsom to Washington streets, and crossing in front of the Ferry Building at the foot of Market Street, to connect the northern and southern divisions of the belt railroad. This important work has been completed and the operation of the new continuous line proceeds with perfect satisfaction and without the slightest interference with the city street car traffic. South of Market Street the belt line has been extended to Channel Street.

Extension of the Belt Railroad North.

A large extension has been made to the north and west, more than a mile in length, from The Embarcadero, along Jefferson Street through the new tunnel under the United States Fort Mason military reservation to a connection with the railway tracks of the Panama-Pacific International Exposition Company, in Beach Street, between Laguna and Buchanan streets.

Purpose of this Extension.

The main purpose of this extension was to connect up the belt line with the United States Army transport docks, situated at the foot of Laguna Street, in the northwest corner of the Fort Mason reservation, and its completion has directly connected the transport docks by rail with the transcontinental railroad systems. These docks are the permanent government location for all the transports, which convey men and material to the Philippine Islands and the other insular possessions.

Situated so remotely from the termini of the railroads in San Francisco, the transport docks were subject to a long and expensive haul by truck of all their merchandise and other material, and the army representatives in San Francisco urgently requested the Harbor Board to extend the belt line railroad to the transport docks, both for commercial and military reasons. On account of the grades, this could only be done by the construction of a tunnel under the Fort Mason military reservation.

Fort Mason Tunnel.

Authority to the Harbor Board to construct such a tunnel and extend the belt line was conferred at the last session of the legislature. (Stats. 1913, page 383). Under this act the tunnel, 1,500 feet in length, 17 feet wide, and 22 feet high, of concrete throughout, with a single track railway, designed for freight service has been built.

It extends from Van Ness Avenue on the east, opposite the end of Jefferson Street, to a point near Beach and Laguna streets on the west, running throughout its length under the Fort Mason military reservation.

Federal authority to cross the reservation with the tunnel was granted by congress to the Panama-Pacific International Exposition Company and its assigns, and the exposition company assigned its rights with the approval of the government to the Board of State Harbor Commissioners.

Other Purposes of this Extension

Through the tunnel the belt line connects up with the railway switching system within the Panama-Pacific Exposition grounds and an arrangement has been made with the exposition company whereby exhibits on their way to and from the grounds will be carried on the belt line. Of course, other industries, along the line of this Jefferson Street extension, will also be served, and by this means a large new waterfront area of desirable flat land has been made much more available for factory and other commercial uses.

After the exposition closes, it is planned to extend the belt line further west to the United States military reservation, known as the Presidio.

Fort Mason Tunnel and Belt Extension Finished.

The tunnel and the belt line extension through the same have been finished and appropriate dedicatory exercises were held on October 31, 1914.

A Continuous Belt Railroad Around Harbor.

By these constructions and extensions, a continuous belt railroad switching system, adequately equipped, is now in full and successful operation around the whole active harbor front of San Francisco, from the United States transport docks on the north and west to Channel Street on the south. It is a tremendous gain to the harbor, and its real advantages only become properly estimated when it is recollect that even such a great seaport as New York has no harbor belt line.

Increase in Number of Locomotives and in Business.

The great enlargement of the belt line system and the consequent increase in business necessitated the purchase of new locomotives since the last report. The Board is now operating seven locomotives, whereas the number in use when we took office in 1911 was three. This, of course, entails the employment of more crews. The road is operated twenty-four hours a day, and, in the crop-moving season, also on Sundays and holidays. The belt line business, by the building of the connection across Market Street and other extensions, has increased over 100 per cent during the past year.

Drawbridge Over Islais Creek.

It was stated in our last report that this Board had set in motion the necessary legal machinery to compel the construction of a draw bridge over Islais Creek at Kentucky Street, by certain railroad companies using the roadway of the latter street. This bridge was subsequently contracted for and the work is now in progress.

The following section of the report is a slight repetition of the prior text, but it goes into more detail of the maintenance and construction of the railroad.

Belt Railroad.

A large amount of work has been done on the belt railroad, both in the way of additional spurs serving piers and industries and sidings and extensions. Mention has already been made of the fact that all new piers are provided with one or two tracks, those completed and Imder contract being as follows: Piers 46, 32, 30, 28, 26, 37, 39 and 41, two tracks each and piers 15 and 17 one track each; of those projected, piers 16, 18, 29, 31, 33 and 35 are to have two tracks, while those to be numbered 24 and 22 are to be supplied with one. Spurs have also been constructed to piers 25 and 27 and it is intended to place one later on pier 13.

A decided improvement in operating conditions was effected by the building of that portion of the line crossing the foot of Market Street and connecting the northern and southern divisions; this link is 3,900 feet long and extends from Folsom Street to Broadway. Some difficulty was experienced in the construction of the section in front of the Ferry Building and extending north to Clay Street; The Embarcadero at this point is a sand fill carried by a timber platform supported by piling cut off at low water level and it was necessary for a distance of 390 feet where the piles were too far apart to carry trains safely, to trench the street, drive the required additional piles and lay a new plank platform to retain the sand. The entire connection was completed and ready for operation on January 27, 1913.

The belt railroad is being further extended from the foot of Powell Street, its former northerly terminus, by the construction of the line to the government transport docks at Fort Mason. This line begins at the corner of Powell and Jefferson streets, and runs westerly along Jefferson Street to Van Ness Avenue, turning thence to the corner of Beach and Laguna streets and connecting with the government tracks to the transport docks and warehouses and also with the tracks of the Panama-Pacific International Exposition. Between Taylor and Jones street, where it runs along the southerly edge of Fisherman's Lagoon, and between Larkin Street and Van Ness Avenue where it crosses the cove east of Black Point, it is on trestle and under the government reservation at Fort Mason, in tunnel. The trestles are open deck, built in accordance with standard railroad practice, having creosoted pile bents and creosoted sway braces and girts; tower bents are spaced every 150 feet. The tunnel is 1,500 feet long, its easterly portal being situated 120 feet west of the westerly line of Van Ness Avenue and its westerly portal 245 feet east of the easterly line of Laguna Street. It is concrete lined throughout with a clear width of 17 feet and a clear height above top of rail of 22 feet. At the westerly end from the portal to Laguna Street, there are concrete retaining walls about 250 feet long, having a height of 27 feet at the portal face and four feet at the easterly line of Laguna Street; these walls were ordered built to save as much ground as possible for the use of the reservation.

The material encountered in the tunnel was a sandstone shale for the easterly 700 feet, clay in the middle 400 feet and sand in the westerly 400 feet. The easterly and middle portions were excavated by the ordinary heading and bench method, a center shaft being sunk to hasten the work, the westerly section in sand being taken out as an open cut and backfilled after the masonry was completed. The shaly rock from the easterly portion was used to make an embankment extending into the bay from Hyde Street to Larkin Street, and heavily riprapped along the northerly side and the westerly end to protect it from wash.

This extension, which is 1.09 miles long, was 47 per cent completed on June 30, 1914, and is expected to be ready for trains by November 1, 1914, in ample time to serve the exposition.

A reinforced concrete engine house containing seven stalls was erected on Seawall Lot 8, bounded by Lombard and Sansome streets and The Embarcadero. This building is provided with a drop pit, machine shop, blacksmith shop and store room; the engine house proper and the machine shop are floored with wooden blocks on a concrete base, the store room with concrete and the blacksmith shop with cinders.

It is expected that this engine house will suffice for the needs of the belt railroad for several years and when additional stalls are required another engine house should be built on the southern division.

This engine house was completed April 30, 1914.

The total length of line between the north side of Second Street wharf, the present southerly terminals, and Beach and Laguna streets, the proposed northerly terminus, is 3.70 miles. A comprehensive plan has been worked out for the track system between these termini which contemplates 1.86 miles of single track, 0.64 mile of double track and 1.20 miles of three track road, the number of tracks being determined by local conditions of railroad yards and tracks serving industries at different points. The single track sections extend from the north side of Second Street wharf to Berry Street, from King to Townsend Street, from Folsom Street to Broadway and from Powell to Laguna Street; the double track sections from Berry to King Streets from Harrison to Folsom Street, from Broadway to Green Street and from Battery to Francisco Street, and the three track sections from Townsend to Harrison Street, from Green to Battery Street and from Francisco to Powell Street.

To render possible the storage of cars during the season of heavy traffic, yards have been projected on Seawall lots 20 and 18 at the south end and on lots 1, 2, A and B at the north end; these yards will assist materially in doing away with congestion of the main line and in assuring rapid delivery of cars to shippers and to the different railroad companies entering the city. Several of the tracks planned for these yards have already been laid.

Car Ferry Slips.

The present car ferries at the foot of Lombard Street are to be torn out to make room for piers and two new ones are being built between the foot of Powell Street and the foot of Taylor Street. They are of creosoted piles carrying a timber deck planked with Oregon pine, which on the eastern dolphin is covered with a wearing surface of cedar to permit of teaming when this dolphin is used for berthing vessels. The construction follows the plan of the present car ferry slips in general, but with steel aprons and wider dolphins supplied with more tracks, there being two of these on the easterly dolphin, four on the middle one and two on the westerly dolphin. In connection with the contract for the car ferry slips, the adjacent bulkhead is being reconstructed to carry tracks, this work being carried out in timber on the same plan as the slips.

The car ferry slips were 4 per cent completed June 30, 1914.

Buildings.

Plans for buildings in the vicinity of the ferry slips are being prepared as follows: Extension to the southerly end of the main Ferry Building to be used for baggage purposes.

Post office building to be located opposite the foot of Mission Street with a connecting shed on the dolphin between slips 8 and 9.

Shed on the dolphin on the south side of slip 10 to be used for express purposes.

GLOSSARY

Dolphin: The wings of a pier that guide a ship into berth.

Copyright 2005-2006 SanFranciscoTrains.org

THE STATE BELT RAILROAD, SERVING PORT OF SAN FRANCISCO.

While we have been termed "Wooden Axle Line", "Toonerville Trolley" or "Fetch-and-carry-Line", our real name is the State Belt Railroad, serving the great Port of San Francisco. It should be explained that the San Francisco waterfront is owned by the State of California. Why? Well, back in the early 1860's, when life in the Far West was still free and wild, a group of promoters attempted to secure for themselves and their heirs in perpetuity, complete ownership of the city's harbor -every wharf

and wharf rat. Finally the people stirred and to protect themselves, chose to hand the waterfront over to the State. In 1863 the Board of State Harbor Commissioners was created to administer it. In 1889 a belt railroad was authorized and in October 1891 operation was actually started, one mile in length and with a third rail for the narrow-gauge cars of several railroads.

The State Belt Railroad is a terminal switching railroad, one of the very few owned by a state and performs switching service to pliers, spurs, team and storage tracks adjacent to the waterfront area in San Francisco, being classed by the Interstate Commerce Commission as Class S II. The ramifications of the 60 miles of trackage operated along a short distance of the city's perimeter are realized only when it is pointed out that The Embarcadero proper less about three miles in length. And while our locomotives travel over 70,000 miles per year, they never get more than 5 miles away from the roundhouse.

Our entire system of trackage is operated as a single yard and while we have no yard limits or yard limit boards, we do get an occasional time card for moving into what our crews feel is off-limit territory. No train orders or time-table schedules to worry about. No block signal system, all movements being made under operating control. While we operate drags up to 60 cars, newspapers have termed our trains "Embarcadero Limiteds". Their inference about each engine having a "Too Late Bell" is well taken. Motorists may hear it, but don't care; then it's too late.

Trunkline carriers interchanging with the State Belt Railroad include the Southern Pacific Company with which there is a direct physical transfer at King Street and The Embarcadero, and the Santa Fe, Western Pacific and Northwestern Pacific, cars for the latter three being interchanged via car Ferry barges at Pier 43.

We operate four intranet storage yards with capacity of about 300 cars. An outbound car ferry classification yard will accommodate 112 cars. Outbound drags to Southern Pacific Company are made up on running tracks that will handle 60-car trains. At present we operate five regular crews daily, this being augmented by extra crews as required. Our present handling per day, in and out, averages 170 cars. Our facilities can handle a much heavier volume of traffic. As an example during the war years of 1945 we moved 259,649 cars; included were 156 troop and 265 hospital trains. Most of our inbound is received from 9 p.m. to 7 a.m. from trunkline carriers, while our heavy outbound occurs between 3 p.m. and 1 a.m. However, we are prepared to receive and dispatch cars at any time necessary. No service is provided on Sundays or holidays except on special request and then at tariff rates. Prompt and frequent service is provided twenty-four hours per day, many of our clients requiring from 3 to 5 switches each day. We pride ourselves on the expeditious service to pier clients. With gangs standing by, it is quite important that switching service be prompt as ordered. Generally, two hours advance notice is required for service.

While most of the piers are rented by individual steamship companies under preferential wharf assignment, stevedore and car loading and weighing companies operate in many of these piers with permission of pier assignee. Their switching is coordinated with that of the pier tenant. At times we are handicapped by late arrivals, particularly during period trunklines operate on standard time, while pier and spur occupants function on daylight saving time. It is hoped that legislation will correct the confusion of a dual time system. A source of occasional delay and annoyance is the fact that motorists park on or in close clearance of track. Operating almost entirely in public streets, vehicular traffic at times slows operations.

Service in District "A", operated by the State Belt, is provided to 36 piers and 121 industrial spurs with a capacity of about 1500 cars. Among the industries located on our rails are ice houses, coffee plants, warehouses, paper distributors, paint manufacturers, glass companies, lumber yards, bag companies, an elevator plant, dairy products distributors, produce companies, grocery concerns, automobile unloading facilities of several railroads and for a sweet tooth a candy company. On request I should be glad to furnish you a list of these industries. Team and storage tracks of trunkline carriers located here can accommodate 500 cars. Our crews enjoy the trip thru Aquatic Park, with its bathing beauties, weather permitting, thru tunnel to Fort Mason and thence over Marina Green to Presidio, where we handle switching for the U.S. Government. State Belt Railroad tracks in District "B" China Basin served by the Santa Fe, provide service to Piers 48, 50 and 54. Service in District "C" Islais Creek is provided by Southern Pacific Company, under agreement. Located in this area are Piers 90, 92, Cotton Terminal (capacity 7500 bales) and Grain Elevator that can handle one million bushels. Service is also provided to various fish canneries and lumber companies. The Western Pacific Railroad switches the Copra Terminal at Islais Creek. Getting back to cotton, it has been noted increasing amounts are being moved through the port, as a result of the active efforts of our traffic department. Due to faster train schedules from San Joaquin Valley points, much cotton is moving by rail. Modern piers, such as Pier 50 operated by American President Lines, Piers 30-32, Matson Navigation Co and Piers 15-17, States Line with depressed area for rail cars and trucks, provide the utmost in quick dispatch of cargo.

All cars offered in interchange are switched on orders of the delivering carrier owning or controlling the equipment, cars moving to destination on switch lists furnished by such carrier, cars destined to piers or industrial spurs being supplemented by form B⁷ control, this being a written order (form supplied by railroad) required of pier and spur track occupants. This car order control prevents trunkline carriers from delivering cars too far in advance of time required by consignee and assures fluid operation of the railroad. Same procedure applies to outbound movements from State Belt, such cars being ordered out on switch lists by trunklines and 7 supplemented by the form B⁷.

Distribution of empty cars is controlled by trunkline carriers. A large portion of cars unloaded are either ordered direct to a location to reload, or ordered held for cleaning and prospective loading. In event of heavy demand for empties for a particular loading such as bagging or bones, space is provided in our yards or yards of trunklines for accumulation of empties to protect such loading. Freight cars are afforded prompt dispatch not only by the State Belt but also by trunklines handling and I can assure you these cars are held for tonnage. Cars are delivered to trunkline carriers in time to permit connection with outbound trains and much improvement has been noted in handling thru their terminals. Frequently we learn that running time has been reduced over the road by trunkline freight trains, the most recent incident to my knowledge being 24 hours saved in movement to the Pacific Northwest. Centralized traffic control and use of car retarder yards at strategic points in trunk line yards contribute to the improved handling. All details of seal records, issuance of waybills, delivery orders and bills of lading are handled by the trunkline carriers. Not subscribing to the Car Service Rules or Per Diem Agreement, you can readily see the mechanics of our operation is rather simple. And with such simplicity, we can devote our time to efficiency and economy of operation. We do comply with the rules and regulations of the Interstate Commerce Commission, being subject to their service orders, locomotive inspection requirements, Hours of Service law, etc. We are assisted in our problems through membership in the American Short Line Railroad Association.

Claim Prevention is a continuing program on the State Belt. It is significant to note that one-half of the claims paid by railroads for loss and damage to freight result from overspeed impact of cars. Operating almost entirely over public streets of necessity crews move at slow speed, hence "kicking" movements are quite limited. All operating personnel are furnished with Speed Cards and Careful Car Handling pamphlets. Stressed is the fact that four miles per hour is the standard maximum safe coupling speed, a speed equivalent to a brisk walk. You may rest assured it is our constant endeavor to see that careful car handling is accorded to all freight entrusted for movement over our rails.

Employees of the State Belt Railroad are members of the civil service system of the State of California. Rates of pay are based on prevailing rate in the area. Vacation and sick leave benefits are more liberal than those in force on trunkline carriers. The majority of our operating employees are members of railroad labor organizations, and being subject to the Railway Labor Act, we are required to negotiate contracts with such groups. Personnel consists of 64 full time or regular employees and 8 relief and extra men.

Owning four 1000 hp. diesel-electric switching locomotives, all repair work, except tire turning, is handled in our own shops, equipped with 7-1/2 ton overhead crane, 25 ton drop table, drills, lathes, presses, etc. In order to facilitate repairs, without unnecessary lay-up of locomotives, we have a complete spare truck assembly with traction motors. A truck can be removed and the spare truck unit installed in locomotive in about an hour. In cooperation with engineers from Dupont and Minnesota Mining, a new color scheme has been developed for locomotives; black and high-visibility-yellow stripes with reflective striping that must present an eerie spectacle to a tipsy driver at night. Incidentally should you see a State Belt locomotive at South San Francisco, rest assured we are not extending our operations south to Los Angeles; the unit has been leased.

Complete dieselization of our motive power has resulted in many economies of operation. Diesels permit traffic to be handled in fewer trains, operating at higher average speeds and reducing track occupancy. We are waiting for an atomic locomotive with nuclear reactors. In fact several railroads have been authorized to conduct experiments along these lines.

Our track gang is completely mechanized and thru welding we build up switches and frogs. In our own shops we can completely construct crossings and frogs. With three and four main running tracks along the waterfront and with cross-overs strategically located, we can make-up and break-up drags with dispatch.

Many terminal systems base their tariff charges on the commodity transported, while others have established a sliding scale on the zone plan, the cost to the patron varying with the distance cars are moved. The State Belt Railroad on the other hand, takes no cognizance of contents of cars, maintaining a uniform rate irrespective of the length of the haul. Terminal Tariff 6 I.C.C. No.8 is currently in effect, with a switching rate on loaded freight cars of \$24.82, which in most instances is absorbed and reflects no cost to the shipper, or consignee. Cars for loading and unloading strictly on points on our rails are furnished at a rental of \$10 for each period of 72 hours, plus switching charge. You won't find our net income in the financial pages, in fact the figure is not black.

Please don't forget that in addition to service to the port of San Francisco, the State Belt Railroad can be used as a bridge between two trunklines to expedite movement and affect saving in per diem and car days. An example would be lumber movements from the Redwood Empire to the south.

In Railroad communications we are aware of the importance of radio installations, loudspeaker systems, walkie-talkies and even television for car reporting. Operating within such a short distance from central yard office we find use of automobiles by yardmaster to dispatch orders to crews to be more efficient and economical at the present time.

In conclusion wish to point out that our concern is with today's work, rather than yesterday's. I sincerely believe that the State Belt Railroad is geared to meet any challenge presented. Outside of complaints from annoyed insomnia victims on Telegraph Hill and annoyed commuters on the Embarcadero, feel we are providing as fine a switching service as can be had anywhere in the United States.

Rather than start with a story and have my audience try to remember it thru this discourse, missing the subject matter, I should like to end with a story.

"Pat had been quite a religious man until he secured employment with a lumber yard. It seems each day he would steal a few sticks of lumber. As the years rolled by, eventually he became remorseful and decided to go back to his church. During the course of confession the good Father asked him if he ever made a retreat to which Pat answered 'No, but Father if you will furnish the blueprints, I'll furnish the lumber.'"

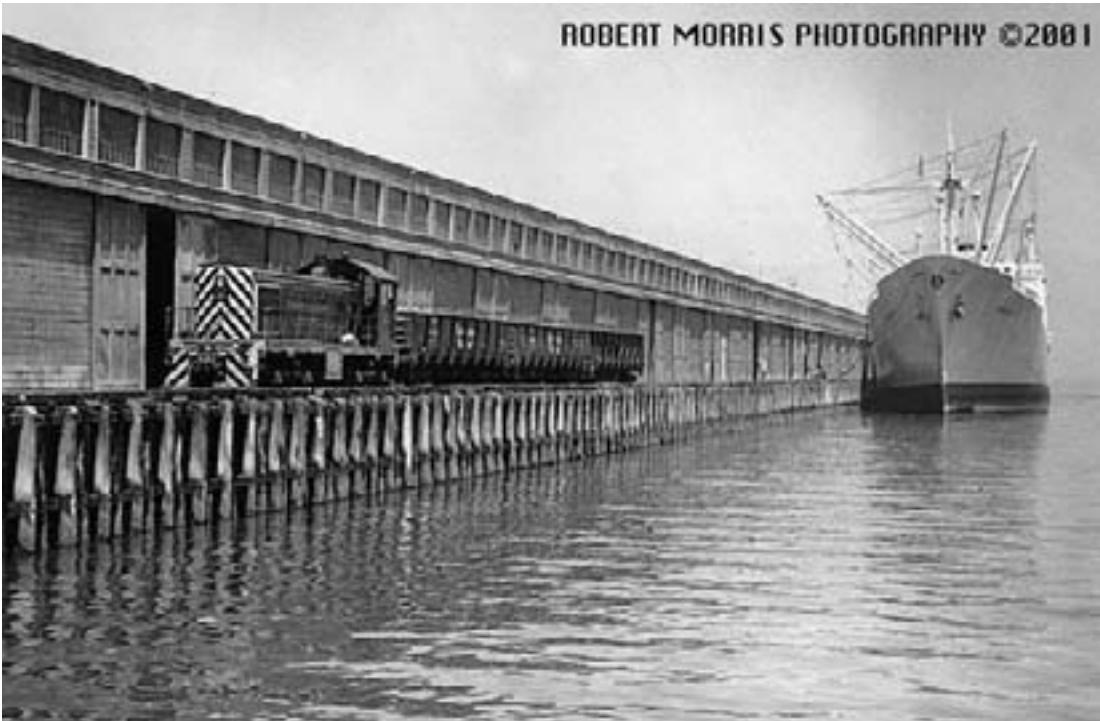
I believe, gentlemen, that reflects the position of the State Belt Railroad; you furnish us the business and we'll provide the service.

The above is from a talk by J. B. Silva, Superintendent, State Belt Railroad August, 1960

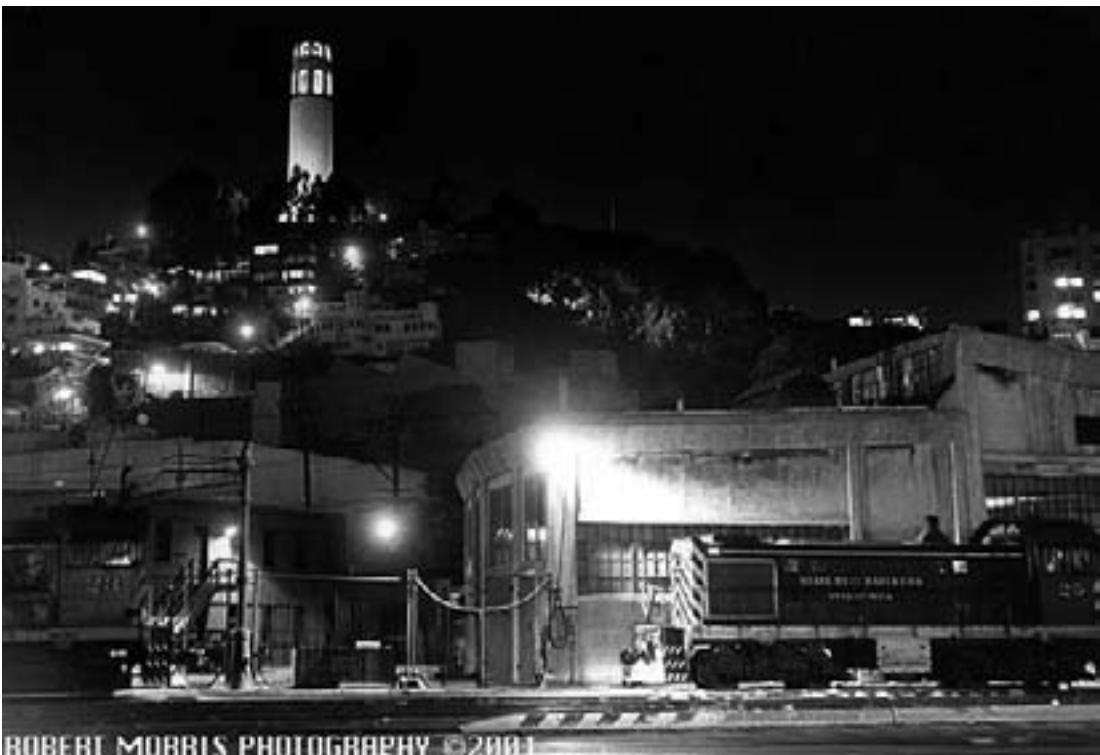


ROBERT MORRIS PHOTOGRAPHY ©2001
STATE BELT 25 AT FISHERMANS WHARF

ROBERT MORRIS PHOTOGRAPHY ©2001

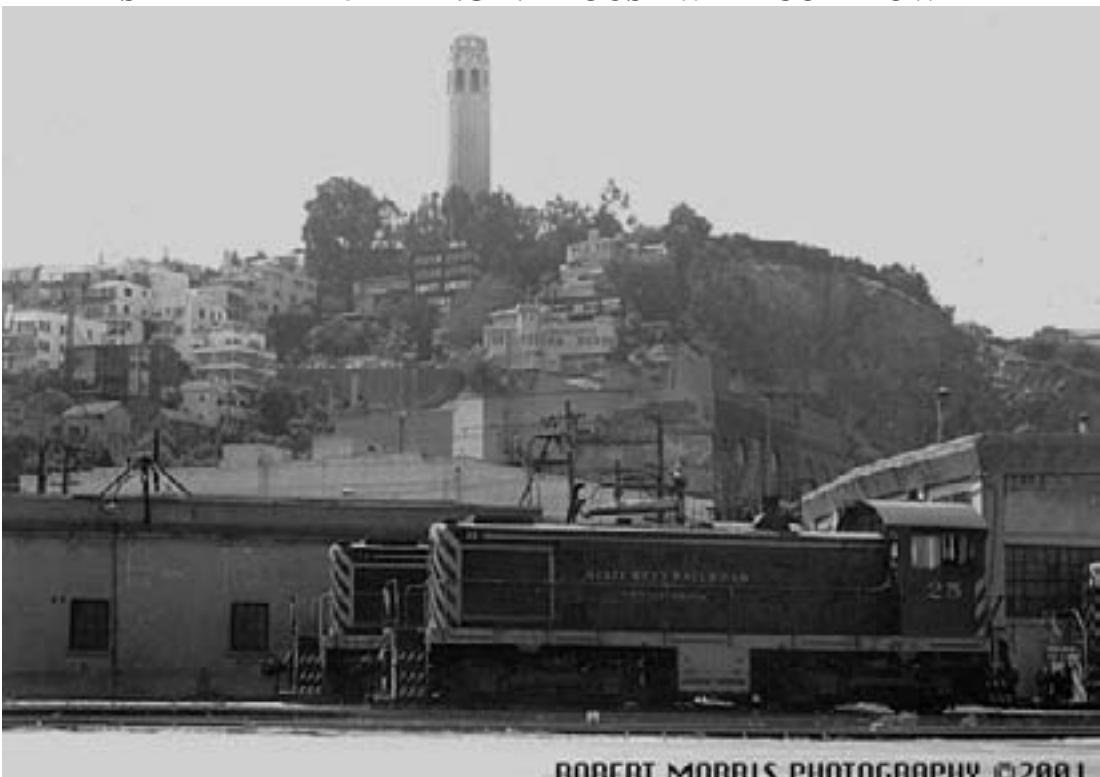


STATE BELT 25 ON PIER WITH GONDOLA CAR



ROBERT MORRIS PHOTOGRAPHY ©2001

STATE BELT 25 AT ENGINE HOUSE WITH COIT TOWER



ROBERT MORRIS PHOTOGRAPHY ©2001

STATE BELT 25 WITH COIT TOWER



STATE BELT 25 WITH SAILING SHIP BALCLUTTHA



View of Fort Mason from 1933. This photo shows the rail service and where the tracks ran.

Photo is from the [San Francisco Library website](#).

<http://sfplib1.spl.org:82/>

SAN FRANCISCO'S EMBARCADERO & THE STATE BELT RAILROAD



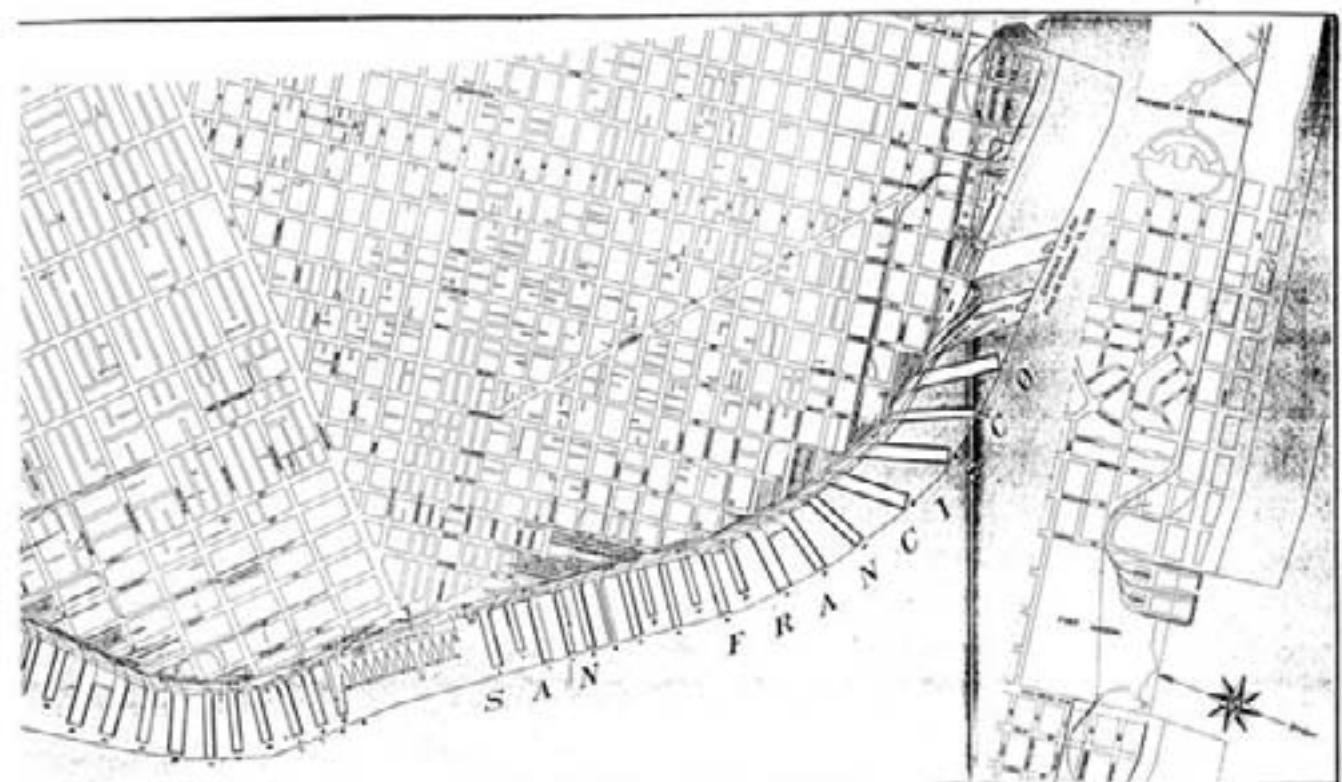
Original photograph. 28½ x 38½ inches. A few minor spots and scratches. Mounted on board. Overall, a handsome image. Framed, without glass. (San Francisco: c.1950).

A large image of San Francisco's Embarcadero taken shortly after World War II. Looking south toward the Bay Bridge from the Ferry Building, the primary focal point is The State Belt Railroad of California with engine 24 in front. The State Belt Railroad was a shortline that served San Francisco's waterfront until the 1980's. Its tracks extended the length of the Embarcadero from south of Market Street to Fort Mason and the Presidio. Although locals nicknamed the line the Toonerville Trolley and the Wooden Axle Line, the State Belt had an illustrious career. Operations slowly wound down as shipping moved across the Bay to Oakland. In 1969, with the State wanting to get out of the port business, San Francisco voters approved a bond issue to buy the Port of San Francisco. The State Belt R.R. thus became the San Francisco Belt Railroad. Later in 1973, the City offered to sell the railroad to any operator for \$1. After more than half a year, a 20-year contract to operate the railroad was signed with Kyle Railways. Total trackage had fallen from 67 miles in 1950 to 58 miles in 1973. The line no longer exists.

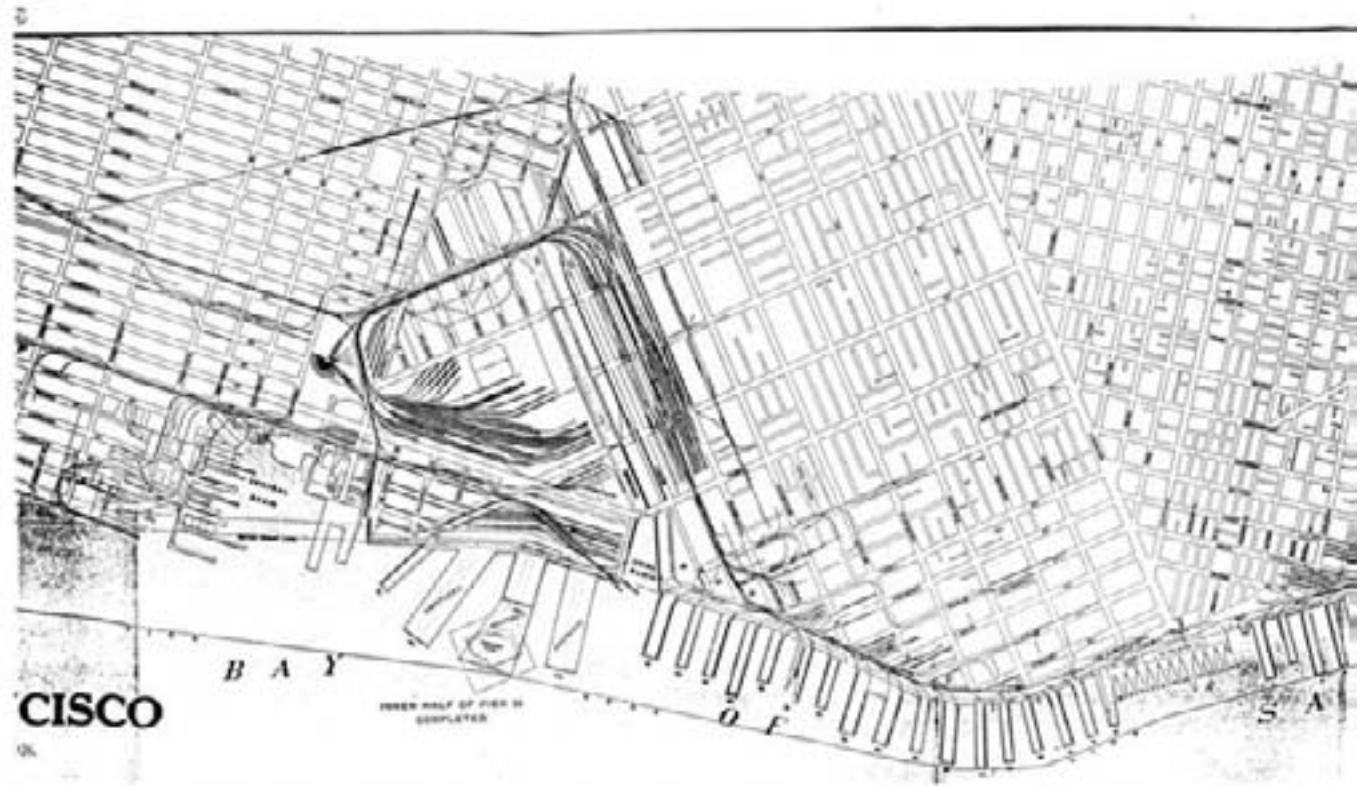


First Belt Railroad Train Across Market Street, 1913.

The first State Belt Railroad train across Market Street, San Francisco, in 1913



1926 Map of the State Belt Railroad, Northern



1926 Map of the State Belt Railroad, Middle



1926 Map of the State Belt Railroad, Southern