

"san francisco bay  
bridge"



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Constructing the San Francisco Bay Bridge was once thought to be impossible and far from ones' imagination to happen especially for having a thought that a bridge extending the San Francisco Bay by connecting the two cities of San Francisco and Oakland was been thought as a financial and an engineering impossible action.

The San Francisco-Oakland Bay Bridge is a great help for the commuters from San Francisco and Californian cities of Oakland in the United States of America. Bay Bridge is a toll bridge which connects the two mentioned places (San Francisco and California cities of Oakland). The official and legal name of the bridge is called " The James " Sunny Jim" Rolph Bridge but the official name was not used and recognized until such time that the said bridge celebrated its 50th anniversary in 1986. 1 The San Francisco-Oakland Bay Bridge is made up of two main and foremost sections which link Central Island-the Yerba Buena island- which has shore. The western part concluding in San Francisco contains two suspension bridges end on having an innermost port.

While the eastern part concluding in Oakland contains of a twofold-barbican cantilever span, five average-spans bind bridges and a tied up walkway which is set to be changed by a completely new arrangement which is presently under construction. In November 12, 1936, the Bay Bridge was opening for traffic-six months previously to other well-known bridges of San Francisco called the Golden Gate. Ralph Modjeski was the one who designed the unique and innovative bridges. 2 Thus, I believe that this bridge was built in order to help the commuters to make their travel easier and it extends a \_\_\_\_\_1. " San Francisco -Oakland Bay Bridge".

Wikipedia, the free encyclopedia. July 20, 2006. [http://en.wikipedia.org/wiki/San\\_Francisco-Oakland\\_Bay\\_Bridge2](http://en.wikipedia.org/wiki/San_Francisco-Oakland_Bay_Bridge2) Ibid...financial augmentation in the government of United States of America through the toll paid by commuters. Moreover, I supposed, it is well-planned by the designer which made this bridge capable to cater the numerous numbers of cars and commuters everyday and for its functional purposes.

But though it was well-planned, there was still controversy arose especially in constructing the said bridge.\*The purpose of this study is to: First, is to know the history and background of San Francisco-Oakland Bay Bridge. Second, is to scrutinize the dilemmas encountered by the San Francisco-Oakland Bay Bridge due to earthquake. And third, is to have an idea of the bridge construction, engineering, modifications and its financing.

\*History and Background\*In the time of the Californian gold rush, San Francisco- located at the bay's mouth- was in a consummate locale to develop and prosper. It was roughly estimated that all goods are not produced locally pulled in through ship. In May 1869, preceded the first transcontinental railroad was concluded-the city realized itself on the erroneous side of the bay- which set-apart from the new rail connection. The people who reside in San Francisco were threatened and feared that the city will forfeit its title as the trade's center. During the gold rush days, the idea of a bridge extension the San Francisco Bay had been studied and deliberated.

3 In 1870, various newspapers' articles debated and disputed the said concept. In the beginning season of 1872, a " committee of Bay Bridge" was

deliberately deliberating the project to build a railroad bridge. According from the Wikipedia, in 1872 of April issue of the San Francisco Real Estate Circular held an item \_\_\_\_\_<sup>3</sup> " San Francisco -Oakland Bay Bridge". Wikipedia, the free encyclopedia. July 20, 2006. [http://en.](http://en.wikipedia.org/wiki/San_Francisco-Oakland_Bay_Bridge)

[wikipedia. org/wiki/San\\_Francisco-Oakland\\_Bay\\_Bridge](http://en.wikipedia.org/wiki/San_Francisco-Oakland_Bay_Bridge) about the said committee and stated that:" The Bay Bridge Committee lately submitted its report to the Board of supervisors, inwhich compromise with the Central Pacific was recommended; also the bridging of thebay at Ravenswood and the granting of railroad facilities at Mission Bay and on the \_\_\_\_\_ and on the water front. Wm. C. Ralston, ex-mayor Selby and James Otis were on thiscommittee. A daily newspaper attempts to account for the advice of these gentlemen tothe city by hinting that they were afraid of the railroad company, and therefore madetheir recommendations to suit its interests.

" 4I supposed that the committee itself should present its goals and purpose why it wanted to extend its area; and assure the Franciscans that this project will make the city more developed and progressive. I guess there was a miscommunication between the Franciscans and the committee of the San Francisco Bay Bridge because the Franciscans, themselves, have develop fear and speculated that the city will no longer be the Trade's center.

Emperor Norton- the self-proclaimed- adage fit to edict various times that an abeyance bridge will be constructed to link San Francisco and Oakland.\*The Dilemmas due to Earthquake\*The controversy in San Francisco Bay Bridge started when there was an earthquake struck the place called the Loma Prieta earthquake in 1989 of October 17-measured 7. 1 on the Richter scale- which brought intense destruction and disorganization to transportation

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lifelines around the San Francisco Bay Area. The most important destruction to roadways and bridges happened in San Francisco and Oakland cities which both cities are 70 miles away from the \_\_\_\_\_<sup>4</sup> Ibid... earthquake's epicenter.

The most popularized and promoted freeway unsuccessfulness was the collapsed of a 1.25-mile division of the two-level Cypress Street Viaduct along the Nimitz Freeway which is south of the San Francisco Bay Bridge. The breakdown of this division- which has 170,000 vehicles passed per day proceeding to the earthquake- has caused over 40 casualties and is roughly estimated to cost \$200 million to repair. The San Francisco Bay Bridge was temporarily closed for a month as construction crews repaired and fixed the fallen division. I perceived that this bridge was well-constructed before but due to the intense intensity of the earthquake, the bridge foundation was not able to cope up with.

In 2005 of April 5, The FBI promulgated an examination and analysis into charges by fifteen past inspectors and welders on the new eastern span that the said welders were in a rush which affected their performance on up to one third of the welds. I strongly believe that it is the responsibility and look out of the inspectors to inspect the welders' work in order to shun tragic incidents happen during earthquake.\*Architectural Structure\*The western interruption span has experienced intensive seismic retrofitting. All parts of the San Francisco Bay Bridge were fabricated using hot steel rivets which are unrealizable to heat and still comparatively soft. There was an analysis made that these actions done could make the bridge fail by cutting under ultimate stress and pressure. For the most part of the beams were initially

constructed of two-plate I-beams connected with lattices of flat strip or angle stock which depend on structural requirements.

There were also an additional diagonal box beams in every each upper and lower decks of the bay in western spans. It augments the physical

property\_\_\_\_\_5 " The Loma Prieta Earthquake: Impact on Lifetime Systems", Dames and Moore's Earthquake Engineering Group.

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8. [http://www. drj. com/drworld/content/w1\\_113. htm](http://www.drj.com/drworld/content/w1_113.htm)of being flexible and hard to bend in order to lessen the side-to-side movement throughout an earthquake and lessen the possibility of destruction to the decking surfaces.

6\*Financing\*1Wikipedia further explained that " in 1936 at the time were the San Francisco Bridge was opened, the toll that was collected in every direction was only 65 cents.

After few months, due to ferry competition, the toll was lowered to 50 cents and finally settled to 25 cents. Having a desire to lower down the cost of collecting tolls and the plan to build additional toll booths, every bridge in the Bay area were transformed to gather tolls in one just direction having the amount collected doubled. In the later part, the toll was raised in order to finance the enhancements to the bridge approaches. As of last year, autos' toll still remains at \$3 which collected only for westbound traffic." 7 Another article entitled " The San Francisco/Oakland Bay Bridge" stated that " Bay Bridge's construction was supported and provided through a series of bonds.

The Bay Bridge's net revenues have been joined along with the funds generated from the San Mateo-Hayward and Dumbarton Bridges. In 1958,

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the said funds provided the San Francisco Bay Bridge reconstruction- the new Dumbarton Bridge has raised \$70 million while the new San Mateo-Hayward Bridge has raised \$70 million, too. The present bulk of toll revenues are handed to the regional transportation planning agency called the Metropolitan Transportation Commission and reallocated to the Bay Area Transit District, BART,- San Francisco Municipal Railway and Alameda Country Transit." 8\_\_\_\_\_