This day in earthquake history

October 17

Event: 1989, M7.1 Loma Prieta earthquake
Prepared by: Richard Allen – August 19, 2011

Stats
Guidelines: This section should be a bulleted list of facts/statistics for the earthquake. The source of all information should be included.

- 5:04:15 pm (local time) October 17, 1989
- Mw 6.9
- 63 killed¹, 3,757 injured²
- 42 died in the collapse of the Cypress Street Viaduct on the Nimitz Freeway (Interstate 880)
- 5 died on Bluxome Street (Fifth and Townsend) in San Francisco as a brick facade collapsed onto the sidewalk
- 5 died in the Marian district in collapsed buildings and fires
- 1 person died in one of the two cars that fell from the upper to the lower deck in the collapsed section of the Bay Bridge
- 40 buildings collapsed in Santa Cruz killing 6 people³
- 18,306 homes and 2,575 businesses were damaged
- $6 billion to $13 billion in property damage
- President George H.W. Bush signed a $3.45 billion earthquake relief package for California
- The Bay Bridge reopened November 18th
- The new stretch of freeway replacing the Nimitz Freeway took 8 years to build and was routed to the west of the original route on more solid ground.
- Street-level Mandela Parkway now occupies the previous roadbed of the Cypress Structure.

Sources


3. LOMA PRIETA EARTHQUAKE: 15 years later. Shaken -- and then stirred. Santa Cruz capitalized on fate, working together to rebuild downtown after quake. Alan Gathright, Chronicle Staff Writer. Saturday, October 16, 2004

Description
Guidelines: Limit 400 words. Describe the impact of the earthquake on people in the region.
The Mw 6.9 Loma Prieta earthquake struck at 5:04pm on October 17, 1989 just as the World Series game between the Oakland A's and San Francisco Giants was getting underway at Candlestick Stadium just south of San Francisco. As a result it was the first major earthquake to be broadcast live on television. The epicenter was beneath the high Santa Cruz mountains 60 miles south of San Francisco and 15 miles north of Santa Cruz. Most of the 63 fatalities occurred in the collapse of the double-decker Cypress Street Viaduct on the Nimitz Freeway (Interstate 880) in Oakland (60 miles north of the epicenter). The Marina District of San Francisco experienced stronger shaking due to amplification effects caused by the soft sediment/landfill that the homes are build on. Soft story buildings (with wide ground floor openings for garages or shops) were particularly hard hit. There were also fatalities due to collapsing brick facades in San Francisco and Santa Cruz.

The earthquake had a major impact on transportation in the San Francisco Bay Area. In addition to the Bay Bridge and Nimitz Freeway collapses, many other sections, often build on soft sediments around the margins of the bay, experienced damage and had to be demolished or repaired. The new Embarcadero Freeway under construction along the edge of the bay in San Francisco was abandoned and demolished. The replacement section for the Nimitz Freeway was routed further west around the collapsed section that was on soft sediment. The Bay Bridge was reopened a month and a day after the earthquake but planning began for a permanent replacement for the east span of the bridge. Construction of the new bridge started in 2002 and is expected to be completed in 2013.

Many people in the Bay Area remember this earthquake as the "big one". While it was a large magnitude earthquake, it occurred in an unpopulated region of the Santa Cruz mountains. The damage was to structure often 60 miles away. A similar earthquake on the Hayward Fault in the east bay, or the San Andreas fault along the Peninsula south of San Francisco would do considerably more damage.

Newspapers

Guidelines: Images of newspaper cover stories are important to include. You may need to print from the microfiche and then scan or photograph the microfiche machine screen. Brief descriptions of the newspaper/media coverage can also be included. The sources of all information are required.
Ronald L. Sobel, & Jean Merl. (1989, October 25). Bay Area Quake: Campuses Get Back on Track Earthquake: Some school officials are still assessing the damage and others are astounded at their good fortune, but the lack of serious injuries on campus is a relief to all. Los Angeles Times, p. 20. Retrieved October 21, 2009, from Los Angeles Times. (Document ID: 66582102).
http://proquest.umi.com/pqdweb?did=66582102&sid=7&Fmt=3&clientId=1566&RQT=309&VName=PQD

Bay area campuses are relieved to find that they have not been affected to severely by the earthquake. While a few buildings were damaged on several campuses, classes were returning to normal a few days after the quake.

Images/Video

Video links

Various video segments of the shaking
http://www.youtube.com/watch?v=FW-TkpvKPl0

The damage including the Bay Bridge, the Nimitz Freeway and the Marina District.
http://www.youtube.com/watch?v=0lAXStQCjr8

Images

USGS collection of images can be found at: http://pubs.usgs.gov/dds/dds-29/


Above: The collapse of a brick facade on Bluxome Street near Fifth and Townsend in San Francisco killed 5 people. Photo credit: C.E. Meyer, United States Geological Survey
Above: Absence of adequate shear walls on the garage level exacerbated damage to this structure at the corner of Beach and Divisadero Streets, Marina District. Photo credit: J.K. Nakata, U.S. Geological Survey

Above: Ground view of collapsed building and burned area shown in photo 4, Beach and

Above: Smoldering remains of the apartment complex at the corner of Beach and Divisadero Streets, Marina District. Photo credit: J.K. Nakata, U.S. Geological Survey

Above: An automobile lies crushed under the third story of this apartment building in the Marina District. The ground levels are no longer visible because of structural failure and

Rescue efforts, Pacific Garden Mall, Santa Cruz. Photo credit: C.E. Meyer, U.S. Geological Survey