

Alaska's 1964 Good Friday Earthquake

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The Turnagain area of Anchorage was particularly hard hit during the 1964 earthquake. This car was smashed under a house.

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Anchorage's new J. C. Penney department store had just been completed when the earthquake struck. A slab fell off the exterior, flattening this car and killing its occupant.

Steve McCutcheon photo, Anchorage Museum of History and Art, Library and Archives

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Anchorage Museum of History & Art. Library & Archives.

In Seward, as in most other coastal communities, the boat harbor was destroyed by the tsunami.

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Archives, University of Alaska, Fairbanks

Valdez evacuees arrived in Fairbanks by plane and bus. Notes with this photograph read, "A CH-21, piloted by Capt. Wheeler from Ft. Greely, arrived in Fairbanks on Saturday evening with children from the Pentecostal Childrens Home. They were accompanied by Miss Mildred Pitts, who worked in the Home, and Mrs. L. P. Carriker, widow of the minister of the Assembly of God Church. The pastor was one of victims of the quake. On Tuesday evening, three Alaska Overland busses delivered 115 evacuees to the Fairbanks Chamber of Commerce."
Archives, University of Alaska Fairbanks

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Anchorage Museum of History & Art. Library & Archives.

Portage, May 1964. The road and rail line were broken at Portage. Further, the entire region dropped several feet during the quake, allowing flooding with every high tide.

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More about the Alaska Earthquake:

March 27, 1964, remains an infamous date in Alaska history, especially among those who survived it. That Friday an earthquake of epic proportions took scores of lives and left its mark on Alaska's coastal people, their hometowns, and the very landscape. Also known as the Good Friday Earthquake, its epicenter was roughly 75 miles east of Anchorage and 14 miles beneath the earth's crust. Originally the quake measured as 8.6 on the Richter Scale and was later upgraded to 9.2, making it the largest in North American history and the second-largest in modern world history. The largest was measured in Chile in 1960, which was recorded as a 9.5. Depending on the final interpretation of the 2004 Sumatra quake measurements, that event may land at second or third strongest earthquake in modern history.

In Alaska alone, 121 people died in the 1964 earthquake and the subsequent tsunami, but had the young state been more populated, or its buildings constructed of stone instead of wood, the death toll would have been much higher. In fact, had it not been a holiday, many more people would have died. By comparison, in a more densely populated region of the world, the Sumatran earthquake and tsunami of December 26, 2004, killed an estimated 225,000 people. Scientists have not yet agreed on its magnitude, judging its range at 9.0 to 9.3.

Damage and death from the Alaskan quake and tsunami was not limited to the state of Alaska. Killer waves took 16 more lives in Oregon and California, and damaged property in Canada, the entire West Coast, and even as far as the Gulf of Mexico and its inland waterways. Researchers reported that the entire earth was vibrating in its aftermath, likening the effect to the gong of a bell. But while boats were sloshing at their moorings in Louisiana and Texas the next day, Alaska was just beginning to assess the devastation.

Striking at 5:36 p.m., and continuing for up to four minutes, the Good Friday Earthquake was centered near College Fjord in Prince William Sound, at a point along the edges of Pacific and North American plates. Where the two plates meet is a subduction zone that, at this northernmost edge, extends along the Alaskan coast westward through the Aleutian chain and beyond. Here, the northward-trending oceanic Pacific plate collides with the continental North American plate. The Pacific plate, which is older, denser material, bends and is forced downward beneath the younger North American plate. As it descends into the magma layer, the solid material "melts" and may in turn reach the surface during a volcanic eruption. Around the world, subduction zones exhibit higher levels of volcanic activity and earthquakes as the earth's plates continue moving,

grinding, sometimes binding up then releasing pent-up energy that sends shockwaves through the earth and sea.

In the Good Friday Earthquake, Anchorage experienced the greatest damage to property. In a subdivision called Turnagain Heights, more than 125 acres of soil virtually liquified and great gashes opened in the earth, tipping houses and cars while trees swayed and toppled. Those who dared try to walk were thrown to the ground. *Anchorage Times* newspaper editor Bob Atwood later recalled that he had recently acquired a trumpet and when the quake struck, he had been practicing while the rest of his family was away on errands. When the house began shaking, he rushed outside. Over the course of the next four minutes, he tried to help his neighbors and ended up falling into and pulling himself out of a crevasse that had formed. After the shaking ended, he said, he was quite surprised to see that he was still holding the trumpet in one hand.

In the aftermath, Alaska Sen. Ernest Greuning surveyed the damage around Anchorage on horseback, accompanied by Muktuk Marston, who had supplied the animals. Across Ship Creek on Anchorage's Government Hill, the elementary school had pancaked and slipped downhill in a landslide. Other schools likewise were severely damaged. Thirty downtown blocks were ravaged. Along Fourth Avenue, one side of the street had dropped several feet and slid downward. Massive cracks tipped sidewalks and asphalt, storefronts had been torn apart, parts of the new J.C. Penney façade had ripped away from the building. One large piece crushed a car, taking the life of the person inside. Alaskans were griefstricken, stunned, and fearful, waiting for the aftershocks that surely would come. And they did. Eleven more aftershocks were recorded that day alone, all with magnitudes of 6.0 or greater. In the next three weeks, nine more shocks measuring greater than 6.0 besieged the people as they took stock and began the work of rebuilding. With help in dollars and personnel from the federal government, Alaskans bulldozed or rebuilt structures, roadways, and harbors. Repairs began on gas, sewer, power, and phone lines. Citizens stacked sandbags against tidal floods; volunteers fed the hungry; and evacuees were temporarily relocated.

In Portage, the railroad tracks and highway had been destroyed, and the townsite abruptly dropped below sea level, allowing seawater to infiltrate the tree roots, killing the trees and flooding any buildings left standing. The town was abandoned. Nearby Girdwood was also destroyed and later moved further inland for its new start.

More people died from the effects of the ensuing tsunami than the quake itself. Entire communities were wiped out, including Chenega, which suffered 23 deaths and was

eventually relocated, and Kaguyak, where every home was destroyed, and three people died. That village was never rebuilt. In Kodiak, the harbor suffered extreme damage and commercial fishing boats were tossed into the streets by the huge wave. In Seward, the train terminus, docks, and fuel tanks were destroyed or washed away. Ragged pieces of train tracks, twisted like pipe cleaners, extended into thin air. In Valdez, 31 people were killed and the town was so demolished that with the help of the Army Corps of Engineers, a new townsite was selected and those structures that still remained were moved.

On the island of Afognak, north of Kodiak Island, 30 homes out of 38 were destroyed by tsunami in one village. In the months that followed, members of the Lions Club assisted residents in finding a new townsite on the north coast of Kodiak Island where they rebuilt. The people named their new town Port Lions.

In the aftermath, the total property damage estimate was set at more than \$300 million in 1964 dollars. Translated into the 2006 dollar value, that equals about \$1.8 billion.

As Alaska's population has exploded, only a small percentage of its people can claim firsthand memory of the Good Friday Earthquake, but its scars can never be erased. Alaskans also are aware that the ground under their feet is an active earthquake zone, and while minor quakes are a part of normal living, another monumental quake remains a possibility. Modern buildings include specialized designs to help earthquake-proof the structures, and many families keep an emergency earthquake kit handy as part of their disaster preparedness plans.

Links:

To learn more about the 1964 earthquake, see this USGS website:

http://neic.usgs.gov/neis/eq_depot/usa/1964_03_28.html

For a list of coastal communities, in and outside of Alaska, that sustained damage and loss of life due to the tsunami, visit this website:

http://wcatwc.arh.noaa.gov/web_tsus/19640328/damage.htm

Visit the library for more information:

Alaska's libraries include plenty of audio, visual, and written material about the 1964 earthquake. Visit your local library or go online to see what's available in holdings all over the state. Take these simple steps:

1. Access **SLED** (State Library Electronic Doorway) at <http://sled.alaska.edu/library.html>.
2. Click on the listing for **ALNCat** (the Alaska Library Network Catalog) to view the Basic Search window.
3. Go to the Keyword field, and type in **GOOD FRIDAY EARTHQUAKE**.