Alaska, 1964

The second most powerful earthquake ever recorded took place in North America in 1964. The quake struck Prince William Sound, Alaska but registered in all but 3 of the 50 states of the USA.

On Good Friday, March 27th 1964, many Alaskans were sitting down to their dinner when the earth shook (5:36pm). Witnesses to the quake recalled crunching and grinding noises as the magnitude 9.2 tremor hit, the tarmacked roads moving like waves in front of them and the ground cracking open with water shooting through. Water, sewage and gas lines broke open, and electrical failures flooded the area. Buildings not only shook but were completely moved, torn apart and crumbled. Train tracks buckled effortlessly and roads split in two. Telephone poles tumbled. This was the primary impact of the quake which lasted at least four minutes.

Not only did the quake itself cause destruction on a widespread scale, it caused devastating tsunamis, landslides and submarine slumps after the tremors subsided which caused further devastation (the secondary effects of the earthquake). Whilst 15 people died in the initial quake, a further 116 people died in the aftermath. Surveys completed just after the earthquake showed that parts of the Alaskan coast sank up to 8 feet whilst others rose by up to 38 feet, and the coastline moved 50 feet towards the ocean! A coastal village was completely crushed by an enormous tidal wave, landslides wiped out vast areas and soil liquefaction (where the ground acts like it is a liquid) caused one particular landslide to take 75 homes into the bay!

And this wasn't the end, or the only place, of the destruction. Washington, Oregon and California all suffered too as the quake triggered an enormous tsunami - 4 lives were claimed in Oregon and 12 in California – and it reached as far as Hawaii and Japan (although caused little damage). Aftershocks also continued for weeks after the original earthquake, some measuring upwards of 6.2 on the Richter scale, causing further devastation.

However, there were positives to come from this geological event. Prior to this disaster, geologists had a limited understanding of the cause of earthquakes. However, they realised that subduction zones have a major part to play in creating earthquakes; in this example the North American plate (continental) slid over the top of the Pacific Plate (oceanic) moving by approximately 30-60 feet! An earthquake monitoring system was put in place to help seismologists predict future earthquakes. Scientists also began to understand that earthquake-related tsunamis aren't limited to happening only in the vicinity of the earthquake itself but can happen miles away;

this led to the Pacific Tsnumai Warning Center being established to warn people of the possibility of a widespread tsunami.