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# U.S. House of Representatives

## Committee on Natural Resources

### Washington, DC 20515

#### Opening Statement of Chairman Doug Lamborn Subcommittee on Energy & Mineral Resources

On Thursday, March 27, 2014

1324 Longworth House Office Building Subcommittee Oversight Hearing on  
*"Advances in Earthquake Science: 50th Anniversary of the Great Alaskan Quake"*

Today marks the fiftieth anniversary of the Good Friday Great Alaska Earthquake. It was a massive 9.2 magnitude quake making it the second largest earthquake ever recorded with 'modern' seismic equipment, and the largest in the US.

Technically, the earthquake occurred in the Aleutian Trench 'subduction zone' – although at the time the earthquake occurred 'subduction zone' was not a part of the geologic lexicon. The rupture occurred along a 580 mile stretch of the fault and lasted between 4 and 5 minutes. The earthquake caused the greatest amount of vertical uplift ever measured, almost 34 feet, and Southern Alaska moved more than 65 feet seaward. The earthquake also caused the largest tsunami to ever hit the west coast of the United States and Canada with the largest wave, 222 feet high, hitting Valdez at Shoup Bay.

In all, the earthquake and ensuing tsunamis and landslides, caused 129 fatalities in Alaska, Oregon, and California. More than 70 percent of the deaths were actually a result of the tsunamis and not the actual quake.

The town of Valdez was destroyed and 30 people lost their lives, many of them children that had come down to the dock to meet the freight ship Chena that was delivering the first fresh fruits and vegetables of the year. As tradition would have it the Chena crew would toss fruit to the children that had come to meet the ship.

Two crew members were filming the festivities when the earthquake hit – they captured the destruction on film.

The Great Alaskan Earthquake is one of the most studied natural disasters. The Federal response was significant not only in economic relief and reconstruction but also research.

Geologists from the USGS were some of the first geoscientists on site conducting field mapping, surveys, and taking core samples. Their findings were published in a series of six professional papers and The National Academy of Sciences published eight volumes of scientific research.

Research on the quake made significant contributions to the emerging theory of 'Plate Tectonics'.

Today earth scientists recognize that the earthquake resulted from the convergence of the North American Plate overriding the Pacific Plate where it is being subducted into the earth's mantle along the Aleutian trench.

According to the USGS, knowledge gained from the research conducted on the Alaska quake has provided the geologic framework for assessing the earthquake and tsunami hazards at convergent plate margins around the world.

Many other contributions to earthquake science and hazard reduction were also made that provided geoscientists with tools they could use to identify other plate boundaries that have had major ruptures in the past and are susceptible to future ruptures such as the Cascadia structure in the Pacific Northwest.

Hazards caused by movement on secondary fault structures, a better understanding of liquefaction, a better understanding of earthquake hazards in general, and tsunami hazards assessments and warnings.

As was evident in the Great Alaska quake and others that we have experienced in 50 years since, death and destruction from the Tsunamis can be greater and more widespread than damage caused by the shaking and the tsunami can happen thousands of miles for the epicenter of the earthquake.

In recent years, massive earthquakes and tsunamis have wracked devastation across Indonesia, Japan, Chile and Haiti. But in each of these massive movements of the earth, there are lessons.

Earthquakes in Haiti and Chile while nearly the same size cause massive differences in deaths and damage. Much of the difference is the direct result of efforts to establish standards and mitigation of earthquake hazards.

In Japan, the early warning system allowed the Japanese transit system to shut down every train so not a single derailment occurred as a result of the Honshu quake.

Today we are here to remember those who lost their lives in the Great Alaska Quake. We are to remind ourselves that we cannot be complacent in protecting against hazards and remind ourselves that the advancement of science depends on our vigilance.

I would like to thank our witnesses for being here today. I look forward to hearing their thoughts on advances in earthquake science over the past fifty years.

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