

AFTERSHOCKS CONTINUE FROM MAJOR ALASKA QUAKE

Hundreds of aftershocks ranging as high as magnitude 5.2 (Richter Scale) have occurred in the wake of last week's (Feb. 28, 1979) major earthquake in the southern Alaska-Yukon Territory border area, according to U.S. Geological Survey scientists.

USGS scientists now estimate the magnitude of the main quake at 7.7 making this the largest earthquake in the continental United States since the magnitude 8.5 "Good Friday" earthquake on March 28, 1964, that devastated Anchorage and other coastal areas.

The exact magnitude of the February 28 quake is still subject to revision, depending upon additional data still being received from seismograph stations around the world. The strength of the quake drove many seismograph stations in North America completely offscale and other stations have reported magnitudes that range from 7.0 to 8.2.

The scientists now believe the earthquake was caused by underthrusting of the Gulf of Alaska coastal area northwestward beneath the Chugach-St. Elias Mountains.

Dr. Robert Page, USGS seismologist, Menlo Park, Calif., and spokesman for a team of USGS scientists studying the quake, said, "We expect that this major earthquake will supply some valuable clues both for future construction activity in the area and for prediction of future earthquakes.

"From an engineering standpoint, the earthquake could play a key role in providing data for establishing seismic safety design criteria for costly engineering structures in the region, including the planned gas pipeline along the Alcan Highway through the Yukon Territory," Page said.

"The earthquake is also of great scientific interest," Page said. "Because an earthquake of this general size had been expected to occur in the eastern Gulf of Alaska region by scientists studying long-term seismicity patterns, we have been monitoring the seismic activity in detail for the past few years. Now we will review our records to see if this last quake was preceded by any tell-tale patterns that could possibly be used to forecast future large earthquakes.

"At this stage in earthquake prediction research, we desperately need observations preceding large earthquakes," said Page. "First we must capture all the precursor events that precede one big earthquake so we can determine what evidence, if any, can be used as clues in predicting future major earthquakes in a particular area.

"Of course, the biggest earthquake threat to large U.S. populations is in California," Page said, "but this Alaska earthquake may help lead to a breakthrough in prediction studies and provide useful data for other regions such as California as well."

Evidence on the nature of the faulting that generated the earthquake is being obtained from the hundreds of aftershocks that have been recorded by a 500-mile-long network of sensitive seismographs operated by the USGS in southern Alaska from Yakutat Bay to Cook Inlet. Locations have so far been determined for a few dozen of the aftershocks and indicate that the faulting extended over at least 50 miles.

Weather conditions have hampered field investigations of the earthquake and prevented identification of exactly which of several faults in the area -- the St. Elias, Coal Glacier and Chaix Hills faults -- were involved in this major earthquake.

During a reconnaissance flight over the area, USGS geologists from Anchorage reported extensive snow avalanching off the northern flank of the St. Elias mountain range from Mount Huxley east to Mount Augusta. "The avalanches extended as much as a mile out from the mountain front," said Dr. Thomas Miller, USGS geologist, Anchorage. "Low cloud cover along the coast, however, has prevented us from seeing any earthquake-generated breaks in the snow cover over the mapped faults in the area. The pattern of avalanche activity suggests that the fault responsible for the earthquake lies south of the St. Elias range."

The nearest settlement to the epicenter of the main earthquake is Cape Yakataga, 60 miles to the southwest, where the strongly felt earthquake knocked loose objects off tables and shelves. Had the epicenter been beneath a populated region, serious damage and injuries would have resulted.



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