SEISMOLOGY

Earthquake 'Rings' Earth

The earth is still ringing from the tremendous shock it received from the Good Friday Alaskan earthquake, one of the worst earthquakes of modern times—By Ann Ewing

➤ THE "KICK" GIVEN the entire earth by the Good Friday Alaskan earthquake, one of the most severe known, was recorded for several weeks by instruments around the world.

This is because such a strong temblor makes the earth ring as if it were a bell struck with a giant clapper. The vibrations from this clang continue for several weeks later.

The earthquake, which wreaked havoc on southern Alaska and caused severe tidal waves in California, Oregon, Canada and Japan, officially began at 5:36 p.m. Alaskan time or 10:36 p.m. EST on Good Friday. Its epicenter was charted at 61.1 degrees north latitude and 147.8 degrees west longitude.

The major earthquake, believed to have a magnitude of about 8.5 on the Richter scale, was followed by numerous minor tremors.

Highest on the scale ever hit by the worst earthquake in the past was estimated at 8.5. This 1897 quake occurred before instruments were used to record magnitudes, but seismologists credit it with being the strongest on the basis of reports at that time.

An earthquake is the earth's way of relieving stresses and strains in the planet's crust and upper mantle. The solid, rocky crust of the earth is always in a state of strain and is acted upon by shifting forces. When the rocks shift a little to relieve the strain, they cause an earthquake.

The waves set up by this earthquake in the rocky material of the earth spread out like ripples from a stone in a pond and are detected on delicately balanced seismographs half way round the world.

Where they are likely to occur is known, as in the belt around the Pacific Ocean, but not when.

Some million earthquakes shake the earth each year, but only a few occur in populated areas, and are strong enough to cause extensive loss of life or damage to property or generate giant tidal waves.

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Quake Resistant Buildings

➤ ALL NEW STRUCTURES could be built to withstand earthquakes, if the public demanded it.

The cost is not much when the building is going up. What is needed is proper reinforcement, using either steel beams or reinforced concrete.

However, many communities have not adopted or do not enforce the Uniform Building Code that specifies standards of design and workmanship to make structures earthquake resistant.

Small buildings, such as homes, should be able to resist a steady horizontal pressure equal to one-tenth of their weight.

Since no area can be guaranteed against earthquakes, all new structures should be made to withstand this amount of pressure. On the basis of past history and geological studies, Government seismologists in 1951 drew a map of the United States showing regions where earthquakes are most likely and least likely to occur.

Four zone ratings were made, based on intensity, which refers to the degree of shaking at a particular place. The intensity scale runs from Roman numeral I, for barely felt, to XII, or total destruction. On this scale, the Alaskan Good Friday earthquake would be rated X.

Zone III includes all areas where major earthquake damage has occurred and may be expected to occur again. The entire California coast and Seattle, plus parts of Montana and Nevada have this rating.

Zone II areas have experienced moderate damage from earthquakes at least once and have a probability of experiencing a major earthquake in the future. Charleston, S. C., and New Madrid, Mo., where strong temblors have occurred, are in this category.

Zone I, where minor damage has been recorded, includes Pennsylvania, Ohio and the mid-Atlantic states.

Zone 0, comprising Florida and states bordering the Gulf of Mexico, is where there appears to be no reasonable probability of a major earthquake.

This map, although retired by the Coast and Geodetic Survey about a year after it was issued, forms part of the Uniform Building Code in a slightly revised version.

Anchorage and other severely damaged Alaskan cities will now be rated Zone III. Alaska was not covered in the 1951 map.

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Earthquakes Not Cause Of Any Bad Weather

➤ EARTHQUAKES can be blamed for many catastrophes, but they can NOT be blamed for bad weather or other far-off earthquakes.

A severe earth temblor, such as the one in Alaska on Good Friday, causes death, terror and destruction in that area. However, the only damage earthquakes cause in far-away places results from seismic sea waves speeding over ocean waters to flood coastal shores.

The considered opinion of leading specialists consulted, is:

1. Earthquakes do not cause or trigger bad weather nor any kind of storm in the atmosphere—either heavy snowfalls, spring freezes, torrential rains, tornadoes or hurricanes.

2. Earthquakes do not move the earth an inch or two up and down over large areas thousands of miles from the quake's epicenter (as suggested by radio reports). Away from the immediate region, earthquake movements are measured in hundredths of an inch and are perceptible only by extremely sensitive instruments that are thrown off scale by a large temblor.

3. Earthquakes do not cause or trigger other earthquakes in regions remote from the original tremor, as in New Hampshire or Japan.

4. Earthquakes do not relieve earth strains in earthquake-prone areas far removed, for instance, making the Alaskan earthquake reduce the chances for a later temblor in California.

5. Earthquakes do not result a specific time later from the explosion of an underground atomic or nuclear bomb. The only time such an event could possibly occur would be when the man-made explosion was detonated in the immediate vicinity of earth strains already set to snap from natural causes, and the effect would then follow directly. (A Swedish scientist, Sven Svantesson, was reported in news dispatches as suggesting that the Alaskan earthquake was triggered by underground nuclear tests.)

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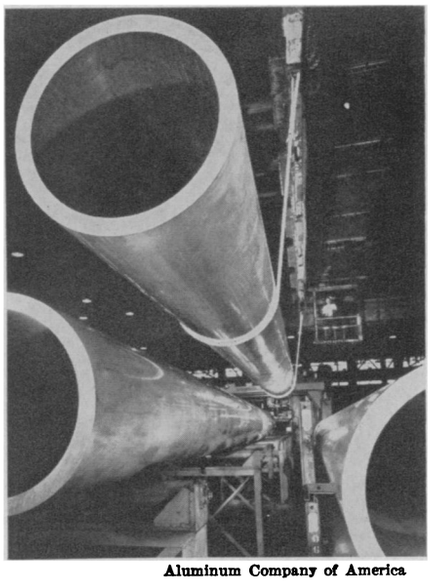

Aluminum Company of America

COLD STORAGE—These huge seamless aluminum tubes, the largest ever extruded, will store gaseous helium on Saturn V boosters while immersed in liquid oxygen tanks at minus 297 degrees Fahrenheit. The cylinders, each weighing 2,230 pounds were produced by Aluminum Company of America, Lafayette, Ind.