

Summary of Newspaper Articles

Daily Inter Lake – Kalispell, MT (last date searched 04/02/1952)

Headline: [Moderate Quake Shakes Valley](#)

Date: 04/01/1952

[Info Categories:](#) E, N, S

Headline: [Delicate Seismometer At H-H Dam Tells Story Of Earthquake](#)

Date: 04/02/1952

[Info Categories:](#) E, S

Idaho Daily Statesman – Boise, ID (last date searched 04/04/1952)

No articles found.

Missoulian – Missoula, MT (last date searched 04/04/1952)

No articles found.

Information Categories

A -- Aid:

provide medical services, shelter, donations, loans, advice, encouragement, implement safety measures

B -- Building Damage:

structure itself plus windows and chimneys (typically damage visible from outside the building)

E -- Earthquake Description:

where, when, duration, direction, sound, motion, number and timing of aftershocks

G -- Geologic Effects:

changes at the Earth's surface, fault scarps, rockfalls, landslides, ground cracks, ground subsidence, sand boils, water spouts; effects on springs, lakes, wells

H -- Humor:

I -- Impact:

changes in daily routine; rumors; influx of reporters, politicians, cost in dollars

L -- Lifelines:

effects on transportation: roads, bridges, railroads, airports

effects on communications: telephone, telegraph

effects on power, gas, water, and sewer lines

effects on dams

N -- Nonstructural Effects:

effects on plaster, furnishings (typically damage or rearrangement of furnishings visible inside a building)

P -- People:

effects on and responses to, during and after; deaths, injuries, near misses

R -- Recovery:

clean up, rebuild

S -- Scientific:

explanation of the day

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MODERATE QUAKE SHAKES VALLEY

HUNGRY HORSE, April 1--The earthquake that Northwest Montana residents felt yesterday at 5:37:49 p.m. probably had an epicenter in the general Swan lake area. The strong shock was actually followed for 28 minutes with minor shocks. Termed as "moderate," the main shock was so strong that it did not expose the film of the delicate seismograph here.

However, following quakes were recorded and showed both southeast and southwest directions. The first aftershock took place at 5:46 with an epicenter of 17.5 miles, direction not determined.

The second aftershock was 49.5 miles away with an epicenter in a southwest direction which would have put it under the approximate center of Flathead lake.

According to the Bureau of Reclamation seismograph the shocks continued for 28 minutes although the others were likely not felt by residents of the area.

Last Shock at 1:04 A.M.

The Fourth shock (third aftershock) came at 6:01 and was only 9 miles away from the station, direction not known. Next was at 6:10 and was 26.5 miles away with an estimated direction of southeast. The next was at 8:24 p.m. only 12.5 miles away. Next shock was at 1:04 a.m. and 21 miles away in a southeast direction.

Theory of Robert Bush, laboratory technician in the Bureau concrete laboratory, is that the first big quake triggered the following quakes. In other words the minor shocks were set off by the first big shock.

Seismologists report that the quake had no effect on Hungry Horse dam. They said a moderate quake is one that is felt, however creates little or no damage.

East Lake shore residents reported they felt a strong shock there, probably because they were near the center of the underground earth movement.

Other residents on the east shore of Flathead lake reported pictures swung on the wall during each of two jolts. They said the wood in the houses creaked although they could find no visible damage.

Recorded in Butte

The Associated Press said today that the Montana School of Mines seismograph at Butte recorded the shock. Bureau seismograph operators said today cross readings from other stations should be able to pinpoint the main shock in five or six days. At Butte Dr. Stephen W. Nile, professor at the Butte school, said moderately strong earth tremors were still registering at 7 p.m. He said it was probably the strongest tremor recorded at the School of Mines since 1947.

Oddly enough it was the same Prof. Nile who in 1949 was queried as to whether Kalispell would be the center of an earthquake area in years to come. At that time the earthquake expert said he could not tell for sure.

Felt in Kalispell

Quakes occurred in the Kalispell-Polson-Seely lake region from 1941 to 1947. In Kalispell the quake was felt at the Moncure Cockrell residence at 30 Seventh street west. She said the whole table shook and the doors of the kitchen rattled. Dave Bailey reported from the Greenacres district that the quake shook his home sharply although it caused no damage to his residence. He said that he had experienced quakes in California and this was a "good one" in comparison.

The Associated Press reported that some roaring was reported from Essex near the Continental divide.

Dr. Nile said it probably was the strongest tremor recorded at the School of Mines since 1947.

[Daily Inter Lake; April 1, 1952]

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DELICATE SEISMOMETER AT H-H DAM TELLS STORY OF EARTHQUAKE

By Bob Petty

HUNGRY HORSE, April 2--When Bob Bush, seismometer operator, went to take the film from his seismograph at Hungry Horse dam yesterday, his anticipation may have been a good deal greater than normal.

For Bush knew there had been a big tremor and it was a break in routine. He daily climbs down the mountainside near Hungry Horse dam to an underground vault. It is there that the tremors of the earth are recorded on film.

When Bush entered the light-proof vault and opened the seismometer, he found the nearly straight line it normally traces was broken. A blank space appeared, followed by a series of lines zig-zagging up and down across the film graph.

Records Aftershocks

Although Monday's initial quake was strong enough to be felt by most residents of Northwest Montana, it left only the blank space referred to above. This, Bush explained, was because the quake moved the recording beam of light up and down so fast that even the sensitive negative in the seismometer was unable to record its movement. However, the seismometer did record the aftershocks which followed the main quake. So sensitive are the instruments that even the strong motion recorder can be tripped by blowing on the pendulum starter.

Every day except one the seismometer film has shown some underground movement of the earth. On the 35-millimeter film the movements of the earth show in wavy lines. By these Bush can tell the direction of the quake, the number of miles away and the approximate center of the underground movement.

Can Pinpoint Quake

Much the same as three fire lookout station operators pinpoint the location of the fire so do the seismograph stations pinpoint the center of an earthquake. When readings from other stations are received here the exact location can be determined although Bush says the quake center sometimes extends over a 50-mile area.

The depth of the quake underground is another feature that can be determined. As a preliminary estimate as to the depth of the Monday earthquake felt throughout Northwest Montana, Bush called it normal. Bush explained that by "normal" he judged it to be from zero to 20 miles under the earth's surface.

He said an instrument such as the delicate seismograph would have recorded our quake in Japan. Likewise, he said, his machine had recorded the recent quake in northern Japan.

No Damage to Dam

As to the possibility of damage to the dam from quakes like the one Monday, Bush said the chance is so remote as to be nearly impossible. He said structures such as dams, buildings and other heavy structures are known to be much safer when set on a solid base than those set on alluvial fill such as is the base for buildings in the Flathead valley.

The basic rock underneath this area, Bush said, is argillaceous limestone extending to a great depth. It was either movement of this rock or the earth beside it that caused the Monday earthquake in this vicinity.

Film in Vault

Each day the film is removed from the vault on the east slope on the downstream side of the dam. There in the darkness the continual movements of the earth are recorded on film for study. The building houses the accelerograph (strong motion instrument), the seismograph (records light earth movements), a highly delicate clock to record the exact time of all tremors and the filming device. The seismograph is mounted in solid concrete poured on bedrock.

Daily the film is read and the significant results are sent to the U. S. Coast and Geodetic survey in Washington, D. C.

As a part of United State geological studies the seismograph operators have been able to determine that the valley floor underneath the Hoover dam reservoir is gradually sinking because of the tremendous weight of the water.

Studies the Earth

Bob Bush, Evergreen resident, knows that the earth moves nearly every day. He has learned to know and understand why it moves. But it takes an earthquake that rattles the dishes before the public wants to know what the ponderous earth beneath them is doing.

[Daily Inter Lake; April 2, 1952]

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