

1959 Hebgen Lake, Montana Earthquake

**August 17, 1959
11:37 p.m.**

Magnitude 7.5

Newspaper Articles

**This publication is an archive of newspaper articles
relating to the**

**1959 HEBGEN LAKE, MONTANA EARTHQUAKE
Monday, August 17, 1959
11:37 p.m.
Magnitude 7.5**

Significant Foreshocks and Aftershocks:

Monday, August 17, 1959; 11:37 p.m.; Magnitude 6.3
Tuesday, August 18, 1959; 12:56 a.m.; Magnitude 6 ½
Tuesday, August 18, 1959; 1:41 a.m.; Magnitude 6
Tuesday, August 18, 1959; 4:03 a.m.; Magnitude 5 ½
Tuesday, August 18, 1959; 8:26 a.m.; Magnitude 6.3
Tuesday, August 18, 1959; 9:04 p.m.; Magnitude 6
October 21, 1964; 12:38 a.m.; Magnitude 5.8

Newspaper articles were collected as the basic step of an earthquake education project funded by the U.S. Geological Survey under the National Earthquake Hazards Reduction Program (NEHRP). The project, entitled *Personalizing the Earthquake Threat in the Intermountain West*, involves researching and archiving newspaper articles, individual accounts, photographs, and additional sources of information for 48 earthquakes that have occurred in Utah, Idaho, Wyoming, and Montana since settlement. This information forms the basis for several earthquake education products: World Wide Web site publication of information collected, travelling photographic exhibit, scripted slide sets, manuscript for short book, and classroom activity packets.

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Information Categories

The content of each newspaper article has been classified by the categories of information it contains. The first letters of the information categories assigned each article are listed by the headlines in the Table of Contents that follows. Listed below is an explanation of the types of information that can be expected within each category.

A — Aid:

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

B— Building Damage:

damage to structure itself plus windows, chimneys, facade
(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 and politicians; cost in dollars

L — Lifelines:

effects on transportation—roads, bridges, railroads, airports, vehicles
effect 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:

emotional and physical effects on people, responses during and after;
includes deaths, injuries, near misses

R — Recovery:

clean up, rebuild, returning to normal routine

S — Scientific Explanation of the day

1959 Hebgen Lake, Montana earthquake - listing of newspaper articles*

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NEWSPAPER: Billings Gazette

Date	Headline	Page	Information Categories	Towns Mentioned
08/18/1959	Billings Rocked By Sharp Quake; Entire Northwest Area Is Reported Jolted	1	E, H, N, P	Montana: Billings, Columbus, Helena, Red Lodge Wyoming: Basin, Powell, Shell, Greybull
08/19/1959	West Yellowstone Entrance, Norris Cutoff Road Closed	2	B, G, I, L, P	Wyoming: Yellowstone National Park Montana: Billings
08/19/1959	Park's Heaviest Quake Damage At Old Faithful	3	B, G, H, I, L, P	Wyoming: Yellowstone National Park
08/19/1959	Billings Matron Victim Of Quake	4	A, E, I, L, N, P	Montana: Billings, Bozeman, West Yellowstone, Red Lodge, Ennis, Duck Creek, Elk Basin
08/19/1959	Local Photographer Reports Temblor Cracked Mountains	6	A, G, I, L, P	Montana: Ennis, West Yellowstone, Billings
08/19/1959	Billings Father Sights Son, Friends Safe In Quake Area	7	A, B, G, L, N, P	Montana: Billings
08/19/1959	Flies Over Area	8	A, G, L, P	Montana: Big Timber
08/19/1959	Anacondan Tells Of Discovering Woman Who Survived Slide Horror	8	A, G, P	California: El Centro, Los Angeles Idaho: Coeur d'Alene Montana: Anaconda, West Yellowstone, Helena, Beaverhead County Washington: Everett
08/19/1959	Citadel Aid Goes To Stricken Area	9	A	Montana: Billings, Butte, Ennis
08/19/1959	Offers Help	9	A, I	Colorado: Denver
08/19/1959	Too Much For Machine	10	E, I, N	Colorado: Denver
08/19/1959	Staff Studies Quakes	10	P	Montana: Bozeman
08/19/1959	Followed By Quake?	10	H, P	Montana: Billings
08/19/1959	Old Reliable Recorder Knocked Out By Quake	11	E, I, N	Montana: Belgrade, Billings
08/19/1959	Local Radio Hams Assist With Traffic Relays In Earthquake	11	A, I, P	Montana: Billings, Bozeman, Lewiston, West Yellowstone Utah: Salt Lake City

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Date	Headline	Page	Information Categories	Towns Mentioned
				Wyoming: Casper
08/19/1959	Dams Reported Undamaged	12	L	Montana: West Yellowstone
08/19/1959	USGS Requests Quake Reports	12	A, B, G, L, P	Montana: Billings
08/20/1959	Mild Tremor Reported Here	13	A, E, P	Montana: Billings, Bozeman, Butte, Helena, Livingston Pennsylvania
08/20/1959	Evacuees From Madison Valley Being Housed In Gallatin City	14	A, P	California: San Francisco Montana: Bozeman
08/20/1959	Bans Private Planes	14	A	Montana: Helena
08/20/1959	Ready To Help	14	A	Montana: Bozeman Wyoming: Basin, Cheyenne, Cody, Lovell, Powell, Rawlins, Riverton, Worland
08/20/1959	West Yellowstone Motel Man Fears Park Season Now At An End	15	A, G, I, L, N, P, R	Montana: Bozeman, Butte, West Yellowstone
08/20/1959	Believed Alone	17	A, P	Idaho: Coeur d'Alene Montana: Ennis, Hamilton
08/20/1959	Laurel Resident Tells Of Quake	17	A, B, G, L, N, R	Montana: Laurel North Dakota: Leipzig
08/20/1959	Work Delayed	18	A, B, E, G, I, P, R	Wyoming: Yellowstone National Park
08/20/1959	Major Earth Tremors Bring Disaster To Montana	19	A, B, E, G, I, L, P, R,	Montana: Bozeman, Butte, Ennis, Helena, Three Forks, Townsend, West Yellowstone Canada, Alberta: Frank
08/21/1959	Yellowstone Park Workers Back On Job; Tourist Influx Holds Up	20	A, G, H, I, P, R	Wyoming: Yellowstone National Park
08/21/1959	List Of Quake Evacuees Given	21	A, P	Arizona: Tucson California: Arcadia, Culver City, Escondido, Fresno, Garden Grove, La Canada, La Puenete, Long Beach, Los Angeles, North Hollywood, Oakview, Pasadena, Riverside, San Jose, San Mateo, Santa Ana Colorado: Denver, Greeley, Lake George

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				Georgia: Stone Mt. Idaho: Ashton, Coeur d'Alene, Pocatello, Rexburg, St. Anthony, Twin Falls Illinois: Decatur, Harrisburg Indiana: Indianapolis Iowa: State Center Kansas: Topeka, Udall Massachusetts: Concord Mississippi: Tarlton Montana: Big Timber, Billings, Bozemen, Butte, Dillon, Ennis, Great Falls, Nye, Roundup, West Yellowstone New York: New York City Ohio: Akron, Canfield, Carrollton, Dayton, Elyria, Vandalia Oregon: Salem Pennsylvania: Harrisburg Utah: Brigham City, Coalville, Hunter, Lehi, Ogden, Pleasant Grove, Roy, Salt Lake City Washington: Aberdeen, Albion, Bellevue, Colville, Kent, Seattle, Spokane, Tacoma, Woodenville Wisconsin: Montello Wyoming: Dug Creek, Lovell, Rock Springs
08/21/1959	Center Reports On Local Families	23	A, P	Montana: Billings, Bozeman, Helena
08/21/1959	SA Unit Serves Earthquake Area	24	A	Idaho Montana: Billings, West Yellowstone Wyoming
08/21/1959	Earthquake Victim In Good Condition	24	P	Montana: Billings, Bozeman
08/21/1959	Quake Blamed For New Crevices In Courthouse	24	B, N	Montana: Billings
08/23/1959	Governor Is Promised Aid For Quake-Torn Territory	25	A, E, I, P, R	California Idaho Montana: Bozeman, West Yellowstone New Mexico North Dakota: Riverdale Utah Washington
08/24/1959	Slide Victims Have Infection	27	A, I, P	Montana: Bozeman, Ennis

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08/26/1959	W & L Geologist Explains Quake That Rocked Southwest Montana	28	A, B, E, G, P, R, S	Montana: Hebgen Lake, West Yellowstone Virginia: Lexington Washington
08/27/1959	Hunt For Couple Is Of No Avail	30	A, P	Montana: Billings, Bozeman, Ennis, Virginia City New York
08/27/1959	Experts Hopeful Madison River Is Not Doomed As Trout Stream	31	G, I	Montana: Billings, Ennis
08/28/1959	School At Butte Declared Unsafe	32	B, I	Montana: Butte, Meaderville
08/28/1959	Survivor Tells Of Quake Horror	32	A, G, P	Montana: Billings
08/28/1959	Services Held For Quake Dead	33	A, I, L, P	Montana: Butte, Ennis, Townsend
08/28/1959	Last date searched			

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NEWSPAPER: Bozeman Daily Chronicle

Date	Headline	Page	Information Categories	Towns Mentioned
08/18/1959	Quake Hits Hebgen	34	A, E, G, I, L, P	California: Fresno, San Francisco Idaho: Ashton Montana: Billings, Bozeman, Ennis, Helena, Three Forks, Virginia City, West Yellowstone Tennessee Utah: Ogden Wyoming
08/18/1959	Earthquake Damage Is Not Extensive In Bozeman Area	35	A, B, L, N	Montana: Bozeman
08/18/1959	Red Cross Aid Ready For Use In Disaster	36	A, L	Montana: Bozeman, Billings, West Yellowstone
08/18/1959	Midnight Quake Is Jar To Sleepy Bozeman	36	E, G, L, P	Montana: Bozeman
08/18/1959	Phones Are Out Between Here And West Yellowstone	36	A, G, L	Montana: Bozeman, West Yellowstone
08/18/1959	West Yellowstone's Chimneys Shattered	37	A, B, L, N, P	Montana: Livingston, West Yellowstone
08/18/1959	Wyoming Governor Offers Help In Crisis	37	A, I	Wyoming: Cheyenne
08/18/1959	Boy Scouts Not In Any Danger Near Hebgen Lake	37	A, P	none
08/18/1959	Evacuation Of Injured Planned	38	A, G, L, P	Montana: Billings, Bozeman
08/18/1959	Injured Persons Are Flown Here For Treatment	38	A, G, P	Montana: Belgrade, West Yellowstone
08/18/1959	Forest Service Crews Survey Hebgen Damage	39	A, L, N	Montana: West Yellowstone
08/18/1959	150 People Are Marooned Between Dam And Slide	39	A, G, I, L, P	Idaho Montana: Bozeman, Ennis, Helena
08/18/1959	Highways Into West Yellowstone Remain Closed	40	A, L, R	Montana: Bozeman, Ennis, West Yellowstone
08/18/1959	West Yellowstone Is Digging Out After Earthquake	40	A, B, I, N, P	Idaho: Ashton Montana: West Yellowstone

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08/18/1959	U.S. Engineers Will Fly Into Hebgen Dam Area	41	A, I, L	Montana: Hebgen Lake, Great Falls Nebraska: Omaha North Dakota: Garrison
08/18/1959	Shaky Hebgen Was Engineering Feat Back In 1910	41	L	none
08/18/1959	Helena Residents Flinch At Newest Earthquake Shock	42	E, N	Montana: Great Falls, Helena, Livingston, West Yellowstone California: Berkeley
08/18/1959	Tourists Flee Three Forks Area	42	I, P	Montana: Three Forks, Helena California: Los Angeles
08/18/1959	Governor Given Report On Earthquake Scene	42	A	Montana: Cut Bank, Helena
08/18/1959	Great Falls Feels Shock	43	E	Montana: Great Falls
08/18/1959	Earth Shocks Are Felt At Idaho Border Town	43	E, P	Wyoming: Afton
08/18/1959	Young Mountains Are Believed Cause Of Tremors	43	S	none
08/19/1959	Three Hundred Are Rescued From Still-Shaking Madison Canyon Area	44	A, G, L, P	Montana: Butte, West Yellowstone California: Hamilton Air Force Base
08/19/1959	Survivors Receive Aid, Shelter In Bozeman	45	A, G, L, P	Montana: Bozeman, West Yellowstone Wisconsin: Montello
08/19/1959	Death Toll May Be Excessive	46	G, P	Arizona: Cottonwood Montana Wisconsin
08/19/1959	Big Spring Flows From Mountain Slide At Wade	46	B, G, P	Montana: Bozeman
08/19/1959	Whole Blood Is Flown To Treat Injured Here	47	A	Montana: Bozeman, Great Falls, West Yellowstone
08/19/1959	Road Crews Work On Damages	47	G, L, R	Montana: Helena, West Yellowstone Idaho: Henry's Lake
08/19/1959	Awful Roar Describes Earthquake	48	A, G, L, P	California: San Jose, Temple City

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				Montana: Billings, Bozeman, Nye, Roundup Utah: Brigham City Wisconsin: Montello
08/19/1959	Fury Of The Earthquake Is Seen In Hebgen Area	49	A, B, G, I, P	Montana: Bozeman, Ennis California: Temple City New York: Queens, Scarsdale
08/19/1959	Local Hospital Is Scene Of Tragedy As Earthquake Victims Are Cared For	50	A, P	Montana: Bozeman, Great Falls Kansas Wyoming: Cody
08/19/1959	10-Year-Old Helps Mother Aid Victims At Slide Area	51	A, H, I, P	Montana: Billings, Bozeman Arizona: Cottonwood
08/20/1959	Light Tremors And Rain Slows Search For Victims	52	A, E, G, R	Montana: Hebgen Lake, West Yellowstone Utah: Sandy
08/20/1959	Local Medic Team Is First To Reach Disaster Victims	53	A, P	California: Hollister Montana: Bozeman, West Yellowstone
08/20/1959	Continuing Earth Tremors Delay Park Crews Attempting To Clear Roadways	54	A, E, G, I, L, R	Wyoming: Yellowstone National Park
08/20/1959	Hebgen Lake Area Still Closed To General Public	54	A, I, P	Montana: Malstrom Air Force Base in Great Falls
08/20/1959	Red Cross Officials Set Up Disaster Center Here	55	A, I	California: San Francisco Montana: Bozeman, Ennis, Great Falls, Missoula, West Yellowstone Washington, D.C. Wisconsin Wyoming: Cheyenne
08/20/1959	Mrs. Ray Painter Is Second Victim To Die Here	56	A, G, P	Canada, British Columbia: Victoria Montana: Billings, Bozeman, Butte, Ennis Utah: Ogden
08/20/1959	California Man Describes Horrible Night At Slide	56	A, G, I, P	California: Temple City
08/20/1959	Coroner Says Body Of Ninth Victim In River	57	A, P	Montana: Bozeman, Ennis, Virginia City Utah: Sandy

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08/20/1959	Volunteers Aid Search For Bodies In Canyon	58	A, G, I, L, P	Montana: Bozeman, Virginia City
08/20/1959	Neighbors Report Family Missing In Park Area	58	A, G, I, P	Illinois: Rock Island Wyoming: Yellowstone National Park
08/20/1959	Virginia City Aids Survivors	59	A, I, P	Montana: Virginia City, Ennis
08/20/1959	Mountain Fell Before Flood, Survivor States	59	G, P	California: Arcadia, Lakewood, La Puente
08/20/1959	Rescue Job Done Near Slide Area Officials Report	60	A, I, L, P, R	none
08/20/1959	Manhattan School Opening Delayed By Quake Damage	60	A, B, I	Montana: Manhattan
08/20/1959	Size Of Slide Is Undetermined At Present Time	60	G	none
08/20/1959	Park Is Safe Rangers Tell Many Tourists	61	A, G, I, L, P	Wyoming: Yellowstone National Park
08/20/1959	Emergency Pump Will Guard Pipeline At River	61	A, L	Montana: Three Forks
08/20/1959	Third Of Mountain Is Scooped By Quake	61	G, P	Montana: Butte
08/20/1959	Major Movement Is Quake Cause	62	S	none
08/20/1959	Tremors May Last For Two Weeks	62	A, S	none
08/20/1959	Second Quake At Same Spot Said A Possibility	62	E, S	California: Pasadena Wyoming: Yellowstone National Park
08/21/1959	Mop-Up Activities Begin At Hebgen-Madison Area	63	A, G, I, P, R	Montana: West Yellowstone Canada, British Columbia: Vancouver California: Fresno Utah
08/21/1959	Rock Slide Is Permanent Officials Say At Meeting	64	A, G, I, L, P, R, S	Montana: West Yellowstone
08/21/1959	Western Union Facilities Ready For Full Use	65	A, L	Montana: Helena, Billings, Bozeman

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				California: San Francisco Oregon: Portland
08/21/1959	Pilot Checks Slide Height At 280 Feet	65	A, G, L	none
08/21/1959	Dr. Bayles First To Reach Injured	66	A, G, L, P	Montana: Billings, Bozeman, West Yellowstone
08/21/1959	People Huddled Together During Night Of Terror	67	A, E, G, I, L, P	Oregon: Salem Montana: Bozeman
08/21/1959	Tourist Business Is Booming At West Yellowstone	68	I, L, P, R	Montana: West Yellowstone
08/23/1959	Action Need Is Seen By Engineers	69	A, G, L	Montana: Bozeman, West Yellowstone Nebraska: Omaha North Dakota: Riverdale Washington, D.C.
08/23/1959	Evacuees From Earthquake Area Find Hospitality And Aid From Bozemanites	70	A, G, L, P	Arizona: Cottonwood, Flagstaff Montana: Gallatin County Utah: Ogden
08/23/1959	Little Boy Can't Imagine His Dad Dead In The Quake	70	G, P	Utah: Sandy
08/23/1959	Toll Of Tourists May Be Higher	71	A, I, P	California: Burbank, Los Angeles Massachusetts: Boston, Wakefield Montana: Bozeman New York: Saratoga Springs Utah: Clearfield, Salt Lake City Wyoming: Yellowstone National Park Washington: Anacortes
08/23/1959	Quake Damage Hastens Repair Of State Prison	72	B, R	Montana: Butte, Great Falls, Helena
08/23/1959	Eighteen After Quakes Recorded At Helena	72	E	Montana: Helena
08/24/1959	Five Weekend Tremors Touch Off More Slides	73	A, E, G, I, P	California: Burbank, Los Angeles, Van Nuys Maryland: Damascus Massachusetts: Wakefield Montana: Billings, Bozeman, Ennis, Helena, West Yellowstone New York: Schenectady

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				Pennsylvania: Clairton Utah: Ogden Washington: Anacortes Washington, D.C. Wyoming: Yellowstone National Park
08/24/1959	Geyser Activity Is Triggered By Earthquake	74	G	Wyoming: Yellowstone National Park
08/24/1959	Boys Show Up After Memorial For Them	74	P	Montana: Lewistown Missouri: Creighton
08/24/1959	Red Cross Lists Names Of Missing	75	A, P	California: Coalinga, Los Angeles, Santa Rosa, Soledad, Van Nuys Idaho: Idaho Falls Indiana: Highland Iowa: Davenport Massachusetts: Wakefield Michigan: Damascus, Lake Orin, Niles Montana: Billings, Havre New Jersey: Merchantsville New York: New York City North Dakota: Martin Oregon: Pendleton, Portland Pennsylvania: Clairton Utah: Provo Washington: Seattle
08/25/1959	Thirty-Three Persons Are Missing	76	A, G, L, P, R	Canada, British Columbia: Nelson Colorado: Grand Junction Massachusetts: Wakefield Montana: Bozeman, Ennis Nebraska: Omaha Wyoming: Yellowstone National Park
08/25/1959	Radio Hams Are Among Unsung Heroes Of Quake	77	A, L, P	California: Pasadena Montana: Billings, Butte, Chinook, Cut Bank, Dillon, Great Falls, Havre, Helena, Livingston, Missoula, West Yellowstone, Gallatin County North Dakota Washington: Seattle
08/26/1959	Number Of Persons Killed Still Is Mystery Of Slide	78	E, G, I, L, P	Arizona: Cottonwood California: San Francisco Canada, British Columbia: Nelson

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				Montana: Bozeman, West Yellowstone North Dakota: Riverdale Utah: Sandy Wyoming: Yellowstone National Park
08/26/1959	Sheriff Refuses Memorial Service At Slide Area	79	A, P	Montana: Butte, Ennis, Laurin
08/26/1959	Short Wave Radio Is Set Up At Earthquake Slide	79	A, G, L	Montana: Ennis, Virginia City, West Yellowstone
08/26/1959	Engineers Race To Cut Channel	80	A, G, L, R	North Dakota: Riverdale
08/26/1959	Mile Of Highway Covered By Slide	80	L	none
08/26/1959	Madison River Area May Not Qualify For Legal Aid	81	A, I, N, P	Montana: Gallatin and Madison counties, West Yellowstone, Missoula
08/26/1959	Quake Loss Said Over Six Million	82	A, I, L, P, R	Montana: Helena Wyoming: Yellowstone National Park
08/27/1959	Engineers Rush Slide Spillway	83	A, G, L, R	Idaho: Idaho Falls Montana: Ennis, Helena North Dakota: Riverdale
08/27/1959	Damage Decision Will Be Made At Friday Meeting	83	A, I	Montana: Helena
08/27/1959	New List Of Missing Is Issued	84	A, P	California: Coalinga, San Diego, Soledad Canada, British Columbia: Nelson Idaho: Idaho Falls Illinois: Rosiclare Michigan: Saginaw Montana: Billings New York: Syracuse Oregon: Medford Pennsylvania South Dakota: Sioux Falls Utah: Sandy
08/27/1959	Hebgen Dam Is Holding Up Well	84	A, L, R	Montana: Butte, Ennis, Virginia City
08/28/1959	Earthquake Damage Is Eleven Million Dollars	85	A, B, I, L, P, R	none

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08/28/1959	Heady Family Are Reported Safe; On Quake List	86	A, P	Montana: Bozeman New York: Clayton Oregon: Medford
08/30/1959	Tremors Continue In Park Area Radio Ops Report	86	A, E, P	Montana: Ennis, Virginia City, West Yellowstone
08/30/1959	Forest Service To Designate Earthquake Area	87	A, G, I, P	none
08/30/1959	Twenty-Six Are Unaccounted For From Earthquake	87	A, P	California: Anaheim, Coalinga, Chino, Soledad Idaho: Idaho Falls Canada, British Columbia: Vancouver Illinois: Rosiclaire Oregon: Medford Pennsylvania
08/30/1959	Slide Remains As Grim Token To Natural Forces	88	G, I, L, P, R	Montana: Butte, Ennis, Missoula, Virginia City, West Yellowstone North Dakota: Riverdale
08/30/1959	Tourists Assured That Danger Of Quake Is Over	89	A, I, P	Montana: Ennis, Virginia City, West Yellowstone
08/30/1959	Madison River Fishing Is Crippled By Earthquake Damage For Many Seasons	90	G, I, L, P	none
08/31/1959	Yellowstone Park Will Be Open For Rest Of Season	91	E, G, I, L, P, R	Wyoming: Yellowstone National Park
08/31/1959	Roads Are Opened In Park	92	E, G, I, L, R	Wyoming: Yellowstone National Park
08/31/1959	Quakes Change Geyser Pattern In National Park	92	G, P	Wyoming: Yellowstone National Park
09/01/1959	Engineers Rush Spillway Over Slide	93	A, G, P, R	Nebraska: Omaha North Dakota: Riverdale
09/01/1959	Quake Center Is Believed At Park Entrance	93	E, S	California: San Francisco, San Mateo Montana: Bozeman, Butte Utah: Logan Wyoming: Yellowstone National Park
09/03/1959	Red Cross Receives Disaster Grant For Earthquake-Caused Expenditures	94	A, P	Montana: West Yellowstone

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09/03/1959	Chamber Studies Effect Of Quake On Local Trade	95	I, L	Montana: Bozeman, Helena
09/03/1959	False Rumors, Sightseers, Cause Delay At Slide Area	96	A, G, I, L, P	Montana: West Yellowstone
09/03/1959	Quake Lake Will Overflow Slide Late Saturday	96	A, L, R	none
09/04/1959	Disaster Talk No Help, Aronson Tells Madisonites	97	A, P	Montana: Virginia City Washington: Hanford
09/04/1959	Water Levels Changed By Yellowstone Earthquake	97	G	Florida: Miami Hawaii Idaho New Jersey
09/06/1959	Repairs Begin On Quake Damage In Yellowstone Park	98	A, I, R	Wyoming: Yellowstone National Park
09/06/1959	New Quake Shakes Park Area	98	A, E, G, L, P, R	Wyoming: Yellowstone National Park
09/08/1959	Roger Provost Fails To Report, Said Slide Victim	99	G, P	California: Ontario, Soledad
09/08/1959	Ceremony To Mark Work On Spillway	99	A, E, I, R	Montana: Butte
09/09/1959	Yellowstone Park Travel Drops By One-Half	100	I, L, P	Wyoming: Yellowstone National Park
09/09/1959	'Terrific Blast' Contractor Says Of Quake Slide	100	A, G, P, R	Montana: Great Falls
09/09/1959	Clarence Scott, Slide Victim, Leaves Hospital	101	A, G, P	California: Fresno
09/10/1959	Water Edges Over Slide At Spillway	101	A, G, L, R	Montana: West Yellowstone
09/10/1959	Raynolds Pass Route Is Favored	102	G, L, R	Montana: Bozeman, Ennis, Virginia City
09/10/1959	Ennis Is Poised To Flee If Slide Gives Way	102	A, G, L, P	Montana: Ennis, Great Falls, Helena
09/10/1959	Quake Shakes Water Loose In Madison And Gallatin	103	G, I, L	none

1959 Hebgen Lake, Montana earthquake - listing of newspaper articles*

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NEWSPAPER: Bozeman Daily Chronicle

Date	Headline	Page	Information Categories	Towns Mentioned
09/11/1959	U.S. Engineers Plan Close Check On Madison Area	103	A, L, R	Nebraska: Omaha
09/11/1959	Water Is Flowing Again Down The Madison River	104	A, G, I, L, R	Montana: Helena, West Yellowstone North Dakota: Riverdale
09/11/1959	McMannis Explains How Madison Slide Occurred	105	E, G, P, S	none
09/13/1959	Erosion Is Problem At Quake Slide	106	A, G, R	Montana: Butte, Bozeman North Dakota: Williston
09/13/1959	Highway Route Lost Forever	106	A, I, L, R	Montana: Ennis, Virginia City, West Yellowstone
09/13/1959	Madison Slide Road Is Still Off Limits	107	A, I, P	Montana: Madison county
09/14/1959	Park Earthquakes Are Felt Here	107	A, E, H, N, P	Montana: Bozeman, West Yellowstone
09/14/1959	U. S. Geologists Believe Major Quakes Are Through	108	G, S	none
09/15/1959	Raynolds Pass Route Selected To By-Pass Slide	109	L, R	Montana: Ennis, Virginia City, West Yellowstone
09/15/1959	Experts To View Erosion Problem On Quake Slide	109	A, G, L, R	California: Oakland Massachusetts: Cambridge Minnesota: Minneapolis North Dakota: Riverdale Virginia: Upperville
09/16/1959	Quake Dropped Earth 15 Feet	110	G, P	none
09/16/1959	Earthquake Slide To Be Inspected Again	110	A, G, R	Nebraska: Omaha
09/16/1959	Libraries Have Copies Of Quake Report	110	A	Montana: Bozeman, Missoula
09/18/1959	Sec. Seaton Inspects Quake Area	111	A, I, L, R	none
09/22/1959	Madison Area To Be Developed	111	I, P, R	Idaho: Sandpoint

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Bozeman Daily Chronicle

Date	Headline	Page	Information Categories	Towns Mentioned
09/25/1959	Deeper Slide Cut Planned By Army	112	A, G, I, R	California: Oakland Massachusetts: Cambridge Montana: Ennis, West Yellowstone Minnesota: Minneapolis Nebraska: Omaha Virginia: Upperville
09/27/1959	Quake Lake Area Pictured On Highway Map	113	G, P	none
09/29/1959	Raynolds Pass Job Surveyed	113	G, L, R	Montana: Ennis, West Yellowstone Oregon: Portland
10/04/1959	Last date searched			

NEWSPAPER: Bozeman Daily Chronicle-2

Date	Headline	Page	Information Categories	Towns Mentioned
10/21/1964	Light Earthquake Felt In Bozeman	114	E, P	Montana: Bozeman, Butte, Cameron, Deer Lodge, Dillon, Ennis, Hamilton, Helena, Missoula
10/22/1964	Montana's Earthquake Analyzed	115	A, N, P	Montana: Bozeman
10/23/1964	Center Of Wednesday's Earthquake Determined	116	E, P	Montana: Butte
10/27/1964	Last date searched			

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Deseret News (Salt Lake City, UT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/18/1959	16 Reported Dead As Quakes Smash West Yellowstone Area	117	A, B, E, G, L, N, P	Arizona: Tucson California: Hamilton Air Force Base, Los Angeles, Novato, San Diego Idaho: Ashton, Boise, Coeur d'Alene, Nampa Montana: Bozeman, Butte, Dillon, Virginia City, West Yellowstone Utah: Salt Lake City Wyoming: Yellowstone National Park
08/18/1959	Latest Quake Items Reported At A Glance	119	A, B, G, L, P	Idaho: Ashton, Idaho Falls Montana: Bozeman, Butte, Dillon, Ennis, Virginia City, West Yellowstone Wyoming: Yellowstone National Park
08/18/1959	Here's A Partial List Of Temblor Victims	119	P	California: Los Angeles, San Diego, San Mateo Idaho: Coeur d'Alene Montana: West Yellowstone Utah: Ogden
08/18/1959	Residents Sketch Scene Of Nature On Rampage	120	B, E, G, L, N, P	California: El Centro, Los Angeles, San Diego Idaho: Rigby, St. Anthony Montana: Ennis, West Yellowstone
08/18/1959	Quake Disrupts Rail Service To Yellowstone	121	I, L	Idaho: Ashton, Victor Utah: Salt Lake City Wyoming: Jackson Hole, Yellowstone National Park
08/18/1959	Tremors Hit S.L. Home, Family Flees In Night	121	B, E, P	Utah: Salt Lake City
08/18/1959	Hillside Cracked Wide; Damage Everywhere	121	B, G, I, L, P	Montana: West Yellowstone
08/19/1959	More Tremor Victims Hunted In Massive Slide	122	A, B, E, G, L, P, R	Montana: Billings, Bozeman, Butte, West Yellowstone Utah: Salt Lake City, Sandy
08/19/1959	Slide At Hebgen Traps Ogden Pair, Children	124	A, E, G, P	Montana: Billings Utah: Ogden
08/19/1959	U. Seismograph Tilts Crazy During Shocks	125	E, S	Montana: West Yellowstone Utah: Salt Lake City
08/19/1959	Visitors At Park Say Quakes 'Big Adventure'	126	A, B, E, G, I, N, P	Wyoming: Yellowstone National Park
08/19/1959	Sisters Relate Terror In Tremor-Filled Night	126	A, E, G, P	New York: Queens

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Deseret News (Salt Lake City, UT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/19/1959	Night Of Horror Told By California Woman	127	A, G, P	California: Fresno Montana: Bozeman
08/19/1959	Survivors Tell Of Terrifying Quake Wrath	128	A, B, G, L, P	Arizona: Cottonwood California: Temple City Montana: West Yellowstone Utah: Salt Lake City
08/20/1959	Lake Search Turns Up No New Quake Victims	129	A, E, G, L, P	Montana: Bozeman, Ennis, Helena, West Yellowstone
08/20/1959	Nature Shatters Man's Work At Hebgen Lake	130	B, G, L, P	Montana: West Yellowstone
08/20/1959	W. Yellowstone Almost Like A Ghost Town	131	I, N, P, R	Montana: West Yellowstone Utah: Ogden
08/21/1959	Grim Search Continues For Victims Of Quake	132	A, G, L, P, R	Idaho: Coeur d'Alene Montana: Bozeman, Ennis, Virginia City, West Yellowstone Utah: Ogden, Sandy, Virginia City
08/21/1959	Solons Plan Tour Of Quake Area	133	I	Idaho Montana: Bozeman, West Yellowstone Utah
08/21/1959	Activity Inside Park 'Near Normal' Again	134	B, G, I, L, R	Idaho: Ashton Montana: Bozeman, Cooke City, Gardiner, West Yellowstone Wyoming: Cody, Jackson Hole
08/21/1959	Slide No Protection To Downstream Areas	135	A, G, L, P	Montana: West Yellowstone Wyoming: Jackson
08/21/1959	Round-Clock Watch Put On Split Dam	135	A, L	Montana: West Yellowstone
08/21/1959	40 Utah Residents Unreported In Quake	136	A, P	Montana: Bozeman Utah: Bountiful, Brigham City, Fairview, Kaysville, Salt Lake City
08/22/1959	More Quakes Shake Up Montana Disaster Area	137	A, E, G, I, L, P	Montana: Bozeman, West Yellowstone Utah

1959 Hebgen Lake, Montana earthquake - listing of newspaper articles*

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NEWSPAPER: Deseret News (Salt Lake City, UT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/22/1959	Utahn Tells Terror Of Quake Near Dam	138	A, E, G, L, P	Idaho: Idaho Falls Montana: Bozeman, Missoula, West Yellowstone Utah: Magna
08/22/1959	Utah Families Rejoice As 'Lost' Return	139	A, E, I, P	Montana: West Yellowstone Utah: Bountiful, Brigham City, Fairview, Salt Lake City Wyoming: Jackson Hole
08/22/1959	Utah's Missing Drops To 11 In Earthquake	140	P	Utah: Bountiful, Brigham City, Clearfield, Provo, Salt Lake City
08/24/1959	Disaster Aid Urged For Quake Region	141	A, G, I, L, P, R	Montana: Bozeman, Helena, West Yellowstone Washington D.C.
08/24/1959	No Utahns Seen Missing In Slide	142	G, P	Utah: Ogden, Sandy
08/24/1959	Rites At Slide End Search For Utahns	143	A, G, P	Montana: West Yellowstone Utah: Sandy
08/24/1959	Last date searched			

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Montana Standard (Butte, MT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/18/1959	Severe Earthquake Rocks Butte	144	A, B, E, G, L, N, P	Montana: Butte, Billings, Cut Bank, Ennis, Great Falls, Helena, Three Forks
08/18/1959	Much Of Montana Feels Tremor	145	B, E, G, N, P	Montana: Belgrade, Bozeman, Butte, Dillon, Glasgow, Great Falls, Hamilton, Helena, Kalispell, Lewistown, Livingston, Missoula, Shelby, Thompson Falls, West Yellowstone Wyoming: Yellowstone National Park
08/18/1959	Hebgen Dam Out; Ennis Is Evacuated	146	A, G, L	Montana: Ennis, Three Forks, Trident
08/18/1959	That Silly, Helpless Feeling Comes From Being 'All Shook Up'	147	E, N, P	Montana: Butte
08/18/1959	Earthquake Is Widely Felt In Northwest	148	E, N	Arizona: Tucson California: Berkeley Idaho: Boise, Burley, Idaho Falls, Pocatello, Rexburg, Twin Falls Utah: Salt Lake City Washington: Colfax, Colville, Olympia, Pullman, Renton, Seattle, Spokane, Wenatchee
08/18/1959	Butte Scared By Tremor	149	P	Montana: Butte
08/18/1959	Quake Damages Old Buildings In Virginia City	149	B	Montana: Virginia City
08/18/1959	Three Forks Shaken; Rock Slide Results	150	G	Montana: Three Forks
08/18/1959	Butte's Seismograph Not To Be Opened Until 7 This Morning	150	A, E	Montana: Butte
08/19/1959	At Least 18 Are Dead In Tremors	151	A, G, P	California: San Mateo Colorado: Greeley Georgia: Stone Mountain Idaho: Coeur d'Alene Montana: Bozeman, Butte, Ennis, Missoula, Virginia City, West Yellowstone New York: Queens Ohio: Elyria Washington: Colville, Spokane Pakistan

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Montana Standard (Butte, MT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/19/1959	Butte Danger Apparently Passed	152	A, B, E, I, L, N, P	California: Ventura Montana: Anaconda, Butte, Deer Lodge, Dillon, Manhattan
08/19/1959	Butte Is Ready To House 750 Ennis Refugees	153	A, L	Montana: Butte, Ennis, Missoula
08/19/1959	Terrifying Experiences Are Related By Youthful Tourists	154	E, P	Montana: Ennis New York: New York City Ohio: Elyria Pakistan
08/19/1959	Civil Defense Response Here Is Great	155	A	California: San Francisco Idaho: Pocatello Montana: Butte, Ennis, Helena, Missoula
08/19/1959	Temblor Brings Wakefulness To Anaconda Area	156	A, E, P	Montana: Anaconda
08/19/1959	Slight Damage Done In Dillon	156	B	Montana: Dillon
08/19/1959	Only One Montana Route Open To Yellowstone Park	156	G, L	Montana: Ennis, Virginia City, West Yellowstone Wyoming: Yellowstone National Park
08/19/1959	Tremors 'Slight' At Wyoming Parks	157	E	Wyoming: Jackson, Grand Teton National Park
08/19/1959	Big Mountain Was Just Chopped Away	157	G, I, L, P	none
08/19/1959	Hebgen Lake Is 65 Miles Around	157	A, G	Montana: Hebgen Lake
08/19/1959	Quake Did Not Damage Park Wonders, But Traffic Tied Up	158	B, G, I, L, P	Montana: West Yellowstone Wyoming: Yellowstone National Park, Grand Teton National Park, Cody
08/19/1959	Nearly 3,000 Quakes Recorded In State	159	E, S	Montana: Ennis, West Yellowstone
08/19/1959	'25 Quake Just Missed Train	159	E, I	Montana: Butte, Helena, Lombard
08/19/1959	Many Of Stranded Persons At Dam Badly Hurt	160	A, P, R	Idaho: Pocatello Montana: Bozeman, Butte, West Yellowstone
08/19/1959	Crews Cut Through To Probe Disaster Region	161	A, P	Montana: Bozeman, West Yellowstone Oregon: Salem

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Montana Standard (Butte, MT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/19/1959	Evacuation Forced Into High Speed	161	A	Montana: Bozeman, Ennis, Virginia City
08/19/1959	Plans Are Under Way To Dynamite Barrier	161	A	none
08/19/1959	Flying Rancher From Dillon Tells Of Flight Over Hebgen Dam Area, Signals From People	162	A, G, L, P	Montana: Dillon
08/19/1959	Once Happy, Carefree Faces Of Vacationing Americans Grim, Some Stained With Blood	163	E, G, P	California: Hollister Canada, British Columbia: Victoria Montana: Billings, Bozeman, Ennis, Virginia City, West Yellowstone
08/19/1959	Virginia City Opens Arms To Refugees	164	A, I, P	Montana: Butte, Ennis, Virginia City
08/19/1959	People In Ennis Feel Worst Yet To Come--Moving The Mountain	165	G, L, P	Idaho: Coeur d'Alene Montana: Ennis
08/19/1959	Deer Lodge Man Dies After Quake Strikes	166	P	Montana: Deer Lodge
08/19/1959	Billings Couple Hurt When Big Wave Hits	166	A, G, P	Arizona: Tucson California: Rio Linda, San Francisco Montana: Billings, West Yellowstone Utah: Salt Lake City
08/19/1959	Butte Receives Its First Quake Casualty	166	A, P	Montana: Butte, Ennis, West Yellowstone Ohio: Elyria
08/19/1959	Three Brothers Tell Of Their Parents Death	167	G, P	California: Berkeley, Modesto Montana: Ennis, Virginia City
08/19/1959	People From Butte Assisting Victims	167	A	Montana: Butte, Ennis
08/19/1959	Cool Efficiency Marks Hospital	168	A, P	Montana: Ennis
08/19/1959	Bozeman Red Cross Clears Information	168	A	Montana: Bozeman
08/19/1959	Emergency Food Ready If Needed	168	A	none
08/19/1959	St. Vincent DePaul Assists Refugees	168	A	Montana: Butte, Ennis

1959 Hebgen Lake, Montana earthquake - listing of newspaper articles*

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NEWSPAPER: Montana Standard (Butte, MT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/19/1959	Blood Flown To State	169	A	Montana: Bozeman Wyoming: Cheyenne
08/19/1959	Lt. Gov. Cannon In Hebgen Area	169	A	Montana: West Yellowstone
08/19/1959	The Earthquake	169	E	Montana: Butte
08/20/1959	Curious Advised To Avoid Madison River Area; Rock Slides Continuing	170	A, E, G, P	Montana: Anaconda, Ennis
08/20/1959	Ennis Residents Are Allowed To Resume Normal Activities	171	G, L, P, R	Montana: Bozeman, Butte, Dillon, Ennis, West Yellowstone
08/20/1959	Sad, Mad, Glad, Grateful--These Were The People In The Quake	172	I, P	Montana: Bozeman, Dillon, Ennis Oregon
08/20/1959	Man Who Escaped Death Says Prayer Salvation	173	E, P	Montana: Ennis Ohio: Elyria
08/20/1959	Alderman Skelley And Family Safe	173	L, P	none
08/20/1959	More Than One Person Blamed Prowling Bears When Trailers Began To Rock In Earthquake	174	A, E, G, P	California: San Mateo Georgia: Stone Mountain Montana: Ennis, Helena Utah: Roy
08/20/1959	Wise River Johnsons, Egged On, Describe How Quake Played Shell Game Trick On The Hens	175	H	Montana: Butte
08/20/1959	Room Reserved	175	P	Montana: West Yellowstone Utah: Ogden
08/20/1959	Butte Civil Defense Alert Is Canceled	175	A	none
08/20/1959	Ennis People Jolted As Siren Wails	176	P	Montana: Ennis, Missoula
08/20/1959	Montana Prison Cellblock Damaged So Badly It Is Ordered Torn Down	176	B, I	Montana: Deer Lodge

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NEWSPAPER: Montana Standard (Butte, MT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/21/1959	Quake Claims Another Victim	177	A, E, G, L, P	California: Arcadia Montana: Bozeman, Mammoth Utah: Ogden
08/21/1959	Team To Survey Quake Region	178	A, R	Montana: Helena, West Yellowstone Nebraska: Omaha Washington: Everett
08/21/1959	Hebgen Dam Is Under Study, Engineer Describes Damage	178	R	none
08/21/1959	Answer To Big Question Very Confusing	179	A, L	Montana: Ennis, Virginia City
08/21/1959	What Did 'O.K., S.O.S.' Mean?	179	L	none
08/21/1959	Size Of Landslide Is Measured	179	A, G	Montana: Ennis
08/21/1959	School Of Mines Seismograph 'Blew Its Top'	180	E	Montana: Helena Washington D.C.
08/21/1959	Quake Inquiries Flood Into Red Cross Office	180	A, P	Montana: Bozeman Poland Washington D.C.
08/21/1959	Potter Is Designated Quake Coordinator	180	A	Canada Montana: Helena
08/21/1959	Power Co. Asks Chimney Check	181	A	none
08/21/1959	Quake-Jarred Wall Falls On Butte Home	181	A, B, P	Montana: Butte
08/21/1959	Gas Shut Off In Building Here	181	B, L	Montana: Butte
08/21/1959	State Has No Funds to Replace Roads Ruined By Tremors	182	I, L	none
08/21/1959	Paul Cannon Cautions Quake Sightseers	182	A, E, G	Canada Montana: Butte
	Visitors Are Barred From Quake Region			California: Fresno

1959 Hebgen Lake, Montana earthquake - listing of newspaper articles*

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NEWSPAPER: Montana Standard (Butte, MT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/22/1959		183	A, P	Canada, Alberta: Lethbridge Canada, British Columbia: Victoria Idaho: Coeur d'Alene Montana: Bozeman, Ennis, Great Falls, West Yellowstone Utah: Ogden, Sandy
08/22/1959	No More Quake Bodies Expected	184	G	Montana: Ennis, Helena, West Yellowstone
08/22/1959	School Of Mines Seismograph Called Invaluable In Study Of Earthquake	185	E	Montana: Butte
08/22/1959	State Newsmen Are Welcomed To Yellowstone; Superintendent Says Conditions Are Safe	186	E, G, I, L, P	Montana: West Yellowstone Washington, D.C.
08/22/1959	Old Faithful Inn Closed For Now	186	B, G, I, L	none
08/22/1959	West Yellowstone Is Strange Measure Of Quietness, Action	187	A, I, P, R	Montana: West Yellowstone
08/22/1959	Forced Decisions Saved Family	188	P	California: San Mateo Montana: Deer Lodge, West Yellowstone
08/22/1959	Deer Lodge Man Sings To Ease Quake Fears	188	P	Idaho: Idaho Falls Montana: Billings, Deer Lodge, West Yellowstone
08/23/1959	Survivors Of Quake Overjoyed By Butte's Friendliness	189	A, P	Montana: Butte, Ennis Ohio: Cleveland, Elyria
08/23/1959	Tourist Travel Reduced By Quake, But Butte Figures Good For Year	190	I	Montana: Butte
08/23/1959	Demolition Work Confusing To Butte Tourists	190	P	Montana: Butte Ohio
08/23/1959	West Yellowstone Man Tells How He Sounded Alert After Quake	191	A, P	Idaho: Pocatello Montana: Ennis, West Yellowstone
08/23/1959	Virginia City Players Entertain Evacuees From Madison Valley	191	P	Montana: Ennis, Nevada City, Virginia City

1959 Hebgen Lake, Montana earthquake - listing of newspaper articles*

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NEWSPAPER: Montana Standard (Butte, MT)

Date	Headline	Page	Information Categories	Towns Mentioned
08/23/1959	Neighborliness Was Never More Evident	192	A, G, I, P	California: San Mateo Montana: Anaconda, Bozeman, Butte, Ennis, Missoula, Sheridan, Twin Bridges, Virginia City, West Yellowstone
08/23/1959	Red Cross There	193	A	Montana: Ennis, West Yellowstone
08/23/1959	T & T Did Good Job	193	L, P	Montana: Bozeman, Butte, Ennis, Helena, Virginia City, West Yellowstone
08/23/1959	Amazing Cooperation In Tragedy Significant	194	A, P	Montana: Ennis
08/23/1959	Madison Slide Would Overflow Berkeley Pit	194	G	Montana: Butte
08/24/1959	Dam Employee Explains 'O.K.--S.O.S.'	195	P	none
08/24/1959	Just Dropped In	195	A, P	Montana: West Yellowstone
08/25/1959	Quake 'Fear' List Cut To About 39	195	A, P	California: Santa Rosa Colorado: Boulder Maryland: Damascus Montana: West Yellowstone Oregon: Pendleton, Portland
08/25/1959	Madison Towns Seek Travelers	196	I, P	Montana: Ennis, Virginia City
08/25/1959	Dog, Happy To See Someone, Found In Quake Region	196	I	Montana: West Yellowstone
08/25/1959	Metcalf Asks SBA For Worker In Earthquake Area	197	A	Montana: Helena
08/25/1959	Engineers Study Quake Lake For Flood Threat	197	G, R	Montana: Ennis, West Yellowstone
08/25/1959	Earthquake Lake To Be Major Attraction	198	I, R	none
08/25/1959	Last date searched			

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Salt Lake Tribune

Date	Headline	Page	Information Categories	Towns Mentioned
08/18/1959	Quake Jolts Western States	199	A, B, E, G, L, N, P	California: Berkeley, Needles Idaho: Ashton, Boise, Macks Inn, Pocatello Montana: West Yellowstone Oregon Utah: Salt Lake City Washington Wyoming
08/19/1959	Temblor Crumples Mountains In Death, Destruction Sweep	200	A, B, E, G, I, L	Canada, British Columbia California: San Francisco Idaho Montana: Bozeman, Ennis, West Yellowstone North/South Dakota Utah Washington
08/19/1959	Park Scene Of Fear, Confusion	202	B, G, I, L, P	Idaho: Idaho Falls Montana: Bozeman, Forsyth, West Yellowstone Nevada: Elko
08/19/1959	Tribune's Action Swift In Quake	203	A	Idaho: Big Spring, Idaho Falls, Pocatello
08/19/1959	Here's List Of Casualties	204	P	Arizona: Cottonwood California: Fresno, Hollister, San Mateo, Temple City Canada, British Columbia: Victoria Idaho: Coeur d'Alene Minnesota: Priest Montana: Billings, Bozeman, West Yellowstone New York: Queens Ohio: Elyria
08/19/1959	'Awful Roar' First Sign Of Temblor	205	E, I, P	Australia: Melbourne California: Los Angeles Idaho: Big Springs, Boise Montana: West Yellowstone
08/19/1959	Stay Put, Then Count To 40	206	A	none
08/19/1959	Quake Severs Service To Park Areas	206	A, G, L	Montana: Ennis, Helena, West Yellowstone

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Salt Lake Tribune

Date	Headline	Page	Information Categories	Towns Mentioned
08/19/1959	Mammoth Slide Recalls Gros Ventre Disaster	207	G, I, L, P	Idaho: Pocatello Montana: Ennis
08/19/1959	Madison Wends From Park To Disaster Sector	207	G	none
08/19/1959	S.L. Quivers, Rattles In Mild Quake	208	E, N	Montana: West Yellowstone Utah: Salt Lake City
08/19/1959	Earthquake Jars Utahns At Lake	208	B, G, P	Montana: Bozeman New York: Sandpoint Utah: Holladay, Salt Lake City
08/19/1959	Idaho Guard Alerts For Quake Role	209	A	Idaho: Boise Montana: West Yellowstone Wyoming
08/19/1959	Ham Radio Airs Disaster	209	A, L	Idaho: Boise, St. Anthony Montana: Dillon, West Yellowstone South Dakota: Rapid City Utah: Salt Lake City Washington: Seattle
08/19/1959	Earthquake Sweeps Salt Lake 'Suburb'	210	G, P	California: Palo Alto Montana: West Yellowstone Utah: Bountiful, Salt Lake City
08/19/1959	Jolt Jars U. Needle Off Scale	211	E, S	Arizona California: San Francisco Canada Idaho Montana: Helena Nevada Utah: Elsinore, Kanab, Kanarraville, Salt Lake City Wyoming
08/19/1959	'No Intentions' To Close Park	212	A, G, I	Idaho Montana: Cooke City, Gardiner, West Yellowstone Wyoming: Jackson Hole
08/19/1959	Earthquake 'Actually Tilted Lake'	213	G, L, P	none
	Quake Ties Up U.P. Branch Line			Idaho: Ashton, Victor

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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NEWSPAPER: Salt Lake Tribune

Date	Headline	Page	Information Categories	Towns Mentioned
08/19/1959		213	G, L	Montana: West Yellowstone Utah: Salt Lake City
08/19/1959	'Work Until Dark Hunting Dead'	214	A, I, P	Montana: Ennis, Virginia City
08/19/1959	Heroism Plays Dramatic Role	214	A, B, G, P	Arizona: Cottonwood California: Temple City Canada, British Columbia: Victoria Idaho: Twin Falls Montana: Nye Ohio: Vandalia Utah: Ogden Washington: Albion
08/19/1959	Basin Rumbles, Geyser Reborn	216	G	none
08/19/1959	Resort Town Somber In Quake Wake	216	B, I, N	Montana: West Yellowstone
08/19/1959	Park Bears Line Roads Again, Miss Handouts	216	I	none
08/19/1959	'Young Mountains' Go On A Rampage	217	A, G, S	Utah: Salt Lake City
08/20/1959	Rescuers Sift Quake Ruins; Fear Hike In Death Toll	218	A, E, G, I, L, P	Montana: Billings, Bozeman, Butte, Ennis, Virginia City, West Yellowstone
08/20/1959	'Quake Mountain' Largest Tomb?	219	A, G, I, L, P	Montana: Billings, Bozeman, Ennis, West Yellowstone Ohio: Vandalia
08/20/1959	Here's Count Of Victims In Disaster	220	P	California: San Mateo Idaho: Coeur d'Alene Montana: Billings, Bozeman, Virginia City Utah: Sandy
08/20/1959	Relatives Identify Body Of Utahn--Hunt Wife	221	A, P	New York: Rochester Utah: Murray, Salt Lake City, Sandy
08/20/1959	Here's Latest List Of Injured In Yellowstone Earthquake	222	P	Arizona: Cottonwood California: Fresno, Temple City Canada, British Columbia: Victoria Idaho: Ashton, Coeur d'Alene

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Date	Headline	Page	Information Categories	Towns Mentioned
				Montana: Billings, Bozeman, Butte, Ennis Ohio, Elyria Utah: Ogden
08/20/1959	Dad 'Had To Find Boys'	222	A, P	California: San Jose Idaho: Idaho Falls Montana: Bozeman, West Yellowstone
08/20/1959	'Unaccounted' List Includes Utahns	223	P	Utah: Salt Lake City, Tooele Wyoming
08/20/1959	Park's Mostly 'Open' But--	224	G, I	Montana: West Yellowstone
08/20/1959	Ol' Fishing Hole No Longer Angler's Dream	224	I	Montana: West Yellowstone
08/20/1959	'Unseen Damage' Adds To Quake-Area Worry	225	B, G, I, L	Montana: Gardiner, West Yellowstone Wyoming: Cody, Jackson
08/20/1959	Military Help To Continue	225	A	California Montana: West Yellowstone
08/20/1959	Reporter's Thoughts In Valley Of Death	226	I, L, P	Montana: West Yellowstone
08/20/1959	2 Major, 12 Minor Jolts Follow Big Earthquake	227	E, S	Utah
08/20/1959	Dam Repairs On Way, Utility Says	227	B, L, R	Montana
08/20/1959	Salt Lakers Relive Nightmare	228	B, E, P	Montana Utah: Salt Lake City Wyoming
08/20/1959	S. L. Businessman Tells Of Terror At Epicenter	229	B, G, L, N, P	Montana: Bozeman New York: Sandspoint Utah: Holladay, Salt Lake City
08/20/1959	Slide Dodges 5 Utahns In Close Call	229	I, P	Utah: Lehi, Murray, Pleasant Grove
08/20/1959	30 Million Yards Of Fill	230	G	Utah: Salt Lake City

1959 Hebgen Lake, Montana earthquake – listing of newspaper articles*

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Date	Headline	Page	Information Categories	Towns Mentioned
08/20/1959	Tall Tales Emerge From Quake Talk	230	I	Montana: Bozeman, West Yellowstone
08/20/1959	Family Still Going Fishing!	231	P	Montana: Bozeman
08/20/1959	Couple Tells Escape From Cabin	231	B, G, N, P	Montana: Bozeman Utah: Salt Lake City
08/20/1959	Bozeman Bill Proves Phopphet	232	H	Montana: Bozeman
08/20/1959	U.P. Depot Condemned? Yes, No	232	A, B, I, L	Montana: West Yellowstone
08/20/1959	Rumble Of Earthquake Can't Overcome American Sense Of Humor	233	H, P	California: Chula Vista Texas Utah: Salt Lake City
08/21/1959	Fresh Earthquakes Rumble In Montana Disaster Area	234	A, E, G, I, L, P	California: Arcadia, San Francisco Colorado: Denver Idaho Montana: Bozeman, Ennis, Mammoth, West Yellowstone Utah: Salt Lake City Wyoming: Ashton
08/21/1959	Advise Folks Of Safety, Official Asks	235	A, I	Montana: Bozeman Oregon: Portland
08/21/1959	ARC Names 'Safe' Of Park Area	236	A, P	Idaho: Ashton, Pocatello, Rexburg, Sagle, St. Anthony, Twin Falls Montana: Bozeman, West Yellowstone Oregon: Portland Utah: Amalga, Brigham City, Coalville, Hunter, Lehi, Magna, Ogden, Pleasant Grove, Roy, Salt Lake City, Sidney, Tooele
08/21/1959	Search Party Probes For Utah Woman	237	A, P	Montana: Virginia City Utah: Sandy
08/21/1959	Temblor List Adds Two More Deaths	237	A, P	Idaho: Coeur d'Alene Montana: Bozeman Utah: Ogden
08/21/1959	Alarmed Utahns Add To List Of Missing In Park	238	I, P	Utah: Bountiful, Brigham City, Fairview, Kaysville, Salt Lake City, Sandy

1959 Hebgen Lake, Montana earthquake - listing of newspaper articles*

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NEWSPAPER: Salt Lake Tribune

Date	Headline	Page	Information Categories	Towns Mentioned
08/21/1959	Temblor Awoke 'Whole Camp'	239	P	Utah: Salt Lake City
08/21/1959	2 Cyclists Cover Park Quake Damage	239	G, I, L, P	Arkansas: Fort Smith Montana: Billings Utah: Salt Lake City
08/22/1959	Lawmen Block Off Canyon In Quake-Ridden Parkland	240	A, B, E, G, I, L, P	Idaho: Coeur d'Alene, Victor Montana: Bozeman, West Yellowstone Wyoming: Jackson
08/22/1959	Shocks Shut Park Inn For Season	241	I	Wyoming: Mammoth Hot Springs
08/22/1959	Old Faithful Stars In Pre-Quake Show	242	G, L, P	Montana: West Yellowstone Washington: Everett
08/22/1959	Utah Names Off Roster Of Missing	243	P	Montana: West Yellowstone Utah: Brigham City, Fairview, Tooele
08/22/1959	Moss To Visit Montana Quake Area	243	A, I	California Idaho Montana: Bozeman, West Yellowstone Wyoming
08/22/1959	You 'Get The Feel' Of Jolts	244	E, P	Montana: West Yellowstone
08/22/1959	Road To Quake	244	L	Idaho: St. Anthony Montana: Ennis, West Yellowstone
08/23/1959	Congressional Party Views Earthquake Devastation	245	A, E, G, I, L	California Idaho Montana: Bozeman, West Yellowstone New Mexico Utah Washington: Everett
08/23/1959	Jeep Patrol To Hunt Utah Quake Victim	246	A	Utah: Salt Lake City, Sandy Montana: West Yellowstone
08/23/1959	Fatality Count For Hebgen Remains At 10	247	P	Montana: Bozeman
	Loss--Million Easy And Rising			Idaho: Pocatello, Victor

1959 Hebgen Lake, Montana earthquake - listing of newspaper articles*

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Date	Headline	Page	Information Categories	Towns Mentioned
08/23/1959	Temblor Out-Punches H-Bomb's Blast	255	S	California: San Francisco Nevada
08/23/1959	Last date searched			

Aug. 17, 11:37 p.m. M6.3; Aug. 17, 11:37 p.m. M7.5;
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

**BILLINGS ROCKED BY SHARP QUAKE;
ENTIRE NORTHWEST AREA IS REPORTED JOLTED
No Damage Reported; Montanans Awakened By Rolling Temblor Which Averages 30
Seconds In Duration; Washington, Wyoming Also Hit**

Downtown Billings swayed and houses shook sharply throughout the Billings area at 11:40 p.m. Monday when a moderate earthquake swept through the area.

There were no immediate reports of damage.

A second tremor of less intensity rolled through this section of the state at 11:47 p.m.

There were tremors in Columbus, Helena and as far as Basin, Powell, Shell and Greybull, Wyo., according to early reports.

Residents throughout this area notified the Gazette of trembling doors, rolling beds, rattling dishes and jumping furniture. Lew Barton, 2511 Arvin Rd., said "my house shook like a leaf."

The quake was believed to have taken a north to south course. Two minutes after the tremor was felt at the U.S. Weather Bureau at Logan Field, it was felt in the 220 block on Ave. B.

Hundreds of residents of this area were awakened by the first sharp tremor at 11:40. Light fixtures in the Gazette newsroom swung as in a strong August wind and the entire building shook perceptibly.

The weather bureau reported there was no seismograph or other recording instruments in the Billings area.

The first tremor, according to the weather bureau, lasted "from 30 to 45 seconds," and the second was of shorter duration.

Ralph Gumpf, chief weather bureau forecaster, was awakened at his home by the tremor. He said he believed the last such quake struck Billings about 10 years ago.

Gumpf said that special forms showing duration and intensity of the tremor would be forwarded to offices in Bozeman. Epicenter of the last previous quake was at Dillon, he reported.

Sheriff Roy Stewart's office said no reports of damage had been received. Deputies patrolled the rimrocks and found numerous rocks had been loosened and rolled down but said there were none on the road to the airport.

Billings hotels were in confusion following the tremor. Guests at the Northern, especially in rooms on

the upper floors, sought refuge in the lobby.

One man emerged dressed only in trousers and shoes. Several women appeared in nightgowns. On the ninth floor, two women were in a state of near-hysteria, as they paced the hall and sought advice as to where they could find safety.

"I came all the way from California to have this happen to me," one woman said.

At the Custer Hotel a number of guests fled to the street.

The Motor-Vu Drive-In theater saw an exit of customers when the quake hit. A dozen frightened car owners drove away at once. Others got out of their cars to see if their tires were flat.

"It hit so hard out there that the rocks in the gravel drive jumped up and down," said Greg Kemp, 619 Avenue F.

Dick Koch, 1105 Central Ave., was another witness of the excitement at the theater. He hurried to the Gazette office to report the phenomenon.

Taverns, the busiest places in town at that hour of the night, accepted the shake with mixed emotions. A tipsy customer weaved his way out of one on Montana Ave., and announced:

"That's the last time I'll ever touch the stuff."

He was brushed aside by a man hurrying back in who commanded the bartender:

"Quick! Give me another one."

Ray Wittmer, 610 S. 31st St., reported "my whole house shook and the doors were swinging. I think it lasted about a minute or longer."

A draftsman working on plans at the Billings Sash and Door Co. reported the desk on which he was working vibrated through the "big shake."

Ishmael Yost said that his house shook, and doors and dishes rattled. He resides seven miles west of Billings on the Laurel Rd.

On Beck Drive, a resident reported the swimming pool "completely overflowed onto the patio."

At 932 Ave. B, a woman said, "Our house sure shook like the dickens."

City Librarian Ann Whitmack, who said "I've been in 'em before, said, "I don't know when I've been in one

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BILLINGS GAZETTE

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as prolonged. You wake up with the dishes rattling and the house shaking . . ."

Mrs. Gilbert Rhodes, 744 Lake Elmo Drive, said the tremor "just shook a chest of drawers to beat the band. I thought it was a big windstorm."

At 1128 North 25th St, the residents said "it felt as though the house were rocking."

Angelo Dimich at 212 Fairpark Drive said he was lying in bed when the tremor hit. "I've been in earthquakes before in Los Angeles and San Francisco but this one lasted quite awhile. Some closet doors and things in the kitchen were rattling."

W. W. Boger at 2618 Sunnyview said a few vases were knocked down.

Robert Busby, 2234 Fox Drive, said "Out where they're building the new high school," the quake lasted 30 seconds, and though he'd never been through one before, he's had them described and was "quite sure that's what that was."

Mrs. Val Schwan woke up at 2107 Virginia Lane

and said she heard something pop in the house but couldn't find anything disturbed.

Ole Helland at Shepherd said he awoke to find the bed shaking but thought his 21-year-old daughter "was just playing tricks." He said his wife was praying when the tremor began moving pictures on the walls and shaking doors.

Kathryn Wright, Gazette society editor, said at her home 10 miles west of Billings that her swimming pool had waves "four to six inches high, not sharp, short waves but great, undulating rolls." All the neighbor's children and stock woke up, she said, and were "squawking their heads off."

At St. Vincent's Hospital, nurse's aide Kay Harte said the building "just rattled." She said the "patients were just as scared as we were" but no damage or upsets were noted.

Mrs. J. H. Patton said in Red Lodge she felt two tremors in a "good shaking."

[Billings Gazette; August 18, 1959]

WEST YELLOWSTONE ENTRANCE, NORRIS CUTOFF ROAD CLOSED Natural Wonders Of Park Undamaged By Quake; Accommodations Open Except Old Faithful Inn; Persons Trapped By Slides Have Ample Food

All Yellowstone National Park entrances are open except the West entrance, L. A. Garrison, park superintendent, told the Billings Chamber of Commerce in a telephone call Tuesday following severe earthquakes in the area.

No travel is possible along the west side of Yellowstone, between Mammoth and Old Faithful, because of slides and damage to bridges, Garrison said. The cutoff road from Canyon to Norris Junction, running east and west across the center of the park, also is closed by a slide.

All accommodations in the park are open except Old Faithful Inn, which was evacuated after the quake broke water mains and damaged a chimney.

Highway 191 was reported open between Bozeman and the park, but blocked inside the park because of damage to bridges.

No injuries were reported inside the park, Garrison said. He added that there was no panic. He said that August 18 is the date which normally sees the greatest number of visitors housed in park

accommodations.

Thermal activity is normal, he said. Some park streams are muddied by slides.

Some persons camped on Indian Creek between Mammoth and Norris were caught between slides blocking the main road, but could leave by following a forest trail, he said. However, they were remaining in the area and reported ample supplies of food.

Bridge Damaged

Officials of the Cop Construction Co. in Billings said Tuesday they had reports of damage to a \$100,000 steel and concrete bridge in Yellowstone Park as a result of the earthquake.

Tom Dolan, general manager, said a Yellowstone Park ranger told Bill Kapptie, Cop superintendent in Gardiner, the quake had caused settlement and cracking in an abutment to the Gibbon River bridge.

No damage was sustained to the company's other two Park projects, a housing development at Mammoth Hot Springs, and a bridge across the Lewis River, Dolan said.

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Work proceeded Tuesday as usual on the two jobs,
the Cop spokesman said.

[Billings Gazette; August 19, 1959]

PARK'S HEAVIEST QUAKE DAMAGE AT OLD FAITHFUL Inn Is Evacuated, East Wing And Main Lobby Are Closed

By Don Anderson

President, Lee Newspapers of Montana

OLD FAITHFUL, YELLOWSTONE PARK,
Wyo.—Heaviest damage in Yellowstone Park from
Monday night's devastating earthquake centered in the
Old Faithful area where panic-stricken guests poured
out of Old Faithful Inn, many of them climbing into
their cars and fleeing from the park in terror.

Tremors shook the area throughout the night and
the quake topped off its performance with four more
shocks during the breakfast hour.

Inn Is Evacuated

Old Faithful Inn was evacuated. But Tuesday
night Mrs. Anderson and I were among half a dozen
guests permitted to occupy rooms in the west wing of
the hostelry.

When the earthquake hit the area, guests poured
from the structure in panic. Rocks fell from the huge
fireplace chimney in the center lodge and shocks left
the fireplace about eight inches out of plumb.

The Yellowstone Park Transportation Co.
dispatched eight buses to the Inn and evacuated many
to the Old Faithful recreation hall at the lodge.

No Meals Served

The east wing and the main lobby were closed off
because of the damage. A few rooms were left
available in the west wing but no meals were being
served.

Shortly before the tremor hit, 800 people were
assembled in the recreation hall to witness a beauty
contest. Moments after the queen had been crowned
and she was walking down the aisle to the plaudits of

the crowd, the first, mighty shock hit.

Every one in the place dashed for the door.

Hardy Rescuer

Jackie Yoigen, a waitress at the Inn from Detroit,
Mich., had a date with a park ranger Monday night and
the two were together when the first tremor shook the
area.

"Goodie, goodie," Jackie cried, "I'm glad I've got
someone to rescue me."

The ranger quickly dropped the girl's hand and
rushed to the door—to open it so that people would not
be killed or injured in the crush to leave the building.

Thousands of tourists have left for fear of their
lives but an equal number of the curious have come
into the park to view the damage.

There was an unconfirmed report that geysers have
been showing greater activity and that some which
have been long inactive have begun to spout.

Blocked Routes Listed

Highways No. 1 and 191, the first up the Madison
River and the other up the Gallatin, were reported
closed except for excavation purposes.

These routes were blocked: Canyon to Norris,
Mammoth to Madison Junction, and Old Faithful to
Madison Junction and West Yellowstone.

Huge rock slides in Firehole Canyon blocked the
road between Canyon and Madison Junction and it will
require about two weeks to open this route.

The east end of the park was not damaged as badly
as other sections, it was reported.

[Billings Gazette; August 19, 1959]

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BILLINGS MATRON VICTIM OF QUAKE

Mrs. Margaret Holmes, 72, 515 Broadwater Ave., was reported Tuesday night to have died in a Bozeman hospital of injuries received in the Hebgen Lake area during Monday night's devastating earthquake.

With her daughter, Miss Verona Holmes of the same address, were reported to have left Billings a week ago on a camping trip in the area.

At least six other Billings residents were among the known campers who were injured when the quakes brought death and destruction to the Madison River Canyon.

Mr. and Mrs. Warren Steele of 615 S. 36th St., were among injured who were flown out by helicopters from West Yellowstone to Bozeman. According to reports received here, Steele suffered cuts and bruises. His wife was reported suffering from chest injuries.

Also injured and hospitalized were Mr. and Mrs. Anton Schreiber of 432 Broadwater Ave., and their daughter, Bonnie, 7, who was reported suffering from a cut on the head. Extent of injuries of Mr. and Mrs. Schreiber was not known.

Mr. and Mrs. George Horning of 105 Brickyard Lane, Mr. and Mrs. Bernie Boynton of 2532 Longfellow Pl. and John R. Davis, no Billings address available, were all reported to have been fishing in the Hebgen Lake or Ennis area and latest reports were that none of them had been heard from since the quake.

The Gazette received a report that 167 persons had been evacuated from the stricken area by private cars and reached Bozeman late Tuesday night. They were to be housed at Montana State College. The Red Cross at Bozeman made arrangements for the rescue.

The people will be "processed" and names of next of kin obtained. The party successfully negotiated the treacherous Duck Creek "wye" area.

Rush Plasma, Drugs

Antibiotics and blood plasma was rushed to Bozeman late Tuesday afternoon for use at the Bozeman Deaconess Hospital. Some of the emergency shipment will probably be taken to emergency stations at the scene of the destruction.

William Lambrecht, manager of McKesson & Robbins Billings wholesale outlet, said Tuesday five cases of antibiotics and antibiotic dusting powder and plasma from Billings hospitals were sent to Bozeman by bus. Lambrecht said members of his staff would

remain on duty all during the night to answer further calls for emergency medical supplies.

"We still have some antibiotics supplies on hand although the bulk of them was sent out Tuesday afternoon," Lambrecht said.

Billings hospitals Tuesday night had not received any requests from Bozeman to handle any of the injury cases. Preparations have been made however at both the Billings Deaconess and St. Vincent hospitals to set disaster plans into operation to care for the injured if necessary.

Both hospitals anticipating the possibility of some cases being brought to Billings for possible treatment that could not be provided at Bozeman.

Although the Yellowstone County Chapter, American Red Cross, still hadn't been ordered to begin moving emergency disaster equipment into the area, its volunteers were busy Tuesday night with a message center operation.

Bernard Dahl, chapter disaster chairman, said facilities have been set up to relay messages to determine the whereabouts of people in the earthquake area.

"We already have located some people and the chapter office will handle all requests from persons seeking to find out about relatives who might be in the area. We also stand ready to do our utmost to report on the condition of those who are injured. A call to the Red Cross office is all that is necessary," Dahl said.

He reported that the ARC had received a message that Oscar Bjorgum, 141 Grand Ave., had escaped injury in the quake. Bjorgum said he would remain in the area to assist with the rescue work.

Dahl also said the ARC Pacific area office had informed him that it has dispatched four staff members to the quake area. Chapters in the immediate vicinity are preparing to take care of the refugee load. A communications expert, along with Joseph Hladecek, Pacific area director, was flown to Bozeman to set up a special communication system for handling locator messages.

Hundreds of residents were awakened Monday night as the tremors, the first felt here in a decade, shook buildings, moved beds and caused doors in homes to sway.

According to descriptions of quakes available at

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the city library, the intensity of the tremors in Billings was about 5—sufficient to rattle dishes and crack plaster. No official report on the intensity is available here because of lack of seismological instruments.

No major property damage has been reported in the area. Mrs. Frank Robinson of 619 S. Broadway reported to the city building inspector's office that the tremors opened a crack in the stucco on the outside wall of her home. Plaster was reported cracked in several residences.

T. E. Duke, city building inspector, said there were no reports of any major structural damage to buildings in Billings.

"There are a few indications of some cracks in plaster and in wooden lath which probably was about to break anyway," Duke said. "The quake probably helped it along."

No damage along the Zimmerman Trail or the Airport Road had been reported to the county surveyor's office.

Road Is Safe

Undersheriff Don Davison said he was surprised the quake did not dislodge some of the larger boulders teetering above the Airport Road.

"We sent a man up there Monday night," Davison said, "and it was not too bad at all."

The undersheriff said some small rocks—"none larger than a water bucket"—had rolled to the edge of the road about midway between the valley and the top of the rims.

Most prisoners in the county jail, apparently slept right through the tremors, Davison said.

One exception was an Indian who told Jailer Paul Gahagen he was lying on his bunk "and all of a sudden the walls were shaking."

Frank Swenson, Geological Survey employee, said he heard a dull rumble with the Monday night tremors from his home at 941 Rimrock Rd.

Water System Okay

The city water department reported pressure gauge readings were normal which indicated there were no major breaks in city water mains. Possibility of small breaks was not ruled out but department officials pointed they would take a while to show up.

Montana Dakota Utilities Co. reported all gas lines in operation and no breaks have been reported in their system in Billings or south to northern Wyoming points.

Reports received by Elmer Neilsen, MDU

superintendent, Tuesday from Wyoming points said the tremors were apparently lighter in intensity in the Powell and Lovell areas. Light fixtures swayed at plants in the Elk Basin area during the Monday night shake.

George Scotten, division manager for the Montana Power Co. said Tuesday no damage had been reported to electrical lines. There were sharp tremors felt Monday night at the company's Mystic Lake power plant.

Check Mystic Dam

Crews went immediately to check on the condition of the Mystic Lake dam high above the power plant community. Monday night's check and one again Tuesday morning did not show any damage to the installation, Scotten [?]

[?] Red Lodge-Cooke City Highway, Ralph Weagel, secretary of the Red Lodge Chamber of Commerce, said.

Weagel said no slides had been reported on the mountain highway and the park service patrols were operating in the area.

"We have received no word to close the highway and we are sure through our communication setup that we would be notified immediately of any difficulties," Weagel said.

Weagel said tremors were felt in Red Lodge Monday night and again Tuesday morning. He heard of no damage in that area.

Billings Police Chief C. E. Maness said all highway patrolmen in the Billings area had been ordered to the Madison River area to cope with the earthquake emergency.

Sheriff Roy R. Stewart ordered his force to take over investigation of all highway accidents in Yellowstone county after he learned all highway patrolmen had been diverted elsewhere.

At least one off-duty deputy was called in to help with the work, Stewart said.

The Montana Highway Commission in Billings said no request had been received to move road equipment from this division to the stricken area. Equipment from Bozeman has been moved in. The Billings Division had been requested not to use its radio transmitting facilities to avoid interference with operations out of Bozeman.

The Weather Bureau was still handling earthquake calls Tuesday.

Ralph Gumpf, chief meteorologist, said people are

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still calling to confirm whether or not there had been an earthquake. Requests have also come in for earthquake forecasts.

"We have to tell people that earthquakes are just a little out of our line when it comes to forecasting. All we do is collect data on them," Gumpf said.

Several tornado-conscious Billings residents reported they headed for the basements of their homes when the tremors struck Monday night. They realized after it was all over that basements are not places to seek haven in an earthquake.

[Billings Gazette; August 19, 1959]

LOCAL PHOTOGRAPHER REPORTS TEMBLOR CRACKED MOUNTAINS

Death And Devastation

By Leo Carper, Billings Photographer,
as told to Addison R. Bragg

When I left Billings Tuesday morning for the earthquake scene I counted on seeing some devastation and wreckage—but I never thought I'd see a mountain literally pushed down into a valley.

We were a little way out of Ennis, headed toward West Yellowstone, when we noticed what looked like smoke coming up out of the Madison Valley. When we got closer we realized it wasn't smoke at all but dust kicked up by landslides that were still occurring down below us.

Sees Huge Slide

Then, as our plane followed a bend in the valley, I saw the biggest, ugliest looking pile of dirt I think I've ever seen. There it was, a thousand feet below us, a whitish pile of rock with a lot of pine trees mixed in with the rubble and the gaping scar in the side of the mountain left when it slid down to block the river and the road through the valley.

I didn't even realize what I was looking at until I saw the river, stopped short by the huge pile, and the road which disappeared under it.

It must have been almost two miles wide and hundreds of feet deep.

Later at West Yellowstone I talked to a highway patrolman about it. He told me if there was anybody in there at the time it happened, they'll never be found.

New Slides Occur

As we were landing at the West Yellowstone strip we noticed another cloud of dust rising from a valley in the park where another slide was taking place.

The town was all but deserted. Windows were boarded up and stores were closed. I saw one group of college girls waiting for a ride—any ride they could get—that would take them out. That's all anyone there,

apparently, was thinking about.

I saw one kid with a suitcase headed down the street and I asked him to wait a minute so I could get a picture of him. "You go to hell," he told me, "I'm not waiting around here another minute for anything—not even a picture."

At the airfield there was a lot of activity—too much, it seemed to me. Planes were flying around every which way at all levels and they were coming and going so fast I couldn't keep track of them. They finally closed the strip because of the traffic and I guess it was a good thing. It seemed real hazardous to me.

Injured Arrive

They were pretty busy with the injured at the field. I saw one elderly woman, unconscious and half naked with her arm all bruised and bloody. She looked like she'd been in the water.

In fact, they were so concerned with earthquake victims there that someone in a station wagon backed up too quickly and hit a man standing behind it and knocked him down. No one hardly paid any attention.

Flying over Hebgen Lake and the dam we could see three big slides that blocked the road in as many places. There were campers stranded in each of the areas between the slides and, on our way back, we saw one of those "flying banana" helicopters land to pick some of the people up.

Mountains Cracked

Unless a person had been there at the time there's just no way of imagining what those people went through. The mountains literally cracked. Flying along by the lake we could see these huge, jagged fissures in the sides of mountains which ran along for a mile or more.

Someone asked me if I could compare what I saw up there with the earthquake we felt here Monday

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night. There's no comparison at all. I wasn't a bit scared here last night—but I'd have been plenty scared if I'd been there.

In fact, it scared me a little just looking at it after it all happened.

I don't think they'll know for two or three days yet

BILLINGS GAZETTE

how many people are killed. They can't, because some of those places are so isolated.

This is the first earthquake I've ever seen and I think it'll last me a long time.

[Billings Gazette; August 19, 1959]

BILLINGS FATHER SIGHTS SON, FRIENDS SAFE IN QUAKE AREA

By Roger Davis

A Billings father at about noon Tuesday found something to be joyful about as he scanned the earthquake destruction in the Madison River Canyon from a light plane.

Anxiety and worry over the safety of his 19-year-old son, Dean, and his two companions, Loyal Hahn of 1917 10th Ave. N. and Dave Coy, 17, of 245 Ave. E, prompted Oscar H. Dale of 1015 N. 32nd St. to charter a plane and head for the area Tuesday morning.

The young men had gone on a fishing and camping trip and Dale thought they were camping in the vicinity of Cliff Lake where considerable quake damage had been reported.

Circling low over the plateau area between Wade and Cliff Lakes, Dale spotted the three from the air.

"I was never so happy in all my life when I recognized them," he said.

The light plane landed on the plateau area "bouncing in and out of gopher holes and over boulders until everybody thought the undercarriage would be torn off."

It was a happy reunion. The three boys had been camping at Wade Lake. They had climbed to the plateau area only a short while before Dale's plane arrived.

"It was as if they knew we'd be looking for them," Dale said.

Although the quakes caused plenty of turmoil and destruction at the Wade Lake camping area, nobody had been injured, Wade said.

Cabin in Ruins

The interior of a summer cabin at the camp was in ruins. The tremors had upset furniture and dishes and glass were scattered all over. A sidewalk around the structure was completely crumbled.

Sections of the road slid off into the lake but fortunately missed the campers, Dale said. He also reported large fissures in the earth along Wade Lake and springs had dried up as a result of the tremors.

The three boys, who remained in the stricken area with the hope of eventually getting their car out, told Dale that they almost tore the tent down getting out of it when the quake hit Monday night. Fear gripped them when they got outside and heard slides and watched their car "jump up and down."

Something Terrible to See

Dale described the disaster scene as "something terrible to see."

"People who were camped in the narrows where the mountain slid into the canyon will probably never be found. They are under a rock pile at least 200 feet high and three-quarters of a mile long," he said.

He reported seeing cars and trailers marooned along the roads cut off by slides. Lakes are filled with debris.

Dale also said that the quake had not stopped the activities of the looters of the forest. Bears were reported having a field day stealing food from camps that had been hastily abandoned.

[Billings Gazette; August 19, 1959]

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FLIES OVER AREA

BIG TIMBER—Dr. V. D. Standish, Big Timber physician who flew over the area blocked out by a landslide, said "a huge pile of rubble east of Cliff Lake seems to have covered nearly a half mile of road to a depth of 200 feet."

Dr. Standish said the area between the dam and the slide "seems to be filling with water." He reported, however, that cars of campers in the area had been moved toward higher ground and were "all clustered

together."

"Above the dam," said Dr. Standish, "where the highway skirts the lake there are whole sections of it that just dropped right into the water."

Standish said he counted eight or ten small aircraft that were apparently able to land in the affected area and were "shuttling back and forth in rescue operations."

[Billings Gazette; August 19, 1959]

ANACONDAN TELLS OF DISCOVERING WOMAN WHO SURVIVED SLIDE HORROR

WEST YELLOWSTONE (UPI)—Lloyd Verlanic, Anaconda, was the first to reach Mrs. Purley Bennett, Coeur d'Alene, Idaho, whose husband and three children were buried in a slide caused by an earthquake. A fourth child survived.

Verlanic found Mrs. Bennett and her son, Phil, 16, in the middle of a dry creek bed.

"Mrs. Bennett was nude," Verlanic said. "She was crawling on her hand and knees. She looked up at me, her face a mass of blood and said, 'Oh, thank God! I've been crawling and praying all night. My children, oh my God, my children. I wish I could find my children.'"

Verlanic said that when the mountain crashed down into the canyon, water from the Madison River sent air swooshing up on both banks with such force it tore the clothes off campers.

Mr. and Mrs. S. B. Gilstad, of Helena, were parked about a half mile downstream from the landslide and were among the first to reach the injured.

Worse Than War Noises

"The roar sounded like the end of the world," Gilstad said. "We were sleeping in the car. It felt as if 10 men were jumping on your bumper."

Air Force Warrant Officer Victor James, 55, El Centro, Calif., was parked in his trailer about 75 yards from where the main slide hit.

"I heard a terrible rumble and looked up," he said. "I saw the whole damn mountain crumbling. It was awful. I saw a lot of fighting during World War II but I never heard such a hell of a roar."

UPI correspondent Robert Crennen narrowly

missed injury in one of the aftershocks at 8:26 a.m. It happened near where he and Highway Patrolman Robert Spear, rancher Don Cox, and Sheriff Lloyd Thomas of Beaverhead County were standing.

They had just driven to the downstream side of the rockslide. At that point rocks were still trickling down the mountainside and two cars could be seen "twisted like a wrung washrag," Crennen said.

I was just taking a picture when Spear shouted, 'Good God, look at that!' There were five or six huge boulders coming down from the top of the mountain.

Ledge Breaks Off

"We were back about 50 feet from the slide and the car was pointed toward the slide. We all jumped in. Spear got the car turned around just as the rocks came crashing down behind us.

"Seconds later a big ledge broke off the cliff and came tumbling down. One rock made a 10-foot dent in the asphalt highway."

In West Yellowstone, western gateway to Yellowstone, Laura Schauer, Los Angeles, was coming out of the Wagon Wheel Cafe when the first quake struck.

"I felt like I was on waves," she said. "I had no control. The lights swung. Glass was flying everywhere. I picked myself up off the ground several feet from the steps.

She suffered a lacerated left leg.

Becky Alexander, Everett, Wash., was driving out of the park with her children, Leslie and Larry, along with Glen and Thelma Alexander.

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"We thought it was a flat tire and stopped," Becky said. "The boulders came rushing down both in front and back of the car. One felled two trees in front of the

car."

[Billings Gazette; August 19, 1959]

**CITADEL AID GOES TO STRICKEN AREA
County Red Cross Placed On Alert**

Billings Salvation Army personnel and supplies were on their way to the Ennis earthquake disaster area Tuesday afternoon to assist with emergency work.

Maj. Ernest Orchard, Citadel commanding officer, said he had received an emergency call from the Army's Butte headquarters for foodstuffs, blankets and mattresses to be used to care for people who were being evacuated from the Ennis area.

The Citadel's truck and canteen station wagon were loaded with the needed supplies Tuesday morning.

Maj. Orchard and Lt. Nels Nelson and two other Citadel personnel were ordered directly to the Madison River emergency area to assist personnel from Butte who were already on the job.

[Billings Gazette; August 19, 1959]

OFFERS HELP

DENVER (AP)—Gov. Steve McNichols of Colorado offered help to governors of Montana, Wyoming and Idaho where the earthquake hit.

McNichols said in a telegram:

"Please let us know if we can help in any way to meet the problems and emergencies caused by the

earthquakes in the West Yellowstone area reported Tuesday morning."

The telegram was sent to Govs. J. Hugo Aronson of Montana, Joe Hickey of Wyoming and Robert Smylie of Idaho.

[Billings Gazette; August 19, 1959]

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TOO MUCH FOR MACHINE

DENVER (AP)—The seismograph at Regis College here was knocked out of action temporarily by the severity of earthquakes in Montana.

The Rev. Joseph Downey, S.J., said "I almost thought there was something the matter with my machine.

"The needle of light went back and forth across the

page violently indicating the quake was close."

He said the shocks Monday night and Tuesday marked the first time on record that the beam of light went off the paper with "the first push."

"They were by far the largest I've recorded here," he said.

[Billings Gazette; August 19, 1959]

STAFF STUDIES QUAKES

Monday night's earthquake was as much a coincidence as a shock to members of the city building inspector's staff.

They recalled Tuesday they had spent part of Monday afternoon checking earthquake probabilities for the Bozeman area.

"We don't often get requests like that," explained Mrs. Florence Scott, department secretary, "but an

architect wanted the information in connection with a building at the state college.

"Earthquakes were on the tip of our tongue when we stopped work Monday afternoon, but we never dreamed there would really be one only a few hours later."

[Billings Gazette; August 19, 1959]

FOLLOWED BY QUAKE?

A Yellowstone county deputy clerk and recorder had good reason Tuesday to think earthquakes may be following him around the world.

Monday night's tremors were the third in the past three years experienced by Allen Martin.

The clerk said he usually tours a different Latin American country during his vacation in August each year.

Two years ago, a quake hit near Mexico City while he was visiting there.

Last year he witnessed a similar tremor in Guatemala.

"I figured this year I'd say in Billings," he shrugged.

[Billings Gazette; August 19, 1959]

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OLD RELIABLE RECORDER KNOCKED OUT BY QUAKE

The earthquakes that brought a mountain down into the Madison River Canyon put water level recording instruments out of order at a 100-foot water well near Belgrade, the U.S. Geological Survey said Tuesday.

The well, often referred to as "old reliable" when it comes to recording earthquakes by fluctuations of the water level, has been used for this side purpose by the USGS since 1950.

The tremors Monday night caused the water level to rise so rapidly that the recorder quit after a rise of 1.2 feet.

The well has recorded quakes that have occurred in Alaska, Mexico and California. Dr. Charles Bradley, dean of science at Montana State College, reads the recording data for the USGS Billings office.
[Billings Gazette; August 19, 1959]

LOCAL RADIO HAMS ASSIST WITH TRAFFIC RELAYS IN EARTHQUAKE

Billings amateur radio operators had a ringside seat—so far as transmitting conditions permitted—at organization efforts and progress of rescue operations following the earthquake in the Hebgen Dam area.

E. Carl Lanzendorfer, operator of station W7MQI, said he had been assigned to the emergency network to stand by in order to relay messages from mobile units sent to the stricken area.

His first official notice, Lanzendorfer said, was received from Bill Hammond of Fishtail, operating W7OTJ. Hammond advised that an emergency situation existed "on the Madison River" and told operators that ambulances had been called from Bozeman and that a helicopter had been requested from Salt Lake City.

Later, Hammond passed word to the network that "six helicopters aren't enough. There are 250 injured to be evacuated."

Activities of the emergency network, Lanzendorfer said, are being coordinated by John Bielenberg of Helena, who owns station W7BIS.

Also assigned to the network from this area is Florence Majerus, who operates station W7QYA in

Lewistown.

Lanzendorfer reported his station had relayed a request from Carter Oil Co. officials in Billings relative to the safety of employees and their families in the affected area. The oil firm also inquired about oil storage tanks in the vicinity, Lanzendorfer said.

First transmission from the near scene, the Billings pharmacist reported, "sounded pretty discouraging."

The operator of station W7JPD in Dillon flew to West Yellowstone where he established an emergency station before noon Tuesday. He advised the network "conditions are worse than we expected."

Reports from the scene indicated "trees were broken like matchsticks and they're still fishing people out of the water."

According to reports, Lanzendorfer said most of the casualties were apparently caused by a rise of water "almost like a tidal wave" which swept across campgrounds.

Lanzendorfer said the first death message from the area was addressed to Casper, Wyo.
[Billings Gazette; August 19, 1959]

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BILLINGS GAZETTE

DAMS REPORTED UNDAMAGED

Bureau Checks All Reservoirs

No damage was reported to Bureau of Reclamation dams in Region 6 as result of the earthquake that brought death and destruction to the West Yellowstone and Madison River area, the Region 6 office reported Tuesday.

Checks on installations north of the stricken area such as Canyon Ferry, Crow Creek and Helena Valley showed no damage, Frank M. Clinton, regional director, said.

Clinton said apparently nothing out of the ordinary was discovered at Hungry Horse Dam in northwestern

Montana. Although that dam is under the jurisdiction of the Boise regional office, any damage would have been reported to the Billings office.

Clinton said the Island Park Dam, an earthfilled structure located on Henry's Fork 50 miles south of West Yellowstone, also apparently escaped damage. Tests were made Tuesday morning on the outlet works and other parts of the dam and no damage could be found, according to reports received here, Clinton said.
[Billings Gazette; August 19, 1959]

USGS REQUESTS QUAKE REPORTS

Seeks Information To Aid Studies

Earthquakes can bring about many changes in the earth's structure and the U.S. Geological Survey's Billings office wants to find out about them.

The USGS requested Tuesday that residents in the area report factual information to them as soon as possible.

They are interested in everything from emotions and sensations of individuals to water levels in wells and springs.

Frank Swenson of the USGS said Tuesday that his office would appreciate receiving reports of any unusual observations in areas hit by the quake.

"By piecing together factual information much can be learned about the structural make-up of our rocking and rolling mother earth," Swenson said.

Information is sought on building damage, emotions and sensations, effects on mines, rock and earth slides, cracks in the ground, changes in spring and well water levels, and pipeline breaks.

Quakes often renew flows in dry oil and water wells. Dry holes, which never have produced, sometimes become productive after a quake. Sand spouts also occur. Observations on such phenomena will assist the USGS in its work, Swenson said.

He requested information to be sent to the USGS at Box 1818 in Billings. The USGS is cooperating with the Montana Bureau of Mines and Geology at Butte on these studies.

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MILD TREMOR REPORTED HERE **Local Residents In Quake Area**

Another brief and mild earth tremor was recorded in Billings at 12:45 p.m. Wednesday by the Weather Bureau at the Airport, as an aftermath of severe shocks Monday night which centered their destruction in the Madison River Valley west of Yellowstone Park.

Other slight tremors were reported at 9:05 p.m. Tuesday by several local residents.

One injury victim from the quake area was brought to the Billings Deaconess Hospital early Wednesday morning. He is Frank Baker, 34, of Livingston. Baker, who had been engaged in rescue operations, was believed to have suffered back injuries in a slide Tuesday. It was reported he had transported some of the injured out of the area on horses.

Both Billings hospitals were prepared to take care of injury cases, but it was pointed out that hospitals in Butte, Helena and Livingston were a shorter distance from the scene of devastation.

The American Red Cross county chapter's message center was busy Wednesday handling calls. Messages seeking the whereabouts of relatives had been received here from as far east as Pennsylvania.

Reported in Area

Among Billings people reported to be in the Hebgen Lake area and whose whereabouts were sought through the message center were Mr. and Mrs. Jack McCord, 1013 Foster Lane; Mr. and Mrs. C. J. McGinnis and children, Allan and Seamas, 822 N. 29th St.; Mr. and Mrs. Carl Davis and children, 138 Birchwood Dr.; Mr. and Mrs. George Horning, 105 Brickyard Lane and their grandson, Philip Deitz, 13, Laurel, and Mr. and Mrs. Bernie Boynton, 2532 Longfellow Pl.

Couple Said Safe

Mr. and Mrs. Henry Meyers, of 306 9th St. W., were reported safe and were expected to return to Billings soon. John R. Davis, 2228 Hewitt Dr., who also was believed to be in the Madison area, called relatives late Tuesday night from Salt Lake City.

Another grim note in the disaster was an order from Bozeman for gas gangrene antitoxin which was filled early Wednesday morning by McKesson & Robbins wholesale drug outlet in Billings. This medication is used for severe wounds and cases of amputation.

[Billings Gazette; August 20, 1959]

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EVACUEES FROM MADISON VALLEY BEING HOUSED IN GALLATIN CITY

BOZEMAN (UPI)—Evacuees from the Madison Valley disaster continued to trickle slowly into Bozeman Wednesday—weary, still frightened but thankful to be alive.

Main headquarters for the American Red Cross have been established here to handle the thousands of requests for information concerning the safety of persons possibly in the earthquake area Monday night.

Joseph Hladecek of San Francisco, field director for the Pacific area of the Red Cross, said he expects the headquarters to be in operation at least another three days.

Office Swamped

"We're really swamped here," he said. "It will take at least 24 hours before we can get out from under the backlog of work."

The backlog of requests for information about persons believed in the quake area was at least 500 Wednesday with new queries pouring in constantly.

The Red Cross has found temporary homes for at least 90 persons in Bozeman. Many of them were housed at Montana State College dormitories.

"We expect many more," Hladecek said.

He said the Red Cross planned to furnish transportation for those persons who have been evacuated and have lost their cars.

A staff of seven Red Cross workers and two teletype operators was handling the hundreds of telegrams. Meanwhile, telephone company operators were under instruction to accept only emergency calls.

[Billings Gazette; August 20, 1959]

BANS PRIVATE PLANES

HELENA (UPI)—State Civil Defense Director Hugh Potter closed the Madison Valley earthquake area Wednesday to private aircraft.

"It's purely a safety problem," Potter said, explaining that heavy traffic and low clouds had caused

aerial congestion in the narrow valley.

He said official aircraft crews made an aerial survey of the valley Wednesday, looking for possible additional survivors and dead.

[Billings Gazette; August 20, 1959]

READY TO HELP

CHEYENNE, Wyo. (AP)—The Wyoming Health Department has two 200-bed mobile hospitals ready to move to the Yellowstone National Park area if needed for victims of the severe earthquake which jolted the area Monday night and Tuesday.

Dr. Cecil Reinstein, director of preventive medicine, said the fully equipped hospital units are at Riverton and Worland, both within 200 miles of the disaster area.

An additional mobile hospital is located at Rawlins and could be moved to the Yellowstone area if needed, Reinstein said.

Another 100 hospital beds could be made available in Powell, Cody, Lovell, Basin, Worland and other Big Horn Basin communities for evacuation of injured persons from southwest Montana, Reinstein said.

He said the State Health Dept. was ready to send equipment or take patients into Wyoming if requested by Montana officials.

The Wyoming Air National Guard flew 30 units of blood to a Bozeman, Mont., hospital late Tuesday.

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WEST YELLOWSTONE MOTEL MAN FEARS PARK SEASON NOW AT AN END Creaks, Shakes, Jolts

By Neil Mellblom

(Neil Mellblom, former Gazette reporter and correspondent for Time and Life, visited the Yellowstone Park earthquake area and wrote this story for The Gazette).

I'm sitting up in bed writing this. I'm fairly comfortable, well supported by three large pillows and a soft mattress—but I'm ready to quickly toss this portable typewriter off my lap and bolt for the door of my motel room.

The walls just creaked, there was a faint but deep rumbling noise outside and the bed shook enough to startle me. I just told myself it won't take many more such jolts to convince me I should be wearing pants and shoes.

I'm in West Yellowstone, Montana. It's 1 a.m. Wednesday and I've been awake nearly 20 hours. The ache in my legs tells me I'm tired, but I know I won't sleep tonight.

I doubt if many people in this area will relax in their beds tonight. They've been having the shakes all day, real ones, and even if the ground stops quivering, their nerves will maintain the St. Vitus reaction.

Conversation all over the West Yellowstone area have sounded like this Tuesday:

(Leonard Kelly, operator of the Hitchin' Post Motel, telling about the first jolts that rocked the area Monday night.)

"At first I thought a truck or car had hit the building. They have before. Then the bed started whipping and the walls began to groan. The whole room was swaying . . ."

He pauses, cocks his head slightly and asks:
"Feel that? There's another one."

Tremor Is Felt

You did feel something. It was hardly noticeable, a tiny shudder immediately underfoot—but it was there, all right. Your eyes are drawn to the circular rack of postcards on the motel office counter; they are shimmering, ever so slightly, and you know nobody touched them.

"Anyway," Kelly, the motel owner continues, "the whole room was swaying and I realized we were having an earthquake."

He goes on to describe the terrible few hours—terrible also in a dollar and cents way for a motel owner—following the first shock waves.

He describes dishes cascading out of cupboards, furniture sliding and hopping, being banged into both sides of the doorway as he tried to get outside.

Load Cars, Leave

The thousands of tourists and campers in and around West Yellowstone realized just as quickly as Kelly that they were in an earthquake. Before daybreak a large majority of them had dressed, loaded their cars and joined the caravan leading southwest to Idaho Falls.

"They didn't check out, they just left. Many had paid for a night or two in advance, but nobody asked for refunds," Mrs. Kelly commented.

West Yellowstone and the immediate tourist area will accommodate some 8,000 guests. Early Monday evening, the Hitchin' Post and most other motels had their "no vacancy" signs lit. By Tuesday evening rooms were available all over town and a long count would show hardly more than a thousand people still around—most of them natives.

Instead of the gay, peak-of-the-season atmosphere normally in West Yellowstone this time of year, there is a quiet, nervous feeling. Shock has set in, and probably won't wear off for days. The people are listening for the next rumble and waiting for the next tremble. It will take a long period of steadiness to revive their spirit.

Say Year Over

The townspeople are convinced their year is over. The quake temblors that forced condemnation of the historic old Union Pacific depot and cancellation of daily train arrivals, that tumbled chimneys and some walls, that put gaping cracks in the brick walls of the famed Stagecoach Inn also has broken the stream of tourist traffic.

For the time being the neon signs will remain off and the atmosphere of a winter-shut-down will prevail.

"The end of the season came early," Kelly agreed, "but at least Old Faithful is still spouting. If it quits, we're really dead."

A trip into the immediate quake area—the place where bodies were picked up by a heaving earth and

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tossed into the water, where who knows how many others were smashed and smothered—is an awesome thing.

It makes you realize immediately that there really is a force that can move mountains.

Crews Open Roads

Roads are opening in the West Yellowstone vicinity now—thanks to efficient Montana Highway Department crews—but as late as Wednesday morning it was impossible for anything but trucks and powerful four-wheel-drive vehicles to navigate the few miles from the town to the lake shore.

Three miles north of the tourist town the road suddenly resembled a piece of shredded wheat. Asphalt was spread as far as a foot in many places and the driving surface dipped east to west and north to south, then back again.

A few miles further, just before the junction where the lake road cuts off, the northbound driver—if he couldn't stop—would smash headon into a dirt and gravel wall. The highway was broken in a clean line, the level dropping abruptly at least eight feet.

Cadillac Is Smashed

(At this point a new Cadillac, roof and sides smashed, sat in the borrow pit. Its southbound driver had unwittingly tried to make the jump over the drop-off.)

Once the northeast turn is made into the lakeshore drive area, the road for a short distance is as good as ever, but a glance to either side tells you things are not right.

On the left the water does not have an ordinary shoreline, the level in places is halfway to the top of bushes and small trees. This is the open area before you reach the dam and forested sections.

Jagged Gash Seen

On the right, high up on the mountain ridge a few hundred yards is a strange line. At first it resembles a roughly-made irrigation ditch. Then, on closer inspection you realize it is not a ditch but a jagged gash

through the sod and trees, a gash left when acres and acres of lake bottom and shore—shore extending upward several hundred feet—suddenly dropped from ten to 15 feet.

Imagine you are holding Hebgen Lake in your hands. Grab it by the south side and give a sudden upward jerk. Watch the water mushroom and slosh up the opposite shore and over the earth-filled dam at the end. Then leave it in the tilted position.

The massive ground shifting and force of small tidal waves broke the shoreline highway at several points. For several stretches of hundreds of feet the road simply disappears, murky water filling the gaps.

Bulldozers at Work

The drive is possible, however, because of the quick and effective work of bulldozers. The N-K Construction Co. of Butte moved into the lake area early Tuesday and by that night had created rough but durable defiles up and around the washouts.

Opening of the road made it possible Tuesday night for a caravan of over 50 cars loaded with survivors of the quake to drive to the main highway and travel to Bozeman. The injured were removed by helicopter earlier in the day and most of the dead bodies were found many miles north of the lake and dam—downstream on the Madison River.

The shoreline of the lake is littered with whole trees, uprooted and floating, abandoned boats, tiny and large chunks of wood that were once buildings. At one of the points where the road drops away, the water-filled gap also holds an entire house. Only its roof and tops of windows show above the water line.

Dam Battered, Cracked

Hebgen Dam itself is battered and cracked, but the cracks themselves are not large and first observations lead you to believe the earth-filled structure will not break. Most damage is to the concrete-lined spillway, where 20-foot sections have crumpled and displaced.

[?]

[Billings Gazette; August 20, 1959]

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BELIEVED ALONE

ENNIS (AP)—"I thought was the only one in the family still alive."

Actually, Mrs. Irene Bennett, 39, and her son, Phillip, 16, of Coeur d'Alene, Idaho, were the only two survivors of an earthquake landslide in the family of six.

Her story was related Wednesday from the Ennis hospital by her brother-in-law, James Burkhart of Hamilton. He quoted her as saying:

Thrown Clear

"I was thrown clear across the river and I was in the water a long while. When I came to, I was jammed against a tree with a log on my back. I dug myself out of that.

"I thought I was the only one in the family still alive.

"I couldn't walk. When daylight came I saw

Phillip and called to him. He raised up over the dirt pile and saw me. He crawled over to where I was to help me."

Phillip, whose leg was broken when he was thrown across the river, managed to swim and crawl back. He has had much scouting training and put this to good use. In the darkness he dug a hole and covered himself with dirt for warmth and survived the night.

Just as Phillip and his mother got together in the daylight they were spotted by other vacationing campers and brought ashore.

Killed were her husband, Purley, 43, a truck driver and their children, Carole, 17, Tom, 11, and Susan, 6.

Their car and all belongings were washed from shore by a tidal wave created by the quake and landslide.

[Billings Gazette; August 20, 1959]

LAUREL RESIDENT TELLS OF QUAKE **Family Returns From Hebgen Area**

A 'horrible' experience but one common to many campers and vacationers along the shores of Hebgen Lake during Monday night's earthquake was recounted Wednesday by Mrs. Ray Eckery of Laurel, who with her husband and her mother, Mrs. Katie Wruck of New Leipzig, N.D., were at Lakeshore Cabins about seven miles from Hebgen Dam when the temblor struck.

The first severe shock, Mrs. Eckery said, knocked many of the cabins off their foundations, knocked down persons who had been standing, upset stoves and refrigerators and scattered dishes and supplies in the cabins.

Fissures in the earth opened from 3 to 4 feet in width and about 10 feet deep, she said, but no one at that location was injured.

The cabins were evacuated and occupants moved to higher ground, where the women and children remained in cars during the night. Men worked to save boats and some buildings which had floated out into the lake.

The lake itself was filled with debris, including tents and buildings, Mrs. Eckery said.

There was no panic, and everyone worked together to salvage belongings, she added.

On Tuesday, bulldozers succeeded in opening the highway to a point where it connected with Highway 191 in the Gallatin Valley, filling fissures sufficiently so that traffic could proceed. The Eckerys returned to Laurel Tuesday afternoon.

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WORK DELAYED

YELLOWSTONE NATIONAL PARK, Wyo. (AP)—Efforts to clear mountainous road slides in Yellowstone National Park were delayed Wednesday after a road crew narrowly escaped being trapped by another slide.

Park rangers said no further efforts will be made to bulldoze the slides caused by a series of earthquakes Monday night and Tuesday until the threat of further tremors subsides.

Work was started Wednesday to clear a giant slide near the park headquarters at Mammoth Hot Springs. The bulldozing and a slight tremor loosened a pile of rocks which cascaded onto the road, scattering workmen.

Geysers Okay

Park service officials said there had been no change in the geyser activity in the world famous park. Old Faithful is still spouting regularly every 63 minutes and no changes have been reported in other geyser activity.

Giantess Geyser, which erupts every six months, spouted shortly after the earthquake, but park rangers

said the geyser had been several days past due. They said the earthquake may or may not have been responsible for the geyser's activity Tuesday.

Remains in Tent

Park Supt. Lemuel A. Garrison still had his office in a tent on the Mammoth Hot Springs lawn Wednesday, but park rangers said it may be moved back to the main administration building later in the day. The administration building had been evacuated Tuesday.

Roads are still closed in the entire western half of the park and the West Yellowstone gate is closed. Park rangers said tourist traffic is moving normally in the eastern part of the park.

Park rangers said only a few minor tremors were felt in the park Wednesday and that no further damage had been reported.

Two houses, occupied by rangers at Mammoth, had chimneys knocked down by the earthquakes. One chimney fell into the inside of the house, but no one was injured.

[Billings Gazette; August 20, 1959]

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BILLINGS GAZETTE

MAJOR EARTH TREMORS BRING DISASTER TO MONTANA

The second disastrous earthquake in the recent history of Montana shook most of the southwest and south-central sections of Montana just before midnight Monday with minor tremors continuing at intervals during the following thirty-six hours. So far as has been determined by scientists with their seismographs, the epicenter of the quake, which sent waves of diminishing intensity out into five or six Northwestern states, was along a stretch of the Madison river, south of the town of Ennis and near the location of the Hebgen dam, built more than forty years ago by the Montana Power Company.

The force of the quake brought down an entire mountainside into the Madison River canyon and swept everything before it in an area which has long been known as a favorite recreation region for vacation campers and fishermen. More than two hundred people were camped in the area when the quake hit and sent millions of tons of rock and debris hurtling down upon some of the campers. Twenty people are known to have lost their lives and it is feared that the death toll will be greatly increased when investigations now in progress are completed. Some two hundred of the survivors, a number of them critically injured, were caught in the area between the rock slide and the dam.

Planes and helicopters were rushed to the scene of the disaster and had succeeded in rescuing all of the trapped campers, a number of them critically injured, by late Tuesday evening. The injured were rushed by plane and cars to Bozeman hospitals but two failed to survive the shock and their injuries. Others remain in a critical condition.

The little tourist town of West Yellowstone was the most seriously damaged of the several settlements in and around the northwest corner of Yellowstone Park although a portion of Old Faithful Inn, one of the oldest hotels in the park, also collapsed and made that famous inn uninhabitable.

It was obvious that the Hebgen dam was cracked and fears were felt that it might give way and send a huge volume of water, some three hundred thousand acre feet comprising the lake created by the structure, rushing down through Madison valley to its junction with the Missouri at Three Forks. Ennis, the first

community of considerable size in the valley, was ordered evacuated. Many of the inhabitants of Ennis hurriedly left for high ground and all who remained were prepared for a hasty evacuation on a moment's notice.

A warning was also sent to individual residents down the valley and also the towns of Three Forks and Townsend, the latter on the Missouri which was expected to overflow if the great body of water from Hebgen Lake poured into it. The impounded water above the Canyon Ferry and Hauser dams were lowered to help take care of the overflow from up above in case Hebgen should fail to hold.

While the loss of life and injuries to others are, of course, the most tragic results of the disaster, there will also be enormous property damage. If the dam holds, it will have to be repaired at heavy cost. Buildings in West Yellowstone will need to be repaired and new highway mileage of considerable length will have to be constructed to take the place of that section now covered to a depth of several hundred feet by the collapse of a side of the high mountain. Two entrances to the Park will probably be closed for much of the remaining weeks of the season.

While occasional tremors have been felt in Montana, the state's first major quake hit Helena in October, 1935 and the property damage was figured at four million dollars. Fortunately, only one life was lost although many people were injured, most of them but slightly.

A similar disaster, probably caused by an earthquake, wiped out the coal mining town of Frank, Alberta, Canada on April 29, 1903, when an estimated ninety million tons of rock crashed down and simply buried the town killing between 60 and 70 people, most of them miners, employed by owner of the property, H. L. Franks, Butte, Montana capitalist.

While Montana has been the scene of other natural disasters from different causes since it became a settled region, that which spread death, terror and great material damage up toward the headwaters of the Madison River ranks as one of the worst of its kind in the history of our state.

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YELLOWSTONE PARK WORKERS BACK ON JOB; TOURIST INFLUX HOLDS UP Menu Is Featuring 'Quake Special'

YELLOWSTONE PARK, Wyo.—Park employees were back on a business-as-usual basis Thursday, even though minor tremors still shook this quake-torn area as late as Thursday morning.

Don Anderson, a Gazette reporter who covered the area through the help of park officials, reported a menu at a Canyon Village restaurant typified the general reaction toward the tragedy. On the noon meal was a "Quake Special," featuring tossed salad and hamburger steak.

According to Anderson, the influx of tourists into Yellowstone was holding up well with more than 16,000 entries reported both Tuesday and Wednesday. This was a slight drop from the seasonal record of previous years but considered very good attendance. However, a receptionist at Canyon Village told Anderson that area was beginning to feel the lack of traffic.

Stranded Straggle Back

Pointing up the return to normal at the park was the straggling back of numerous park employees stranded in various parts of the park, coupled with the go-ahead of the Montana Press Association meeting Friday and Saturday on schedule.

Park Supt. Lemuel Garrison told Anderson no road clearing or repairs were planned until the shocks ceased. This was expected to be in about two weeks. A small crew was sent in to clear near Golden Gate Monday night, but a second slide cascaded down, endangering the men. Garrison said the halt in road clearance and repairs was made to protect crews from further possible danger.

Seismologists Flown In

Park officials were clamping a tight ban on travel in the danger areas. Four men were fined from \$10 to \$25 each Thursday for driving past roadblocks into the threatened areas.

Two seismologists from San Francisco were flown into the park area Thursday with a portable seismograph to study the quake situation. Anderson said a big rock fall was located in Fire Hole River canyon, between Old Faithful and Madison Junction. Engineers were worried about cribbing near Gibbons Falls on Norris Junction Road, between Canyon and Norris.

Visitors Continue Tours

Portable radios were brought into play to keep in constant touch with all parts of the park. Superintendent Garrison insisted that other facilities in the park unaffected by the quake were coming in for normal use by tourists, and Anderson reported this was true as far as he could see, with the usual large number of visitors gathered around the geysers and the perennial park favorites, bears.

Garrison had set up an administration tent on the lawn of the park office, moving out of the administration building after examination revealed some cracking in the old stone building and some danger of falling chimneys.

The severity of the quake was emphasized by George Ash, the oldest white man born in the park and a survivor of the San Francisco disaster of the early 1900's. Ash described this week's catastrophic shake-up as worse than the one that levelled blocks of the San Francisco business district.

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LIST OF QUAKE EVACUEES GIVEN **Some Addresses Said Unavailable**

BOZEMAN (AP)—Here is a partial list of evacuees who left the southwest Montana earthquake zone by way of Dug Creek, Wyo., and Bozeman, Mont., obtained through the Red Cross, Montana Highway Patrol and the U.S. Forest Service:

(Addresses unavailable where not listed)
 Caraway, West and wife, from Hebgen Dam.
 McFarland, Gerald; wife and daughter, Salem,

Ore.

Yaklish, A. J., Woodenville, Wash.
 Thompson, Mike, Udall, Kan.
 Maxwell, V., Jr.
 Thompson, June; man, woman, daughter, and aunt.
 Martin, A. F.
 Davis, Mrs. Ben.
 Drake, Miss Goldie.
 Davis, B. W.
 Tarlton, Miss.

Sanders, Leland L., wife, daughter, Ina Jean, Roy,

Utah.

Thomas, Mrs. David, three children, Nye, Mont.
 Rogers, Mrs. Charles, three children, Roundup,

Mont.

Wood, Mrs. Ethel, son Harry, Salt Lake City,

Utah.

Curtis, L. H. and wife, Pasadena, Calif.
 Balack, Clarence M., wife, one small girl, mother-in-law, Middleton, Mrs. Erma, Tucson, Ariz.
 Blaydon, Richard, wife, North Hollywood, Calif.
 Tovias, Louis; wife Kay, daughter Karen, Akron,

Ohio.

Lorenze, Mrs. Fred, Akron, Ohio.
 Genderson, Gilbert, Bellevue, Wash.
 Willie, James B., Tacoma, Wash.
 Badoviwx, John; wife, two children, Seattle,

Wash.

Burley, Robert; wife.
 Goodnough, Jack; wife, three children, Albion,

Wash.

Wils, Wilfor; wife, four children, Brigham City,

Utah.

Davis, John B.; Carolyn, Pocatello, Idaho.
 Wizel, Fred; wife, four children, Aberdeen, Wash.
 Hudson, Charotta, Twin Falls, Idaho.
 Rost, Eleanor.

Greenaway.

Kraeter, Eugene G.; wife, Jean, Concord, Mass.

Bernard, Hayward; wife, three sons, Escondido, Calif.

Melchon.

Cooper, William E.

Webb, Glenn.

Engle, F. N., wife, Garden Grove, Calif.

Robert W. Dean, wife, two children, Nancy,

Cynthia, Salt Lake City, Utah.

Daea, John Sr., Great Falls, Mont.

Stranger, J. F. and Leo.

Triempower, E.

Buser, Jack; wife, Harrisburg, Penn.

Bateman, Rex; wife, Utah.

Hobeson, C. W.; wife, two boys, Estan and Gary.

Three Painter children, Ogden, Utah.

Own, O. B., Culver City, Calif.

Searcy, J. Spencer; wife, Don, Ralph, Lina, Salt Lake City, Utah.

Potter, Robert; wife, son Barry, 122 Custer Ave., Billings, Mont.

Bacon, Rodney E.; wife Alice, Santa Ana, Calif.

Bowns, Mr. and Mrs. Terry Eugene, and Jo Ann, Salt Lake City.

Plaga, Jean; Pat, Salt Lake City.

Staley, Dr. Elden D.; Barbara V., Richard E., Leland V., Jeanne, Claudia, Rock Springs, Wyo.

Weston, H. G. and Mrs. Weston, San Jose; two nephews, Stephen and Billy Conley.

Olson, Mr. and Mrs. Bernie, Kent, Wash., four children, John, Fred, Gloria and Joanne.

Vernon, Richard Lynn; Annebel, Coalville, Utah.

Blakley, Howard S.; Adline D., Cheryl L., Dale H., 810 Connie Ave., Rock Springs, Wyo.

Nomura, Dr. Frank Shimpie; Francis, Connie, Kan.

Maeda, Frank S.; Dorothy, Los Angeles.

White, Warren Bruce; wife, Frederick, Ruth Ann, Indianapolis, Ind.

Reppat, Leonard V.; wife, Topeka, Kan.

Davis, Charles; wife, Terry, Lake George, Colo.

Maxwell, Vern; wife, Steve, Kim, State Center,

Iowa.

Barton, Mrs. Tom, State Center, Iowa.

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Burbank, August L.; wife, Susan, Richard,
Eugene, Louisa, Penelope, Melani, Brigham City, Utah.
Lavett, Tehdore Avery; wife, Salt Lake City.
Greene, Ray; wife, Steve, 2312 10th North,
Billings, Mont.

Kennedy, Larry, Dayton, Ohio.

Morse, Mrs., Salt Lake City, Utah.

Jensen, Mr., Salt Lake City, Utah.

Donny, Mr. and wife, Vandalia, Ohio.

Campbell, Clark O.; wife, Ross O., Cathy Jean,
Box 274, Lovell, Wyo.

Donaldson, Donald; wife, Canfield, Ohio.

Kreuger, Harold; wife, Polly, Bruce, Larry, Mary,
Montello, Wis.

McDonald, John; wife, St. Anthony, Idaho.

Holtsman, I. K.; wife, Carrollton, Ohio.

Walker, Norman; wife, Rickey, Christinie,
Pleasant Grove, Utah.

Kalmer, Lela, Lehi, Utah.

Rogerson, Charles, Roundup, Mont.

Thomas, David and Mrs., Nye, Mont., 3 children,
David Jr., Carol and Ann.

Mr. and Mrs. Chas. T. Rogers, Roundup, Mont.,
Charles, Sandra, Patty.

Grub, Calvin; wife, two children, Gen. Del., Butte,
Mont.

Meyers, Henry; wife, Zella, children, 306 9th St.
West, Billings, Mont.

Hoggan, Donald S.; wife, Salt Lake City, Utah.

Hamada, Minoru; wife, 2 children, Roy, Utah, also
2 other children, Dick Maeda, Los Angeles.

Danny Nomura, Roy, Utah.

Yemoto, Kiyoshi; wife, son, Fresno, Calif.

Sogihara, George; son.

Miller, Edward Raymond; wife, 2 children,
Denver, Colo.

Owen, Lawrence Terril; wife, Dorothy, son John,
Riverside, Calif.

Keith, Kenneth; wife, Harrisburg, Ill.

Vander Pluym, John; wife, 2 children, Decatur, Ill.

Donegan, Clifton and Gene, children, Vandalia,
Ohio.

Good, Frederick Arnold Jr; wife Doris, 4 sons,
Frederick, Robert, Alex, Jeff., La Canada, Calif.

Lenz, Clyde C., Ashton, Idaho.

Sexton, Bill, son Bobby, 231 E. Granite, Butte,
Mont.

Hungerford, George; wife, from Hebgen Dam and
West Yellowstone.

Sewain, C. H.; wife, Long Beach, Calif.

Hayward, Charles Jr., Ted, whole family all right.

Quisnell, Reed A.; wife, 3 children, Arcadia, Calif.

Keuning, A.; son, La Puenete, Calif.

Christensen, Roy, Rexburg, Idaho.

Guanne, Dennis E.; wife, 2 boys, Hunter, Utah.

People gone through the Ennis, Mont., Hospital:

Bennett, Mrs. P. R. and son, Phillip, 16, Coeur
d'Alene, Idaho.

Lost, Mrs. Ruth, New York City.

Lost, Geraldine, New York City.

Lost, Shirley, New York City.

Frederick, Paul, Elyria, Ohio.

Delhart, Carol, Colville, Wash.

Lost, Joan, New York City.

Delhart, Danny, Colville, Wash.

Lost, Larry, New York City.

Mooge, Elsie, Spokane, Wash.

Smith, Ann, Greeley, Colo.

Smith, Jo Ann, Greeley, Colo.

Whittmore, George, Elyria, Ohio.

(End partial evacuee list)

Eugene B. and Mary Bair, care R. H. Hackson,
route 2, Stone Mt., Ga.

Dave or Dale Covey, Billings.

Dean Dale, Billings.

Blue Evans (Forest Service reported him missing).

Edward T. and Elaine Egloff and children, Bruce,
Rick, Mike and Steve, Denver.

Melvin and Laura Frederick and children, Melva
and Paul J., Elyria, Ohio.

Thomas Goodman, Big Timber, Mont.

Johnnie Harr, Dillon, Mont.

Ray and Wilma Harrison and Bobbie, Linda and
Ray, no address.

Murlin Hartkoph and family, no address.

Laurel Haun, Billings.

Jerry Lavoie, Dillon.

Mrs. Elsie Moore, Spokane, Wash.

Rev. Elmer Ost and wife, Ruth (in Sheridan,
Mont., hospital) and children, Joan, Geraldine, Shirley
and Larry, New York City.

Palmer Podd, Butte.

Martha Schranz, Butte.

Dick Slentz, Spokane.

Lewis and Ann Smith and daughters, Joan and
Carol, 1714 22nd Ave., Greeley, Colo.

Three children of Mr. and Mrs. E. H. Stryker, San
Mateo, Calif.

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Gerald and Clara Taylor, no address.
Tom Travers, Denver.
Jack and Roseva Voucher and daughter, Joan Ann,

BILLINGS GAZETTE

Oakview, Calif.
[Billings Gazette; August 21, 1959]

CENTER REPORTS ON LOCAL FAMILIES

A number of Billings residents were reported safe Thursday night after being in, or reported in, the Madison Canyon earthquake area.

Those reported safe included Mr. and Mrs. C. J. McGinnis and children, Allan and Seamas, 822 N. 29th St.; Mr. and Mrs. Jack McCord, 1013 Foster Lane; Mr. and Mrs. George Horning and son, Robert, and nephew, Phillip Deitz, 105 Brickyard Lane, and Mr. and Mrs. Carl Davis and children, 138 Birchwood Drive, who were in Helena at the time of the quake.

Most were located through the American Red Cross special emergency communications system which was still busy in Billings relaying inquiries about people to Bozeman where special teams are processing the names of evacuees.

The center reported that 150 more evacuees were brought into Bozeman Wednesday night. Fred Penwell, county ARC chapter chairman, went to the

disaster scene Thursday to seek possible information on Billings residents whose whereabouts were still unknown to the center Thursday afternoon.

They are Mr. and Mrs. Bernie Boynton, 2532 Longfellow Pl.

Other city residents, injured in the quake, have been transferred to hospitals here. Mrs. Warren Steele, 615 S. 36th St., was admitted to St. Vincent Hospital Thursday night with a fractured spine, fractured left ankle, contusions and abrasions. Her condition was said to be fair.

Mrs. Steele was transferred here from a Bozeman hospital.

Her husband Warren Steele, Anthony Schreiber, 432 Broadwater Ave., and Bonnie Schreiber, were examined at St. Vincent but were not admitted.

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SA UNIT SERVES EARTHQUAKE AREA

More than 300 hot meals in the first 24 hours following the earthquake were served by the Billings Salvation Army unit near West Yellowstone following the disaster Monday night, according to Billings citadel officers.

Maj. Ernest Orchard, Billings corps commander, is directing workers from Montana, Wyoming and Idaho throughout the disaster area.

Six trucks, three canteen station wagons and an emergency shortwave radio mobile truck are being operated by the army in the stricken area.

Lt. Nels Nelson, Billings assistant corps officer, said the teams were expected to return to home cities late Thursday but will remain on call.

[Billings Gazette; August 21, 1959]

EARTHQUAKE VICTIM IN GOOD CONDITION

Miss Verona Holmes, 45, of 515 Broadwater Ave., daughter of a Billings woman who died of injuries suffered in Monday night's earthquake, was in good condition in St. Vincent Hospital with a fractured left leg sustained in the disaster, according to her physician.

Her mother, Mrs. Margaret Holmes, of the same

address, died Tuesday in a Bozeman hospital. Another daughter, Mrs. Anton J. Schreiber, her husband and daughter, Bonnie, 7, of 432 Broadwater Ave., are hospitalized in Bozeman. The group was camping in the Hebgen Lake area.

[Billings Gazette; August 21, 1959]

QUAKE BLAMED FOR NEW CREVICES IN COURTHOUSE **Which Is Which?**

The inner walls of the Yellowstone County courthouse have sprung some new cracks.

But county officials aren't sure how many they can attribute to the earthquake shocks felt in Billings this week.

Paul King, building custodian, pointed out about half a dozen of the more noticeable cracks to Commissioner A. A. Healow Thursday during an inspection of the eight-story structure.

King said damage appears to have been centered in the fifth and sixth floors, where numerous chinks—some up to eight feet long—have appeared in plastered walls and stairwells and above door facings and marble wainscoting.

Loosened squares of acoustical tile in the ceiling of the sixth-floor criminal courtroom testify to the swaying

motion noted by janitors working in the courthouse late Monday night.

King said not all the cracks could be blamed on the earthquake, however. Many, he said, doubtless were caused by what he termed "normal settling" of the building, occupied 15 months ago.

Healow reported after the inspection that he found no serious damage. All of the cracks, he said, probably can be repaired by the building superintendent without much additional expense to the county.

The commissioner pointed out that insurance on the building does not cover earthquakes. He said he knows of only one insurance firm in all the world that writes earthquake insurance but added, "I don't know anybody around here that has such a policy."

[Billings Gazette; August 21, 1959]

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Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
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BILLINGS GAZETTE

GOVERNOR IS PROMISED AID FOR QUAKE-TORN TERRITORY

Congressional Group Makes Air Survey Of Disaster Area

WEST YELLOWSTONE (UPI)—Gov. J. Hugo Aronson was promised federal aid for Montana's earthquake-rubbed areas from a congressional delegation that flew over the scene Saturday in a helicopter.

Governor Aronson pleaded for the aid in a meeting at which more than 100 persons representing agencies and organizations engaged in survey and relief work attended.

"We're hard-up here," Aronson said, "we need help right away." He asked the congressmen to do what they could.

He was assured by Sen. Frank Moss (D-Utah), representing the Senate Public Works and Interior committees, that "we will see that aid is coming and as rapidly as possible."

Following a helicopter flight over the scene, Moss and six representatives had a two-hour-long briefing in a West Yellowstone hotel where the tremors had shattered the plaster.

Montana Civil Defense Chief Hugh K. Potter appealed to the congressional delegation to "pass a law that will give one man authority in the case of a disaster." He didn't elaborate further.

HOVER OVER SLIDE

WEST YELLOWSTONE (UPI)—Seven helicopter-borne Congressmen hovered within 50 feet of the earthquake slide area in Madison canyon Saturday and declared afterwards they were amazed by the great force of the quake.

"It can only be compared with the power of the H-bomb," Rep. Leroy Anderson (D-Mont.) said. "The magnitude of the forces of nature involved" amazed him. He said he did not believe Montana ever experienced any disaster before which presented such "damage to be rectified."

Earlier the Congressmen flew over a wider area of quake damage in a party of 21 officials in two C-47 planes.

Will Study Aid Plans

"The thing that hits you most deeply when you fly over is the sorrow and compassion for those caught in the slides," Anderson said. He said he and the other Congressmen would fly back to Washington Sunday to

study means of aiding the quake victims. He refused to speculate on what forms such aid might take.

Saturday the Congressmen and other federal officers met here to discuss the disaster and map recovery plans.

Other Solons Comment

Congresswoman Gracie Pfof (D-Idaho) was a member of the group. She said the picture from the air "reminded me of the cracks you see when pulling a cake of gingerbread from the oven after it is there too long."

Sen. Frank E. Moss (D-Utah) described the slide as "a great, huge thing." He said it appeared from the air that there was no possibility of moving it by blasting.

"Almost Unbelievable"

Rep. Tom Morris (D-N.M.) said it was a "wonder more people weren't killed." Congressman Harold Johnson (D-Calif.) said it was "almost unbelievable," and another Californian, Republican John Baldwin, said the thing that amazed him was that the "trees on top of the slide ended up like matchwood."

Meanwhile the Army Corps of Engineers set up a headquarters here. They will undertake an official study of the quake damage. Maj. Gen. Keith R. Barney said the Corps will survey the Madison River slide area under the general flood emergency authority of the Corp. A team of 14 engineers has been assigned here.

MORE TREMORS FELT

WEST YELLOWSTONE, MONT. (AP)—A congressional delegation came to this still-trembling section of southwest Montana Saturday to study firsthand the damage caused by Monday night's earthquake, which left nine known dead and toppled a mountain top into a river canyon.

The congressmen were accompanied by a dozen federal officials.

Land at Bozeman

They landed at the Bozeman, Mont., airport at 1:18 p.m. after a flight from Washington and transferred to automobiles for the 80-mile trip to West Yellowstone. There two big helicopters waited to fly them over the damage stricken area.

Only a few hours before the congressional party

HEBGEN LAKE, MT 1959 SERIES pg. 26

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arrived more tremors shook the West Yellowstone area, but Montana Gov. J. Hugo Aronson said they were light and caused no damage. Gov. Aronson met the congressmen as they arrived at the Bozeman airport.

Start Slide Survey

The Army Engineers announced start of a survey to determine what should be done with the mountain top which has dammed up the Madison River and possibly has buried some persons who were camping at Rock Creek campground. Search of the scene ended Friday because—as Montana Civil Defense Director Hugh Potter said—"There is nothing more to find."

Maj. Gen. Keith Barney of the Omaha division said a team from the Army Corps of Engineers from Riverdale, N.D., is making the survey. Heading the team is Lt. Col. Walter Hogrefe.

Sees Flood Danger

Questions to be determined include: What is the composition of the natural dam, estimated as varying from 150 to 300 feet in height? When will the water it is backing up reach the top? What is the best way to eliminate danger of further flood damage to the

Madison Valley downstream?

Gen. Barney said a personal inspection of the area indicates a potential flood danger to an extent that "we felt immediate and prompt action must be taken."

One suggestion has been that man perfect the dam, sealing it up.

Two Montana Solons

The congressional party was made up of Sen. Frank Moss (D-Utah), Rep. John Baldwin (R-Calif.), Rep. Harold Johnson (D-Calif.), Rep. Lee Metcalf (D-Mont.), Rep. Leroy Anderson (D-Mont.), Rep. Tom Morris (D-New Mexico) and Rep. Gracie Pfof (D-Idaho).

Headquarters for the congressional party until it leaves Sunday will be West Yellowstone—at the fringe of Yellowstone National Park but isolated from it by rockslides which have blocked roads. Numerous aftershocks have been felt in the area.

Meanwhile, the Red Cross at Bozeman continued its efforts to answer inquiries from throughout the nation about persons who may have been in the area.

[Billings Gazette; August 23, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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SLIDE VICTIMS HAVE INFECTION

Special Serum Sent From Billings

BOZEMAN (UPI)—One, and possibly two, of the persons injured in Monday's earthquakes in Montana has contracted infection resembling gas gangrene, United Press International learned Sunday night.

Special serum for treatment of the infection was rushed from Billings to Bozeman to be administered to a man and his wife.

The attending physician confirmed that the man's wounds had developed "an organism like gas gangrene," similar to gangrenous infections contracted by men suffering battlefield wounds.

"We think his wife probably suffered a mild case," the doctor said.

The physician said these apparently were the only surviving victims of a tragic quake-caused landslide in the upper Madison canyon who suffered the gangrenous type infection. However, he said, two women who died in the Bozeman hospital "could have had it in addition to their other injuries."

The attending physician at Ennis, where two more

slide victims are still hospitalized, said neither had developed such an infection.

The infection in the man at Bozeman appears to have been halted before it could spread, the Bozeman doctor said.

"He looks better every day," he added. The physician said the infection could have been fatal if it had been permitted to spread.

Dr. Louis Smith, head of the Montana State College Bacteriology Department, said he has made cultures of the infection in an attempt to pin down the type organism which developed in the wounds. He said it would be two to seven days before the cultures are completed.

Other sources told UPI gangrenous-type infections are not unusual in wounds such as those suffered by persons injured in the slide, where dirt and mud were ground into the torn tissue.

[Billings Gazette; August 24, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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W & L GEOLOGIST EXPLAINS QUAKE THAT ROCKED SOUTHWEST MONTANA

Editors Note: Dr. Edgar W. Spencer is chairman of the Geology Department of Washington and Lee University, Lexington, Va. For two years he has been studying earthquake patterns in Montana's Madison Mountains as part of a project sponsored by Washington and Lee and the National Science Foundation. Since a sudden quake rocked the area last week he has again inspected the scene both from the air and on the ground. Here is his explanation of what happened and why.

By Dr. Edgar W. Spencer

As told to The Associated Press

WEST YELLOWSTONE (AP)—The earthquake disaster at Hebgen Lake is a grim reminder of the tremendous energy which is stored in the earth and released through a great number of natural processes.

It also points out dramatically that the planet on which we live is a dynamic body subject to sudden and violent change.

There apparently was no warning before sudden and violent displacement opened up gaping fissures near Hebgen Lake the night of Aug. 17. But it is remembered now that waterfowl and other birds left the area the afternoon before the first shocks. They returned several days later.

Changes Normal

Changes in the earth are normally so slow that man very rarely has an opportunity to observe a movement in the crust of the earth of the nature and magnitude of the earthquake at Hebgen Lake. Only a few earthquakes of this magnitude have been recorded within the continental limits of the United States and all have brought tragedy in their wake.

Earthquakes are not rare. Thousands of slight earth movements are recorded by seismographs each year, but earthquakes in the magnitude range of 7 to 10 are extremely rare.

This earthquake has been recorded as one of magnitude of 7.2 to 7.8 on a scale on which 10 would mean total destruction in the immediate area of the quake.

Earthquakes are known to be caused by two natural processes, volcanic eruptions and faulting. The Montana earthquake of last week was caused by a faulting movement in the earth's crust. A fault is a

break through the solid rock beneath the soil along which movement and resulting displacement of the two sides occurs.

Three faults moved at Hebgen Lake on the night of Aug. 17, just before midnight. Each one runs approximately parallel to the lake, displacing the earth along it as much as 15 feet vertically.

Many Fractures

One fault may be traced near a ranchhouse. At 11:45 p.m. Monday evening a flat smooth surface road ran behind the ranchhouse. Several minutes later the road on the north side of the fault stood nearly 20 feet above that on the other side.

In a zone several hundred feet wide the earth was cracked as though pulled apart, with many small vertical fractures and cracks extending parallel to the main fault scar.

When a faulting movement such as this occurs, the rock along the fault is dragged and ruptured and vibrations are set up in the rocks which travel out from the rupture. This is accompanied by a rumbling noise, like that of a train passing nearby. Several types of vibrations or shock waves are produced. Some are transmitted through the earth very rapidly. Some are like sound waves traveling through rock. Others are carried by slight shearing or twisting of the earth's interior along their paths.

These waves cause slight movements of the earth's surface as they hit and may be recorded by an extremely sensitive seismograph.

A man whose house was cut by one of the faults described the motion as that of being in a boat on a heavy, choppy sea. In West Yellowstone people were thrown out of bed and many were unable to walk on the ground because of the ground swells.

Intense Near Faults

The waves were most intense near the faults where the motions were generated. There the waves were high relative to their length and they came rapidly. Heavy shocks continued for several hours, but have been slowly diminishing since that time.

Relatively little property damage and no loss of life was caused directly by the displacement along the faults. It was the ground motion set up by the surface waves which brought about the disaster.

The Madison River Canyon west of Hebgen Lake

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is a deeply incised and narrow canyon. The walls of the canyon rise nearly 3,000 feet above the river and are less than two miles across at the top of the canyon. The slopes on the walls of the canyon are in places between 30 and 35 degrees, the maximum slope on which loose rock will repose without slipping.

When the surface waves brought about vibrations much of this loose material began to slip and slide down the slopes. Several people were killed in the slides and rock falls resulting from this cause, but the reason for the largest slide and the formation of the natural dam is different.

An estimated 5 million cubic yards of rock and debris moved about a half a mile in less than a minute. It broke and fell from one mountain side, leaving a huge scar and forming a natural dam estimated to be 150 to 200 feet above the valley floor at its lowest point.

Old Scars Visible

This deluge of boulders, soil and trees fell because the solid crystalline rocks on the south side of the canyon were unstable. The rocks there are stratified (formed in layers). These layers are fractured and steeply sloping toward the river.

Aerial photos of the area taken before this quake show the outlines of old slide scars which must have moved thousands of years ago. When the earthquake occurred, the ground motion caused by the surface waves set the strata in vibration and soon dislodged enough rock to trigger a huge mass movement of the slope.

It roared down into the canyon, sloshed up the other side and flowed as a glacier of rock up and down the valley. At present, the Army Engineers and other government agencies are surveying the resulting natural dam to decide whether to destroy it, allowing the river to resume its normal path, or to make a permanent dam of it.

One of the most frequently asked questions is why

did faults form along Hebgen Lake? The answer to this is not simple.

The movements at Hebgen Lake occurred along faults which formed many millions of years ago when the mountain system which we know as the Rocky Mountains came into existence. At that time a chain of mountains extending from Alaska to the Antarctic rose out of a sea which occupied this region. In the Montana and Wyoming area the Rocky Mountains take the form of large block-like mountain ranges separated by broad basins.

All of these mountain ranges are bounded by steep faults on two or more sides. It was along these faults (or zones of weakness in the earth's crust) that the blocks initially rose, some as much as 20,000 feet. Although the Rockies are about 70 million years old, they are young mountains compared with ranges like the Blue Ridge and adjustments within the crust under them have not ceased.

Preliminary surveys of these faults indicates that the crust was stretched near the surface.

The resulting movement and tension at the surface caused the northeast side of Hebgen Lake to be slightly depressed as that side dropped down along a fault. Cabins and parts of the highway were submerged as a result, and others were dropped into the lake by a slumping of the loose rock and soil along the edge of the lake. Somewhat similar movements occurred along the faults farther up the mountainside.

The net movement would have produced a step-like pattern if it had occurred on a flat surface.

While this is one of the most intense earthquakes to hit Montana, it is one of many thousands that have been recorded in this area previously, most of which were too slight to be felt. Although no one can predict when or where the next will occur, it is certain that this is not the last.

[Billings Gazette; August 26, 1959]

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HUNT FOR COUPLE IS OF NO AVAIL

Search Party Back From Quake Area

Relatives of Mr. and Mrs. Bernie Boynton held the belief Wednesday the Billings couple are buried under a slide that swept Madison River Canyon on August 17.

A search party returned Wednesday after a fruitless hunt for clues in the quake-shaken area.

The party, made up of Mike Denda, New York, Mrs. Boynton's brother, Marilyn Moes, Mrs. Boynton's daughter, Mort Boynton Jr., Mr. Boynton's son, Harry Wardell and Frank Pierce, close family friends, left Billings Monday and returned early Wednesday morning.

The search started at Bozeman where the group interviewed several slide survivors in a Bozeman hospital. A Mr. Armstrong recalled seeing Mr. Boynton in the fatal slide area. Mr. and Mrs. Clarence Scott, when furnished with a description of the Boynton's car and trailer, were almost positive the Billings couple was parked in the Rock Creek campground in an area known as "The Point" about 4 p.m., either Sunday or Monday.

Find Gas Ticket

Verification that the Boyntons were in the area was obtained from a service station, where records indicated they bought gasoline at 3 p.m. Sunday, and were headed for the park.

The search moved then to Virginia City where the group examined clothing and articles gathered from the slide area, but found no clues. All of the clothing had

been identified by the Red Cross at Bozeman.

With close cooperation from officers and the Red Cross, the party drove to Ennis, where a ranger suggested calling west entrance to Yellowstone National Park to see if the Boynton's car had passed through. Making the call, however, the group found that no records of cars or trailers moving into camping areas were kept at the West Yellowstone ranger station.

The next move was an interview of still another survivor, Mrs. P. Bennett, in an Ennis hospital who could throw no light on the search.

At the slide area in Madison River canyon, the party found another group of articles and clothing gathered from around a zoo just south of the slide. A close examination of the articles produced no clues.

The search ended at the slide, where a construction foreman sent one man below the slide to check the license number of a blue car stranded below the area. The license number did not check with the Boynton's number.

Both Pierce and Denda said the general slide area was still trembling Tuesday, with small slides occurring almost constantly.

Back in Billings the only clue left to the group is a rumor picked up that the Boyntons had invited acquaintances for coffee Tuesday morning, Aug. 18. The slide prevented that invitation being carried out. **[Billings Gazette; August 27, 1959]**

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EXPERTS HOPEFUL MADISON RIVER IS NOT DOOMED AS TROUT STREAM Temperatures And Silt Flow Major Worries Of Biologists

By Al Funderburke

Although the Madison River was hard hit by the August 17th quake, fish experts are hopeful the famed trout stream is not doomed.

With fingers crossed on one hand, and a rabbit's foot in the other, fish biologists are predicting the majority of game fish below Hebgen Lake and the slide may survive, but add a couple of "ifs."

The first "if" centers around temperatures during the remainder of the summer. With water flow reduced to one-tenth its normal volume, the flow is spread over the broad river bottom to a depth of only a few inches. Fish are able to survive in the reduced flow, provided water temperature does not bounce into the dangerous high 70s.

The second worry concerns silt flow. If, and when, waters of the newly formed Quake Lake reach the top of the slide dam, the overflow is expected to carry silt and debris over the top into the stream.

A crew of experts from three agencies, U.S. Fish and Wildlife Service in Billings, fishery department of Montana State College in Bozeman, and state fish and game department from Bozeman, surveyed the river closely during the past weekend.

Joe Halterman, fisheries biologist from the Bureau of Sports Fisheries, U.S. Fish and Wildlife Service, Billings, moved into the quake area Friday, checking conditions from Hebgen Lake downstream past the slide, and river below.

Part of Bed Dry

Halterman found a powder dry stream bed immediately below the quake-created dam, but seepage and small tributaries were producing a reasonable flow 500 feet downstream. The flows picks up considerably, amounting to 100 second feet two miles below the slide. Although far below the normal 1,000 to 1,500 second foot flow, the stream has enough water to support fish, Halterman believes. When tested last week, the river temperature stood in the safe 60s. Shorter days and cooler nights lead Halterman and others to hope the trout will survive through the rest of the summer.

With Quake Lake rising steadily, the silt problem will present itself when water reaches the top of the dam and flows over into the river. Harry Goodwin,

supervisor of the Bureau of Sports Fisheries, U.S. Fish and Wildlife Service for the Missouri River Basin, points to the gradient, or fall, of approximately 30 feet to the mile from the mouth of Madison canyon to Ennis, with the ability to carry a fair sized load of silt, as a hopeful sign.

Few Fish Killed

Halterman's survey of the quake area turned up a far smaller number of fish killed than expected by the slide and resulting silting of water. He conjectured that many fish may have been tossed up on the slide, or washed far back out in the brush by shock waves, but were picked up by mink, otter, and scavengers before the survey was made.

A shock test was carried out by the state fish and game department at the time of Halterman's survey, but results will not be known until the findings are analyzed.

Two other problems, concerning fishermen more than fish, were created by the slide.

Was Blue Ribbon Area

Although fish have been spotted in Quake Lake, this area will not be considered good fishing for some time. Inundation of the eight miles of river between the slide and Hebgen Lake takes a good chunk out of the 98 miles of fishing in the Madison. The eight miles involved was in the "blue ribbon" section of the Madison, located on park land and offering easy access. Fish population in the eight mile strip before the quake was estimated as a pound of trout per foot of river, making the stream one of the top fishing areas in the country.

Another indirect problem is the possible location of a new highway. Since many miles of paved roads were sluffed off by the slide, any new highway must be constructed higher on the mountain flanks. This would put access roads far above the Madison, with river access possible only by climbing steep slopes.

But sizing up the entire situation, Goodwin, Halterman and others put it this way, "The Madison will be hurt badly, at least temporarily, but we are hoping there will be no great loss of the existing fish population. The Madison will survive."

[Billings Gazette; August 27, 1959]

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SCHOOL AT BUTTE DECLARED UNSAFE Earthquake Damage To Force Closing

BUTTE (AP)—Because of earthquake damage Butte's Franklin School in the Meaderville area has been pronounced unsafe for use this fall. It will not be reopened for the term.

School authorities estimated Thursday that repairs necessitated throughout parts of the school district will cost between \$75,000 and \$100,000.

A survey made through Catholic pastors here at the same time indicated that parochial schools seemed to have suffered little, if any, damage.

Curiously, the Franklin School is only 1½ blocks from the Holy Savior School, which had no damage.

School Supt. George Haney and Kevin Shannon,

chairman of the school board's building committee, said the decision to keep Franklin closed was reached after an inspection. This was made by Maurice Strickland of the State Board of Equalization's safety department and school board members.

Strickland reported the Aug. 17 quake weakened some of the classroom floors, cracked walls, and loosened the north and south walls at the top. The school's chimney fell.

The Franklin faculty and students will be assigned to other buildings, it was announced.

[Billings Gazette; August 28, 1959]

SURVIVOR TELLS OF QUAKE HORROR Lions Get Report From Delegate

"Sitting on the hillside, you could hear them scream and couldn't get down to get them out."

That is how Anton J. Schreiber of 432 Broadwater Ave. Thursday described the plight of the Madison Valley campers during the Aug. 17 earthquake to the Lions Club in the Chamber of Commerce.

Schreiber and his family and party fled to higher ground after the landslide and wall of water demolished his Rock Creek campsite.

Strikes Suddenly

He described the suddenness of the tragedy and the heroic efforts of participants to relieve the agony of the injured.

His mother-in-law, Mrs. Margaret Holmes, was flown out of the quake area by helicopter but later died of her injuries.

"I'm glad that I'm here and my family is here," he told the Lions, "but the ordeal is one that will be hard to forget."

[Billings Gazette; August 28, 1959]

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SERVICES HELD FOR QUAKE DEAD

Nearly 50 Attend Joint-Faith Rites

ENNIS (AP)—The souls of those persons presumed buried by an earthquake slide were committed into the hands of God Thursday afternoon from a sun-drenched, windy slope just outside the mouth of Madison Canyon.

Nearly 50 persons, including sheriff's officers, Forest Service employees, and Red Cross personnel, attended the 15-minute service, conducted by representatives of Protestant, Catholic and Hebrew faiths.

Six persons are missing and presumed buried by the side of an 8,000-foot mountain which toppled onto a canyon campground the night of Aug. 17. The Red Cross has no account for 40 other persons. Nine bodies have been recovered.

Held Mile From Slide

The committal rites were held about a mile from the mammoth mile-long and several hundred feet deep slide. Sheriff's officers vetoed a plan to hold services on the slide itself. The slide, however, was visible from the sagebrush-covered slope a mile away.

"These people had come to escape the maddening crowd and found their last resting place in the beauty they loved," said Rabbi Max Kert of Butte, referring to the pine-covered mountain valley. "From the womb of

women to the womb of earth is but a brief span in days but the effect of character that is the human soul is of eternity. The anonymity of those sleeping in the ground enhances the brotherhood of those who gathered to bid them fare well."

Services Are Short

Bishop Chandler Sterling of the Montana Episcopal Diocese recited psalms of the Old Testament.

"Unto God's gracious mercy and protection we commit you," he said. "Lord accept these prayers on behalf of the souls of Thy servants departed. Grant them an entrance into the land of life and joy in the fellowship of Thy saints."

The Roman Catholic committal services were conducted by the Rev. Lawrence Jensen of Laurin and Father Byrne of Ennis. Assisting the Anglican bishop was the Rev. Ralph Krohn of Townsend.

Each service took about five minutes.

Rabbi Kert said the ride from Butte to the canyon was the "longest, roughest ride I have ever taken." The minister referred to quake-caused cracks and dips in the road which produced a washboard effect, forcing a slow drive.

[Billings Gazette; August 28, 1959]

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QUAKE HITS HEBGEN

Death Toll Mounts In Face Of Major Montana Disaster

HELENA, Mont. (AP)—Earthquakes hit the Northwest from British Columbia to Wyoming Monday night and early today, leaving a mounting death toll over southwestern Montana. The shocks were so severe a big Montana dam was damaged and a mountainside toppled into a river.

Sixteen deaths were reported.

Six deaths were reported to Sheriff Lloyd Brook at Virginia City, by a helicopter pilot who flew over the scene. The Idaho State Police in a radio broadcast said there had been eight deaths. A radio station executive who got into the area said he learned that two people had been buried by a landslide in the Madison River canyon below the big slide area. He theorized more might be dead.

There was no way, Civil Defense headquarters here said, of determining whether there is duplication in the reports.

The report of the people covered by the slide came from Richard D. Smiley, president and general manager of radio station KXXL at Bozeman, Mont., who got into the stricken area as far as the big slide. He said he was told that three boys escaped the same slide.

The helicopter pilot told Sheriff Brooks he had counted the six bodies during a flight over the scene.

The quakes shook Yellowstone National Park, filled with summer tourists.

Dean Stone, managing editor of the Maryville-Alcoa (Tenn.) Times, was among the tourists routed by the quake. He said the hotel and Mammoth Hot Springs rumbled for several minutes and that at least one auto was trapped inside the park by a rockslide.

Dr. W. A. Melther, manning a hospital in Ashton, east Idaho town, said he treated half a dozen minor injury cases from West Yellowstone. Three or four of the people, he said, were pretty badly shaken up.

He said there is a general exodus from the western gateway of the park, 57 miles northeast of Ashton.

The assistant chief ranger at Yellowstone Park, Frank Sylvester, said most west side roads were closed by slides but tourist travel was carried on through other entrances. A water main broke in the eastern wing of Old Faithful Inn.

He reported there appeared to be no damage to

Old Faithful and other famed geysers and scenic features in the park.

He said the last heavy tremor in the park was in 1924 and that the geysers also escaped damage.

He reported roads closed by rockslides included south from Mammoth, Norris Junction to Madison Junction and from Old Faithful to Madison Junction.

Most of the residents of Ennis, Mont., about 50 miles downstream from Hebgen Dam, were evacuated in the predawn hours but about a hundred remained. The evacuation was ordered when it appeared the third of a million acre feet in Hebgen Lake might pour down on them. The evacuation was called off when the mountainside blocked the river so tightly it shut off all the stream's flow.

Many of those who left Ennis went to nearby Virginia City, famed in Western lore as the birthplace of the Vigilantes.

The first quake struck at 11:30 p.m. (MST).

All tourists staying in the town were awakened at 2 a.m. and were advised to get out. The same advice was given to tourists at Three Forks, several miles downstream.

Civil Defense Director Potter appealed for helicopters to aid in the rescue and asked the U.S. Forest Service to send in a smokejumper equipped with a radio to help organize the people. A smokejumper is a parachutist who jumps into forest fire areas to fight blazes.

The search and rescue coordinating center of the 4th Air Force at Hamilton Field, near San Francisco, said it is mustering helicopters to try to rescue the marooned persons. The 'copters are being rounded up from Hill Air Force Base, Utah; Malmstrom Air Force Base, Montana, and the Army at Ft. Lewis, Wash.

Varied reports came out of the condition of Hebgen Dam. The Montana Power Co., which owns it, said it was damaged at the top and that it "could go." At various times through early morning hours there were reports it had "gone out."

The fatalities were reported by a helicopter pilot, who said he counted the bodies as he circled the area.

Two of the dead were in the Cliff Lake area, killed when a quake sent a cliff hurtling down on them. Another was believed to be in the Wade Lake area.

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Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
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The Sheriff at Virginia City, Mont., did not know where the other bodies were seen. He had no identification of the victims.

The first four injured persons brought to the hospital here at 2 p.m. today were identified as Margaret Holmes, 72, of Billings; Ray N. Painter, 46, and his wife, 42, of Ogden, Utah, and Clarence D.

BOZEMAN DAILY CHRONICLE

Scott, 59, Fresno, Calif.

The Billings woman and Mr. and Mrs. Painter were listed as surgical patients.

The condition of the patients was not immediately available.

Four other injured persons were expected momentarily.

[Bozeman Daily Chronicle; August 18, 1959]

EARTHQUAKE DAMAGE IS NOT EXTENSIVE IN BOZEMAN AREA

Earthquake damage within the city of Bozeman was not extensive according to numerous reports received by noon today.

Many stores reported that merchandise and displays were toppled over and many glass-packaged items broken.

Tops of chimneys were toppled on many houses, particularly on South Willson and in the southern section of the city. There was one report of extensive soot damage within the home from the fireplace where bricks were shaken down from the top of the chimney.

Father Paul Mackin reported that some concrete fell from the tower of Holy Rosary Catholic church onto the roof making a small hole. He reported no damage within the structure as far as he could tell.

Martin Whalen, physical plant superintendent at MSC, reported there were no injuries and no extensive structural damage to buildings on the campus, although bricks were dislodged from chimneys, window ledges and other protruding sections on the outsides of the buildings.

"The most extensive damage was to Montana Hall, where a number of bricks were dislodged," Whalen said. "There was no damage to the heating plant."

Bernard Merkle, secretary of the local carpenter's union, reported that no damage has been discovered as yet on any of the buildings now under construction in this area. He also stated that in his tour around town he heard no reports of extensive damage other than the bricks dislodged from chimneys.

City Manager M. F. Henderson reported that, to his knowledge, no reports of any great damage have been received by the city office, the firemen or policemen.

He issued a warning for all owners to check the cornices and ledges on the older buildings in the business district carefully as the quake has probably increased the possibility of falling bricks.

County commissioners reported at noon that there were no county bridges out and no bad damage according to reports from bridge crews in the area.

[Bozeman Daily Chronicle; August 18, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 36
Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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BOZEMAN DAILY CHRONICLE

RED CROSS AID READY FOR USE IN DISASTER

Mrs. Doris Wood, American Red Cross field representative will arrive in Bozeman today to assist the Gallatin County Chapter of American Red Cross to assist the local chapter if disaster aid is needed.

Dr. Paul Visscher, chairman of the local chapter said that the Pacific area office of the organization has been in constant touch with the local chapter.

An offer of supplies has been received from the

Billings Chapter.

A team of Red Cross officials from Idaho have gone to the West Yellowstone area to offer any assistance and guidance needed, Dr. Visscher said.

The Bozeman Chapter is handicapped because they can't get through to West Yellowstone and the Idaho chapter can.

[Bozeman Daily Chronicle; August 18, 1959]

MIDNIGHT QUAKE IS JAR TO SLEEPY BOZEMAN

Bozeman came to life and light suddenly just before midnight last night.

Many may not have heard the rumbling roar of the city's most severe earthquake in more than 30 years but few slept through the rolling pitching motion of the earth as buildings swayed for half a minute.

Within seconds after the earthquake was felt, lights began blazing in houses everywhere and within minutes only a few scattered houses were dark.

Many people, perhaps remembering other 'quakes

rushed into the streets or spent an anxious hour trying to reassure their children that all would be well.

While only two or three minor jolts have been felt in Bozeman since 11:40 p.m. last night, the area around Hebgen and the Madison River canyon apparently is in a very unstable condition.

Rock slides are still fairly common there and telephone linemen report that poles are swaying from the effects of earth motion.

[Bozeman Daily Chronicle; August 18, 1959]

PHONES ARE OUT BETWEEN HERE AND WEST YELLOWSTONE

The telephone carrier circuit between Bozeman and West Yellowstone is out, Mt. States T. and T. officials reported at noon.

The lines were reported out of order at 11:55 p.m. last night and a crew was dispatched immediately up the Gallatin Canyon, Walter Miller commercial representative of the telephone company said. A late report from the crew revealed that two landslides and one fallen tree had caused breaks in the line several miles north of West Yellowstone.

Miller urged local residents to restrict their phone

calls for the next 48 hours, making only those necessary, as the switch boards are being flooded with unnecessary calls. He pointed out that the lines are badly needed for the emergency which now exists.

Crews are working on the last mountain top going into West Yellowstone and rushing repairs on the last 12 miles of disrupted line.

Linemen said "the ground is shaking so bad it feels like you're walking on jelly."

[Bozeman Daily Chronicle; August 18, 1959]

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WEST YELLOWSTONE'S CHIMNEYS SHATTERED

LIVINGSTON, Mont. (AP)—An amateur radio operator in West Yellowstone reports that every chimney in that resort community was knocked down by Monday night's earthquake. All glass was shattered.

A Livingston radio operator said his information came from operator Warren Russell at West

Yellowstone, which has been cut off from telephone communication since the earthquake.

He quoted Russell as saying the pavement in West Yellowstone "looks like it is coming toward me in waves a foot high."

[Bozeman Daily Chronicle; August 18, 1959]

WYOMING GOVERNOR OFFERS HELP IN CRISIS

CHEYENNE (AP)—Gov. Joe Hickey of Wyoming today offered to do "all possible" to help Montana and Yellowstone Park officials in the aftermath of Monday night's earthquake.

"If any help from Wyoming is needed, we'll do all possible," Hickey said. He said he planned to call Gov.

J. Hugo Aronson of Montana and Yellowstone Park Supt. Lemuel A. Garrison, offering aid.

The park is under federal jurisdiction, but Hickey said if road crews or other assistance were needed, Wyoming would help out.

[Bozeman Daily Chronicle; August 18, 1959]

BOY SCOUTS NOT IN ANY DANGER NEAR HEBGEN LAKE

Twenty-four Boy Scouts in Rosary troop were reported in no danger at their Spring Creek camp grounds on the west side of Hebgen.

The scout troop, their scoutmaster Ken Hardesty and three other adults went into the Hebgen area Sunday.

It was reported by the Forest service this morning that the boys were all right and that they are in no danger. The Forest Service has sent in a preventive

guard to be with the troop.

The camping area where the scouts are located is flat, open country and there is no danger that they could be trapped in a land slide or by falling rock, the report said.

They have plenty of room to move, should earthquakes continue in that area, it was reported.

[Bozeman Daily Chronicle; August 18, 1959]

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EVACUATION OF INJURED PLANNED Communications Are Lacking

Only meager reports on the possible loss of life and injury trickled into the sheriff's office here this morning but plans were put into effect to evacuate an undetermined number of injured persons.

A Bozeman doctor, two nurses and two ambulances were dispatched to the Duck Creek Y near the northeast end of Hebgen Lake about 10:30 this morning to take care of reported injured persons. Others were standing by.

The injured were reportedly brought from the dam site and transported across the lake in boats to the junction of Highway 191 and Montana 1.

Late this morning Montana Power Co. from its Butte office said that a 20 foot wall of water rolled over the dam just after the earthquake and it was then that several persons were injured in a housing area just below the dam.

Because of the lack of communication facilities—all telephone lines into the area were knocked out—little information directly from the

disaster was available here.

But the same Montana Power Co. report made to Sheriff D. J. Skerritt indicated engineers who went to the dam said they believed the structure was not in immediate danger of bursting.

Meantime, a fleet of 10 Montana Highway Patrol cars was sent here from Billings this morning to help.

The patrol cars and drivers may be used to establish a chain of shortwave radio relays between the sheriff's office here and Hebgen Lake.

Nearly all of the information reaching Bozeman this morning from the disaster area was from amateur radio.

It was also reported this morning that the Bozeman Deaconess hospital was setting up to handle at least ten emergency cases but there had been no word or verified accounts of the number of persons that might be expected for treatment.

[Bozeman Daily Chronicle; August 18, 1959]

INJURED PERSONS ARE FLOWN HERE FOR TREATMENT

Six critically injured persons, hurt in the devastating earthquake and landslide in the Hebgen Lake area were being flown by plane from West Yellowstone to Belgrade and rushed to the hospital here for treatment.

The six were rescued by helicopter from the blocked slide area below Hebgen dam. They are the first of the injured to be taken from the slide section where some reports indicated as many as 200 persons were trapped.

There was no report at 12:30 p.m. today as to the

extent of the injuries suffered by the six disaster victims nor as to their identity.

At the same time it was reported that the hospital here was being set up to care for many victims.

Because of the sketchy information filtering out of the area, there was no way of determining how many injured would be brought here.

However, doctors, nurses and hospital personnel were standing by for whatever might be required of them.

[Bozeman Daily Chronicle; August 18, 1959]

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FOREST SERVICE CREWS SURVEY HEBGEN DAMAGE

Roy F. Berg, administrative officer for the local forest service, reported before noon that a two-man crew had been dispatched from West Yellowstone to the lookout tower on Horse Butte, located on an arm extending into Hebgen Lake. They reported the lookout was still standing but unsafe and everything in it was "topsy-turvy."

Berg stated that his men reported no structural damage to the government buildings in West Yellowstone but extensive personal property damage was reported within the structure.

"The men reported that in going to the lookout they had to cross numerous one to two inch cracks in the road and that they could not estimate the depth of the cracks," Berg said. "There was also a report of glass breakage and general shaking up of the Cinnamon lookout station."

Berg said that contact had been made through the lookout station in the Gardiner district to the rangers in West but that at 1 p.m. all contact had been lost.
[Bozeman Daily Chronicle; August 18, 1959]

150 PEOPLE ARE MAROONED BETWEEN DAM AND SLIDE

HELENA (AP)—A Montana civil defense report said today between 100 and 150 people in about 40 automobiles apparently are marooned in a canyon between Hebgen Dam, damaged by earthquakes during the night, and a rockslide seven miles below the dam.

The Montana civil defense director, Hugh Potter, said the report was from the pilot of a State Highway Department plane which flew over the scene.

The rock slide has dammed the river below the dam, Potter said he was advised, and the water is rising slowly.

He said this indicated that the dam is holding, at least partially.

Potter quoted the pilot of the plane as saying that rain and low clouds kept him from getting a good view of the dam itself.

The Montana Power Co., which owns the dam, said at 7 a.m. the 7 foot-high concrete structure is leaking. One spokesman expressed fear it "could go." Earlier the company said there was a hole in the top of the dam.

The highway—U.S. 287—has cracks in it so big automobiles are unable to move, the plane's pilot said.

Potter said he understands that the people would be able to walk either way to escape personal danger.

He appealed to U.S. Forest Service to fly an experienced smokejumper—a parachutist who drops into areas to fight forest fires—into the region. This man would be equipped with a radio to contact airplanes, Potter said, and could organize the people and help them out.

He said helicopters are en route to the area from Mountain Home Air Force Base, Idaho, and Malmstrom Air Force Base at Great Falls, Mont.

Richard D. Smiley, president and general manager of radio station KXXL at Bozeman, Mont., tried to drive into the area from Ennis but reported he was stopped by the rockslide. He said there were boulders in the road "as big as automobiles" and the highway is completely impassable.

He returned to Ennis.
[Bozeman Daily Chronicle; August 18, 1959]

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HIGHWAYS INTO WEST YELLOWSTONE REMAIN CLOSED

George W. Barrett, district engineer for the Montana Highway department, said at noon today that U.S. 191 is closed from Bozeman into West Yellowstone.

The approaches are reported out on the bridges between the Duck Creek junction and West Yellowstone and between the junction of Highways 287 and 191 into West, it was reported. Highway 287 is reported closed from Ennis south by a slide across

the river and road at the mouth of the Madison.

Barrett reported that crews were dispatched at 3:30 a.m. this morning to the Hebgen area. Heavy road equipment from the Naranche and Konda construction firm, which is working in Gallatin canyon, was sent to the scene at this time, along with other equipment, he said.

[Bozeman Daily Chronicle; August 18, 1959]

WEST YELLOWSTONE IS DIGGING OUT AFTER EARTHQUAKE

West Yellowstone, the most popular entrance to the nation's largest national park, was digging out from under debris and counting thousands of dollars in property damage this morning on the heels of the mightiest earthquake this area has ever seen.

While no buildings were flattened by the roaring, rolling earthquake, the roof of a cafe was torn loose, one wall of the school building was reported down and a service station front fell.

In addition, much damage was caused when stocks of merchandise in stores crashed to the floor during the

quake and untold structural damage to buildings has not yet been discovered.

Business was at a standstill in the park entrance community but every resident was prepared to help in any way possible with injured persons and provide food and homes.

Several minor injuries to West Yellowstone residents were reported, some of them taken to Ashton, Idaho, for treatment. None was reported seriously hurt.

[Bozeman Daily Chronicle; August 18, 1959]

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U.S. ENGINEERS WILL FLY INTO HEBGEN DAM AREA

OMAHA (AP)—Engineers and Hydrologists of the Corps of Army Engineers assembled today for a flight into the Hebgen Dam area of Montana, damaged by earthquakes.

Maj. Gen. Keith Barney, Missouri River division engineer, conferred by telephone with Lt. Col. Walter W. Hogrefe, Garrison (N.D.) district engineer, under whose jurisdiction the Hebgen Dam area falls, and directed Col. Hogrefe to prepare for a flight.

Aside from available for any rescue work needed, the Corps of Engineers is anxious to survey the area to see if flood damage can be minimized should the Hebgen Dam give way.

Gen. Barney said maps and charts in his office showed the reservoir behind the 90-foot high dam has a

capacity of 350,000 acre feet and as of August 13, had about 337,000 acre feet in storage.

About 210 river mile down stream the Canyon Ferry Dam on the Missouri River, which has a capacity of about two million acre feet of water, is nearly full, but it could possibly absorb another 100,000 acres feet of water Army engineers said. However, the surge of water from a possible break in the Hebgen Dam would flatten out considerably by the time it reached Canyon Ferry.

The engineers said Great Falls, Mont., the nearest large city, is sufficiently distant so that it probably would not be much affected.

[Bozeman Daily Chronicle; August 18, 1959]

SHAKY HEBGEN WAS ENGINEERING FEAT BACK IN 1910

HELENA, Mont. (AP)—Hebgen Dam, which figured in Tuesday's earthquake disaster, was an engineering feat of its day when it was started in 1910. The earth-filled concrete core dam was built by men and horses in the years before Power equipment.

It was completed in 1915, as one of the largest dams at so high an elevation—6,000 feet—in the world. It is 87 feet high, 718 feet long.

Hebgen, on the Madison River, is the first of a series of dams to convert the power of the Missouri

River system to man's use. It is owned by Montana Power Co.

Hebgen backs up 325,000 acre-feet of water in a long, narrow southwestern Montana canyon, to the northwestern border of Yellowstone National Park. Its reservoir also contributes to world-recognized trout fishing stream, keeping it fishable in the otherwise dry late summer months.

[Bozeman Daily Chronicle; August 18, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 42

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HELENA RESIDENTS FLINCH AT NEWEST EARTHQUAKE SHOCK

HELENA, Mont. (AP)—The 11th earthquake in a span of 10 hours shook this Capital City Tuesday morning.

The Weather Bureau said it lasted about two or three seconds, and apparently, like the others, caused no serious damage. Windows were shaken and cars rocked.

The heaviest tremor was the first, at 11:30 p.m. Monday. This broke some windows and lasted about 35-45 seconds, the Weather Bureau said.

The latest tremor occurred at 8:28 a.m.

It was the 2,956th recorded since Helena's disastrous quakes of 1935. The Weather Bureau said most of these, 2,883, occurred within the first two years after the 1935 disasters. These were the first earthquakes in the United States recorded by modern

instruments.

Helena earthquakes in 1935 caused property loss estimated at over four million dollars.

Civil Defense headquarters said a tremor at 8:27 a.m. also was felt at West Yellowstone, Mont., north of Livingston and Great Falls.

At Carroll College, school authorities said their seismograph registered two of the 11 earthquakes. A spokesman noted that the seismograph takes a magnitude of five to set it off.

At Berkeley, Calif., a University of California seismologist set the first quakes's magnitude at 7.8 on the Richter scale. The San Francisco earthquake of 1906 had a magnitude of 8.25 on the same scale.

[Bozeman Daily Chronicle; August 18, 1959]

TOURISTS FLEE THREE FORKS AREA

THREE FORKS, Mont. (AP)—Two Los Angeles tourists, Mr. and Mrs. Percy House, said today they were advised to flee from the town of Three Forks after an earthquake—and did.

They were staying at the Three Forks Motel.

Shortly after the quake, House said, employees aroused everyone and said the radio was urging that we leave the town.

"We grabbed our clothes, threw everything into the car and asked: "Where do we go?" he said. "We were advised to head for Helena and we did."

House said dozens of other tourists had similar experiences.

House identified himself as manager of a store fixture firm.

[Bozeman Daily Chronicle; August 18, 1959]

GOVERNOR GIVEN REPORT ON EARTHQUAKE SCENE

HELENA (AP)—Gov. J. Hugo Aronson was given the full picture of the terror and destruction in the Hebgen Lake area Tuesday.

The report was relayed to the chief executive by

State Civil Defense Director Hugh Potter. Aronson was at his Cut Bank area ranch.

[Bozeman Daily Chronicle; August 18, 1959]

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GREAT FALLS FEELS SHOCK

GREAT FALLS (AP)—The city of Great Falls has felt another tremor. This was about 8:30 a.m. Tuesday and lasted about one second. It rocked the chairs of

Electric City newsmen who were writing of the first quake which happened about 11:40 p.m. Monday.
[Bozeman Daily Chronicle; August 18, 1959]

EARTH SHOCKS ARE FELT AT IDAHO BORDER TOWN

AFTON, Wyo., (AP)—Earth shocks which shook a wide section of the Pacific Northwest were felt at Afton, seven miles east of the Idaho border, last night.

Lee Call, editor of the Star Valley Independent, said he was puzzled at first by the shock. He was at work in his office.

"Then I looked up and saw each of the fluorescent lights swinging in the same rhythm in a six or eight-inch arc. Then I knew what it was."

There apparently was no damage in Afton, he reported.

[Bozeman Daily Chronicle; August 18, 1959]

YOUNG MOUNTAINS ARE BELIEVED CAUSE OF TREMORS

WASHINGTON (AP)—The relatively young and still-rising mountains of the West are believed to be the culprits that caused the series of earthquakes in the northwest Monday night and today.

The opinion was advanced by Capt. Elliott Roberts of the U.S. Coast and Geodetic Survey who added that this is a standard theory to account for all past earthquakes which have occurred in the West.

"The western part of the United States," he told a reporter, "is an area of geological change. The mountains of the West are still growing slowly higher, and are rated as geologically young mountains.

"And the rising up of the ground that causes the

pushing-up of the mountains results in a condition of change which in turn creates stresses in the rocks all the way from the earth's surface to a depth of several hundred miles.

"This stress can build up over long periods of time and then, on occasion, result in an earthquake. It is rare, however, that actual faults or uprisings of the earth's surface are produced."

Roberts is director of the geophysics division of the Coast and Geodetic Survey, and heads up the federal government's major department for recording and analyzing earthquakes.

[Bozeman Daily Chronicle; August 18, 1959]

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THREE HUNDRED ARE RESCUED FROM STILL-SHAKING MADISON CANYON AREA

Death Toll Is Expected To Continue To Rise

WEST YELLOWSTONE, Mont. (AP)—About 300 persons have been rescued from the still trembling earth of quake-rocked Madison Canyon of southwest Montana, the U.S. Forest Service announced today.

This includes all known survivors of Monday night's quakes, a spokesman said.

The death toll remained at eight. It might rise to at least 12. One woman was reported missing and survivors said they saw three others crushed in an automobile.

Air Force Capt. A. S. Champion of Hamilton Air Force Base, Calif., said aerial search of most of the quake-ravaged area has been completed.

At least five members of the Gallatin Sheriff's Posse, who left Tuesday morning from Wapati Ranger station, have joined a search party below Hebgen dam.

The Posse members, with others, are looking for

any possible survivors of the earthquake or for the bodies of persons who perished in the grinding landslide and floods in Madison canyon.

On the other side of the rock slide Marines from Butte were searching the nearly-dry Madison river bed for disaster victims.

No effort will be made to dig into the big slide at Rock Creek campground to see whether it contains more victims until after the land movement ceases, said A. E. Zion of the Montana Highway Department.

He described the slide as half a mile long and up to 300 feet high.

A spokesman for the Army Corps of Engineers said all danger is past at Hebgen Dam, damaged by the quakes.

[Bozeman Daily Chronicle; August 19, 1959]

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SURVIVORS RECEIVE AID, SHELTER IN BOZEMAN **Landslide Trap Is Sprung; 81 Victims Brought Here**

A trap that had imprisoned more than 100 vacationers in a dangerous and precarious situation between earthquake-weakened Hebgen Dam and the landslide-blocked Madison River canyon was sprung late Tuesday night.

The uninjured streamed out of the area by car, truck and boat.

The major relief was afforded when a temporary road was punched around the damaged highway section on the north side of the lake to provide an escape route for the trapped people.

Heavy equipment, directed by personnel of the Highway Dept., constructed a passable road and had the route ready for emergency travel about dark last night.

Within two hours, the stream of survivors began trickling into Bozeman. By 12:30 a.m. this morning a total of 81 persons from widely scattered sections of the country had checked in here.

The 81 received here probably represents most of the persons who were trapped in the area but officials said some made their way to West Yellowstone.

Most of the people who came into Bozeman was plainly tired and shaken by their ordeal and a suspense-filled day behind a dam they thought might go but generally were in good condition and happy to be out of the earthquake area.

The Gallatin Red Cross disaster organization and Gray Ladies quickly organized to take care of the incoming disaster victims.

They were housed at Pryor Hall last night and as they came into the dormitory, they were given coffee or milk and their immediate needs were cared for.

Family units were especially happy although many of them lost all of the possessions they had taken on what they had planned as a joyful vacation trip through the west.

While most of those who came into Bozeman were complete family units, there were several children whose parents had been injured in the slide or flood

and were in the hospital.

Where necessary, the evacuees received pajamas last night and today the Red Cross was following through to provide clothing for those who lost everything.

The Harold Kruger family of Montello, Wis., perhaps was a rather typical example of the personal losses sustained by many.

Kruger, his wife and three children had stopped at Rock Creek camp grounds about 6:30 Monday. Their schedule, Kruger said, had originally called for them to be in West Yellowstone that night.

They pitched their tent and with many others in the area settled down for the night.

About 11:30 p.m. Kruger said he heard a sound "like a jet plane or a train around the valley. Then the rock slide came."

He and his family got out of their tent and Kruger took his family to high ground just in time to avoid being swept away in the flood.

But the family car, two tents, and the vacation money in the form of traveler checks disappeared under water.

Kruger said there were five cars in that area lost either under the rock slide or water. He also said that there were people in one of the cars. He didn't know who they were nor where they were from nor how many.

This morning Mrs. Kruger said, "We have always liked Montana and now we love it. People here have been wonderful."

The Krugers will be returning to their Wisconsin home shortly. They will have clothing and train tickets.

Others who lost their possessions likewise are finding that through the Red Cross and the generosity of Bozeman people that they will lack nothing to make their stay here as pleasant as possible and they will be assured of money to get home.

[Bozeman Daily Chronicle; August 19, 1959]

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Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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BOZEMAN DAILY CHRONICLE

DEATH TOLL MAY BE EXCESSIVE

The number of persons who died in the cracking earthquake and landslides that followed probably will never be known.

Reports now indicate there are eight known dead.

But it may be days, weeks or months before the total number of missing can be determined and possibly days before the canyon area and lake can be thoroughly searched.

At least two accounts have been made to newsmen that a family of three—a man, a woman and a crippled boy—were buried in their car by the huge rock slide that blocked the canyon. A family from Cottonwood, Ariz., and a family from Wisconsin told reporters they saw the car engulfed by the landslide. Nobody had any idea where the family was from.

There also was a report that a car loaded with four or five people was plunged into Hebgen Lake during

the earthquake when a section of the road and hillside along the north shore dropped into the water.

Also missing is Mrs. Grace Miller, an aunt of Robert Miller of the Elkhorn Ranch in the Gallatin Canyon.

Mrs. Miller lived alone in a cabin along the Hebgen Lake shore.

The cabin was seen in the water yesterday.

At least three other persons are known to be missing.

What cannot be determined is: were there any campers in the area now engulfed by a mile-long rock slide?

Workers are continuing to search through the area and at the lake.

[Bozeman Daily Chronicle; August 19, 1959]

BIG SPRING FLOWS FROM MOUNTAIN SLIDE AT WADE

Mr. and Mrs. J. T. Sandiland and Mr. and Mrs. L. W. Sandiland and three children of Bozeman were camped at Wade Lake Monday night.

They said a part of the mountain near their camp fell down and uncovered a great big spring which gushed out of the exposed part of the mountain.

The two women and children walked about a mile and a half over the top of the washed out mountain to Elliott's tourist camp, the only buildings on the lake shore.

All of the cabins were demolished and a large

home was badly damaged. So far as Sandiland can determine, there were no casualties at Elliott's camp, or on Wade Lake.

There are several campers in the area, cut off by the slide.

The two Sandilands remained to help out in the area.

The women and children were brought to Bozeman by a man whom they did not identify, but who told the women he was looking for his parents.

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WHOLE BLOOD IS FLOWN TO TREAT INJURED HERE

GREAT FALLS (AP)—An Air Force plane flew 60 pints of whole blood to the Bozeman hospital Tuesday for treatment of the injured in the earthquake.

The pilot, Capt. Chester Cooper of Malmstrom AFB, was to continue on to West Yellowstone in the dark with three dozen surettes of demerol, a mild sleep producing drug supplied by the Air Force Hospital on

demand of medics in the West Yellowstone area.

The whole blood from Montana regional blood center was taken partially in a mass drawing Tuesday. The drawing gained momentum in the afternoon as news of the southwestern Montana disaster reached residents.

[Bozeman Daily Chronicle; August 19, 1959]

ROAD CREWS WORK ON DAMAGES

HELENA (AP)—Damaged roads in the earthquake-torn Madison River area of southern Montana began to reopen Wednesday as Highway Department crews plowed away rocks and debris.

Yellowstone National Park was open and ready for visitors. All entrances were open except at West Yellowstone.

U.S. 20 and 191 were reopened into West Yellowstone. Damaged bridges over Cougar Creek, Duck Creek and the Madison were expected to be open to traffic by afternoon.

U.S. 191 south from Bozeman and the crude road plowed into Hebgen Dam from upstream Tuesday night were reserved for emergency travel Wednesday. Officials said U.S. 191 would probably remain closed to normal traffic for 24 to 36 hours.

A road from Hutchins Bridge over Reynolds Pass into Henry's Lake, Idaho, and West Yellowstone was

being cleared Wednesday.

Montana Highway 1 south of Ennis remained closed. A crude road was planned over the 50-million ton landslide seven miles below Hebgen Dam, but the Highway Department said it would be used only to move earth clearing equipment into the heavily damaged area.

Department officials said there was no present danger of the slide dam giving way.

Meanwhile, Highway Engineer Fred Quinnell Jr. and members of the Highway Commission began assessing damage to the roads and plans for clearing away the Madison Canyon slides. Commission Chairman Harry Burns of Chinook and Quinnell both inspected the area Tuesday.

Commissioners met with Army Engineers representatives Wednesday on clearing plans.

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AWFUL ROAR DESCRIBES EARTHQUAKE

"We saw the mountains falling with the most awful roar.

"We could see trees flying in the air like toothpicks."

Mrs. Polly Weston, San Jose, Calif., told today of the horror of Monday night's Montana earthquake.

Mrs. Weston, her husband, Hal, and two nephews were among the first survivors from the Rock Creek camp area to reach Bozeman. They were trapped 24 hours by a mountain slide and flood.

The Westons were getting dinner after a night of fishing when the quake-triggered landslide came down.

"I thought, Holy Cow! A bear is at the trailer again," Mrs. Weston said.

Her husband added:

"I thought someone had coupled onto our trailer and was trying to pull it away."

"And then the screaming started," Mrs. Weston said.

She found a little girl with a head injury and the child's grandmother with an injured leg.

Mrs. Weston said she saw 10 trailers swept down

the Madison River. She did not know if anyone was in them.

Harold Krueger of Montello, Wis., reported seeing five cars buried in dirt and rock. He, too, did not know whether they were occupied.

David Thomas of Nye, Mont., told of using a raft to rescue Mr. and Mrs. Grover Mault of Temple City, Mont., who had been clinging to a tree in the water seven hours.

Eugene and Richard Burbank, sons of Mr. and Mrs. A. L. Burbank of Brigham City, Utah, found fish flopping on the bank when daylight came. They cooked and ate them.

Bozeman prepared to care for 167 survivors.

Early arrivals included:

Mr. and Mrs. Robert R. Potter and son, 122 Custer, Billings, Mont.

Mr. and Mrs. David Thomas and three children, Nye, Mont.

Mr. and Mrs. Charles F. Regena and three children, Roundup, Mont.

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FURY OF THE EARTHQUAKE IS SEEN IN HEBGEN AREA

HELENA, Mont. (AP)—The 7,600-foot peak had no name. It does now.

"Call it, Earthquake Mountain," a man said. "Just look at it."

The top was gone, jerked from the place where it had stood for ages by a terrible twitch of the earth. It crashed down in the darkness on sleeping dozens of vacationers along the Madison River in southwestern Montana.

When the rumbling was over, nature had left almost two mountains.

The new mountain—perhaps "little earthquake" from now on—is 250 to 300 feet high, and a quarter-mile long from canyon wall to canyon wall.

It lies across the Madison River. Behind it is the frightened town of Ennis. Seven miles in front of it is the scattered, pocked-marked Hebgen Dam. In the middle were people, trapped between a 1915 power dam that took years to build and an awesome mountain created in seconds by nature.

With them were expensive trailers, station wagons, cars and tents. No thought of them now.

Those who lived through the nightmare told stories they could hardly believe themselves. The stories were mostly the same—an eerie awakening to a horrible noise, an unearthly shaking of the entire earth itself, then stillness.

Grover C. Mault is 71, on vacation from Temple City, Calif. He and his 63-year-old wife had picked a quiet spot along the Madison for their evening camp. They were in their trailer, a mile below the dam.

They hear the rockslide ahead, then saw the quiet river surge up. They climbed atop their trailer, which started to float.

Mault grabbed the branch of a tree. It snapped. The trailer floated on. Then another branch came into view. Mault made a desperate try. The branch held.

Mault and his wife climbed off the trailer and into the tree. They stayed there all night. Rescuers in boats

found them Tuesday morning, and took them to a hospital.

Paul Jesswein, photographer for Montana State College at Bozeman, 90 miles from the catastrophe, drove to the scene expecting a routine landscape. "I was aghast at what I found—it was fantastic," he said.

The Rev. Elmer Ost of Queens, N. Y., recovering from the first shock, organized a group of perhaps a dozen survivors.

"Through most of the night, we heard people crying for help, screaming," he said. "The front end of that mudslide just didn't give people a chance."

Ost took a piece of paper and scribbled a note to Henry Tretsen of Scarsdale, N. Y.

"We have been in the earthquake," the note said. "We lost all but we are safe. Coming home by train immediately."

Many of the stunned survivors, some in pajamas, stood on cliffs awaiting rescue.

Four miles from the dam, a state highway ends sharply as if it were cut by an axe. Fifteen feet below is water from picturesque Hebgen lake. The movement of the earth virtually tipped the lake on its side.

Some 300 years away was the rest of the chopped-off road. In the chasm between there is an automobile, now junk.

Farther down toward the dam, two houses floated aimlessly in the water. Just the top of one showed.

At the dam, 100 persons awaited rescue.

An Air Force helicopter landed behind the dam. Rescue workers carried stretcher cases carefully across it.

Farther on, a dozen men and women stood on a grassy ridge above the camp that had disappeared beneath rock and timber below. They were told a helicopter would take them off.

Those who said it know the fury of an earthquake in the mountains in the dark of night.

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LOCAL HOSPITAL IS SCENE OF TRAGEDY AS EARTHQUAKE VICTIMS ARE CARED FOR

By Annabelle Phillips

I stood quietly on the stairs and watched the 14 injured victims being admitted to the hospital here yesterday.

An air of hushed sympathy and quiet efficiency hung over the small back entry as one by one the victims were unloaded from ambulances, police cars and private vehicles by volunteer citizens and hospital personnel.

Shock, fear, utter belief showed in the eyes of some. Many lay with their eyes closed.

All were battered, bruised and bloody.

Some had small slips of paper, bearing their names, pinned to them.

As I watched, I marvelled at the speedy efficiency with which the hospital operations were carried out.

Within minutes after the victims were taken to the third floor in one elevator, the empty stretchers were brought down in another one. Drivers loaded the equipment and rushed back to the airport for the next group of victims.

People, young and old, appeared like magic to offer their services in any way.

Blood donors quietly arrived.

Two small boys lingered outside the entrance offering to run errands. I asked them once if anymore victims had been taken up. Their answer was no lady, just one man and bottles of human blood. I knew the plasma had arrived from Great Falls.

Red Cross women and Grey Ladies arrived to answer scores of phone inquiries and send messages to out-of-town friends and relatives seeking word of their loved ones.

People came checking the identity of patients who bore names identical to theirs.

Relatives of the victims arrived in a surprisingly

short time from many areas. Fear was written on their faces.

The hospital was on a 24-hour emergency basis. Exhausted nurses and teams of doctors worked on caring for the injured.

Unbelief of the magnitude of the tragedy showed in the eyes of one woman as she related her experiences. I could almost see and hear the screams of frantic people searching for loved ones and begging for help.

Terror haunted the face of one shocked woman who saw neighboring campers buried under tons of rock within feet of her family. Close by her side was her uninjured 10-year-old son offering comfort and reassurance. Uppermost in their mind was the uncertainty of the whereabouts of his father and sister whom they expected to find at the hospital. They weren't there.

A small girl was brought in, her head bandaged. The next stretcher bore her injured father. She was probably unaware that the first patient received was her fatally injured grandmother or that her injured aunt was also a patient. Shortly after the uninjured mother arrived, going from one to the other with words of comfort.

I talked in the waiting room to two ladies from Kansas who had just arrived in town from Cody, Wyo., and hearing of the injured, came to the hospital seeking word of their two brothers and their families believed to be camping near Hebgen. They had not been admitted. Tears welled in their eyes as I told them many were believed killed in the area.

As I left after word arrived that all the injured had been evacuated, people were still coming, seeking any word of their loved ones.

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10-YEAR-OLD HELPS MOTHER AID VICTIMS AT SLIDE AREA

Out of the maze of tragic stories of the victims caught in the center of the disaster area at Hebgen Lake comes the tale of the heroic fortitude of a 10-year-old boy who stood staunchly by the side of his shocked mother throughout the ordeal.

Royal Bennett of Cottonwood, Ariz., was praised here by rescuers and nurses alike.

"He's quite the boy, that kid. Brave and sharp as a tack," one commented.

Royal and his mother, Mrs. Henry F. Bennett, 37, were the last of the injured to be admitted to the hospital here last night.

They were brought by helicopter from the slide area to the junction eight miles from the dam and into Bozeman by car by free lance photographers, A. P. Madison and Jim Wiemals of Billings.

The Bennett family—mother, son, invalid 41-year-old father, Henry, and 14-year-old daughter, Jeannette—were camped within 50-feet of the huge mountain which thundered into the Madison river.

They watched with horror as neighboring campers—a man, his wife and crippled son—were buried under tons of rock only a few feet away.

They sought help for an unknown number of terrified people trapped by a tree and rocks in their trailer only ten feet from theirs. There was no way they

could release them—their fate is unknown.

With help, they dragged the invalid father up a mountainside in his sleeping bag, out of the danger area.

The uninjured boy stood quietly on a mountain nearby and watched water cover the spot where they'd been within a half-hour's time. All their possessions, totaling about \$5,000, were lost, he said.

He heard people screaming and crying for help.

Utter disbelief and terror filled the face of the shocked mother when she arrived here to find her daughter and husband were not in the same hospital. No one could tell her until this morning that they were flown to another hospital for treatment.

The comfort, which only a child can give a mother, was felt by the nurses attending the shocked woman.

Said Royal to his rescuers:

"This is the first time I've ridden in a helicopter.

"This is the first time I've ever been in an earthquake.

"We're going home on the train—it'll be the first time I've ever ridden on one.

"What a whale of fun I'd be having, under different conditions."

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LIGHT TREMORS AND RAIN SLOWS SEARCH FOR VICTIMS

Small Slides Continue To Fall In Earthquake Area

By Tom Maddox

WEST YELLOWSTONE, Mont. (AP)—Three light tremors jolted the southwestern Montana earthquake area Wednesday night and early today. There was no damage. The shocks awakened residents.

The shocks, coupled with a driving rain, hampered efforts of searchers to renew the hunt for possible additional victims of the Monday night quake, which touched off major landslides.

The tremors were the latest in a series that has continued since the major shock and sent small landslides down the mountain slopes.

Ground parties, aided by skindivers, want to search above and below Hebgen Dam, hard hit in the Monday night shocks.

Searching crews are made up of men from the Civil Defense organization, sheriff's office, U.S. Forest Service and volunteers.

They said they would not attempt to dig into the 50-million-ton landslide below Hebgen Dam until the comparatively slight tremors subside.

Bodies of eight quake victims have been recovered from the devastated mountains and canyons. Reports from survivors indicate the toll may rise to 12. They told of seeing a car with a man and a woman and a crippled boy buried by an avalanche.

A woman reported by Sheriff Donald Skerritt to be missing and presumed drowned was found alive Wednesday night. Grace Miller, about 60, whose lakeside home was washed away in a wave of water propelled by a landslide, had walked 15 miles to a ranch.

Coroner Charles E. Raper says he believes the body of Mrs. Thomas Stowe of Sandy, Utah, is in the Madison River. He reported the family car and her belongings have been found in the stream. Her husband was killed.

Officials have said they believe more bodies may be found by digging into the landslides and probing Hebgen Lake and the Madison River.

Skindivers are planning to go into the lake when the muddy water clears. They will check a report that two persons drowned in a car submerged in dirt and water.

All of the known survivors—about 300—have been moved out of the quake area. Some roads, buckled and twisted by the quake, have been made passable by the use of bulldozers.

Many highways in the western part of Yellowstone National Park were blocked by landslides and the damage there was expected to run into the millions of dollars.

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LOCAL MEDIC TEAM IS FIRST TO REACH DISASTER VICTIMS

Emergency aid to the injured earthquake and rockslide victims in Monday night's Hebgen Lake-Madison River tragedy came quickly.

Two teams from Bozeman were among the first to make themselves available and responded quickly Tuesday morning to calls for medical help, nurses, supplies and equipment.

A Bozeman Doctor, Dr. Richard Nollmeyer and his two nurses, Mrs. Barbara Ann Nute and Mrs. Jack Gilbert were the first medical personnel to reach the stricken area.

A group of six Bozeman nurses and Richard Lubben, superintendent of the Bozeman Deaconess hospital were at West Yellowstone to provide the only first aid station at that point where many injured were treated after their arrival by helicopter from the quake scene.

Considerable favorable comment was heaped upon these people by survivors of the disaster.

Dr. Nollmeyer and his nurses, accompanied by Gar Lutets, Johnny Kinna and Danny Sprague, of City Taxi, walked five miles from the Hebgen Lake road to the dam.

With them went two pillow cases of medicines and Dr. Nollmeyer's medical kit.

This group spent the entire day helping with the injured and shocked survivors and not leave until the last of the injured had been removed.

The team of nurses and the hospital administrator responded to a call from the sheriff's office for aid.

Nurses making the trip to West Yellowstone were Mrs. Sue Barclay, Mrs. LaVonne Lindgren, Karlene Topel, Mrs. Carl Rognlie, Mrs. Ann Blackhall and Marilee Heffelfinger.

Nurses were taken in Highway Patrol cars. Medical supplies, blankets, stretchers and other

equipment was taken in two pickup trucks, one driven by Lubben and the other by Harold Miller of Bozeman.

A Hollister, Calif., physician, Dr. R. D. Quinn who had flown to West Yellowstone Monday morning, worked with the injured throughout the day, providing treatment during the break between the helicopter lift and plane trip to Bozeman.

The Bozeman unit arrived at West Yellowstone just after the first four injured had been brought out of the Hebgen area.

Thereafter, they were on hand to help with all patients brought to that area.

An emergency first aid station was set up at the West Yellowstone airport hangar. Beds were made of baled hay, blankets and sleeping bags.

Lubben said that with the exception of plasma, medical supplies carried into the scene were adequate for the initial treatment.

Two nurses returned to Bozeman during the afternoon with one plane to help with critically injured patients. The other four also returned by plane after the last of the injured had been evacuated.

A total of 15 injured were brought to the hospital here and cared for without any problems.

Lubben pointed out that when a call for assistance came it was believed that 60 or more persons might be brought here.

He said that the hospital here had facilities to handle 65 accident cases.

Throughout the afternoon of Tuesday, the Bozeman team and Dr. Quinn operated the only first aid station at West Yellowstone. A young doctor, unidentified, made several trips in the Army helicopter that was ferrying the injured from the quake site.

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CONTINUING EARTH TREMORS DELAY PARK CREWS ATTEMPTING TO CLEAR ROADWAYS

YELLOWSTONE NATIONAL PARK, Wyo. (AP)—Park Service crews hope to begin work early next week to clear the 75 miles of roads in the western half of Yellowstone National Park, plugged by a series of earthquake triggered landslides Monday and Tuesday.

"There are still some overhanging ledges above some of the rockslides and it's too risky to ask crews to start bulldozing out the slides when there is a threat of more tremors," a park ranger said.

Two minor earth tremors were felt in Yellowstone Park during the night, but no further damage was reported.

More than a dozen landslides have blocked all roads in the western part of the summer wonderland. Another landslide was touched off Wednesday when highway crews were bulldozing one slide near Mammoth Hot Springs and workers had to scramble for safety, the Park Service said.

A few cracks and crevices have been reported in the lower geyser basin between Old Faithful and said. Some of the runoff from the thermal hot springs is going into the cracks in the earth's surface instead of following their normal course into Firehole river.

Park Service officials said the thermal wonders

affected by the crevices are small and there didn't appear to be much change in the subterranean thermal activity.

There are a few places where the road between Old Faithful and Madison Junction, near the park's western border, where the highway dropped a foot or two, park rangers said.

Two seismographic crews were brought into the park today to make a thorough study of underground which jolted the area Monday night and Tuesday.

Although roads in the western half of the park are closed, all gates except West Yellowstone are still open to tourist travel. Only major tourist attractions in the park that can't be reached are the Lower Geyser Basin and Norris Geyser Basin.

Four buildings at the park headquarters in Mammoth, near the north border, all still closed pending a safety engineer's inspection. They included the main administration building, visitor's center and two park ranger homes.

Supt. Lemuel A. Garrison has set up park headquarters in a tent outside the main administration building.

[Bozeman Daily Chronicle; August 20, 1959]

HEBGEN LAKE AREA STILL CLOSED TO GENERAL PUBLIC

The Hebgen Lake area from the Duck Creek intersection of Highway 191 and Montana 1 has been closed to all except authorized personnel and residents, it was reported today.

Crowds of curious have made search work nearly impossible at times and forced the closure of the area.

Efforts to locate a car reported to have been tumbled into the lake by a slide of earth were unsuccessful, the sheriff's office reported this afternoon.

Three divers and two assistants from the Gallatin Sheriff's Posse had no success in their effort to locate

any car in that section.

Diving operations were halted this morning because of muddy water. No further efforts to search under water until the water clears.

It also was announced that all helicopters except a small one from Malstrom AF base, Great Falls, had been released. The remaining 'copters at the disposal of Civil Defense but probably will be released by CD Friday.

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RED CROSS OFFICIALS SET UP DISASTER CENTER HERE

Joseph Hladecek, San Francisco area service representative of the American Red Cross, arrived in Bozeman Tuesday evening to take charge of the Hebgen disaster operation and to direct the local organization in procedure.

Other outside Red Cross personnel who have come to assist with the increasing amount of work at the local office are:

James F. Cook, Washington, D. C., communications specialist; Robert J. Nash, Springfield, Ill., teletype operator; and George Montaign, Red Cross disaster specialist.

Mrs. Doris Wood, field representative from Missoula, and Ralph Carlson from the San Francisco area, are at Ennis directing operations, and Robert Wisemer, Idaho field representative is at West Yellowstone.

More than 200 telegrams have been received by the Red Cross office from relatives and friends requesting information about Yellowstone Park visitors.

Information on the tourists who were evacuated from the disaster area has been difficult to obtain because a major portion of them failed to report at the Gallatin office.

However, a complete list will be furnished by the field representative at West Yellowstone or the state highway patrol so that more of the telegrams might be answered.

The teletype installed by the Red Cross for the emergency is being used for an exchange of information between the three offices at Bozeman, Ennis and West Yellowstone. It has speeded up the answering of inquiries and the locating of separated families.

Three ambulances were sent to the disaster area by the local Red Cross office, which also furnished transportation for the injured from the airport to the hospital.

Extra hospital beds were supplied by the Red Cross. With the cooperation of Miss Gloria O'Connell, assistant director of residence halls, arrangements were made for housing evacuees.

Blood plasma was flown in from Great Falls and Cheyenne, Wyo., at the request of the Gallatin Red Cross.

In the midst of tragedy, the people at the Red Cross office have had the pleasure of helping victims of the earthquake. A father, mother and three children from Wisconsin who lost everything at Rock Creek camp—car, trailer, clothes and money—were taken to a department store where they bought complete new outfits. They were also given cash from personal necessities, housed and fed. Their train transportation home was furnished by the Red Cross.

The work at the Red Cross office will continue as long as people are reported missing, Howard Nelson, local disaster chairman said. The books on the Hebgen disaster may never be closed but an attempt to answer all inquiries will be made. To this end, the office is working in cooperation with Don Skeritt, director of Civil Defense.

At the Red Cross office, the Gray Ladies, headed by Mrs. Herman Lehrkind, are working on inquiries. They are Mrs. Frank Eaton, Mrs. A. W. Overturf, Mrs. Paul Eneboe, Mrs. J. H. Newhall, Mrs. Max Worthington, Mrs. Joe Wantulok, Mrs. Ed Barnett, Mrs. Dean Epler, Mrs. Charles Erick [?]

[Bozeman Daily Chronicle; August 20, 1959]

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MRS. RAY PAINTER IS SECOND VICTIM TO DIE HERE

Mrs. Ray Painter, 42, 4345 Porter Ave., Ogden, Utah, died at the hospital here just before noon, the second person injured in the Monday night earthquake and landslide at Hebgen to die.

Mrs. Margaret Holmes, 72, Billings, died here of injuries Tuesday night.

The death of Mrs. Painter, who with her husband and four children were camped near the major slide area on the Madison river Monday night, brings to nine the number of known dead in the disaster.

Mrs. Painter and her husband were airlifted out of the slide area by helicopter and then flown by plane to the airport here.

Painter, also injured in the disaster, was to have

been released from the hospital today.

Hospital officials said that all remaining patients treated for injuries would be able to leave the hospital with the exception of Joseph H. Armstrong of 4490 Raymond Road, Royal Oak, Victoria, B.C. Armstrong was reported in fair condition with a leg injury.

The official list of injured persons including those treated at Bozeman, Ennis and Butte hospitals reached 29, which includes the names of the two women who died at the hospital here.

Apparently the most seriously injured were airlifted to Bozeman.

[Bozeman Daily Chronicle; August 20, 1959]

CALIFORNIA MAN DESCRIBES HORRIBLE NIGHT AT SLIDE

(Editor's Note: Grover C. Mault, from Temple City, Calif., gives the nightmarish account of how he and his 68-year-old wife escape death in the collapse of a mountain at Rock Creek Campground in southwestern Montana. The Maults spent a horrible night in the water.)

By Grover C. Mault
As told to Annabelle Phillips of The Bozeman Chronicle

"We were camped at Rock Creek Court and Campground and had been there for six or seven days. Monday night a group of us, including Mr. and Mrs. Clarence Scott, and a Mrs. Bair, had supper together. Later we talked and then walked for about a half mile.

"We were amazed about how beautifully the moon shone on the mountains and the river. Coming back we found a beautiful spot on the side of the road where we commented about having a home. We visited for a while, then went to bed.

"What time it struck, I don't know. We were all asleep in our trailers. There were a lot of bears in that area and when the first jolt hit us—I thought they were trying to get into our trailer.

Moon Made It Bright

"The missus said, 'No, it's an earthquake'. I looked through the window and the moon made everything just

like daylight. I couldn't begin to tell what I saw out that window.

"Everything was going upside down. A second or so later our trailer was knocked end over end. Luckily it landed on its wheels or we never would have escaped.

"Then it seemed like something, I don't know what, picked up the trailer and hurled it into the water. I got the missus out of the trailer and lifted her on top. She was clad only in her nightie.

"I went back in to get sweaters or something. The moon had disappeared and it was dark. Before I could get out, the water was up to my chin. I crawled back on top, put on some wool trousers, shirt and a sweater. I wrapped other clothing around my wife's legs.

Prayed To Reach Tree

"By this time there was only three or four feet on top of the roof where we could stand. It was sinking fast. I told my wife, 'I pray the Lord we drift toward that tree.'

"We did. I got hold of a branch and the end pulled off. I clutched again, got a better hold.

"I clung to the missus with my right hand and my left hand was around the tree. The trailer went out from under us.

"It was horrible. As I tried to pull the missus up, the limbs broke off.

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"I tried to grab higher limbs and clung to the missus with my leg. As we kept on going the limbs kept breaking. Finally we found one that would hold us.

"We hollered and hollered. People came on foot and tried to get us with ropes. We were surrounded by 25 to 30 feet of water already. They yelled for us to hang on, that they were going for a boat.

Man Rescues Wife

"We clung to the tree, our bodies in the water almost to our necks. My wife went under three or four times. The last time she was gasping for breath, but I managed to pull her out. She wanted me to let her go. But I told her that if she went, I'd go too.

"While we clung there I could see the mountains sliding and falling every few minutes. There'd be a terrific roar followed by more slides. It was pitiful. I thought the world had come to an end.

"It was hazy, thunder, lightning, then it began to rain.

"We prayed it wouldn't rain because we were so wet already. My collar was the only thing that was dry.

Couldn't Have Held On

About 8 or 8:30 in the morning (Tuesday) they

came for us in a boat. They came just in time. If they'd been another ten minutes, I couldn't have held on.

"You don't know what we went through. Nobody will ever know.

"At first we could see lights, then everything went black, we couldn't hear anything over the roar of the tumbling mountains.

The men had to help us into the boat, we couldn't move our legs. We were literally frozen. I'm finally thawed out today (Wednesday).

"A truck had brought the boat to the water's edge. Three times, while they were trying to get to the truck, it had to be moved forward because of the rising water and the men had to row further.

"The day before I walked about a half mile toward where the slide now is. There I talked to people who were camped in tents.

"There was one man and his wife, his mother, father and a brother in one tent, six or seven in another, including some children. There was one trailer, but I didn't see anybody around it. I'm sure these people were covered by the slide because they told me they were going to stay a few more days."

[Bozeman Daily Chronicle; August 20, 1959]

CORONER SAYS BODY OF NINTH VICTIM IN RIVER

VIRGINIA CITY (AP)—Coroner Charles E. Raper Wednesday said he knows the body of a ninth earthquake victim is in the Madison River of southwestern Montana.

Raper, whose mortuaries at Virginia City and nearby Ennis held the bodies of seven victims of the quake, put it this way:

"We know Mrs. Thomas Stowe's body is in the

river. We found the family car and some of her belongings.

"We plan to search further downstream Thursday."

One of the bodies at Virginia City is that of Mrs. Stowe's husband from Sandy, Utah. An eighth victim died in a Bozeman hospital.

[Bozeman Daily Chronicle; August 20, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 58

BOZEMAN DAILY CHRONICLE

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VOLUNTEERS AID SEARCH FOR BODIES IN CANYON

Volunteers to help search for bodies in the Madison Canyon slide area were asked Thursday by sheriffs at Bozeman and Virginia City.

Twenty volunteers, headed by Bozeman fireman Herb Hoey, left the Gallatin County seat to join a similar Madison County group at the base of the Rock Creek slide.

Meanwhile, a private pilot, Al Newby of Bozeman, made his 12th flight over the canyon Thursday morning. He said the new lake behind the slide is now about two miles long.

He estimated the land has been covered by 30 to 40 feet of water at the slide where the road is submerged. Behind this lake and up to Hebgen Dam,

4½ to 5 miles away, the Madison River remains in its bed.

A Montana Power Co. official in Bozeman reported the slide will hold for the foreseeable future. Earlier, Army Engineers had expressed doubt the earth slide would be able to dam the water at higher levels.

Closure of Montana Highway 1, which carried considerable eastbound traffic to Yellowstone Park prior to the quake, has increased travel into Bozeman.

Motels and hotels in the city have been jammed. They already were largely filled by delegates to a 4-H Club fair.

[Bozeman Daily Chronicle; August 20, 1959]

NEIGHBORS REPORT FAMILY MISSING IN PARK AREA

ROCK ISLAND, Ill. (AP)—Neighbors said Wednesday that Mr. and Mrs. Jerry Cunningham and their crippled son, Stephen, 4, left for Yellowstone Park Saturday and have not been heard from since.

There have been many eyewitness reports that a couple and their crippled son were seen carried off in the thundering landslide which followed Monday night's earthquake in Madison Canyon.

Neighbors said the Cunninghams were traveling in a car and truck with Mr. and Mrs. Carl Cunningham and son, James, 16.

Authorities at the scene of the landslide have said that bodies of persons buried beneath the massive slide many never be recovered.

[Bozeman Daily Chronicle; August 20, 1959]

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VIRGINIA CITY AIDS SURVIVORS

VIRGINIA CITY, Mont. (AP)—The bars stayed open all night in tough Virginia City but this historic western town has seldom been more sober.

This one-time rip-roaring gold camp is at the edge of the Montana earthquake area.

Shaken survivors streamed into town.

And Virginia City, itself a picturesque survivor of the march of history, was ready to take care of them. Hotels, restaurants and taverns kept their doors open to provide food and shelter.

By this morning Virginia City was just plain exhausted. Many of its 320 residents hadn't slept since the quake hit Monday midnight.

As the countryside shook, citizens gathered downtown. There was little of the usual hilarity that has kept this old home of the vigilantes a reminder of the pioneer West.

People exchanged bits of information and discussed a ceaseless flow of rumors. One was that the whole town of Ennis would be evacuated immediately and that Virginia City should prepare for refugees.

Housewives went home to prepare extra beds. Men stayed down town to watch and wait.

People from Ennis started drifting in. Hot coffee

and sandwiches came from the kitchens. Waitresses didn't try very hard to collect. It seemed unimportant.

The bars were supposed to close at 2 a.m. but Sheriff Lloyd Brook said, "Keep 'em open."

"Everyone is just tuckered out completely," Mayor Warren Reichman reported last night, "and we just had a few more shocks here."

Virginia City has lived through a lot of excitement in its many years but none quite like this.

In the old days it was gold strikes, gunfights, robberies and hangings.

Virginia City came into being shortly after the Civil War when gold was found. Biggest of the strikes was Alder Gulch, which produced millions of dollars worth of gold.

Badmen flocked in on the heels of the gold finds. Most notorious of the desperado gangs was that led by Henry Plummer—the sheriff.

Vigilantes organized to bring back some semblance of law and order. They hanged Plummer and some of his outlaws in the building which now is Virginia City's city hall.

[Bozeman Daily Chronicle; August 20, 1959]

MOUNTAIN FELL BEFORE FLOOD, SURVIVOR STATES

The mountain fell first—and then the water came.

That's the account of a California dentist and his friends who survived the Madison Canyon earthquake and avalanche below Hebgen Dam Monday night.

Dr. Reed Quesnell of Arcadia, Calif., gave the account when questioned concerning a theory that water spilling over the dam raced through the canyon and swept some campers away before the mountain collapsed.

"Not so," said Dr. Quesnell. "First came the earthquake. Then the mountain collapsed into the canyon. And after that came a wave of water. This wave is what hit and injured a number of those hurt in the disaster."

Dr. Quesnell, his wife, and two friends and their families—Sam Kuening of Lakewood, Calif., and Ike Kuening of La Puente, Calif.—said they believed an unknown number of campers in the area were buried by the big slide.

"We have vacationed there every summer for 10 years," Dr. Quesnell said. "And every year there have been the same two trailers in the same place. They were there again this year, so close to the river they could fish from their doors. And those two trailers did not come out of the canyon when we were evacuated Wednesday. There undoubtedly are many others buried with them."

[Bozeman Daily Chronicle; August 20, 1959]

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RESCUE JOB DONE NEAR SLIDE AREA OFFICIALS REPORT

WEST YELLOWSTONE (AP)—Officials directing rescue operations at the Montana earthquake scene said Wednesday night they believed all distressed persons are out of the area.

What remains from the monstrous underground upheaval is a gigantic mopping up operation and a methodical search for possible victims who may have been trapped in the slide.

Plans are to ask for some National Guardsmen to patrol the area to protect property and prevent looting of deserted mountain lodges and personal property left behind when hundreds of tourists fled.

All phases of the quake aftermath were discussed by groups in a meeting here including forestry service

personnel, Civil Defense officials, Red Cross, the military and State Police.

The number of State policemen has been reduced by one half and Idaho volunteers have returned home. More of those who were sent into the disaster area after the quake will be released from further duty tomorrow.

No more air operations are required the officials concluded as all rescue is considered completed.

Thirty persons were brought out of an area on Horse Butte Wednesday. They had never been in danger but road conditions prevented them from getting out of the area earlier.

[Bozeman Daily Chronicle; August 20, 1959]

MANHATTAN SCHOOL OPENING DELAYED BY QUAKE DAMAGE

Due to minor earthquake damages to two Manhattan public school buildings, the opening date for the coming school term has been postponed until repairs have been completed, Ronald Mattson, superintendent of schools, announced at noon today.

The opening date, previously scheduled for Aug. 31, has been tentatively set for Sept. 8.

"Cracks have been discovered in the walls of the

high school building, built in 1923, and the old grade school, constructed in 1913," Mattson said. "Both are brick buildings. The new elementary school and gym was undamaged."

He added that engineers had been contacted to survey the damage and recommend needed repairs.

[Bozeman Daily Chronicle; August 20, 1959]

SIZE OF SLIDE IS UNDETERMINED AT PRESENT TIME

Height and width of the huge rock and earth slide blocking the Madison River about 7 miles below Hebgen Dam has not been established by exact measurements.

Figures on estimated length, width and height have varied by hundreds and even thousands of feet.

The Gallatin National Forest office has come up with some admittedly rough figures but figures made from educated guesses by people who are familiar with the situation.

These figures indicate the slide, at its highest point, is about 400 feet. The length is estimated to be 4,000 feet and it is believed to be 2,000 feet wide.

No information has been reported whether the rock slide at its top is higher, lower or about level with the top of Hebgen dam.

Conceivably, there can be only one huge lake but more likely there will be the old Hebgen and a new lake.

[Bozeman Daily Chronicle; August 20, 1959]

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PARK IS SAFE RANGERS TELL MANY TOURISTS

OMAHA (AP)—It's still all right to plan a trip to Yellowstone Park, the Regional Park Service Office in Omaha advised tourists today.

Park Service officials said they had been flooded with calls from persons who either were planning to go to the park or had some one en route there.

All roads to the park are open except on the west side, a spokesman said. The west entrance is closed as

a result of Tuesday's earthquake.

"The concession people in the park have assured us they can provide food and accommodations and there is lodging for visitors in the park," he asserted. Earth and rock slides blocked roads at four points in the north and east parts of the park, but travel elsewhere in the park is normal, he added.

[Bozeman Daily Chronicle; August 20, 1959]

EMERGENCY PUMP WILL GUARD PIPELINE AT RIVER

An emergency pumping station is being erected by Yellowstone Pipeline company at its Missouri River crossing north of Three Forks to prevent any gasoline from escaping into the river in the event floodwaters from Hebgen Dam wash out the line, it was announced today.

"We expect to have the station set up about four miles north of Three Forks this week," said Erick P. Kienow, Yellowstone Pipeline superintendent. "We will tap into the line and top the flow of gasoline if there is any imminent danger of the river crossing

collapsing.

"Yellowstone Pipeline company has men stationed at the crossing keeping a constant watch," he said. "We want to assure the citizens of this area that we are able to check the flow of gasoline immediately if the need arises and to protect the area from any damage. Yellowstone Pipeline company will purge the line of any inflammable liquids and replace the liquids with water."

[Bozeman Daily Chronicle; August 20, 1959]

THIRD OF MOUNTAIN IS SCOOPED BY QUAKE

BUTTE, Mont. (AP)—A mountain blasted by an earthquake "looked like someone took a big scoop out of it from top to bottom," an aerial observer says.

H. A. Frank of Butte flew over the quake area Tuesday.

"At least a third of the mountain was moved. I never saw anything like it in my life, it is about a mile square," he said.

The scooped-out part of the mountain crashed across the canyon with such force that it was piled higher at the far side than near the mountain.

Frank said he saw a number of other slides. He said one was 450 yards wide. It turned the upper part of Cliff Lake into solid mud.

[Bozeman Daily Chronicle; August 20, 1959]

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Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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BOZEMAN DAILY CHRONICLE

MAJOR MOVEMENT IS QUAKE CAUSE

DENVER (AP)—What caused the wrenching, mountain-splitting southwestern Montana earthquake?

W. B. Myers, geologist for the U.S. Geological Survey, said it apparently was a major movement along a large rock fault just west of the Madison River Valley.

A fault is a huge crack in the earth's rock crust extending underground to unknown depths. Some are visible along mountain slopes.

Of the fault which sent the earth into quivers Monday night, Myers said:

"It's a steep fault in very old rocks, and yet I know

of no previous quake causing movement along it in historic times.

"We do not know enough about the deep underground geology of the area to say definitely but it may well be on one of the major faults of the United States.

"It is not considered likely that this quake will trigger other quakes in the same area. Usually a movement like this relieves pressure, acting as a safety valve to put things in a more stable condition."

[Bozeman Daily Chronicle; August 20, 1959]

TREMORS MAY LAST FOR TWO WEEKS

MISSOULA, Mont. (AP)—Earth tremors in Montana's quake-devastated Madison River Valley "could last for two weeks to a month—maybe even longer."

That's the opinion of Dr. Robert W. Fields, professor of geology at Montana State University. He

pointed out, however, that "this is only a guess, based on the experience factor in other areas."

Fields Thursday explained that the aftershocks "really are an adjustment being made on the surface of the earth to try and get back to an equilibrium."

[Bozeman Daily Chronicle; August 20, 1959]

SECOND QUAKE AT SAME SPOT SAID A POSSIBILITY

PASADENA, Calif., (AP)—Another large earthquake is possible within two weeks in the Yellowstone National Park area, an expert said today.

It is possible, said Dr. Charles Richter of the California Institute of Technology, but not necessarily probable.

He said he thinks it is possible because a strong quake in the same area in 1935 was followed in about two weeks by another equally strong.

"Since we had that occurrence," he said, "we have to consider the possibility it could happen again."

It is rare for a strong quake in any area to be followed closely by one of equal strength. Usually, the succeeding shocks are smaller.

Richter said he made the statement in response to inquiries from Montana officials in charge of rescue efforts, who wanted to know for planning purposes whether more temblors are likely.

"If they are wise," he said, "they won't pull out of the area immediately."

[Bozeman Daily Chronicle; August 20, 1959]

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MOP-UP ACTIVITIES BEGIN AT HEBGEN-MADISON AREA

Searchers Comb Area For Scraps Of Information

A gigantic rock slide blocking the Madison river about seven miles below Hebgen dam and near the mouth of the Madison canyon will be a grim monument to an unknown number of dead.

A Monday night earthquake that loosed millions of tons of rock and soil that tumbled into the canyon and presumably burying beneath it at least some campers.

This morning Maj. Gen. S. H. Mitchell, adjutant general of the Montana National Guard said no guard troops had been sent into the area.

His announcement, made through the 163rd Armored Cavalry Regiment here and relayed from Gen. Mitchell at West Yellowstone, said: "The governor of Montana has received no request for National Guard troops in connection with the (Hebgen-Madison) disaster."

This means that there are no plans to send guardsmen into the area.

Today there was little left of the emergency and disaster activity that was carried out Tuesday, Wednesday and Thursday.

Officials have reported that the entire Madison canyon area below Hebgen dam, the rock slide and the river bed below had been combed by searchers.

No bodies have been found for the past two days and it is believed that the possibility of finding any in the area around the canyon and slide is remote.

The belief still exists that an undetermined number of people were killed when the slide rolled into the canyon but there are no plans to dig into the slide.

But the death toll stands at nine known dead, including two at Cliff Lake.

The other seven were killed or died of injuries in the major slide area. A Utah woman, whose husband was killed, is missing and presumed dead.

Comparative quiet descended on the entire Hebgen-Madison canyon area today.

There were still people searching the area but only a handful compared with the number that were in that section for the past three days.

Hundreds of volunteers combed the canyon and slide area yesterday but turned up nothing new.

Most of the survivors have been reunited with their families and only four of the original 15 injured brought to the hospital here remained for treatment.

Remaining here are Mr. and Mrs. Joseph H. Armstrong of Vancouver, B.C., and Mr. and Mrs. Clarence D. Scott of Fresno, Calif. The men were listed as in fair condition this morning. Condition of both women listed as good.

Inquiries were still pouring into Red Cross emergency headquarters today as relatives of people who had been in the area sought to locate them.

More than 1,600 inquiries had been received in the past two days and many more were continuing to be received today.

The office here is set up to handle the messages and will continue in operation as long as necessary. Several Red Cross officials from other areas are here to assist local chapter volunteer workers.

Sheriff D. J. Skerritt said this morning that by the end of the day little of the personal property of nearly 300 persons in the slide area will remain.

Most of the cars, trailers, clothing, camp equipment and other items were removed by owners yesterday and today.

During the height of the search, there were forest service people, smokejumpers, Marine reservists, volunteer workers, Gallatin Sheriff's Posse, fish and game people and law enforcement officers in the area.

The smokejumpers were dropped in Tuesday morning.

[Bozeman Daily Chronicle; August 21, 1959]

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ROCK SLIDE IS PERMANENT OFFICIALS SAY AT MEETING

"The rock slide seven miles below Hebgen dam will, in all probability, be there for eternity," according to the opinion of engineers attending an 8 p.m. meeting at the Stagecoach Inn in West Yellowstone last night, Sheriff Donald J. Skerritt, Civil Defense director for Gallatin County, said this morning.

Engineers, including the man who constructed Hebgen dam, stated they were sure, "that unless another severe jolt occurs, the dam (Hebgen) will hold," Skerritt said.

Repairs on the dam will begin just as soon as roads are available for the movement of heavy equipment, it was announced.

Hugh K. Potter, Montana Civil Defense director, was named coordinator of all operations.

An emergency office was set up at the Stagecoach Inn in West Yellowstone to serve as headquarters for the disaster area mop-up operations. Telephones are to be installed in this office this morning.

"Communications are our biggest need," Skerritt said. "Through the cooperation of the highway department we have obtained big radio equipment, which will be set up in trucks and mobile generators. One unit will be stationed at the dam, one in Madison county on high ground below the slide area and one at the West Yellowstone sheriff's office."

Montana Power officials stated they will furnish men to keep constant watch on the dam, 24 hours a day, as long as the danger period exists, he added.

"All of the area north of the lake, along the north lake shore road, is absolutely out-of-bounds from the Duck Creek Wye towards the dam, to all people except workers and people with property to remove or check," Skerritt announced. "Property owners will be issued passes at the West Yellowstone sheriff's office. Anyone else caught in the area will be considered as 'looters' and dealt with accordingly."

Ten men from the Montana Highway patrol are

stationed at the area to man the blockade and handle traffic. Eight were released last night.

Skerritt said that the complete area below the dam and in the surrounding mountains has been surveyed by forest service officials to determine road and fire trail damage.

"A complete search of the ground between the dam and the slide and on the other side of the slide through the Madison valley area was completed yesterday," Skerritt said. No bodies of victims were found.

He added that pieces of clothing and other personal items found were being gathered up for possible identification to determine names of unknown persons killed in the area.

"We have discontinued diving operations until the danger of more tremors has passed," Skerritt said, adding that he felt five distinct shocks in the area yesterday, "some of which made me sit up and take notice."

All the helicopters in the area with the exception of one small machine turned over to the civil defense by Malstrom airforce officials, have been released, he said. Four helicopters search the area yesterday and a complete plane search has also been made for survivors or victims.

The Gallatin County Sheriff's Posse and forest service personnel combed the Beaver Creek and other camp areas near the disaster site yesterday for survivors or victims but none were found, the sheriff said.

Among those attending Thursday night's meeting in West Yellowstone were federal and state engineers, Montana civil defense personnel and regional CD engineers, Montana Power officials, geologists, army engineer officials, forest service personnel, Red Cross representatives and officials from the bureau of public roads. He estimated that 30 persons attended the meeting.

[Bozeman Daily Chronicle; August 21, 1959]

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WESTERN UNION FACILITIES READY FOR FULL USE

Orson Tudor, manager of the local Western Union office, pointed out today that telegraph facilities have been available at all times during the emergency here.

He said: "Our facilities have never been jammed at any time. We are in a position to handle not only emergency messages, but general business and social messages throughout the world without delay."

Elaine Zahara, Helena, and Joe Lewis, Billings, both automatic operators, were at the Bozeman office

to assist in handling the file and the extra channel set up to handle communications.

Also in Bozeman this week were P. L. Barstow from the general manager's office at San Francisco and Ralph Fulmer of the district supervisor's office at Portland, both of whom agreed that operations here were going satisfactorily, Tudor said.

[Bozeman Daily Chronicle; August 21, 1959]

PILOT CHECKS SLIDE HEIGHT AT 280 FEET

Al Newby, president and manager of Flight Lines, Inc., at Gallatin field, this morning made his 18th flight over the Hebgen-Madison area.

During the course of his trips into the area, he has taken the time to compute the size of the rock slide blocking the mouth of Madison canyon.

By flying at times below the level of the rock slide and checking his flight instruments, Newby concludes that the slide at its highest point is about 280 feet. The lowest, he believes, is about 100 feet high and about in the middle of the slide area.

These heights are figured as above the river bed.

This morning by using the ground speed of his plane and a stop watch while flying through the canyon, Newby calculates the length of the slide as possibly over a mile long.

This morning the new lake forming behind the slide had backed water for a distance of perhaps 2½ miles.

Using these slide height figures, it seems that the new lake, when it reaches the top of the slide, would back water up stream to a point possibly a half mile below Hebgen dam.

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DR. BAYLES FIRST TO REACH INJURED Praises Billings Nurse

Editor's note: Dr. Ray G. Bayles of Bozeman was the first outsider to reach the huddled groups of injured in the earthquake-hit Hebgen Dam area Tuesday. The physician, owner of the Stagecoach Inn at West Yellowstone, said he feared for the safety of his employees and decided to make an immediate check for injured. His account gives the first word of the heroic work of a Billings nurse, Ramona Green, who had camped in the area.

By Dr. Ray G. Bayles

As told to The Associated Press

The injured and those marooned in the Madison Canyon area tell me I was the first outsider to reach them.

I chartered a plane early Tuesday morning after hearing that roads were cut and that Hebgen Dam might go out. The pilot, Bob Winterowd of Bozeman, and I flew over the areas where mountain slides occurred. As we passed, we could see groups of people gathered on high points, waving anything they had to attract our attention.

We flew as low as we could over the canyon to determine what had happened. We saw the terrific slide, the one which covered a mile of canyon, and knew anybody adjacent to it must have been injured.

The groups, gathered on high ground, apparently expected the dam to go out and flood the entire area.

We flew on to West Yellowstone, landed, and at the Stagecoach Inn I gathered all the dressings and medical supplies that I could. I already had taken my medical bag with me from Bozeman.

I went back to the airport and asked my pilot if he would land me somewhere near the dam. He said, "If you're willing, so am I." We flew out and landed within a mile of the dam in an area where people were dragging some boats out of the water.

We walked to the lake and one young fellow volunteered to drive me across in a motor boat. The lake was full of pine trees and other debris. We had to go right to the end of the dam to land, then had to cross

the cracks and crevices made by shifts in the land. The ground was still quivering.

In the area just along the highway end of the dam all the more seriously injured were gathered. They were lying in station wagons, trailers, sleeping bags and anything available.

A nurse, Ramona Green of Billings, had been camping in the area with her family. They had been a little above the major slide, so had not been injured.

She had done a very fine job of keeping those people under control and calm. I got there about 9 a.m. so for about nine hours these injured lay there without any sedatives and narcotics to kill the terrible pain. She did a wonderful job of keeping them calm and quiet.

I gave the injured first aid. Fortunately we had sufficient narcotics and stimulants along to treat all of the 15 badly injured.

After doing everything possible for the injured, I took the boat across the lake and had the pilot fly me back to Bozeman to help set up the air rescue of the injured. They couldn't be taken out by boat, they were too badly hurt to be transported that way, and no roads were open. It was a matter of getting them out by helicopter.

Helicopters and other planes arrived shortly before noon. The 15 seriously injured that I saw at 9 a.m. were in a Bozeman hospital by early afternoon. I shuttled back and forth with the planes to see that all seriously injured got out okay.

The helicopters flew the injured to West Yellowstone airport. From there a DC-3, converted into an ambulance, carried the injured on to Bozeman, four at a time.

Two of these injured since have died.

Some of the injured told me they knew of several trailers and groups of people that were further down in the major slide area that didn't have a chance to get out. It'll probably never be known just how many there were.

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PEOPLE HUDDLED TOGETHER DURING NIGHT OF TERROR

Editors Note: A newsman who was trapped in the Madison River Canyon by the Montana earthquake, tells here of the ordeal:

By Gerald L. McFarland
News Editor, Salem, Ore., Capital Journal.

My wife and I were asleep in a trailer six miles below the dam when the first tremor hit about 12:30 a.m. It came without warning. We thought the trailer might tip over. Then we thought we were rolling into the Madison River, about 50 feet away. We couldn't get out. The shock lasted about 45 seconds.

When we finally freed ourselves, we rounded up our party of six and found all were uninjured. The main slide had occurred about one-half mile upstream toward the Hebgen Dam. I quickly hooked up the trailer and we started out with just the clothes on our backs.

Our first thought was of the dam. We knew it was old and thought it had probably burst.

The side roads downstream were blocked by slides so we started upstream, hoping to find high ground. We expected to meet a wall of water at any time. The road was strewn with boulders about the size of a watermelon. Small trees, uprooted by the quake, blocked our way. We had to stop every 10 feet and clear the road.

Approximately one-half mile upstream, we did see a wall of water coming. We thought the dam had surely broken and this was it. The water was just beginning to creep over the side road when we found higher ground. We later learned that the water escaped over the top of the dam like a tidal wave, forced out by the action of the quake.

Within an hour there were about 150 of us on a ledge-like area. The five gallons of water in my trailer house were all the group had. We quickly made coffee and this helped to calm everyone.

The aftershocks continued all night. We counted about 25 of them. After each tremor, hundreds of slides would start. There were boulders the size of an automobile crashing around us. This was a horrifying sound.

The biggest slide down the canyon covered the highway for about a half mile. It was just unbelievable to see. The people camped near the biggest slide

immediately became engulfed in the rocks and flooding waters from the river. I think six people died down there.

About 2 a.m., we formed a rescue party to bring the injured out of the main slide area. We went down into the valley, still not knowing when the dam might burst. We brought about 20 people out, and made them as comfortable as we could.

At daybreak, an airplane flew over. There were other aircraft and helicopters blanketing the scene the rest of the day.

About 9 a.m., Tuesday we organized a volunteer party to return to the main camp for food and medical supplies. We were all jittery. We thought it might be days before we could escape the rubble.

In the party besides myself were I. K. Saltzman who lives near Canton, Ohio, Terry Owen and his son Jack from Riverside, Calif., and Hank Powers of Twin Falls, Idaho. We made two trips into the camp and brought back food and medicine. This greatly improved the supply problem and helped the injured.

About 11 a.m., the first helicopter landed at the dam and took four injured out. From then until dark there was a constant stream of whirlybirds evacuating the stranded and stunned persons.

Early in the afternoon Dr. Richard Nollmyer of Bozeman and two nurses made their way to us on foot. The nurses were Rita Gilbert and Barbara Nute, both of Bozeman. They said when they heard about the quake, they volunteered to try to get to us. They had to walk about four miles over rocky ground and slides.

They were a great help. They patched everyone up, and made them ready for evacuation.

At 6 p.m. the Montana Highway Department opened an old Forest Service road high above the dam. Cars went out first, then trailers brought up the rear. We had to be pulled out by bulldozer.

Our last experience about 10 p.m. Tuesday as we were trying to get out was perhaps the most harrowing. We were given the wrong directions and drove our car and trailer into the rising waters of the Madison River, blocked by the main slide. The trailer was actually floating at one time and we had to get out in waist-deep water and push it to higher ground. But we did finally get out about midnight.

We were so tired we camped about halfway

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between the slide area and Bozeman, Mont. for the rest of the night.

BOZEMAN DAILY CHRONICLE

But we were safe.

[Bozeman Daily Chronicle; August 21, 1959]

TOURIST BUSINESS IS BOOMING AT WEST YELLOWSTONE

WEST YELLOWSTONE, Mont. (AP)—At least one aspect of life in this western mountain resort town returned to normal today.

The tourist business was better than ever.

The only difference: Now they are flying sightseers over the Hebgen Dam-Madison River Canyon earthquake tragedy area.

With the west entrance to Yellowstone National Park closed because of 'quake road damage, the tourist business dropped earlier this week. But today the small airport was doing a landoffice business flying charter sightseeing trips.

At noon Thursday there were 15 private planes on the airport. Also lined up for other uses were four big Air Force search and rescue helicopters, an Air Force two-engine transport. Many other planes were in the

air.

V. H. Rock, who handles an automobile rental agency and sells gasoline at the airport, said that on an average summer weekday there may be from three to ten private planes at the field.

Another indication of a return to normal was a speedup in long distance telephone communications. For 18 hours after the Monday earthquake West Yellowstone had no telephone communications with the outside world.

Service was restored about 6 p.m. Tuesday, but at first there was but one line and it was jammed. This condition still existed this morning, but by this afternoon calls were being placed without delay.

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ACTION NEED IS SEEN BY ENGINEERS

An engineering survey of the Madison river earthquake slide will begin immediately, Maj. Gen. K. R. Barney, Missouri Division chief of the Corps of Engineers, announced here Saturday.

Gen. Barney said the survey is being made under the general emergency flood responsibilities assigned to the corps.

His announcement followed a three-day personal inspection of the earthquake-damaged area with members of his staff. Inspected were the mile-long slide of rock and earth blocking the mouth of the Madison canyon and damaged Hebgen dam.

"Our investigation will be conducted in close coordination with state authorities and with other federal agencies having responsibilities in the earthquake area including Bureau of Reclamation, Forest Service, Geological Survey and Civil Defense," Gen. Barney said.

"After seeing the damage in the area and the potential flood threat created by the slide, and the water backing up behind it, we felt immediate and prompt action must be taken. The decision to proceed has been approved by the Department of Defense and Chief of Army Engineers, Maj. Gen. F. Itschner, Washington,

D.C."

Gen. Barney said Gov. Hugo Aronson of Montana had requested the Corps of Engineers to undertake the study and the general said he had already taken "preliminary steps in this direction when the order came" to proceed with inspection and study.

The investigation has been assigned to the Garrison Engineers district of the Corps of Engineers at Riverdale, N.D., under supervision of Lt. Col. Walter Hogrefe.

Engineers and hydrologists from the Garrison district were moved into Bozeman and West Yellowstone Saturday.

Gen. Barney said the engineers office will be established in Bozeman or West Yellowstone but most likely West Yellowstone.

An initial crew of 12 to 14 men were being moved into the Madison river area over the weekend.

Col. Hogrefe arrived from Riverdale Saturday morning and immediately went into conference with Gen. Barney and other staff members from Omaha on procedures for the investigation.

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EVACUEES FROM EARTHQUAKE AREA FIND HOSPITALITY AND AID FROM BOZEMANITES

Evacuees from the Hebgen dam-Madison canyon earthquake and landslide disaster found hospitality and aid extended them from the community, the Red Cross and even a large corporation.

Many of the 300 people in the disaster area last Monday night when one of the strongest earthquakes to be recorded in recent years lost everything they had except the clothing they were wearing that night.

Emphasis, when the trapped hundreds were released from the Madison canyon Tuesday evening, was to provide shelter and food, if necessary for the uninjured. This was done through the Gallatin Red Cross chapter, its volunteer workers and Montana State College at Pryor hall.

Because some families had lost all of their clothes, equipment, cars and trailers, they were in great need.

Several families were provided with new clothes by the Red Cross as well as transportation home, mainly by train.

In one case, a special problem presented itself and here the Hertz Car rental showed its heart.

The Henry Bennett family of Cottonwood, Ariz., escaped with no injury to the family of four but during the evacuation, Bennett and a daughter, Jeannette, became separated from Mrs. Bennett and a son, Royal.

The problem was magnified because Bennett is a polio victim and confined to a wheel chair.

After the family was reunited, plans were made to get the family home but airline, train and bus transportation was ruled out because of Bennett's condition. Long layovers and stops were impractical.

Charter plane was expensive and then the possibility of renting a car to take the family home was considered.

The manager of the Hertz Car firm here said, "Look, we have a car going to Ogden, Utah. Take that to Utah. There will be no charge."

Then it developed that at Ogden there was a rental car that was to go to Flagstaff, Ariz. So the family made the trip in two cars, provided free by the rental concern.

[Bozeman Daily Chronicle; August 23, 1959]

LITTLE BOY CAN'T IMAGINE HIS DAD DEAD IN THE QUAKE

SANDY, Utah (AP)—Three-year-old Terry Mark Stowe went fishing with his dad last Sunday.

It was a reward, so that he would stay home while his mother and father went on a more extended outing Monday.

His parents were killed when an earthquake shaken mountain collapsed onto a popular camping spot on the Madison River below Hebgen Dam in southern Montana Monday night.

The body of the father, T. Mark Stowe, was found on the downstream side of the huge slide area. The mother is listed as missing.

The Stowes' auto was one of two cars found, rolled

up like wads of crumpled paper, only a few hundred feet from the avalanche.

Terry is staying with relatives. He has been told about his father, but does he realize fully what it means?

"Nothing can happen to my dad," he said.

He hasn't been told about his mother.

His future hasn't been definitely decided. But his grandparents, Mr. and Mrs. Thomas W. Stowe and Mr. and Mrs. Rex G. Whitmore, along with several uncles and aunts, vow that he will have a happy home.

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TOLL OF TOURISTS MAY BE HIGHER

By The Associated Press

Did the Montana earthquake take a far higher toll of tourists than at first believed?

Families in communities scattered from coast to coast expressed growing fear Saturday at continued silence from relatives known to have been traveling in the shock area.

In addition to nine known dead, scores of men, women and children have not been heard from since tons of rock and earth thundered down into the Hebgen River Valley last Monday.

Red Cross emergency headquarters at Bozeman, Mont., said more than 2,300 inquiries had been received from anxious relatives. Some 1,500 to 1,800 of the people asked about could not be immediately traced, but a spokesman said many later turned up safe.

Of the others, said the Red Cross, many may not have been anywhere near the area. But many of the missing were known to have been close to the quake site.

Among them are eight persons from the state of Washington, six southern Californians, four from Massachusetts, three from New York State, and three from Utah.

Are they buried forever under the landslide? That was the thought gnawing at those who wait for word, good or bad.

Among those waiting are Mr. and Mrs. Roy Maricich of Anacortes, Wash.

Their boy, Peter, 8, was in a group of eight from Anacortes vacationing in the area. Their trail ends at Old Faithful geyser in Yellowstone National Park.

A letter received by the Mariciches Monday, day of the quake, said the group was going out to hunt agates and pick berries—in the Hebgen River area. It also said they would telephone the Mariciches Monday

night.

The call never came. And none of the eight has been seen since.

With young Peter in the group were Mrs. Maricich's parents, Mr. and Mrs. Virgil Keltz Sr., along with Mr. and Mrs. Virgil Keltz Jr., and their three children, Don, 9, David, 7, and Karen, 6.

From Boston, the Red Cross reported that a Wakefield, Mass., Navy officer and his wife and two children have not been heard from since the quake.

They are Lt. Harry W. Patch, his wife, Jean, and a boy and girl, Harry Jr., 5, and Jean, 1.

The family, on vacation, was driving by car and trailer from the West Coast to Washington, D.C. Patch's sister, Mrs. Joseph O'Neill, said the family intended to travel through Yellowstone Park.

From Saratoga Springs, N. Y., George H. Smith, a contractor, expressed fear his wife and two daughters may have been buried under a rockslide in Montana or Wyoming while on a camping trip.

Smith said his wife, Bernice, and the girls, Joy, 15, and Nancy, 9, were to have arrived at Rock Creek Camp in Yellowstone National Park Sunday night. He said his wife was to have called him early this week, but there has been no call.

From Los Angeles, it was reported that six Southern Californians visiting Yellowstone Park during the earthquake were unaccounted for.

They were listed as Hugh Lee Moore, 36, his wife, Mary, 30, and two children of Los Angeles, and James E. Weaver, 55, and his wife, June, 50, of Burbank.

Of a number of Utah residents first reported missing in the quake area, three still have not been heard from. They are Elizabeth McMillan of Salt Lake City, and Mr. and Mrs. Ken Horton of Clearfield.

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QUAKE DAMAGE HASTENS REPAIR OF STATE PRISON

HELENA (AP)—Razing of the 90-year-old original cellblock No. 1 at the State Prison which was severely damaged by Monday's earthquake was started Friday by Cahill-Mooney Construction Co., Butte.

Gov. J. Hugo Aronson and Secretary of State Frank Murray, sitting as the State Board of Examiners at an emergency meeting Thursday night, authorized the immediate action.

Prison Warden Floyd Powell stressed that the prison is still secure. The situation is one of overcrowding, he said.

The board also asked the Butte company to secure and erect a Butler-type steel building inside the prison walls. This type building may be dismantled later and converted to other use.

Also approved were:

Conversion of the women's quarters to a maximum security unit within the walls.

And conversion of a building located behind the warden's house, across the street from the prison, to accommodate women prisoners.

The building adjacent to Powell's residence now houses laundry facilities and quarters for inmates employed in his home. Remodeling will accommodate about 12 women prisoners although the prison now holds only four.

Kenneth Knight, of the Great Falls architectural firm of Knight & Van Teylingen, which is handling over-all programming plans for prison improvement, also attended the special meeting.

[Bozeman Daily Chronicle; August 23, 1959]

EIGHTEEN AFTER QUAKES RECORDED AT HELENA

HELENA (AP)—Eighteen earth tremors or aftershocks have been recorded in Montana's Capital City since the Monday night earthquake that ripped through much of the Madison Valley.

The U.S. Weather Bureau said Monday night's

quake was the first in Helena since April 19. It brought the city's total quake count since 1935 to 2,964.

The most recent tremor felt in Helena was at 12:12 p.m. Thursday.

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FIVE WEEKEND TREMORS TOUCH OFF MORE SLIDES

Forest Road Blocked By Sharp Jolt Early Sunday

WEST YELLOWSTONE (AP)—More earth tremors were felt Sunday night and today in West Yellowstone, but none as sharp as one Sunday morning which touched off a rock slide.

Police said there were four or five new tremors but none apparently caused any damage.

The Sunday morning jolt brought rangers and tourists from their beds in the Old Faithful area of Yellowstone National Park.

It was here that the devastating quakes of last Monday night and Tuesday were centered. Tremors have been felt each day since then.

Sunday's early morning shock caused a big rock slide which blocked a forest road in the Hebgen Dam area. About 20 summer homes are in the new slide vicinity, but police here said it was believed all the cabins were unoccupied.

The group from Washington, D.C., flew there via Bozeman, Mont. and Billings, Mont., after a helicopter tour of the quake area Sunday.

Sen. Frank Moss (D-Utah) termed the damage appalling, and expressed belief "quite a number of bodies" are entombed in the giant slide northwest of Hebgen Dam. The original quake last Monday night sent an entire mountainside thundering down on Rock Creek campground there.

Nine persons were killed in the quakes and a 10th is missing and presumed dead.

Reports from throughout the nation show at least 16 other persons missing. They are among those still unaccounted for on Red Cross lists at emergency headquarters in Bozeman.

They are Navy Lt. Harry W. Patch, his wife, Jean, and their two children, Harry Jr., 5, and Jane, 1, of

Wakefield, Mass.; Mr. and Mrs. Hugh Lee Moore and their two children, of Los Angeles; Mr. and Mrs. James E. Weaver of Burbank, Calif.

Milford Kellogg, an Atomic Energy Commission employee from Damascus, Md., his wife and their two sons; and Mr. and Mrs. Laird R. Allen of Clairton, Pa.

One group of eight persons from Anacortes, Wash., previously reported as unaccounted for was located at a ranch near Ennis, Mont., by the Red Cross. Relatives said they had heard nothing from the families of Mr. and Mrs. Virgil Keltz Sr. and Jr. since last week's disaster.

In other developments, Rep. Lee Metcalf (D-Mont.) has urged Gov. J. Hugo Aronson to seek disaster area designation for the southwest Montana region hardest hit.

Metcalf said this would provide federal aid for highway repair and other needed projects.

In Helena, Aronson called a meeting Friday of representatives of federal, state and county agencies to determine what steps are needed to restore travel, communications and safety to the area.

At Schenectady, N.Y., Mrs. Dawn E. Harding waited for word of her family believed in the quake area.

Mrs. Harding said her daughter, Nuys, Calif., wrote a week ago from Ogden, Utah, that she was en route to Montana with her husband and two sons.

Mrs. Harding said she feared that her relatives may have camped in the area hit by the tremors. She said she has been unable to get any trace of the Dobbins family.

[Bozeman Daily Chronicle; August 24, 1959]

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GEYSER ACTIVITY IS TRIGGERED BY EARTHQUAKE

YELLOWSTONE PARK, Wyo. (AP)—Last week's earthquake apparently did not jar Old Faithful Geyser off its schedule of eruptions, but the earth shocks apparently stepped up the paces of many other geysers in Yellowstone National Park.

Dean Stone, managing editor of the Maryville-Alcoa, Terry Times, says he was told by a park official that the affected geysers may or may not return to their old pattern.

Stone says he was told that Economic Geyser, which had been dormant for nearly half a century, was triggered into action. Its boiling water is killing trees which had grown up near its mouth. The trees are estimated to be 40 to 50 years old.

The Morning, Fountain and Clepsydra Geysers are among those which have increased their tempo of eruption since the quake last Monday night.

Large cracks around some of the geysers and changes in geyser activity has led to the closing of the road through the lower geyser basin just north of Old Faithful.

The quake also has caused some of Yellowstone Park's other thermal features to become less active. Grand Geyser has not been in action for several days, although it normally erupts every 9 hours. It is larger than Old Faithful.

[Bozeman Daily Chronicle; August 24, 1959]

BOYS SHOW UP AFTER MEMORIAL FOR THEM

LEWISTOWN, Mont. (AP)—Memorial services were held at the National High School Rodeo Thursday for two young spectators reported lost in the quake-torn Madison canyon area of southwestern Montana.

Saturday the boys turned up, very much alive.

Bill Leitzinger and Mike Debates, both of Creighton, Mo., had run a little short of funds en route to the rodeo. R. B. Frazer told rodeo officials they were working on his ranch near Lewistown.

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RED CROSS LISTS NAMES OF MISSING

Eighty-eight persons feared in the Canyon area of southwestern Montana were still unaccounted for today, nearly a week after the quake.

Their names, compiled by Red Cross emergency headquarters in Bozeman, were released by Gallatin County Sheriff Donald J. Skerritt of Bozeman, who urged all of them to let their families know if they are still all right.

On the official list are those who have been repeatedly inquired about, but for whom no trace has been found since the quake. They are:

Laird Allen, wife and two children, Clairton, Pa.

William Baxter, wife and two children,
Merchantsville, N.J.

B. L. Boynton and wife, Billings, Mont.

Oliver Calhoun, wife and two children, Pendleton,
Ore.

Frank K. Dobbins, wife and two children, Van
Nuys, Calif.

Merle Edgerton and wife, Coalinga, Calif.

The Rev. D. Enns, wife and two sons, Portland,
Ore.

Robert Finch, wife and two children, Highland,
Ind.

Harold Goodman, wife and two sons, New York
City.

Louis Gulbranson, wife and one child, Niles,

Mich.

Milford Kellogg, wife and two sons, Damascus,
Md.

Hugh L. Moore, wife and two children, Los
Angeles.

Kenneth Mulford and wife, no hometown listed.

Navy Lt. Harry W. Patch, wife and two children,
Wakefield, Mass.

Roger Provost, wife and three children, Soledad,
Calif.

William Reynolds and wife, Lake Orin, Mich.

Dr. John Rupper, wife and four children, Provo,
Utah.

Mrs. Stella Rupper and Michael Rupper, Provo,
Utah.

Herman Schulund, wife and son, Havre, Mont.

Kurt Stine (or Stein), Seattle.

Arthur Ullman and wife, Davenport, Ia.

The Rev. Harry Vix and wife, Martin, N.D.

Lloyd Webster and wife, Santa Rosa, Calif.

Frank Welt, wife and three children, New York
state, no town listed.

Robert J. Williams and three children, Idaho Falls,
Idaho.

Harmon Woods and wife, Coalinga, Calif.

[Bozeman Daily Chronicle; August 24, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

THIRTY-THREE PERSONS ARE MISSING

WEST YELLOWSTONE, Mont. (AP)—The Red Cross list of persons still unaccounted for in southwest Montana's earthquakes a week ago narrowed to 33 today as six more names were removed.

The Red Cross at Bozeman, Mont., reported Mr. and Mrs. Kenneth Mulford, address unlisted, were safe. The report contained no details.

It also developed that Navy Lt. Harry W. Patch, his wife Jean and their two children, had been vacationing at Grand Junction, Colo., for several days after going through the major quake in Yellowstone National Park. They now are en route to their home at Wakefield, Mass.

At one time Monday, the Red Cross listed as many as 88 persons as possibly missing. Many of these were located alive and well.

Nine persons were killed, and a 10th is missing and presumed dead.

The immediate concern here is for the massive earthslide which may have buried alive some campers in the Rock Creek area, downstream from Hebgen Dam where the quake centered.

Water spilling through the dam has formed a seven-mile long lake known as Quake Lake, and officials say the waters will crest the natural dam formed by the rock slide in from 20 to 30 days.

Army engineers from Omaha, Neb., began inspection of the area Monday to determine how best to relieve a flood threat in the scenic Madison River canyon. The nearest town is Ennis, Mont., 45 miles downstream.

The engineers are considering whether to use the slide as the core for a permanent dam, or to carve a channel through the slide.

Hebgen Dam itself was damaged by the quakes. It holds back more than 300,000 acre-feet of water in Hebgen Lake.

At Nelson, B.C., friends of Mr. and Mrs. Sydney D. A. Ballard have been advised by the Red Cross that the Canadian couple and their crippled nine-year-old son, Christopher, may have died in the earthquakes.

The family left Nelson Aug. 15 for a camping holiday in Montana.

[Bozeman Daily Chronicle; August 25, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

RADIO HAMS ARE AMONG UNSUNG HEROES OF QUAKE

There are many unsung heroes during any major disaster such as the recent Hebgen area earthquake.

Among those in this area are the amateur radio operators, better known as "hams." Through their efforts contact was established with West Yellowstone within 15 minutes after the initial quake rocked the area.

R. Earl Dawes, emergency coordinator for Gallatin county, said today that the emergency short wave contact was organized over W7ED. Contact with West was established through Warren Russell, K7ICM, and Hank McTuistan, who had a mobile unit in his car, WA7AYG, Dawes said.

He also told of a Father Peterson, W7RKI, who relayed communications of the lightning storm affect in the area.

"Amateurs responded 100 percent," he added.

"We cleared messages through our emergency channel, turning them over immediately to Sheriff Donald J. Skerritt, until the equipment at the sheriff's office could make contact."

Dawes said that during the night and early morning (Tuesday) they made direct contact with Butte, Helena, Great Falls, Billings, Havre, Chinook, Dillon, Livingston, Missoula and Cut Bank. He said the hams relayed and received messages from Seattle and, indirectly from Pasadena, Calif., to Canada and from North Dakota to the Pacific.

"One thing which made it peculiar was the fact that we would be talking with fellows on the air when they had tremblers and we could feel them here at the same time," Dawes said. He added that this was true with both state and out-of-state calls.

[Bozeman Daily Chronicle; August 25, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
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Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

NUMBER OF PERSONS KILLED STILL IS MYSTERY OF SLIDE

WEST YELLOWSTONE, Mont. (AP)—A Red Cross official said today it appears that three Canadians can be presumed dead in the Montana earthquake.

They are Mr. and Mrs. Sydney D. Ballard and their son Christopher of Nelson, B. C.

There are nine known victims of the quake and one other person—Mrs. Thomas Stowe of Sandy, Utah—is presumed dead.

Addition of the Ballards would raise the known probable death toll of the Aug. 17 temblor to 13.

The statement that the Ballards can be presumed dead came from Joseph Hladecek of San Francisco after he had talked with Ballard's mother, who went to Red Cross headquarters at Bozeman, Mont., to check. He did not retain a record of her name. Hladecek is in charge of compiling the list of missing at the Bozeman office.

Hladecek quoted the mother as saying there is no doubt in her mind that the Ballards were killed.

Earlier, Mr. and Mrs. Henry F. Bennett of Cottonwood, Ariz., told interviewers they had been camping near the Ballards at Rock Creek campground—where the major mountainslide roared down after the quake, damming the Madison River. The Bennetts said they had become friendly with the Ballards and are certain the Canadian family did not escape. The Ballard youngster was crippled.

Other survivors said earlier they had seen an automobile with a couple and a crippled boy buried by the landslide.

Fears have been expressed that others may be buried by the slide.

The Red Cross continued to list the Ballards officially as unaccounted for.

One slight tremor was felt in West Yellowstone about 7:15 a.m. today but no damage was reported.

The U.S. Forest Service began clearing a slide touched off Sunday by a sharp jolt. The slide blocks

the road to summer homes on the west side of Hebgen Lake.

The danger of floods was regarded as past in the Madison Canyon area where the big rock slide created a lake.

While crews supervised by the Army Corps of Engineers cut down the crest of the debris-laden slide, a portable shortwave radio was set up on a nearby mountaintop. Volunteers will man it day and night.

The slide is backing up Madison River water about seven miles downstream from Hebgen Dam.

Col. Walter Hogrefe of Riverdale, N.D., supervising the work, said the rapidly filling lake already is more than 100 feet deep and it is filling at the rate of 12 feet a day.

"We feel there is very little flood threat as a result of the work we are doing," Hogrefe said.

An estimated 1,500 people live in small communities downstream.

Meanwhile, Montana's congressional delegation estimated the quake damage at more than 5½ million dollars. They called on Gov. J. Hugo Aronson to declare a disaster area—a decision he said may be made Friday.

The loss of national forests was estimated at \$500,000. The lawmakers said it would require three to four million dollars to replace State Highway One, damaged for 20 miles, and two million dollars to repair damage to Yellowstone National Park.

Yellowstone National Park is south and east of Madison Canyon.

The names of people still unreported in the area since the quake now total 42, the Red Cross said.

Twenty-three of the original list of 115 were located Tuesday, many of them thousands of miles apart. In all, 73 people have been found.

[Bozeman Daily Chronicle; August 26, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
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SHERIFF REFUSES MEMORIAL SERVICE AT SLIDE AREA

Memorial services for earthquake victims, scheduled for tomorrow, must be conducted on the flats in the valley rather than in the slide area, Sheriff Donald J. Skerritt announced here at noon today.

Bishop Chandler Sterling of the Montana Episcopal Diocese has announced that he and ministers from the Catholic and Jewish faiths will conduct the services at 2 p.m. tomorrow at what may be the final resting place for an unknown number of earthquake victims.

The announcement stated that the services would "probably be at the foot of the giant slide which crashed across Rock Creek campground a week ago Monday night."

"Nobody will be allowed in the slide area on the Ennis side except army engineers and contractors they hire," Sheriff Lloyd Brooks of Madison County said at noon. "Any service must be conducted on the flats in the valley."

Sheriff Skerritt announced that no one except authorized personnel will be allowed in the Hebgen Lake area beyond the Duck Creek Wye. A road block has been set up at the wye.

Representing the Roman Catholic faith at the planned memorial services will be the Rev. Leonard Jensen, pastor at Laurin, near Ennis. Rabbi Kerte of Butte will conduct the Jewish service.

[Bozeman Daily Chronicle; August 26, 1959]

SHORT WAVE RADIO IS SET UP AT EARTHQUAKE SLIDE

A portable short-wave-radio has been set up on a mountain overlooking "earthquake slide" in the Madison Canyon. Sheriff's officers said the unit is being manned day and night by volunteers primarily as a device to warn of possible flood threats.

The unit has direct contact with West Yellowstone, Virginia City and Ennis. Mobile equipment used

previously did not have this 70-mile range.

The slide is backing up Madison River water about seven miles downstream from Hebgen Dam, which was damaged by a major earthquake eight days ago.

[Bozeman Daily Chronicle; August 26, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
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Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

ENGINEERS RACE TO CUT CHANNEL

WEST YELLOWSTONE, Mont. (AP)—Army engineers, racing a rising reservoir, hacked away at a mountainous rock slide today to channel Madison River water dammed up since a disastrous earthquake eight days ago.

Their goal is to prevent a possible flood in the valley below, home for about 1,500 persons.

"We plan to bulldoze a spillway section to carry the water out in a smooth flow," said Lt. Col. Walter Hogrefe, Garrison District engineer from Riverdale, N.D.

"We don't know how deep the spillway will be, but we'll be ready by the time water from 'Quake Lake' reaches it." That, he said, at the current rate of rise, will be about 10 days.

Hogrefe said crews also are levelling major humps in the slide to provide for a smooth flow in peak seasons when it may overflow the spillway.

The lake is now a little over 100 feet deep and about 100 feet below the work area.

It is backed up behind some 50 million tons of rock, trees and debris which thundered through Rock Creek Campground the night of Aug. 17, choking the river through Madison Canyon about seven miles below Hebgen Dam. Hebgen also was damaged, but has held firm so far.

Hogrefe said the material in the slide appears to be mostly rock and "looks fairly stable." It varies from 150 feet to 300 feet high across the half-mile wide canyon and stretches up the canyon nearly a mile.

About 32 engineers, working 24 hours a day, completed a 1,300-foot road to the downstream side of the slide Tuesday to permit movement of heavy equipment into the area.

[Bozeman Daily Chronicle; August 26, 1959]

MILE OF HIGHWAY COVERED BY SLIDE

HELENA (AP)—Highway Department engineers say slightly more than one mile of highway—about 5,900 feet—was covered by last week's earthquake slide in the Rock Creek Camp area.

Extensive damage to the road, Montana 287, also known as Montana 1, was reported both above and below the slide. Large segments of the highway dropped into Hebgen Lake above the dam.

Large cracks and fissures severely damaged the

roadway from Duck Creek to Hebgen Dam.

Highway Commission Chairman Harry L. Burns has said about 20 miles of road would have to be replaced. Montana's congressional delegation estimated this cost at over four million dollars.

The road is designated as a National Forest route and was built with federal money.

[Bozeman Daily Chronicle; August 26, 1959]

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MADISON RIVER AREA MAY NOT QUALIFY FOR LEGAL AID

HELENA (AP)—Unless damage to public property in excess of \$500,000, other than highways, can be shown, there may be difficulty in declaring a disaster area in the Civil Defense Director Hugh K. Potter said Tuesday.

"The immediate emergency is over," Potter said. "With the exception of Gallatin and Madison County sheriff's forces and the Army Engineers, emergency staffs have left the earthquake area. They are prepared to return on short notice, however, in case there are more serious quakes that cause additional problems.

"This was a terribly spectacular earthquake. But it was in an isolated area. When the rescue of about 220 people, and removal of bodies was completed, the emergency ended for the time being. "Unless there is additional damage from quakes or floods, it will be very difficult to show \$500,000 damage. Declaration of a disaster area by the President can only supply funds to state, county and cities involved after expenditure of local funds in excess of that sum."

Potter told a newsman that "as the damage to upwards of 20 miles of highway is largely a state and federal responsibility, it seems doubtful now there was a half million dollars damage to other tax supported properties. It is fortunate the quake hit in an isolated area. Had it struck in a populated section, there would, of course been extensive damage to buildings, sewers and other services.

"Obviously, before Gov. J. Hugo Aronson can ask the President to declare a disaster area, he must have facts necessary to comply with federal laws. So far there have not been sufficient factual damage reports to qualify. That is why the governor has called the conference in Helena Friday, so that an accurate check can be made by engineers and others skilled in making estimates and recommendations.

"As there is no emergency involving lives and property at the moment, we must await the Friday conference."

Potter pointed out that the federal government does not supply money to individuals, for such damage as may have been caused to store stocks in West Yellowstone, broken windows and other earthquake losses. But he said he understood the Small Business Administration had been asked to see if loans can be arranged to those individuals affected.

Potter said he had notified all home and cabin owners below Hebgen Dam to remove whatever effects they may desire, in case there is additional flood damage.

As of Tuesday, the Forest Service has returned special crews to Missoula, the military staffs have returned to bases and local authorities are in charge, Potter said.

[Bozeman Daily Chronicle; August 26, 1959]

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QUAKE LOSS SAID OVER SIX MILLION

HELENA (AP)—Estimated damage from last week's Madison Canyon area earthquake already totals between 5½ and 6½ million dollars, Montana's congressional delegation said Tuesday.

Their report to Gov. J. Hugo Aronson again carried an appeal that he request declaration of a disaster area, thus becoming eligible for federal aid. Aronson has said the decision would be made Friday, after a conference with federal and state officials.

Sens. James E. Murray and Mike Mansfield, and Reps. Lee Metcalf and LeRoy Anderson, all Democrats, estimated the loss of national forests at \$500,000, plus three to four million dollars to replace 20 miles of Montana Highway 287.

The congressmen quoted Director Conrad Wirth of the National Park Service as saying Yellowstone National Park damage would be about two million dollars.

The park is south and east of the Madison Canyon where earthquake slides Aug. 17 killed nine persons, injured more than 30 others, and may have buried an

unknown number of campers.

The congressmen noted that the requirement that public property damage must exceed \$500,000, other than highways, for the state to be eligible for federal aid does not apply to federal property where major damage occurred.

"You can request various disaster assistance on federal lands anytime," the delegation said.

"We will support the request and rapid action to restore all facilities."

They said the secretaries of Commerce, Agriculture and Interior have been asked to provide Aronson with advice on assistance that is available.

They added, "Great economic damage to the recreational area will continue as long as the west entrance to Yellowstone Park is closed and a good route to Ennis and Highway 10 is unavailable."

The delegation said lawyer James Bottomly will represent them at the meeting in Helena Friday.

[Bozeman Daily Chronicle; August 26, 1959]

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Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
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ENGINEERS RUSH SLIDE SPILLWAY Have 10-Day Deadline

WEST YELLOWSTONE, MONT. (AP)—Army Engineers Thursday figured they have eight or nine more days in which to bulldoze a spillway in the massive mountain slide damming the Madison River.

Water in the lake forming behind the earthquake-caused slide is rising at the rate of 9½ feet a day. The water is coming through the spillway at Hebgen Dam, seven miles above the slide, and from springs.

Eighteen bulldozers, power shovels and other pieces of earth-moving equipment borrowed from Idaho and Montana contractors were being used Thursday.

So vital is the need for heavy equipment to help beat the rising lake that one bulldozer sent by Peter Kiewit Sons Co., Idaho Falls, got a police escort across Idaho Wednesday.

Lt. Col. Walter Hogrefe, Garrison District engineer from Riverdale, N.D., said the machines are being used to level a spillway on top of the slide to carry the water over in a smooth flow.

The lake behind the slide is being called both Quake Lake and Slide Lake.

Thursday, 10 days after the quake that upset the Madison Canyon in southwestern Montana, the lake contained about 34,000 acre-feet of water.

Engineers say it will hold about 80,000 acre-feet before water begins spilling over the slide, which is 48 miles above the once-evacuated town of Ennis.

Basic goal of the engineers is to make certain that Ennis and other populated downstream areas, home for about 1,500 persons, are insured against possible flooding.

In addition to the 18 pieces of heavy equipment already at the slide location, 16 more dozers are expected. The emergency call for equipment was issued by J. W. Marlow of Helena, manager of the Montana Contractors Association. Thirty-four pieces were promised, with the first arriving Monday.

Engineers built a 1,300-foot long road from the lower side of the slide to its top. This is the road over which the heavy equipment reaches the crest of the mountainous rock slide.

[Bozeman Daily Chronicle; August 27, 1959]

DAMAGE DECISION WILL BE MADE AT FRIDAY MEETING

HELENA (AP)—Representatives of federal and state agencies will meet with Gov. J. Hugo Aronson in Helena Friday to assess earthquake damage, a step the governor has asked before deciding on whether to ask for federal aid.

The list includes representatives from the Corps of Engineers, National Park Service, Forest Service, state and federal highway departments, the Red Cross and Gallatin and Madison Counties.

In addition, Montana's congressional delegation has asked the secretaries of Commerce, Agriculture and Interior to furnish Aronson with advice on various forms of aid available.

The delegation, which will be represented at the conference by James Bottomly, has asked the governor to declare a disaster area which would allow federal aid in reconstruction of the quake-torn Madison Canyon. The congressmen said estimated damage already totals over 5½ million dollars.

A similar request was made by a group of senators and representatives who toured the area last weekend for their committees in Congress.

Aronson has said a decision would be made after the conference Friday.

[Bozeman Daily Chronicle; August 27, 1959]

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NEW LIST OF MISSING IS ISSUED

WEST YELLOWSTONE, Mont. (AP)—The list of persons missing and presumed dead in Montana's Aug. 17 earthquake rose to six today.

Gallatin County Sheriff Donald J. Skerritt added the names of Bernie L. Boynton and his wife, Inez, to the presumed-dead list, saying, "We are sure they are in there."

Skerritt, who has taken over handling of the disaster list from the Red Cross, said officials are convinced that these persons were killed in the slide at Rock Creek Campground:

Mr. and Mrs. Boynton, Billings, Mont.

Mr. and Mrs. Sidney D. Ballard and son, Christopher, Nelson, B.C.

Mrs. Thomas M. Stowe, Sandy, Utah, whose husband's body was among seven recovered after the quake. In addition, two persons injured in the quake-caused slides, died in hospitals.

Thirty-seven others are listed as unaccounted for. They are persons about whom repeated inquiries have been received, as possibly having been in southwestern Montana the night of Aug. 17.

Those from whom no word has been received:

Dr. Merle Edgerton and wife, Edna, Coalinga, Calif.

Harold Gaines, wife Phyllis, and three children, San Diego, Calif.

Donald Heady and wife, Irene, Syracuse, N.Y.

Arthur Holden and wife, Ruth, Sioux Falls, S.D.

Dr. Harold S. Murphy, wife and three children, listed only as from Pennsylvania.

James Peak, wife, son and friend, Saginaw, Mich.

Roger Provost, wife and two sons, Soledad, Calif.

Norman Smeds and wife, Winifred, Medford, Ore.

Robert J. Williams, wife and three children, Idaho Falls, Idaho.

Harmon Woods and wife, Edna, Coalinga, Calif.

Fred C. Wrobbel, wife Evelyn, and two sons, Rosiclare, Ill.

Added to the unaccounted-for list Thursday were the Gaines, Heady, Holden and Smeds families.

Skerritt urged everyone who has made inquiries since the quake to contact their Red Cross office on whether the persons they asked about have returned home or remain missing.

[Bozeman Daily Chronicle; August 27, 1959]

HEBGEN DAM IS HOLDING UP WELL

HELENA (AP)—Hebgen Dam, damaged in last week's earthquake, is holding well and continues to impound water as usual, Montana Power Co. engineers reported Wednesday.

They said a quake-caused crack in the concrete, shown in some pictures of the dam, is not considered dangerous and is not more than three inches wide.

A utility spokesman in Butte said plans are under

way to repair the Madison River hydroelectric structure completed in 1915.

Meanwhile, emergency shortwave radio service has been set in southwestern Montana to alert residents of Ennis and Virginia City in the event of further earthquake disturbances.

[Bozeman Daily Chronicle; August 27, 1959]

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EARTHQUAKE DAMAGE IS ELEVEN MILLION DOLLARS **Governor's Conference Seeks Source Of Aid Fund**

HELENA, Mont. (AP)—Government and industry officials Friday estimated damage from last week's Yellowstone-Madison Canyon earthquake will run well over 11 million dollars.

They agreed the biggest problem remaining is where the money will come from.

Civil Defense officials said that because of limited damage to state, county and city property other than highways, it would be difficult to meet requirements for declaring the region a national disaster area. They were backed by a telegram from Director Leo A. Hoegh of the Office of Civil and Defense Mobilization.

Gov. J. Hugo Aronson said Thursday he would issue a proclamation permitting federal emergency aid for highways. But road officials Friday pointed out that even this must be on a federal-state matching basis and highway funds at both levels are nearly depleted.

This picture of the aftermath of the disastrous earthquake was pieced together at a public meeting called by the governor to assess quake damage.

Present were representatives of federal, state and county agencies as well as private industry.

The largest single damage estimate came from the Forest Service. Regional Forester Charles L. Tebbe of Missoula said damage to national forests and forest roads would run at least five million dollars.

He said his agency had spent another \$82,000 on men and equipment used immediately after the Aug 17-18 quakes, and had found damage to private summer homes running at least \$500,000.

The next highest figure was for replacement of damaged highways.

Montana Highway Engineer Fred Quinnett Jr. said the absolute minimum for replacing Montana Highway 287, extensively damaged and covered by slides, would be \$2,650,000.

This estimate was the cost placed on rerouting the highway over Reynolds Pass near the Montana-Idaho border rather than back through Madison Canyon and would involve some \$80,000 work in Idaho.

Yellowstone Park Supt. Lemuel A. Garrison said park damage would run about \$2,575,000.

Montana Power Co. officials estimated damage to Hebgen Dam at a minimum of \$150,000.

Maj. Gen. Keith R. Barney said the Army

Engineers are spending between \$150,000 and \$200,000 on removing the danger of floods from a giant earthslide that choked the Madison River seven miles below Hebgen Dam.

Representatives from Ennis and quake-caused dam wanted to know whether there is still danger of a flood.

Barney and others said the danger is not entirely passed but everything possible is being done to end it.

Barney, the Missouri Division engineer from Omaha, said, "I can't guarantee absolute safety, but I'd be perfectly willing to sleep in Ennis tonight."

The meeting, in a packed Governor's Reception Room in the State Capitol, ended shortly before 1 p.m.

A telegram from Montana's congressional delegation, read just before adjournment, said a disaster designation for the damaged area would mean an extra \$3,800,000 in federal aid.

Sens. James E. Murray and Mike Mansfield and Reps. Lee Metcalf and LeRoy H. Anderson renewed their request that the governor ask for a disaster designation. Also signing the wire from the Montana Democrats was Sen. Frank Church (D-Idaho).

Such designation by President Eisenhower, they said, "will mean at least \$3,700,000 in funds otherwise not available can be spent to help the area recover from the earthquake."

Aronson said his decision on requesting a disaster designation would be made after the meeting.

The congressmen said that if the disaster proclamation is requested, there will be four million dollars available to restore Montana Highway 1 from West Yellowstone to Ennis, 1½ million dollars for roads in Yellowstone Park and \$200,000 for various forest roads in the area.

They said such a proclamation also will permit the Veterans Administration and Federal Housing Administration to aid home restoration by suspending mortgage payments without penalty.

Some aid to damaged schools would be possible also.

If the proclamation is not made, the congressmen said, no emergency funds would be available for park and forest roads. And the secretary of commerce's emergency fund could supply only half the cost of restoring the part of Montana 1 which is on the federal

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aid system.

[Bozeman Daily Chronicle; August 28, 1959]

HEADY FAMILY ARE REPORTED SAFE; ON QUAKE LIST

WEST YELLOWSTONE, Mont. (AP)—Mr. and Mrs. Donald Heady, listed only Thursday as unaccounted for since the Montana earthquakes last week, are safe.

Dr. William C. Heady reported today from Clayton, N.Y. he had received a letter from Donald Heady from Medford, Ore., written after the quakes. Mr. and Mrs. Donald Heady recently moved from Fairmount, N.Y. to Medford.

The report cut the list of persons unaccounted for

to 31.

Sheriff Donald J. Skerritt at Bozeman, Mont., now keeping the list, added 11 names to it Thursday on the basis of new inquiries by relatives. He also removed 11 names during the day when persons were located.

He said his office has received inquiries on hundreds of persons, most of whom have been found safe and some of whom were not even in southwest Montana.

[Bozeman Daily Chronicle; August 28, 1959]

TREMORS CONTINUE IN PARK AREA RADIO OPS REPORT

WEST YELLOWSTONE, Mont. (AP)—Civil Defense radio operators Saturday reported logging six earth tremors in the past 24 hours.

One of the log entries in the mobile communications station about four miles below the quake-caused Madison River slide read:

"A real shake—double dip." At least one other entry described a recent tremor as "sharp."

Four volunteers man the station, which links aircraft, sheriff and highway radio frequencies between West Yellowstone and Ennis, about 70 miles.

They are Jack Scully and Fred Kirby of Ennis and Guy Holtz and Lawrence Bubinski of Virginia City, seat of Madison County where the slide is located.

[Bozeman Daily Chronicle; August 30, 1959]

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FOREST SERVICE TO DESIGNATE EARTHQUAKE AREA

WASHINGTON (AP)—A special earthquake geologic area will be established in national forest lands affected by Montana's recent violent quake, the Agriculture Dept. said today.

An intensive study already has been started by the Forest Service to assess effects of the Aug. 17-18 earthquake on life, property and the earth's surface within the Gallatin and Beaverhead national forests.

When this survey is completed, boundaries will be determined and the earthquake geologic area established under regulations for setting up special areas of public interest.

"Though the quake area is clothed in tragedy," Forest Service Chief Richard E. McArdle said "the Forest Service recognizes that the area has tremendous new geological importance as the scene of one of America's severest earthquakes and its youngest natural lake."

The Gallatin and Beaverhead national forests in a

giant land slide that dammed the Madison River.

McArdle said the Forest Service would cooperate in any appropriate plan approved by families in the area for a memorial in Gallatin forest to the persons who were killed in the quake.

The geologic area is expected to include the slide area, the new lake it created and many of the prominent faults and fissures in the two forests which resulted from the earthquake.

McArdle said the area would preserve evidence of earthquake action so that it will be available for observation and study.

Special trails, overlooks and interpretive signs will be included.

Development work will start after the emergency operations to open roads and restore damaged public facilities have been completed.

[Bozeman Daily Chronicle; August 30, 1959]

TWENTY-SIX ARE UNACCOUNTED FOR FROM EARTHQUAKE

WEST YELLOWSTONE (AP)—Twenty-six members of eight families are unaccounted for since last week's earthquakes which left nine known dead and did an estimated damage of 11 million dollars. Six persons are listed as missing and presumed dead.

Sixteen more names were stricken Friday from the list of persons unreported since the quake. All 16 were reported safe.

Sheriff Donald J. Skerritt at Bozeman removed these names:

Mr. and Mrs. Fred C. Wrobbel and two sons of Rosiclaire, Ill., from whom a letter was received by a neighbor; Mr. and Mrs. Donald Heady of Medford, Ore.; Mr. and Mrs. Norman Smeds of Medford, who wrote relatives, and Mr. and Mrs. Arthur Buckle and their three daughters who arrived at their home at Vancouver, B.C.

The list of persons considered unaccounted for, in addition to the six persons missing and presumed dead:

Ralph B. Anderson, wife Anna Marie and four children, Anaheim, Calif.

Dr. Merle Edgerton and wife, Edna, of Coalinga, Calif.

Dr. Harold S. Murphy, wife and three children, listed only as driving an automobile with Pennsylvania license.

Roger Provost, wife and two sons of Soledad, Calif.

Robert J. Williams, wife and three children of Idaho Falls, Idaho.

Harmon Woods and wife Edna of Coalinga, Calif.

Mr. and Mrs. Howard Madden of Chino, Calif.

[Bozeman Daily Chronicle; August 30, 1959]

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SLIDE REMAINS AS A GRIM TOKEN TO NATURAL FORCES

By J. D. Holmes

Associated Press Staff Writer

What is it like?

The tremendous earth and rock slide that choked off one of the world's best trout fishing streams can be awe-inspiring, leaving you at a loss for words. Or it can be a rather disappointing spectacle.

It depends on how you relate its craggy spread-out bulk to the surrounding, majestic mountains of southwestern Montana.

It depends on how strong your feeling is that the earth, boulders and trees being thrust aside by 23 huge bulldozers, mark a grim monument to the unknown number of once-carefree campers the fallen mountain entombs.

But, most of all, it depends on your vantage point.

The disappointed reaction is best summed up by a tourist's remark passed along by a Montana Fish and Game Department employee, K. D. Sears of West Yellowstone.

As he drove Gov. J. Hugo Aronson and this writer from a grassy Forest Service landing strip to the top of the earthquake-caused slide, Sears told of hearing a woman say:

"Oh! Is that all it amounts to?"

That tourist was looking at the slide from four miles away—about as close as most visitors are permitted to the still-shaking ground of the Madison River Canyon.

Had she looked long enough to see that the slide appeared like a giant foothill to the adjacent mountain, the visitor could easily have impressed herself with its enormity.

If she could have gone through the road block and driven over a rough, steep road to the top of the slide, as we did, the lady probably would have been unable to make any remark at all.

Madison County Sheriff Lloyd Brook of historic Virginia City, who was helping man the road block a few miles downstream from the slide, joined the party on the trip to the top.

His job is to detour tourists off Montana 287 from the west and send them toward West Yellowstone or Idaho over the unpaved Reynolds Pass road.

Travelers object, sometimes loudly, to being prevented from continuing on to the scene of the Aug.

17-18 mountainslide.

Nevertheless, only the official few got a go-ahead into the heart of one of the nation's worst quake-damaged areas of all time.

The sheriff himself was quick to say, "I don't mind admitting this is my first trip up this road." He referred to the road Army Engineers built to get 34 pieces of massive road equipment on top of the slide.

Shortly before their vehicle began the hard pull onto the slide, members of the governor's party had their thoughts directed forcibly to the tragic night which brought death to at least nine persons.

In the bed of the Madison River, nearly dry at the downstream edge of the mile-long slide, were two piles of twisted metal. Green paint and some pieces of chrome trim on what once had been two automobiles sparkled in the sun.

Someone said a survivor claimed money was locked inside one bent mass of steel and the sheriff said he would check the report out later.

Nearby, at the edge of the road where rescuers had apparently dragged them, were two torn mattresses and what looked like the remnants of bedding.

The queasy feeling these sights produced changed swiftly to amazement as the top of the slide was reached and crossed.

The stillness gave way to the roar of dozens of powerful diesel engines, the clank of steel tractor treads and the crunch of rock.

Some 34 pieces of equipment rushed to the scene by contractors in Montana and Idaho, each machine with its own driver, are being pushed to the limit from sunrise to sunset.

Included are 23 bulldozers and three big power shovels, two of which were crawling slowly up the road to the slide Saturday.

One had just arrived from Idaho by trailer over the Reynolds Pass road. It had to be unloaded at an old wooden bridge which would not bear the weight. The shovel forded the creek under its own power and made its slow way the four remaining miles to the slide.

The job would be enormous under any conditions.

But, racing a clock on which only five or six days remain, it defies description.

Yet, even to a layman's eyes, the progress already made is clear evidence the channel can be completed

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before the lake formed by the slide begins spilling over the top.

Hogrefe placed a helicopter, piloted by Fred Gerlach of Missoula, at Aronson's service and the governor inspected the work from the air. Later, the writer circled the area from the slide upstream seven miles to Hebgen Dam.

In the lake, now backed up five miles by the slide, the green and brown-roofed tops of 11 or 12 houses and other buildings can be seen. Several obviously had floated some distance. Most of the nearly submerged buildings, however, were said to have been a resort camp, one of many along the famed Madison.

The north shore road that once linked West Yellowstone with Ennis, Virginia City and Butte was completely washed out in places and cracked in others.

Bulldozers had cut bypasses around the washouts and filled in the cracks to make the route temporarily usable to a point about three miles above the slide.

There, Montana 287 disappears. It emerges again four miles downstream at the western edge of the slide.

As the 'copter set down in the midst of the construction, five bulldozers operating side by side gave a clear picture of the feverishness of the beat-the-clock project. The pilot said he saw 12 machines lined

up that way earlier, all pushing rock from what soon will be the river's new spillway.

Engineer Hogrefe said weak spots in the channel will be firmed with quartzite.

This hard rock originally acted as a sort of retaining wall for the collapsed mountain on the south side of the Madison. It ended up, almost unbelievably, in a huge pile at the slide's highest point on the north side of the river.

Estimates of the amount of fill in the slide range from 30 to 50 million cubic yards.

This means the material in the slide could be compared roughly to about half the fill used to build Garrison Dam at Riverdale, N.D. That structure, which took seven years to build and cost 294 million dollars, is the nation's largest roll-fill dam.

The slide probably contains enough material to equal the fill used in the Gavin's Point Dam at Yankton, S.D., the lowest damsite on the Missouri. This was built in less than two years at a cost of under 200 million dollars.

Thus, nature, in a matter of seconds, built a dam that would have cost man years of time and millions of dollars to erect.

[Bozeman Daily Chronicle; August 30, 1959]

TOURISTS ASSURED THAT DANGER OF QUAKE IS OVER

HELENA (AP)—Residents of towns near the Madison Canyon-Yellowstone earthquake region assured potential tourists that their areas are completely safe for travel.

"There's no more danger now than there ever has been," said a businessman delegation from Ennis, the first town down the Madison from the Hebgen Dam and quake slide area.

"Our town is undamaged and the tourist facilities are open as usual," the businessmen said. "The same holds true for Virginia City."

The delegation emphasized that it did not want any

monetary aid or charity. "We just want people," they said.

W. T. Beaumont, Montana manager of the Small Business Administration, said he found this same attitude in West Yellowstone, where, he said, about half the businesses have been closed since the quake closed the west entrance to Yellowstone National Park.

The Ennis group pointed out that tourists who want to view the Rock Creek Campground slide from a safe distance may do so from the gravel and dirt road over Reynolds Pass to West Yellowstone.

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MADISON RIVER FISHING IS CRIPPLED BY EARTHQUAKE DAMAGE FOR MANY SEASONS

HELENA, (AP)—The Fish and Game Department says it may take three to four years for the Madison River below Hebgen Dam to regain its crown as one of the nation's best fishing areas. A report by George Holton, chief fisheries biologist, added that even more time may be required to reestablish numbers of lunger trophy trout.

Holton's announcement followed a survey to determine how trout fared in the low water resulting from a quake-caused slide which filled the river channel and disrupted the natural flow.

"There has been significant, immediate damage from the loss of water and consequent reduction of living space for trout," Holton reported. "Large, dead trout were seen in the main river as well as in dried up pools away from the main channel. However, fisheries personnel using an electric fish shocker found numerous live brown and rainbow trout concentrated in remaining pools. Some of these trout reached three and four pounds in weight."

The Madison suffered an additional setback the past week. Due to damage from falling rocks, Holton said the Montana Power Co. had to make repairs to the large pipe carrying water from Ennis Dam to the generating plant. For three days both the dam and the pipe were closed, he said, allowing only a very small flow of water to go through the famed Bear Trap Canyon to the lower half of the Madison River.

"Due to higher summer water temperatures in the lower Madison, conditions for trout below Ennis Dam are even more critical than upstream," the biologist added. "The extent of damage to the trout population resulting from these three days of low flow has not been

determined. The Montana Power Co. has advised that following repairs and until normal flows are resumed in the upper river, as much water as comes into Ennis Lake will be allowed to pass through Ennis Dam to the lower Madison."

Most of the river channel has been covered by at least some water. In the upper river, water has been provided by springs and tributaries, and augmented by seepage from Ennis Dam.

Even a small amount of water is very important, Holton pointed out, since it not only maintains a limited number of trout but also keeps trout foods alive—that is, smaller fish and stream bottom insects. Recovery of stream life, when normal flows are resumed, will be much faster if even small numbers of fish and insects remain. "This means, barring further serious deterioration in trout living conditions or trout foods, the sport fishery may take as long as three to four years to regain its former excellence," Holton said. "More time may be required to re-establish numbers of lunger trout."

"This doesn't mean there won't be fishing in the meantime. Wild trout will grow fast in this highly productive stream and they will be augmented with hatchery fish."

The department advised that fishing regulations for the Madison will not be changed as a result of the low water conditions. The report said since there will be a reduction in the fish population as it adjusts to the lower water, it would be better to have the fish taken by anglers than to die in the stream.

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YELLOWSTONE PARK WILL BE OPEN FOR REST OF SEASON

Yellowstone Park—Yellowstone National Park's scenic and thermal wonders are still available and being used by park visitors, Supt. Lemuel A. (Lon) Garrison announced today. Pointing out that four major park entrances are open now and the West Entrance should open again within a few days, Garrison indicated that in most major aspects park operations were proceeding almost normally. Accommodations at all visitor points such as Old Faithful, West Thumb, Lake, Fishing Bridge, Canyon and Mammoth are open as they have been throughout the earthquake period.

Garrison states that some after shocks continue following the major earthquake on Aug. 17, but they are presently diminishing in intensity quite noticeably, and unless other heavy shocks or slides occur the park will remain in full operation through October 31 as had been planned. The West Entrance road slides are being removed, and this road will open on a limited basis just as soon as it is safe for visitor travel. The road from Canyon to Norris Geyser basin is open, but travel between Norris and Madison Junction or Mammoth is still restricted.

There were no fatalities within the park and no serious injuries during this critical period, but the National Park Service asks visitors to observe every precaution and warning sign while in the park during this adjustment period. Visitor walk and interpretive talks throughout the Old Faithful and Lower Geyser Basin are being conducted daily as a public service.

Garrison also reported that scientific data on the effects of this quake on Yellowstone's thermal features is being collected by park naturalist George G. Marler an employee who has been detailed to hydrothermal research studies for the past two years. Mr. Marler reports that the most noted effect is a pronounced increase in thermal energy.

Many springs without any previous record of

geyser function became eruptive and a number of geysers began playing on greatly shortened intervals. To attempt to describe these effects in detail would involve a description of practically all springs in the geyser basins along the Firehole River.

A few geysers are playing on about the same pattern as before the earthquake, but the formerly limpid water of hundreds of springs is in a turbid state. It would seem that the earthquake served as a trigger to start discharge from hundreds of springs.

On the morning of August 18, the Giantess Geyser was active. Examination of the stage of the eruption indicated that it had started at about the time of the initial shock at 11:38 p.m., August 17. An eruption of the Giantess has a pronounced effect upon the great majority of the springs on Geyser Hill, therefore, it is hard to ascertain what effect the earthquake had on these springs. It is quite certain that near-by Cascade Geyser was induced to erupt for the first time in over forty years.

The Fountain Paint Pot shows increased activity. Mud has been splashed violently over guard rails and walkways. The paint pot has undermined one sidewalk and started to break out in the near-by parking area.

Numerous other changes have been noted in the geyser basins. Only time will tell whether these changes are permanent or merely transitory.

It is certain that the recent earthquake has afforded an unparalleled opportunity to observe geological changes manifested in Yellowstone's hot springs.

Travel to the park has been reduced by this occurrence, but still many thousands a day are entering and enjoying the unusual opportunity to inspect and enjoy the changing thermal features, the scenery, and the wildlife, Garrison emphasized.

[Bozeman Daily Chronicle; August 31, 1959]

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ROADS ARE OPENED IN PARK

YELLOWSTONE NATIONAL PARK, Wyo. (AP)—The west entrance to Yellowstone National Park, closed since a jolting earthquake Aug. 17, was reopened today.

Three major tourist roads in the western part of the park also were reopened to daytime traffic today.

"The roads in the western part of the park will be closed at night because there are still a few tremors and we don't want to have any campers caught," Park Ranger Jim Valder said.

Roads reopened today were between Old Faithful Inn and Madison Junction, West Yellowstone to Madison Junction and Norris Junction to Canyon. The Norris Mammoth Hot Springs road will be opened in a few days but the Madison Norris road will remain closed for the balance of the 1959 tourist season.

Valder said there are some cracks and rough spots in the newly-reopened road, "but they're patched up reasonably well."

A series of earthquakes rocked the park area and southwestern Montana during the week beginning Aug. 17, causing at least nine deaths in southern Montana. Six other persons were reported and presumed dead in the earthquake, one of the severest records in the United States.

There were five major rockslides that park service crews cleaned off the highways during the past week, in addition to several smaller slides.

Despite the earthquakes, tourist travel in the summer wonderland didn't drop extensively, Park officials said.

[Bozeman Daily Chronicle; August 31, 1959]

QUAKES CHANGE GEYSER PATTERN IN NATIONAL PARK

YELLOWSTONE PARK, Wyo. (AP)—Will the earthquake-fostered changes in Yellowstone National Park geyser activity be permanent?

Only time will tell, says Supt. Lemuel A. Garrison. But tourists, meanwhile, will have a unique opportunity to observe the differences.

The biggest changes are in the Lower Geyser Basin, where, says Garrison, a great increase in thermal energy is evident. Nearly all the geysers in this basin are playing at shorter intervals since the Aug. 17-18 quakes.

Pink Cone Geyser, for example, is playing several times a day instead of about twice a week.

In the Firehole Lake area many previously inactive

springs erupted the night of Aug. 17 and about an acre of ground around the lake slumped considerably.

Castle Geyser has been erupting every four or five hours instead of about every 15 as it had for years. Daisy Geyser's interval has been shortened to about 90 minutes from 140 and long dormant Economic Geyser has been rejuvenated.

Old Faithful Geyser and a few others apparently are unaffected.

The superintendent said scientific data on effects of the quake is being collected by Park Naturalist George G. Marler.

[Bozeman Daily Chronicle; August 31, 1959]

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ENGINEERS RUSH SPILLWAY OVER SLIDE

WEST YELLOWSTONE (AP)—Army Engineers began around-the-clock work Tuesday in a desperate effort to complete a spillway before water tops nature's dam on the Madison River.

The water could top the slide about Friday.

Two diesel power generators will be set up by dark Tuesday to furnish lights for all-night operation of bulldozers, power shovels and dump trucks.

Water in the lake formed behind the earthquake-caused mountain slide was 30 to 35 feet below the crest of the mile-long slide Monday. The new reservoir, known as Quake Lake and Slide Lake, is about 150 feet deep and five miles long. It has risen as much as nine feet daily since the earthquakes on Aug. 17-18.

The doubled tempo will have men working two 10-hour shifts. This was not possible before because of the lack of floodlight equipment. Thus far, some 150 men have worked from sunrise to sunset daily.

The equipment operators spend their nights at

Ennis, about 45 minutes drive from the slide. Corps of Engineers men stay at West Yellowstone, about 1½ hours away by car over the Reynolds Pass road.

Engineers have set up a flood warning station about half a mile from the slide. A 24-hour daily watch on a gauge at the station was ordered by Lt. Col. Walter Hogrefe, Garrison District engineer from Riverdale, N.D.

At the first sign of any ominous change in water depth, a warning would be flashed by radio tied in with the Forest Service emergency network.

Two geologists attached to the emergency team are making tests of rock formations on the ridge above the slide and in the slide strain gauges to locate any rock movements or cracks back of the ridge. The geologists are Donald K. Knight and Robert E. Curtiss of the Omaha District.

[Bozeman Daily Chronicle; September 1, 1959]

QUAKE CENTER IS BELIEVED AT PARK ENTRANCE

SAN FRANCISCO (AP)—Seismologists still haven't located exactly the epicenter of the great earthquake which shook the West Yellowstone region Aug. 17, an investigator said today.

Latest calculations put the center just inside Yellowstone Park and on the south side of the Firehole River, said B. J. Morrill, U.S. Coast and Geodetic Survey technician who was one of the first official observers to reach the area from the outside.

This puts the center several miles east and a little south of the original epicenter calculation.

Morrill, who lives in nearby San Mateo, and Richard P. Maley, of San Francisco, a government geophysicist, did a quick job of getting two portable seismographs to the scene from here.

They learned of the quake immediately from a newly installed high sensitivity seismograph installed in the Coast and Geodetic Survey's seismology office here and headed for the scene by automobile with the two recording instruments.

The portable machines were installed at the site while the ground still was shaking violently.

These and other machines previously installed at Bozeman and Butte, Mont., and at Logan, Utah, will contribute data which will yield the final information as to the epicenter. The Coast and Geodetic Survey eventually will have a complete picture of what happened to the area geologically.

[Bozeman Daily Chronicle; September 1, 1959]

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RED CROSS RECEIVES DISASTER GRANT FOR EARTHQUAKE-CAUSED EXPENDITURES

The Gallatin Red Cross chapter today received an \$8,000 check from the National Red Cross, Pacific area, as a "disaster grant" for expenditures incurred during the Montana earthquake.

This was the second disaster grant to be received by the chapter here. The first one of \$2,000 came from the National Red Cross Aug. 21.

Chapter officials said the money spent for this disaster operation in Gallatin county, an estimated total of \$11,700 from the national organization, approximates the amount of the annual Red Cross goal in the county.

The balance of about \$1,700 will be received as it is needed, according to Richard F. Gordon, director of disaster services.

A special disaster advisory committee met with local officials yesterday at West Yellowstone to review the work done by the Red Cross in Montana during the earthquake.

The committee also offered guidance in planning with families for Red Cross assistance in applications received for rehabilitation.

Dr. Paul Visscher, Gallatin county chapter

chairman, said that more than 2,800 welfare inquiries had been received and processed by the chapter.

He said: "This part of the job, requiring many hours of work, was carried on by the volunteers of the chapter and the community. Mrs. Herman Lehrkind, chairman of the staff aides, was in charge of the work." Dr. Visscher said the cost of this part of the disaster operation would be about \$2,500.

He added that assistance to families, who had need for shelter, food, clothing, transportation to place of residence and medical care have been committed in the amount of \$9,200.

Dr. Visscher pointed out that more than 200 persons were given mass care, and help with food, clothes and shelter. The assistance was given on individual need basis, not on the basis of loss, he said.

The doctor emphasized that assistance received by families is an outright gift made possible by the generosity of the American people. "No loans are made to victims of disaster and repayment is not requested or expected," he said.

[Bozeman Daily Chronicle; September 3, 1959]

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CHAMBER STUDIES EFFECT OF QUAKE ON LOCAL TRADE

Members of the Bozeman Chamber of Commerce Highway and Tourist and Convention Committees have been attending meetings and studying possible economic changes that might occur in the Gallatin Empire as direct and indirect result of the recent earthquakes in the Yellowstone and Madison areas.

Attending Governor Aronson's evaluation meeting in Helena last Friday were, George Niebel and Howard Nelson of the chambers highway committee, Lyman Haynes, tourist and convention committee and Harold Frysliie, chamber manager.

Representatives of all County, State and Federal Agencies involved with the quake area and property damages, submitted detailed reports to the Governor at Fridays sessions in the State Capitol along with their recommendations as to courses of action they feel should be followed in making necessary repairs to roads and other government and private property.

Regardless of action taken by the State and Federal Governments, this area will feel a change in travel and other economic activity the chamber representatives

said. "With the loss for some time of a portion of Montana Highway 1, it is certain that motorists will create an increased load on U.S. Highway 191. This projected condition causes an even greater need for an accelerated completion of the construction now in progress and planned for portions of U.S. Highway 191," according to the Bozeman Chamber.

Routing of that portion of Montana Highway 1 which must be reconstructed is another matter of vital concern to the Gallatin and Madison areas. Representatives of the Bozeman Chamber have scheduled meetings with Highway officials to gain the thinking of that department and to apprise the Highway Department of the opinions held by business and professional people of the area.

"All facets of the demands of the motoring public should be given serious consideration before final decisions are reached regarding road reconstruction and routing," Bozeman's Chamber representatives said.
[Bozeman Daily Chronicle; September 3, 1959]

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FALSE RUMORS, SIGHTSEERS, CAUSE DELAY AT SLIDE AREA

HELENA (AP)—Civil Defense Director Hugh K. Potter Thursday assailed what he called the "baseless rumors and persistent sightseers causing most of the difficulties in the Madison River earthquake area."

Potter, returning from an inspection of the earthquake zone, reiterated his stand that declaration of a national disaster area is not necessary.

He said there is no danger to downstream areas and appealed to Montanans to stay away from the damaged canyon.

Potter said, "Schools and business places in West Yellowstone are operating as usual. Those wishing to use the West Yellowstone entrance to the park may go by way of Reynolds Pass, a route about two miles longer than the former highway by Hebgen Lake.

"Army engineers are making good progress in cutting a channel across the top of the slide created by the earthquake. When the water starts through this new channel, it will go very slowly because of seepage. The flow can be controlled quite well by Hebgen Dam.

"Rumors that Hebgen dam may collapse are absolutely false. The dam is not leaking and is functioning normally. In fact, some engineers think the quake may have strengthened it in places because the shocks hit it on one end and forced it a little bit into tighter contact with abutments.

"Schools in the area that have been damaged can have surplus federal goods for the asking. There is no need to declare a disaster area for that. There are some metal army surplus buildings out west that can be had. But schools should first look into the cost of dismantling them and transporting them, along with re-assembly. That cost might be more than making repairs to damaged schools.

"I appeal to Montanans not to try to inspect the earthquake area. They will not be allowed within five miles of the damaged section. Army Engineers are using available roads near the slide. Visitors cannot be allowed in that area."

[Bozeman Daily Chronicle; September 3, 1959]

QUAKE LAKE WILL OVERFLOW SLIDE LATE SATURDAY

WEST YELLOWSTONE (AP)—Army hydrologists predicted Wednesday that the Madison River would not overflow the earthquake-caused dam before late Saturday or Sunday.

They said the water was about 24 feet from the top of the slide Wednesday, rising at the rate of six feet per day. The water had been rising at the rate of eight to 10 feet per day.

Army engineers have rigged up diesel generators so work could continue at night to cut a spillway in the new dam. Workmen are cutting the spillway on two

10-hour shifts per day. They use the other four hours in the day to service the equipment.

Lt. Col. Walter Hogrefe, head of the spillway operation for the Army Engineers, predicted the spillway would be completed by Friday. The spillway will provide a chute to send water from the lake behind the landslide downstream into the Madison River.

Officials had estimated the water would spill over the slide Friday night.

[Bozeman Daily Chronicle; September 3, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

DISASTER TALK NO HELP, ARONSON TELLS MADISONITES

HELENA (AP)—Gov. J. Hugo Aronson told Virginia City school trustees Thursday he could see no way that presidential declaration of a national disaster area would help their situation.

Instead, he said, quake-caused damage to the tourist income of the area would be further magnified.

Aronson said repeated requests by Montana congressmen that he ask for such designation in the earthquake area "seem to be a smokescreen of some kind, although I'm not sure just why it is being done."

The state's all-Democrat delegation told the school district Wednesday that substantial federal aid for the damaged school could come only with declaration of a disaster area under Public Law 875. They also advised

that four steel Army buildings would be available at Hanford, Wash., if the school district paid the cost of transportation and erection.

The Republican governor, answering Thursday in a letter to Warren Richmond, a member of the Virginia City board, said the any disaster request, but pointed out that they are bare steel buildings that would have to be moved, set up, wired, floored, insulated and otherwise made ready for use.

The governor said he has asked Public Instruction Supt. Harriet Miller to see what temporary provisions might be made to help the damaged schools.

[Bozeman Daily Chronicle; September 4, 1959]

WATER LEVELS CHANGED BY YELLOWSTONE EARTHQUAKE

WASHINGTON (AP)—The earthquake near West Yellowstone, Mont. caused momentary changes in water levels in wells throughout the country.

The Geological Survey reported today that changes were registered by its automatic water-stage recorders in states as far away as Hawaii and Florida.

First reports from those two states as well as from Idaho and New Jersey show that water levels jumped at least 17 inches at some places while at others the effect was only about a quarter of an inch.

In some instances the effect was so strong that recorders jumped the track so the full amount of change could not be determined.

Among distant points of observation, a well in Union County, N.J., had the largest fluctuation—17 inches in all. In four other New Jersey wells the fluctuation was only about an inch. These wells are about 1,900 miles from the epicenter of the quake.

The earthquake was registered in Hawaiian wells, about 3,200 miles from the epicenter, at about 9 p.m. local time on Aug. 17. The levels in three wells rose and fell about a quarter to three-quarters of an inch.

In Florida, the water levels in wells around Miami changed within a range of 1.7 to 6.8 inches. These wells are about 2,100 miles from the quakes's epicenter.

The survey for many years has collected and compiled records of abrupt water-level changes caused by earthquakes and shown on its recording gauges in observation wells.

It noted that not only earthquake waves but even passing trains affect water levels. In fact, it said the effect is so marked that one can determine train schedules by observing the groundwater charts at given wells.

[Bozeman Daily Chronicle; September 4, 1959]

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REPAIRS BEGIN ON QUAKE DAMAGE IN YELLOWSTONE PARK

WASHINGTON (AP)—Work is already under way or soon will be on \$864,000 worth of emergency repairs and restorations in Yellowstone National Park because of damage caused by the recent severe earthquake.

Secretary of the Interior Fred A. Seaton so informed the Montana congressional delegation today. He also told the legislators that additional work which may be undertaken next spring is tentatively estimated to cost another \$1,700,000.

Seaton said funds for the work being undertaken immediately will be obtained by adjusting current programs of the National Park Service.

He added he expects to inspect the damaged area himself soon.

Work already under way or to be undertaken immediately includes:

Emergency repairs to roads to remove slides, restore surfaces, etc., estimated to cost about \$388,880;

Major reconstruction of the Gibbon Falls section of road, \$350,000;

Repair and restoration of buildings and utilities, \$95,000;

Additional operating costs incident to special emergency measures, \$31,000.

Work which may be undertaken next spring would involve replacement of stone buildings at Mammoth Hot Springs. Some of these buildings are 50 years old.

[Bozeman Daily Chronicle; September 6, 1959]

NEW QUAKE SHAKES PARK AREA

YELLOWSTONE NATIONAL PARK, Wyo. (AP)—Labor Day week end vacationers in the center of Yellowstone National Park were awakened Saturday by an earth tremor—described as the earthquake near here three week ago.

But no injuries, rockslides, or major damage was reported.

The dawn tremor, described as the strongest of three since midnight, was not reported felt in any location beyond the resort at Canyon, where cafeteria dishes were broken.

Canyon's general manager, Col. Joseph E. Primeau, a retired Air Force officer, said the quake was the strongest since the big earthquakes which tore western Montana Aug. 17.

Those tremors caused slides which left 28 persons dead or missing in an area just west of the park boundary. The quakes also caused extensive road damage in the park.

But Frank Sylvester, chief park ranger, said Saturday's tremors caused no road damage. He said no evidence of loose rock above or on highways was found

after a thorough inspection by rangers Saturday morning.

Meanwhile, repair work on the Aug. 17 quake damage continued.

Army engineers were working on the mile-long spillway being constructed over the top of the 55 million ton quake-caused slide about seven miles below Hebgen Dam and 20 air miles northwest of the scene of Saturday's tremors.

Five power shovels, 20 bulldozers and 15 dump trucks are being manned on the job by 106 workers.

Water is rising in Quake Lake and is expected to spill over the huge slide Friday. The lake claimed many summer homes and cabin camps that dotted the valley below Hebgen Dam before the earlier quakes.

Sylvester said bids will be called for soon for rebuilding on a 1,000 foot section of the Yellowstone Park Highway damaged by the quake.

The highway is in a deep canyon near Gibbon Falls. Sylvester said considerable rock in the canyon wall must be cut away to prevent future rockslides.

[Bozeman Daily Chronicle; September 6, 1959]

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ROGER PROVOST FAILS TO REPORT, SAID SLIDE VICTIM

SOLEDAD, Calif. (AP)—Roger Provost did not report today for duty and it was assumed that he and his wife and their two sons were killed in the Montana earthquake Aug. 17.

Provost, 43, was supposed to go on duty at 8 a.m. as deputy superintendent of Soledad Correctional Training Facility.

A postcard dated Aug. 16 was the last word heard

from Provost. The card informed his mother, Mrs. Elizabeth Provost of Ontario, Calif., that he and his family were camped on the Madison River. The big earthquake occurred the next day.

With Provost were his wife, Elizabeth, and their sons, David, 2, and Richard, 16.

[Bozeman Daily Chronicle; September 8, 1959]

CEREMONY TO MARK WORK ON SPILLWAY

WEST YELLOWSTONE, Mont. (AP)—Gov. J. Hugo Aronson will be at Quake Lake Dam in the Madison Canyon Thursday afternoon for a brief ceremony marking the first flow of water over the quake-caused slide dam.

The dammed up Madison River is expected to top the slide and begin flowing through a mile-long spillway sometime Wednesday night.

Aronson said Tuesday he will fly to the area in time for 2:30 p.m. ceremony with Army Engineers and other officials.

The ceremony will be held on top of the slide, the site of a quake on the Madison the night of Aug. 17.

The quake left 28 persons dead or presumed dead, many of whom apparently are buried forever beneath this slide.

Work on the spillway was near completion

Tuesday, but engineers said two shovels and a skeleton crew will remain at the site for about 30 days for emergency repairs and maintenance.

The engineers, under Lt. Col. Walter Hogrefe, Garrison District engineer from Riverdale, N.D., have been working almost around the clock since a few days after the quake. Their goal has been to cut the spillway, providing an orderly flow of water and eliminating threat of a flood in the populated Madison Valley below.

Crews have been working on the spillway even as tremors continued to shake the area and send up little clouds of dust from resulting smaller slides.

The latest southwestern Montana tremor, which rattled beds in Butte, 80 miles from the dam, was reported early Monday.

[Bozeman Daily Chronicle; September 8, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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YELLOWSTONE PARK TRAVEL DROPS BY ONE-HALF

YELLOWSTONE NATIONAL PARK
(AP)—Travel through Yellowstone National Park, which reached record levels this summer, dropped by one half after the Aug. 17 earthquake.

Figures released today showed travel for August prior to the quake was 15.2 per cent ahead of August, 1958. By August 30 it was down 9 per cent from last year.

Park officials said, however, that travel is still exceeding 5,000 persons per day in the park. The total for the year on Aug. 30 was 1,290,752, compared with 1,257,040 at the same time a year ago—a 2.7 per cent increase.

The northeast (Cooke City, Mont.) entrance showed the largest percentage of increase so far this year—8.2 per cent. The south entrance at Jackson is

up 8 per cent, the east entrance at Cody is up 2.6 per cent and the north gate at Gardiner, Mont., is up 2.3 per cent. The West Yellowstone gate is down 4.2 per cent. The loss resulted from closure of the entrance from Aug. 17-31 following the quake-caused rock slides.

Park roads are to be kept open this year until Nov. 1. Park officials said tourist accommodations would be available to late visitors on both east and west sides of the park until Nov. 1.

Canyon Village remains open until Oct. 1 and Old Faithful Lodge until Nov. 1. Old Faithful Inn and cafeteria, West Thumb cafeteria, Roosevelt Lodge, Lake Lodge, Lake Hotel, Mammoth Terrace grill, bus service, stagecoach trips and saddle horse facilities are already closed.

[Bozeman Daily Chronicle; September 9, 1959]

'TERRIFIC BLAST' CONTRACTOR SAYS OF QUAKE SLIDE

GREAT FALLS (AP)—"There must have been a terrific blast—a blast so big it is almost impossible to believe."

This was a Great Falls excavating contractor's impression of the Aug. 17 earthquake that sent the side of a mountain across the Madison Canyon in southwestern Montana.

The contractor, James Robertson, has two tractors and crews working on construction of a spillway through the giant slide and just returned from the area himself.

He based his blast theory on several facts:

All bodies recovered from edges of the slide were nude, indicating to Robertson that their clothing was blown off. Trees from the river valley are lying with

their roots pointing up the mountain. And, much of the rock at the top of the slide is quartzite, which geologists claim was below the bed of the Madison River before the quake.

Robertson said he believes the action that touched off the slide came in three stages, each taking but a matter of minutes.

First, he theorized, a terrific explosion occurred below the river, blowing the quartzite and trees several hundred feet up the mountainside and taking the "toe" out of the mountain. This, he said, caused the slide that rolled over Rock Creek Campground and dammed the river. Finally, the theory goes, the quake itself followed and pushed many of the rocks up the mountains.

[Bozeman Daily Chronicle; September 9, 1959]

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CLARENCE SCOTT, SLIDE VICTIM, LEAVES HOSPITAL

Clarence D. Scott, 59-year-old retired Fresno, Calif., man was released from the hospital here at noon today, the last of the injured in the Aug. 17 earthquake and Madison slide to leave.

Scott, on the critical list for several days, left with his wife for Fresno where they will stay at the home of a daughter.

The California man and his wife were camped at Rock Creek, scene of the Madison Canyon slide the night of the earthquake. Scott received a severe chest injury. His wife was treated at the hospital for shock

following their evacuation the day following the slide and quake.

The Scotts had been camped at the Rock Creek grounds from June 7 until the quake and were making their fifth stop there in as many years.

Fifteen of the most seriously injured persons evacuated by helicopter from the slide area were flown to the hospital here for treatment. Two of the injured, both women, later died here.

[Bozeman Daily Chronicle; September 9, 1959]

WATER EDGES OVER SLIDE AT SPILLWAY

QUAKE LAKE, Mont. (AP)—Water bubbled down a rough spillway today on the face of a huge natural dam formed by the terrible earthquake of Aug. 17.

The water reached the crest of the seven-mile-long lake late Wednesday. Gov. J. Hugo Aronson was expected to visit the scene today.

The 250-foot wide, mile-long spillway was fashioned by Army engineers on the face of the vast rockslide which is presumed to be the tomb for 19 persons.

They were among scores of persons at the Rock Creek campground when the side of a mountain, sheared off by the first tremor, thundered down into the Madison River Valley. Nine persons are known dead, and 19 others are listed as missing and presumed dead.

The slide blocked the river seven miles downstream from Hebgen Dam. Between the two dams rose Quake Lake at the rate of three feet a day.

The spillway will provide a safety valve for the waters, averting the threat of floods to downstream communities.

"It is one of the most remarkable engineering feats that has ever been done in so short a time," said one

Army engineer of the spillway.

Thursday morning, the leading edge of the flow had crossed the spillway crest. But 500 feet beyond that high point it was disappearing into the rocks.

This left about 2,000 feet of spillway still to be wet down before the water flow would remain in evidence on top of the entire new river channel.

Between Quake Lake and the spillway crest, however, the early morning flow was estimated at 90 cubic feet a second.

Engineers hoped for a good flow by 2:30 p.m. when Aronson was to visit the spillway location for a second time.

Federal and state officials will mark the water's passage over the spillway with a brief ceremony at that time.

The general public, however, was still prevented from visiting the slide area by a roadblock at the junction of Montana 287 and the turnoff to the Reynolds Pass road leading to West Yellowstone.

A skeleton crew will keep a vigil on the spillway's performance for several days.

[Bozeman Daily Chronicle; September 10, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
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RAYNOLDS PASS ROUTE IS FAVORED

Representatives from Ennis, Virginia City and Bozeman met with Lee Swanson, a member of the Montana State Highway Commission, to discuss reconstruction and routing of Montana Highway 1 in the area damaged or destroyed by the recent earthquake. The meeting was presided over by W. C. Henshaw, president of the Bozeman Chamber of Commerce.

Swanson, speaking on behalf of the Highway Commission said that final decisions in connection with the road construction have not yet been made and that only the commission may do so. Routing will be determined at the earliest practical date, Swanson said, after the Highway Department has had opportunity to consider all factors involved.

"We are going to weigh every aspect in this matter," Swanson said, "and give consideration to the economy of the Madison area, desires of other state and federal agencies as well as the recommendations of engineers."

At the present time, Swanson said that the

Raynolds Pass route appears most practical and the Highway Commission is in hopes of being able to complete necessary preliminary work so contracts for the reconstruction may be let this fall.

Following a discussion and presentation of each county's interests, the group representing the three communities handed Swanson their unanimous opinion that a new or rebuilt road of all weather standard should be completed at the earliest date, and that the demands and desires of tourists be considered by the Highway Commission.

The meeting was held at the Sportsman Lodge in Ennis with 29 persons in attendance from the three communities. Representing the Bozeman Chamber was Edward Chauner, A. P. Dasinger, Harold Fryslie, Bert Griffin, W. C. Henshaw, Lyman Haynes, George Neibel, Howard Nelson and Arnold Swanson, all of whom favor reconstruction of Highway 1 through the Madison Canyon, if practical and feasible from an engineering standpoint.

[Bozeman Daily Chronicle; September 10, 1959]

ENNIS IS POISED TO FLEE IF SLIDE GIVES WAY

ENNIS (AP)—Signs throughout this community indicate the residents are taking no chances of being surprised by a flood.

The posters proclaim that continuous wailing of a siren will mean one thing—evacuation. Short siren blasts will mean "all clear."

Ennis is about 45 miles downstream from Quake Lake, the reservoir formed behind the mountain slide caused by an earthquake Aug. 17.

Newsman W. Preston (Luke) Wright, Helena correspondent for the Great Falls Tribune, saw the

signs and reported:

"After standing on top of the natural dam and seeing how big and wide it is, I don't think the people of Ennis have a thing to worry about."

Most Ennis residents left their homes for higher ground the day after the earthquake when it was feared that Hebgen Dam, seven miles upstream from the slide, might give way. Though slightly cracked by the quake, the dam has been pronounced safe by engineers.

[Bozeman Daily Chronicle; September 10, 1959]

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QUAKE SHAKES WATER LOOSE IN MADISON AND GALLATIN

HELENA (AP)—Some increases in spring and stream flows in the upper Madison and Gallatin River Canyons were credited Wednesday by the U.S. Geological Survey to the severe earthquakes of August 17-18.

"The immense slide dam on the Madison River closed off the waters released from Hebgen Reservoir which, at month's end, amounted to about 60,000 acre-feet," the agency said.

"Some sewage water began appearing at the foot of the slide dam on August 26 and reached a fairly constant level of about 12 cubic feet per second near month-end. This flow of less than one per cent of the inflow is believed to be from independent springs beneath the slide dam.

"Overflow of the dam through a broad prepared spillway channel is expected when the inflow has reached about 85,000 acre-feet.

"The waves set up by the earthquake caused an overtopping of Hebgen Dam in a series of brief surges that may have reached a peak volume of about 11,000 cubic feet per second.

"A minor increase in the capacity in Hebgen Reservoir is indicated by preliminary comparison of inflow and outflow."

The Geological Survey also said:

August runoff was above or near median in the mountain areas. Reservoir storage was generally above average with some local exceptions.

West of the Continental Divide streams showed the usual seasonal decrease during August with runoff for the month continuing much above average.

East of the Continental Divide mountain stream flow was somewhat lower but generally near the median values for 1921-45.

As the close of the irrigation season drew near, storage for remaining irrigation appeared ample with reservoir contents generally above average. A few local shortages or low carryover were indicated by month-end contents. Hydroelectric reservoirs were approaching the period of seasonal drawdown with about average volumes in storage.

[Bozeman Daily Chronicle; September 10, 1959]

U.S. ENGINEERS PLAN CLOSE CHECK ON MADISON AREA

WASHINGTON (AP)—Army engineers will keep a close watch on the Montana earthquake area until they're satisfied no hazard exists, an officer said today.

Maj. Gen. Keith R. Barney, chief of the Omaha, Neb., Army Engineer Division, made the statement in a report to the Montana congressional delegation regarding the recent earthquake in the Yellowstone National Park area.

Barney said engineers are keeping close watch on the Montana Power Co.'s Hebgen Dam, which was damaged by the quake, and on a huge earthslide which dammed the Madison River below Hebgen.

The Montanans were told that water from the new

"quake lake," formed by the slides, Thursday night began pouring over a spillway built by the engineers.

The spillway flow equals the Madison's volume running into Hebgen Reservoir, and will be increased to permit lowering of the surface in Hebgen to make possible an inspection of the dam.

Barney has asked about the existing warning system in the event residents of Ennis, downstream from quake lake, are endangered in any way.

He said the system is a civil defense responsibility, but the Army will move in on request if the system is found to be inadequate.

[Bozeman Daily Chronicle; September 11, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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WATER IS FLOWING AGAIN DOWN THE MADISON RIVER

QUAKE LAKE (AP)—The Madison River, world-famed fishing stream in southwestern Montana, is whole again.

Water streamed across the top of a fallen mountainside Thursday afternoon, reuniting the river with its headwaters for the first time since Aug. 17.

That was when an earthquake turned the mountain into a huge natural dam and a grim monument to 28 dead or missing and presumed dead.

Twenty-four days after the slide water from Quake Lake, formed behind the fallen mountain, crossed the mile-long spillway and flowed into the old river bed. The first trickle of water reached the end of the spillway at 1:03 p.m. Thursday.

Army Engineers and private contractors worked almost around the clock since a few days after the quake to bulldoze the spillway across the top of the slide before Quake Lake began to overflow.

The water reached the crest of the 250-foot wide spillway late Wednesday and kept seeping toward the face through the night and again Thursday morning.

By Thursday night about 400 cubic feet a second of water was flowing across the new channel.

Gov. J. Hugo Aronson and State Civil Defense Director Hugh K. Potter were on hand for a ceremony marking the event. Aronson congratulated Lt. Col. Walter W. Hogrefe, Garrison District engineer from Riverdale, N.D., who was in charge of the project, and called it "a quick and splendid job."

Hogrefe said, however, that work remains to be done. While the water flows flat across the crest of the spillway, it is channeling near the end. Hogrefe said this must be corrected to lessen danger of erosion.

Even as he talked, dump trucks rolled back and forth across the slide, dumping loads in low spots to try to correct the channeling.

Hogrefe said his crews will continue on the job until the spillway is stabilized, possibly another week. He said it eventually will be tested at a flow of 2,500 cubic feet a second.

Also present at the ceremony was Jack Marlowe of Helena, secretary-manager of the Montana Contractors Association. His group was praised by Hogrefe and Aronson for fast mobilization to meet demands of the job.

For a while Thursday there was a question whether the water would actually traverse the spillway for the governor's arrival. About 500 feet beyond the crest it began disappearing into the rocks.

This left about 2,500 feet of spillway still to be wet down. The river rose to the occasion, however, starting across the last portion about noon.

Engineers watched as it began to channel and quickly began measures to correct it.

The general public is still barred from the slide area by a roadblock at the junction of Montana Highway 287 and the turnoff to the Reynolds Pass road leading to West Yellowstone.

Cost of the rock-lined spillway, built while tremors still shook the slide, has been estimated at \$150,000 to \$200,000.

Estimates of the fill in the slide compare roughly with about half that used to build Garrison Dam in North Dakota. This largest roll-filled dam in the nation cost 294 million dollars and took seven years to build.

[Bozeman Daily Chronicle; September 11, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 105
Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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BOZEMAN DAILY CHRONICLE

McMANNIS EXPLAINS HOW MADISON SLIDE OCCURRED

Editor's note: Much has been written about the Madison Canyon slide and its origin. Following is the appraisal of the situation by William J. McMannis of Montana State College.

By William J. McMannis
Dept. of Earth Sciences, M.S.C.

At 11:37 p.m., August 17, 1959, a violent earthquake rocked the country around West Yellowstone, Montana. One of the most destructive and spectacular results of the quake was a tremendous landslide five miles southwest of Hebgen Dam, at the Rock Creek Campground. Damage to property and injuries or death of people have been dwelled upon extensively in many articles. This paper will present a brief description and technical explanation of how the slide occurred.

The upper part of the slide, at the crest of the ridge between Rock Creek Campground and Sheep Creek, has a width of about 2,300 feet (See map). The debris extends very nearly a mile from the ridge northward across the Madison River, the highway, and part of the Rock Creek Campground.

The slide fans outward in the valley area (See figure one on map) and covers about 4,400 feet of river bed and highway. Difference in elevation from ridge crest to old valley floor was about 1,300 feet. The debris moved up the opposite valley wall to a pre-slide ground elevation of about 6,600 feet, and the high point of the rock piled up is at an elevation of approximately 6,700 feet.

The elevation of the debris at the spill point (where the ponded water will top the slide) is about 6,450 feet, where there is probably 150 to 175 feet of slide material.

The material involved in the slide was mainly ancient layered metamorphic rocks of marble,

quartzite, gneiss, and schist varieties. Also carried down were vast quantities of soil cover and vegetation.

The debris that piled up against the north wall of the canyon consists almost entirely of huge blocks of quartzite and marble. Some of these blocks are as much as 25 feet in diameter.

Across its low part the slide is covered by debris consisting mainly of platy, much decom- [?] as soil and vegetation from the old higher slopes of the mountain.

Geologically, the framework of the area was optimum for a slide to occur, given a severe earthquake such as the one of August 17.

The slope of the mountain was steep, rising over 1,300 feet in less than one half-mile. The layering in the metamorphic rocks of the mountain is inclined northward toward the canyon at angles between 60 and 70 degrees. This layering curved slightly, and essentially parallels the ridge crest.

In addition the rocks had been heavily fractured in the hundreds of millions of years they had been there. One dominant set of fractures is vertical and trends north-south; another set is nearly flat-lying.

The resistant quartzites and marbles formed the ledges, and steep lower slopes of the south canyon wall prior to the quake. The weaker, deeply weathered schists and gneisses occupied an arcuate belt of outcrop along the higher slopes and crest of the ridge.

The earthquake shook the retaining wall of quartzite and marble loose from its moorings, and it moved out across the valley. This in turn removed the support from the schists and gneisses, and large volumes of this materials followed after the quartzite and marble debris, pushing the latter far upon the north side of the canyon.

[Bozeman Daily Chronicle; September 11, 1959]

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EROSION IS PROBLEM AT QUAKE SLIDE

WEST YELLOWSTONE (AP)—Huge boulders will be used by Army Engineers to prevent further erosion of the lower section of a spillway across the Madison Canyon mountain slide.

To facilitate the mending job on the last 1,000 feet of the mile-long spillway, the flow of water through Hebgen Dam was stopped Saturday.

Within 24 hours, this should cut the depth of water going over the spillway seven miles below Hebgen to about half a foot, instead of the present 1½ feet.

Two truck-mounted cranes loaned by the Anaconda Co. at Butte and a "stone boat" being constructed at Bozeman will be taken to the slide.

The cranes will lift boulders of perhaps 20 or 30 tons onto the stone boat for movement to the eroding part of the spillway. The boulders will be placed so as to create a series of cascades which engineers say will

halt the erosion.

The boulders will break up the flow and flatten it out, a spokesman said.

Water from Quake Lake, formed between the earthquake-caused slide and Hebgen Dam, began flowing over the spillway Wednesday afternoon.

Robert Parke, of Williston, N.D., an engineer who supervised the night shift during construction of the spillway, offered one explanation for the erosion at the lower end of the Madison River spillway.

He pointed out that "the mechanics of the mountain slide displayed almost uncanny, human ingenuity.

"It placed the impervious material on the upstream face of the barrier and the pervious, or loose stuff, on the downstream toe—the standard procedure of engineers."

[Bozeman Daily Chronicle; September 13, 1959]

HIGHWAY ROUTE LOST FOREVER

GREAT FALLS (AP)—Gov. J. Hugo Aronson Saturday said it is questionable if Montana Highway 287 can ever be rebuilt through the earthquake-torn Madison River Canyon.

He put it this way in a talk to the Central Montana Highway Association:

"Highway 287 from Hutchins Bridge nearly all the way to West Yellowstone has been affected and, although some of it can be repaired, it is questionable if the connection up the Madison River Canyon can ever be rebuilt."

He described the road as the lifeline of three of Montana's tourist centers—West Yellowstone, Ennis and Virginia City—"which have been hurt severely."

The governor said that even if the road could be rebuilt, "it would be unwise to do so at this time with the unstableness of the mountain terrain.

"We think a route over Reynolds Pass will serve just as well for the time being and will be much cheaper to construct.

"We have been assured by our sister state of Idaho that it will cooperate in building this highway as a portion of it is in that state."

Aronson's prepared text said officials realize the mountain slide which erased a portion of the highway "will become a great attraction to visitors and that eventually a road must be provided for the public to view this sight.

"Also, the Forest Service and Montana Power Co. must have roads leading down the canyon as far as possible to provide access to their large investments around Hebgen Dam and forest areas in Cabin and Beaver creeks."

[Bozeman Daily Chronicle; September 13, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

MADISON SLIDE ROAD IS STILL OFF LIMITS

Madison county attorney Chester L. Jones at Virginia City has warned sight-seers that the Madison canyon slide is off-limits.

He said Saturday, "The road block at the Raynolds Pass turnoff at the Cliff-Wade Lakes road is necessary because the highway to the slide is being used for

machinery maintenance and as an air strip for air service into the area."

Jones said, "All persons other than those holding permits from Army Engineers or Madison county sheriff will be prosecuted for violating the road block."
[**Bozeman Daily Chronicle; September 13, 1959**]

PARK EARTHQUAKES ARE FELT HERE

WEST YELLOWSTONE, Mont. (AP)—Four earth shocks jiggled the area around West Yellowstone Sunday, nearly a month after the devastating earthquake of Aug. 17. No damage was reported.

Porch lights snapped on in Bozeman at about 7 p.m. Saturday night as neighbors peered out after another mild-but-noticeable shake, originating in the West Yellowstone-National Park area, was felt here.

A farmer west of Bozeman reported that the Saturday night quake was similar to the big one of Aug.

17, although much milder, in that it was preceded by a noise which he describes as "like a dynamite blast."

A diner in Gardiner Sunday morning was assured by restaurant personnel there that the quakes were over. As he was reading a Park County newspaper account claiming the end of earth tremors in the area, a quake hit of sufficient strength to spill water and soup over his newspaper.

[**Bozeman Daily Chronicle; September 14, 1959**]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

U.S. GEOLOGISTS BELIEVE MAJOR QUAKES ARE THROUGH Hebgen Lake Turns Brown

BILLINGS (AP)—Another major shock in the Hebgen Lake and Yellowstone Park area may be thousands of years away, in the opinion of a U.S. Geological Survey team.

In a preliminary report, the USGS said the major movement of the Aug. 17 earthquake was along two fault zones which more or less parallel the northern shore of Hebgen Lake.

The report added:

The fault which swings northwest up the east side of Red Canyon Creek and around to the head of Kirkwood Creek shows the greatest amount of displacement.

A 22-foot high scarp—something like the side of a ditch—is exposed where Red Canyon Creek is crossed. The scarp stands as a sheer wall barring passage up the east fork of Red Canyon Creek. The creek has formed a waterfall where it crosses the scarp.

The other fault on which major movement took place parallels the northeast shore of Hebgen Lake and passes across the Cabin Creek Forest Service campground.

At this location part of the campground and the road into it were dropped about 15 feet relative to the remainder of the campground.

Not only were people camped at this site subjected to considerable movement of the earth itself but they were subjected to a bombardment of huge boulders jarred loose from high on the mountains to the east.

One outbuilding was flattened and splintered by a boulder about four feet square landing on it.

It is known there was considerable bowing and flexing of the basin of the lake. Lands along the southern part of the lake have been raised as much as 13 feet relative to the lake level and large parts of the bottom are now dry land.

Some lands along the northern part of the lake have been submerged, or have been involved in landslides into the lake.

Most of the streams in the area are spring fed and the water is normally crystal clear, as trout fishermen know.

In many places the earthquake resulted in large increases in the discharge of the springs, with consequent increase in streamflow.

All of the springs which are associated with volcanic rocks underwent great changes. Instead of crystal clear water, for which these mountain springs were noted, the water that issued from the springs was brown and extremely turbid.

The streams most affected were the South Fork of the Madison, Duck, Cougar and Grayling creeks and the upper Gallatin River. The material giving the brown color to the streams is so fine-grained that it does not settle out of the water.

The amount of water discharged by these streams was far greater than normal so they have carried a great deal of this brown material into Hebgen Lake and it no longer has the clear, blue water which made it so attractive.

The main Madison River coming from Yellowstone Park had only a slight milky color and its discharge was not increased to the extent of the smaller streams. After three weeks there can be noted a clearing of the water of all the springs and streams in the area.

It is believed that the only effect this discolored water will have on the trout is the decrease in photosynthesis and a consequent decrease in the food supply available to the fish.

[Bozeman Daily Chronicle; September 14, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

RAYNOLDS PASS ROUTE SELECTED TO BY-PASS SLIDE

HELENA (AP)—A contract may be let early next year for improvement of a highway to link West Yellowstone, Ennis and Virginia City over Reynolds Pass.

The report came with official announcement from state and federal agencies Monday that the Reynolds Pass road will replace the quake-damaged portion of Montana 287 through the Madison Canyon.

The Forest Service, Bureau of Public Roads and Highway Department said the Reynolds Pass route will serve local and interstate traffic, at least for now, "because any reconstruction in Madison Canyon must wait until the area is more stable than it is now."

The Forest Service said it will designate the road a Class A forest highway route. This means it can be built with federal funds.

Montana 287 from Duck Creek to Hebgen Dam also will be rebuilt to provide access to recreational facilities and the dam itself. The Forest Service said the canyon has been designated a "geologic area" and is expected to become a major attraction for both scientists and tourists.

Also to be reconstructed is the quake-damaged portion of U.S. 191 from West Yellowstone to Duck Creek.

The Highway Department said surveys are now under way on the U.S. 191 damage and will begin immediately on the Reynolds Pass road. They said construction could start as soon as a contract is let, early next year.

[Bozeman Daily Chronicle; September 15, 1959]

EXPERTS TO VIEW EROSION PROBLEM ON QUAKE SLIDE

QUAKE LAKE (AP)—Four experts from throughout the country will survey erosion problems on the huge quake-caused slide dam in Montana's Madison River Canyon.

Lt. Col. Walter W. Hogrefe of the Army Engineers said he wanted the consultants' advise on stability of the slide and safety of a mile-long spillway bulldozed across it by the engineers.

Water streamed over the slide last Thursday for the first time since an earthquake Aug. 17 turned the side of a mountain into a gigantic natural dam.

The water began channeling at the downstream end of the spillway and water was shut off at Montana Power Co.'s Hebgen Dam upstream for two days as engineers built up the eroded channel.

Hogrefe, Garrison District engineer from Riverdale, N.D., said Monday most of the erosion has been corrected since and water is flowing smoothly through the spillway at a rate of 745 cubic feet a second. He added, however, that he wanted the experts to look at it.

The consultants are Dr. Arthur Casagrande, soil mechanics professor at Harvard University, Cambridge, Mass.; Dr. Lorenz Straub, head of the University of Minnesota Civil Engineering Department, Minneapolis; Edward B. Burwell Jr., Upperville, Va., consulting geologist, and I. C. Steele, Oakland, Calif., engineering consultant.

[Bozeman Daily Chronicle; September 15, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 110
Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

BOZEMAN DAILY CHRONICLE

QUAKE DROPPED EARTH 15 FEET

DENVER (AP)—Dr. William W. Mallory of the U.S. Geological Survey says that the Montana earthquake near Yellowstone National Park caused a vertical drop of 9 to 15 feet in the earth's surface in that area.

It tilted Hebgen Lake and moved 35 million tons of earth in a few seconds.

Dr. Mallory, speaking at a meeting of the Rocky

Mountain Geologist Monday night, said a quake in Utah in 1901, one near Three Forks, Mont., in 1925 and a third near Cottonwood, Ariz., in the 30s all were more severe than the one last month.

None exacted the toll of lives taken by the Hebgen Lake tragedy, with 9 known dead and 19 missing and believed dead.

[Bozeman Daily Chronicle; September 16, 1959]

EARTHQUAKE SLIDE TO BE INSPECTED AGAIN

QUAKE LAKE (AP)—Maj. Gen. Keith R. Barney of Omaha, will inspect Army Engineers work on the quake-caused slide dam in the Madison Canyon Wednesday for a third time.

Engineers worked Tuesday on stopping erosion in

a mile-long bulldozed spillway across the slide. A spokesman said the water was flowing more than it was planned than at any time since it first re-united the Madison River over the spillway last Thursday.

[Bozeman Daily Chronicle; September 16, 1959]

LIBRARIES HAVE COPIES OF QUAKE REPORT

The booklet, "Hebgen Lake-Madison River Earthquake Disaster," prepared by the regional foresters office at Missoula, is not available for public distribution, Roy E. Berg, local forest service administrative officer, said today.

"The booklet was prepared only for in-service use

and distribution to key services and individuals," Berg said.

Copies have been given to both the Bozeman Public and MSC libraries for the use of the public, Berg said.

[Bozeman Daily Chronicle; September 16, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

SEC. SEATON INSPECTS QUAKE AREA

HELENA (AP)—Secretary of Interior Fred A. Seaton has advised the governor's office he will complete a two-day inspection of the adjoining earthquake area Friday.

Gov. J. Hugo Aronson also was advised by Secretary of Commerce Mueller that his department would give Montana all financial assistance possible in repairing quake-damaged roads.

In a letter to Aronson, Seaton said: The department is, of course, greatly concerned because of the casualties involved and the great property loss. As you know, the damage in Yellowstone Park is estimated to exceed 2½ million dollars.

"We shall act as promptly as possible to make emergency repairs to property in the area under the jurisdiction of this department."

Meanwhile, Aronson had advised Mueller that he urged the Montana congressional delegation to sponsor legislation which would make available 100 per cent

federal, nonmatching highway funds for reconstruction of highways in the damaged area.

Mueller replied:

"Our Bureau of Public Roads division office in Helena has assigned public roads engineers to cooperate with engineers from the State Highway Commission in the investigation of the extent of the damages to roads in this catastrophe area and to evaluate the cost of necessary relocation and reconstruction of these damaged highways.

"As soon as the full report of our field engineers is received in Washington and a careful analysis made, you will be advised further. You may be assured that you will have our full cooperation and that all financial assistance possible, within the intent of the governing legislation, will be provided to assist the state of Montana in the highway rehabilitation work."

[Bozeman Daily Chronicle; September 18, 1959]

MADISON AREA TO BE DEVELOPED

MISSOULA (AP)—Planning is under way to preserve and develop the earthquake area in the Madison River Canyon.

Foresters, engineers, hydrologists and recreation specialists will protect the area for its scientific value,

but still make it accessible to the public.

Appointed director of this task force is Harold E. Anderson, a Forest Service staffman from the Kaniksu Forest at Sandpoint, Idaho.

[Bozeman Daily Chronicle; September 22, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

DEEPER SLIDE CUT PLANNED BY ARMY **Eliminates Threat To Ennis**

QUAKE LAKE (AP)—Army Engineers decided Friday to gouge a deeper cut on the earthquake slide spillway in the Madison Canyon. This will cut the size of Quake Lake about in half and eliminate any possible flood danger to downstream points.

Lt. Col. Walter W. Hogrefe, Garrison District engineer, said the decision was made on the advice of a board of consultants appointed to assess the adequacy of flood control measures taken by the engineers.

Although the material on the downstream side of the slide is basically rock, it has eroded more rapidly than was anticipated. This instability led to the decision to deepen the spillway and reduce the water head in Quake Lake to a level about half of the 79,000 acre feet.

Work in deepening the spillway has started and should take two or three weeks. Hogrefe expects progress on the cut to be about three feet a day.

It has not been specifically determined how deep the cut may go, Hogrefe said. Whether the channel goes down 40, 50 or 60 feet will depend on the stability of material encountered.

The decision to adopt the reconstruction program coincided with a visit of two members of the board of

consultants, Dr. L. G. Straub of the University of Minnesota and Edward Burwell of Upperville, Va.

The other two members, Dr. Arthur Casagrande of Harvard University and I. C. Steele of Oakland, Calif., made similar recommendations when they inspected the site about two weeks ago.

The second phase program has the approval of Maj. Gen. Keith R. Barney, Missouri River Division engineer from Omaha.

The new construction program will necessitate handling about 1½ million cubic yards of material, about the amount handled in the first phase.

The Army Engineers have been on the spillway since Aug. 22, five days after the earthquake, first from a field office in West Yellowstone and later in Ennis.

The new channel work will be done in about three feet of water.

Ranchers and others below the dams have expressed the desire to have the water lowered.

After the work is done, Quake Lake will be about four miles long instead of seven and about 100 feet deep instead of 200.

About 100 men are working on the project.

[Bozeman Daily Chronicle; September 25, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 113
Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

BOZEMAN DAILY CHRONICLE

QUAKE LAKE AREA PICTURED ON HIGHWAY MAP

HELENA (AP)—The once-nameless 7,600 foot Earthquake Mountain that filled Madison Canyon after the Aug. 17 earthquake ironically is pictured on the back of Montana's 1958 highway map, a department official said Friday.

"Copies of the map will be at a premium soon," Cato Butler, assistant information coordinator, said Friday.

The color picture on the map shows a man fishing in the Madison river, now a lake at that point, and the mountain in the background.

Even more ironic, Butler added, is the V shaped by trees on the mountain side which nearly mark the part

of the mountain which fell into the canyon, creating the famous Earthquake dam and lake.

The dam is believed to have buried about a dozen campers in the canyon.

The new lake has risen above the tall pines along the river shown in the picture, Butler said.

The picture was taken by Ernst Peterson for the Montana Power Co.

It was announced recently the proposed 1960 highway map will show the natural dam and Quake Lake.

[Bozeman Daily Chronicle; September 27, 1959]

RAYNOLDS PASS JOB SURVEYED

HELENA (AP)—Two crews of surveyors soon will start work on the Raynolds Pass Highway, which is to be the new traffic link between West Yellowstone and Ennis. Much of the old route past Hebgen Lake was lost after the Aug. 17 earthquake.

The U.S. Bureau of Public Roads Monday announced that a 14-man crew will survey the Montana portion of the route, which is to be brought to primary highway system standards. A seven-man crew will survey the Idaho portion.

Both crews will work under the direction of John McGillvary of Portland, Ore., locating engineer for the BPR.

The surveyors will establish a center line and stake the new route for the contractor who eventually gets the job. However, there has been no announcement of any bid-letting date.

The Raynolds Pass route was selected as a

substitute for the Highway 287. Many miles of this road are either under the waters of Quake Lake or under millions of tons of rock in the mountain slide that dammed the Madison River and formed the new lake.

The survey work is expected to take 45 to 60 days.

In addition to crossing Raynolds Pass, the new route goes over Targhee Pass. Its highest elevation is 6,800 feet.

This road, from West Yellowstone to Ennis, will be only 2.3 miles longer than the old Montana 287 route.

About five miles of the Idaho portion of the Raynolds Pass Highway is on that state's secondary system.

The decision to replace Montana 287 with this route was recently made by the Montana Highway Department, the Forest Service and the BPR.

[Bozeman Daily Chronicle; September 29, 1959]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

LIGHT EARTHQUAKE FELT IN BOZEMAN

By The Associated Press

A light earthquake hop-scotched across southwestern Montana Wednesday, awakening some residents and rocking furniture. But it apparently caused no damage. The tremor was the most widespread since Aug. 17, 1959, when much of the Intermountain region was shaken by the deadly Madison Canyon quake that claimed 28 lives. The latest quake came as a roar and a thump in some areas, a mild shaking in others.

Seismograph readings made in California and Washington placed the intensity of Montana's Wednesday quake at 5 to 5.5 on the Richter scale. This scale takes into account energy released.

The University of California seismograph showed 5.5 on the same scale that gave 8.25 for the 1906 San Francisco quake.

The University of Washington seismograph recorded the Montana quake at 12:40 a.m. at an intensity of 5 on the Richter scale.

It was felt in Butte, Dillon, Bozeman, Helena, Deer Lodge, Hamilton, Missoula and Ennis between 12:30 and 12:45 a.m. Residents in Ennis reported two disturbances, about 10 minutes apart. But residents at Cameron, 25 air miles north of Quake Lake, said they didn't feel the quake.

While parts of cities felt the shaking, others didn't.

This was the case in Butte, Dillon, Missoula and Helena.

Authorities said residents reported an intense shaking near the Butte Airport, about four miles from the city's business district. Mrs. Henry Richer said her entire family was awakened.

Some residents of Dillon were awakened by the earth movement. The Federal Aviation Agency said the tremor was strong enough to shake some homes in Dillon.

In Deer Lodge, keys on the county jail hook "swayed like a pendulum on a clock," a deputy sheriff said.

The quake was described as a large thump in Bozeman.

Several Missoula residents reported a roar followed by a shaking. But police and sheriff's officers say most of Missoula apparently escaped the disturbance.

Some residents in south Helena reported feeling the tremor. "An east to west shaking," said one. The Weather Bureau in the Helena Valley and police station near downtown Helena said they felt nothing.

The earthquake apparently missed the lower Flathead Valley which has been receiving frequent shocks, including several severe jolts.

[Bozeman Daily Chronicle; October 21, 1964]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

MONTANA'S EARTHQUAKE ANALYZED

The MSC seismographs on the Bozeman campus and at the Red Bluff station, near Norris, were "too close to the center of Montana's Wednesday morning earthquake to secure proper readings to determine the magnitude or location of the quake center," Dr. A. J. M. Johnson of the MSC earth sciences department said this morning.

"We could determine, however, that the epicenter was west of Bozeman because the Red Bluff seismograph recorded the start of the quake motion first," he said.

Start of the quake was recorded at Red Bluff at 12:38:42.1 a.m. Wednesday while the campus seismograph started wiggling at 12:38:47.9 a.m., about five seconds later.

"The shock caused too much motion on both the high and low magnification machines at both stations to allow us to determine the distance or magnitude," Dr. Johnson said. "We were too close to it and it is impossible to separate the phases on the seismograms."

An Associated Press report said the University of California seismograph measured the quake at 5.5 on the Richter scale of 10. A University of Washington seismograph measured an intensity of five.

The AP also reported that a seismograph at Hungry Horse Dam recorded the tremor and gyrations lasted 25 minutes. Roy Wendt of Columbia Falls, who tends the U.S. Coast and Geodetic Survey seismograph, said the tremor produced more shock than recent

quakes that have rocked the lower Flathead Valley.

The Aug. 17, 1959, Madison-Hebgen earthquake which took 28 lives, was recorded at 7-7.5 on the Richter scale of 10, according to reports from a number of stations.

Dr. Johnson said that if Wednesday's quake was recorded at 5-5.5 at the West Coast universities, then it was "a modest little shake which probably did no more damage than maybe crack plaster or rattle dishes."

He explained that readings on the Richter scale climb in powers of 10.

"Thus, a quake recorded at 7.5 would be 100 times as big as one recorded at 5.5," he said. "One of 6.5 intensity would be 10 times greater than 5.5 and one of 8.5 would be 1,000 times bigger."

Both the campus and Red Bluff seismographs also recorded a tremor at 2½ minutes after 1 p.m. Wednesday.

"This was just a little quake that should have been felt and was about the right distance to have been centered at Hebgen Lake or in that general area," Dr. Johnson said.

He also said one individual reported to the earth sciences department that he had been awakened at 3:50 a.m. today by what he felt "could have been an earthquake." Readings on this reported tremor will not be available until Friday.

[Bozeman Daily Chronicle; October 22, 1964]

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

CENTER OF WEDNESDAY'S EARTHQUAKE DETERMINED Madison County Area

BUTTE (AP)—The center of Wednesday's large but nondestructive earthquake apparently was in Madison County, 75 to 85 miles southeast of Butte.

Although widespread, the energy it released may have been only about one per cent of that from the deadly 1959 quake near West Yellowstone.

Approximate location of the quake was furnished Thursday by Dr. Stephen Nile of the Montana School of Mines in Butte. He said the quake registered an intensity magnitude of 5 to 5.5 on the Richter scale of 10.

He said it was felt "very, very strongly" by persons in Madison County. Instruments showed it lasted more

than one hour.

Seismographic equipment at Montana State College could not record the quake because it was too close and too strong.

Dr. Arthur J. M. Johnson of MSC said that, because of the progression of the Richter scale a quake registering 7 would release 100 times the energy of one registering 5.

The 1959 quake that killed 28 persons in the Madison River Canyon registered 7.1 on the Richter scale. Reports of Wednesday's quake are the most widespread since the one in 1959.

[Bozeman Daily Chronicle; October 23, 1964]

HEBGEN LAKE, MT 1959 SERIES pg. 117
Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
Aug. 18, 4:03 a.m. M5½; Aug. 18, 8:26 a.m. M6.3;
Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

DESERET NEWS

16 REPORTED DEAD AS QUAKE SMASH WEST YELLOWSTONE AREA

Dam Cracked; Mountains Fall

By M. DeMar Teuscher and Will Fehr

WEST YELLOWSTONE, MONT.—A series of massive earthquakes turned mountains into rubble in Southern Montana and eastern Idaho early Tuesday, killing at least 16 persons.

No true estimate of the death toll can be made, officials said, until the debris from various slides can be cleared away. However, the death toll could go as high as 50 or 60, they said.

The powerful tremors, which ripped six to 10 foot-wide fissures in the earth, brought a mountainside tumbling down seven miles below Hebgen Dam in Montana's Madison Valley. The mammoth slide has completely blocked Madison Canyon from rim to rim, backing up the waters of the Madison River into a lake.

Mountain Tumbles On Six

Four members of a Coeur d'Alene, Idaho, family were reported killed when the earthquakes split the mountain and sent rock and earth sliding down into the canyon. Two other persons also died in the slide.

In another slide at Reynolds Pass on the South Fork of the Madison River in eastern Idaho, eight persons were reported dead. Rescue teams said they had recovered six bodies, but did not have the equipment to recover the other bodies.

In another slide at Cliff Lake, 12 miles west of Hebgen Lake, two more campers were reported killed.

Paramedics Flown To Area

Meanwhile, helicopters and paramedics from Utah, Idaho, Montana, and Pacific Northwest states were being flown to West Yellowstone to aid in rescue operations.

About 150 vacationers were reported trapped between Hebgen Lake and the slide area seven miles downstream. Four paramedics left Hamilton Air Force Base north of San Francisco for West Yellowstone Tuesday morning. Mission Commander Capt. Andrew S. Champion of Novato, Calif., said the paramedics would parachute into the area, if necessary.

A Tucson, Ariz., ham operator said he had received a message from a doctor who had visited the slide area below Hebgen Dam. The doctor said that "about 12" persons were seriously injured. A number

of other persons had minor injuries.

The doctor requested that ambulances be standing by at Bozeman, Mont., Airport because the injured required immediate treatment. The injured were taken up-river to the base of the dam where helicopters were to pick them up and fly them to Bozeman.

Gallatin County Sheriff Don Skerritt, who flew over the Madison Valley area, said Hebgen Dam, which backs up water for 20 to 26 miles, was still intact although it had suffered some damage.

SOS Signals Laid Out

He said he saw a number of people in the dam area, who had laid out SOS signals.

"A tremendous mountain slide has occurred about seven miles below the dam," he said. "It appears that an entire mountain has collapsed to create a towering natural dam. The dam is higher than the man-made one."

He said that although many persons were trapped between the slide and the dam, they could easily get out by heading for high ground on foot.

The earthquake, he added, apparently started a huge fissure which "may be nearly 40 miles long."

"The fissure starts on the north side of the dam and runs around the north side of the lake over mountains, through roads and summer homes and into the park area of West Yellowstone," he said.

The fissure was six to 10 feet wide and had destroyed roads and bridges. Some summer homes were under water and others were split in two by the earthquakes.

Slides Seal Off Roads

The first quake, which was felt also in Salt Lake City, hit at 11:39 p.m. (MST) Monday, with a magnitude of 8 on a scale of 10. The disastrous San Francisco earthquake of 1906 had an intensity of 8.25. Jolting after shocks followed at 12:59 a.m., 1:44 a.m., 3:08 a.m. and 8:28 a.m. (MST).

Rock slides closed roads throughout most of the west half of Yellowstone Park.

In West Yellowstone, hardly any large windows were left intact. Most of the curio shops had the appearance of being ransacked, with goods scattered all

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DESERET NEWS

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

over. In grocery stores, canned goods were scattered about. At a service station, a gas pump was leaning like the Tower of Pisa. Along one side of a schoolhouse, bricks had fallen to the ground.

"I felt like I was on a roller coaster without any control," Mrs. Laura Schauer, Los Angeles, Calif., said. "I lost my balance, staggered out of a restaurant and fell to the ground, cutting my leg on glass and gravel."

Number Of Others Hurt

A number of other persons also suffered cuts and bruises, but none received serious injuries.

The Old Faithful Hotel was shut down when a water main broke.

Other major landslides occurred at Gibbon Falls Yellowstone and West Yellowstone. Three bridges on U.S. Highway 191 between Bozeman and West Yellowstone had caved in.

Telephone Service Wiped Out

Telephone service was knocked out in West Yellowstone and most of the Madison Valley area in Montana.

The State Capitol in Boise was rocked by the earthquakes and at Montana's historic Virginia City many old buildings were damaged.

At Butte, chimneys toppled, fireplaces and windows cracked. A chimney also toppled at the City Library in Dillon, Mont.

At Ashton, Idaho, operators at the Utah Power and

Light Co. plant on the North Fork of the river also felt a decided shock.

Lavell Chatterton, on duty during the earthquakes, said the first tremor tripped the switch on the power line to West Yellowstone.

Second Tremor

His first thought, he said, was that something had happened to the dam and he went outside to inspect it. He said he found no damage and returned to the station.

A second tremor hit, he said, forcing him to hold onto the door to keep from falling down.

At the Ashton Hospital, three patients were admitted who received injuries at West Yellowstone. Anthony Smith, 39, of San Diego, Calif., told of grabbing onto a post in a West Yellowstone establishment when the earthquake hit. A piano rolled across the floor and struck his thumb, almost severing it.

Others Hurt

Mrs. Bertha Wilson, 69, West Yellowstone, received a severely cut leg. Robert Lavelle, 9, of Nampa, Idaho, also was brought to the Ashton Hospital after complaining of pain in his stomach after the tremors were felt.

At the Ashton Hospital the tremor awakened patients, causing a degree of excitement, but nothing was broken.

[Deseret News; August 18, 1959]

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LATEST QUAKE ITEMS REPORTED AT GLANCE

Here are the latest important happenings in the West Yellowstone earthquake story.

- Sixteen persons known dead.
- Twenty-one persons known injured.
- Mayor Charles Bower, Ennis, Mont., says death toll may rise between 50 and 60.
- About 150 campers trapped between Hebgen Dam and rock slide in Montana's Madison Valley.
- Huge fissure, extending from Hebgen Dam into West Yellowstone, opened by earthquakes.
- All roads closed to Yellowstone Park. Train service to West Yellowstone halted until track damage is determined.
- Helicopters rushed from Utah, Montana, and Idaho to aid in rescue operations.

- Landslides reported at Gibbons Falls, Yellowstone, Madison Junction and West Yellowstone.
- Three bridges on U.S. Highway 191 between Bozeman and West Yellowstone reported caved in.
- Telephone service knocked out in West Yellowstone and most of Montana's Madison Valley.
- All buildings damaged to some extent in West Yellowstone.
- Chimneys cracked and windows broken at Virginia City, Butte and Dillon, Mont.
- Little damage reported at Ashton, Idaho.
- No damage reported to Palisades Reservoir near Idaho Falls.

[Deseret News; August 18, 1959]

HERE'S A PARTIAL LIST OF TEMBLOR VICTIMS

Here is a partial list of persons who have been reported killed and injured in the massive earthquakes which rolled across southeastern Idaho and Montana late Monday and early Tuesday.

In addition to those victims who have been identified, there are at least 10 others known dead. Eight of these are in Reynolds Pass in eastern Idaho where six bodies have been recovered.

DEAD:

Purley Bennett, 43, Coeur d'Alene, killed in mountain slide while camping seven miles from Hebgen Dam on Madison River.

Carol Bennett, 17, daughter.

Susan Bennett, 5, daughter.

Tom Bennett, 11, son.

E. H. Stryker, 39, San Mateo, Calif., killed in rock slide at Cliff Lake.

Mrs. Stryker, his wife.

INJURED:

Mrs. Laura Schauer, Los Angeles, cut leg when thrown to ground in West Yellowstone.

Anthony Smith, 39, San Diego, crushed thumb when hit by skidding piano in West Yellowstone.

Mrs. Bertha Wilson, 69, West Yellowstone, severe leg cut when hit by glass in West Yellowstone.

Ray Painter, Ogden service station operator, injured in landslide near Hebgen Dam.

(At least 20 other unidentified persons have been reported seriously injured.)

[Deseret News; August 18, 1959]

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RESIDENTS SKETCH SCENE OF NATURE ON RAMPAGE

Quake Area Report

Surprise, shock and a picture of nature gone wild was sketched Tuesday by persons who were eyewitnesses to the havoc caused when two powerful earthquakes jolted the southeast Idaho and western Montana area.

Much of the damage was concentrated in the West Yellowstone region and Madison Valley in Montana.

Here are some of the comments by persons in the quake area:

Gallatin County Sheriff Don Skerrett, who flew over Madison Valley early Tuesday morning—"The whole area around Hebgen Dam is a mess. A lot of tourists were trapped in the area when the roads were wiped out.

"A mountain slide has occurred below the dam. It appears that a whole mountain has collapsed. It's the biggest slide I have ever seen.

"A crack in the earth runs for miles from the dam toward West Yellowstone. It is six to 10 feet wide, and has totally ruined roads, bridges and summer homes.

"I saw one building which was split right in two by the fissure and both halves shoved apart. The damage is unbelievable and many tourists are trapped in the area. They can get out on foot, but they'll have to leave their cars and everything."

Phil Bennett, 16, who survived the landslide on Madison River with his mother. The slide killed his father, two sisters and a brother and several other persons—"Suddenly there was a huge roar. I looked up and saw the mountain cascading down upon us."

Lavell Chatterton, operator on duty at the Utah Power and Light plant on the North Fork of the Snake River in southeast Idaho—"The first tremor tripped the switch on the power line to West Yellowstone.

"At first I thought something had happened to the dam and I went outside to look. I was on the way back to the station when another shock hit and I had to hold onto the door to keep from falling down."

Anthony Smith, a San Diego tourist, was in a West Yellowstone building when the quake hit—"I grabbed hold of a post to keep from falling down. The

jolt sent a piano skidding across the floor and it smashed my thumb."

Charles Melaney, Madison County deputy sheriff—"Three bridges on U.S. Highway 191 are caved in, rock slides have closed other highways from Ennis to West Yellowstone, and all telephone wires are down. Communications are very poor."

H. J. Morris and his wife, residents near Rigby, Idaho—"We woke up with a sensation of being carried on a wave in a boat. The shock had carried the mattress to the floor.

"I went outside and the whole countryside was alive with the sound of crowing pheasants. When we turned the water on in the morning it ran bright red for nearly an hour."

Gilbert C. Orme, lumber and hardware store owner in St. Anthony, Idaho—"We knew it was a good jolt because the chimes in the clock downstairs rang out three times.

"That first shock hit St. Anthony Monday about 11:45 p.m. We were asleep, but the ringing of the clock chimes and the rumbling and creaking throughout the house had us wide awake.

"There were four other distinct shocks during the night, the last one seven minutes before 2 a.m."

Mrs. Laura Schauer, Los Angeles, who was coming out of a cafe in West Yellowstone when the shock struck—"I saw the lights start swinging and the glass from the front window fly out.

"I felt like I was on a roller coaster without any control. I staggered out of the cafe and cut my leg when I fell on gravel and glass."

Air Force Warrant Officer Victor James, El Centro, Calif., was parked in his trailer about 75 yards from where mountain collapsed in Madison River—"I heard a terrible rumble and looked up. I saw the whole mountain crumbling. It was awful. I saw a lot of fighting in World War II, but I've never heard such a roar."

[Deseret News; August 18, 1959]

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QUAKE DISRUPTS RAIL SERVICE TO YELLOWSTONE

Rail transportation to Yellowstone Park was disrupted by the earthquake that hit the western United States Monday night and Tuesday morning.

Union Pacific Railroad Co. officials said Tuesday morning the Yellowstone Special into the park was held up temporarily at Ashton, Idaho, because of quake damage to the company lines between Ashton and West Yellowstone. However, the 46-mile line from Ashton to Victor, Idaho, was not damaged. This is the railhead for Jackson Hole area and south entrance to Yellowstone Park.

Railroad men routed the train passengers to Victor and planned to convey them 80 miles through Jackson Hole country to the south entrance to the park where park company buses will pick them up if transportation into the park is permitted. Until this is determined passengers will be housed at Jackson Lake Lodge.

Passengers coming out of the park by train Tuesday were to be brought to the south entrance and then by bus to Victor and on the U.P. line to Ashton, Idaho Falls and into Salt Lake City, it was announced.
[Deseret News; August 18, 1959]

TREMORS HIT S. L. HOME, FAMILY FLEES IN NIGHT

The jolting earthquakes which rolled across Idaho and Montana Monday night were also felt in Utah, where a Salt Lake family fled into the night as the tremors shook their house.

Harry and Catherine Evans, 828 Washington St., their four young children and a niece scrambled out of the house as it "felt like it was slipping off the foundation."

Mrs. Evans said the children were asleep when the first shock came. When they noticed the lights starting to dance and the house creak and groan, they roused the

children and fled outside.

"The children were getting dressed as we went out the front door," Mrs. Evans said.

The brick house split in several places apparently as a result of the quake. The family spent the night with some relatives.

Several neighbors also were roused by the shock and came outside with flashlights in hand to check for damage to their homes.

[Deseret News; August 18, 1959]

HILLSIDE CRACKED WIDE; DAMAGE EVERYWHERE **Reporter At Scene**

(Editor's note: Deseret News Staff Writer M. DeMar Teuscher and Chief Photographer J. M. Heslop flew over southern Montana and West Yellowstone early Tuesday morning. Mr. Teuscher describes the extent of damage in the following story.)

By M. DeMar Teuscher

WEST YELLOWSTONE, MONT.—We flew over the Hebgen Dam in southern Montana early Tuesday morning. Along the north shore of the lake created by the dam opposite West Yellowstone, we could see tremendous cracks in the hillside.

In at least five places along the lake east of the

dam, the road has dropped into the lake. In one section, 100 yards of road has slipped under water.

The dam is holding although there are cracks along its top. It did not appear to us that there was any immediate danger of the dam bursting.

About seven miles downstream, a mountainside has fallen and completely filled in the Madison River Canyon. The slide, started by the earthquakes, is about 40 to 50 feet deep and about a mile in length. It fills the canyon from rim to rim.

River water is backing up behind the slide to create a new lake in the canyon. On the downstream side of the slide, the river is about dry.

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Upstream from the dam about a mile we saw three summer homes. One of them was completely under water and the other two had water running through the

windows.

[Deseret News; August 18, 1959]

DESERET NEWS

MORE TREMOR VICTIMS HUNTED IN MASSIVE SLIDE Two Utahns Reported Among Known Dead

By M. DeMar Teuscher and Don Beck

WEST YELLOWSTONE, MONT.—Rescue workers Wednesday began digging through a massive slide seven miles below Hebgen Dam in southern Montana's Madison Valley where as many as 50 or 60 persons may be buried.

So far, 10 bodies have been recovered from slide areas. Among those reported dead were Mr. and Mrs. Thomas Mark Stowe, Sandy, Utah.

Minor earthquake tremors continued to be felt Wednesday.

The biggest slide occurred seven miles below Hebgen in southern Montana's Madison Valley where an estimated 50 million tons of rock and earth split away from an 8,000-foot high mountain and thundered down upon the Rock Creek camping area below. The massive slide completely blocked the Madison River, backing the river's water into a lake.

60 May Be Lost

Campers in the area told reporters that it was possible that even more than 60 persons were lost in the slide area.

"There might be 100 people under that slide or there might be only a few," Madison County Sheriff W. H. Bowman said. "Probably we'll never know."

Stuart W. Wall, Forest Service information officer, said, "We feel we will find more bodies in this area. They may have been washed down from the campgrounds below the dam."

To Release Water

Officials said they hoped to cut a channel through the slide area to release the lake water building up behind it.

There was no equipment in the area yet capable of doing anything about the slide.

"There's more dirt in there than they took out of the Panama Canal," Harvey Robe, forest ranger, said.

Meanwhile, Air Force planes and helicopters continued to comb the area around Hebgen Dam in an

effort to locate further slides or lost campers.

Campers Stranded

Jim Stradley, Montana pilot, said there are many campers stranded high on mountains surrounding the Madison Valley slide area.

"I've seen slides still going on in a 15 to 20 mile area from the disaster site," he said. "There are a man and a woman in one mountain area who will have to go 40 to 50 miles to get out safely."

Mr. Stradley, as well as Air Force pilots, are dropping notes to stranded campers telling them how to get out of the area.

Tours Area

Montana District Fish and Game Manager Joe Townsend said, "There's no telling how many people are stranded. We have spotted quite a few and know that there are more."

Lt. Gov. Paul Cannon, of Montana, who toured the disaster area, said minor tremors continued to be felt every half hour or so.

In Salt Lake City, Dr. Kenneth L. Cook, professor and head of the Geophysics Department, University of Utah, said the department's seismograph recorded a major aftershock of 10 minutes duration Tuesday at 9:05 p.m.

A minor aftershock was recorded at 4:05 a.m. Wednesday, he said.

Since that time over a dozen minor aftershocks of little consequence have been recorded up until noon Wednesday, Dr. Cook said.

"The whole seismograph record indicates that the ground up there is still in a state of considerable unrest," he said.

Hebgen Dam, which was weakened by the flood, was still intact Wednesday. However, Mr. Cannon said, the lake was higher than he had ever seen it.

Dam May Hold

Engineers said the dam would hold if there were no more severe shocks.

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DESERET NEWS

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Upwards of 60 persons were injured in the slides.

Most of the injured were flown out of the Hebgen Dam area late Tuesday afternoon by helicopter. They were taken to West Yellowstone, where they were transferred to transport planes and flown to Bozeman, Mont.

Minor Injuries

Many of the injured were treated for minor cuts and bruises and released.

Sixteen persons, however, were still hospitalized at Bozeman, some of them in serious condition. One person was being treated at a Butte Hospital. Three or four injured persons were believed hospitalized in other Montana cities.

Marines and volunteers searching the area around the Madison River recovered such items as children's clothes, women's undergarments, camping equipment, purses and shoes.

Clothes Ripped Off

Campers who survived the terrifying slides said clothes were ripped from people in the rush of rocks and earth.

Automobiles began coming out of the Hebgen Dam area Tuesday at 8 p.m. and an estimated 150 persons moved out of the area to Bozeman, over roads that were hacked out of the mountains by bulldozers of the N. K. Construction Co., Billings, Mont.

Officials also said Wednesday that the north end of Hebgen Lake apparently slipped eight feet during the tremors while the south end of the lake rose eight feet.

Homes Submerged

On the north side of the lake, summer homes have been submerged by water.

The Idaho State Highway Patrol, which reported Tuesday that eight persons were killed at Reynolds Pass along the Idaho-Montana border said Wednesday this report was not correct.

State Police Superintendent A. E. Perkins said the report of eight dead was confused with the victims of the slide near Hebgen Dam.

Montana Civil Defense Director Hugh Potter also said that through an error, deaths were reported twice.
[Deseret News; August 19, 1959]

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SLIDE AT HEBGEN TRAPS OGDEN PAIR, CHILDREN

WEST YELLOWSTONE—A night of sheer terror in which he feared for the lives of his wife and children was related Tuesday afternoon by an Ogden man seriously injured by the massive earthquakes which ripped this area.

Ray Painter, 46, an Ogden service station operator, with his wife, Myrtle, were two of several seriously injured persons evacuated by helicopter from near Hebgen Dam.

Mr. Painter told his story here after the helicopter had set down and he and his wife were waiting to be taken to another plane for transfer to a hospital at Bozeman.

Helicopters Busy

Several other seriously hurt campers were also airlifted out by helicopters. All the others are from Billings, Mont.

Mr. Painter said his family was sleeping in a trailer at the foot of the dam when he felt the trailer shake. His first thought was of bears, and he ran out to see what was going on.

"The noise was terrible. I looked up and saw everything was moving, then it occurred to me that it was an earthquake."

He said that when he realized what was happening, he tried to make it to his car. "Suddenly the water mushroomed, and I was hurled back about 50 feet

against some trees."

Pinned By Tree

One of them fell across him, pinning his leg and inflicting a severe injury.

"I heard my children and knew that some of my family were still alive. I didn't know about my wife."

Mr. Painter said he kept pleading for help, but that it seemed like "an eternity" until some men lifted the tree from his leg.

He then found his children, and they knew where his wife was. The children were unhurt but he and his wife both suffered severe loss of blood in addition to other injuries.

Others Brought Out

Others brought by helicopter included:

Warren Steele and his wife, Esther, of Billings, Mont. They were camped with Mr. and Mrs. Tony Schriber of Billings. The Schribers' daughter, Bonnie, 7, received a cut on the head.

Mr. and Mrs. Verno Holmes, Billings.

A doctor aboard the helicopter said there were 10 critically injured in that immediate area and 10 less seriously hurt.

A helicopter was trying to reach trapped campers and tell them how to walk out to reach cars which are not far away.

[Deseret News; August 19, 1959]

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U SEISMOGRAPH TILTS CRAZILY DURING SHOCKS

The West Yellowstone earthquake Monday night knocked the University of Utah seismograph off scale for four minutes and then kept the needle dancing off and on the rest of the night and Tuesday morning recording four aftershocks.

The heaviest aftershock came at 8:26 a.m. Tuesday.

The California Institute of Technology estimated the magnitude of this aftershock at 6.5 on the Richter Scale of 10. The magnitude of the original quake has been estimated at between 7 and 8.

Heaviest In 2 Years

Dr. Kenneth L. Cook, professor and head of the geophysics department at the U. of U. said this is the heaviest earthquake in the Rocky Mountain region since the Dixie Valley quake in Nevada two years ago last December.

The West Yellowstone quake approaches the devastating San Francisco quake in 1906 when the magnitude was placed at 8.25. The heaviest quake ever reported on the face of the earth was 8.7, Dr. Cook said.

By measuring the amplitude of marks of the last aftershock on the chart, he placed the quake region at 400 to 500 miles away from the Salt Lake area.

'Great Unrest'

"The state of the ground up there is in great unrest," he declared.

The original quake usually is the heaviest, Dr. Cook said, but aftershocks will continue in the area for days and possibly weeks.

He likened it to throwing a pebble into the water and having the waves spread out. The same thing happens in a quake. The ground keeps shuddering out from the center of the break.

Only A Fraction

While the earth movement was probably quite

pronounced in the West Yellowstone area, the ground in Salt Lake City probably was moving only a fraction of an inch, Dr. Cook said.

"Everything was going along fine until 11:38 p.m., Monday," he related, "when we got the first manifestation of the quake. The chart broke completely. For four minutes it was dancing back and forth so far it went off the scale.

"Then little marks started coming in and we started getting a reading although it was still swaying. The marks on the chart, which go along in a straight line when all is quiet, showed an amplitude of three to four inches.

Marks Diminish

"The marks started diminishing then and had dropped down to between one and two inches at the end of 20 minutes.

"Then at 12:56 a.m. Tuesday came the first aftershock and the marks jumped to an amplitude between two and three inches. This continued for about 10 minutes and then diminished during the next hour.

"The second aftershock came at 1:43 a.m., sending the chart marks to an amplitude of two to three inches and lasting about five or six minutes. After that there were small minor tremors for the next couple of hours.

Third Aftershock

"The third aftershock came at 4:05 a.m. and then things were quiet for the next four hours when the fourth and largest aftershock sent the needle dancing again.

"This aftershock was continuing when we pulled the record off at 8:45 a.m." Dr. Cook said. This major aftershock showed marks with an amplitude of about three inches on the chart.

[Deseret News; August 19, 1959]

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VISITORS AT PARK SAY QUAKE'S 'BIG ADVENTURE'

Yellowstone National Park (UPI)—Yellowstone National Park visitors accepted a series of earthquakes which wracked the park Monday night and Tuesday as a "big adventure," according to Supt. L. A. Garrison.

The first and worst tremor hit Yellowstone at 11:40 p.m. Monday. Others of lessening severity continued every half-hour.

"But they were very, very light," and most persons don't notice them, he said.

The quakes, the Park Service insists are being treated as the biggest added attraction staged during the park's 87 years as the nation's oldest playground.

Damage Minor

Damage to park facilities—natural and man-made—has been written off as minor. Hardest hit was the Old Faithful Inn at Old Faithful Geyser. The geyser continued to spout every 63 minutes. It was not roped off, as was reported.

Only one person was injured according to the official count. An unidentified woman broke her ankle when she ran outside when the first and hardest temblor hit her hotel.

Most persons, Garrison said, woke with the first earthquake. Then they stayed up through the night to compare reactions.

The park's 12 hotels and motels made the night one long coffee hour. "The savages"—college students employed in the park for the summer—were assigned the job of dispensing coffee and doughnuts to the gaily chattering guests.

Inn Was Closed

Old Faithful Inn was closed when the first shock broke pipelines in the sprawling structure. The entire inn was closed during the day because of water damage and fallen plaster.

[Deseret News; August 19, 1959]

SISTERS RELATE TERROR IN TREMOR-FILLED NIGHT

(Editor's Note—Geraldine Ost, 13, and her sister, Shirley, 6, daughters of the Rev. and Mrs. Elmer Ost of The Queens, N.Y. survived Monday night trapped between Hebgen Dam and a landslide seven miles downstream. Their father is pastor of Bethany Congregational Church in The Queens, N.Y. Here is Geraldine's account of the night.)

By Geraldine Ost

As Told to United Press International

ENNIS, MONT. (UPI)—We laid our tents and had been asleep, I guess, for some time. We awoke with a start when we heard and felt that terrible big shake.

Somebody yelled, "It's a cyclone" and I thought of both twisters and, gosh, I was worried about being sucked up into the air.

My dad shouted at us to grab a tree.

"(We sure held on tight, believe me," little Shirley interjected.)

The water hit us like a big tidal wave and poured over us. We heard the water rising so we hit for higher ground. We heard those rocks crashing around us all night long.

We stayed awake all night. Somebody lighted a big fire. We all huddled around the fire. It got pretty cold.

My father helped rescue many people by guiding them to higher ground. I would say he is a brave man.

In the morning we cooked our breakfast over the fire. We had a breakfast of—what do you call those things?—oh, yes, scrambled eggs with potatoes.

("Boy, that was good," Shirley added.)

[Deseret News; August 19, 1959]

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NIGHT OF HORROR TOLD BY CALIFORNIA WOMAN

Mrs. Clarence D. Scott of Fresno, Calif., was one of those camped between the Madison River slide and the Hebgen Dam Monday night when earthquakes ripped through the Yellowstone National Park area. From a hospital bed in Bozeman, Mont., where she and her husband were taken for treatment of their injuries, Mrs. Scott described to United Press International what happened to her in this terrifying night.

BOZEMAN, MONT. (UPI)— "It was horrible. Children were screaming and crying for their mothers. And husbands were begging for their wives to answer."

That's the way Mrs. Clarence D. Scott, 57, Fresno, Calif., described the scene that greeted her when she was thrown out of her house trailer in the area where a landslide, triggered by a violent earthquake, slammed millions of tons of rocks into the Madison River in Yellowstone National Park.

Everything was confusion, Mrs. Scott said from her bed in a Bozeman, Mont., hospital. It was dark and cloudy with thunderstorms in the area and nobody could see anything after the quake hit, she said.

At Rock Creek

"We were camped at Rock Creek, seven miles down from the dam. We were in our house trailer. And we were in bed.

"There was a terrific shaking of the trailer and the television thing (antenna) fell off and hit me.

"There was a huge noise. It sounded like a

thousand winds going through a thousand trees. But not a tree was moving.

"Then something struck the trailer and pushed it against a tree. A side and the end of the trailer fell out. And my husband was gone.

"Then I fell out.

Children Screaming

"It was horrible. Children were screaming and crying for their mothers. And husbands were begging their wives to answer.

"Someone was screaming for help from someone who could swim. I looked where there had been trailers and tents. There weren't any."

Mrs. Scott explained that she and her husband Clarence, 59, had come to Yellowstone for the camping and fishing. The place they picked to park their trailer is one of the best and most famous fishing spots in the northwest. It is nationally known to fishermen. Anglers and other campers flock to the area during the vacation season and dot the entire valley with their tents and trailers.

Sheets Of Water

Although Mrs. Scott could not tell it at the time she was thrown from her trailer, a large part of an 8,000-foot mountain thundered down into the river. The resulting splash shot sheets of water for hundreds of yards, probably explaining the call for a swimmer that Mrs. Scott reported.

[Deseret News; August 19, 1959]

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SURVIVORS TELL OF TERRIFYING QUAKE WRATH

Heartbreak, Joy

Tales of terror and desperate struggles for survival were related Tuesday by persons caught in the earthquakes which triggered an avalanche of death and destruction in Montana near Yellowstone Park.

Heartbreak and heroism were mixed in a night which could only be described as terrifying.

John D. Sanders, 2276 Redondo Ave., Salt Lake City:

"I was at the Old Faithful Lodge in West Yellowstone with my wife, two children and a neighbor girl, Mary Lee Grandy. We were watching a beauty contest with about 500 people when the quake hit. We all ran outside and headed back to the motel. When we got there we saw people jumping out of windows wearing towels and bathrobes. Water was spurting from broken pipes.

"We sat in the car all night and it kept shaking every now and then. It was the most terrifying experience we had ever had. We didn't know what to do. Old Faithful was spouting very hard and we thought the whole ground around us might blow up any minute. I was never so glad to see anything as our front room when we got home. I could have kissed every square inch of the floor."

Jack Goodnough family, Adlioni, Wash.:

"At first I thought it was a train and then the tent began to shake and I thought it might be a bear so I jumped out, ripping out the front of the tent. I could see and hear rocks falling in an avalanche across the lake.

"Within seconds water was filling the tent. I grabbed my children and at that moment the water hit us and carried us 300 feet before we were stopped by a tree.

"I ran the children to shore and rushed back for my wife. I thought she must have drowned, but fortunately an air bubble had formed in the tent, keeping her alive."

Angelo Fuoco, 1823 Lake St., Salt Lake City:

"I wanted to get camp set up because we had a reservation at Rock Creek camping area, but my wife insisted that we stay at a motel for the evening.

"I cannot describe the feeling I had when I learned that a mountain had fallen on the Rock Creek area. I'm thankful to be alive."

Grover Mault, 71, Temple City, Calif.:

"My wife and I were parked with our car and trailer in a camping area near a reservoir when we heard a terrible roar and rocks were tumbling all around us. Our trailer turned every which way and then we landed in the water.

"When the trailer stopped bouncing, we got on top and I managed to grab a tree limb. It broke and then I grabbed hold of the tree itself and pulled us to safety."

Henry F. Bennett, Cottonwood, Ariz. (Wheelchair polio victim.):

"I was asleep in my sleeping bag when the major quake struck. I don't know how I got out, but when it was all over my chair and I had survived the storm."

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LAKE SEARCH TURNS UP NO NEW QUAKE VICTIMS

Divers Probe Water; Crews Comb Slide

By Reed Madsen

WEST YELLOWSTONE, MONT.—An underwater search by skin divers in the murky depths of Hebgen Lake Thursday failed to turn up any additional victims of the earthquakes which shattered the Madison River Canyon Monday night.

The still trembling canyon is being scoured by air and ground crews in an effort to locate more bodies of campers who may have been caught in the huge avalanche touched off by the quake.

Four skin divers and six others using light Navy diving equipment had been searching for a car and trailer believed to be in the lake, but the search was called off indefinitely because of the shifty and muddy water stirred up by continuing tremors.

After-Shock Hits

Two hard after-shocks ripped the area Thursday morning sending persons running from buildings in West Yellowstone not far from the canyon where the big slide cascaded down Monday night.

There are 10 persons known to have been killed when a 50 million ton section of mountain was sent roaring into a popular camping and fishing spot just below Hebgen Dam in Madison Valley.

A crew of 15 men was organized at Bozeman, Mont., and sent into the valley to walk the area of the slide to see if they could locate any more bodies, cars, license plates or anything which might lead to identification of possible victims.

May Be Buried

Authorities expressed fears that occupants of an estimated 30 cars and trailers may be buried under the mountain of rocks and dirt which crashed down Monday night.

The skin divers were probing the water of Hebgen Reservoir seven to 15 miles above the slide area for cars which may have been hurled into the water when the earthquake struck.

Sections of Montana State Highway 1, which goes around the reservoir toward West Yellowstone, were plunged into the water by the shock of the quake.

Saw Car Tumble

One eyewitness claimed that a car and trailer carrying several people had tumbled into the lake.

Divers went underwater to depths of 50 feet

Wednesday night and managed to locate the trailer.

However, it contained no occupants. No trace has been found of the car.

Tremors continued to shake the disaster area Wednesday night increasing the danger of continuing landslides.

Montana highway crews attempting to open roads in the Madison Valley region were pulled off the job Thursday because of slide dangers.

Temporary Road

They managed to construct a temporary road from West Yellowstone to about as far as Hebgen Dam some seven miles above the mountain slide before being taken off the job.

Danger is slowly mounting because of a lake which is filling up between the huge slide and Hebgen Dam.

The dam was damaged in the earthquake, but officials expressed hope that it would hold. If it went all at once, the landslide might not be able to hold the rush of water, they feared.

7 Miles Long

The growing lake is presently over seven miles long and more than 60 feet deep and still rising. It may eventually go through the slide which is blocking its path and threaten small communities downstream.

Officials said there was no immediate plan to cut through the slide and slowly release the water backing up behind it. Geologists and survey teams have been flown into the slide region to study the situation.

The community of Ennis, Mont., 50 miles below the dam had been evacuated right after the quake.

Mayor Charles Bauer told the 600 residents Wednesday they could return from their high ground exile—but he advised them to keep their bags packed.

A siren signal has been set up to warn residents to evacuate if the water should break through the slide.

Federal and state officers were expected to confer with Montana Gov. J. Hugo Aronson in Helena Thursday to discuss what could be done to recover possible victims from the ruins of Madison Canyon.

Confined To Fringes

Lt. Gov. Paul Cannon said Wednesday night that there was no present plan to try and move the huge mountain of dirt in the canyon and that any digging

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operations probably would be confined to the fringes of the slide.

"There might be 100 people under that slide—or

there might be only a few," said Madison County Sheriff V. H. Brown. "Probably we'll never know."

[Deseret News; August 20, 1959]

NATURE SHATTERS MAN'S WORK AT HEBGEN LAKE

WEST YELLOWSTONE—Man, and an earth-fill dam, created Hebgen Lake many years ago.

Nature, in a few earth-shattering hours Monday night, changed the whole face of man's handiwork.

Hebgen Lake Wednesday was a vastly different body of water from what it was Monday before the quake. The lake shore is different. The water level is different.

Imagine Saucer

Imagine holding a shallow oval shaped saucer in your hand, filled with water. Turn it so that the ends are roughly facing east and west.

Now tip the saucer so that the southeast end rises and the northwest end sinks. That's what happened to Hebgen Lake.

The northwest shoreline dropped roughly eight feet. The southwest end tilted up about six feet. That's the way the "new" lake will be, unless capricious nature shakes the ground again like it did Monday.

Only One More

And one more shock like that might eliminate Hebgen Dam and turn the whole lake loose on the massive rock slide which still blocks Madison Canyon about seven miles below the dam.

Along the north shore of the lake, summer homes and cabins suffered extensive, although still undetermined damage. The ones to the east were less damaged than the ones nearer the dam.

Only one cabin was under water about six miles west of the dam. Nearby, two others were dropped from a high point and into water which rose three or four feet along the walls.

Rest High, Dry

The rest of the cabins are high and dry—and shaken badly. Stoves, refrigerators and dishes are scattered all over, according to cabin owners who managed to get out of the area.

Cabins on the south shore seem less damaged, but must have been shaken badly by the quake. You cannot reach them either. The forest roads have wide cracks in every direction.

Where many boats once floated, filled with fishermen, Hebgen Wednesday showed only drifting debris and muddy water.

Time will heal the scars. But Hebgen will be a different lake from now on.

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W. YELLOWSTONE ALMOST LIKE A GHOST TOWN

By M. DeMar Teuscher

WEST YELLOWSTONE—There are still plenty of tourists in the Yellowstone Park area but you would never know it in West Yellowstone—once the most popular port of entry to the park.

West Yellowstone is not quite a ghost town, but it comes close.

Crazy rock and roll jigs of the earth since Monday night proved quite a deterrent to the tourists who usually throng the pine-lined streets of this community.

But the fact one can't go anywhere from here except back to the west and south has proved even more of a hurdle. That and highway patrol road blocks set up along U.S. Highway 91.

The Bozeman road to the north is still blocked, twisted out of shape by the grinding earth shocks. The once-busy Yellowstone Park entrance is blocked by a large barrier. It is blocked even more effectively a few miles further on by tons of earth over the park highway leading to Old Faithful.

In West Yellowstone itself, things are still confused. A small army of Air Force, Red Cross, civilian volunteers and peace officers is set up at the airport, the nerve center.

What tourists are left throng the fringes of the airstrip, watching, asking questions of anyone who looks as if he might have some information.

In town storekeepers Wednesday started to set their stores in order.

The grocery stores were open and most of the goods back on the shelves.

In one combination curio shop and drug store, an unshaven newsman asked for a package of razor blades.

"Just be patient," quipped the pretty clerk. "They are here somewhere."

She pawed through a considerable pile of miscellaneous goods on the counter and came up with the blades. The curios were even more mixed up.

Forced to Move

Another curio shop owner stood in his doorway.

"When are you opening up again," asked a friend.

"Don't know," came the answer. "But it won't be in this building."

He gestured behind him and upward toward the ceiling. A two foot wide section of the ceiling, clear across the room, was gone. It looked almost as if the scar had been cut with a saw. The plaster was neatly piled below on the floor. The timbers of the roof were the only things not straight. They were somewhat out of line.

Yellowstone Park Superintendent Lemuel Garrison reported from Mammoth that the tourist business in his park was still booming, with every entrance but West Yellowstone open.

Busy Elsewhere

Down the highway to the south, at Island Park Lodge, Macks Inn, Pond's Lodge, Big Springs and other places, the tourists were still much in evidence.

But at West Yellowstone, once the tourist mecca of the area, things are rather quiet.

A sign on one motel typifies the "new look."

"Gone to Ogden," it reads. "Be back when the quakes quit."

Above this little sign, a bigger one reads "Vacancy." In August, you don't usually see such things in West Yellowstone.

[Deseret News; August 20, 1959]

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GRIM SEARCH CONTINUES FOR VICTIMS OF QUAKE

New Jolts Threaten Dam, Slide

By Reed Madsen and M. DeMar Teuscher

WEST YELLOWSTONE, MONT.—Planes again took to the air Friday to scour the quake-shattered mountainside of Madison Canyon for survivors who may be trapped by broken roads in high elevation campsites.

In the valley, the slowly rising "Lord's Lake" forming behind the massive 50 million ton rockslide which spewed death and terror Monday trembled markedly as tremors continued to rock the area.

Rescue teams abandoned virtually all hopes of finding more victims in the devastated camping areas near the slide.

Immovable Tomb

The huge, ugly slash of the fallen mountain appeared to be an immovable tomb which may never give up the secret of how many bodies lie crushed beneath it.

Five Air Force helicopters and two Fish and Game Dept. aircraft took to the air Friday after a heavy fog blanket lifted, searching for more campers possibly marooned way in Monday's upheaval. The planes also were keeping a close watch on cracked Hebgen Dam, and the swelling lake below it.

A major concern was the possibility of a second major quake which might knock out Hebgen Dam, seven miles upstream, or which might breach the tremendous slide and send part of the new lake roaring downstream on the communities of Ennis and Virginia City.

Identified Dead

The death toll Friday stood at nine identified and one unidentified woman.

Latest addition to the death list was Mrs. Myrtle Painter, 42, of 4345 Porter Ave., Ogden.

Mrs. Painter died in a Bozeman hospital Thursday at 11:30 a.m. She was evacuated from the slide area Tuesday by helicopter. Her husband, Ray, is still in the hospital. The couple's three daughters, Carol, 16, and twins Anne and Anita, escaped injury.

Mrs. Painter is the second Utahn known to have died in the quake disaster.

The other identified dead Utahn is Mark Stowe, 31, of Sandy.

Mrs. Marilyn Stowe, his wife, is believed dead, but

her body has not been recovered. Her father, Rex K. Whitmore, 8060 7th East, reported from Virginia City that he was continuing to search even though the organized hunt for bodies has been called off.

Sandy Residents

A carload of Sandy residents, friends of the Stowes, left Thursday night for the slide area to help look. Two more carloads left Friday.

Madison County Sheriff Lloyd Brooks said Friday there "doesn't seem to be any use making a more organized search below the slide."

It was in this area that the body of Mr. Stowe was found as well as bodies of four members of the Purley Bennett family of Coeur d'Alene, Idaho.

Chances Slim

"Our chances of finding any more bodies are slim," Sheriff Brooks said. "The only way we will find any more is when and if this slide is shifted to allow the water to come through."

On the upstream side of the slide, Gallatin County Sheriff Don Skerritt also called off search activities in face of the gathering lake behind the slide.

Divers who probed the murky depths Thursday without success reported the continuing tremors were "strong enough to turn us upside down in the water."

Sheriff Skerritt concurred in the opinion that no other bodies would be found in the slide area until some way is found to move the slide or drain the growing lake.

And removal of the tremendous landslide was termed "a complete impossibility" Thursday night at a meeting of state, federal and county officials in West Yellowstone.

Hugh Potter, Montana civil defense director and coordinator of various agencies engaged in further protection of life and property in the quake-devastated area, said that there are no plans current to try to do any reconstruction work in the slide area.

May Trim Slide

Some engineers said that if the water backed up behind the slide area, the top of the slide might be trimmed to gradually release water down stream.

Mr. Potter Friday organized a "sensible demobilization" of various agencies.

Major concerns of officials Friday were improved

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communications, police protection in the area to stop some reported vandalism, Red Cross activity in trying to help locate missing persons and surveys to determine property damage and earth damage in the area.

Missing Persons

The problem of missing persons continued to be a large part of the task facing the officials.

The American Red Cross in Bozeman, deluged by calls from all over, sent out special appeals to everyone who had been in the disaster area and who had not contacted their family to do so at once.

Meanwhile, volunteer and regular Red Cross workers have set up a full-scale field office in Bozeman to try to help locate persons believed to have been in

the area.

4 Miles Long

Water has backed behind the 50-million ton rock and land slide to a point nearly four miles above the slide area.

Two trailers were discovered in the new lake Thursday, but neither contained any bodies. Another was checked out by boat Friday, but no bodies were found.

Reports that the body of a small boy had been found Thursday were not confirmed. In fact, both Sheriff Brooks and Sheriff Skeritt said there had been no bodies found.

[Deseret News; August 21, 1959]

SOLONS PLAN TOUR OF QUAKE AREA
On-Spot Study

WASHINGTON (UPI)—A group of congressmen and government officials will fly to Montana Saturday to inspect earthquake damage in the southwestern part of the state.

The trip was arranged by Chairman James E. Murray (D-Mont.) of the Senate Interior Committee. The group was scheduled to take off at 6 a.m. EDT for Bozeman, Mont., spend Saturday night at West

Yellowstone in the quake area and return to Washington Sunday.

The inspection party will include Sen. Frank E. Moss (D-Utah), member of the Senate Interior Committee and Reps. Lee Metcalf (D-Mont.), LeRoy Anderson (D-Mont.) and Gracie Pfof (D-Idaho).

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ACTIVITY INSIDE PARK 'NEAR NORMAL AGAIN

YELLOWSTONE NATIONAL PARK—Tourist activity at Yellowstone National Park was just a few notches below normal Friday despite a nerve-wracking and ground-wrecking earthquake which spread death and destruction near the park's west entrance Monday.

All highways into the park, except those at the west entrance, were open, undamaged, and being used by an estimated 12,000 tourists per day.

Those roads which are presently closed as a result of the quake will be quickly cleared by road crews as soon as the earth stops shuddering in the disaster area.

There are still tremors going on and seismologists have moved into the park area to set up portable seismographs. They will measure the frequency and intensity of the shocks and try to make some kind of prediction as to when the tremors will end.

"Road crews are not going to start repair work until those people can recommend what to do," said Lemuel Garrison, park superintendent. "It would be foolhardy to go into the slide areas now while the ground is still shaking."

At present the east entrance to Yellowstone on U.S. Highway 20 at Cody, Wyo., is open; the northeast entrance on Montana Highway 12 at Cooke City, Mont. is open; the north entrance on U.S. 89 at Gardiner,

Mont. is open, and the south entrance on U.S. 89 from Jackson Hole also is open.

The road from Bozeman, Mont., to West Yellowstone is repaired and open to traffic on a limited basis but the roads from West Yellowstone to Mammoth Hot Springs in the north and to Old Faithful in the south are both blocked by slides.

It is possible to reach West Yellowstone from Ashton, Idaho, but further progress is impossible into the park. It is also impossible to reach the west entrance from anywhere inside the park.

Aside from the roads, the only other park facility which is damaged is the Old Faithful Inn. Broken water pipes and a collapsed chimney have shut down most of the inn, but the west wing, containing some 150 rooms is still open.

"Once the tremors stop, we should have the park back as good as new within a few weeks," the park superintendent declared.

The only permanent change can be seen west of the park in Madison River Canyon, once a popular camping and fishing area. There, a half of a mountain collapsed and stands as a silent tomb to a number of unknown dead beneath its massive tons.

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SLIDE NO PROTECTION TO DOWNSTREAM AREAS

WEST YELLOWSTONE, MONT.—Fifty million tons of dirt and rocks make a tremendous natural barrier across Madison Canyon, seven miles downstream from Hebgen Dam.

But the size of the slide is no guarantee of its permanency, officials warn, particularly if Hebgen Dam should break and 26-mile-long Hebgen Lake pours against the massive landslide.

The people of Jackson, Wyo., can give evidence that great landslides do not always hold back water for long.

Twenty-five years ago, an avalanche roared across

Gros Ventre Canyon, northeast of Jackson, setting up a natural barricade that residents said would "last forever."

Three years later the lake backed up behind this barrier cut a path of flooded destruction in the Jackson area and wiped out bridges hundreds of miles downstream on the south fork of the Snake River.

It is fear of just such an occurrence which is keeping engineers and geologists working full time trying to devise a way to drain water from behind the Madison Canyon slide as soon as possible.

[Deseret News; August 21, 1959]

ROUND-CLOCK WATCH PUT ON SPLIT DAM In Case Of New Quakes

By Reed Madsen

WEST YELLOWSTONE, MONT —Radio-equipped crews from the Montana Power Co. Friday were keeping an around-the-clock watch on the Hebgen Lake dam—just in case.

Officials of the power company said they are confident the dam itself will hold, unless another major earthquake hits.

There are no cracks on the earth fill dam along the lake side of the structure. This was determined Thursday by divers.

But there are cracks in the concrete core of the dam on the downstream face. No water is coming through any of these cracks, even though the roadway atop the dam has dropped as much as seven feet.

One huge concrete spillway pillar received considerable damage.

Harry Cochrane, who designed the dam in 1913, said that the grinding quake Monday and the tremors which have rocked the area since, have had the effect of settling the earth fill around the concrete core even more solidly.

Three tremors rocked the region Friday morning between 6:07 and 7:15 a.m.

There was concern expressed Thursday afternoon about seepage on the earthen fill of the dam about 25 feet below the crest. But purple chemicals put into the water above the dam and traced showed the seepage coming from the spillway, and not through the face of the dam.

Meanwhile, a complete network of warning systems was set up to make sure that everyone would know if the dam did start to go.

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40 UTAH RESIDENTS UNREPORTED IN QUAKE

Forty Utahns were included among vacationing and camping families and groups listed Friday as "unreported and missing" and believed in the Madison River Canyon area at the time of the huge earthquake caused slide Monday night.

Among them were a Bountiful family of eight and a Fairview Explorer Scout party of 11.

With no word received from many persons since they left for the Yellowstone Park, Madison River and Hebgen Lake areas, the Bozeman, Mont., office of the American Red Cross continued its plea for such persons able to do so to contact relatives immediately.

"We probably won't know for weeks how many are missing," a Red Cross official at Bozeman said.

The Bountiful family still not heard from since they left for Yellowstone Park Monday morning is that of Fred Simons, 38, and Donna Haycock Simons, 38, and their six children: David Fred, 17; Richard, 15; Donna Lynn, 11; Christa, 7; Clark, 3, and Drew, 2.

Relatives said they were driving a light blue 1957 Ford station wagon with a commercial license plate, Utah 031001.

The Fairview, Sanpete County Explorer Scout party, is under the charge of Don C. Hansen, listed in his 50's, and Wendell Christensen, about 40. The scouts, all between 15 and 16 years of age, include Richard Llewellyn, Douglas Bench, Rodney Coates, Dean Carlston, Roger Christensen, Gary Mower, Johnnie Bigler, Vaughn Garlick and Brent Tucker.

The party left Fairview at 5 a.m. bound for the west entrance of Yellowstone with sleeping bags and fishing equipment. They were believed traveling in a green pickup truck.

Other late additions to the list of unreported include the following:

Mr. and Mrs. Mack Leonard, 1503 19th East, and two sons, Michael, 17, and Gregory, 11. They are reported by a sister of Mr. Leonard, Mrs. M. J. Coldesina, 623 G St., to have planned to leave Monday morning and drive through the west entrance of Yellowstone and on to Glacier National Park.

Mr. and Mrs. Warren E. Mulcock, 2800 E. 4510 South, and their five children: John Ernest, 13; Margaret, 12; Stephen, 11; Thomas, 10, and Rosemary, 5. They left Sunday morning with a house trailer bound for Yellowstone Park.

Mr. Mulcock, a son of Sidney E. Mulcock, foreman of the Salt Lake County grand jury and a Salt Lake businessman, and his family were on their way to Yellowstone Park by way of the west entrance.

Mrs. Thompson said she and her husband had been away on vacation and returned when they heard news of the Hebgen Lake disaster.

Mr. and Mrs. Osmond LeCheminant, 870 N. 4th East, Bountiful; children, Randall Scott, 7, and Leslie Ruth, 5, and Mrs. LeCheminant's mother, Mrs. Vera Haycock, also of Bountiful.

According to Mr. LeCheminant's mother, Mrs. Lionel LeCheminant, 3780 S. West Temple, the family left early Sunday for a fishing trip into Yellowstone Park. She said they probably were traveling in two cars, a blue 1958 Chevrolet sedan and a white 1955 Chevrolet sedan, one of them hauling a rented house trailer.

Mr. and Mrs. Ross Burke Jenson, Brigham City, and their four children: Lynn Burke, 10; Bruce, 7; Janet, 4; and Brent, 19 months. Mr. Jenson, manager of the Mountain States Telephone and Telegraph Co. at Brigham City, and his family left Saturday morning for the Yellowstone area and expected to do some fishing on the Madison River.

They were traveling in a two-tone gray 1953 Buick sedan.

Thad A. Carlson, commercial representative for MST&T at Brigham City, said Mr. Jenson said he would call Tuesday, and that the call has not been received.

Mr. and Mrs. Ernest Jenson, Sandy, parents of Mr. Jenson, and Mr. and Mrs. Shirley Haywood, Kaysville, parents of Mrs. Jenson, also reported they have not heard from the family.

[Deseret News; August 21, 1959]

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MORE QUAKES SHAKE UP MONTANA DISASTER AREA

S. L. Patrol Joins Hunt For Victims

By Reed Madsen

WEST YELLOWSTONE, MONT.—Earthquakes continued to jolt this area Saturday with at least eight tremors being felt during the night.

Air search operations were called off as apparently all campers who had been marooned in high elevation campsites have reached safety.

However, the Air Force was scheduled to fly a congressional party over the disaster area Saturday afternoon.

Although official agencies were halting search operations, many private groups, including twenty-one members of the Salt Lake County Sheriff's Patrol were still scouring the devastated areas near the slide in search for missing relatives.

Frequent Tremors

In officially ending search operations, Madison County Sheriff Lloyd Brock said. "All we can do is put up a monument to the unknown dead there."

"We felt more earthquakes last night than we've felt since the initial shock," Mrs. Bess Kelly, operator of the Hitching Post Motel, West Yellowstone, said Saturday.

The last tremor, she said, was felt at about 7:30 a.m. Saturday.

"There was a real good one at 6:30 a.m.," she added.

No Damage Reported

No damage was reported from the aftershocks.

Nearly 400 tremors have jarred the West Yellowstone-Hebgen Lake area since the initial earthquake which terrified vacationers and residents last Monday night.

Hugh Potter, Montana Civil Defense director, said air searches were no longer necessary over Southern Montana's Madison valley area.

"We can safely say there is no one in high country timber," he said.

Congressional Tour

Air Force officials said helicopters and three C-47's would be used to fly members of a congressional party over the earthquake area.

The congressional party, led by Sen. Frank E. Moss (D-Utah), was scheduled to arrive at Bozeman,

Mont., at 1:30 p.m.

Montana Gov. J. Hugo Aronson was scheduled to join the 21-member party at Bozeman.

Gov. Aronson said he had asked President Eisenhower and Defense Secretary Nell H. McElroy to immediately order army engineers to survey the stricken area and "take whatever steps may be necessary" to protect the life and property of the Madison Valley.

Major concern was the possibility of a second major earthquake which could destroy Hebgen Dam.

Also, a lake was forming behind the massive slide blocking Madison Canyon, seven miles below Hebgen Lake.

"The immediate great danger may be flooding," the governor said.

Ten persons, nine identified and one still unidentified, were killed in slides triggered by the earthquakes. Many more persons are believed buried under the 50-million tons of rock and earth blocking Madison Canyon.

Geologists and engineers who have surveyed the slide believe it's almost impossible to move it.

"It's just like moving a mountain," one geologist said.

Meanwhile, Red Cross officials at Bozeman were still trying to determine the number of persons missing since Monday's earthquake.

George Montag, director of inquiries for the Red Cross, said his office has been swamped with calls from anxious relatives throughout the United States.

"We had 1,500 telegrams come in last Thursday," he said.

He said that it was almost impossible to compile a list of lost persons until "a lot of people can be worked out of our files who are safe. That will take several days."

Seismologists from the U.S. Coast and Geodetic Survey and Montana State University were scheduled to go into the Hebgen Lake area Saturday with instruments to measure the continuing aftershocks and trace the pattern of Monday night's mammoth tremor.

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UTAHN TELLS TERROR OF QUAKE NEAR DAM

(Editor's Note: Rex A. Bateman of Magna was with his family at Hebgen Lake last Monday and Tuesday when the area was rocked by earthquakes. Here is the story of the family's frightening experience.)

"It was a beautiful moonlit night and then three big shocks hit us."

This is how Rex A. Bateman, 3201 S. 8000 West, Magna, describes the first terrifying moments when an earthquake jarred the Hebgen Lake area in southern Montana Monday night. Mr. Bateman was staying in a cabin at Camp Fire Lodge, about 500 yards below Hebgen Dam with his wife and four children, Lance, 17; Layne, 15; Greg, 14, and Mark, 11. Also staying with the Batemans were Mr. and Mrs. Douglas Mander, Idaho Falls, and their children, Sybil, 17 and Jackie, 6.

When the first tremor hit, Mr. Bateman was standing outside the cabin.

Dives for Auto

"I felt the first shock at about 11:40 p.m.," he said. "I immediately knew it was an earthquake. I ran and dove face forward across the hood of Mr. Mander's car. I was afraid of the earth opening up. I hung onto the radiator ornament and cut my hand.

"The earthquakes increased in intensity. 'My God,' I said to myself. 'How long can this last.' Rocks along the cliffs started breaking loose and coming down. I thought it was the end of the world. I thought the mountain would disintegrate," Mr. Bateman said.

"There seemed to be a terrific pressure in the air and there was a lot of noise. We didn't get hit by the tidal wave of water breaking over Hebgen Dam although we were within 20 feet of the river. Everybody thought the dam was going to break," he said.

Head For High Ground

Mr. Bateman said both families piled into their cars "and headed for high ground." Most of the families met in an area of flat ground about 500 yards above the Madison River, Mr. Bateman said.

"Everyone was wonderful," he said. "We used station wagons as ambulances and started bringing the injured in. People gave away everything they had.

When people came in without clothing, other people would give them what extra clothing they had. Several people were practically unclothed.

"What really made it bad during the night were the aftershocks which kept coming every few minutes. We kept waiting for another big one," he said. "I was sure that the dam would break. About three o'clock in the morning, we got a report that the dam was definitely going out. Big black clouds came over and we had lightning, thunder and rain. We were able to crowd everyone into cars and we waited out the night. It was a long night.

"The next day planes started flying over the area. One dropped a message saying that helicopters would fly in to remove the injured. Six firefighters from Missoula, Mont. parachuted into the area. Two men jumped during high winds and they were almost blown into the cliffs. The plane also dropped supplies. The firefighters had walkie-talkies and communicated with the plane," Mr. Bateman said.

"During the day, we cleared an area of sagebrush for the choppers to land on. We still didn't know whether or not the dam would break. When the helicopters came in, the injured were loaded aboard and taken out. The Air Force also came in with tents, food and water. A doctor came in," he said.

Later that day a construction company cut a road around the northeast shore of Hebgen Lake and the Bateman and Mander families were able to drive out of the area. After spending another night at Duck Creek, they drove to West Yellowstone and then to Idaho Falls.

The families brought out two children of Mr. and Mrs. John H. Armstrong, Victoria, B.C., who were hospitalized at Bozeman, Mont. for injuries. The children stayed at Idaho Falls with Mr. and Mrs. Mander until Friday when they were taken to Bozeman.

Asked if he wanted to return to the Hebgen Lake area, Mr. Bateman said:

"I'd go tomorrow if I could see the slide in Madison Canyon. However, I don't think I'll ever feel safe camping below that dam."

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UTAH FAMILIES REJOICE AS 'LOST' RETURN 'Had No Idea'

Several Utah families were rejoicing Saturday as missing relatives returned home from the West Yellowstone quake area or sent word that they were safe.

Most of the vacationers were dismayed to learn of all the concern over them. They were in areas which were not badly shaken by the earth tremors and said they did not realize the extent of the damage until they got back home.

There were no newspapers in the park, they said, radio reception was poor and there were no notices posted in the park which gave them any cause for alarm.

Lot of Excitement

Sidney E. Mulcock, 1240 Harvard Ave., said Saturday he had received a postcard from his son and daughter-in-law, Mr. and Mrs. Warren E. Mulcock, 2800 E. 4510 South, that they and their five children were safe. They were in Jackson Hole when the big quake occurred, but went into Yellowstone Park later to finish out their vacation. Their only comment on the card, Mr. Mulcock said, was "There was a lot of excitement."

Mr. and Mrs. Osmond LeCheminant, 870 N. 4th East, Bountiful; their two children and Mrs. LeCheminant's mother, Mrs. Vera Haycock, Bountiful, returned home Friday at 7 p.m.

At Canyon Village

They were at Canyon Village about 40 miles west of West Yellowstone when the big quake hit. "It shook real bad, but no one was hurt," Mrs. LeCheminant said. "We were in the trailer house and we thought a bear was shaking the trailer," she said. "But it kept it up all night, and pretty soon we figured out what it was."

"We finished out our vacation. There hasn't been any mail or phones up there and the rangers didn't tell us we should notify our families. We really didn't know how bad it was until we got home. When my relatives heard my voice on they phone, they started crying," she said.

Mr. and Mrs. Fred Simons, 1518 N. 350 West, Bountiful, who arrived home Friday about 4 p.m. with their six children, also were dismayed when they learned of all the worry they had caused.

They were at Fishing Bridge some distance from

the main quake. "You could feel the jolts pretty well there, but nothing really serious," Mrs. Simons said.

Had No Idea

"We had no idea how serious the quake was until we got home. The rangers didn't suggest that we even leave the park or notify our families; people were still coming in and going out," she said.

"My husband and I were sleeping in the car when the quake started. It shook quite thoroughly. The next morning there was one about 9 o'clock. It was 'seasick' motion. There was no panic at all. People all around us were talking and laughing about it. We heard rumors and we knew some people had been killed, but there were no postings in the museums and no one seemed very concerned."

Scouts Return

A Fairview, Sanpete County Explorer Scout party, including Don C. Hansen and Wendell Christensen, in charge; plus Richard Llewellyn, Douglas Bench, Rodney Coates, Dean Carlston, Roger Christensen, Gary Mower, Johnnie Bigler, Vaughn Garlick and Brent Tucker, also came out of the park safely.

"We didn't even know that extensive damage had been done until we saw a copy of the Deseret News at Jackson Thursday morning," said Mr. Hansen. "Then we hurried home to let our families know we were safe. There were 11 joyous families and a grateful community on hand to greet us."

They had come through the Old Faithful area early Monday morning and were camping Monday night about a mile from Fisherman's Bridge.

"There never were as many bears in Yellowstone Park as were being blamed for the strange rock and roll sensations of campers near us," Mr. Hanson declared.

"Wendell and I were sleeping in the truck and the boys were nearby in sleeping bags. When we were roused by a rocking sensation, we thought the kids had put some food under our truck to bait the bears. It wasn't long until we heard women from nearby camps calling to their husbands to get the bears away."

All Woke Up

"The boys all woke up and thought it was the natural activity of the earth around Yellowstone, so we didn't worry very much about it. Everybody was calm."

"The next day as we were walking along the road

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toward a fishing hole we heard a muffled roar and thought there was a truck behind us. It turned out to be one of the aftershocks.

"No news of the extent of the quake reached us until we were outside the park. The only information available to campers at Fisherman's Bridge was sketchy bits posted on bulletin boards in the post office and store," Mr. Hansen said.

Ross Burke Jenson, his wife and family of Brigham City, also were safely back in the Salt Lake area Saturday.

Relatives were especially worried because his favorite fishing spot was by the Hebgen Dam. However, this time he did not go there, but to another area where the jolt was not severe.

[Deseret News; August 22, 1959]

UTAH'S MISSING DROPS TO 11 IN EARTHQUAKE

Most Utah families who had been reported missing in the Montana earthquake area were reported safe Saturday.

However, a Salt Lake woman, a Clearfield couple and eight Provo persons have still not been heard from.

REPORTED MISSING:

Mrs. Elizabeth McMillan, 153 N. 5th West.

Mr. and Mrs. Ken Horton, Clearfield.

Dr. and Mrs. John Rupper and four children, Provo.

Mrs. Stella Rupper, Provo.

Michael Rupper, Provo.

Persons reported missing but now accounted for:

Mr. and Mrs. Fred Simons and six children,

Bountiful.

A Fairview, Sanpete County, Explorer Scout party, including two leaders and nine scouts.

Mr. and Mrs. Mack Leonard and two sons, 1504 19th East.

Mr. and Mrs. Warren E. Mulcock, and five children, 2800 E. 4510 South.

Mr. and Mrs. Osmond LeCheminant and their two children, 870 N. 4th East, Bountiful. Also Mrs. LeCheminant's mother, Mrs. Vera Haycock, also of Bountiful.

Mr. and Mrs. Ross Burke Jenson and their four children, Brigham City.

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DISASTER AID URGED FOR QUAKE REGION

Montana Governor Calls Conference

WASHINGTON—The Senate Interior and Insular Affairs Committee Monday urged Montana Gov. J. Hugo Aronson to declare the quake-stricken West Yellowstone-Hebgen Lake sector a disaster area.

About the same time as the committee was sending the Montana chief executive a wire urging his action, Gov. Aronson called a Friday conference in Helena to determine whether or not to seek a disaster area label for the region.

Gov. Aronson said he would call in Army Engineers Corps officials, U.S. Forest and Park Service representatives, Montana Power Co. executives, Montana State Highway experts and officials of Madison and Gallatin counties for the 10 a.m. Friday meeting.

Governor's Decision

Only the governor of a state is empowered to designate disaster areas in his state and to request the President to declare the disaster, making an area eligible for federal fund aid.

Members of both the House and Senate Interior Committees who toured the quake-ripped corner of Montana Saturday and Sunday said federal aid would be available for a major portion of the cleanup job.

The Senate committee wire to Gov. Aronson urged him to take action in terming the region a disaster area so that federal funds could be extended to the state and to private individuals for repair work.

Heads Tour

Sen. Frank E. Moss (D-Utah), who headed the joint House-Senate tour of the quake area over the weekend, said that the U.S. Park Service and the U.S. Forest Service would bear the brunt of the cost of rebuilding roads and bridges, since most of the damage was on lands administered by one or the other of these two agencies.

But, he noted, the state of Montana will also have extensive road repair and construction costs in the area for which federal funds would be available if the region was labeled a disaster area.

Also, federal disaster loans to private individuals for rebuilding of six or eight private homes and to repair lesser damage to other homes can be made if the region is designated as a disaster area.

Dam Still Sound

Sen. Moss added that he doubted if the Hebgen Dam, owned by the Montana Power Co., would require any major repair aid.

Meanwhile, in West Yellowstone, officials clamped down restrictions on tourist travel into the quake area as tremors continued to rock the region.

Several smaller earth slides rumbled from shock-weakened heights in Madison Canyon and in Yellowstone Park Sunday and several dirt roads leading to private summer homes in the Hebgen Lake area buckled under the stress of the latest shocks.

Curious Tourists

Small armies of curious tourists flocked into West Yellowstone over the weekend to see the area first hand, prompting officials to set up new blockades to limit the influx to a number that would not interfere with the work going on in the area.

Engineers and survey crews continued to probe and poke at the massive land and rock slide which Monday night spewed dirt, death and destruction across the mouth of Madison Canyon, 15 miles northwest of this tourist mecca.

As they probed, engineers revised their estimates of the size of the slide. First estimates placed the amount of rock and rubble at 50 million tons.

Wendell E. Johnson, chief of the Omaha division of the U.S. Army Engineer's office, said Sunday the slide is between 85 and 100 million tons in scope.

Lake Backs Up

Meanwhile, the new "Lord's Lake" continued to back up behind the quake-formed slide barrier at a rate of about one foot each two hours.

Mr. Johnson estimated it would take between 30 and 40 days before the new lake would begin to pour over the top of the slide.

So far, no plans have been announced for methods of trying to let some of the trapped water downstream before it reaches the slide crest.

Confer At Length

The Congressional delegation conferred at length Saturday with Gov. Aronson and Montana Civil Defense Director Hugh Potter regarding conditions in the disaster area before returning to Bozeman and then to Washington.

But three of the group, Sen. Frank E. Moss (D-

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Utah) and Reps. LeRoy Anderson (D-Mont.) and Lee Metcalf (D-Mont.) stayed over a few extra hours to make a personal inspection trip of the quake-ripped region of the slide and nearby Hebgen Lake.

"I am appalled at the magnitude of this slide," Sen. Moss said. "It is almost unbelievable."

Disaster Sector

He indicated he was in favor of declaring the area a disaster sector and "giving some federal assistance." He added that "the sooner all the facts are in the sooner we can act."

Sen. Moss and the House members of the inspection team were slated to confer with Montana Sens. Mike Mansfield and James E. Murday, both Democrats, in Washington Monday. Then the full House and Senate Interior and Insular Affairs Committees will be briefed Tuesday.

Gov. Aronson asked the Congressional groups "not to leave Washington until we get some sort of help."

Rep. Gracie Pfof (D-Idaho) said she did not know whether or not the region could be termed a disaster area but said that its close proximity to Yellowstone Park and because of the forest lands "it is important we give every consideration to possible federal aid."

Meanwhile, curious tourists started replacing newsmen, volunteer rescue workers and peace officers in West Yellowstone.

Officials still will allow no unauthorized persons into the slide area or near the Hebgen Dam.

Dam Still Holds

The dam itself shows no signs of weakening and concern that it might go out have lessened. But officials want no one poking around in the area.

However, flights regularly leave West Yellowstone airport as enterprising pilots fly over the dam and slide area, giving tourists a birds-eye view of the new lake and the barrier which created it.

In West Yellowstone itself, most of the damage caused by the quake has either been repaired or is under repair. Only a few business establishments are still closed.

Roads Precarious

Tourists still cannot get from West Yellowstone into the Yellowstone National Park and the road north to Bozeman is still precarious.

For this reason, and to cut down on the flow of the curious, officials have started cracking down again on road blocks to try to limit the influx of visitors to a degree which can easily be handled in the area.

All other entrances to the park are open and facilities are limited only by the fact that many of the college students who work summers at the park are returning to school, causing some accommodations to be curtailed.

Praises Activities

Mr. Potter, praising activities of all persons connected with rescue and search operations in the hectic days following the earthquake, told the Congressional delegation that some sort of law was needed to bring various agencies under one head in event of future disasters.

He pointed out that all agencies worked through the offices of the Gallatin and Madison County sheriff's offices, but that because the slide separated the two counties, it was difficult to coordinate activities.

[Deseret News; August 24, 1959]

NO UTAHNS SEEN MISSING IN SLIDE

WEST YELLOWSTONE, MONT.—Montana Civil Defense Director Hugh Potter reported Monday that no Utah residents appear to be still missing in the Madison Canyon Slide area.

He said his office has at least 10 names listed by relatives as "pretty definitely" being in the slide area. These people are mostly from the Midwest, he said.

Mr. Potter stressed, however, that it is still

impossible to tell how many persons might be under the slide and said he expected more inquiries to come in as persons fail to return home within a reasonable time.

Three Utahns, Mr. and Mrs. Mark Stowe of Sandy, and Mrs. Myrtle Painter of Ogden, are known to have died in the slide-ripped canyon.

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UTES AT SLIDE END SEARCH FOR UTAHNS

By Larry D. Finnegan

WEST YELLOWSTONE, MONT.—A simple, moving prayer, offered in the shadows of a 85-million ton landslide across Madison Canyon 15 miles northwest of here, Saturday marked the end of a sorrow-choked search for the body of a 24-year old Sandy, Utah, woman.

About 40 friends and relatives of Mrs. Marilyn Whitmore Stowe listened with bowed heads and tear-dimmed eyes as Bishop John C. Richards of the Sandy First Ward, Church of Jesus Christ of Latter-day Saints, conducted a simple religious service.

Towering above the sorrowing searchers loomed the giant slide which a week ago snuffed out the life of Mrs. Stowe's husband, Thomas Mark Stowe, 30, and covered the body of Mrs. Stowe.

As the sun started to go down Saturday, weary searchers, including neighbors and friends of the Stowes, Mrs. Stowe's father and other family members and members of the Salt Lake County Sheriffs Jeep Posse, gathered at a point near where Mark Stowe's body was found.

Bishop Richards, kneeling in the silent circle, offered a short and simple prayer.

"If Marilyn's body is not found," he said, "we ask thee to accept this as her final resting place." Then he offered a moving plea for God's solace for her loved ones.

The search itself was called off by Mrs. Stowe's father, Rex G. Whitmore, 8060 7th East, Sandy.

Mr. Whitmore arrived at the slide scene Wednesday, the day after searchers found the body of Mark Stowe, one of the identified disaster victims.

He dug at the slide area until his hands bled, then

called upon his Sandy neighbors for help. They responded magnificently.

But Saturday afternoon, his face gray with weariness, Mr. Whitmore admitted defeat. Searchers who combed the riverbed below the slide had uncovered Marilyn's sleeping bag, her purse and some clothing identified as hers. But there was no body.

"I had a feeling that if we did not find her this afternoon, it was no use," Mr. Whitmore said as he called off the search.

He tried to thank each of the searchers, but words failed him. Silently he moved around the circle of dusty, tired men, giving each a handshake.

"There wasn't one of us who didn't shed a tear," reported Salt Lake County Deputy Sheriff C. W. Brady, one of the jeep patrol members.

Even while the searchers dug at the rocks and rubble Saturday in the hunt for the body, aftershocks of Monday's disastrous quake continued to rock the area.

While men dug below, one man constantly watched a high point to the north of the canyon rim opposite the mountain which split in half to form the slide for any further evidence of falling rocks and soil.

After the simple ceremony marked the end of the search, members of the party climbed silently into their various vehicles and drove away.

Nothing more could be done.

Formal funeral services for Mark and Marilyn Stowe will be conducted Tuesday at 1 p.m. at the Mt. Jordan High School auditorium, 9360 S. 400 East, Sandy.

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SEVERE EARTHQUAKE ROCKS BUTTE

Minor Damage Widespread In Mining City

By John Calcaterra

A severe earthquake, determined by veteran Butte observers as the longest in Mining City history, shook thousands of residents awake at 12:28 a.m. Tuesday (11:38 p.m. Monday MST).

The quake lasted about 30 seconds. Its center will not be known until School of Mines seismograph records can be studied for it was felt in many sections of Montana.

School of Mines earthquake experts said small tremors probably would occur throughout the morning.

A large plate glass window at Buttrey's Store on Harrison avenue was shattered and dozens of Butte residents reported dishes shaken off shelves and pictures from walls.

In the 500 block of West Aluminum, a chimney was toppled; at Silver and Colorado, cornices fell off an apartment building. A 75-year-old pendulum clock in the city jail stopped at 12:42 a.m. Cracks appeared in the walls of many Butte homes.

Power lines were down on Harrison avenue in the vicinity of the White Swan.

No injuries were reported.

It was the first sustained earth tremor here since the summer of 1948. It was labeled worse in length than the great quake of Oct. 12-24, 1935, which put Helena in ruins and cracked some Butte homes.

Underground damage was being studied by officials at various operating mines of The Anaconda Co.

Anaconda escaped with only a few rattled dishes.

The quake was believed responsible for a big rock slide six miles west of Three Forks on Highway 10S and residents of the area were warned there may be more fallen rock.

The Milwaukee Railway immediately ordered that trains not move in the quake area until tracks have been checked.

The big shake was preceded and followed by lesser shocks. Residents of the Butte Country Club said they felt two small tremors shortly after midnight. Others said two slight but distinct shocks followed the big one, but they apparently were not felt in all sections.

The Federal Aviation Authority at the Butte

Airport said the quake was felt in Butte, Ennis, Helena, Great Falls, Billings, and Cut Bank, and as far south as Pocatello, Idaho.

When the tremor struck, most of Butte was sleeping. It started slowly, then rose to a crescendo that soon had residents wide awake. Within seconds, lights went on in homes all over town and many occupants ran to the streets in their night clothes. Butte firemen were out of bed in a hurry and dashed to the truck garage in anticipation of calls.

The Montana Standard was deluged with telephone calls, with most of the messages reporting odd occurrences. For instance, Sheriff W. L. Dalling, 1805 B St., said he was awakened by the ringing of his door chimes. Police and the sheriff's office also were flooded with inquiries by phoners.

Many people asked, "Will there be any more?"

Mrs. Joe Cappa, 615 S. Jackson, bordering on hysteria, reported that she was almost thrown from her feet by the tremor. She said a closet door was sprung and cannot be closed. She also reported that a number of drinking glasses and dishes were tumbled over in their cabinets and broken.

The Owen Williams family, 402 W. Daly, Walkerville were reported to have lost a number of dishes that were shaken from their shelves. The family fled to the street garbed only in their sleeping apparel.

Similar reports of persons fleeing their homes were received from all sections of the Summit Valley.

Mrs. R. M. Farrell, 932 W. Woolman, was reported to have been violently thrown from her bed, and it wasn't until seconds later that she realized the cause of her discomfort was the quake. A check of her home failed to disclose any immediate damage.

Mrs. Peter Oren, 1717 B Street, reported that a number of vases had been dumped over and were shattered, but a preliminary survey failed to disclose any other damage.

Olga Konarski, 832 Emma, said plates were shaken off shelves in her home; the Friendly Tavern, Walkerville, reported glasses were rattled; Nellie Rademacher, 40 Blue Wing, Walkerville, said pictures were shaken off a piano; Mrs. James Lowney, 40½ Blue Wing, Walkerville, said dishes were bumped off shelves.

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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Mrs. Patricia Burns, 2018 California, a resident of the Mining City more than 50 years, said the shock was the worst in her memory.

Mrs. Leonard Shea, 31 Lexington, Walkerville, reported that she was awakened from a sound slumber by the first shock. She ran into her living room only to be showered by particles of glass and plaster from broken dishes and ceramics what-nots that adorned her walls.

Mrs. Shea said she felt two distinct after shocks a short time after the first major temblor. She also reported feeling other 'quivers' of the earth and at about 1:35 Tuesday morning said an after shock more severe

than the rest made her fearful that another major tremor was on its way.

Walter Eslick, night police dispatcher, said some brick had come out of a chimney at St. James Hospital. Bricks also were found in the intersection of Montana and Mercury. The dispatcher said the police had received over 400 calls.

One person in the midst of the confusion asked "Is the strike settled?" Another old lady asked if the dispatcher "had time to talk to a scared lady?" Eslick replied, "Yes, we are all scared."

[Montana Standard; August 18, 1959]

MUCH OF MONTANA FEELS TREMOR

Many Cities Report Feeling Shock

HELENA (AP)—A low rolling earthquake that lasted up to 45 seconds awoke thousands of Montanans late Monday night to the tune of rattling windows and glassware.

Reports rolled in from dozens of cities in the state and all agree that the major portion of the earthquake lasted at least 30 seconds.

It was felt in Helena, Great Falls, Butte, Dillon, Shelby, Belgrade, Bozeman, Livingston, Glasgow, Kalispell, Missoula and Lewistown among other cities.

In Helena, where Montana's worst 'quake occurred in 1935, observers said this was the worst since then. Switchboards in all of the cities were jammed with calls from worried residents. Some radio and television stations remained on the air longer than usual to carry reports to the public.

The earthquake appeared to have a wavy action as contrasted with the steady vibration and sharp jolts of the more damaging type such as the one that rocked the Capital City 24 years ago.

In the Associated Press office, in Helena, the quake had barely stopped shaking desks and typewriters when the telephones began jangling. The reports rolled in from the western half of the state, north to Thompson Falls and south to Dillon, without letup.

The main tremor began at 11:39 p.m. and in Helena lasted 35 to 40 seconds. A second tremor came at 11:46 p.m. and continued for four or five seconds.

In all the reports, one thing stood out—there were no immediate reports of severe damage.

At Dillon, the tremor caused the courthouse clock to bong loudly in the night, adding to the confusion of startled residents there.

Each of the reporting cities said the earthquake was widespread in their areas. Lewistown, for example, said reports indicated it was felt throughout Central Montana.

In Thompson Falls, as elsewhere residents were aroused from their sleep. One said his sliding closet doors rolled back and forth on their tracks during the tremor.

In Hamilton, the most western point in Montana to report, patients at the Marcus Daly Hospital were awakened. Hospital attendants said they had quite a time quieting them down and returning them to their beds.

Utility servicemen were called out in numbers throughout the area but electric power was not reported to have been interrupted.

The earthquake appeared to have an east-west direction. Reports from Bozeman, Belgrade and Livingston said it lasted about half a minute in each of those cities.

It was Editor Robert Miller of the Livingston Enterprise, a veteran at reporting earthquakes, who first used the phrase, "low and rolling" to describe Monday night's action. "It was not very sharp," he said, in

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comparing it with the damaging 1935 earthquake in Helena where he was at the time.

In Billings, newsmen term the 'quake "sharp" but said no damage was reported. No damage reports were received from Billings, however, and lights remained on. Telephone switchboards there, as elsewhere, were deluged with calls.

Missoula reported a light earthquake was felt shortly after 11:30 p.m. There were no reports of damage from the tremor that was felt as far north as Ronan. Lights swayed on their cords in the offices of the Missoulian.

Bozeman, which felt the first shock at 11:40 p.m.

Monday later had three followup tremors—at 12:06 a.m. Tuesday, at 12:30 and at 12:55.

Bricks were said to have been dislodged from Main Hall, constructed about 1906 as one of the original buildings on the Montana State College campus at Bozeman.

Several rock slides were reported in the Bozeman areas and motorists were advised to proceed with caution.

The 'quake was felt at West Yellowstone and in Yellowstone National Park.

[Montana Standard; August 18, 1959]

HEBGEN DAM OUT; ENNIS IS EVACUATED

Bulletin

Ennis, Three Forks and Trident were being evacuated early Tuesday as water gushed into the Madison River from Hebgen Dam.

ENNIS—Mammoth Hebgen Dam breached early Tuesday under the pressure of a violent earthquake and reports were that this Madison Valley community of 1,000 was ordered evacuated.

The dam holds 500,000 acre feet of water. The water would empty into the Madison River and it was feared this entire valley might be flooded.

The dam is 54 miles south of Ennis.

Telephone contact with Ennis became impossible at 4 a.m. (DST) when all circuits went out.

[Montana Standard; August 18, 1959]

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THAT SILLY, HELPLESS FEELING COMES FROM BEING 'ALL SHOOK UP'

By Lewis T. Poole

Nothing makes you feel more silly and more helpless than a feeling that the floor is rolling around under your feet and the walls are swaying on all sides of you.

Some people spend a lot of money and time to get themselves into a condition where such things seem to be occurring, only to wake up the following morning to find that everything is just about where it was the night before.

Sailors at sea get so used to the rolling and pitching of their floating habitations that the earthquake feeling may seem normal to them.

But we who live on dry land feel that we have a right to expect that land to lie quietly under us, and when it doesn't do that we are likely to get just plain scared.

The land didn't lie quietly under Butte early this morning, and the Mining City had a lot of scared people in it for what seemed like quite a while.

The thing started with a slight shaking, which might have come from a blast, but it developed swiftly into a rolling and pitching that reminded me of negotiating a rough patch of water in a small boat.

I was up and around, not shaken out of my sleep as I am told so many people were—as, in fact, my wife was.

We live on the second floor of an apartment house downtown. The building kept rocking until I was beginning to wonder if this was indeed "it." It seemed that mere masonry and framework put together by mere man could not take much more of this—but there was no place to go.

That is when one begins to feel silly and helpless. The fright comes later, as reaction, when you begin to think about what MIGHT have happened.

Mrs. Poole is an old California hand, so to speak. She lived there many years, and everyone has heard about California and its earthquakes.

But when this one awakened her, it was I who had to tell her to head for a doorway and stand in it. I was already in a doorway.

"Not this one," I said. "That one over there."

It was in my mind that if one doorway went and the other didn't, at least one of us would still be around.

No doorways went or were to go. We all know

that now. None of us knew it then.

Then came the voices from the hallways and other apartments. There were no screams, no sounds of alarm or panic—just people opening their doors and talking to one another.

The lights stayed on during the whole thing, so I knew that at least not all of the power was off in Butte, and perhaps none of it was. I lifted the telephone receiver and got a dial tone. That utility apparently was working normally.

I did NOT call the newspaper. I knew everyone in Butte would be doing that at about that time.

But I went over to the newspaper plant—and anyone who thinks it takes an earthquake to get every member of our staff on the job is absolutely right. Most of them were there. All of them were answering telephones.

Even Peggy Verstappen's society telephone was ringing now and then. Just what an earthquake has to do with society news is not quite clear to me, but some people apparently saw a connection.

It is somewhat flattering to work for a newspaper at such a time. Everyone thinks you know all about the situation before it is even over.

We were getting calls before the last tremors subsided, from people who wanted to know how much damage had been done or how many casualties had occurred.

We knew as much as they did.

More than one person who called had the same thought I and so many others had:

"This was bad, but maybe we're not in the center of it. Maybe some other city really got it and we just received the shocks along the edge."

We were happy to learn that the cities our telephones and wire services had contact with were apparently no more hurt than Butte was.

The quake was of what is called the rolling type—not the short, sharp, jolting type of shock that sends buildings tumbling and opens crevasses in the earth, like most of the world's disastrous earthquakes of record.

We are told now that it lasted, at its greatest intensity, for about 30 seconds.

That is long enough—plenty long.

The chandelier in my living room was still

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swinging to and fro, in a good one-foot arc, when I left to walk the short distance to the office.

I will always remember one of the telephone calls I answered about a half hour after the thing hit. A lady said:

"Will it be all right for me to go back to bed now?"

"We can't guarantee anything," I answered. "But you might as well go back to bed."

The lights were on in most of the residences and many of the business buildings of Butte for hours after the quake. People were talking it over.

They were still talking it over when the after-shocks started coming.

They were, as so many of them are saying this morning, "all shook up."

[Montana Standard; August 18, 1959]

EARTHQUAKE IS WIDELY FELT IN NORTHWEST

SEATTLE (UPI)—A far-reaching but apparently minor earthquake rocked the Pacific Northwest Monday night but no major damage or injuries were reported.

Temblors were reported in Idaho, Montana, Utah, British Columbia and Washington. None of the reports mentioned any serious damage although all reported the shocks rocked homes throughout the region.

At Boise, Idaho, the temblor lasted for about one minute and Idaho state police said it was felt as far east as Pocatello.

The earthquake shook the state capitol building in Boise so hard that filing cabinets still quivered five minutes later.

An operator at the Renton City Airport at Renton, Wash., said the earthquake shook the tower there and several areas of Seattle were shaken.

"We're 50 feet up on the tower here and it really rocked it," said the operator at the tower. "It lasted quite a time—about a minute or two I'd say."

The Washington state patrol at Olympia received word on state patrol radio that the quake was recorded on seismographs at Berkeley, Calif., and Tucson, Ariz., but there were still no reports of damage.

Seismologists at the University of Washington in

Seattle and at the University of California at Berkeley began a check of their instruments to determine the scope of the earthquake.

In Seattle, the earthquake rattled homes in the West Seattle and Ballard areas but was not felt in some other sections of the city.

The Washington towns of Colfax, Pullman, Wenatchee, Colville, and Spokane reported feeling the earthquake.

BOISE (AP)—An earthquake tremor was felt throughout southern Idaho and northern Utah shortly before midnight Monday.

It rocked pictures hanging on the walls and rocked chandeliers. The time of the tremor in Boise was 11:30 p.m. (MST).

Reports from Pocatello, Twin Falls, Burley, Idaho Falls and Rexburg in southern Idaho, and Salt Lake City in northern Utah established the time within a few minutes of 11:30.

No damage was reported immediately.

In Pocatello, some persons telephoned news media to report two tremors two minutes apart.

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BUTTE SCARED BY TREMOR

Butte was frightened Tuesday morning.
Frightened at it never has been.

An earthquake, Mother Nature's great show, is a seldom occurrence in this mining capital. Many did not know what the turbulence was; others, who knew, reacted in different ways.

God was remembered in those 30 critical seconds. Families gathered to pray for His help.

Many people remembered what they had been told, or had read, and sought safety in the doorways of their homes. Still others sought shelter beneath sturdy tables and the like.

Modesty went out the window as thousands dashed to the streets in their night clothes.

Lights flicked on all over town, and soon Butte was as wide awake as at noon on Saturday.

"Will there be more?"

School of Mines earthquake experts said yes, all through the morning.

"Where was the center?"

That won't be known until seismograph records can be studied.

"Was anyone hurt?"

At 3 a.m., there were no reports of injuries.

"How was the damage?"

Widespread, but apparently not too serious.

From Walkerville and the South Side; from Meaderville and the West Side; the length and breadth of this copper capital, people had different questions, different reports. But they all had one thing in common.

They were afraid.

[Montana Standard; August 18, 1959]

QUAKE DAMAGES OLD BUILDINGS IN VIRGINIA CITY

VIRGINIA CITY—Old buildings in this cradle of Montana history suffered damage in Montana's quake Tuesday.

A large piece of wall tumbled into the second floor courtroom of the courthouse built in 1876. Bricks fell out of a wall of the school house built in the same year.

The Masonic temple, erected in 1864, suffered some damage when a sign fell from it and a large crack appeared down the front of the building.

No one was injured.

[Montana Standard; August 18, 1959]

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THREE FORKS SHAKEN; ROCK SLIDE RESULTS

THREE FORKS—A rock slide six miles west of Three Forks on U.S. Highway 10S apparently resulted from an earthquake felt throughout the state late Monday.

"This entire community was aroused by a severe temblor about 11:40 Monday night but there was no apparent damage."

That was a report telephoned to the Montana Standard by Mrs. Max Makoff, operator of the Three Forks Hotel. Mrs. Makoff said her husband, a deputy sheriff for Gallatin County, was making a close check of the community to determine whether any severe damage had been inflicted.

[Montana Standard; August 18, 1959]

BUTTE'S SEISMOGRAPH NOT TO BE OPENED UNTIL 7 THIS MORNING

Butte's seismograph, located at Montana State School of Mines, will not be opened until 7 o'clock Tuesday morning, and it was not certain that the quake recording could or would be interpreted at that time.

Prof. John McCaslin, associated with Dr. Stephen S. Nile in checking the delicate instruments, said that the latter is at present on the "320 Ranch" in the Gallatin valley. Efforts were being made to contact him and learn whether Dr. Nile would come to Butte to

make the readings.

The recording will be removed from the seismograph by Prof. McCaslin, and Ralph Byrne, a student, who was working at the time the quake aroused the community. If Dr. Nile cannot be contacted, it was indicated, the recording will be forwarded to a government agency for interpretation.

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AT LEAST 18 ARE DEAD IN TREMORS

Rescue Workers Seek Victims Of Slide In Madison Canyon; Hebgen Dam Expected To Hold

By Frank Quinn and John Calcaterra

ENNIS—A pall of gloom hung heavy over the stunned Madison Valley Tuesday night as rescue workers began counting the dead in one of the nation's worst earthquakes.

The death toll was figured at 18. It may never be known exactly how many perished for it is feared many bodies lay entombed forever beneath a mountainous landslide at the mouth of the Madison Canyon.

At least 42 were injured seriously enough to require medical treatment.

The danger of a flood in the Ennis area passed with word from Hebgen Dam that the dam is intact. A 20-foot wave sloshed over the crest of the dam and washed down the Madison River, leading to an original report that the dam had breached.

The people of Ennis were not allowed to return to their evacuated homes as a precautionary measure, however. Several pitched tents on a hill overlooking the city. Others sought shelter in Butte, Virginia City and nearby communities.

Hospitals at Ennis, Bozeman and West Yellowstone cared for most of the injured but Marine Reserves from Butte with the aid of Navy personnel established a medical equipment center at the Ennis High School. A nerve center to direct rescue operations was set up by the forest service at Ennis.

Smokejumpers Reach Area

The first rescue workers reaching the scene of the slide disaster were several smokejumpers dispatched from the regional forest office in Missoula. They were dropped about 11 a.m. into the canyon area between the slide and Hebgen dam. The jumpers, all first aid experts, gave emergency treatment to many campers and fishermen who had escaped from the wall of water that raced down the river bed and the crush of the landslide.

Plans were completed late Tuesday night at the slide scene for an intensive search to start at daybreak Wednesday along the river bed north of the slide. It was feared many persons were washed into the river when the surging waters devastated the Rock Creek campgrounds and were carried downstream before the

mountain of rock, dirt and trees swept across the gorge.

Three members of the Deer Lodge County Rescue Unit from Anaconda arrived late Tuesday night to assist forest service men, members of the armed forces and other volunteers in the search for additional victims.

One hundred sixty-seven persons found stranded on a mountainside between the slide and Hebgen Lake were being brought out by trucks and cars after a bulldozer drove a rough road from the Bozeman side. Part of cars and other debris were found along the Hebgen Lake shore.

The first evacuees from Wade Lake were brought into Ennis at 9 p.m. About 35 were stranded there. Jim Johnson, Antelope Basin rancher, led the first group to safety while highway patrolmen directed the others.

The greatest number of evacuees came from just over the big slide and were brought out by helicopter. A large number of the rescued still wore sleeping attire.

Repairmen Reach Scene

Montana Power Co. crews and other repairmen made it to Hebgen Dam Tuesday and after a careful examination reported the dam would hold. J. E. Corette, company president, said the dam slipped on the east abutment and the action of the quake tipped the lake, sending a 20-foot tidal wave that caused some damage to the structure, powerhouse and equipment. Initial reports said the dam had breached.

Construction men, led by Naranche and Konda of Butte, went to the dam to make necessary repairs.

People Treated at Ennis

Among those treated at Ennis were Mrs. Irene Bennett, Coeur d'Alene, whose husband and three of her children were killed; her son, Phil 16; George Whitemore, son of missionaries now in East Pakistan; the Rev. and Mrs. Elmer Ost, Queens, N.Y.; Geraldine, 13, Larry, 18, and Shirley Ost, 16, their daughters; Melvin Frederick; his son Paul, 15; his daughter, Melva, 16, all of Elyria, Ohio; Martin 15, John, 13, and Morgan Stryker, 8, brothers from San Mateo whose father and stepmother were killed.

Carol and Danny DeHart, Colville, Wash.; Elsie

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Moore, Spokane; Mrs. Annie Smith, Greely, Colo.;
Mrs. E. B. Bair, Stone Mountain, Ga.; Donna Ballart,
Colville, Wash.

Doris M. Wood, Missoula, Red Cross field
representative, set up headquarters in the disaster area.
Search parties were organized late Tuesday to begin an
extensive search for any person still stranded
Wednesday.

It Never Will Be Same

Perhaps it was Mrs. R. E. Losee, wife of an Ennis
doctor, who described the scene best. Mrs. Losee, a
nurse, was flown into the Rock Creek Camp Ground
and she said, "It looked like the mountain blew up.

"The Madison Valley doesn't look the same any
more."

[Montana Standard; August 19, 1959]

BUTTE DANGER APPARENTLY PAST Another Bad Earthquake Now Unlikely

"The pattern which earthquakes usually take
consists of the first heavy ones which gradually
diminishes into lesser and lesser temblors and there is
no need for Butte residents to fear another bad quake,"
Prof. John McCaslin of the Montana School of Mines
reported Tuesday night.

Butte felt four minor temblors, slight, at 3 p.m.,
one at 10:04 p.m. and one at 11:49 p.m. Tuesday.
They caused both the police and sheriff's offices to be
deluged with calls asking if there could be a repeat of
the quake disaster in Madison Canyon.

Although predictions are dangerous, Prof.
McCaslin said, the chances are Butte has felt its worst
quake shocks.

Big Punch First

The big punch in the series was dealt at the outset,
at 12:38 a.m. (MDT), when thousands of Butte
residents were shaken severely, most of them from their
sleep. It lasted about 30 seconds.

Thereafter, at intervals ranging from a few seconds
to many minutes, the landscape continued to buck and
weave, but in comparatively minor and diminishing
intensity.

Damages Caused

The first was the big one, a rolling, undulating
sweep that damaged shelves of goods in grocery stores,
collapsed large plate glass window, cracked walls and
panes, and frightened hundreds out of their wits until
the first shock passed.

Word was received Tuesday night that relatives of
a Butte woman, Mrs. Ray Matthis, 1001 Missoula, had
been rescued from Wade Lake where they had been
camping. Mrs. Matthis said that she was leaving for
Dillon to bring back her two sisters and their children.

The group had been brought there for emergency
treatment following rescue operations.

Those saved were Mrs. Jack Voucher of Ventura,
Calif., who suffered an injured shoulder, her daughter,
Joan, and Mrs. Ray Harrison of Manhattan, who
received a leg injury, and her three children.

The whereabouts of the husbands of both women
was not known. Mrs. Matthis said she talked on the
phone to Mrs. Voucher but that the rescued woman
was on the border of hysteria and did not give details of
her experiences except to say that the trailer and boat
with which the couples were camping had been
demolished.

Schools Suffer

Generally, there was no building damage in Butte
caused by the earthquake, although several schools
were jarred. Worst hit was the Franklin where the
chimney tumbled down and the walls were badly
cracked. George Haney, superintendent of schools,
said that repair costs would run between \$5,000 and
\$10,000 and it was a question at the moment if the
school would open in September.

A large block fell from the top of the entrance to
the Emerson and the front steps were destroyed. Bricks
in the chimney at the Harrison were cracked and the
cement columns fell from under the windows of the
Longfellow.

Charles Davis, principal of Butte Public High
School, reported that the first floor on the south wing
on Gold street was damaged slightly. "Cracks have
appeared in the walls of the hall and the woodworking
shop and the floor in the shop has separated," he said.
Damage is in the old section of the building.

City hall and the county courthouse evidently

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escaped damage during the earthquake but the federal building on North Main was rattled beyond its endurance. Several walls were cracked including those in the Internal Revenue office and the Forest Service office on the third floor, Judge W. D. Murray's office on the second floor and in the post office on the first floor. Concrete crumbled from the ceiling in the workroom in the basement, plaster fell in many offices and damage to the floors was reported.

Stores Are Damaged

Safeway stores on Front street and Harrison avenue, the Food Bank on Harrison, Buttreys and other stores were damaged when goods tottered and crashed to the floor. A large plate glass window at Buttreys', 2307 Harrison, was smashed.

The Montana Power Co. reported a small outage along a section of Harrison avenue, but the damage was considered light.

No injuries were reported in Butte.

An Anaconda Co. spokesman said Tuesday a number of men at work in the Mountain Con mine when the quakes struck were hoisted to the surface. Afterward they returned to their underground work. The men said the tremors were felt clearly.

Anaconda and Deer Lodge appeared to have escaped with little more than broken dishes, banging of cupboard doors, and toppling of a few chimneys on old buildings.

[Montana Standard; August 19, 1959]

BUTTE IS READY TO HOUSE 750 ENNIS REFUGEES

The hearts of Butte's residents opened wide Tuesday to those who have been stranded following the evacuation of Ennis. The town, 54 miles north of Hebgen Dam, was threatened with inundation when the dam was cracked after being jarred by Tuesday earthquake.

The Butte Red Cross issued a plea for Butte people to give accommodations to those forced to leave their homes and within an hour and a half places to house 750 people had been offered.

The Butte Chamber of Commerce office which handled the calls also received many from out-of-state people who have relatives living and vacationing in the disaster area.

Harold McGrath, secretary of the Butte Red Cross chapter said that at the moment there is no necessity to send first aid workers to the scene, but that they have been alerted and are ready, along with doctors and

medical supplies, to be sent if requested.

The Anaconda Company Tuesday offered facilities of the Kenwood Realty Co., in Butte to refugees from the Madison Valley earthquake area.

The company informed Harold McGrath, secretary of the Butte Red Cross chapter, that it could open 100 unfurnished apartments and 15 furnished ones for refugees needing shelter.

Word that the apartments are available was relayed to Civil Defense headquarters and to the Red Cross field representative, Doris Wood of Missoula, who is aiding Red Cross relief and evacuation work in the Sheridan-Ennis area.

The apartments are located in various Butte housing projects, built and operated by Kenwood, an Anaconda subsidiary.

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TERRIFYING EXPERIENCES ARE RELATED BY YOUTHFUL TOURISTS

By Frank Quinn

VIRGINIA CITY—Terrifying experiences when they were jolted from sleep by the nerve-shattering roar of the great landslide that swept down on their camping sites along the Madison River were related Tuesday afternoon by two young tourists, who were hospitalized along with several other disaster victims in the Madison Valley Hospital in Ennis.

Cute, blonde Geraldine Ost, 13, of New York City, who with her sister Shirley, 6, and her mother, Mrs. Ruth Ost, was brought to Ennis by helicopter, said:

"We were wakened by a terrific roar. Some one cried 'Cyclone' and my father shouted 'Hang onto a tree.' I tried to reach a tree. There was water all around us. I grabbed for a tree and my hand was smashed with some awful force against the trunk of the tree. I grabbed and hung on.

"Finally, we got to high ground and kept a fire going all night. We saw and heard stones tumbling down until daybreak. Then, it stopped. We had plenty of food, and we had scrambled eggs and potatoes for breakfast."

Miss Ost's hand was badly lacerated and her sister

suffered leg cuts. Her mother was immediately removed to the hospital at Sheridan for treatment of undetermined injuries.

Minister Aids Others

The girls' father, the Rev. Elmer Ost, a Bethany Congregational minister, stayed at the landslide scene to assist in the rescue of others.

Paul Frederick, 15, of Elyria, Ohio, who was camping with his family in the canyon, said:

"There was a terrifying earth shock, which jarred me awake in the tent. The next thing I was rolling over and over on the ground, which was shaking and trembling."

He suffered numerous cuts about his hand. His sister, Melva, 16, was treated for minor injuries, and their cousin, George Whittemore, 15, suffered a severe eye injury and was rushed to a hospital in Butte.

The Whittemore boy's parents are Mr. and Mrs. Willard Whittemore, who have served as missionaries in West Pakistan. They are now visiting somewhere in the eastern part of the United States. Mrs. Whittemore is Mrs. Frederick's sister.

[Montana Standard; August 19, 1959]

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CIVIL DEFENSE RESPONSE HERE IS GREAT

By Molly Cutts

Butte's answer to its first Civil Defense emergency call poured forth more people Tuesday than the organization knew what to do with and in the end, after volunteer nurses and doctors were alerted to mobilize, the word came that their help was not needed at the earthquake scene near Ennis. "However, it was good practice and will help us correct our mistakes," Dr. William Talbott, chief medical officer, reported.

Cole Sullivan, director of the Butte CD chapter, put out a call beginning at 3 p.m. asking for volunteer nurses and others to report at headquarters to be transported to Bozeman where most of the casualties are being taken. The call was retracted by 6:30 p.m.

Doctors Sent to Area

Two Butte doctors were sent to the disaster scene, Dr. Frank Peterson and Dr. L. G. Hammer, a former paratroop doctor. A private plane was also dispatched carrying 6,500 cc's of plasma, six oxygen tanks, 24 disposable oxygen masks, tubing and other equipment. Also a truckload of clothing was sent to the scene by the Salvation Army.

Big Group Was Ready

Before the call came to send no more help there were five doctors, 25 nurses and 25 first aiders ready to leave along with a complete supply of emergency hospital equipment. Many others had also volunteered their services including Army and Navy hospital corpsmen, 25 other people trained in first aid, pharmacists, volunteers to drive personnel and ambulances and high school girls volunteering to baby-sit to free others for emergency work.

In Butte, besides the hospitals, emergency stations were ready to be set up in all public and parochial schools and the ice skating rink in the Civic Center was melted to make more room.

The Petticoat Patrol also volunteered its services in case a mounted rescue group was needed.

Red Cross Staff on Job

Harold McGrath, secretary of the Butte Red Cross chapter, received a telephone call Tuesday night from Richard Garden, of San Francisco, director of disaster

services for nine Western states, who reported four staff members were dispatched to assist local chapters.

The Madison County Chapter with headquarters at Sheridan is ready to care for any refugees who might need assistance as a result of the evacuation along the Madison River, McGrath said.

Doris Woods of Missoula and Robert Wiseman of Pocatello were sent into the area and Robert Bergen of the Red Cross aquatic school near Rollins was sent to Helena to coordinate Red Cross activities with the state Civil Defense. Ralph Carlson of Garden City, Utah, also was sent to Montana.

Response Overwhelming

A plea put out by the Red Cross chapter here Tuesday morning received an overwhelming response offering accommodations for 750 people from the evacuated area, McGrath said.

Naval and Marine Corps personnel, ready for any emergency, loaded radio gear, tents, sleeping bags and medicine into trucks and rushed to Ennis to set up communications and assist the injured and those who would leave their homes. In charge were Lt. Cmdr. Carroll Davis, USNR, commanding officer of the U.S. Naval and Marine Corps Reserve Training Center, and Maj. Robert Johnson, USMC, in charge of the Marine Corps Training Center.

Mayor Goes to Scene

Mayor Vern Griffith sped to the Ennis disaster scene in a police car, his radio tuned in on police and commercial circuits to stay abreast of the rapidly-changing situation. Frank Reardon, Butte radio station manager and civil defense officer for emergency feeding, alerted his personnel to stand by.

Evan Thibideau, Butte amateur radio operator, and his fellow "ham operators" manned a radio communication network at 6 o'clock in the morning and helped transmit messages.

Radio equipment on a Montana Power Company airplane was used to help in rushing personnel to repair the damaged Hebgen Dam.

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TEMBLOR BRINGS WAKEFULNESS TO ANACONDA AREA

ANACONDA—Residents of Anaconda spent a pretty much sleepless night after being jarred into wakefulness by the earthquake that shattered the summer night calm of Southwestern Montana.

There were no reports of damage in the Smelter City or surrounding country.

In addition to the major tremor at 12:38 Tuesday morning, Anaconda residents reported feeling shocks at 2 and 3 o'clock and again at 9:25 o'clock Tuesday morning.

The initial quake brought thousands of

Anacondans into the streets and lights went on throughout the city as residents gathered in little groups to talk over their feelings and reactions to the sudden upheaval.

City firemen were called out at 1:15 o'clock to investigate a smoke scare at the Montana Hotel. It was reported that dust from the basement of the big structure, apparently stirred up by the trembling of the building, appeared as smoke and caused the alarm.

[Montana Standard; August 19, 1959]

SLIGHT DAMAGE DONE IN DILLON

DILLON—Most earthquake damage done in the Dillon area was to the sleep of residents Monday night. Some damage of a more literal sense was experienced, namely loosening of bricks on the chimney of the Library Building and a few falling bricks from the

building housing the Stockman Bar. Repairs have been made to both buildings and no other damage was done in either case.

[Montana Standard; August 19, 1959]

ONLY ONE MONTANA ROUTE OPEN TO YELLOWSTONE PARK

The only way to Yellowstone Park from Montana is through Gardiner.

A violent earth tremor caused land slides that blocked all roads between the junction of Highway 10S at Ennis and Highway 287 to West Yellowstone, and Highway 34 from Ennis to Virginia City.

Hebgen Dam, about 25 miles from West Yellowstone, is accessible only by boat, foot or horseback.

A number of bridges in the area collapsed under the rolling pressure of the quake.

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TREMORS 'SLIGHT' AT WYOMING PARKS

JACKSON, Wyo. (AP)—Grand Teton National Park and the Jackson area just south of Yellowstone National Park received only a "slight tremor," Sheriff Warren Francis said Tuesday.

No damage has been reported in the county,

Francis said.

He said there has been no noticeable influx of tourists in Jackson evacuating Yellowstone Park.

[Montana Standard; August 19, 1959]

BIG MOUNTAIN WAS JUST CHOPPED AWAY

By Paul M. Quinn
(United Press International)

I saw where an 8,000-foot mountain was leveled. Its crashed to the ground. I flew at 8,000 feet and the mountain is gone.

To this reporter it appears that someone had taken a knife and neatly chopped part of the mountain away.

We flew over the lower Madison Valley at daybreak Tuesday. It's hard to believe that there had once been a river or a highway beneath it. Huge boulders have uprooted trees and ton after ton of rock and dirt has completely cut away any sight of the highway and river.

The dam at daybreak appeared intact. It was brimful. Some water appeared to be seeping around it.

A huge sign was painted on the top saying "SOS—OK." Signal fires and waiting motorists were

seen around the area of the dam.

The slide took away half a mountain making it into a cliff. In that area, I counted three campsites higher up on the mountain, about five autos and a half dozen persons standing around.

If there are casualties, they may be in that area. It was a popular camping spot.

Water was backed up behind the slide over a 500-foot area. The road is all covered with dirt. Motorists may be trapped in that area. I counted three cars.

Meanwhile, the Madison River, famed fishing stream, is completely dry from the slide area on downstream.

There were signal fires in the hills above the valley and on the road below the slide and dam dozens of cars were seen streaming North toward safety.

[Montana Standard; August 19, 1959]

HEBGEN LAKE IS 65 MILES AROUND

Hebgen Dam, an earth and rock filled structure with a concrete core, is on the north end of the reservoir on the Madison River, near West Yellowstone and was filled to its capacity of 325,000 acre feet when it weathered an earthquake Monday night.

Owned by the Montana Power Co., the dam stores water for use in generating plants downstream. The only power generated at the dam itself is used there.

Hebgen Lake, as the reservoir is known, is 65 miles around and has a surface of 13,415 acres. The dam is 718 feet long and 87½ feet high. It was completed in 1915, five years after work was begun by the Montana Reservoir and Irrigating Co., a subsidiary of the Montana Power Co.

One acre foot of water will cover one acre of land with one foot of water.

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QUAKE DID NOT DAMAGE PARK WONDERS, BUT TRAFFIC TIED UP

YELLOWSTONE NATIONAL PARK, Wyo. (AP)—None of the natural wonders of Yellowstone Park were damaged by a series of earthquakes which jolted the Montana-Idaho-Wyoming area Monday night and Tuesday, park rangers said.

"Old Faithful is still spouting with its same old regularity," park Ranger John Magnuson said, commenting upon the world famous geyser.

However, traffic is tied up because of rockslides in the western half of the park and efforts won't be started until Wednesday to clear the roads.

Park Roads Blocked

Rockslides along the Madison, Firehole and Gibbon Rivers have blocked roads between Old Faithful and Madison Junction and Norris Junction, Mammoth Hot Springs and Norris Junction and Norris Junction to Canyon.

Park rangers estimated it would take several days for crews to clear the roads. Work wasn't started because of a danger that other tremors would cause loose rock to tumble down onto the road again.

Old Faithful Inn Closed

Old Faithful Inn, one of the historic landmarks in the country's first national park, was closed temporarily pending a safety inspection by engineers. The east wing of the inn was shut down shortly after the first quake that broke a water main in the building. The rest of the building was closed later.

Even the Park Service's headquarters administration building was evacuated. Park rangers set up temporary headquarters in tents outside the main

administration building at Mammoth, in the northern part of the park.

Tremors were felt throughout Tuesday in various sections of the park, Magnuson said. The last was reported at Fishing Bridge near the eastern border about 1:30 p.m.

Most Park Gates Open

All entrances to the park, except the West Yellowstone, Mont., gate were kept open. Park Supt. Lemuel A. Garrison estimated there were 22,000 to 25,000 tourists in the park when the first major earthquake struck shortly before midnight Monday.

By Tuesday afternoon many of the tourists had left the shaking park to the bears. However, Magnuson said many new tourists were flocking into the park despite the threat of after shocks from the earthquake.

Animals Not Worried

"The bears and other park animals have shown no signs of panic," Magnuson said. "The people are more nervous than they are."

Park Service headquarters reported there had been no deaths or injuries confirmed there. However, there were reports at some of the gates of minor injuries received by tourists.

No damage was reported at Grand Teton National Park, Yellowstone's sister attraction to the south. Teton County Sheriff Warren Francis said only a "slight tremor" was felt in the Jackson Hole area.

Cody, a northwest Wyoming resort town 53 miles east of Yellowstone, also reported no damage.

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NEARLY 3,000 QUAKES RECORDED IN STATE

HELENA, Mont. (AP)—Montana is no stranger to earthquakes. But they seldom are of the intensity of the tremor which rocked southwestern Montana Monday night.

The Weather Bureau began recording earthquakes in Montana in 1935. Since that time 2,945 shakes have been noted.

Almost all of the earthquakes recorded occurred through 1947—2,883. Since then the number has tapered off considerably. Only 54 were reported in the past nine years.

The biggest tremor—up to Monday's—was in 1935, when property damage in Helena alone was estimated at over four million dollars and seven persons lost their lives.

At least 11 separate earthquakes were recorded by the Weather Bureau in a span of 10 hours this Monday

and Tuesday. That brings the grand total of quakes in Montana since 1935 to 2956.

The reason for the large number of temblors is a fault, or crack in the earth's surface. Geologists say a fault just west of the Madison River apparently caused Monday night's quake.

The fault is in very old rocks and extends from the West Yellowstone area northward to the area around Ennis, Mont. The earth's crust shifts and great masses of rock suddenly slip past one another on opposite sides of the faults.

The Hebgen Dam, a structure of concrete and earth, was completed in 1915. It backs 325,000 acre feet of water in the Madison River, one of the most famous trout fishing streams in America. Theodore Roosevelt, among thousands of others, fished the river. **[Montana Standard; August 19, 1959]**

'25 QUAKE JUST MISSED TRAIN

Road signs warning of falling rock are an everyday sight to Montana motorists and earthquakes don't help matters any. However, the mountain which fell in front of Hebgen Dam and which blocked the road in two places probably saved millions of dollars in damage from the unregulated flow from the broken dam.

Once before Montana got a lucky break during an earthquake which tumbled tons of rock across the Chicago, Milwaukee and St. Paul railroad tunnel at Lombard on June 27, 1925. The slide occurred only 60 seconds after a transcontinental train passed the site. This slide also backed up water, but in this case it was a stream which formed a lake where one was not

wanted. Trestles had to be built for the bypass until the slide could be removed.

Montana's most serious quake, the epicenter of which was near Helena, occurred beginning Oct. 12, 1935, and continued until Dec. 31 when a total of 1,300 shocks were recorded. The damage, estimated at \$3 million, was almost entirely confined to the city of Helena. Forty houses were demolished, 200 damaged and 80 per cent of the buildings suffered some damage. The quakes were felt in Butte, but there was no damage here.

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MANY OF STRANDED PERSONS AT DAM BADLY HURT

A doctor was brought from West Yellowstone to Hebgen Dam by boat Tuesday to care for a number of people badly hurt by slides caused by a violent earthquake.

Emergency equipment was on its way in an effort to save the earth-filled structure that was threatened by a wall of water that sent millions of gallons of water spilling down the Madison River. The equipment was from the Naranche-Konda Construction Co. of Butte. Reports said, however, that the dam is accessible only by boat, foot or horseback. Even amphibious planes were prevented from landing because of debris in Hebgen Lake.

Assistance Offers Made

Offers of assistance in the form of manpower, equipment and material came from the Washington Water and Power Co., Pacific Power and Light Co., Utah Power and Light Co., Pacific Gas and Electric Co. of San Francisco and the Vigilante REA Cooperative, Dillon. Howard Babcock of Vigilante offered crewmen and communications equipment. Some 40 people are stranded at Hebgen and a Montana Power Co. official said many of them were badly hurt.

Information Is Sketchy

J. E. Corette, Montana Power Co. president, said in Butte he had received only sketchy information by radio, via the weather bureau station at West Yellowstone and then through Pocatello, Idaho.

He said the equipment was being sent from the vicinity of Bozeman, both by the Highway Department, George Barrett and by the construction firm of Naranche and Konda.

Equipment Goes to Work

Highway department equipment which was located

near West Yellowstone started working to save the dam at 4 a.m. and M. J. (Spike) Naranche of the construction firm started its heavy equipment from a road job to the dam. Rainbow Ranch on the West Gallatin about 5:45 a.m.

The latter equipment included four large rubber-tired vehicles and, from Bozeman, two transports which were hauling diesel tractors and earth-moving equipment from a road job to the dam. He estimated it would take about three hours for the equipment to make the trip of about 100 miles.

Repair work on the dam is being supervised by Cecil Kirk, Montana Power vice president in charge of electrical operations. He and Bob Rand, the superintendent of power, flew to West Yellowstone from Butte at dawn Tuesday.

Damage Is Inspected

Later the Montana Power twin-engine plane took another load of company personnel to inspect the damage. Included in this group were Chief Engineer Ray Ball, Construction Manager Glenn Jones, Consulting Engineer Harry H. Cochrane and Dick Engstrom.

Other engineers were slated to take off from Butte for the scene in later flights.

Corette said he was sure the dam's spillway had been opened to release water over the top, as well as the lower tunnel which is controlled by gates and is the ordinary method of handling the flow.

The dam is an earth-filled structure with a concrete core and was full at the time of the quake. It holds approximately 325,000 acre-feet of water.

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CREWS CUT THROUGH TO PROBE DISASTER REGION

By Tom Maddox

WEST YELLOWSTONE, MONT. (AP)—Road crews working out of West Yellowstone, Mont., fought through pelting rain and lightning-streaked black clouds Tuesday to open a path into Rock Creek Camp Ground, below earthquake-damaged Hebgen Dam in southwest Montana.

Reports filtering out of the area indicated that several people may be buried beneath the debris. Engineers say the toll never may be known.

One report was that an automobile pulling a trailer was trapped at the approaches to the campground and was hurtled into the Madison River. A motorist behind the trailer said he saw it knocked off the road. No one knew how many persons were in the car, but apparently no one was in the trailer.

Another report was that an elderly man and his wife climbed a tree and escaped the rocks.

Among the survivors was G. L. McFarland, editor of the Salem, Ore., News. He handed a helicopter pilot who came to pick up seriously injured persons a story written in long-hand for his paper.

About 50 to 75 people are in the area of the campground, waiting to be taken out as soon as road crews can reach them. About 15 injured were evacuated by helicopter. They were sent to Deaconess Hospital in Bozeman, Mont.

Two hurdles still remained for the road crews—breaks in U.S. Highway 287 described as 50 feet wide.

[Montana Standard; August 19, 1959]

EVACUATION FORCED INTO HIGH SPEED

VIRGINIA CITY—Evacuation by water and air was forced into high speed in the earthquake disaster area Tuesday.

Early in the afternoon it was reported from the Virginia City sheriff's office that several persons in the Hebgen Lake area were being evacuated by boat to West Yellowstone.

Every possible means were being used to ease the distress of the persons trapped by the huge landslides.

A member of the Montana Highway Patrol was taking a doctor and nurse from Bozeman as close to the dam as possible.

In addition, two nurses from Ennis, Mrs. Ronald Losee, wife of the administrator of Madison Valley Hospital, and Mona Reid were flown into the canyon area on separate mercy missions.

[Montana Standard; August 19, 1959]

PLANS ARE UNDER WAY TO DYNAMITE BARRIER

VIRGINIA CITY—Madison County authorities Tuesday afternoon reported that plans were under way to dynamite from the air the gigantic landslide straddling the Madison River canyon as soon as it could be determined that all persons were evacuated from the area.

The dynamiting would be done in an effort to

lower the water level building up rapidly behind the barrier. If such action were successful, it would prevent a tremendous wall of water from engulfing the canyon region should the damned up water rise to the point where it could crash around the landslide.

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FLYING RANCHER FROM DILLON TELLS OF FLIGHT OVER HEBGEN DAM AREA, SIGNALS FROM PEOPLE

EDITORS Note: A flying rancher from Dillon, Mont. was pressed into service by authorities to bring back an aerial report on the effects of the earthquake to the Hebgen Dam area Tuesday. He is DeMar Taylor, who made a flight through the Madison Canyon with a brother, Garth Taylor, and Walter Swartz, also ranchers in Montana's Beaverhead Valley. Taylor telephoned the Associated Press, explaining, "I thought you might be interested."

By DeMar Taylor

As told to The Associated Press

DILLON, Mont. (AP)—"It's terrific. You'd never realize what's happened over there. The canyon below Hebgen Dam has given away and the whole mountainside has slid into the canyon. It has covered the highway at a terrific depth for possibly one mile. It has dried the river up below and is starting another lake above it.

"Campers all up and down the river above the slide to the Hebgen Dam are gathered in groups on high ground waving white flags to airplanes as they fly over.

"They have written SOS all up and down the undamaged parts of the highway, indicating they are in trouble.

"The dam itself is quite badly shattered but is not giving away yet with any terrific amount of water flow. There is muddy water running through the dam indicating it has several leaks in it and could give way anytime, jeopardizing the people trapped below.

"The highway along the east shore of Hebgen Lake for possibly five or six miles is broken and has slid into the lake at several different points.

There is a distinct crevice running the full length of the mountain east of Hebgen Lake.

"What has happened is that the whole mountain for several miles has shifted into the lake. The water all along the east side of the lake is up into the sage brush below the road.

"The dam seemed to be holding with a normal flow of water with exception of the seeps. We could see checks in the dam. We could see 30 or 40 people at the dam. They appeared to be standing there.

"They had written across the top of the dam these words 'SOS—OK.' I interpreted that to mean that on their personal examination of the dam that it looked like it was going to stand the pressure and hold at least temporarily.

"From the actions of some of the people waving white flags, I'm just afraid there are some injuries there.

"About half way up the mountain east of Hebgen Lake, where people camp.

"At Wade Lake, about 20 to 25 miles northwest of Hebgen Dam, we saw 15 or 20 cars which appeared to be marooned there. A mountain slide appeared to have taken the road with it into Wade Lake.

"At Cliff Lake, where two persons were reported dead, the water was full of trees and debris caused by intermittent minor slides the full length of the lake. This lake is about one-half a mile south of Wade Lake. We saw people there and a lot of rocks and trees in a camping area. I presume this is where the deaths occurred.

"We saw minor slides and evidence of land movement all up and down the Madison Valley, including many fractures in the highway."

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ONCE HAPPY, CAREFREE FACES OF VACATIONING AMERICANS GRIM, SOME STAINED WITH BLOOD

By Robert Moore

WEST YELLOWSTONE, Mont. (AP)—These were the faces of vacationing Americans and Canadians . . .

A mere 15 hours ago they were gay, carefree faces. Now they were grim, almost expressionless. Some were stained with blood.

These were the first seven people to be brought out of the Ennis, Mont., area which Monday night and early Tuesday was jolted by an earthquake.

There were two married couples. Another was a 7-year-old child, Bonnie Schriber, of Billings, Mont. One was Bonnie's father, Jay Schriber, 43. The other was Verona Holmes, about 35, of Billings.

The married couples were Mr. and Mrs. Warren Steele of Billings, both 27, and Mr. and Mrs. Joseph Henderson Armstrong of Royal Oak, Victoria, British Columbia.

They were brought to a hangar at the West Yellowstone airstrip by U.S. Air Force helicopters.

Dr. R. D. Quinn of Hollister, Calif., said Mrs. Armstrong was the most seriously injured of the seven. He said she suffered a compound fracture of the leg. Mrs. Steele suffered chest, back and leg injuries.

Steele, a packing plant employee, said the quake came about midnight.

"My wife and I were sleeping in a tent," Steele mumbled from his makeshift bed on a bale of hay. "Suddenly, I was awakened and realized the ground was shaking. I rushed out of the tent and found rocks and dust flying off of the mountain.

"I returned to the tent, got my wife and went outside to face a wall of water backing up the creek toward us. The wall was about 12 feet high. It came in on us and knocked us winding.

"We stumbled around over the rock. The water

had ripped the pajamas off us and we had no clothes. It was the worst experience I've ever encountered."

Miss Holmes said she was sleeping in a camp trailer "when I felt something jar me. I yelled, thinking it was a bear.

"Then rocks, brush, mud and debris caved in around the trailer," she recalled.

"I was swept under water for a long way. One leg became entangled between two logs and I ran and I fell into the river."

Mrs. Armstrong said the first sign of the earthquake sounded like a plane coming down from overhead.

"I saw a tremendous mass of dirt," Mrs. Armstrong said. "I guess I started to run, and suddenly I was knocked off my feet and rolled and rolled.

"A second later, I was swept into the water, and then I began to climb and climb over rocks. I thought I had lost my husband and two children, Patricia, 18, and Donald, 11.

"I began to scream my husband's name. Again and again I screamed, and I thought it was no use. Then all of a sudden I could hear my husband's voice calling my name. I yelled and asked him if he knew where the children were. And he said they were okay.

"When I got back to Patricia and Donald, they looked like drowned rats."

Mrs. Armstrong said they left Virginia City, Mont., earlier Monday night and drove to Rock Creek Camp Ground where they had spent a night four years ago. She added they were planning on going to the Grand Canyon on a vacation trip.

All of the seven injured were flown to a Bozeman, Mont., hospital.

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VIRGINIA CITY OPENS ARMS TO REFUGEES

By Frank Quinn

VIRGINIA CITY—This one-time territorial capital of Montana hasn't seen so much fear-filled excitement since the Vigilantes, taking the frontier law in their own hands, strung up Clubfoot George Lane, Boone, Helm and their fellow-desperadoes.

Virginia City was a throng with its Madison County neighbors from the town of Ennis, and from ranches and camps—all people now suddenly having become refugees.

Ennis, some 25 miles south of here, was completely evacuated, Sheriff Lloyd Brook reported.

This entire area, aside from Virginia City itself, lay face to face with danger.

Establishments Kept Open

Virginia City was wide open to the people from Ennis and others. At Sheriff Brook's suggestion, all establishments—hotels, restaurants, taverns and the like—remained open all night to offer accommodations to persons coming here.

They came sometimes bumper-to-bumper along the highway to Virginia City in orderly fashion. Virginia City, normally a community of 200, was not hard pressed so far to take care of the 600 Ennis residents and the hundred or more others in the region.

Scores Sit in Cars

Tuesday morning some 200 persons sat in their cars and trucks atop a steep hill between here and Ennis, about five miles from Virginia City. There they

waited for news.

Many of them told me and Ken Lewis, Post-Standard photographer, that Ennis was "completely evacuated—no power, no lights and no telephone."

This colorful little town, largely restored to something of its pristine frontier-day appearance, is really putting out to help the neighbors. Townsfolk led by Mayor Allan Dudley are cooperating wholeheartedly in taking care of the evacuees.

Mr. and Mrs. Jack Northway and their children, Jackie Ann and Donnie, and Mr. and Mrs. Jess Armitage and their daughter Alice Sue, 14, Bryan, 11 and Christian, 3, were among the Ennis residents I talked with here. Northway is a grocer in Ennis and Armitage is a car salesman.

Many Returned to Bed

They said they were awakened in Ennis by the first quake shock, after which the families went back to bed.

About 3 a.m. they were awakened again, this time by the town siren which was sounding the evacuation alarm.

I saw a number of fishermen, some of them from Butte, including Winton Kane and his family and Pat Kenney and family. Kane is a driver for The Anaconda Co. They and others from the Mining City, as well as a large number of tourists, were getting out, heading for Butte.

[Montana Standard; August 19, 1959]

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PEOPLE IN ENNIS FEEL WORST YET TO COME—MOVING THE MOUNTAIN

By J. D. Coleman

News Director, KBTK Missoula

ENNIS, Mont. (AP)—It will be days—even months—before the final death toll can be determined in the tragic earthquake that shook this vacation land.

Hundreds of dazed, bedraggled people are wandering aimlessly about Ennis mingling with residents who have been ordered from their homes.

The 600 people of Ennis fear the massive landslide, which obliterated a mountain pass and a mile of the Madison River, might shift if earth tremors continue. There is also the stark fear that this could happen in conjunction with the collapse of the Hebgen Dam, thus destroying the town.

A man was sitting on the steps of the Ennis High School, converted into a first aid station and evacuation headquarters, with only a birdcage and two parakeets left from his possessions.

"They are the only things I have worth saving," he said.

He owned a novelty shop in downtown Ennis, directly in the path of a flood, and abandoned it to flee to higher ground.

"I could not carry much so there was no sense in taking anything but my birds."

In the overcrowded Ennis hospital, a structure under the shadow of death and tragedy, I talked to a woman who lost her husband and three of four boys. Miraculously she and one son escaped death.

The earthquake shattered the mountain and heaved it upon Mrs. Irene Bennett and her family, from Couer

d'Alene, Idaho. Battered and bruised, she murmured between swollen lips that there was "this great sound" and then she found herself rolled along with trees, rocks and water.

"I don't know how I got out. They say my husband and my boys are dead. But I have not lost faith in God. I know they will be found."

A nurse gently explained in the hallway that the woman's husband and three boys were found dead this morning.

"The poor woman," the nurse said. "She just does not realize yet."

Down the hall, a group of youngsters were being patched up with only minor injuries. All five lost everything they owned including the clothes on their backs. But they escaped with their lives.

Perhaps the greatest tragedy I found was that no one really knows how many bodies will be found under that massive mountain. In the path of the avalanche was a popular overnight campground. No one has an idea of how many were in that camp when the tons of rock and earth began its slide. Some guess as high as 75. No one knows.

The slide—a half mile wide, a mile long and about 150 feet high—defies description. I flew over the area today.

And the people here in Ennis feel the worst is yet to come—the almost impossible task of moving that slipped mountain.

[Montana Standard; August 19, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 166
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MONTANA STANDARD

DEER LODGE MAN DIES AFTER QUAKE STRIKES

DEER LODGE—A Deer Lodge man who felt Tuesday's earthquake and thought he was having a heart attack died on the way to the hospital early Tuesday morning.

John Coates, 70, of 708 Second, was stricken at his home and died in the ambulance. He had had a

previous heart condition but had worked Monday in the electrical shop which he owned and operated. He was a member of the International Brotherhood of Electrical Workers.

[Montana Standard; August 19, 1959]

BILLINGS COUPLE HURT WHEN BIG WAVE HITS

SAN FRANCISCO (AP)—An amateur radio report from the Wyoming earthquake scene said Mr. and Mrs. Warren Steele of Billings, Mont., were injured when a big wave struck their camp at Rock Creek Camp Grounds.

The report was relayed from Dwight Jones of The Associates Press at Salt Lake City, via Ted Travis of Tucson, Ariz.

Travis and his wife Madeline were vacationing in West Yellowstone when the quake occurred.

Travis had a mobile transmitter in his trailer.

"The quake nearly shook me out of the trailer," he said.

He relayed information from Jones which was picked up at Rio Linda, 10 miles north of Sacramento, by Charles Hardes, a government air conditioning

engineer.

Hardes tried to connect Jones to the San Francisco bureau of The Associated Press, but was unable to do so because of static.

Hardes said Jones told him he did not know how seriously the Steeles were injured.

He said they were injured while camping a few miles below Hebgen Dam, and a mile above the big slide.

"A large wave swept into camp, and washed them out of the tent," Hardes quoted Jones.

Hardes told the AP here that a terrific thunder and lightning storm just broke over the area, and Jones had to hurry away to return to Salt Lake City.

[Montana Standard; August 19, 1959]

BUTTE RECEIVES ITS FIRST QUAKE CASUALTY

The first casualty from the Ennis earthquake disaster area to arrive in Butte Tuesday night was George Whittemore, 15, of Elyria, Ohio.

Young Whittemore was evacuated in a helicopter and brought to St. James Hospital for surgery for an eye injury. His doctor reported his condition as "good" Tuesday night and said his eyesight will be saved.

The youth is the son of Mr. and Mrs. Willard Whittemore, who are Baptist missionaries in West

Pakistan at present. He was camped with his aunt and uncle, Mr. and Mrs. Melvin Frederick, also of Elyria, and their two children, Melva and Paul, just below the Hebgen Dam when the quake-caused mountain slide occurred.

The family was en route to West Yellowstone on vacation.

[Montana Standard; August 19, 1959]

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MONTANA STANDARD

THREE BROTHERS TELL OF THEIR PARENTS DEATH

VIRGINIA CITY—"They couldn't have known what hit them. I'm glad they never suffered."

Martin Stryker, 15, bravely fought back tears as he recounted how his father and stepmother were crushed to death in an avalanche Tuesday morning at Cliff Lake. Martin and his brothers, John, 13, and Morgan, 8, escaped unhurt, but were in shock.

They were brought to Virginia City by a Mr. Robinson.

Killed when they were buried beneath 10 tons of rock were Mr. and Mrs. E. H. Stryker, Modesto, Calif. The Strykers vacationed annually at Cliff Lake.

Martin said an earthquake that led to the avalanche shook his sleeping bag two feet across a tent and awoke him. He and his brothers occupied a tent about 20 feet from the one in which their parents slept.

"We could hear trees cracking," the boys related. "When we got out of the tent, two trees had fallen across our car and another crushed our boat."

A tremendous roar, that the youngest brother thought was thunder, had echoed down the mountain walls only seconds before and buried the parents' tent.

"They couldn't have known what hit them," Martin said. He said the air was filled with dust, making breathing difficult and vision blurred.

Mr. Robinson came by shortly and escorted the boys two miles up a bluff, drove them to Ennis and then to Virginia City. The boys are now awaiting the arrival of their mother from Berkeley, Calif., Mrs. Katherine Stryker.

[Montana Standard; August 19, 1959]

PEOPLE FROM BUTTE ASSISTING VICTIMS

VIRGINIA CITY—Mrs. Pat Kenney, Butte nurse, hurried to the aid of earthquake disaster victims at the Madison Valley Hospital in Ennis.

Mrs. Kenney, with members of her family, was camping near Ennis, when the quake devastated the Madison Canyon area, and immediately volunteered her services at the hospital.

A contingent from the Butte Naval Reserve unit went into the disaster area early Tuesday afternoon. It

included Lt. Comdr. Carl Davis, Radio man Wayne Jarrell, So. 2 Dale Smith and Medical Officer R. F. Langdon. The crew was outfitted with radio and power equipment to facilitate rescue and evacuation activities.

The Butte Army Recruiting station had personnel standing by ready with medical supplies and other relief material.

[Montana Standard; August 19, 1959]

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MONTANA STANDARD

COOL EFFICIENCY MARKS HOSPITAL

ENNIS—In the midst of the stress and strain of the disaster and the flood threat that hung over Ennis, the Madison Valley Hospital was the scene of quick, calm efficiency.

Dr. Ronald Losee, who returned to Ennis just a short time ago after two years of advanced study in bone surgery in Montreal, directed the work of his staff, augmented by several nurses aides and volunteers, as the quake victims were brought into the hospital.

Working with Dr. Losee was Dr. David Rossiter of

Sheridan.

Some were discharged after receiving treatment for minor injuries, while others were sent on to other hospitals after receiving emergency treatment.

In addition, during the afternoon, Dr. Losee supervised preparations for establishing an emergency receiving station in the high school gymnasium, after word was brought that some 21 injured persons were being brought into Ennis.

[Montana Standard; August 19, 1959]

BOZEMAN RED CROSS CLEARS INFORMATION

WASHINGTON (AP)—The American Red Cross designated its Bozeman, Mont., chapter as information center for all inquiries about tourists and other individuals in the Western earthquake area.

A spokesman said any inquiries about individuals should be filed with local Red Cross chapters for relay to Bozeman.

[Montana Standard; August 19, 1959]

EMERGENCY FOOD READY IF NEEDED

HELENA, Mont. (AP)—Federal agricultural officials Tuesday authorized the state to distribute emergency supplies of federal food to the scenic, quake-torn Madison Valley, if relief is asked.

State Controller, William F. Koch said no request had been made Tuesday evening, although there were

reports that a food shortage exists for some of the widely dispersed refugees, some of whom have put up shelters on mountain tops.

Koch said the state has large supplies of flour, cornmeal, rice, dry milk, eggs, butter, and cheese.

[Montana Standard; August 19, 1959]

ST. VINCENT DePAUL ASSISTS REFUGEES

The St. Vincent DePaul truck from Butte went to Ennis Tuesday morning laden with clothing and blankets for flood evacuees.

Taking the truck to the scene were Phil LaComba and Al Guay, Butte, volunteer workers.

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BLOOD FLOWN TO STATE

CHEYENNE, WYO. (AP)—A Wyoming Air National Guard C45 took off late Tuesday to fly 30 units of blood to a Bozeman, Mont. hospital for victims

of the severe earthquake which rocked the Yellowstone National Park area.

[Montana Standard; August 19, 1959]

LT. GOV. CANNON IN HEBGEN AREA

DILLON (AP)—Lt. Gov. Paul Cannon, accompanied by his son, Ross, left for the earthquake disaster area at Madison Canyon Tuesday afternoon.

He told newsman he hoped to arrive at the leaking Hebgen Dam late Tuesday night after a round about

trip into Idaho and to West Yellowstone.

Cannon said he plans to walk into the disaster area from the damsite. About a seven mile stretch of mountain lake front is reported devastated.

[Montana Standard; August 19, 1959]

THE EARTHQUAKE

Most natural phenomena can be foreseen and, consequently, prepared for. It is not this way with an earthquake, however. Mother Nature remains completely inscrutable when it comes to wrinkling her face, or shrugging her shoulder. This is why the temblors which struck so suddenly and violently in and nearby Butte also struck terror in the hearts of so many people. It appears now that the damage caused by the quake, including killed and injured, will reach catastrophic proportions.

Still, this is the way Mother Nature rearranges things. In a billion years the area around Butte has changed so much that anyone here in one of the past periods would not have recognized it in the next period. When this area was an inland sea, there was an island

reaching approximately between where Butte now stands and Lima.

Extreme violence in the form of volcanoes formed our mountains and also deposited the minerals which make Butte the richest hill on earth. Once the Missouri and the Yellowstone Rivers flowed into Hudson's Bay. The shifting of a few glaciers and water's propensity to seep and form escape hatches brought about the present channels of the two rivers.

Geologists say that one day our mountains will have been worn down so that the area around here is flat. That would be the day!

[Editorial]

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CURIOUS ADVISED TO AVOID MADISON RIVER AREA; ROCK SLIDES CONTINUING

By Edward A. Coyle

Curiosity seekers are advised to stay away from the Madison River disaster area, as earth tremors continue to rumble through the canyon, causing minor rock slides, Lt. Cmdr. C. E. Davis, commanding officer of the Butte Naval Reserve Division, declared Wednesday night upon his return from the scene.

"Persons should stay away from the entire area unless they have urgent business there," Cmdr. Davis stated. "There is nothing to be seen, as a matter of fact, people can get a better idea of the immensity of the landslide and the damage caused in the canyon by the earthquakes by looking at the pictures carried in the local newspaper, than they can by trying to get a first-hand view."

Earth Continues to Tremble

The naval reserve leader said that all day Wednesday the ground trembled with one minor quake after another.

"We had quakes almost every 30 minutes and at short intervals dust pillars could be seen rising from the huge hole in the mountain on the west side of the canyon from where the big landslide broke loose, as more and more rock, dirt and trees tumble down," he reported.

Cmdr. Davis reported that big crevices have been spotted in the other side of the canyon, and dust clouds plainly indicated slide activity there, also.

New Springs Pose Hazards

In addition, the quake activity has opened new springs on both sides of the canyon and these pose further hazards, he said.

"The area is absolutely unsafe at the present time, and is certainly no place for sightseers," he commented.

Four scuba divers were sent Wednesday into the big lake that is forming behind the landslide barrier, Cmdr. Davis reported.

Working in teams, the divers used a 35-foot rope and in many places, they reported, they were unable to touch bottom.

The water was so murky that the divers were unable to determine if there were any bodies trapped in the depths of the pit. They reported they had contacted by touch some shapes that might have been overturned trailers or cars, but the silt and debris in the water hampered breathing to the extent that they were unable to prolong their search.

Divers From Anaconda

Two of the divers were Leo Staat and Noel Shuee of Anaconda, members of the Deer Lodge County Rescue Unit; the third was Don Blodgett, also of Anaconda, and the fourth an unidentified youth from Ennis.

"There is not one drop of water coming out the north end of the landslide across the canyon," Cmdr. Davis reported. He stated that the normal springs are feeding the river north of the slide, but that the upstream level of the Madison is dropping rapidly.

He said Army Engineers and Bureau of Reclamation officials made several flights over the area Wednesday, but there was no report as to their conclusions on what can be done with the slide and the enormous body of water building up behind it, he said.

Search Must Wait

Cmdr. Davis said that nothing much can be done in the area until the earthquake activity subsides and the danger of more slides is removed.

Cmdr. Davis led Navy and Marine reservists Wednesday on a search for possible victims along the river bed, working north from the slide for approximately one and a half miles. The searchers tore apart jams of logs and debris as they combed the river bed and banks.

"We worked under considerable difficulty," he said. "What water there is in the river bed is very cold, and the river is loaded with broken trees and other debris. The Navy men and Marines did a wonderful job, however, and clearly showed the value of the training they have received."

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ENNIS RESIDENTS ARE ALLOWED TO RESUME NORMAL ACTIVITIES

By John Calcaterra and Frank Quinn

ENNIS—"It is safe for Ennis residents to resume activities," Mayor Charles E. M. Bauer and the Ennis City Council said in a joint prepared statement Wednesday noon. It was the best news Ennis has had this week.

The danger of a flood in the Ennis area passed with word from Hebgen Dam that the "dam will hold." A 20-foot inland tidal wave had sloshed over the crest of the dam after the Monday night earthquake and washed down the Madison river. It was first reported that the dam had been breached.

Ennis residents were evacuated as a precautionary measure.

Siren Will Be Signal

When the evacuation order was rescinded Wednesday it was announced by the mayor and council that a warning signal, in event of renewed threat of a flood, would be one continuous blast of the Ennis fire siren.

Aircraft carrying Army engineers criss-crossed the sky Wednesday high above the Madison Canyon as work of mapping began in the area.

While 42 or more persons were receiving medical attention at hospitals in Ennis, Bozeman, West Yellowstone and Butte for injuries suffered during the nightmarish experience, military and civilian engineers methodically took up the tangle of problems affecting Hebgen Dam and the Madison River.

Crews searching for additional survivors or injured were at work under direction of Frank Bailey, assistant supervisor of the Beaverhead National Forest which has headquarters in Dillon. They were working in the areas toward Ennis from where the gigantic landslide took place, and in the Wade and Cliff Lake areas. Navy and Marine Corp reservists were assisting in the search.

Survivors Interviewed

Foresters were also interviewing survivors of the slide trying to determine how many were in the death-ravaged area at the time of the avalanche. Donald W. Nelson, assistant forest supervisor said he would make

no estimate until he had talked to more survivors.

The Corps of Engineers had men Wednesday morning at the site where part of a huge mountain, slashed and ripped by the quake, was flung into the gorge, where it plugged the famous stream five miles below the man-made dam. The barrier which nature fashioned out of a peak at the Rock Creek camp grounds is 200 feet high, a mile long and a half-mile wide.

The east fork of the Madison River vanished beneath the avalanche and a fissure 30 to 50 miles long was opened from Hebgen to West Yellowstone.

'Dam Will Hold'

Montana Power Co. engineers reported their inspection of the imperiled dam structure showed it definitely will continue to hold back the broad expanse of water impounded behind it.

Army engineers flew back and forth across the gashed and shaken area, making aerial surveys, recording elevations and taking photographs. It appeared that the main engineering problem immediately facing them was obtaining a means for relieving the tremendous pressure levied against the nature-made plug dam. Water between there and the dam was estimated at 2½ miles in length and 50 feet deep at the slide location.

Campers Taken to Safety

All persons known to have survived the earthquake in the Rock Creek camp ground region had been removed to safety by 8 o'clock Tuesday night. Highway patrol and Army personnel helped round them up.

Naranche and Konda, Butte contracting firm engaged in a project in Gallatin County, reached the lake Tuesday night with heavy machinery. A temporary road was chewed out in the locality where the original road, a portion of Montana Highway No. 1, disappeared into the water near the slide. Authorities near here emphasized Wednesday, however, that only trucks and jeeps could travel the detour, and no automobiles were being permitted to use it.

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SAD, MAD, GLAD, GRATEFUL—THESE WERE THE PEOPLE IN THE QUAKE

By Ken Lewis

Big news stories usually consist of small happenings. Reporters call in the happenings and editors put them together to give you the full dramatic picture.

I spent nearly two days in the Ennis-Hebgen earthquake area and saw the small picture.

I climbed on the enormous landslide and hoped the rumble I heard was thunder. I saw the twisted pieces of metal that had been automobiles, saw the rents and tears in the blacktop highway and the collapsed mountains.

I saw the battered, dead bodies and the bruised, injured survivors—and the children who had lost their parents.

But most of all I saw people.

There was the Oregon tourist who thought the quake was a personal affront.

She and her husband were shaken out of bed and later evacuated from an area just below the landslide. Somehow or other she seemed to hold Montana (or Montanans) to blame for spoiling her vacation.

And then there was the 81-year-old refugee who appeared unconcerned (or unaware) with what was going on.

I talked with an elderly lady who had lived in the Madison Valley all her life and "noth'n like this ever happened before"—and a nurse who had flown in to help the injured who said, "It looked like the mountains have blown up."

—The boy with an injured hand eager to talk of his brush with death in the big slide area.

I saw indignant families who hadn't wanted to

leave the Wade Lake area where they had their camping equipment and cars.

There were also grateful tourists, glad to be alive, who wondered if it was safe in Ennis, and "wouldn't it be safer in Bozeman where there aren't any mountains."

I heard a bartender complaining that the sheriff allowed him to stay open all the night of the quake. Refugees drank 10 gallons of coffee but didn't buy a drink.

I heard rumors.

—There are at least 150 people under the slide. The slide is 3 miles long and 500 feet high (actually it is not certain there are any people under the rocks and the slide is about 1 mile long and 100 feet high.)

I listened to officials—an informed sheriff, hard-working city policemen, highway patrolmen and tired forest service employees.

There were groups of newsmen. There was only one phone.

I was aware of unusual cooperation between the various official agencies working in the disaster region—and amazed at the lack of a central organization to direct the emergency work.

There was a group of boys from Dillon who did a man's job of patrolling the empty streets of Ennis and protecting the deserted houses.

And there were refugees from the evacuated town of Ennis. Worried refugees who wondered if they would ever feel safe in the valley again.

They wondered if the man-created dam could stand against the forces of nature when even mountains collapse.

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MAN WHO ESCAPED DEATH SAYS PRAYER SALVATION

By John Calcaterra

ENNIS—"Prayer was our salvation," Melvin Frederick of Elyria, Ohio, said Wednesday in telling how he and his family escaped death at the Rock Creek camp ground, which was ripped apart by the earthquake of Monday night and accompanying landslides that night and Tuesday morning. Frederick told how he saw a whole mountainside crash down on the camp area. His story follows:

"We arrived at the south end of the camp about 6 o'clock Monday night and set up a tent. The place was full. There were about 21 people in the immediate area. I know all of them didn't get out. I am afraid there may be as many as 50 persons buried in that locality.

Roar Was Tremendous

"I was sleeping with my son, Paul, 15, and George Whittemore, his cousin, 15, in the tent. My wife and daughter Melva, 16, were sleeping in the station wagon. It was about 11:38 when the quake struck. At first I thought it was a bear tearing through the nearby trees. Someone shouted, 'It's a tornado or an earthquake.' There was a tremendous roar. Outside the tent, and looking upward, I saw the whole side of a mountain collapse. It looked like a huge waterfall.

There was a gush of air, followed by a wave of water from the Madison River.

"My son, Paul, was washed downstream about 50 yards. He was able to get back to the bank, but was pinned between two trees and a trailer. Water and mud engulfed him up to his mouth. We were unable to extricate him. I thought he was doomed to death. I prayed hard. There was a miracle, for as we gave one last all-out effort we pulled him loose.

Many Knelt To Pray

"I had heard my wife and daughter scream. They told me later they felt the car roll over, but that it came to rest on its wheels. One door was all that could be opened. The other was jammed. Someone helped them out of the car, just as it rolled over again. They eventually made their way to high ground where they and others knelt and prayed. Prayer was the salvation of many."

The Whittemore boy suffered a severe eye injury and was brought to Butte. Mrs. Frederick and Melva escaped injury. Paul Frederick suffered a severe hand injury which resulted from his being pinned between the tree and the trailer.

[Montana Standard; August 20, 1959]

ALDERMAN SKELLEY AND FAMILY SAFE

Third Ward Alderman Peter J. Skelley and his family, who were on a fishing trip in the Yellowstone area when Tuesday's earthquake hit, were not injured, he notified relatives here late Wednesday night.

Skelley telephoned his sister-in-law, Mrs. William

Mullane, 725 W. Granite, that blocked roads and downed phone lines had prevented him from reporting earlier that he and his family and a neighbor boy with them are safe.

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MORE THAN ONE PERSON BLAMED PROWLING BEARS WHEN TRAILERS BEGAN TO ROCK IN EARTHQUAKE

(Editor's note: Robert Barr, Seattle Times reporter, was vacationing in Montana when Monday's earthquake struck. Following are excerpts from his interviews with survivors.)

By Robert Barr

ENNIS, Mont. (AP)—More than one person blamed prowling bears when their trailer homes began to rock in Monday's earthquake.

Nature quickly set them right.

"The bed began to rock and shake," said Mrs. Eugene H. Bair of Stone Mountain, Ga. She was alone in her trailer—her husband had gone to Helena, the state capital, for medical treatment.

"Then I began to hear a roar. It got louder and louder. I thought it was a bear.

'You Do Crazy Things'

"Then water started coming in through the roof. The whole front of the trailer started caving in toward me. The windows broke. Everything inside was tumbling and breaking. You do crazy things at a time like that. I grabbed my car keys and billfold and crawled out the front window."

Mrs. Bair's trailer was at Rock Creek Campground on the Madison River, where tons of rock fell away from a mountainside. Several campers were killed; others may be buried beneath the slide.

Trees Fell All Around

"Trees were falling all around. Everywhere people were screaming and trying to wade out of the water," continued Mrs. Bair.

"I saw one mother who was lame. Her three children were floating down the river. She was

shouting and her husband was shouting. They finally managed to reach the children and drag them to shore.

"Another man and his wife were chasing their children downstream. The children were floating on air mattresses, on which they had been sleeping. The parents finally got them out.

"I tried to get to some people who were camped nearby to see if they were all right. Their car was gone. So were they. I don't know their names. I never saw them again."

Wade Lake Story Told

About 40 refugees are being cared for in the Ennis elementary school. Among them is Frank Dodson of Roy, Utah, who was camped at Wade Lake in the mountains above the river. He, too, thought the first motion of his trailer was caused by a bear.

"Then the trailer started bouncing at least three feet off the ground," he said. "I knew then it wasn't a bear." The Dodson's two children slept peacefully through the quaking moments.

Dodson said he looked out at the lake, normally placid and calm. "Waves were bouncing straight up, 10 feet high," he recalled. "The lake bottom was being tossed up onto the banks. Mud, rusty tin cans, bottles and fish were heaved onto the shore."

At daylight Dodson walked to nearby Cliff Lake, where Mr. and Mrs. E. H. Stryker of San Mateo, Calif., had been killed. A rock large as a truck had rolled over their tent.

Their three sons were sleeping in a separate tent. They were untouched.

[Montana Standard; August 20, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 175

MONTANA STANDARD

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WISE RIVER JOHNSONS, EGGED ON, DESCRIBE HOW QUAKE PLAYED SHELL GAME TRICK ON THE HENS

Earthquakes, like tornadoes, play strange tricks, sometimes mixing the comic with the tragic.

Tornadoes have been known to tear the feathers off chickens, leaving the birds otherwise unharmed.

Earthquakes also have strange effects on chickens, according to a report from the ranch of Mr. and Mrs. Howard Johnson in the Wise River district southwest of Butte.

Mr. and Mrs. Johnson said that at about the time the first earth shock struck early Tuesday, they heard a tremendous commotion from their chicken coops, about 10 yards from the house.

Upon investigation, they said, they discovered that every chicken capable of doing so had laid an egg, and that each of the newly-laid eggs was without a shell.

Only an earthquake, the Johnsons are convinced, could cause hens to lay eggs without shells in the first wee hours of the morning.

As to what use, if any, exist for eggs without shells, the Johnsons had no immediate statement to make.

After all, they have until the next earthquake to figure that out.

[Montana Standard; August 20, 1959]

ROOM RESERVED

WEST YELLOWSTONE, Mont. (AP)—A sign on the office door of the Yellowstone Lodge & Trailer Court reads:

"Left for Ogden, Utah, at 2:15 a.m. Tuesday, 18th

of August. Mae Hill.

"P. S. Will come back when quake stops."

[Montana Standard; August 20, 1959]

BUTTE CIVIL DEFENSE ALERT IS CANCELED

Mayor Vern Griffith and the Silver Bow County commissioners issued orders Wednesday afternoon to the Civil Defense organization here to cancel the CD alert, releasing all personnel from duty.

Cole Sullivan, director of the Butte group, said he wished to thank all who participated in Butte's attempt to aid the disaster victims.

[Montana Standard; August 20, 1959]

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ENNIS PEOPLE JOLTED AS SIREN WAILS

By John Calcaterra

ENNIS—The people of Ennis, already made jittery by a two-day flood-imperiled evacuation, got another jolt Wednesday night after they were allowed to return to their homes.

They were told that the signal for evacuating again in the event Hebgen Dam broke would be a prolonged blast from the city fire siren.

At 8:17 p.m., the siren blew.

Many people rushed to the street, some of them exclaiming wildly, "The dam's broke!"

Then, power went out all over the city to add to the confusion.

Fortunately, it was still light and the people were

informed quickly that the dam remained intact and there was no danger.

The cause for the alarm Beaverhead Forest officials explained, was a small grass fire started by three electric wires that were knocked down.

The breaking of the wires led to the blackout.

And the wires were broken by an airplane coming in for a landing at the Ennis airport. The plane came in safely and the pilot, identified as Bill Ladwig, Missoula, was unhurt.

Kerosene lamps and candles flickered as darkness arrived before power was returned 1 hour and 2 minutes after the whole thing had started.

[Montana Standard; August 20, 1959]

MONTANA PRISON CELLBLOCK DAMAGED SO BADLY IT IS ORDERED TORN DOWN

DEER LODGE, Mont. (AP)—Earthquake damage to the 90-year-old original cellblock at the Montana Prison was so bad that it was ordered torn down by top state officials Wednesday.

Warden Floyd Powell, in making public the damage, said Monday's quake created "the most critical time in the history of the State Prison."

Seventy-eight convicts, including the prison's most dangerous, were evacuated from cellblock No. 2, where convicts last April obtained the rifle that killed the deputy warden and two inmates.

They have been crowded into cellblock No. 2, the one in which escape-bent convicts made their bloody stand.

Powell said this 200-cell building now holds 375 men. The other 186 inmates are on the nearby prison farm.

The earthquake left daylight showing between the

roof and brick walls of Cell Block 2 and broke two dormer tops. A state building inspector said the building might collapse and recommended it be torn down.

Gov. J. Hugo Aronson and Secretary of State Frank Murray, upon receiving the report Wednesday, ordered the building razed. Powell said work would begin at once.

Plans are to remove the women inmates from their separate building at the prison as soon as new quarters can be found. The women's building then will be used as a temporary maximum security block for the more dangerous convicts.

Powell said it is hoped a way can be found to erect a temporary steel structure on the old cellhouse location.

[Montana Standard; August 20, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 177
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MONTANA STANDARD

QUAKE CLAIMS ANOTHER VICTIM

Area Rocked By 5 New Earth Tremors

By Tom Maddox

WEST YELLOWSTONE PARK, Mont. (AP)—A woman injured in an earthquake-caused avalanche died Thursday. Her death brought the known dead in Monday night's southwestern Montana shocks to nine.

(United Press International Wednesday also listed the death toll at 10.)

Four others are believed dead. More victims may be hidden beneath landslides and in a lake and a river.

Mrs. Ray Painter, 42, Ogden, Utah, died in a hospital at Bozeman, Mont.

She was injured at Rock Creek campground when the side of a mountain toppled into the Madison River. She was brought out by helicopter and airplane.

Five more earth shocks shook the disaster area Thursday. There were no reports of damage. Frightened people in West Yellowstone ran into the street in midmorning.

Park Has 372 Aftershocks

The Yellowstone National Park area has been rattled by 372 aftershocks since the big quake, the U.S. Geodetic Survey said.

Skindivers searched the cold, muddy waters of Hebgen Lake, three miles north of Hebgen Dam Thursday. A section of highway fell into the lake there and is reported to have carried one or two cars with it.

After making several dives, the skindivers were ordered to quit because it was feared continuing quakes might cause an overhanging bluff to collapse.

Despite a driving rain, about 100 volunteers clambered over the landslides hunting for victims.

Officials decided against tackling a 50-million-ton landslide with bulldozers. A surface search failed to disclose any more victims.

The side which bore down on Rock Creek campground after Monday night's heaviest shock is almost all rock.

Engineer to Check Slide

The Army Engineers Corps said it will send crews in to check the landslide to determine what, if anything, can be done about burrowing into it.

One official said the landslide may hold forever the secret of whether campers are buried beneath it.

Eight bodies have been recovered, most of them between Hebgen Dam and the landslide. Reports of

eyewitnesses indicate four other persons died.

Officials say they believe the landslide caught other persons as it split off a mountain and thundered across the Madison River.

Dentist Tells of Missing

A California dentist, who came out of the hard-hit Rock Creek camping area, supported this belief. Dr. Reed Quesnell of Arcadia said:

"We have vacationed there every summer for 10 years. And every year there have been two trailers in the same place. They were there again this year, so close to the river they could fish from their doors. And those two trailers did not come out of the canyon when we were evacuated.

"There undoubtedly are many others buried with them."

A woman believed drowned when her home at the edge of Hebgen Lake was swept away turned up alive. Mrs. Grace Miller, about 60, had walked 15 miles to a ranch.

Officers of the Idaho and Wyoming Highway Patrols who have been stationed in the disaster area were withdrawn Thursday. The Montana Patrol force was reduced.

Guard to Watch Property

Montana National Guardsmen will be moved into the area to prevent looting of evacuated campers' property.

The gigantic task of opening 75 miles of landslide-plugged roads in the western half of Yellowstone Park will begin next week.

"There are still some overhanging ledges above some of the rockslides and it's too risky to ask crews to start bulldozing out the slides now when there is a threat of more tremors" a park ranger said.

Although roads in the western half of the park are closed, all park gates except West Yellowstone are open to tourist travel.

Four structures, including the main administration building at park headquarters in Mammoth, near the park's north border, are closed pending inspection by a safety engineer.

Two seismographic crews have arrived at the park to study underground activities and the possibility of more aftershocks.

HEBGEN LAKE, MT 1959 SERIES pg. 178

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In the river below the mountain top slide, search parties joined hands to keep from slipping in the rock-filled river. The main Madison River channel flow was cut off by the huge slide. But springs and tributaries

continue to feed water into the river bed below the slide.

About a one-mile stretch was covered Thursday.
[**Montana Standard; August 21, 1959**]

TEAM TO SURVEY QUAKE REGION

HELENA (AP)—A three-man team of federal civil defense and Red Cross officials conferred in Helena with State Highway Engineer Fred Quinnell Jr., before beginning a preliminary survey Thursday of the Madison Canyon quake area from Monday night's disastrous earthquake in the Madison River canyon.

Meeting with Quinnell and William Huffine, division engineer for the U.S. Bureau of Public Roads, were Harold Tepper of Everett, Wash., deputy director of the Office of Civil Defense Mobilization, Frank Chick, regional engineer for the OCDM and Clyde

Baird of the Red Cross.

Major Gen. Barney, of the Corps of Engineers at Omaha, is scheduled to join the survey team for a tour of the damage area.

Quinnell said highway crews are working to improve the forest road from Hutchins bridge to connect with U.S. 191 and 20 over Reynolds and Targhee passes into West Yellowstone. Traffic over this route has been restricted to emergency travel.

[**Montana Standard; August 21, 1959**]

HEBGEN DAM IS UNDER STUDY, ENGINEER DESCRIBES DAMAGE

Water has been shut off from the damaged spillway at Hebgen Dam and is now flowing through the undamaged tunnel, Robert R. Rend, superintendent of power for The Montana Power Co., said here Thursday after spending two days inspecting the structure.

He said three cracks, the widest about two inches, have appeared in the concrete core that runs the length of the dam, which is 718 feet long. He said there is no water seeping through them.

The engineer, who flew to the dam Tuesday morning before dawn, said a complete survey of the dam will be made within the next few weeks to determine what should be done to repair it. He said the spillway, which is lined with four-inch-thick concrete, experienced considerable cracking. The spillway is at the northeast end of the dam, and the tunnel that flows through the bottom of the dam is at the other end of the dam.

Direct current electricity for the Hebgen camp is being produced by generators that are activated by water flowing through the tunnel. A 60-kilowatt portable generator was brought to the dam Wednesday.

Rend said he had been to the scene of the slide below the dam and believes it will be about 40 to 45 days before the flow of the Madison River out of Hebgen Dam will be sufficient to top the slide and pour down the old river channel. A lake is now being formed at the upstream edge of the slide.

U.S. Army Corps of Engineers personnel are now at the slide site, studying what should be done, Rend said.

Montana Power people who have been at the dam include Cecil H. Kirk, vice president of electric operations; R. M. Ball, chief engineer; H. H. Cochrane, consulting engineer; Glen Jones, construction manager, and Dick Engstrom, photographer.

[**Montana Standard; August 21, 1959**]

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ANSWER TO BIG QUESTION VERY CONFUSING

Two Post-Standard reporters Frank Quinn and Ken Lewis, were the first newsmen on the Ennis-Virginia City scene of the earthquake tragedy early Tuesday.

Their first question was the question on everybody's mind.

"Is the dam going to hold?"

Sheriff Lloyd Brook was the only man at that time

in the morning in touch with the whole situation as it was then known.

This was his answer.

"A plane is flying over the dam now. The pilot says there are two messages painted on its face. One is, 'S.O.S.,' the other says, 'O.K.'"

"Does that answer your question?"

[Montana Standard; August 21, 1959]

WHAT DID 'O.K., S.O.S.' MEAN?

What did "O.K., S.O.S." mean? That was the question worrying plane pilots who were checking on damage to Hebgen Dam early in the morning following the quake. An arrow pointing downstream, not shown in the picture, was seen by the pilots but not understood. The dam is still holding. Three small

cracks have been found in the concrete core running its length. Earthfill is cracked, as shown in photo, but Montana Power engineers say it is not significant. The shadow, center, top, outlines core wall.

[Montana Standard; August 21, 1959]

SIZE OF LANDSLIDE IS MEASURED

ENNIS—Donald W. Nelson, assistant regional forester from Dillon, Wednesday night released the forest service's preliminary measurements of the mass that ripped from a mountain below Hebgen Dam and piled up at the mouth of the pass.

Length, one-half mile; width, one-third mile; height at lowest point, 150 feet; height at highest point, 300 feet.

[Montana Standard; August 21, 1959]

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SCHOOL OF MINES SEISMOGRAPH 'BLEW ITS TOP'

One seismograph at the Montana School of Mines "blew its top" during the earthquake Tuesday, becoming useless as far as recording the intensity of the temblors was concerned. However, another recording device called an accelerograph, less sensitive and used to record only strong quakes, went into action for the first time since it was installed following the last strong quake in Helena in 1933.

Because the only man at the school who can read the delicate and complicated instruments is on vacation, the graphs were sent to Washington, D.C., for interpretation. Dr. Edwin G. Koch, president of the

school, said Thursday night that recordings from two other seismographs many miles away must also be read before the center of intensity can be computed.

The "man who wasn't there," Dr. Stephen S. Nile, is now studying the effects of the quake at the scene. When the temblors occurred he was in the Gallatin Valley.

The big quake early Tuesday morning jolted the needle of the more sensitive seismograph right off the chart.

[Montana Standard; August 21, 1959]

QUAKE INQUIRIES FLOOD INTO RED CROSS OFFICE

BOZEMAN, Mont. (AP)—Inquires about persons feared to have been in the quake-torn Madison River Canyon area of southwestern Montana flooded into Red Cross headquarters in Bozeman for a third day Thursday.

More than 1,500 inquiries had been received by late afternoon.

Included in the total was one from Poland, from the father of an attache at the Polish Embassy in

Washington, D.C. Before volunteers could determine his whereabouts, however, the attache, Jan Woloszyn, telephoned the embassy and said he and his wife were all right. He said they had left the quake area about three hours before the first big jolt.

Officials, attempting to cut down the calls, urged all persons who had been in the area to let their relatives know they are all right.

[Montana Standard; August 21, 1959]

POTTER IS DESIGNATED QUAKE COORDINATOR

HELENA (AP)—Gov. J. Hugo Aronson Thursday designated Civil Defense Director Hugh Potter to coordinate work of all governmental agencies in the earthquake affected areas of Madison and Gallatin Counties.

Aronson also said he will limit his trip to Lethbridge to see Canadian Prime Minister Diefenbaker to less than eight hours, leaving about 4

p.m. Friday and returning before midnight.

Montana's chief executive said additional communication facilities are being dispatched to the Hebgen Lake area immediately, "just to be on the safe side."

Aronson said those on the scene report there is presently no cause for worry that the dam will go out.

[Montana Standard; August 21, 1959]

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POWER CO. ASKS CHIMNEY CHECK

Chimneys in an earthquake area take a terrific "beating" and can easily be damaged to the point where they constitute a safety hazard, Montana Power company officials warned Thursday.

Quakes loosen mortar and bricks from the inside of the chimneys which could not only weaken the structure but stop it off, preventing proper venting necessary for combustion.

Homeowners throughout the area were urged by the company to have their chimneys checked by heating contractors or tinnerns and have repairs made immediately.

Several instances of stopped-up chimneys where damage was not visible from the outside have already been reported.

[Montana Standard; August 21, 1959]

QUAKE-JARRED WALL FALLS ON BUTTE HOME

An earthquake-weakened brick wall of a vacant West Copper street house crumpled late Thursday afternoon, endangering a mother and baby in an adjacent home.

Mrs Mike Fior, 221 W. Cooper, was home alone caring for her sister's baby, Billy Stephenson, 3 months, when bricks started falling against the east side of her home about 6:40 p.m.

Firemen sped to the scene and braced the wall of the vacant two-story building at 219 W. Cooper. Later, Fire Chief John McCarthy and Asst. Chief Len Gerry used pike poles to pull down the rest of the brick veneer wall.

Mrs. Fior and the baby were unhurt. The Fior's white frame home received only scrape damage.

[Montana Standard; August 21, 1959]

GAS SHUT OFF IN BUILDING HERE

Earthquake damage to an apartment building at 421 S. Colorado has resulted in a shutoff by the Montana Power Co. of natural gas service to the three tenants occupying the structure, company officials said Thursday.

Tuesday morning, a few hours after the 'quakes shook Butte and other areas in western Montana, a resident of the 400 block on South Colorado reported to the power company that bricks on the south wall of the apartment building had cracked and pulled loose from the wall. Investigation by Montana Power

personnel showed the bricks were being held up by the gas pipes, creating a strain on the pipes serving the first and second floors of the building.

Service was shut off because of the "unsafe condition of the brick wall," according to Al Ducich, Butte division gas superintendent for Montana Power. He explained that if the wall falls, it likely would rupture the gas pipes, which would create a hazard if gas was flowing at the time.

[Montana Standard; August 21, 1959]

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STATE HAS NO FUNDS TO REPLACE ROADS RUINED BY TREMORS

HELENA (AP)—Montana lost 20 miles of highway in the earthquake which jolted the Madison Canyon.

This statement was made in a televised talk Thursday night by Chairman Harry L. Burns of the Highway Commission. He said seven mile of Montana Highway 1 which bordered the river between Hebgen Dam and the earthquake slide were obliterated by the

Monday night quake.

Another 13 miles, he said, were so badly damaged that this portion, too, will have to be rebuilt.

Burns pointed out the state has no money for this 20 miles of construction. He mentioned that "an act of Congress" may be necessary to provide a loan for the reconstruction. He gave no figure.

[Montana Standard; August 21, 1959]

PAUL CANNON CAUTIONS QUAKE SIGHTSEERS

HELENA (AP)—Lt. Gov. Paul Cannon Thursday night cautioned people against embarking on a sight seeing tour of the earthquake-devastated Madison Canyon area.

Cannon, of Butte, made the comment after a two-day tour of the area. He said several sightseers were climbing the lower end of the largest slide when another severe earth tremor occurred at noon Thursday. This caused more rocks to slide down the canyon, but

missed the sightseers.

"It's a very dangerous area," he said. "There were three shocks this morning of fairly severe intensity. And these shocks are recurring intermittently."

Cannon will become acting governor Friday afternoon while Gov. J. Hugo Aronson is in Canada for a visit with Prime Minister Diefenbaker in Lethbridge. Aronson plans to return late Friday night.

[Montana Standard; August 21, 1959]

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VISITORS ARE BARRED FROM QUAKE REGION

Move Aimed At Vandals And Thieves

WEST YELLOWSTONE, Mont. (AP)—Visitors were barred Friday from the earthquake-torn area of southwest Montana in a move to prevent thefts and vandalism.

Sheriff Donald J. Skerritt said unauthorized persons found in the Hebgen Lake and the Madison Canyon where Monday night's quake tumbled down a mountaintop to dam the river will be arrested as looters.

Exceptions were made for rescue workers and persons who might have property there.

The sheriff made his announcement as emphasis shifted from searches in the area to checking whereabouts of persons who may have been near when the temblors struck.

The Red Cross at Bozeman Mont., reported it is working with local Red Cross chapters throughout the country to try to locate people who might have been in the area. It reported receiving 2,000 queries since the quake, but said the rate has dropped sharply. Many tourists at Yellowstone National Park nearby are known to have left without checking out.

Area Carefully Searched

The sheriff said the entire distance between Hebgen Dam and the big slide—seven miles downstream at Rock Creek Campground—has been searched thoroughly and that any bodies remaining are buried beneath the slide, estimated to contain 50 million tons of earth, rock and debris.

Water began rising slowly behind the new barrier. Robert R. Rend, an engineer for the Montana Power Co., which operates Hebgen Dam, estimated the water may fill the canyon within 40 to 45 days.

After that it will spill over into the river in a waterfall unless officials decide to try to remove the huge slide.

Six of the persons injured in the quake-caused slides remained in hospitals where they were taken Tuesday.

Bennett Boy Still Critical

Only the condition of Phillip Bennett, 15, of Coeur d'Alene, Idaho, was listed as critical. His mother, Mrs. F. R. Bennett, is in the same hospital at Ennis but is reported improving. The four other members of the family were killed.

Still in Deaconess Hospital at Bozeman are Mr. and Mrs. Joseph H. Armstrong of Victoria, B.C., and Mr. and Mrs. Clarence Scott of Fresno, Calif. All were reported in fair or good condition.

The toll of known dead remains at nine. Mrs. Ray Painter, 42, of Ogden, Utah, died Thursday. No trace has been found of the body of another Utah woman, Mrs. Thomas Stowe of Sandy, who is missing.

Ten Montana highway patrolmen guarded entrances to the hardest-hit area to keep people out in accordance with Sheriff Skerritt's order.

No Guardsmen Called In

Some National Guardsmen first were reported called in, but Maj. Gen. S. H. Mitchell said no request has been made for Montana Guardsmen and none have been sent to the area.

Downstream along the Madison, around Ennis, conditions were reported as returning to normal rapidly.

Gov. Hugo Aronson of Montana cancelled trips to Lethbridge, Alberta, and Great Falls, Mont., to remain at his desk so he could give speedy handling to problems developing as a result of the quake.

A helicopter was pressed into service by telephone linemen seeking to restore more normal service to West Yellowstone.

Tourists already are streaming back to the park, even though some rockslide-closed roads in the western section won't be open for several weeks.

Chief Ranger Frank Sylvester said 12,000 arrived Thursday—only 4,000 fewer than on a normal day. Most of them, he said, were more interested in seeing the park's scenic wonders than in viewing quake damage.

[Montana Standard; August 22, 1959]

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NO MORE QUAKE BODIES EXPECTED

WEST YELLOWSTONE, Mont. (AP)—The man in charge of the grim mopup in southwestern Montana Valley said Friday "it is extremely doubtful that any more bodies will be found."

Hugh K. Potter of Helena, Montana's civil defense director, said the big mountain slide area seven miles below Hebgen Dam has been thoroughly searched.

The slide dammed the Madison River so tightly that a new and probably permanent lake is slowly forming.

A campground at Rock Creek, a favorite spot for touring fishermen, now is under millions of tons of rock and water.

In Potter's opinion, anyone there when the quake struck Monday night undoubtedly was covered by the slide. But, he said, there is absolutely no way to tell who, if anyone, was there that tragic night.

The camp was located between U.S. Highway 287, also known as Montana 1, and the world famous trout waters of the Madison River.

As Potter put it from his temporary headquarters at

West Yellowstone:

"I don't think there could have been an eyewitness. Anyone close enough to the slide to see anything could not have got out. You can't imagine the enormity of this thing until you see it."

He said search and rescue parties have been called off as there seems to be nothing left for them to find.

"We do not want any volunteers and we do not want any sightseers, either by car or plane," he added.

The stricken area has been sealed off to all but authorized persons. This includes both sides of Hebgen Lake, the new lake, and the Madison River virtually from West Yellowstone to Ennis, a distance of 63 miles.

To point up the futility of rescue operations in the area between Hebgen Dam and the slide, Potter mentioned a new Chevrolet that "sits on a sidehill.

"There is no possible road or trail to it. Water rising in the new lake will gradually submerge the car.

"We have no idea whose car it is."

[Montana Standard; August 22, 1959]

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SCHOOL OF MINES SEISMOGRAPH CALLED INVALUABLE IN STUDY OF EARTHQUAKE

WASHINGTON (AP)—The U.S. Coast and Geodetic Survey said Friday there is a possibility that a few more "relatively strong" aftershocks may occur in the Yellowstone Park, Wyoming, area which was the center of Monday's earthquake. But the agency said there is unlikely to be any additional damage.

Seismologist Leonard Murphy told a reporter it is characteristic of earthquake phenomena that aftershocks may occur for weeks and even months after a main tremor, with some relatively strong ones among them. But neither the relatively strong ones nor possibly hundreds of smaller ones approach the intensity of the original quake, he said.

370 Shocks

Murphy said that as of 9 a.m. MST, Friday, approximately 370 after-shocks had followed Monday's major quake.

He added:

"The after-shocks are now decreasing in energy content. But there is a possibility that a few more relatively strong after-shocks will occur. These would definitely not reach the strength of the major original shock but may occur in the next few days or the next few weeks."

Epicenter in Madison Canyon

A Coast and Geodetic Survey spokesman said the epicenter apparently was at about 44½ degrees north

latitude and 111 degrees west longitude, with the real center probably some 20 to 25 miles below the earth's surface.

(This would place the epicenter directly in the Madison Canyon area.)

This location was established on the basis of readings reported from some 50 earthquake recording stations in all parts of the world.

The quake was figured to have started at 11:37.13 a.m., MST, on Aug. 18.

Butte Seismograph Invaluable

A spokesman said that the seismograph record at the Montana School of Mines had been invaluable in helping fix the location of the quake. He said the recording showed the quake onset was 2:38.44, which was of assistance in figuring the location when compared with other recorded times.

However, he said, the force of the earthquake was so great that the Montana recording instrument swung so severely during the next seven hours that it was impossible to separate the record of one wave from another.

From a reading supplied by the California Institute of Technology, the survey fixes the magnitude of the quake at 7.1.

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MONTANA STANDARD

STATE NEWSMEN ARE WELCOMED TO YELLOWSTONE; SUPERINTENDENT SAYS CONDITIONS ARE SAFE

YELLOWSTONE PARK, Wyo. (AP)—Conventioning Montana newspapermen were welcomed to Yellowstone National Park Friday by Supt. Lemuel Garrison, who said their presence helps counteract tourist fear of more earthquake activity.

Delegates to the Montana State Press Association's annual meeting heard park conditions described as normally safe.

Garrison said U.S. Geodetic Survey officials in Washington, D.C. advised him the intensity and frequency of the aftershocks to Monday's night quake are diminishing.

The park will remain open until its normal closing early in September although service will be on a limited basis because many of the 4,000 college student employees have left.

Parents of some of the summer workers wired money and ordered their sons and daughters home in the wake of the quake and later tremors.

The tourist total slipped from a normal 17,000 a

day to 10,000 Thursday.

Some park roads have been closed, particularly in the Old Faithful and West Yellowstone areas. Garrison said these roads will remain closed until workmen can safely work on them. Loosened rock is causing additional slides.

Garrison told the editors that on the night of the big earthquake, when park officials were without communication or fact, panic could easily have resulted.

But rangers hurried throughout the park advising as many of the estimated 18,000 visitors as could be contacted that they were as safe in the park as anywhere in the immediate vicinity.

He said the only injury reported was to a woman who leaped out of bed and sprained an ankle.

The superintendent said it seemed as though all of the coyote in the park howled during the earthquake Monday.

[Montana Standard; August 22, 1959]

OLD FAITHFUL INN CLOSED FOR NOW

YELLOWSTONE PARK, Wyo. (AP)—The more than half a century old Old Faithful Inn has been closed for the season.

It was closed for the first time this season the day after Monday night's earthquake damaged the rustic, frame building which can handle 750 to 800 persons. Then it was reopened and Friday it was shut down, at least until next year.

The Yellowstone Park Co. decided to close the inn because the summer employees, mostly college students, "were getting to the point where they were ready to leave the building every time there was a tremor."

Then, too, many of the employees were called home by anxious parents.

Across the road, the geyser, Old Faithful, so often pictured as the symbol of the national park system, has

continued its periodic performances with its old regularity.

However, Park Supt. Lemuel A. Garrison said, "there's been some change in activity of some other geysers. You would expect some. After all, we lived through a geological incident in a few minutes." He referred to the great quake Monday night.

The Old Faithful cabins and lodges will be kept open until Nov. 15, or one month longer than normal.

Old Faithful Inn suffered a broken water pipe which damaged the east wing.

Plaster and rock and mortar from a chimney plunged through the roof into the dining room Monday night, damaging the floor. This occurred at a time when the room was vacant and closed.

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WEST YELLOWSTONE IS STRANGE MIXTURE OF QUIETNESS, ACTION

By Colin Raff

WEST YELLOWSTONE—This usually bustling tourist center is a strange mixture of eerie quiet and high-tension activity.

The sun shines brightly and squirrels chatter incessantly in the tall pine trees. One might think it's just another pleasant day.

But West Yellowstone is just recovering from a nightmare, and the signs are all around.

Overhead, planes and helicopters drone continuously in the air. The West Yellowstone airport is seeing more activity than it ever anticipated, and the field is literally filled with aircraft, ranging from a giant Air Force Grumman Albatross to helicopters of varying sizes to Piper Cubs.

Planes and copters take off and land with almost as much regularity as one would expect at New York's busiest terminals.

The Air Force is a center of activity, with crewmen servicing planes and helicopters. The Montana Highway Patrol and Civil Defense Director Hugh Potter are busy at the airport.

Town Is Disquieting

Downtown, West Yellowstone presents a disquieting sight. Some commercial establishments are operating, others are boarded up.

Alternating signs along the main street say "Open," "Open for Business" and "Closed." One store has a sale, with all articles 20 per cent off.

"We don't know yet what's going to happen," says a restaurant owner. "The park gate is closed and it looks like the tourist season is finished."

A motel operator is more optimistic.

"We're going to keep going unless the quake gets worse" she says. "We think there'll be a lot of curiosity seekers. We've already got a number of reservations for this weekend."

Others in town haven't waited to find out. They've closed their stores for the season and boarded up the windows and doors.

A man walks down the street and a friend invites him in for a cup of coffee. "Nope," says the man. "I'm still a little jumpy. I think I'll just keep walking."

One of the merchants in town is happy about the whole thing. He's a youngster who sells an outside daily paper. "Used to sell 20 papers a day, but since this happened, I've been selling 150 to 200 a day," he says.

The highway to Hebgen Lake is not crowded but has a steady flow of traffic. Some are officials inspecting the area, others are geologists and engineers interested in the effects of the earthquake, and some are cabin owners who want to see what's left of their property.

Highway patrolmen have barricades along the way. The idea is to keep out curiosity seekers and allow in only those who have business in the area.

Underneath, everyone seems to be concerned about the future. They wonder if there will be another temblor as bad as the first one.

One of the men who lived through the nightmare puts it this way: "I wouldn't take a million dollars to have missed it, and I wouldn't take two million to go through it again."

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MONTANA STANDARD

FORCED DECISION SAVED FAMILY

DEER LODGE—A forced decision made Monday near Hebgen Lake by Mr. and Mrs. Ted Lynch of San Mateo, Calif., may have saved their lives and the lives of their four children. Certainly it saved them from the frightening experience of being in that area when the earthquake struck.

The Lynch family were in Yellowstone National Park Monday. That day they tried to find accommodations at Old Faithful Inn, but were turned

away when they did not have reservations.

They moved on into Montana by way of West Yellowstone and to the Hebgen Lake area Monday afternoon. They wanted to stop there for some fishing and an overnight camp.

But all camping areas were full, they said, so they continued to Deer Lodge, where today they are happily visiting relatives.

[**Montana Standard; August 22, 1959**]

DEER LODGE MAN SINGS TO EASE QUAKE FEARS

DEER LODGE—A fine Welsh tenor, facility with the guitar and some knowledge of old time songs were among weapons employed by William Hoskins against the fears and uncertainties of those hours when the earth trembled at West Yellowstone.

He and his family, with other relatives, are safely out of the stricken region now, and Mr. Hoskins is trying to settle back into the routine of his insurance business here after an experience which he sums up thus:

"I never experienced anything like it or ever hope to again."

The Hoskins party included his daughter, Mrs. Robert Fletcher and three children of Seattle, and his daughter-in-law, Mrs. William Hoskins Jr., and children of Billings.

They toured Yellowstone National Park and came out by way of the western gateway into the town of West Yellowstone Monday evening.

The children were stowed away in motel beds and in sleeping bags in the two automobiles. The adults of

the party chose to walk about town, stopping at shops and enjoying the company of other vacationers. They stopped between midnight and 1 a.m. (MSDT) in a restaurant for what proved to be the roughest lunch any of them had ever attempted to enjoy.

Hoskins and his daughter were thrown under a table by the impact of the quake. All the lights went out, he says, and everyone ran into the street.

He adds that there was no panic, and as other shocks came people seemed to take them as a matter of course.

Hoskins and the two women returned to their motel, where they found the children unharmed.

Later they returned to Deer Lodge by way of Idaho Falls.

But at three o'clock on the morning of the quake, Hoskins says, he was sitting outside the motel, "playing my guitar and singing my old time songs. It seemed to help folks take their minds off the trembling old earth."

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SURVIVORS OF QUAKE OVERJOYED BY BUTTE'S FRIENDLINESS

By June Dieckmann

It takes faith and friendly people to bolster laughs from a family who just a short 111 hours before were perilously close to being buried alive.

But that's what the Melvin Frederick family of Elyria, Ohio found in Ennis and Butte after they were rescued—injured but alive—from the earthquake-caused mountain slide in Madison Canyon.

The horror was over. And with the hospitality and help of everyone, Frederick and his wife and their children, Paul, 15, and Melva, 16, could laugh again Saturday afternoon as they talked with new-met friends in the Finlen Hotel.

"We've never met more friendly people than here," Frederick said gratefully.

"That's sure right," young Paul agreed while trying to pick up his favorite sandwich, hamburger and raw onion, with his injured right hand in splints.

The Fredericks were filled with thanks for their rescuers; the Ennis people who took them in; the Red Cross workers who are taking care of their needs, and the Butte residents and visitors who warmly are making them feel at home.

A spontaneous collection started among employees and patrons at the Finlen when word spread through the lobby that the Fredericks were in the hotel. More than \$50 was presented to the family.

"This all seems like a nightmare that turned into a nice dream," Mrs. Frederick said with happy tears in her eyes.

To make the "dream" even nicer, Mr. and Mrs. Frederick learned Saturday afternoon that their nephew, George Whittemore, 15, who was camping with them below Hebgen dam when the landslide struck, will not lose his eyesight as a result of the injuries he suffered.

Young Whittemore is scheduled to be released Sunday from St. James Hospital here and the family will leave Monday afternoon for their northern Ohio home via plane as arranged by the Red Cross. Frederick is a cookie firm salesman in Cleveland.

Their 1958 Plymouth station wagon was demolished by the landslide, and all of their belongings, except the pajamas they wore, were lost. "But now we're beginning to feel like we're living again with everything that's been given us," Mrs. Frederick said.

After they were rescued from the canyon by helicopter, the Fredericks were housed in the emergency quarters set up at the high school gymnasium and at the Morgan Motel in Ennis. The Red Cross and Ennis residents gave them each two complete outfits of clothing.

So that they could be near the hospitalized nephew, the Red Cross flew them to Butte and arranged rooms and meals for them at the Finlen.

"They put a TV set in our room, which certainly wasn't necessary, but that just shows how far everybody has gone to make us feel safe and at home after that horrible night," Mrs. Frederick said.

Paul and Melva even got the French fried potatoes they said they wished they could have for breakfast Saturday. And Nephew George was promised he could have the same when he gets out of the hospital.

Aaron Ralph, a Finlen bellhop, gave them a tour in his car around the city, up to the "M" on Big Butte, and out Harding Way to where they could see the sparkling lights of the city below.

"It really glistened, but the real jewels of this city are the people," Mrs. Frederick said.

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TOURIST TRAVEL REDUCED BY QUAKE, BUT BUTTE FIGURES GOOD FOR YEAR

Tourist travel through Butte was temporarily reduced by the Tuesday earthquake here, and by the disaster in Madison Canyon from where scores of tourists usually come to Butte. However the overall travel through the Mining City is good this year.

In the later days of June the Chamber of Commerce notes the start of tourist travel. From that time to Saturday tourists registered at the Chamber headquarters in the Finlen Hotel lobby have numbered 3,370. "This figure compares most favorably with that

of last year," Harold McGrath, secretary of the Chamber said.

McGrath, Glyen Chaffin, Mrs. Sidney Duffy and Mrs. Mary Slater of the Chamber staff, reported that the registrations normally run from 70 to 90 a day during the peak of the tourist season, which is usually in August. Since the quake, however, the figure dropped to 40 to 50, but it is expected to pick up again as travel from the Yellowstone Park area resumes.

[Montana Standard; August 23, 1959]

DEMOLITION WORK CONFUSING TO BUTTE TOURISTS

Dan J. O'Connell, head steward at the Finlen Hotel, had a difficult time Saturday convincing a tourist party from Ohio that Butte was not hard hit by the Tuesday morning earthquake.

"You must have been," one of the tourist party said, we've traveled west from Billings and haven't seen such damage anywhere else, although we know of the disaster in the Madison Canyon."

O'Connell finally found out where the tourists got

their idea Butte was whacked hard. As the tourists rounded the corner of Wyoming and Broadway, heading for the hotel, they saw the result of demolition work which has started on buildings just east of the hotel. The buildings are being razed to provide for construction of a motor motel to be operated in conjunction with the hotel.

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WEST YELLOWSTONE MAN TELLS HOW HE SOUNDED ALERT AFTER QUAKE

Harold Young, West Yellowstone motel operator, who also runs the West Yellowstone Weather Bureau, and is a ham radio operator, is the man who gave out the first word on the earthquake in the West Yellowstone area, and told of a report he received that Hebgen Dam had gone out.

"The earthquake shook me awake shortly after 11:30 at night," Young said. "I figured we were in trouble so I got on my radio right away.

"I finally contacted a ham operator in Utah and told him to get the airport at Pocatello, Idaho, so I could talk to them."

Young said he made contact and relayed the information that an earthquake had struck.

As he was operating his radio, he said, a friend who owned property on Hebgen Lake came to his

place. Young said the man told him his boat and docks were "high and dry" and said he believed Hebgen Dam had gone out and that the lake was being drained.

"I made contact with the Madison County Deputy Sheriff and told him I had reported that Hebgen Dam had gone out and that he should notify the people of Ennis that the water was on its way," Young said. "He said, 'Are you sure?' and I told him that the man who reported the water gone from the lake was right beside me."

"We found out later that the Dam had held, but with all those people downstream in Ennis, I just couldn't take a chance," Young said. "I figured the only thing I could do was alert them to the possible danger."

[Montana Standard; August 23, 1959]

VIRGINIA CITY PLAYERS ENTERTAIN EVACUEES FROM MADISON VALLEY

VIRGINIA CITY—"The show must go on" has always been the creed of show business. Tuesday night the Virginia City Players performed as usual on an improvised stage before an audience of evacuees from the Madison Valley and local townspeople. Admission was free.

The Virginia City Players, their switchboard and Cremona organ knocked askew by Monday night's earthquake, moved their show to a recently restored livery barn in Nevada City, one mile down the road. Nevada City is being restored to its 1864 appearance by Charlie and Sue Bovey, restorers of Virginia City.

When it was discovered Tuesday morning that the only damage to the Opera House had been to the organ and switchboard, Larry Barsness, director of the Players, decided to move the show to Nevada City while repairs were being made. During the day, a stage

was built in the Nevada City barn, electricity was brought to the building from the neighboring house, scenic drops were rigged and house lights installed. Wooden benches were set up on the rough earth floor and signs were hung in front to announce the barn's transformation. By 8 o'clock all was ready for the special show to entertain evacuees from the neighboring town of Ennis.

The show went off without a hitch, the large crowd calling for "more," as they laughed their cares away. Especially enjoyed were the Barbershop Quartette and the comedy song "Blood on the Saddle" as rendered by Judy, recently returned to the Players after a two year absence.

The show has moved back to the Opera House and performances are running as scheduled.

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NEIGHBORLINESS WAS NEVER MORE EVIDENT

By Frank Quinn

Hebgen dam may go out. Ennis is evacuated.

Those reports received here early Tuesday morning, a few hours after Butte and other communities were whacked by an earthquake, shifted the center of news coverage to the Madison Valley in southwestern Montana.

It was apparent that the atomic-like power of nature's upheaval had centered in that area. But, at the time, and for several hours after, the fact that lives had been lost, that autos, trailers, men, women and children had been tossed around like toothpicks as the result of the mountain avalanches, was not known.

It wasn't until battered and blood-stained survivors of the landslides in the Madison Canyon were brought into Ennis, or to West Yellowstone, that the outside world (the canyon area was behind an Iron Curtain of rock and debris) got any idea of the tragedy in the canyon.

Hi Neighbor

Hi! neighbor is a common greeting heard in Montana. But the word "neighbor" covers a lot of territory. That is a heritage of Montana's pioneer days when neighbors lived anywhere from five to 50 or even a 100 miles apart.

Montana neighborliness was never more evident than it was when the threat of tragedy hovered over Ennis and other communities in the valley area, and in Ennis itself when the full impact of the tragedy was known.

Residents of Virginia City were first to offer "open house" to their neighbors "over the hill." It wasn't long before Butte, Anaconda, Bozeman, Twin Bridges, Sheridan and other communities were in the act. The Salvation Army and St. Vincent DePaul Society of Butte sent clothing and blankets into the area.

Butte's Civil Defense Chapter put out a call through Cole Sullivan, director, and it poured forth more people Tuesday than the organization knew what to do with. Volunteer nurses and doctors were alerted, but later word came that their help was not needed.

The Civil Air Patrol of Dillon moved into Ennis late Tuesday and did a good job Tuesday night of patrolling the evacuated city, and at times in getting stragglers out of town.

Open Arms

It was in Virginia City that many early Tuesday morning evacuees from Ennis were received. That historic, one-time territorial capital of Montana, had open arms for people from Ennis and others, who later came out of the stricken area.

Mayor Allan Dudley and Sheriff Lloyd Brook led in arrangements to take care of evacuees. They opened the town to refugees and kept the switch open on the radio to gather and interpret the trickles of information and to coordinate official activity.

It was 3 a.m. when the wailing of a siren gave the first warning to the nearly 600 residents of the Ennis area that there was a threat to the town. Many of the families of the colorful town were in bed. Many others were up, still frightened by the earlier events in which their homes were rocked by the quake.

First Ennis Warning

Ed Taylor, peace officer in Ennis, gave the first warning to the town by prolonged sounding of the siren. Then the word to evacuate was passed by word of mouth.

Reluctant to leave entirely the area and their possessions, many of the community's citizens camped out on a hillside near the town from 3 a.m. Tuesday morning until they were permitted to return home Wednesday. One well-known Ennis man said, "I've been five years paying for my home. I just made the last payment yesterday." His feelings were easily understood.

Montana Highway Patrolmen were in the area early. They manned road blocks, and later acted as radio relay stations between the canyon slide area and Ennis.

Around 5 a.m. in Virginia City, word was received that two persons had been killed in the Wade Lake area. At that it was not definitely known that the deaths were related to the earthquake. Then reports began filtering in of a terrific avalanche in the canyon—an avalanche which neatly sliced away a part of a mountain. Huge boulders uprooted trees and ton after ton of rock and dirt cut away sight of the highway and river. The 90-million ton landslide below Hebgen Dam formed a dam in the Madison River.

Two of the three sons of Mr. and Mrs. E. H. Stryker, residents of San Mateo, Calif., who were slide victims at Wade Lake, brought the first news of the

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canyon catastrophe to Ennis. They were John 13, and Morgan, 8, who with Martin, 15, narrowly escaped death. Ten ton of rock buried their parents. The boys were sleeping in a tent not far away. After the slide, Martin stayed in the canyon to help in work of recovering his parents' bodies. John and Morgan were brought to Ennis, then taken to the home of Marshall Gilbert J. Evans where they were given comfort and aid.

The first outsider into the area between the enormous landslide and the threatened dam was Neil Howarth, supervisor of the Madison Forest. It was not too long after that Forest Service smokejumpers risked their lives jumping into the area in high winds and turbulent air. Forest Service Engineers studied the dam. Forestry foremen directed search parties for the dead. Their planes, and planes of the Highway Department and other services kept over the air constantly.

There is a part of Ennis which is higher than the

townsite proper. In this area is located the Madison Valley Hospital and the high school. When news of the plight of hundreds of vacationers in the canyon became known, Mayor C. E. M. Bauer and councilmen of Ennis, working with forestry officials including Ernest Grambo of the regional office in Missoula, and Dr. Roland Losee of the Madison Valley Hospital, set up plans for care of the injured.

Dr. Losee and his wife, a registered nurse, and Mona Reid, another R.N., were flown into the canyon to render aid. It was not long after their return that the first patients began arriving. They were flown in by helicopter. From that time on the hospital was the scene of quiet, efficient care of the injured. The high school was set up as an emergency receiving station, but fortunately the emergency was not needed.

Then the bodies of the victims of the slide began arriving. It was then that the full impact of the tragedy of Madison Canyon was realized.

[Montana Standard; August 23, 1959]

RED CROSS THERE

The Red Cross went into action fast. Field workers were in Ennis Tuesday and were also at West Yellowstone where clothing was provided for refugees from the disaster area. The Red Cross cooperated to the fullest extent possible in answering a multitude of

calls and telegrams from worried relatives of persons believed in the area. These communications came from all parts of the nation.

[Montana Standard; August 23, 1959]

T & T DID GOOD JOB

Praise from officials, newsmen, tourists and all others having need of telephone service from Ennis, Virginia City and West Yellowstone was given the Mountain States Telephone and Telegraph Co. The

service was excellent. Operators in Butte, Helena and Bozeman were most efficient and courteous despite the pressure.

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AMAZING COOPERATION IN TRAGEDY SIGNIFICANT

By Ken Lewis

What happens after disaster strikes?

An earthquake hits: mountains crumble, hundreds of people trapped, many killed, more injured, a dam might burst and wipe out a city.

What's the next step? Who takes charge—makes the decisions?

The answer in the Montana disaster probably was no one. Or could it have been everyone.

No one asked, "should I do this?" There were many jobs to be done and the people did them.

And there were few conflicts, little confusion.

A radio operator in Ennis was told two relay stations had been set up to give word if the dam broke.

Some time later the operator said:

"I've been thinking. What do I do if a radio message says high water is coming?—yell out the window, or turn off the radio and run for high ground?" A system of warning signals was then worked out.

But confusions were minor.

The significance was the amazing cooperation between the many local organizations; the heroic work of hundreds of volunteers, and the lack of a central agency.

Was it because the disaster workers were Montanans, accustomed to acting on their own?

[Montana Standard; August 23, 1959]

MADISON SLIDE WOULD OVERFLOW BERKELEY PIT

Ninety million tons of rock is a lot of rock. But just how can it be visualized?

Well, it would fill a huge open pit—the Berkeley in Butte—and there would be several million tons left over.

Earth moved from the Berkeley is estimated at 85 million tons while engineers believe at least 90 million have crumbled off the mountain in the Madison Canyon below Hebgen Lake.

The rocks in the slide range from the size of a man's head to the size of a house. Engineers believe it is unlikely the slide will ever be removed. They believe the road will be constructed over its top and the river will be allowed to make its own channel.

The newly created lake will probably be permanent and its newly created name, "Lord's Lake," will probably stick.

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DAM EMPLOYEE EXPLAINS 'O.K.—S.O.S.'

George Hungerford, Montana Power Co. employee at Hebgen dam, has come up with the answer to the question, "What did 'O.K.—S.O.S.' mean?"

That was the question worrying plane pilots who were checking damage to Hebgen dam early Tuesday morning, following the earthquake. A picture of the two messages was carried in The Montana Standard Friday morning. Hungerford received a copy of the paper. He tells this story:

"About daybreak a plane flew over. The pilot

dropped a message asking if the dam was O.K. I used lime to spell out the letters 'O.K.' Later in the morning, when the injured from the landslide started coming into the dam and I realized the need for immediate aid, I used lime to spell out the letters 'S.O.S.' Under the stress of the emergency I forgot to erase the 'O.K.'

"Guess a fellow can't think of everything under circumstances such as we were experiencing. Anyhow, that's the answer to what 'O.K.—S.O.S.' meant."

[Montana Standard; August 24, 1959]

JUST DROPPED IN

WEST YELLOWSTONE (UPI)—Smokejumper Bob Nicols, who parachuted into the earthquake area to aid victims, was showing his elaborate jumping gear at a meeting of state and federal officials.

He was asked: What was the first thing said to you

by the survivors when you jumped?

"Well," he replied, "a guy comes up to me and says, 'Are you all right?'"

[Montana Standard; August 24, 1959]

QUAKE 'FEAR' LIST CUT TO ABOUT 39

WEST YELLOWSTONE, Mont. (AP)—A list of persons about whom relatives have expressed concern since the earthquake in southwest Montana last week was made public by the Red Cross Monday—and almost immediately many of the people were located alive and well.

There was no such information, however, about some of those unreported.

The list contained 88 names when it was issued, but within a few hours it was trimmed to about 39.

Typical were these cases:

Milford Kellogg, an employee of the Atomic Energy Commission living at Damascus, Md., checked

into a convention at Boulder, Colo., where he was a delegate.

Friends in Pendleton, Ore., heard from the Oliver Calhoun family, named on the list, saying they never did go to the quake area. Similar word was received from the Rev. Alfred D. Enns, his wife and two sons, of Portland, Ore.

Fellow employees of Lloyd Webster at Santa Rosa, Calif., got a postcard from him saying, "It sure was some quake." The card was mailed last Tuesday, the day after the quake.

[Montana Standard; August 25, 1959]

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MONTANA STANDARD

Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
Aug. 18, 12:56 a.m. M6½; Aug. 18, 1:41 a.m. M6;
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MADISON TOWNS SEEK TRAVELERS

ENNIS—Businessmen of Ennis and Virginia City, hit hard by the lack of customers during the height of the tourist season because of last week's earthquake, met Monday to organize plans for informing the public that the area is safe and a desirable vacation spot.

"The fishing is the best I've ever seen and I've been here 47 years," J. Hal Pasley, Ennis auto dealer and civic leader, said.

"With all the rumors spreading that Madison River is dry and the roads are closed, people are canceling their plans to come here.

"The truth of the situation is that the rivers and roads and everything are normal except the lack of tourists," Pasley said.

He reported Highway 287 and other roads connecting Ennis and Virginia City with Yellowstone National Park are open and in excellent condition. Only one 17-mile strip on the Reynolds road about 40 miles from Ennis is a gravel-topped detour around the mountain slide area, but it has been graded and is in good condition, Pasley said.

"And that drive will be of interest to vacationers because from it they can view the disaster and slide area without danger and without entering safety restricted areas," he said.

"The water is low in Madison River, but it is clear and the fish are abundant," Pasley reported.

[Montana Standard; August 25, 1959]

DOG, HAPPY TO SEE SOMEONE, FOUND IN QUAKE REGION

WEST YELLOWSTONE, Mont. (AP)—A small, brown dog, described by rangers as "very hungry and very happy to see someone," was found in the southwestern Montana earthquake area.

The dog, who appears to be mostly cocker spaniel, looks like a child's pet.

Rangers feel the animal, about 18 inches high, belonged to someone in the quake area.

He is being cared for at a Forest Service ranger station.

[Montana Standard; August 25, 1959]

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METCALF ASKS SBA FOR WORKER IN EARTHQUAKE AREA

HELENA (AP)—Rep. Lee Metcalf (D-Mont.) Monday asked the Small Business Administration to send a representative into the area.

Metcalf said he hopes the SBA will be able to authorize long-term loans to restore business establishments and aid in reconstruction there.

"The 90 or more motels and dude ranches in the West Yellowstone area represent a multimillion-dollar industry which must be restored to productivity or the Montana economy will be disastrously hurt," Metcalf said.

[Montana Standard; August 25, 1959]

ENGINEERS STUDY QUAKE LAKE FOR FLOOD THREAT

WEST YELLOWSTONE, Mont. (AP)—Army Engineers attacked a fallen mountainside Monday in a race to prevent a possible new disaster stemming from the southwest Montana earthquake of one week ago.

The key to the danger is Quake Lake, a swelling reservoir formed when the side of an 8,000-foot mountain was sheared off and sent crashing through a campground into the Madison River below. The 50 million tons of rock and earth blocked the river seven miles below Hebgen Dam.

The question is whether the natural dam will hold back waters which are feeding into the newly formed lake at the rate of 2,000 to 3,000 acre-feet a day.

Wendell E. Johnson, chief of the Missouri River Division's engineering section at Omaha, estimated the water will crest at the natural dam in from 20 to 30 days.

He estimated the dam plugging the valley ranges from 150 to 400 feet in depth and is a mile long. Water

behind it already is about 80 feet deep.

The engineers were sent here to assess the situation and determine a solution if possible to end the potential flood threat. They worked in shifts around the clock.

Two more popular suggestions are to make a permanent dam of the slide, with gates to permit regulated runoff, or to cut a channel through the slide.

Johnson estimated the capacity of Quake Lake at 40,000 to 50,000 acre-feet.

Hebgen Dam, itself damaged by the earth shocks last week, holds back more than 300,000 acre-feet. Engineers are watching it closely for further damage.

The nearest town is Ennis, Mont., whose 600 residents were evacuated briefly after the original quakes. Ennis is 45 miles downstream from the slide area.

[Montana Standard; August 25, 1959]

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EARTHQUAKE LAKE TO BE MAJOR ATTRACTION

Biggest Landslide In The World

Curiosity seekers are barred from the Madison valley quake area for the time being. But we freely predict that it will become one of the nation's foremost tourist attractions once order is restored.

On display will be a dam of major proportions which was built in the flutter of an eyelid.

It will be the strangest of all dams. Most likely it is the last resting place of unnumbered persons.

A lake which will be about one-third the size of Hebgen dam, just above it, is being formed. It is estimated that the new lake will hold about 100,000 acre feet of water. Its greatest depth will be about 150 feet. It will be about seven miles long.

The dam itself is of enormous proportions.

It stretches 4,400 feet along the bed of the Madison river. It is almost exactly a mile wide in the other direction.

It is estimated that about 90 million tons of material including earth, rocks, and trees swept down into the Madison valley when an earthquake rocked the area a week ago. In its path was a popular camping area, and in the camp was an unknown number of people. Perhaps the exact number will forever remain a mystery.

A major road repair job will have to be done in the area.

The roads for miles around will have to be entirely rebuilt. They may also have to be entirely re-routed.

Perhaps the work will have to wait until it is established that this series of quakes have subsided. When a repair job was started inside Yellowstone Park a group of workmen narrowly missed being caught in another landslide set in motion by a temblor.

This was one major disaster which did not immediately attract the curious. Instead it repelled them.

Yellowstone Park visitors immediately slumped from an average of 18,000 a day to between ten and eleven thousand.

The Park was well on its way to a new record when the earthquake struck. If attendance had kept up, Superintendent Lemuel Garrison had predicted that 1,600,000 people would have passed through the Park by closing time.

There will be a new attraction next year, a great lake caused by a landslide.

And it may turn out to have been the largest landslide of modern times, or, in other words, the largest landslide in the world.

Nobody will have any sort of a claim to fame without having seen this eighth wonder of the world.
[Montana Standard; August 25, 1959]

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QUAKE JOLTS WESTERN STATES

Hebgen Dam Open, Vacationers Hurt

An earthquake late Monday rocked a six-state area of the Intermountain Region and Pacific Northwest, trapped an auto in Yellowstone National Park, and reportedly cracked Hebgen Dam at West Yellowstone, Mont.

Civil defense radio networks reported that an unknown number of persons in West Yellowstone were injured as motels collapsed. The Union Pacific station was crumbled and the injured were being taken to Ashton, Idaho, for treatment.

At Needles, Calif., U.S. Highways 66 and 95 were engulfed in six feet of mud and scores of autos and trucks were stalled with their passengers trapped inside.

Needles was out of communication except by radio.

Shocks were felt in Montana, Idaho, Washington, Oregon, California, Utah and Wyoming.

Water was reported dropping from Hebgen Reservoir.

Reports of the damage to the dam were relayed from that area by an amateur radio operator in touch with the U.S. Weather Bureau station at Pocatello, Idaho.

The University of California seismograph at Berkeley recorded a magnitude of 8 on the Richter scale, only 25-hundredths lighter than the 1906 quake which set fires that virtually wiped out old San Francisco.

Yellowstone Park rangers were reported moving toward the trapped automobile. No one knew whether

there were any injuries.

Idaho state police at Boise said the temblor was felt there a minute after it was reported by the U.C. seismograph as starting with an epicenter probably in Montana.

The Idaho men said the quake lasted about a minute and shook the Statehouse so roughly that filing cabinets rattled and rocked "several minutes afterwards."

The quake rippled southward and was felt locally from Rose Park to Sugar House about 11:40 to 11:43 p.m.

Calls flooded the switchboard at The Salt Lake Tribune.

At Macks Inn, Idaho, it was reported that the quake damaged wells and a slight power stoppage occurred.

Dishes rattled and light fixtures swayed in a fifth floor apartment near South Temple and State.

Sheriff's Deputies Larry Dow and Nick Morgan felt the temblor in Salt Lake County Jail.

Door chimes at the home of Mrs. Cleone Landis, 1320 Roberta (245 East), clanged together.

Olive Connary, inside Courtesy Motors Building at 1000 S. Main, and Frank F. Wright in the Sperry Utah Laboratories plant near Salt Lake Municipal Airport reported jouncing floors.

The University of Utah seismograph will have the temblor recorded, said Dr. Kenneth L. Cook, meteorologist.

[Salt Lake Tribune; August 18, 1959]

Aug. 17, 11:37 p.m. M6.3; Aug. 17, 11:37 p.m. M7.5;
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TEMBLOR CRUMPLES MOUNTAINS IN DEATH, DESTRUCTION SWEEP

Shocks Center Near Hebgen

By Jerry Voros and Carl E. Hayden

Enormous earthquakes late Monday and early Tuesday ripped unstable earth strata through a vast area of the Northwest. They created a jumbled area of horror in southwestern Montana, where at least eight and possibly 10 persons were known dead and upward of 60 injured, many critically. Estimates of possible fatalities ran as high as 75.

The estimate of the number of dead was revised downward from earlier reports of 19 by Hugh Potter, Civil Defense director for Montana, who said, "This is real good news."

Confusion at the scene, he said, combined with difficulties in communications, accounted for the higher figure listed earlier.

Mr. Potter explained that it was earlier believed there were six dead at Reynolds Pass, two at Cliff Lake and six others in the Hebgen Dam area. He said this proved to be wrong, that the figures duplicated names because of poor communications and only eight persons were listed as dead.

He said it had been reported that there were two more bodies in a car in the Hebgen area, but this had not been substantiated yet by the coroner.

However, Idaho State police reports conflicted with Mr. Potter. Police said eight were dead in the Reynolds Pass area, with six bodies recovered. This could bring the toll to 16 or 18 dead.

The tremblers, which began Monday at 11:45 p.m., were reported continuing Tuesday afternoon and night at intervals.

The initial shocks and one at 3:52 a.m. Tuesday were the most severe, authorities said. A total of 28 tremors had been reported by Tuesday night.

Earth shocks and seismograph readings were reported over an area from British Columbia on the north, Utah on the south, the Washington coastline on the west and the Dakotas to the east. The earth shocks, according to seismologists at the University of California, were among the most severe on the North American Continent in recent times.

The main disaster area was between Hebgen Dam at the western tip of Hebgen Lake and a gigantic slide,

estimated between 200 and 400 feet high, about seven miles downstream from the dam.

Smashing earth shocks crumpled the top and side of an 8,700-foot mountain, letting rocks and debris slump into the Madison Canyon, filling it from side to side and blocking the river.

Eyewitnesses said an artificial lake, fed by natural overflow from Hebgen Lake, was building up in the impacted area. The waters were expected to creep up the canyon as far as the dam Tuesday night.

Observers at the scene said the earthquake actually tipped the strata supporting Hebgen Lake, causing a 20-foot wall of water to surge over the dam and damage cement work. The north bank, they said, dipped downward from six to 15 feet, the south shore rising as much. A portion of Montana Highway No. 1 running along the north bank was dropped beneath the encroaching waters.

Information concerning the dead and injured was sketchy Tuesday, and reports emerging from the stricken area were conflicting and confused.

The area beneath the huge slide was a popular camping area, and some reports said from 40 to 75 persons were believed buried by the smashing rockfall.

Early reports confirmed by authorities said eight persons were known dead at the major slide site, eight more in the vicinity of Reynolds Pass on the South Fork of Madison River in eastern Idaho and two at Cliff Lake 12 miles west of the dam.

These figures were subsequently raised.

E. L. Biggs, deputy sheriff from Gallatin County, Mont., said, "The feeling up here is that anybody who was underneath the slide will never be found and the total number of dead will probably never be known."

A three-man group from the National Disaster Committee was scheduled to fly over the disaster area Wednesday morning.

Montana Gov. J. Hugo Aronson viewed the scene from the air Tuesday afternoon.

He said he was deliberating whether he would ask President Eisenhower to declare a major disaster area.

Meanwhile, first of the critically injured were being evacuated.

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By 7 p.m. Tuesday a total of 30 persons had been listed as evacuated from the earthquake area by Air Force and U.S. Forest Service crews.

About 125 persons, mostly uninjured, were said to be stranded between the slide area and Hebgen Dam with no provisions or shelter. But late Tuesday reports indicated that Montana State Highway Department crews had punched a "pioneer" road from Duck Creek Junction to the east of the lake, admitting automobile traffic to the dam for the first time since the slides.

The search also was spreading to surrounding areas to determine if other campers might be stranded or trapped elsewhere.

Fears that the 87½-foot earth-filled, concrete core dam at Hebgen Lake might burst were allayed Tuesday afternoon, with the declaration it is "safe," although it has four fractures in the core and is leaking between three and five cubic feet of water a second.

The structure has sunk on both ends.

Persons at the site said there appeared to be no imminent danger of the dam bursting unless earth shocks of great magnitude continue.

There were fears, however, that impounded waters behind the slide might eat their way through the porous fill to the dry channel of Madison River beyond.

The estimated 600 residents of Ennis were said to have evacuated the community in anticipation of a possible flood, and partial evacuation of other downstream communities was reported. Hebgen Lake has 13,480 acres of surface and contains 345,000 acre-feet of water.

Early Tuesday the evacuation force was bolstered by two nurses and a physician from Bozeman, accompanied by two ambulances assigned to penetrate as far into the disaster area as possible.

Ten Montana Highway Patrol cars were sent to the general area from Bozeman, and 14 Red Cross disaster workers were to have flown into the region from San Francisco. Personnel from Hamilton Air Force Base,

Calif., were reported assisting at the emergency hospital, set up in a large airplane hangar at West Yellowstone.

The Bozeman, Mont., chapter of the American Red Cross was designated as the information center for all inquiries concerning persons in the disaster area. Inquirers were asked to file specific questions with their local Red Cross chapters for relay to Bozeman.

Some reports of injuries elsewhere in the affected area were received, but none was specific.

No serious injuries were reported in the West Yellowstone area, but as many as eight persons may have been injured in Yellowstone National Park. Reports on the matter were conflicting.

Damage was severe and widespread.

In West Yellowstone, service station roofs were toppled and plate glass windows were smashed. Merchandise was shaken from shelves of business houses, and the north wall of the local elementary school was stripped of its brick veneer.

Yellowstone Park itself was jammed to near capacity with late summer tourists and campers, but no deaths were reported. Many buildings showed earthquake damage, and damage to water mains at Old Faithful Inn caused it to be evacuated temporarily. The park administration building at Mammoth was evacuated, and headquarters was established in a tent after tremors caused dangerous cracks to form in the administration building.

Joe Fraser, a district forest ranger, said Old Faithful geyser is still faithful, apparently unaffected by the seismic jolts, but he said reports indicated the appearance of new geyser activity in the region near Madison Junction, where, he said, "apparently the entire area is undergoing a geological revamping."

Persons who attempted to enter the park area by automobile reported enormous cracks in various roadways.

[Salt Lake Tribune; August 19, 1959]

SALT LAKE TRIBUNE

Aug. 17, 11:37 p.m. M6.3; Aug. 17, 11:37 p.m. M7.5;
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PARK SCENE OF FEAR, CONFUSION Single Thought: 'Let's Get Out'

(Editor's note: Tribune staffer Carl Hayden was one of the first newsmen on the scene of destruction in West Yellowstone. Here is his exclusive eye-witness account of the damage and confusion caused by the earthquake.)

By Carl Hayden

WEST YELLOWSTONE, MONT., Aug. 18—Nearing West Yellowstone, crowded resort at the west entrance of Yellowstone National Park, I found southbound traffic on U. S. Highway 191 rapidly gaining momentum.

"Let's get out of here" was written on the face of every straining motorist.

Most of the cars' occupants were silent, starkly postured and pale from fright. A few were gesturing and talking loudly. They too were frightened but showing it in another way.

"All we want to do is get back to Nevada as fast as our car will take us," said Mrs. Blawnie Fairchild, traveling with Mrs. Elinor Mills, both of Elko.

Reaching the main street intersection in West Yellowstone right behind two state policemen from Idaho, I honked for their attention, got out of my car to ask where the most damage might be found. I didn't get an answer, because the policemen's car and myself were literally overflowed by tourists seeking routes to safety.

(The only escape was south into Idaho for 191 north to the Ennis-Bozeman junction was closed as was the highway to Madison Junction in Yellowstone Park.)

Turning left, I pushed through a road block and three miles farther on was brought up short by a small tree thrown across the pavement.

Beyond were streaming gaps in the black pavement.

They ended with the concrete of the Duck Creek bridge, but beyond the bridge opened wider.

Beyond the Madison River Bridge, a brief distance north, stood an abandoned sedan, its four wheels pinched in the crevassed blacktop.

In front of the sedan one half of the pavement had caved in for a hundred feet or more.

It was to this point ambulances came later from Bozeman to receive injured brought from West

Yellowstone, and carried across the impassable section.

Returning to West Yellowstone, I asked a motorist to carry the film to the air express office at Idaho Falls.

Going into the business district, I found the school house falling apart. One brick wall had fallen, with bricks near the corners hanging threateningly. The fine stonework of the entrance had tumbled, and the brick chimney seemed to be twisted around.

Mrs. Mills and Mrs. Fairchild consented to carry this packet of film to Idaho Falls, and I went on to find Kenneth Gooding, West Yellowstone, on bicycle, looking up at a disintegrated brick chimney on a house.

Their wares dumped onto floors, businessmen were dashing about, while tourists gathered in street-corner groups to discuss "the quickest way home."

Eighty per cent of the stock of the West Yellowstone Drug Store was reported to be lost.

Vaden Rock, concessionaire in the Stagecoach Inn, walked among heaps of debris that had been tossed from wide shelves.

Photographing this mess, I ascertained all communications were down, and started for the pine hedged airport.

Meeting a Gallatin County deputy sheriff halfway, I asked whether I could charter a plane to scout the area.

He said "No," that only 1,800 gallons of gasoline was available and that it was being conserved for more urgent purposes.

At the airport I encountered H. D. McCuiston, Forsyth, Mont., rancher taking a few days of ease, and he consented to see me over the disaster area.

"Strap down tight," he said as I swung two cameras and myself aboard. "She may be a little rough over these mountains."

In a trice we were down the paved but peeling runway and lifting over the pine forests.

Turning north, Mr. McCuiston said, "I think we should look at the Horse Butte fire tower," on a promontory in Hebgen Lake, a reservoir of the Montana Power Company. It appeared to have been undamaged by the major quake Monday, and the series of shimmerings that followed.

Gliding over the lake at Rainbow Point to the

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SALT LAKE TRIBUNE

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northeast side we began to trace the Ennis Highway downstream.

Breaks began to appear in the shoreline highway. There were stranded cars and people waving.

Soon we sighted long segments of the highway that had collapsed into the lapping brown shoreline waters.

Several buildings were beginning to submerge.

Occupants of one small fishing resort had imprinted "OK" in the yard so that aerial observers would carry the word to the outside world.

On high ground below Cabin Creek, which is below the dam, stood a colony of stranded people among their cars.

We were aware of a giant landslide five to seven miles below the dam, but squeezed by mountains on either side, and with the canyon narrowing even more in front of us we decided not to risk a look.

Persons at West Yellowstone explained upon our return that water filling behind the slide was certain to

wash it out, sending a boiling wall of water down Madison Canyon.

All downstream reservoirs were being lowered to halt the impending flood.

Maneuvering a turn where the canyon opened, though not invitingly, the Montana rancher pointed his ship back upstream.

What had happened to the reservoir during the earthy rockings was now apparent.

The upper midsection of the reservoir bottom had buckled, and in lifting had increased the depth of water above the dam.

Parts of the reservoir where fishermen had boated the day before were not high and dry except for the criss-crossing water-filled channels.

Widening cracks showed on the shoreline.

Telephone service had not been restored at West Yellowstone by mid-Tuesday afternoon.

[Salt Lake Tribune; August 19, 1959]

TRIBUNE'S ACTION SWIFT IN QUAKE

Even before the extent of Montana's earthquake was known, the Salt Lake Tribune staff was moving swiftly to bring the full story to its readers.

Carl Hayden, Tribune bureau manager at Idaho Falls, started by automobile Monday midnight. Roy Hudson, Tribune Sunday editor, vacationing at Big Spring, Idaho, telephoned one of the first stories of the

quake from Island Park area.

A charter airplane from Salt Lake City carried Jerry Voros and Earl Conrad, reporter-photographer team.

Another aircraft carried Erne Stites, Tribune Pocatello bureau manager, over the area.

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HERE'S LIST OF CASUALTIES

The list of identified dead and injured in the earthquakes that shuddered through the southeastern Montana area was held at eight and possibly 10 late Tuesday night.

Earlier reports that 19 were known dead in the disaster were revised downward just before midnight by Montana Civil Defense officials.

The estimated total injured was still listed at upward of 60, however.

Identities of those known killed, as released by officials, were:

F. R. Bennett, 43, Coeur d'Alene, Idaho.

Carol Bennett, 17, his daughter.

Susan Bennett, 5, his daughter.

Tom Bennett, 11, his son.

E. H. Stryker, San Mateo, Calif.

Mrs. E. H. Stryker, his wife.

Mrs. Margaret Holmes, 72, Billings, Mont.

Another body recovered but unidentified.

Authorities said two persons, in an automobile and believed dead, were tentatively identified as Mr. and Mrs. Thomas M. Stowe, Sandy, Utah, but said their bodies had not been recovered.

Injured victims include:

Mr. and Mrs. Ray Painter, 4345 Porter Ave., Ogden, Utah.

David Walters, Priest, Minn.

Dr. Robert Quinn, Hollister, Calif.

Mr. and Mrs. Warren Steel, Billings, Mont.

Mr. and Mrs. Joseph Henderson Armstrong, Royal Oak, Victoria, B.C.

Jay Schriber, 43, Billings, Mont.

Bonnie Schriber, 7, his daughter.

Tony Schriber, Billings.

Mr. and Mrs. Grover Mault, Temple City, Calif.

Henry F. Bennett, 41, Cottonwood, Ariz.

Jeannette Bennett, 14, Cottonwood

Mrs. Irene Bennett, 41, Coeur d'Alene, Idaho.

Phillip Bennett, 15, her son.

Vernoa Holmes, about 35, Billings.

Clarence D. Scott, 39, Fresno, Calif.

Kay Lepp, address unknown.

Peggy Moore, address unknown.

Mrs. Ost (first name unknown), Queens, N. Y.

Her two daughters and one son.

George Whitemore, 15, Elyria, Ohio.

Civil Defense authorities of Montana said late Tuesday 175 persons, some injured among them, had been removed from West Yellowstone to Bozeman, Mont.

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Aug. 18, 9:04 p.m. M6; Oct. 21, 1964, 12:38 a.m. M5.8

‘AWFUL ROAR’ FIRST SIGN OF TEMBLOR Disaster Scene

(Editor's note: Roy Hudson, Sunday editor of The Salt Lake Tribune, was on vacation at Big Springs, Idaho, when the earthquake struck. Here is his on-the-spot account of the reaction of those in the area.)

By Roy Hudson

WEST YELLOWSTONE, MONT., Aug. 18—This resort community, western gateway to Yellowstone National Park, was one of the hardest hit areas in Monday night's destructive earthquake. Visitors who were caught in the quake provide vivid accounts of the shock and destruction which accompanied it.

Mr. and Mrs. Alfred G. Alexander, Los Angeles, were driving from Old Faithful to West Yellowstone inside the park when the quake hit.

"It felt like all four tires went flat and the car frame was made of rubber," Mr. Alexander reported. "My wife stopped the car and I got out to look for flats.

"All of a sudden there were boulders crashing down all around us. I got back in and told my wife to drive on."

The couple had to stop after a short distance while Mr. Alexander lifted trees and boulders off the road.

"The dust was so thick we had to drive by the white line on the road," he said. "If we had been one minute later, we would have been right in the middle of all of it."

Mike Zoumadakis, 2148 Texas St. (2390 East) was staying in a motel in West Yellowstone with his wife Joan and their children, Michael, 5, and Toni, 3.

"About 11:45 p.m. Monday I heard an awful roar," he said. "I thought it was a train, but then I realized there were no trains near," he said.

"The cabin was shaking, glasses were falling, and so was everything that was hanging on hooks. I tried to turn on the lights . . . no lights.

"I got dressed, grabbed the children and put them in the car. Everything else we left. When we realized it was a quake we drove across the street into a vacant lot. The car was really rocking. I don't care if I NEVER see West Yellowstone again!"

A Melbourne, Australia couple, Mr. and Mrs. Robert Memmlar, reported they had been talked into making a tour of Yellowstone by "some people in Boise, Idaho." They were at the north gate when the quake occurred.

"First, we had an accident which shook us up when another car ran into us from behind.

"We'd hardly recovered when this (the quake) comes along and we're really shook up," said Mr. Memmlar.

The couple was not injured and their automobile received no apparent damage.

[Salt Lake Tribune; August 19, 1959]

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STAY PUT, THEN COUNT TO 40 **Earthquake Advice**

A formula for behavior in an earthquake, which may sound facetious at first, was given by the late Prof. Bailey Willis, world-famed seismologist of Stanford University.

His advice: "Stay where you are and then count slowly up to 40. What you do after that doesn't make much difference."

It's a good trick if you can manage it, but it really does make sense.

The first impulse when the building you are in starts to rock is to rush into the street.

This may be all right if you are at home, but not if

you are in a fairly substantial downtown building.

In past earthquakes many have reached the sidewalk just in time to be killed or injured by falling bricks, stones, cornices or signs.

It is very unlikely that a well-constructed building, particularly if it has steel or reinforced concrete framing, will collapse even in a very severe quake.

So, if you are in a building of this type just stay there until things stop falling on the sidewalk and into the street.

[Salt Lake Tribune; August 19, 1959]

QUAKE SEVERS SERVICE TO PARK AREAS

Monday night's severe earthquake disrupted long distance telephone service out of West Yellowstone, Mont., cut off service to a number of other small communities in western Montana and northeastern Idaho, and swamped exchanges for hundreds of miles in all directions.

Thousands of calls pouring into the area from anxious friends, relatives and the press tied up wires throughout the area, and caused telephone companies to quote delays of up to six hours in completing calls.

The Mountain States Telephone and Telegraph Co. office in West Yellowstone was severely damaged by the temblor, but local service was never disrupted. Repair crews were flown in Tuesday morning to begin restoring long-distance service.

The community, western gateway to Yellowstone National Park, lost touch with the outside world when the quake broke long distance wires and sent giant landslides across whole sections of trunk lines.

At Ennis, Mont., just below quake-weakened Hebgen Dam, the whole population was evacuated to a nearby hilltop. MST&T crews, using facilities of the small privately-owned Madison Valley Telephone Co., installed a single public telephone on the hill for emergency use.

Telephone officials at Helena, Mont., called in all available operators and ex-operators and held them on standby basis.

[Salt Lake Tribune; August 19, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 207
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SALT LAKE TRIBUNE

MAMMOTH SLIDE RECALLS GROS VENTRE DISASTER

Fissure 3 Miles Long

(Editor's note: Erne Stites, bureau manager for The Salt Lake Tribune at Pocatello, flew over the devastated slide area along the Madison River. Here is his account of what he saw.)

By Erne Stites

OVER MADISON GORGE SLIDE AREA—Not since the 1920s when the Gros Ventre Mountains in Wyoming let loose cascading tons of earth has there been anything like the slide that struck the Madison Gorge last Monday night.

Only an aerial view can give an understanding of the calamity which tore a mountain in two and left a fissure two to three miles long on the east side of Hebgen Lake and Madison Canyon.

The slide is awe-inspiring with half a mountain broken away to dam the Madison River whose streambed is dry below the slide.

Our first view of the damage was in the giant crack we estimated as ranging from 10 to 100 feet high in some places.

We could get no idea of the depth to which the disturbance reached.

At least three sections of Montana highway slid into Hebgen Lake, making it impossible to reach Hebgen Dam by car. Several buildings near the dam tumbled into the lake.

To the east of the dam, dust still rose at midday and we could not determine whether it was from slide effects or heavy winds.

At the dam area we noted the helicopters, the great amount of aerial traffic and the several lots of cars parked on the highway below the dam.

Approximately seven miles downstream and almost at the end of the gorge the major damage loomed.

Where once stood a towering mountain there was only debris as the slide filled the river bed, crossed to pile a dam of boulders and soil and tangled trees.

Only a small amount of water was above the new dam but it was flooding the highway.

So large does the dam appear, it is likely it will hold back much water for a time and it appears the town of Ennis, Mont., is in no immediate danger unless Hebgen Dam should fail.

[Salt Lake Tribune; August 19, 1959]

MADISON WENDS FROM PARK TO DISASTER SECTOR

The Madison River, spotlight of attention in Monday night's disastrous earthquake, is born on the north slope of the Continental Divide which weaves through Yellowstone National Park from southeast to northwest.

Along with several other streams rising in the park, it is part of the Missouri River drainage, and

ultimately flows into the Gulf of Mexico and the Atlantic Ocean.

Other streams rising only a few yards from the headwaters of the Madison, such as the Lewis and Snake Rivers, are on the south slope of the divide and reach the Pacific Ocean through the Columbia River.

[Salt Lake Tribune; August 19, 1959]

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SALT LAKE TRIBUNE

S. L. QUIVERS, RATTLES IN MILD QUAKE

It was about 10 minutes after the first shock of Monday's quake was felt in the West Yellowstone, Mont., area that the first local call reached the switchboard of The Salt Lake Tribune, asking if there was a report of an earthquake.

But in another 10 minutes—moments before midnight—there was no longer any question. Calls were deluging The Tribune operator.

A man said he lived on 17th South near 2nd East, said he heard a rumbling in his driveway and his son, sitting in his car out in the street, jumped from the car and ran around it to see who was shaking it.

Mrs. Cleone Landis, 1320 Roberta (245 East), said her door chimes began to ring and no one was at the door.

Inside Courtesy Motors Building at 1000 S. Main,

and Sperry Utah Laboratories near Salt Lake Municipal Airport, employees said concrete floors rippled and jounced.

Calls came to The Tribune from C. W. Cooper, 1350 S. West Temple, who heard rumbling in his driveway; Mildred Williams, Rose Park; L. B. Mansell, 28 W. 17th South; Edmond W. Galbraith, Kearns; Arthur Maud, 422 Edith Ave., and Mrs. C. Forbes in an apartment at 5th East and 6th South.

Mrs. Vaughn Johnson, 207 Hubbard Ave. (935 South); Cyril Kershaw, 2506 Green St. (645 East); Laura McCleery, 1815 Lake St. (740 East), and Reed Christopherson, 39 Boulevard Gardens (1780 South) also called to report feeling the temblor in their homes.
[Salt Lake Tribune; August 19, 1959]

EARTHQUAKE JARS UTAHNS AT LAKE

HEBGEN LAKE, MONT.—A Holladay, Utah, couple and their two grandchildren abandoned a summer home here early Tuesday when a shuddering earthquake sent waters of Hebgen Lake slapping within three feet of the front porch.

The temblor also brought the chimney crashing from the lakeside home owned by C. C. Bintz, 2494 Walker Lane (5450 South), Holladay.

Mr. and Mrs. Bintz and two granddaughters, Wendy Riser, 11, daughter of Mr. and Mrs. Frederick F. Riser, 2037 Pheasant Cl. (5600 South), Holladay, and Elizabeth Gray, 11, daughter of Mr. and Mrs. Sherman Gray, Sandspoint, N. Y., were in the house

when the quake struck shortly after midnight.

"The lake tilted," Mr. Bintz said.

Mr. Bintz, owner of W. H. Bintz Co., Salt Lake City, said shore waters, normally some 20 feet from the summer home, appeared within three feet of the porch.

The Bintzes and the two girls boarded a motorboat and made their way across the lake, where they were picked up about day break and taken to Bozeman, Mont.

Mr. Bintz said they planned to return to Salt Lake City Wednesday noon.

[Salt Lake Tribune; August 19, 1959]

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IDAHO GUARD ALERTS FOR QUAKE ROLE

BOISE, IDAHO, Aug. 18 (UPI)—Gov. Robert E. Smylie Tuesday alerted Idaho civil defense personnel and National Guard units to stand by in eastern Idaho to aid in the earthquake disaster.

Gov. Smylie said guardsmen and civil defense workers will be available to help with the evacuation of injured and stranded tourists in the quake area of Montana and Wyoming.

Idaho state police officers already are in the West

Yellowstone and Yellowstone National Park area to provide assistance.

In a report to the governor, Lt. Col. James Keel Jr., Idaho civil defense chief, said his units in eastern Idaho were alerted and were ready to handle injured, help with evacuation and provide assistance in the event another quake should hit the area.

[Salt Lake Tribune; August 19, 1959]

HAM RADIO AIRS DISASTER

Tuesday's disaster in Yellowstone National Park—outdoor playland of the country, drawing millions of tourists and sportsmen from all over the states and the world—provided dramatic evidence of the crucial importance, plus some inadequacies, of amateur (ham) radio communications in times of emergency.

With telephone services jammed and disrupted, a lone amateur operator in West Yellowstone, Mont., was practically the only source of information concerning the earthquake-landslide-flood catastrophe.

He was identified only as "Russ" at call letters K7ICM, and was apparently operating on emergency power provided by gasoline-driven generator. (The latest listing of authorized stations does not list K7ICM, indicating it is a new one.)

The Rev. Francis A. Peterson, a Roman Catholic priest operating W7RKI in St. Anthony, Idaho, was monitored by numerous Intermountain receivers from shortly after midnight far into Tuesday relaying messages about the situation to distant points where worried relatives of vacationers sought news of their safety.

Brunt of the communications load came Tuesday morning as sketchy news dispatches reached further afield via newspapers, wire services, radio and television. A Dillon, Mont., operator identified from

his aeronautical mobile call letters W7JPD as Harold Beddor, was the first radio unit known to fly over the disaster scene, and transmitted most of the early aerial reports.

The Idaho Civil Defense organization became the chief filter for short-wave transmissions, operating out of amateur station W7OA in Boise, Idaho. Contact with West Yellowstone was lost and monitors from both Utah and Idaho continued attempts to again receive "Russ" late Tuesday.

According to Douglas Butler, 4851 W. 4805 South, operator of W7FSC and Utah section emergency coordinator for the American Radio Relay League, said Utah hams have attempted to stay off the air and monitor, to keep the frequency clear.

Salt Lake area amateurs reported monitoring West Yellowstone calls included Raymond Rich, 5170 Steele St., Kearns (call letters K7BYR); Wilbur Fahey, Air National Guard (K7FCN); Vern J. (Curly) Kloepper, 1021 Pueblo (1440 West), (W7HHW), and Reed Wallace, 623 Lake (740 East), (K7ERO).

Mr. Butler said hams as distant as Seattle, Wash., and Rapid City, S.D., also were monitoring on a standby basis.

Reception was made difficult by "skip conditions," caused by sunspots and the aurora borealis, he added.

[Salt Lake Tribune; August 19, 1959]

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SALT LAKE TRIBUNE

EARTHQUAKE SWEEPS SALT LAKE 'SUBURB' Cabins Surround Hebgen

"I brought my family out Monday and I'm certainly glad I did. Had we stayed another night we would have been in the earthquake."

That statement was from Richard G. Stevens, 1548 Harvard Ave., one of many Salt Lakers who own cabins on Hebgen Lake near West Yellowstone, Mont.

So many Salt Lakers own property around the lake that many Montanans refer to the area as "Northern Salt Lake."

Frank A. Fisher, 36 N. Walcott Ave., is one of the pioneer members of the Salt Lake colony on Hebgen. Contacted at his home Tuesday afternoon, Mr. Fisher said, "I can't understand anything happening to that dam. I was there in 1915 when they were completing work on the project and I know how well it is built.

It should last forever."

For many Salt Lakers, Tuesday was a suspense filled day as they attempted to contact relatives or friends at the lake.

Mrs. Stephen L. Richards, widow of the late member of the First Presidency, Church of Jesus Christ of Latter-day Saints, and 12 other members of the Richards family were safe after leaving the cabins they were occupying on the south shore of the lake and seeking refuge in their cars.

None had been injured, and they were en route home Tuesday.

The group was staying at the cabin of Lynn S. Richards, 1403 E. South Temple, son of the late church official, who said he had planned to join them Tuesday night, and the elder Mrs. Richards' cabin.

Mr. Richards' wife, son Jimmy, and daughter Joyce, were in the party, with his son, Dr. Lynn S. Richards Jr., Minneapolis; Dr. Richards' wife and five children, and Mrs. J. K. Allen, Palo Alto, Calif., and her daughter, Irene.

Mr. and Mrs. Wilford M. Burton, 920 22nd East St., left last Saturday to go to their cabin in the Rumbaugh Ridge area at Hebgen, relatives said.

Other Salt Lakers who own cabins at Hebgen

include Adrian H. Pembroke, 939 Diestel Rd. (1675 East); B. L. Foulger, 2040 Browning Ave. (1410 South); Arthur Gardiner, 1429 21st East; Edward I. Vetter, 2552 Wilshire Cir. (2825 East); Charles C. Bintz, 2494 Walker Ln. (5450 South); J. A. McHale, 3648 Highland Dr.; F. L. (Dick) Romney, 125 13th East, Skyline Conference commissioner.

M. J. Mollerup, 1830 Bryan Ave. (1565 South); Eric C. Ryberg, 2265 Country Club Dr. (2340 South); E. R. Dumke Jr., 1956 Yalecrest Ave. (1075 South); Frederick R. Hinckley 1283 E. South Temple, and R. A. Conely, 470 13th East.

Dr. Joel E. Trowbridge of Bountiful also has a cabin on the lake.

Mr. Gardiner said his son, Richard, had called him early Tuesday with the report that damage to cabins had been heavy.

"He said they evacuated everyone from cabins all around the lake shortly after the quake hit," Mr. Gardiner related. "My cabin was damaged extensively, but my son said it could be repaired. A cabin next door was completely wrecked. He said the water in the lake dropped 10 feet in 10 minutes."

Other Salt Lakers were vacationing in the area. Mrs. Camille Halliday, 743 7th East, a teacher at Columbus School, notified relatives Tuesday afternoon that she and a friend, Miss Marilyn Brunson, "were badly shaken up in the earthquake, but are all right and on our way home."

K. Smith, owner-operator of the Brighton Ski School during winter months, is co-owner of a dude ranch on the shore of Hebgen Lake. Mrs. C. E. Wright, also a Salt Lake co-owner of the Watkins Creek dude ranch, telegraphed The Tribune: "Everything fine at Watkins Creek Ranch, just bottled in for the time being."

The ranch is located on the south shore of the lake, immediately on the lake shore.

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JOLT JARS U. NEEDLE OFF SCALE

By William C. Patrick
Tribune Science Editor

Ground vibrations from the Montana earthquake hit the University of Utah seismograph with such violence the instrument was thrown "off-scale" for four minutes.

Dr. Kenneth L. Cook, head of the department of geophysics, estimated the magnitude of the initial shock recorded at 11:38 p.m. Monday at between 7 and 8 on the Richter scale.

Dr. Charles Richter of California Institute of Technology, who devised the scale for reckoning the energy released by an earth slippage, placed the figure at 7.1.

This makes it one of the heaviest earthquakes recorded in the Intermountain Area in historic times.

Dr. Cook said the center of the disturbance was approximately 400 miles from Salt Lake City. Most likely it occurred along one of a number of fault lines in the Madison River Valley of Montana.

The San Francisco earthquake of 1906 on the notoriously active San Andreas fault registered an intensity of 8.25 on the Richter scale.

The U. of U. seismograph registered numerous after-shocks throughout Monday night and Tuesday. The heaviest, estimated at between 6 and 7 on the Richter scale, was recorded here Tuesday at 8:26 a.m.

Late Tuesday Dr. Cook reported that minor after-shocks were still being noted.

After the Helena, Mont., earthquake of Oct. 12, 1935, after-shocks were felt at intervals for a period of three years.

Two previous Intermountain Area quakes this summer were centered on the Sevier fault near Kanab, and the Hurricane fault near Kanarraville. They were much milder than the one in Montana.

The last major shake in the Intermountain Area was in the Dixie Valley of western Nevada on Dec. 16, 1954. The intensity was recorded at 7.1 on the Richter scale.

The fault lines, or cleavages in the crust of the earth, that gave rise to the Montana quake, are among a number that extend in a belt south from the Canadian border, through Montana, eastern Idaho and western Wyoming, central Utah and into Arizona.

Although no part of the earth's crust is immune to

earthquakes, there are certain areas where disturbances occur more frequently and with greater violence.

The far western section of the American continent is one of these. California is the real hot spot, because it lies in an area where mountain building is still going on.

When subterranean pressures build up to a certain point something has to give, and this occurs along established fault lines.

The San Andreas, which passes right under San Francisco, is the longest and most active, although violent slippages have taken place on other Pacific Coast faults.

Intermountain Area is rated as less active than the Pacific Coast. The adjustments going on in this region are a sort of backwash from the convulsions involved in the Pacific Coast mountain building.

In more than 100 years Utah has experienced nearly 300 earthquakes of great enough intensity to be felt by the inhabitants. Fortunately, no quake of city-destroying magnitude has yet hit a densely populated area.

According to Prof. Ray E. Marsell of the U. of U. Department of Geology, Utah has had three major earthquakes in historic times. The first occurred from Nov. 13 to 19, 1901, in Sevier County on the Elsinore fault.

The next series, also on the Elsinore fault, shook the town of Elsinore, Sevier County, from Sept. 25 to Oct. 1, 1921.

The greatest occurred the morning of March 12, 1934, on the Hansel Valley fault north of Great Salt Lake in western Box Elder County. In Salt Lake City chandeliers swayed and several buildings were cracked.

Since the center of the disturbance is sparsely populated there was little damage, although two deaths were attributed indirectly to the shock.

The ground vibrations were felt over an area of 170,000 square miles, including parts of Utah, Nevada, Idaho, Montana and Wyoming.

This was followed by a series of after-shocks, the heaviest of which was on April 14 of the same year.

They also were felt over a wide area.

The Salt Lake Tribune of the following day reported: "In one of the local theaters, where the

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audience was composed largely of children, a panic was narrowly averted."

Prof. Marsell said 90 per cent of Utah's recorded earthquakes have had their origin in five major fault zones. These are:

(1) Hansel Valley, Box Elder County; (2) the Wasatch fault, parallelling the western base of the Wasatch Mountains from Collinston to Nephi, a distance of 150 miles; (3) the Sevier fault, beginning at the base of the Gunnison Plateau in Sanpete County, then shifting to the western base of the Sevier Plateau and extending through Sevier, Plute, Garfield and Kane counties.

(4) The Elsinore (or Tusher) fault, paralleling the

SALT LAKE TRIBUNE

Sevier fault on the opposite side of Sevier Valley in Millard, Sevier and Plute counties, and (5) the Hurricane fault, which extends southward through Iron and Washington counties and into Arizona across the Grand Canyon.

In Salt Lake County the Wasatch fault extends from the southern end to a point between Big Cottonwood and Mill Creek canyons. A branch takes off northwestward, underlying a portion of Salt Lake City's east bench.

Another fault begins on the face of the mountains near Warm Springs, and extends northward.

[Salt Lake Tribune; August 19, 1959]

'NO INTENTIONS' TO CLOSE PARK Quake Sidelights

With exception of the West Gate at West Yellowstone, Mont., all entrances to Yellowstone Park were open Tuesday afternoon, and officials "definitely had no intentions of closing the park."

That word was received Tuesday shortly after noon by The Salt Lake Tribune from Lemuel A. Garrison, superintendent of Yellowstone.

Mr. Garrison called to quash rumors that the park had been declared a "disaster area" as a result of the earthquakes that ripped through the Montana-Idaho-Wyoming border country late Monday and early Tuesday.

Mr. Garrison said he had just met with John Q. Nichols, president of the Yellowstone Park Co., which operates hotels and concessions in the park, and "we decided that there was no need for closing the park."

The North Gate at Gardiner, Mont., the Northeast Gate at Cook City, the East Gate at Sylvan Pass and the South Gate leading into Jackson Hole, Wyo., are all open, Mr. Garrison pointed out.

Park Rangers at the West Yellowstone entrance said Old Faithful geyser was still erupting normally.

Other major geysers in the area, however, have

definitely been affected by the quake.

"Some of them are really acting up and are very irregular," a ranger reported.

The quake caused five slides which blocked roads on the west side of the park, Mr. Garrison said. Major roads blocked are those leading from Mammoth Hot Springs via Norris Geyser Basin to West Yellowstone and from Old Faithful via Madison Junction to West Yellowstone.

The park official said no attempt would be made to clear the slides "until a safe interval has passed since the last shock." He reported the last tremor was felt at Mammoth Hot Springs about 8:45 a.m. Tuesday.

"There have been no casualties within the park and people aren't panicky," he reported. "However, many persons were leaving Tuesday."

He said there are ample accommodations at all lodges with exception of Old Faithful Inn which received some structural damage, "just how much we haven't determined yet, but it has been temporarily closed in the interests of safety."

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EARTHQUAKE 'ACTUALLY TILTED LAKE' Hebgen Reservoir On Seesaw

Colin Raff, director of publicity for Montana Power Co., Tuesday gave a vivid description of what happened at Hebgen Dam at the time of the worst quake late Monday night.

"When the quake struck," he said, "a 20-foot wall of water surged over the dam, damaging some of the cement work. At the same time, the east abutment slipped into the lake."

He expressed confidence the dam would hold and said every effort was being made to rescue the 100 to 150 persons trapped between the dam and the huge

rock slide that blocked the canyon seven miles below the dam.

Mr. Raff said water was not backing up too much above the rock slide and the river continued to flow below it, indicating water was getting through the tremendous pile of earth and rock.

"The earthquake actually tipped the lake to cause the water to surge over the dam. The north bank of the lake dipped as the south bank was lifted by the fault slippage that caused the earthquake," he said.

[Salt Lake Tribune; August 19, 1959]

QUAKE TIES UP U. P. BRANCH LINE

Service on Union Pacific Railroad's branch line from Ashton, Idaho, to West Yellowstone, Mont., has been suspended until tracks have been repaired, the company said Tuesday.

A slide, born of Monday night's earthquake, covered the tracks seven miles west of West Yellowstone. At another point, seven miles east of Ashton, the tracks were knocked out of alignment.

In the meantime, Union Pacific's "Yellowstone Park Special" left Salt Lake City as scheduled Tuesday

at 7:30 p.m. Its Yellowstone Park-bound passengers will be picked up by Yellowstone Park Co. buses at Victor, Idaho.

Monday night's "Special" was held at Ashton Tuesday at 5:10 a.m. Cars bound for West Yellowstone then were joined with those headed for Victor. The train and its 110 passengers arrived in Victor Tuesday afternoon.

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‘WORK UNTIL DARK HUNTING DEAD’

(Editor's Note: Sheriff L. W. Brooks of Madison County, Mont., is a cousin of Don Brooks, Tribune Outdoors Editor. This is the sheriff's story, telephoned to The Tribune.)

VIRGINIA CITY—We airlifted between 100 and 150 stranded campers and brought five bodies out of the area between Hebgen Dam and the new dam downstream formed by a sliding mountain.

Helicopters brought them out.

We couldn't get the identities of the persons killed because the copters had a different wave length than ours. The bodies were taken to Ennis, where Charles

E. Raper, coroner, was given the task of establishing identity and notifying relatives. Mr. Raper is a mortician in Virginia City.

We know there are at least three more bodies in the area, but we believe we have all the living persons evacuated. We'll work until dark hunting the other dead, and resume the search at daylight Wednesday if we don't find them.

I believe it will be years before we know exactly how many people died in there—how many fishermen camped in the canyon were suddenly and irrevocably buried as they slept.

[Salt Lake Tribune; August 19, 1959]

HEROISM PLAYS DRAMATIC ROLE

Night Of Terror

By Jerry Voros

HEBGEN DAM, MONT.—Two persons, a registered nurse from Vandalia, Ohio, and a Nye, Mont., man, drew high praise for coolness and heroism during the hours after Montana's terrible earthquake.

Mrs. Frances Donegans, the Ohioan, treated scores of people for minor injuries and aided in organizing rescue teams that scoured the area between Hebgen Dam and the slide five miles below the dam.

David Thomas of Nye spent seven hours during the night in the water backed up by the slide, a 100-foot rope tied about his waist.

Two of the persons he succeeded in getting ashore were Mr. and Mrs. Graver Mault of Temple City, Calif., whom he found clinging to a tree branch after the quake and river waters swept away their house trailer.

When the earth's crust quivered, water sloshed over dam and sent a huge wave down-canyon.

Almost simultaneously, the rockslide five miles below slapped the riverbed and threw a tidal wave of water up-canyon. Many people were caught between the two.

Mr. and Mrs. Jack Goodenough, Albion, Wash., and their three children were swept 300 feet on the crest of one of the waves.

They were preparing to bed down in their tent

when the quake struck.

Henry and Ann Powers of Twin Falls, Idaho, operators of Halford's Resort, in the stricken area below Hebgen, said all 29 of their resort cabins were damaged, many of them beyond repair.

Most of the 125 persons stranded in the Hebgen area moved out Tuesday about 7:45 a.m. after temporary roads were dozed out by Montana highway equipment and private contractors of the area.

Montana Highway Patrol and civil defense workers were registering the names of each family as it pulled out to help answer the calls from frantic families which poured into the area all day Tuesday.

Dramatic eyewitness accounts of the terror and devastation in the canyon came from scores of survivors who made their way or were carried to safety early Tuesday.

Henry F. Bennett, 41, Cottonwood, Ariz., who with his daughter, Jeannette, 14, was flown by helicopter to West Yellowstone for emergency treatment of injuries, described the terror of the tremor.

"A couple from British Columbia and their eight-year-old son, a wheelchair victim, were sleeping in their car near our camp. When the quake hit we heard them scream and watched as they tried to get out but the water swept them away," Bennett said.

"They're surely dead," he added.

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Aug. 17, 11:37 p.m. M6.3; **Aug. 17, 11:37 p.m. M7.5;**
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Mr. Bennett, himself a wheelchair victim of polio, was sleeping in a tent with his wife and two children in the Rock Creek camping area below Hebgen Dam when the quake hit.

"We felt the earth shake and then rocks began falling all around us, surrounding our whole camping area.

"We managed to make it to high ground before the water from the stream backed up, otherwise I'm sure we would have drowned," Mr. Bennett said.

"It's nothing short of a miracle that we survived," he declared.

Ray Painter, 36, 4345 Porter Ave., Ogden, Utah, one of the first four evacuated by helicopter from the Hebgen Dam area, was rescued Tuesday morning after lying pinned under a tree and rocks all night.

"I could hear this rumbling noise and the trailer started to tip. I thought that a grizzly bear was shaking the trailer. I stepped out and could feel the earth shaking," Mr. Painter told rescuers.

"It sounded so close I didn't know what to do," he said.

"I didn't even have time to go back to the trailer when a wall of water which must have been 50 feet high came along and washed me right up the mountainside.

SALT LAKE TRIBUNE

"A pine tree settled down on me and a huge boulder fell on my right leg . . . I could hear my kiddies crying, but there was no sound from my wife.

"I lay there hoping, crying, screaming, and finally sometime this morning three men came along and lifted the rock off my leg. I walked about, finally finding the girls. They knew where my wife was. She seems to have a badly broken arm or something . . . I don't know," he added.

Mrs. Painter also was among the 15 flown out of the area by helicopters.

Mr. and Mrs. Joseph H. Armstrong, Victoria, B.C., were camped along the Yellowstone River between Hebgen Dam and the enormous landslide which roared into the valley seven miles below it.

"We were awakened by what sounded like an airplane diving at us," Mrs. Armstrong said.

"I kept thinking, 'This is the end' and kept screaming my husband's name," she said. "Then I crawled out of the water and mud and went to where I thought the car was.

"I thought I'd lost my husband and our two children.

"Then he heard me screaming and found me. The children were all right, but were terrified."

[Salt Lake Tribune; August 19, 1959]

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BASIN RUMBLES, GEYSER REBORN

YELLOWSTONE NATIONAL PARK—New activity in the Yellowstone geyser basins was evident Tuesday when Giant Geyser became active for the first time in five years.

A great attraction in the 1890s, the geyser used to shoot columns of water some 200 feet into the air,

higher than Old Faithful. In recent years it has showed little activity.

After the earthquakes Monday and Tuesday, Giant Geyser erupted again and has been going continuously. **[Salt Lake Tribune; August 19, 1959]**

RESORT TOWN SOMBER IN QUAKE WAKE

WEST YELLOWSTONE, MONT.—This normally vivacious vacation resort has turned into a somber, darkened town, with only one bar open and all restaurants, some of them famous, closed.

Plate glass windows of larger establishments, chimneys and even walls were smashed by the earthquake Monday night, and operators remained closed through fear of further damage from after-shocks.

Motels normally crowded this time of year cry out with red-neoned vacancy signs. Most tourists fled early

Tuesday.

Almost 100 per cent of the stock in West Yellowstone Liquor Store was broken when every shelf in the store tipped during the quake. Whisky was at a premium Tuesday.

The town's popular bars had pretty much the same experience.

The huge stone chimney of the famed Union Pacific Lodge here, near the Union Pacific Railway depot, toppled through the lodge roof.

[Salt Lake Tribune; August 19, 1959]

PARK BEARS LINE ROADS AGAIN, MISS HANDOUTS

YELLOWSTONE NATIONAL PARK, Aug. 18 —The bears were back at their old stands along the highways of Yellowstone National Park Tuesday.

But the tourists were missing.

Park rangers said it was possible that some of the

bears were killed by Monday's earthquake but none had been discovered Tuesday.

There was little chance that elk, moose, deer or bison in the park were injured.

[Salt Lake Tribune; August 19, 1959]

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‘YOUNG MOUNTAINS’ GO ON A RAMPAGE

When the solid earth proves not so solid and a mighty quake occurs, man is terrified. For the quake comes without warning. And man, who today is talking about visiting other planets, has not yet found a way of telling when Mother Earth will go on a rampage.

The quakes, which shook western states Monday night and early Tuesday morning and which were felt as far south as Salt Lake City, occurred in a relatively sparsely settled area.

That was fortunate; otherwise the loss of life could have been ten or a hundred times as great and property damage could have been tremendous.

Even so, the devastation was spectacular. The force which could easily crumple a tall building, toppled a mountain into the Madison River, cracked a big dam, opened a huge fissure in the ground, "tipped askew" the 35-mile-long Hebgen Lake and tore highways to pieces.

The quake area is in the heart of some of the most scenic country in the United States.

It is thronged with vacationers who went to see nature at first hand and experienced nature untamed.

Their panic can easily be imagined. A Yellowstone geyser is awesome, but it is as nothing compared to mountains on the move.

Captain Elliott Roberts of the U.S. Coast and Geodetic Survey explains that the mountains of the West are relatively young and still growing. The forces which build mountains extend deep into the earth, creating stresses which, on occasion, result in quakes.

The theory, however, does not answer the question of when and where a quake will occur.

Someday an answer may be found. But until that happens, man can only pick up after the quakes which he is unable to predict.

That is what took place Tuesday.

Civil Defense radio stations helped relay the first quake reports. Peace officers, the Forest Service, the Air Force, the Army Engineers, the National Park Service, private fliers, phone and power company officials, national guardsmen, physicians—people from all walks of life—rallied in a great effort to meet the emergency.

Ant this is an emergency of almost indescribable proportions. The quake, striking in a rugged area, disrupted communications and surface travel.

We sorrow for those who died. We applaud those who are doing such a valiant rehabilitation job.

[Editorial]

[Salt Lake Tribune; August 19, 1959]

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SALT LAKE TRIBUNE

RESCUERS SIFT QUAKE RUINS; FEAR HIKE IN DEATH TOLL **'Official' Accounts Remain In Doubt**

By Jerry Voros

WEST YELLOWSTONE, MONT., Aug. 19—
The toll of dead and injured in the West's most
destructive earthquake remained officially stable—but
in considerable doubt—late Wednesday.

The quake which transformed one of America's
most famous playgrounds into a focal point for grief,
disaster and unknown monetary loss, had claimed
seven identified dead. In addition, the body of an
unidentified small boy was recovered, and a woman
injured in a rock slide died in Bozeman.

But fear remained that the toll would rise.

One report of eight additional bodies recovered
from a trailer deep in backed up waters below Hebgen
Dam gained wide currency, but could not be confirmed.

Dick Engstrom, a photographer for Montana
Power Co., Butte, reported Wednesday evening that he
had talked with two rescue workers who described the
recovery of the eight additional bodies.

But the Red Cross headquarters in Bozeman,
clearing house for names of dead, injured and rescued,
was unable to verify the report. And Larry Restvedt,
deputy sheriff at Bozeman, reported he had sent a detail
to the site, and his men had been unable to learn of any
additional bodies recovered.

Exact casualty figures were still in doubt.

Tons of earth and rock and muddy brown waters of
the Madison River held the final answer.

The number of dead probably will not be known
for months—if ever. Even the injured totals varied
widely.

Montana State Highway Patrol, Air Force rescue
teams, volunteers and American Red Cross workers
from throughout the West concentrated efforts on
getting out the living Wednesday, 36 hours after the
terrible earth jar.

As dark closed in on this town—famous for its
summer entertainment—Air Force helicopters were
forced to abandon the chores performed since sunup.

Montana officials were confident that all the living
had been taken out of the Hebgen Lake-Hebgen Dam
huge slide area.

But West Yellowstone was far from its normal self
late Wednesday.

Roads north were still closed to unlimited travel

and even the vehicles allowed to pass by Montana
Highway Patrol roadblocks had to travel over hastily
chewed out trails around areas gouged out when the
earth's surface slipped.

Communications with the outside world were
better than they were Tuesday. Some long distance
calls were going through.

But the Union Pacific Railroad Co. didn't expect
track repairs to be completed for three or four days.
That cuts down on the number of tourists.

Businessmen, still fearful that another tremor
would send ceilings down, were reluctant to open their
establishments.

The earth still quaked at irregular intervals and one
jar at 12:45 p.m. Wednesday was termed serious by the
"earthquake veterans" who survived the last two days.

The majority of campers fled the stricken canyon
between Hebgen Dam and the Clift Lake area slide by
morning.

But the whirling helicopters, six in number, moved
into the camping and fishing area.

This enabled ground searchers to look for those
bypassed in the hastily conceived rescue efforts
Tuesday.

Some foot patrols were sent out to search for
persons who might have been trapped beneath
boulders. But none were reported found.

Camping equipment, cars and trailers floated or
protruded from the lake now building up behind the
rock slide. The lake water is coming from overflow
from Hebgen Dam.

Tuesday the slide completely cut the flow of the
Madison River. But Wednesday water was gushing
from where the old paved highway runs beneath the
400 foot pile of earth and rock.

In Yellowstone Park, officials still had the gate at
West Yellowstone clamped shut.

Roads between Madison Junction and Old Faithful
and the North Gate were blocked by slides which will
take a month to clear, said Park Service Ranger Jack
Hughes.

But the old stage coach road to Old Faithful was
still passable.

While the healthy moved out to Bozeman and
Ennis and Virginia City, the injured were treated at

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Deaconess Hospital in Bozeman.

Red Cross officials tried to make a check on persons leaving the area and checked out 167 persons early Wednesday.

But by the time the car caravan of evacuees moved into the Bozeman area only 75 sought Red Cross housing at Montana State College. They were housed in a men's dormitory.

Only one person was definitely dead in Bozeman. She is Mrs. Margaret Holmes, 68, Billings, Mont.

She was one of the first four persons evacuated from the slide area Tuesday by an Air Force helicopter.

Others at the hospital were on the critical list.

What most persons can't understand is the failure to obtain accurate casualty figures.

But communication lines were downed by the earthquake and the few lines pushed through since midnight Monday haven't given a complete link to rescue centers.

Virginia City has been used as a place to bring the dead from one side of the slide area. No dead were brought out from the slide area through West Yellowstone.

Tales told by survivors convince serious and generally conservative police officials that the death count has not been completed.

An incomplete compilation from the stories told by the survivors show that five cars and 10 trailers were covered by falling earth and rocks.

[Salt Lake Tribune; August 20, 1959]

'QUAKE MOUNTAIN' LARGEST TOMB?

By Carl E. Hayden

EARTHQUAKE DISASTER AREA, MONT.,
Aug. 19—Is Earthquake Mountain the largest tomb in history?

And if so, for how many?

That was the gnawing question here Wednesday. And when the last survivors of the Intermountain Area's most devastating earthquake had been removed, it was a question on everyone's lips.

The tempo of evacuation and rescue operations continued unabated. Bulldozers tackled huge earth and rock slides. Giant Air Force and privately-owned helicopters buzzed into and away from airports.

The identified dead numbered 7, the number of injured varied. But it was the "unknown" which troubled everyone concerned with the vast rescue and cleanup operation.

The Forest Service announced cautiously:

"It is presumed that some people have been buried by the large land mass which slid into Madison Canyon. The slide is a half-mile long and a minimum of 150 feet deep at the lowest point, and approximately 300 feet deep at the point over the road."

Some at the rescue scene observed that since many tourists travel for long periods, and do not leave word of their planned stops or routes with relatives, it may be some time before some who may be trapped in the slide are missed.

There were inquiries, of course thousands of them, both Tuesday and Wednesday. But most were about people who could be accounted for. This sparked hope that not many were caught in the quake-triggered slide.

But it was only a hope. No one knew, and no one would know for some time. And possibly no one would ever know the precise toll of Monday night's quake.

The dead and injured were taken out by Air Force and private helicopters and others who had been trapped were escorted out by car over a bulldozed road punched through from the West Yellowstone side by Montana State Highway Department crews.

To reach the Hebgen Dam, four sections of road had to be hacked out around slide areas where the highway had been severed along the lake.

Twenty-one injured persons were evacuated to West Yellowstone for medical attention. They were flown to a hospital at Bozeman.

Latest reports to the Forest Service were that seven persons lost their lives in the Cliff Lake and Wade Lake areas 10 miles west of Madison Canyon and in the vicinity of the big slide.

Five persons injured at Cliff Lake by the earthquake were evacuated to Ennis, Mont.

Before the evacuation, eight Forest Service smoke-jumpers had parachuted into the slide area to administer first aid to the injured.

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It was fortunate there were two nurses in the Madison Canyon disaster who were able to give relief to injured and organize movement to safe areas. They were Mrs. Raymon Greene, Billings, Mont., and Mrs. Fred Donegan, Vandalia, Ohio.

Two large Air Force helicopters were used to evacuate the litter patients, and those able to sit up were rescued by three smaller copters furnished by the Johnson Flying Service of Missoula.

Efforts of the searchers were being coordinated with the Gallatin National Forest through George Duvendak, supervisor.

Duck Creek Road, the highway from West Yellowstone to Bozeman, was re-opened Wednesday afternoon.

The Forest Service said there will be no attempt to open a way around the slide area until the land

movement and earth tremors subside.

Meanwhile, opening of an alternate access route from Ennis to West Yellowstone will be attempted by Montana State Highway Department crews over Reynolds Pass, said A. E. Zion of the highway department.

Alex Stephenson and Ben Newman of the Montana and Idaho state police, respectively, were in charge Wednesday of keeping unauthorized personnel from entering the upheaval area and to evacuate persons located in the danger area.

Capt. Hancock reported the ordeal of a 60-year-old widow who operated Hilgard Lodge just above Hebgen Dam.

Mrs. Fred Miller was left homeless and everything she owned toppled into the reservoir.

[Salt Lake Tribune; August 20, 1959]

HERE'S COUNT OF VICTIMS IN DISASTER

Bodies of seven persons killed by an earthquake-caused landslide in Madison River Canyon had been positively identified Wednesday and were being held in Virginia City and Bozeman, Mont., mortuaries.

The body of a small boy found in the canyon was still unidentified.

Known dead and missing:

Mark Thomas Stowe, 31, Sandy, Utah.

Mrs. Marilyn W. Stowe, 24, his wife, missing and presumed dead.

Purley Bennett, 43, Coeur d'Alene, Idaho.

Carole Bennett, 17, a daughter.

Tommy Bennett, 11, a son.

Susan Bennett, 5, missing and presumed dead.

E. H. Stryker, 39, San Mateo, Calif.

Mrs. Ethel Stryker, his wife.

Mrs. Margaret Holmes, 72, Billings, Mont., died in Bozeman hospital of injuries suffered in Rock Creek slide.

[Salt Lake Tribune; August 20, 1959]

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RELATIVES IDENTIFY BODY OF UTAHN—HUNT WIFE

SANDY—Positive identification of a Sandy man killed in the Yellowstone earthquake was made Wednesday and the search for his wife, now presumed dead, was continuing.

T. Mark Stowe, 30, was identified by his brothers, Robert A. and Richard W. Stowe, and his father-in-law, Rex G. Whitmore, 8060 700 East. Search for his wife, Marilyn, was continuing.

Thomas W. Stowe, 9395 700 East, said his sons informed him the body was found below the largest slide. His car was in the bottom of the river.

Mr. Stowe reported his son, Robert, a Salt Lake County deputy sheriff, said it "looked as if Mark was in bed at the time of the landslide from the way he was dressed."

"Mark was a light sleeper and Marilyn a heavy sleeper. It is possible that Mark may have heard the rumble and jumped out of the tent to see what was happening when the slide hit him and knocked him free," Mr. Stowe theorized.

Their son, Terry Mark, 3½, was staying with Mr. and Mrs. Whitmore. The couple left for the outing Monday morning and had gone to a spot where Robert and Richard had good luck fishing about 10 days ago, Mr. Stowe said. They were parked between the road and the river.

Thomas Mark Stowe was born in Murray May 22, 1929, to Thomas W. and Leola Boulter Stowe.

He was graduated from Jordan High School and Brigham Young University. He attended the University of Utah for two years before receiving his degree from BYU in 1951.

He served in the U.S. Army Medical Corps from 1951 to 1953 and spent one year in Korea.

He was a music teacher in Jordan District. He supervised elementary music at Riverton, Herriman, Lark, Copperton, Bingham Central and West Jordan elementary schools and had taught in Jordan District since his release from the service.

He married Marilyn Whitmore Nov. 24, 1954, in the Salt Lake Temple, Church of Jesus Christ of Latter-day Saints.

Mrs. Stowe, 24, was born in Salt Lake City Aug. 29, 1934, to Rex G. and Ferrol Smith Whitmore. She attended schools in Salt Lake City and Phoenix, Ariz., before graduation from Jordan High School. She attended Brigham Young University for one year, where she was affiliated with the Cami Los social unit.

Mr. Stowe is survived by his parents; two brothers, Robert A. and Richard W. Stowe; one sister, Mrs. Richard I. (Maxine) Crapo, and his son, all of Sandy.

Mrs. Stowe is survived by her parents; one brother, Ray R. Whitmore, Rochester, N.Y., and two sisters, Geraldine and Connie Lee, Sandy, and her son.
[Salt Lake Tribune; August 20, 1959]

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HERE'S LATEST LIST OF INJURED IN YELLOWSTONE EARTHQUAKE

Here is a list of the persons known to have been injured in Monday's earthquake:

Ashton, (Idaho) Hospital — Mrs. Bertha Wilson, West Yellowstone, Mont; Anthony Smith, San Diego, Calif.

Deaconess Hospital, Bozeman, Mont. —

Ray Painter, 46, Ogden.

Mrs. Myrtle Painter, his wife.

Miss Verona Holmes, Billings, Mont.

Warren Steele, Billings.

Esther Steele, Billings, his wife.

Tony Schreiber, 46, Billings.

Carmania Schreiber, his wife.

Bonnie Schreiber, 7, their daughter.

Joseph H. Armstrong, Victoria, B. C.

Mrs. Ruby Armstrong, his wife.

Clarence B. Scott, 59, Fresno, Calif.

Mrs. Olive Scott, his wife.

Grover Mault, 71, Temple City, Calif.

Mrs. Lillian Mault, 68, his wife.

Mrs. Marcille Bennett, Cottonwood, Ariz.

Henry Bennett, her son.

Madison Valley Hospital, Ennis, Mont. —

Mrs. Irene Bennett, Coeur d'Alene, Idaho.

Phillip Bennett, 16, her son.

St. James Hospital, Butte, Mont. —

George Whittermore, believed to be of Elyria, Ohio.

[Salt Lake Tribune; August 20, 1959]

DAD 'HAD TO FIND BOYS'

BOZEMAN, MONT., Aug 19—Bill and Stephen Conley ate breakfast with their Uncle Hal Wednesday morning. The boys laughed and joked.

Bill, 16, had plenty to talk about. Stephen, 10, could think of only one thing: He saw a tree fall on an outhouse at the height of an earthquake which destroyed a camping area they were in.

Bill and Steve are from Idaho Falls, Idaho. They had gone on a vacation with their uncle and aunt from San Jose, Calif.

Now the vacation was nearing an end.

Aunt Polly and Uncle Hal (Weston)) had lost their car and trailer. But they had their lives.

The boys didn't know how their father, John, 48, Idaho Falls, had reacted Tuesday.

John Conley was at home when he heard the news of the earthquake in the Hebgen Dam area. He couldn't be kept home.

John Conley had to find his boys.

He went to West Yellowstone. The stories, the pictures of the area spelled doom.

He was dazed. He was stunned.

People comforted him. Some offered prayers.

John Conley was taken to the emergency hospital set up at the West Yellowstone Airport.

The doctor told John Conley there was hope that

his sons lived until they were found dead.

A minister joined in.

But John Conley had to know.

Then the message came—hours after his first fears burned.

The boys were alive.

Sitting in the cafeteria at Montana State College, the boys told their story.

"We were asleep in the station wagon and all of a sudden everything just shook," said Bill Conley.

"Yeah, it was really something," chimed in Steve.

Uncle Hal Weston listened and nodded. But he couldn't smile. Nor could Aunt Polly.

Aunt Polly had spent hours Tuesday bandaging and treating victims of the slide while rescue was awaited.

"She was an angel," said Uncle Hal. "But she was completely exhausted. She had to sleep late."

The hour was 10:30 a.m.

Then the boys became serious.

Bill recalled he had seen a woman—an old woman—badly hurt.

Steve told how the Weston trailer was a first aid station, how excited people were calmed by their aunt and uncle.

Here were proud youngsters.

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But they were anxious, too.

They wanted their father and mother to know they were safe.

But the boys couldn't have known how much that word meant.

John Conley knew.

So did the people who had tried to comfort John Conley.

But John Conley wasn't alone Wednesday.

Hundreds of persons still sought word that their relatives and friends lived.

[Salt Lake Tribune; August 20, 1959]

'UNACCOUNTED' LIST INCLUDES UTAHNS

Families Wonder

On Wednesday, another list joined that of the dead, the missing or the accounted for of Monday night's earthquake. It was the names of those unaccounted for.

They are persons believed to have been headed for the Yellowstone area in Montana and Wyoming. So far, these persons have not yet informed families or relatives of what may have befallen them just before midnight Monday.

Their names follow:

Mr. and Mrs. Willard V. Fuller, 4252 Highland Dr. (1650 East), their son George, 8, and daughter, Yvonne, 12.

According to their daughter, Carol, 17, who remained at home with her brother Richard, 19, the family left Salt Lake City Friday.

On Tuesday, Carol received post cards from the family, postmarked Sunday at 5 p.m. in West Yellowstone, Mont. The cards said the family was going to the park.

Mr. Fuller is president of Holladay Homes, Inc. The family was driving a 1953 GMC pickup truck, hauling a 20-foot trailer, painted pink and white with black stripes, Carol said.

Mr. and Mrs. William C. Livingstone, 142 American Dr., Murray.

Mrs. Livingstone's parents, Mr. and Mrs. Gerald

G. Rowley, 182 Edith Ave. (1195 South), reported Wednesday night that the Livingstones and their daughter, Ann, 10, had gone to the Yellowstone area for a vacation.

They probably were camping out, since they had borrowed sleeping bags. Ann wrote a postcard from "Yellowstone," postmarked Monday at 11:30 a.m., saying the family was having a wonderful time. That was the last word. The Livingstones were to have returned Wednesday evening.

Mr. and Mrs. Dale James, Tooele, and seven children.

Mr. James, former city manager of Tooele, left Sunday at 2 a.m. for the camping and fishing at the Hebgen Dam area, his mother, Mrs. Eva James, 919 Gale St. (340 West), said Wednesday.

Last word came indirectly from his partner in the Vista Line Coach and Trailer Co., Keith Ensign, who said Mr. James had left the Hebgen area two hours before him. Mr. Ensign was among those in the Hebgen Lake area when the quake struck.

Mr. James was driving a blue truck, hauling one of the company's house trailers. His children range in age from 7 to 20. He was named "Man of the Year" by a Tooele citizens committee in 1945.

[Salt Lake Tribune; August 20, 1959]

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PARK'S MOSTLY 'OPEN' BUT — Yellowstone Will Take Year To Repair

WEST YELLOWSTONE, MONT., Aug. 19—It will be next season before Yellowstone National Park can recover completely from Monday's earthquake.

Even then the scenic vacationland probably won't be the same.

Some old features may be gone. New ones will be added.

Jack Hughes, a National Park ranger stationed at the West Yellowstone gate, briefed newsmen on the results of the earthquake in the park.

"It isn't the fact that we can't clear some of the road east of here," he said. "But we aren't doing any clearing, because of the danger that falling rocks may kill or injure workmen. Or for that matter some visitors."

But Ranger Hughes said the idea the entire park was closed is wrong. It is a huge place and only the

western side of the park and possibly remote areas have been badly hit by shifting earth and rock.

Not even Ranger Hughes and his west gate companions are allowed to wander in the park.

"We went in the night of the earthquake," he said.

Clearing operations in a part of the park were started, then halted Wednesday when a giant rock slide near Mammoth Hot Springs, in the northern section of the park, was touched off by one of the frequent after-quakes now being experienced in the area. About 75 miles of roads in the park are closed, including normal routes between Madison Junction and Old Faithful and Madison Junction and Mammoth Hot Springs.

The west wing of Old Faithful Inn, a historic park hotel, was reopened after a safety inspection.

[Salt Lake Tribune; August 20, 1959]

OL' FISHING HOLE NO LONGER ANGLER'S DREAM

WEST YELLOWSTONE, MONT., Aug. 19—Running fast and clear, the Madison River for years has held a spot as one of the most famous trout streams in America.

But Wednesday it was all over.

And expert anglers said it may take years for the stream to return to its old fishing glories.

U.S. Forest Service experts pointed out the sudden

rise and fall of Hebgen Lake in the Monday night quake left thousands of fish dead on the sidelines of a much bigger disaster—the loss of human life.

As for the Madison, they said in time it may return as a trout fisherman's paradise.

But not this year . . .

[Salt Lake Tribune; August 20, 1959]

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'UNSEEN DAMAGE' ADDS TO QUAKE-AREA WORRY

WEST YELLOWSTONE, MONT., Aug. 19—
Extent of property damage in West Yellowstone proper
resulting from the series of earthquakes, probably won't
be ascertained for some time, authorities said here
Wednesday.

It is believed that much of the structural damage to
buildings, for instance, may not show up immediately.

Reason the town escaped more extensive damage
is attributed to the fact that many of the buildings are of
log or frame construction which withstood the quake.
However, the high school—of brick—was severely
damaged.

At least 75 fireplaces and chimneys were
damaged.

The chimney top fell from the Union Pacific dining
room here, ripping an eight-foot hole in roof and
ceiling.

The town, except for its residents and those
connected with the rescue operations in the Madison
Canyon and Hebgen Lake areas, was pretty well
deserted Wednesday.

Tourists poured out of the resort in panic and great
volume Tuesday following the initial shocks of the
earthquake. Travel was to the south on Highway 191,
the only route left open.

The Bozeman highway and the highway through

the west entrance of Yellowstone National Park had
been closed by rock and earth slides.

Elliot Davis, district park ranger, said the highway
from West Yellowstone to Madison Junction will
remain closed from two days to a week because of
slides.

When the quake started, Mr. Davis, at West
Yellowstone, went into the Madison Junction area and
was trapped by a slide that closed the road.

He said the slides filled the canyon with a gray-
brown dust that was so dense that even with car
headlights turned on there wasn't enough light to see
the ground in front of the car.

There was a slide at Silver Lake near Mammoth
that closed that route.

No travel from Madison Junction to Mammoth has
been possible since the quake.

There still are some campers at Madison in the
Madison Junction area but they can leave the park via
the Old Fire Hole Road, said Mr. Davis.

Travel in the park is now possible through the
Gardiner, Mont., and Cody and Jackson, Wyo.
entrances, and via Mammoth Tower Falls, Fishing
Bridge and West Thumb.

[Salt Lake Tribune; August 20, 1959]

MILITARY HELP TO CONTINUE

WEST YELLOWSTONE, MONT.—The Air
Force expects to keep men and airplanes, including
helicopters, in the area of West Yellowstone for at least
the rest of the week, the operations office set up by air
and rescue personnel from Hamilton Air Force Base,
Calif., announced Wednesday.

The airport here, unlighted and with only one strip,
has seen so much activity that the Montana Aeronautics
Commission has established a special radio control
center at the field to coordinate private and military
flights.

[Salt Lake Tribune; August 20, 1959]

HEBGEN LAKE, MT 1959 SERIES pg. 226
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SALT LAKE TRIBUNE

REPORTER'S THOUGHTS IN VALLEY OF DEATH

By Jerry Voros

HEBGEN DAM, MONT., Aug. 19—I walked in the valley of death Wednesday.

That's the name that generations of Americans will call the six-and-a-half-mile wide winding canyon which took on numerous names Monday, about 11:20 p.m.

Call it the valley of the brave, of the earthquake, of the dead.

For surely this was the place that at least eight persons met death.

It was green Wednesday. At first, entering the canyon below the damsite, the only thing strange was the lack of noise and the muddy brown river.

Usually, the Madison River winds its way in a crystal clear path through the valley.

But not Wednesday.

Mud and debris of all types floated gently downstream. And closer to the end of the canyon and the huge 55 million ton rock slide which closed the valley the water gets dirtier and the stream bed gets wider.

Here it is twice its normal size. Then 2½ times wider.

Then about a turn in the road, one grabs for support.

Transfigured from a peaceful camping area into a scene of utter and complete destruction, the valley (or is it a canyon) stops.

Yes, stops.

This is a deadend.

You can't help wondering how completely dead this canyon was. How many people lie beneath the boulders? Some of the rocks are as large as automobiles. How many people, you ask yourself, lie trapped in trailers or automobiles in the brown waters which gradually are working back to form a new lake?

But the thoughts aren't only of the dead—or the injured—or the heroic, brave hundreds who moved to safety 24 hours after nature sent a surprise vacation punch.

Thoughts are of perhaps this is the way other lakes you've known were formed. That here is one small step in the evolution of the world.

Here nature or God or something had hammered out a new lake.

But would man allow it to exist?

Then thoughts must return to those red eyed, worried folks standing back at West Yellowstone hoping, praying, pleading for news.

"Is Harry dead?" asked one.

"When can I know if Nancy and the children are all right?" asks another.

You must think. This must be moved. Some attempt must be made to find the answer to the questions the people ask.

Remember, you tell yourself, the voice on the party telephone you used to call out your story last night.

"I have to find out," it declares. "I've checked the hospitals, the sheriff, the state police. Where is Harry?"

And you think.

"Is Harry trapped beneath all this?"

Then you see an automobile license plate sticking out from beneath the earth and the boulders.

Is it fair, you ask, to list the license number. Could someone have escaped?

And then there is the sound of rippling rock. Up on the side small streams of pebbles, then larger rock begin to roll.

Is it safe, you wonder?

As you stand there, the water licking up the highway destroying a man-made work, you can't help wondering.

Is this God's handiwork?

And strangely enough, in this place where less than 26 hours ago terror and blood were common—as common as heroes—God and all His works seem close.

Can man move mountains?

Something bigger than man moved a mountain in about three minutes.

Will man try to duplicate the task on months of costly work to find a body—to find several bodies—to do away with that nagging fear which thousands of Americans felt Tuesday when they realized relatives were in, on their way or at Yellowstone?

I wonder.

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2 MAJOR, 12 MINOR JOLTS FOLLOW BIG EARTHQUAKE

Two major and about a dozen minor after-shocks which followed Monday's destructive earthquake in southwestern Montana had been recorded on the University of Utah seismograph up to noon Wednesday.

The shocks may continue for days, weeks or even months while the earth's crust in the area is still in a constant state of unrest, according to Dr. Kenneth L. Cook, head of the University of Utah's department of geophysics.

Dr. Cook said Wednesday the first major after-shock to follow Monday's quake came at 8:26 a.m. Tuesday, nine hours after the first quake spread death and destruction through the Montana resort area.

The after-shock reached an intensity of 6.5 on the Richter Scale, the seismograph showed.

Two additional temblors were recorded Tuesday, one at 4:33 p.m. of inconsequential intensity and another at 9:05 p.m. of "fair" intensity but of about 10 minutes duration, Dr. Cook said.

An additional shock was recorded at the University of Utah earth science laboratory at 4:05 a.m. Wednesday, but did not reach major intensity.

The records were pulled from the seismograph Wednesday at noon, Dr. Cook added.

Intensities of earthquake after-shocks have been known to surpass those of the initial crust disturbances, but the general pattern is that they are mostly minor in nature, he said.

Earthquake after-shocks are attributed to the efforts of Mother Nature to balance pressure in the earth's crust.

After a major fault slippage, unequal crust pressures are set up in the area and may reach out scores of miles.

The follow-up disturbances will continue until all the stresses within the earth's crust are equalized in all directions and the ground is stable again.

[Salt Lake Tribune; August 20, 1959]

DAM REPAIRS ON WAY, UTILITY SAYS

BUTTE, MONT., Aug. 19—The Montana Power Co.'s quake-damaged Hebgen Dam near the head of the Madison River will be repaired as soon as possible.

That was the word Wednesday from the utility's chief engineer, Ray Ball. He said the main damage from Monday night's earthquake was to the building containing the direct current generator.

This furnishes power for operations at the dam, built 44 years ago to control water used by downstream

Madison and Missouri River power plants.

Mr. Ball said a tidal wave caused by the quake filled the generator house with mud and debris. Some of the earthfill at the top of the 87-foot-high concrete and earth filled dam was washed away.

The engineer said three small cracks on the downstream side of the dam are "not considered consequential."

[Salt Lake Tribune; August 20, 1959]

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SALT LAKERS RELIVE NIGHTMARE

When Earth Heaved, Rolled

Several Salt Lakers returned from the heart of the earthquake area in Montana and Wyoming and Wednesday told of their horrifying experiences when the earth heaved and rolled near the Yellowstone Park section Monday night.

Four fishermen who were staying in a cabin at the Madison River Lodge, six miles below the big slide that loosened 50 million tons of rock and dirt, reported they were certain that several bodies buried under the mile-long slide never will be recovered.

The four who luckily escaped from the area are W. W. Archibald, 723 E. Stratford Ave. (2555 South); Bruce Burton, 2612 Lake St. (740 East); Peter Holtan, 2559 Lake St., and Alvin Lundskog, 729 Loveland Ave. (2515 South).

"The earthquake tossed us around in bed like rubber balls," said Mr. Archibald.

"The chimneys of the eight cabins were knocked down.

"There were about 23 tourists and the two women who operate the lodge present when the tremors started. For three hours after the main shock, there were tremors every five minutes.

"The only reason we were able to get out was the fact there was an old wooden bridge three miles below the slide that we were able to drive over because the slide had cut the water off and dried up the river.

"If this hadn't happened, we would be there yet," said Mr. Archibald.

"We were able to find enough room to pass through huge boulders on an old dirt road, which took us over Reynolds Pass, where we hit the main highway close to Henry's Lake."

"I know there are bodies buried in the slide that never will be found," said Mr. Archibald.

"We went to Camp Fire Lodge Monday afternoon and there were numerous cars and trailers parked where the slide came down. We saw a lot of fishermen on the river."

The group estimated there were 25 to 30 vehicles in the slide area.

"The Lord must have had his arms around us because we tried to get a reservation at the Fire Lodge and it was filled up," said Mr. Archibald.

"They disappeared somewhere," he said.

The John D. Sanders family was grateful "to be home alive," said Mr. Sanders of 2276 Redondo Ave. (2015 South).

"We were at Old Faithful Lodge when the quake started but only by sheer luck," said Mr. Sanders. "We had planned to make the park loop Monday at 3 p.m., but decided at the last minute to stay and watch a queen-crowning program."

With Mr. Sanders was his wife; their son, Robert, 16; daughter, Joan, 15, and a neighbor, Marylee Grandy, 15, 2270 Hollywood Ave. (1970 South).

"The queen had just been crowned when everything started to shake," said Mr. Sanders. "I thought, like 400 other people, that the building was going to collapse, but the band played on.

"We rushed out and over to Old Faithful Inn where we were staying.

"Old Faithful geyser was really shooting. We thought the end was mighty near. People were in a panic. Some were climbing out windows of the inn. Water pipes had broken and water was shooting in all directions.

"Parts of the rock work had broken loose and dropped," he related.

Mr. Sanders said they stayed in his car during the night.

"The car was shaking all night long," said Mrs. Sanders. "It was a terrifying experience."

The Sanders were able to leave via the south entrance of the park.

Experiences they never want to have again caught up with Robert Smith, 1458 Hollywood Ave. (1980 South) and his family, and Merlin Perkins, 1444 Redondo Ave. (2015 South), and his family.

They returned to their homes Wednesday from the Hebgen Lake area called "Lonesome Hurst."

"We looked out our cabin window right after the heavy tremor and were startled to find out the lake had gone down," said Mr. Smith. "The lake had actually tilted."

With Mr. and Mrs. Smith were their three boys, Tom, 12; Jimmy, 7; Richard, 3, and Mrs. Smith's mother, Mrs. Ruth W. Reiser.

With Mr. Perkins, Mr. Smith's brother-in-law, were Mrs. Perkins and their three children, Henry, 6;

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Jane, 4, and Jody, 1.

[Salt Lake Tribune; August 20, 1959]

S. L. BUSINESSMAN TELLS OF TERROR AT EPICENTER

Charles C. Bintz and his wife, 2494 Walker Lane (5450 South), Holladay, were asleep in their cabin on Hebgen Lake—a mere mile and a half from the dam—when the quake hit. That put them as close as anyone to the quake's epicenter.

"It shook you like dice in a box," Mr. Bintz reported after he returned to Salt Lake City. Masonry peeled from the house. The chimney crashed down. Range and refrigerator ended up in a pile. The lake rose to within a few feet of the house.

The Bintz's chief concern was for their granddaughters, Wendy Riser, 11, daughter of Mr. and Mrs. Frederick F. Riser, 2037 Pheasant Cl. (5600

South), Holladay, and Elizabeth Gray, 11, daughter of Mr. and Mrs. Sherman Gray, Sandpoint, N.Y.

The children were in the guest house. The Bintzes were afraid the stove there might set the house afire. They found the youngsters huddled safely under their beds.

Roads out of the area were blocked or caved into the lake. The Bintzes took a motorboat to where the roads were intact and were given a ride to Bozeman, Mont.

Mr. Bintz is president of W. H. Bintz Co.

[Salt Lake Tribune; August 20, 1959]

SLIDE DODGES 5 UTAHNS IN CLOSE CALL

One of the most terrifying experiences made known in the earthquake area near the Hebgen Dam was related Wednesday by Dale Walker, Murray, concerning his brother, Norman, and his family of Pleasant Grove.

Norman Walker, Mrs. Walker, their children, Ricky, 7, Christy, 3, and Mrs. Walker's aunt, Lela Kalmar, Lehi, were trapped below the dam and only about 100 feet above the 50 million ton slide.

They relayed this information to Dale Walker by telephone Wednesday from West Yellowstone.

"My brother told me they were camped in a trailer near where the slide was set off by the earthquake," said Dale Walker.

"After the temblor they were able to go up the road

a short distance on foot during the night. They made their way to the top of the mountain where they remained, frightened to death, until Wednesday morning when they decided to come down because of hunger.

"The group had nothing to eat, and was cold, tired and haggard, besides being badly bruised," my brother informed me.

Mr. Walker said he was told by his brother that a road was remade to the area where he was camped. He said he was one of the very few who returned and got his pickup truck and trailer and brought it out over the road made by a bulldozer.

[Salt Lake Tribune; August 20, 1959]

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30 MILLION YARDS OF FILL Within A Few Seconds

A yardstick to measure the might of nature to the puny power of man:

The landslide across the Madison River shifted an estimated 30 million cubic yards of dirt and rock from the mountainside.

Construction of the north-south freeway in Salt

Lake City, from 14th North to 27th South, will require about eight million yards of fill.

The roadwork will require the efforts of hundreds of men and machines for several years and will cost millions of dollars.

[Salt Lake Tribune; August 20, 1959]

TALL TALES EMERGE FROM QUAKE TALK True Or False?

WEST YELLOWSTONE, MONT., Aug. 19—
Exaggerations grew in size in western Montana Wednesday.

A tour of areas where people congregated—and there weren't many—showed that the earthquake was still much a part of the conversation.

But some of the stories sounded better than anything a Texan—or even an Alaskan—could dream up.

And some of the stories were going out to an anxious listening world.

West Yellowstone is leveled, is one story.
It isn't.

Not a building in town collapsed. But many were cracked or damaged.

Mountains of water reaching 500 feet in height swept through the canyon, some eyewitnesses claim.

It's not true.

But it wasn't only in West Yellowstone.

A reporter went to Bozeman and found similar stories being told—mostly by persons not in the area at the time of the quake.

But certainly some fantastic stories are true. And heroic efforts of men deserve attention. So reporters told them.

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FAMILY STILL GOING FISHING!

BOZEMAN, MONT., Aug 19—F. A. Good and his family of five arrived for a three week vacation in Montana just as the earthquake struck Monday.

They were just checking in at Halford's Resort below Hebgen Dam when a mountain fell in.

They managed to escape with car and trailer. But it took 24 hours to do it.

Interviewed here in emergency housing on the Montana State University campus, Mr. Good reported

nobody in the family from four-year-old Jeffery to 16-year-old Ricky was interested in heading home.

"We came here to fish and by golly we will," said Mr. Good.

And his family nodded.

So Wednesday they left for new Montana fishing waters.

[Salt Lake Tribune; August 20, 1959]

COUPLE TELLS ESCAPE FROM CABIN

"We were asleep, then all of sudden the place was going like crazy. 'Quit shaking the bed!' Joyce was hollering at me. 'Grab some clothes!' I shouted. 'We've got to get out of here!'"

Newlyweds Gerald I. and Joyce Thurman, 2706 13th East, were honeymooning at a cabin at Hebgen Lake in southwestern Montana when Monday night's earthquake struck.

The couple crawled over the rocking floor into the kitchen. Mr. Thurman tripped over the stove, which had fallen against the door.

He managed to get out onto the front porch, nearly stepped into a hole deeper than he was. Then the tremors began to subside.

The car was just 30 yards from the lake. They drove it away from the shoreline, saw cracks as wide as three feet and as deep as 20 feet.

The honeymooners spent the rest of the night in the

car. Next morning, Mr. Thurman, a 21-year-old engineering major at the University of Utah, made a survey of the situation.

The cabin had moved six feet horizontally and had dropped four feet from its foundations. Immediately after the quake, the water in the lake dropped two feet. Then within an hour it had risen six feet, covering the breakwater and gasoline pump.

In the middle of the lake there appeared to be huge whirlpools and much floating debris could be seen. Heavy road equipment broke through the slides. They were able to leave for Bozeman, Mont. by 9:30 a.m. Tuesday.

The couple arrived in Salt Lake City late Wednesday afternoon. "From now on I'm goin to stay where I know how to locate the door," said Mr. Thurman.

[Salt Lake Tribune; August 20, 1959]

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BOZEMAN BILL PROVES PROPHET

BOZEMAN, MONT., Aug. 19—The downtown motion picture theater billed "The Angry Hills" the night of the huge earthquake which resulted in a stream of injured to be treated here.

Wednesday, the show changed. It was "The Yellowstone Kid."
[Salt Lake Tribune; August 20, 1959]

U. P. DEPOT CONDEMNED? YES, NO Sign's A Ruse?

WEST YELLOWSTONE, MONT., Aug. 19—The Union Pacific Railroad station here hung out a sign in front Wednesday.

"Condemned," it read.

A huge rock chimney had tumbled in. Some arches looked out of line. But otherwise the building looked sound.

But a rope closed off the building from the public.

But the building isn't destroyed and it isn't condemned, a Union Pacific stationmaster reported. The employee wouldn't identify himself.

The bosses were in town to look the situation over.

The sign, the stationmaster said, was hung out to keep put the curious. But the building was sure to be

back in operation sometime.

The trains weren't running. They haven't since Monday. But they are expected to be back on schedule Saturday.

The Union Pacific Lodge, known to many travelers and located just next to the UP station, was serving meals.

But a closing was probable.

A chimney fell through the roof and cut steam lines. With no steam, there was no heat.

But the closure surely won't be for long, if at all.

It seems the weather—specifically the temperature—will decide the issue.

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RUMBLE OF EARTHQUAKE CAN'T OVERCOME AMERICAN SENSE OF HUMOR

By Dan Valentine

Even sudden disaster can't stop American laughter . . . even crushing catastrophe that strikes in a split second can't dull the American sense of humor.

A California woman, Mrs. James Pridgeon, was in the center of the Yellowstone earthquake. She stopped off in Salt Lake City Wednesday with some light side notes on the shattering quake.

Mrs. Pridgeon, her husband and son were in a cabin near the Old Faithful Inn when the quake hit Monday evening.

"There was a roar and a rolling," she said, "then there was a deathly quiet . . . the next thing I heard was the high-pitched voice of a woman in a cabin across the way who yelled to her husband, 'Henry get up, there's a bear outside shaking the cabin.'"

Mrs. Pridgeon, who is the wife of the superintendent of schools at Chula Vista, Calif., said the Yellowstone Park bears didn't seem to mind the quake at all.

"They just went about their business as usual," she said, adding, "Which is more than I can say for some of the people."

Two park visitors not ruffled at all by any of the earthquake commotion were two farmers from Iowa.

Tuesday morning at breakfast, one of the Iowans came up to Mrs. Pridgeon, his eyes aglow with excitement.

"I tell you, Ma'am," he said, "I wouldn't have missed this for the world. Last night alone was worth the \$3 I paid to get into the park."

The morning after the quake, the restaurant at Old Faithful Lodge was jammed with customers asking for coffee to settle their nerves. The coffee demand must have been too much for the cup supply—because customers were being served hot coffee in water glasses.

Mrs. Pridgeon reports that one waitress approached an elderly man with a glass full of steaming coffee.

"Sir," the waitress said, "do you mind drinking coffee out of a water glass?"

"Young lady," the man answered, "after last night, I'm just happy to be drinking at all . . ."

On Monday evening, several hours before the first shock waves of the earthquake, Mrs. Pridgeon attended a lecture given by one of the park rangers.

Over and over again the ranger emphasized, "Don't throw anything in any of the geysers . . ."

Mrs. Pridgeon said "The ranger warned us of all sorts of dire consequences if rubbish or trash were thrown in a geyser . . . and, when the first shake was felt about 11 o'clock that same night, one of the ladies who had attended the lecture said, 'I'll just bet somebody threw some trash in one of the geysers.'"

Mrs. Pridgeon said one of the most humorous comments during the entire upheaval came from a grizzled old fellow wearing fishing boots.

He was standing near the lodge, and when the earth started to shake he said to no one in particular, "I hope this shakes some of those gol-darned stubborn bass out of the stream . . . Lord knows I ain't been able to get em out."

One of the truly disappointed people in all Yellowstone Park Tuesday morning was the Pridgeon's 11-year-old son, Jimmy.

He slept through the entire quake.

"Sure I felt some rattling and some shaking," Jimmy admitted the next morning, "but I just thought it was the usual bedsprings you find in a tourist cabin."

Mrs. Pridgeon said it was "sort of inspiring the way the people could laugh and joke about the sudden disaster."

She said the morning after the earthquake, she asked a tourist from Texas if he planned to leave the park right away.

"Not on your life," he said. "I paid three bucks to get in here, and I'm aiming to see my three dollars worth before I leave."

Mrs. Pridgeon admits with a tired smile that she and her family got more than their money's worth!

How could Russia ever defeat a people who can laugh and joke through an earthquake?

[Salt Lake Tribune; August 20, 1959]

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FRESH EARTHQUAKES RUMBLE IN MONTANA DISASTER AREA

Tremors Shake Up Rescue Workmen

By Carl E. Hayden

WEST YELLOWSTONE, MONT., Aug. 20—
The ground continued to writhe under the feet of disaster workers Thursday as two major shocks and several less severe ones rumbled through earthquake ridden southwestern Montana.

At 12:30 a.m. four sharp shocks were felt about a minute apart, followed at 4 a.m. by a cracking jolt.

Almost frequent small tremors continued through the day, and another sharp quake followed at 4 p.m. and another of slightly lower intensity at about 5:30 p.m.

Since the initial mountain-splitting upheaval late Monday night, the U.S. Geodetic Survey reported 372 aftershocks had been recorded.

Because of the vast extent of the stricken area and the virtual breakdown of established methods of communication, information concerning the dead and injured Thursday remained sketchy, conflicting and impossible to verify.

About noon Montana State Police ordered skin divers and newsmen out of an area on the northeast side of Hebgen Lake, where the divers probed for a car and trailer reportedly swept into the waters when a portion of Montana State Highway 1 crumpled into the lake.

Huge fissures gaped open in this region, trembling with each minor earth shock.

Montana officials undertook evacuation as a precaution against further injuries.

A report Wednesday that eight bodies had been recovered from a trailer found under the water at this point was circulated widely through official channels but Thursday could not be confirmed and was presumed to be unfounded.

Meanwhile, the new lake behind a huge slide in the Madison River canyon, about seven miles downstream from Hebgen Dam, continued to grow in size. Water poured in from Hebgen Lake overflow and from Rock Creek, Cabin Creek and Beaver Creek.

A visitor at the slide area said the impounded waters rose about 25 feet during the night, bringing it to a depth of more than 70 feet.

What may be beneath the enormous pile of rubble blocking the Madison River was given some substance Thursday by Dr. Reed Quesnell of Arcadia, Calif., who

was camped below the dam when the earthquake hit.

"We have vacationed there every summer for 10 years," he said, "and every year there have been the same two trailers in the same place. They were again this year, so close to the river they could fish from their doors. And those two trailers did not come out of the canyon when we were evacuated. There undoubtedly are many others buried with them."

Engineers inspecting the 50 million ton slide which is damming the waters saw no hope of moving it. There were fears that an unleashing of these waters, which estimates indicated could build to a depth of 170 feet, could cause another disaster by flooding the town of Ennis, downstream from the dam, and other sites in the Madison River canyon.

But the some 600 residents of Ennis, most of whom had fled their homes Monday night and Tuesday in fear of a flood, had returned. They were warned to be alert to the danger—a danger that could become a disaster should the already damaged dam at Hebgen Lake give way under new earth tremors.

Elsewhere in the stricken region, Montana Highway Dept. crewmen were working furiously to provide emergency routes in and out of the area.

Crews were improving the Duck Creek section of the Gallatin River canyon road from West Yellowstone to Bozeman. The road was reported open and passable, but authorities said the connecting road to Hebgen Lake was blocked.

Both Idaho and Montana road crews were at work on an emergency basis on the road from West Yellowstone to Wade Bridge via Henry's Lake and Reynolds Pass. Reynolds Pass was the site of slide activity during initial hours of the earthquake activity.

Two seismograph crewmen of the Coast and Geodetic Survey from San Francisco set up portable seismograph equipment at West Yellowstone Thursday. Two other CGS crewmen were scheduled to arrive at Ennis from Denver. They will take readings in an effort to determine a pattern of earthquake activity, and to determine what can be expected in the way of further tremor activity.

Persons at West Yellowstone late Thursday reported that the first train had arrived at the depot there. Exact information was not available, but ham

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radio operator Harold Young at West Yellowstone said he believed the train, which arrived about 5:30 p.m., was a work train. Several slides had blocked Union Pacific Railroad tracks above Ashton following the earthquake.

In Yellowstone National Park, officials said Thursday all entrances, except that by way of Madison Junction, are open.

Tuesday and Wednesday park personnel said traffic totaled 12,000 persons a day, under the normal figure of 16,000. Wednesday night 6,370 persons remained in the park, about 2,000 lower than normal.

About 75 miles of road in the western portion of the park was said to be damaged by quake activity, and park officials said a slide at Golden Gate had been reported early Tuesday. A road crew was sent to the site but boulders began rolling down mountain slopes, one narrowly missing a workman. The road work was postponed until the danger of tremors has subsided.

At a meeting of all park personnel Thursday, David G. Beal, of Mammoth, park naturalist, said only minor changes in thermal activity in the park had been observed since the main earthquake. He said the changes in geyser activity noted to date is "definitely minor," saying they would be apparent only to an experienced observer.

Frank Young, former Salt Lake City resident and resident of West Yellowstone since 1949, spent Wednesday night at the main slide area.

He reported that for a distance of approximately 100 feet downstream from the huge earth plug, no water is flowing in the Madison River. But he said that beyond this point water can be seen rising in the river channel.

A short distance below the slide, he said, Sheep Creek empties into the river channel, providing sufficient water to keep the trout, for which the river is famed, alive.

From Washington came the word late Thursday that Sen. James Murray (D-Mont.), chairman of the Senate Interior Committee, will fly this weekend to the disaster area in a special Air Force plane to inspect the disaster area.

The party will include representatives of the Senate and House public works committees; U.S. Army Corps of Engineers, National Park and National Fish and Wildlife officials.

They will determine what role the federal government may play in providing aid to the stricken area.

[Salt Lake Tribune; August 21, 1959]

ADVISE FOLKS OF SAFETY, OFFICIAL ASKS In Quake Wake

BOZEMAN, MONT., Aug. 20—An urgent appeal for all who have been traveling this week in the Yellowstone Park area to get in touch with their home folks immediately was made Thursday by the American Red Cross.

It will relieve anxiety in many homes across the nation if park visitors unhurt in the recent disastrous earthquake will let relatives and friends know they are safe, said George Montag, Red Cross official from Portland, Ore.

He said a total of 1,600 telegrams making urgent

inquiries about vacationers believed to have been in the area have been received at the Bozeman office.

"It is almost certain that a large majority of those involved in the inquires are safe, but they have not notified the folks back home," Mr. Montag declared.

The Red Cross is unable to answer the queries because it has information only on casualties and those evacuated from the Madison River area where the quake wrought its greatest damage, he explained.

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ARC NAMES 'SAFE' OF PARK AREA Not Complete

BOZEMAN, MONT., Aug. 20—American Red Cross disaster headquarters here Thursday released a list of Intermountain Area persons known to be safe after Monday night's earthquake in the West Yellowstone and Montana area.

The list of names and addresses, however, was incomplete, with only the last name known in some instances.

George Montag, Portland, Ore., director of ARC inquiry service here, emphasized that names of persons in the area at the time of the earthquake—but not on the "safe" list—did not mean they weren't all right.

Names on the list released Thursday follow:

Glen Curtis and family, Salt Lake City; Keith Ensign, Tooele; Art Johnson and Mrs. Mathison, Sidney; Mrs. Newland, Utah; Dell Orton, Magna; Mr. and Mrs. C. W. Saddler, Amalga, Utah; Mr. and Mrs. John A. Shafer, Salt Lake City; Mr. and Mrs. Rex Bateman, Utah.

Terry Eugene Bownes and Jo Ann Bownes, 876 E. 8th South, Salt Lake City; Mr. and Mrs. Augustus L. Burbank, Susan, Richard, Eugene, Louisa and Penelope Burbank, Brigham City; Ray Christenson, Rexburg, Idaho; Mr. and Mrs. John B. Davis 122 S. Third, Pocatello, Idaho.

Mr. and Mrs. Dennis E. Gauanee and two boys, Hunter, Utah; Mr. and Mrs. Minoru Mamada, two

children, 2610 W. 5800 South, Roy, Weber County, and Danny Nomura, also of Roy; Mr. and Mrs. C. W. Harbison and two boys, Sagle, Idaho; Donald S. Hogan, 636 S. West Temple, Salt Lake City.

Charotta Hudson, Twin Falls, Idaho; Mrs. Jensen, 124 6th East, Salt Lake City; Lela Kalmer, Lehi, Utah; Mr. and Mrs. Theodore Avery Levett, 554 10th East, Salt Lake City; Clyde C. Lenz, Ashton, Idaho; Mr. and Mrs. John McDonald, St. Anthony, Idaho; Mrs. Morse, 662 7th East, Salt Lake City; Edith Painter, Anita and Carol Painter, 1345 Porter Ave., Ogden.

Jean Plaga and Pat Plaga, 150 N. Main, Salt Lake City; Henry Powers and Ann Powers, Twin Falls; Mr. and Mrs. Leland Sander and daughter, 5130 S. 2100 West, Roy; Mr. and Mrs. J. Spencer Searcy, Ralph and Lina Searcy, 1255 E. 2745 South, Salt Lake City; Richard Lynn Vernon and Annabelle Vernon, Route 1, Coalville, Utah.

Mr. and Mrs. Norman Walker, Rickey and Christinie Walker, Pleasant Grove, Utah, and Harry Wood and Ethel Wood, 104 9th East, Salt Lake City.

Byron Peterson, Ogden; Wayne Wardle, Salt Lake City; Wils Wilfor, wife and four children, Brigham City; Robert W. Dean, wife and two children, Nancy, Cynthia, 3585 Meadow Brook Dr., Salt Lake City.

[Salt Lake Tribune; August 21, 1959]

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SEARCH PARTY PROBES FOR UTAH WOMAN

A party, made up of friends and relatives of the families of Mr. and Mrs. Thomas Stowe of Sandy, plans to leave early Friday to search for the body of Mrs. Stowe, missing and presumed dead in earthquake stricken Hebgen Lake, Mont., area.

The body of Mr. Stowe was identified Wednesday. Rex G. Whitmore, 8060 7th East, Mrs. Stowe's father, reported Thursday night from Virginia City, Mont., that the organized search for bodies in the area of the major

slide had been discontinued, although some volunteers were to continue working Friday morning.

Earth was turned Thursday in the area where Mr. Stowe's body was found and other possessions of the family were discovered. Family members felt this gave some encouragement for finding of Mrs. Stowe's body, and said they feel one final attempt should be made.

[Salt Lake Tribune; August 21, 1959]

TEMBLOR LIST ADDS TWO MORE DEATHS

Two names were added Thursday to the list of those known to have been killed by the Monday night earthquake that convulsed the Madison River valley near Yellowstone Park. This raises the total to nine.

Mrs. Ray Painter, 42, 4345 Pote Ave., Ogden, died in a Bozeman, Mont., hospital of crushing injuries suffered in a quake-triggered landslide. Her injured husband is still under treatment in the same hospital.

The body of Susan Bennett, 5, previously reported as presumed lost, was recovered and positively identified, according to the Gallatin County Chapter, American Red Cross, at Bozeman.

She is the fourth casualty in a Coeur d'Alene, Idaho, family trapped in one of the slides. The others are her father, Purley Bennett, 43; a sister, Carole, 17, and a brother, Tommy, 11.

The Red Cross, which is acting as a clearing house for all casualty information, said it had nothing to substantiate reports that the unidentified bodies of a man and a small boy had been taken from the disaster area.

The body of Mrs. Mark Thomas Stowe, Sandy, Utah, one of those presumed to have been lost, has not yet been found. The body of Mr. Stowe was identified Wednesday in a Montana mortuary by members of his family.

The Red Cross said it had no information of any more injured having been taken to Montana hospitals where a number of quake victims are now under treatment.

[Salt Lake Tribune; August 21, 1959]

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SALT LAKE TRIBUNE

ALARMED UTAHNS ADD TO LIST OF MISSING IN PARK

The list continued to grow Thursday of anxious relatives or friends seeking information of persons believed to be headed for or in the area at the time of Monday night's earthquake that sheared off a mountain in Montana Madison River Canyon.

No word has been received by families or friends since they left for Yellowstone Park on sightseeing, fishing or camping trips.

Added to the list were:

Mr. and Mrs. Warren E. Mulcock, 2800 E. 4510 South, and their five children, John Ernest, about 13; Margaret, 12; Stephen, about 11; Thomas Edward, 10, and Rosemary, 5.

Mrs. Mulcock's mother, Mrs. W. A. Thompson, 1955 St. Mary's Dr. (1425 South), said the family left Sunday morning with a house trailer bound for a vacation in Yellowstone Park.

She said she and her husband were away on vacation at the time but hurried home when they heard of the disaster at Hebgen Lake. Friends informed them that the Mulcocks intended to go to the park by way of the west entrance.

Since then, they have had no word from her daughter and family.

Mr. Mulcock is a son of Sidney E. Mulcock, Salt Lake businessman and foreman of the Salt Lake County grand jury.

Mr. and Mrs. Mack Leonard, 1503 19th East, and their two sons, Michael, 17, and Gregory, 11.

Mrs. M. J. Coldesina, 623 G St., a sister of Mr. Leonard, said they had planned to leave Monday morning, drive through the west entrance and then go on to Glacier National Park.

She said she did not believe they planned to camp or fish but had planned only a sightseeing trip. She said it was not unusual not to hear from them on a vacation trip but was a little concerned.

Mr. and Mrs. Osmond L. LeCheminant, 870 N. 4th East, Bountiful, a son, Randall Scott, 7; daughter Leslie Ruth, 5, and Mr. LeCheminant's mother-in-law,

Mrs. Vera Haycock, also of Bountiful.

Mr. LeCheminant's mother, Mrs. Lionel LeCheminant, 3780 So. West Temple, said the family left early Sunday to do some fishing in the park. She believes they left in two cars, a 1958 greyish-blue Chevrolet sedan and a 1955 white Chevrolet sedan. One of the cars was hauling a rented house trailer.

Mr. and Mrs. Ross Burke Jenson, Brigham City, and their four children, Lynn Burke, 10; Bruce, 7; Janet, 4, and Brent, 19 months. Mr. Jenson is manager of the Mountain States Telephone and Telegraph Co. at Brigham City.

They left Saturday morning, driving a 1953 Buick sedan, two tone gray (Utah license 13624). Mr. Jenson had intended to do some fishing along the Madison River.

Before leaving Saturday, he told Thad A. Carlson, commercial representative for MST&T, he would call him Tuesday at Brigham City. Mr. Carlson has not received the call.

Mr. and Mrs. Ernest Jenson, Sandy, parents of Mr. Jenson, and Mr. and Mrs. Shirley Haywood, Kaysville, parents of Mrs. Jenson, also said they have received no word of the family's whereabouts.

A group of Explorer Scouts and two adults in charge of the group from Fairview, Sanpete County, have not been heard from.

They include Richard Llewellyn, Douglas Bench, Rodney Coates, Dean Carlston, Roger Christensen, Gary Mower, Johnie Bigler, Vaughn Garlick and Brent Tucker, all Explorer Scouts between 15 and 16 years of age.

In charge of the group was Don C. Hansen, in his 50s, and Wendell Christensen, about 40.

They left at 5 a.m. Monday in a pickup truck believed to be green in color. They were bound for the park's west entrance equipped with sleeping bags and fishing equipment.

[Salt Lake Tribune; August 21, 1959]

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TEMBLOR AWOKE 'WHOLE CAMP'

"The whole camp was up," said Clarence H. Grasteit of the situation at Fishing Bridge in Yellowstone Park, after the quake tremors hit.

Mr. Grasteit, 1361 11th East, his sons, Dennis, 18,

and Steven, 1½, and daughters, Denise, 3, and Diane, 15, were on a camping trip in the area. Mr. Grasteit and his family are back in Salt Lake City.

[Salt Lake Tribune; August 21, 1959]

2 CYCLISTS COVER PARK QUAKE DAMAGE 'Forest Matchsticks, Boulders, Gravel'

YELLOWSTONE NATIONAL PARK, WYO., Aug. 20—"Whole forests of trees split like matchsticks, huge boulders spilled in every direction and roads crushed into gravel."

This vivid picture of destruction caused by Monday's earthquake was described by two camera enthusiasts who "walked and rode" a motorcycle through the entire quake-damaged area Thursday.

They are the first civilians known to have visited the little-traveled "interior" area.

Clarence F. Durham, 20, Fort Smith, Ark., and Dickinson Mullholland, 23, Billings, Mont., photographed the area from Canyon Village to North Junction and Madison Junction.

They filmed a huge cavein near Fire Hole River, got pictures of damaged wreaked at Virginia Cascades between Canyon Village and North Junction and at Gibbons Falls.

The cameras and film, only known to have been

used by non-government personnel in this particular area of the park, were promptly seized by Yellowstone Park Rangers and just as promptly ordered returned by Elmer F. Bennett, under secretary of interior.

Mr. Bennett, who was in Salt Lake City to make a speech, ordered the cameras and film returned to the pair as soon as he heard of the seizure.

Rangers who confiscated the materials contended the action was taken merely to assure appearance of the two before the U.S. commissioner at Mammoth Hot Springs Friday at 11 a.m. to answer charges of running a barricade and violating traffic signs.

"The greatest damage appeared to be at Gibbons Falls," Mr. Durham explained.

"Along the left side, going north, the entire embankment is strewn with fallen trees and piled boulders. Tremendous cracks split the highway."

[Salt Lake Tribune; August 21, 1959]

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LAWMEN BLOCK OFF CANYON IN QUAKE-RIDDEN PARKLAND

Region Off Limits To Stop Looting

By Carl E. Hayden

EARTHQUAKE DISASTER AREA, MONT.,
Aug. 21—The earth still rumbled Friday in southwestern Montana with what seemed to be the dying convulsions of devastating earthquakes that struck four days before.

Even as the tremors continued, officials turned their main attention from search and rescue operations which had occupied them since the temblors struck, and concentrated on safeguarding the curious who have flocked to the area and on preventing looting and vandalism.

According to disaster headquarters set up by The American Red Cross at Bozeman, the number of known dead stood at 10 Friday.

They reported no bodies had been recovered during the day.

Visitors were barred Friday from the upper Madison River canyon, the center of earthquake devastation, so the contents of cabins and resorts could be safeguarded. Sheriff Donald J. Skerritt said unauthorized persons found in this area would be treated as looters.

Only rescue workers and property owners in the area will be allowed entry, he said.

Meanwhile, U.S. Forest Service bulldozers cleared an exit road from the Cliff Lakes area south of Madison Canyon and guided to safety 10 cars which had been trapped by slides.

The search for stranded persons was carried on from the air, although these operations were hampered by fog. Both airplanes and helicopters operated.

Rumbling earth tremors continued to batter buildings at West Yellowstone with a particularly sharp shock at 6:20 a.m. followed by others at 8 a.m. and 11 a.m. Numerous minor tremors were felt.

Seismologists from the U.S. Coast and Geodetic Survey said the possibility of a few more "relatively strong" shocks exist but said they were unlikely to create further damage.

CGS Officials said over 370 aftershocks had been recorded in the area since Monday night, noting they were "decreasing in energy content."

The epicenter of the quake, they said, had been placed at about 44½ degrees north latitude and 111

degrees west longitude, with the real center probably located some 20 to 25 miles beneath the earth's surface.

Some 50 seismic recording stations around the world cooperated in fixing the location.

California Institute of Technology readings showed the temblor's magnitude reached 7.1 on the Richter scale.

The continuing tremors, combined with other factors, still caused concern over the waters building up behind the 50-million-ton landslide in Madison Canyon.

Observers who drove to the area by jeep Friday morning reported that water is beginning to seep from the canyon wall a half mile down the river from the big slide. Officials in the area said this would indicate water being impounded by the landslide is seeking a new path through sub-surface strata and is emerging as springs farther down the canyon.

Observers said the seepage began as a trickle but is increasing.

There were fears that the flowing of the water might weaken already strained strata, and under pressure of new earth tremors a second slide next to the first might result.

There were no accurate estimates available on the amount of water now impounded behind the huge slide, but Robert R. Rend, a Montana Power Co. engineer, estimated water may fill the seven-mile stretch between the slide and Hebgen Dam in 40 to 45 days.

After this, he said, the water will spill over the slide unless the vast mass of earth can be removed. The U.S. Army Corps of Engineers has sent a crew to the area to study the situation.

But residents of the area recalled the Gros Ventre slide which blocked the Gros Ventre River northeast of Jackson, Wyo., 25 years ago. Later, impounded waters rushed over the slide, washed it away, and tore a path of flood destruction hundreds of miles below.

Heavy rainstorms which covered the disaster area Wednesday and Thursday were counted as a blessing although they hampered rescue operations to some extent.

Officials said that many tourists broke camp immediately after the first earthquake struck, leaving campfires burning. The rains may have prevented

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forest fire damage equal to that of the earthquakes.

The first rough reports of damages to forest installations were released Friday by officials of the Gallatin and Beaverhead National Forests. Indications were that half a million dollars in damage had occurred to trails, lookout towers, roads, cabins, timber properties and trout spawning grounds.

An estimate of \$50,000 in damage to private property along the reaches of Hebgen Lake also was released.

Sheriff Skerrett said a thorough search of the area between Hebgen Dam and the landslide had been completed, as well as seven miles downstream from the dam to Rock Creek Campground. He said any remaining bodies must be buried beneath the huge slide in the canyon.

Reports indicated that six of the persons injured in slides Monday remained in hospitals Friday.

The only person still listed in critical condition was Phillip Bennett, 15, Coeur d'Alene, Idaho. Four other members of his family were killed.

Officials at Union Pacific Railroad at West Yellowstone said Friday that because of earthquake damage at the railroad's dining hall there, the building will remain closed during the remainder of the season.

J. A. Smith, railroad agent, said the chimney fell

from the roofs of both the dining hall and the passenger depot. The impact at the dining hall tore a hole eight feet in diameter through the roof. Some 250 panes of glass were broken in the two buildings.

He said that when passenger service is restored, railroad passengers in West Yellowstone will be served meals on dining cars.

Mr. Smith said the railroad would be prepared to resume passenger service to West Yellowstone by Saturday, but would not do so as the west entrance to Yellowstone National Park remains closed.

He said the Yellowstone Special, which normally goes to West Yellowstone, is now traveling to Victor, Idaho, where park-bound passengers take stage lines over Teton Pass and enter the park through its south entrance.

The decision to close Old Faithful Inn, effective Saturday, was announced late Friday by John Q. Nichols, president of Yellowstone Park Co. But all facilities of Old Faithful Lodge, he said, will remain available to tourists.

The decision to close the building, he said, resulted from loss of some summer employees. Mr. Nichols said no structural damage was caused to the 55-year-old inn.

[Salt Lake Tribune; August 22, 1959]

SHOCKS SHUT PARK INN FOR SEASON

MAMMOTH HOT SPRINGS, WYO., Aug. 21—John Q. Nichols, president of Yellowstone Park Co., said Friday the firm had decided to close Old Faithful Inn, effective Saturday, for the remainder of the season.

He said the dining room and all other facilities will remain open.

The decision to close the structure was concurred in by Park Supt. Lemuel A. Garrison.

Mr. Nichols said that since Monday night's earthquake, many employees, most of whom are college students working for the summer, have

expressed preference to finish the season in some other areas of the park.

He added that a number of employees had left, which created a manpower problem, and subsequent tremors from the earthquake have increased apprehension among employees about remaining in the inn.

Mr. Nichols said, however, that no structural damage was caused to the 55-year-old inn.

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OLD FAITHFUL STARS IN PRE-QUAKE SHOW 'Most Spectacular Performance'

By Jerry Voros

WEST YELLOWSTONE, MONT., Aug. 21—
Old Faithful geyser in Yellowstone Park put on its
grandest show in history less than an hour before
Monday night's earthquake.

And the word comes from a man used to
spectaculars. He's Alfred G. Alexander, cameraman
for Paramount Studios, Hollywood. Mr. Alexander has
shot such productions as "The Ten Commandments."

"We've been living here for five summers now,"
Mr. Alexander explained. "And believe me this was
the greatest show anyone has seen."

It was about 11 p.m. when Mr. and Mrs.
Alexander and visiting relatives from Everett, Wash.,
settled down on benches near Old Faithful.

"It was supposed to shoot off about every 65
minutes and so we knew it wouldn't be long," said the
professional cameraman.

"It was a beautiful moonlite night. When the Old
Faithful geyser does shoot it usually lasts about four
minutes and the spray goes about 150 feet in the air.

"But Monday the geyser wouldn't shut off. It was
beautiful. The spray plucked the midnight blue sky
with a silvery finger which varied in height, but
honestly I'll have to say the height it shot was greater
than I have ever seen.

"And the geyser seemed ready to shut down
several times only to continue shooting. It lasted seven
minutes in all. We timed it because we wanted to
prove to our relatives how faithful Old Faithful was to a
time schedule."

It wasn't really on schedule though. Mr. Alexander
said the geyser was about 10 minutes late when it
spouted.

After the geyser activity Mr. Alexander started to
drive home.

"We took the old service road along the Firehole
River," he explained. "When we got to Madison
Junction the car started to act up and I thought we had
flat tires. The car was shaking like a bulldog shaking
roots.

"I stopped and opened the door and got my foot on
the ground and I saw rocks falling down the mountain.
'Get going,' I shouted to my wife, 'there is an
earthquake'."

Uprooted trees and huge boulders blocked the
Alexander automobile several times on the way to West
Yellowstone.

"It was about eight miles from the West
Yellowstone gate where one boulder about nine feet
high and another about six feet high were on both sides
of the road," Mr. Alexander said. "I got out to direct
my wife and noticed a six inch crack in the road. We
got out of there in a hurry."

Dust was so bad that the car could travel only
about three miles an hour, said Mr. Alexander. "Finally
things settled down and we made it to the gate."

Park rangers at the gate thought a truck carrying
power poles had struck the building when the quake
first started, reported Mr. Alexander. They started to
pursue the truck when the hardest quakes came.

[Salt Lake Tribune; August 22, 1959]

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UTAH NAMES OFF ROSTER OF MISSING Quake Scenes

More Utahns returned from the West Yellowstone, Mont., area Friday and worried relatives crossed their names off the roll of missing persons feared dead or injured in the earthquake which rocked Montana last Monday.

Reported safe Friday was a group of Explorer Scouts from Fairview, Sanpete County, who were in Yellowstone Park the night of the quake but hiked out unhurt and without knowledge a quake had been recorded.

Don C. Hansen was their leader.

Also back safely are Mr. and Mrs. Warren E. Mulcock, 2800 E. 4510 South, and their five children; Mr. and Mrs. Ross Burke Jensen, Brigham City, and their four children; Mrs. and Mrs. Mack Leonard, 1503 19th East, and their two sons; Mr. and Mrs. George P. Mason and son, 596 Wall St., and Mr. and Mrs. Dale James, Tooele, and their seven children.
[Salt Lake Tribune; August 22, 1959]

MOSS TO VISIT MONTANA QUAKE AREA

WASHINGTON, Aug. 21—Sen. Frank E. Moss (D-Utah) will head a congressional party which will fly to western Montana Saturday to inspect the earthquake damage.

He is the only senator making the trip but in the party will be five House members. They are Lee Metcalf (D-Mont.), Leroy Anderson (D-Idaho), Rep. John Baldwin (R-Calif.) and Rep. Harold Johnson (D-Calif.).

The official party also will include Col. Oren Olmstead, acting chief of civil works for the Army Engineers; E. T. Scoyen, associate director of the National Park Service; Dr. Raymond Johnson, chief of the division of sports fisheries of the Interior Department; Clint Davis, director of the division of information and education of the Forest Service, and Joseph Brennan, engineer consultant for the House Public Works Committee.

Representing the Interior Committee will be Benton J. Strong, Robert Wolf and Gene Eaton.

Others in the official party will be John Carver, administrative assistant to Sen. Frank Church (D-Idaho); Mike Manatos, administrative assistant to Sen. Joseph C. O'Mahoney (D-Wyo.); Mike Deevy, administrative assistant to Rep. Anderson and Victor Reinemer of the staff of Sen. James E. Murray (D-Mont.)

Mr. Reinemer, who is handling arrangement for the trip said they would go by military plane and the estimated arrival time at Bozeman was shortly after noon Saturday. He said they would travel by automobile to the Hebgen Dam area and planned to spend Saturday night at West Yellowstone.

Salt Lake Tribune reporter Carl E. Hayden, on the spot at the disaster scene since late Monday night, will meet the party at Bozeman and accompany the officials on the tour.

The officials will study the area with an eye toward possible disaster aid moves in Congress.
[Salt Lake Tribune; August 22, 1959]

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YOU 'GET THE FEEL' OF JOLTS

WEST YELLOWSTONE, MONT., Aug. 21—
The Tribune's on-the-spot reporter, Carl E. Hayden,
who has covered this area since shortly after
earthquake activity began, is "getting the feel" of quake
aftershocks.

"Some," he says, "you can hear coming. There's a
rumble and you can anticipate the shocks. But others
are silent and suddenly both the ground and buildings
pop up and crack with no warning.

"On some the ground trembles slowly and keeps
picking up momentum. With others you get a twisting
motion and feel like you're twisted half around.

"Then there are the tilters that toss you up and

down as if you were on a "teeter-totter."

After four days in the area and experiencing
upward of 370 aftershocks, Carl admits he can sleep
through the "little ones."

After several days of living with bobbing and
weaving ground, Carl anticipates he'll feel like a sailor
home from his first voyage when he returns to firmer
earth.

Carl reports that the tremors are continuing and
that they are "almost frequent." He has noted three or
four really major earth shocks daily since the
earthquakes started Monday night and expects more.

[Salt Lake Tribune; August 22, 1959]

ROAD TO QUAKE

ST. ANTHONY, IDAHO, Aug. 21—Sightseers
wishing to view the monstrous earth slide which has
dammed the Madison River in Montana, may now
travel over Reynolds Pass on an "unimproved but safe
road," Rex Naanes, district supervisor, Buffalo ranger
station, Targhee National Forest, announced Friday.

The Reynolds Pass road has been opened as an
alternate route between West Yellowstone and Ennis,

Mont., because of the earthquake-ruined Montana
Highway No. 1 between the two towns.

Residents are advised that travel is open to anyone,
with no restrictions, on the Reynolds Pass route.

The Reynolds Pass turnoff from U.S. Highway 191
is at the Henry Junction beyond the Henrys Lake Flats,
said Mr. Naanes.

[Salt Lake Tribune; August 22, 1959]

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CONGRESSIONAL PARTY VIEWS EARTHQUAKE DEVASTATION

Tally Property Damage, Death Toll Stays At 10

By Carl E. Hayden

YELLOWSTONE DISASTER AREA, Aug. 22—
A special congressional delegation Saturday viewed the grim scene of death and destruction where earthquakes, hitting with the wallop of 160 billion pounds of TNT, wracked vast portions of southwestern Montana Monday night.

As representatives of the American people, the 21 delegation members will study the nature of damage to state and federally owned lands in the region.

As they inspected the area, the ground still trembled with continuing aftershocks from the immense quakes.

But as the property damage was being assessed, the human toll could not be told.

While 10 persons are known to be dead, scores of persons from throughout the nation were still listed as missing by their families. The American Red Cross disaster headquarters at Bozeman reported it had a list of 1,500 persons who might have been in the area when the first quake hit Monday night.

And Saturday the vanguard of curiosity seekers surged into West Yellowstone after the town had been almost completely evacuated.

Yellowstone National Park officials Saturday announced that the West entrance to the park, via West Yellowstone and Madison Junction, is definitely closed and may remain so for several days until jumbled masses of rock that are blocking roadways can be removed and roads repaired. Work on roads in the Madison Junction area is being delayed until heavy tremor activity ceases, as there is great danger from falling rocks in the area, park officials report.

Airplane flights catering to tourists were begun over the spectacular slide area after completion of the aerial search and rescue mission by the Air Force Friday night.

Gov. J. Hugo Aronson of Montana joined the congressional inspection tour early Saturday after asking President Eisenhower and Defense Secretary Neil H. McElroy to order the U.S. Army Corps of Engineers to "take whatever steps may be necessary" to protect downstream areas of the Madison Valley from floods which could result from washing out of a huge slide blocking the Madison River.

Waters were reported still building up behind the 50 million ton slide which blocked the canyon about seven miles downstream from Hebgen Dam on Hebgen Lake.

A survey by the Corps of Engineers was under way at the slide area Saturday afternoon, headed by Maj. Gen. Keith Barney of the Omaha Division. The survey will determine the composition of the natural dam, which has been estimated as over 200 feet in height. It also will compute when water may reach the top of the barrier and will decide the best way of eliminating the danger of flood damage to downstream areas of Madison Valley.

"We felt immediate and prompt action must be taken," Gen. Barney said after a personal inspection.

The congressional party arrived at Bozeman Saturday morning and was transferred to smaller Air Force planes which could land at West Yellowstone airport. Immediately upon arrival there they were shifted to helicopters for a tour of the Hebgen Dam area.

Harold Tepper of Everett, Wash., deputy director of Region Eight, Office of Defense Mobilization, said an adequate warning system had been set up to provide residents downstream from the slide area with enough time for evacuation should the slide threaten to burst under weight of impounded waters.

He said engineers have studied the slide and estimate they would have at least 10 hours of advance warning before the waters could break through the barrier.

Officials of the congressional delegation explained they have no responsibility in declaring the stricken region as a national disaster area.

Hugh Potter, Civil Defense director for Montana, would have to make a declaration of emergency to Gov. Aronson.

Mr. Tepper said it had been decided the area stricken by earthquakes is not damaged extensively enough to warrant such a declaration of emergency.

But in Washington, Sen. Mike Mansfield (D-Mont.), made public a letter from Civil Defense Mobilizer Leo A. Hoegh which stated the Civil Defense official would keep in close touch with Montana state officials for any help that could be extended by the

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federal government under existing law.

The congressional inspection party was scheduled to remain at West Yellowstone Saturday night and to depart Sunday. Plans for their departure were not available.

On the tour were Sen. Frank E. Moss (D-Utah), a member of the Senate Interior Committee and the Senate Public Works Committee; Rep. Lee Metcalf (D-Mont.); Rep. LeRoy Anderson (D-Mont.), member of the House Interior Committee; Rep. Gracie Pfost (D-Idaho), chairman of the House Interior Subcommittee on Public Lands and member of the House Public Works Committee; Rep. John Baldwin (R-Calif.), member House Public Works Committee; and Rep

Thomas G. Morris (D-N.M.).

Checking the continuing after-shock activity were crews from the U.S. Coast and Geodetic Survey who set up seismograph stations at Victor, Idaho; west of Henry's Lake in Idaho; at Hebgen Dam, and another inside the west gate of Yellowstone National Park.

The crews stationed at Victor said its sensitive instruments recorded a tremor "every 10 minutes on the average," Friday night.

Numerous vivid stories of persons who survived the thunderous earthquakes Monday night continue to come in to The Salt Lake Tribune—too many, in fact, to allow printing individually.

[Salt Lake Tribune; August 23, 1959]

JEEP PATROL TO HUNT UTAH QUAKE VICTIM

The Salt Lake County Sheriff's Jeep Patrol with 21 men left for the West Yellowstone area early Saturday to search for a Sandy woman believed to be one of the victims of the earthquake in the Madison River Canyon Monday night.

They will assist officials in the search for Mrs. Mark Thomas Stowe. The body of her husband, killed in the gigantic landslide set off by the earthquake, was identified by relatives Friday in a Montana mortuary.

The Stowes were camped along the Madison River on a fishing trip, along with a number of other persons, when the slide roared down.

Sheriff George Beckstead said the patrol had no

specific request to go but "we wanted to help find Mrs. Stowe because she is a Salt Lake County woman." He said the men will help in any other way they can.

Groups from two Sandy wards of the Church of Jesus Christ of Latter-day Saints also have joined in the search at the request of Rex Whitmore, father of the missing woman.

A 14-man party was led by John Richards, bishop of the Sandy First Ward. Another group of eight men left earlier under direction of Evan Homer, bishop of the Sandy Fifth Ward.

[Salt Lake Tribune; August 23, 1959]

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FATALITY COUNT FOR HEBGEN REMAINS AT 10

BOZEMAN, MONT., Aug. 22—The Gallatin County Chapter, American Red Cross, closed its offices here for the day late Saturday afternoon with a report that no new casualties had been located in the Madison Valley earthquake area.

The known dead toll stands at 10.

Red Cross officials said they had been unable to

confirm several rumors of casualties, one to the effect that a woman's body had been found in Hebgen Lake.

The office added that a search party Saturday afternoon reported no success in its efforts to find other victims of the tremblor.

[Salt Lake Tribune; August 23, 1959]

LOSS—MILLION EASY AND RISING

WEST YELLOWSTONE, MONT., Aug. 22—Damage caused by last Monday night's earthquake was widespread.

Costs probably will never be known.

Conservative estimates place losses, including potential business and actual physical damage, in excess of one million dollars.

But added to that must go the cost of rescue operations, which must be rated in the tens of thousands of dollars.

U.S. Air Force helicopters and planes were in the area for a week. While they aren't charged for on an hourly basis, private helicopters have a generally accepted price of \$100 an hour.

Highways must be reconstructed. A dam repaired.

So the total cost is tremendous.

How much will it cost merchants to repair buildings? To replace stocks damaged?

Insurance firms don't all pay on earthquake damage so the businessmen are heavy losers.

One motel operator here said business had been brisk and a good year was in prospect.

"Better than last year because last year the Park Service was fixing the road between Madison Junction

and here," he said. "But when you operate on a short season, two weeks can make or break a guy. Some of the marginal operators are bound to take losses from this."

Even the Union Pacific Railroad will not bring the usual tourist trade to town now.

The Yellowstone Special which made daily round trips between West Yellowstone and Pocatello, Idaho, now is stopping in Victor, Idaho.

The reason: The west section of Yellowstone Park is closed.

In addition, visitors who usually made the circuit of Yellowstone Park and came out to West Yellowstone for the type of entertainment they couldn't get in the park just can't get here without many hours of driving.

So business is bound to be hurt.

Then some businessmen are looking to the future. How many, they ask, will be willing to come to western Montana while the earth continues to shake.

Any way one looks at it, this was a costly earthquake.

[Salt Lake Tribune; August 23, 1959]

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PARK SERVICE PREPARES REPAIR PLAN

By Frank Hewlett

WASHINGTON, Aug. 22—The National Park Service set the stage here Saturday for a vast repair program in earthquake-hit Yellowstone Park.

And effects of the disastrous quake reached into the broad Mission 66 program.

Director Conrad L. Wirth said he will ask his Mission 66 planners—who are designing some 30,000 camping areas—to consider the area carefully before locating future campsites under overhanging cliffs.

While the campsite in the Montana disaster wasn't under the NPS, he said, the earthquake danger will play a key role in future campsite plans.

Meanwhile, Park Service officials looked forward to a "sizable chunk" of their budget for the next fiscal year to be directed into Yellowstone repairs.

Top priority will go to roads, buildings and utilities in the hard-hit western sector of the park, Wirth said.

Wirth is getting daily reports and damage estimates from Park Chief Lemual A. Garrison.

Said Wirth: "Yellowstone is a kind of 'pet' of the service. It's the most famous of our parks and consistently scores among the top 10 in the number of visitors."

[Salt Lake Tribune; August 23, 1959]

RANGERS SAY WELCOME, PARK'S OPEN

YELLOWSTONE PARK, WYO., Aug. 22—If you plan to go to Yellowstone Park this season, you can still go—earthquake damage notwithstanding.

But you won't be able to make the usual grand loop tour which makes Yellowstone Park one of the interesting highlights of any vacation trip, or stay at Old Faithful Inn.

The West Yellowstone entrance to the park is "temporarily closed" and the roads between Madison Junction and Norris Junction and between Madison Junction and Old Faithful are blocked by slides and boulders.

Entrances from Teton National Forest, Cody,

Silver Gate and Gardiner are open.

You can still see the park's major sights—Old Faithful Geyser, Fishing Bridge, the Grand Canyon of the Yellowstone River and the bears.

But several geyser basins including Norris, Monument, and parts of the Lower Geyser are closed to public view.

Tourists always have said Yellowstone is too big to see in one trip. So another might be worthwhile.

The Park Service feels that tourists should still come to the park.

Damage here was mainly to roads.

[Salt Lake Tribune; August 23, 1959]

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HEBGEN DAM DECLARED SAFE FROM LAKE BEHIND SLIDE

WEST YELLOWSTONE, AUG. 22—Hebgen Dam is safe from waters backing up toward it from the earthquake-caused slide about seven miles downstream, engineers said Saturday.

Spokesmen for Montana Power Co., owner of Hebgen facilities, said that if the basin between the slide area and the dam were to be filled the highest point the water could reach would be about 20 feet lower than the dam's discharge tunnel.

To fill the canyon to this height would take about 40 days, at an input rate of 1,000 cubic feet a second, engineers estimate.

The landslide resulting from Monday's tremors is 170 feet high. The floor of the canyon at that point is 6,270 feet in elevation.

The top of Hebgen Dam is 6,548 feet above sea level. The dam itself is 87½ feet high.

Montana power spokesmen reported Saturday that U.S. Army engineers, who now are taking charge of the slide situation, tentatively plan to build a concrete spillway through the upper portion of the slide. This would halt flow of backup water behind the slide which otherwise could cause serious or sudden erosion if the water should begin to pour over the top of the slide.

Hebgen Dam, an earth dam with a concrete core, was built in 1915 to store water to feed nine power plants downstream. A small power plant is maintained at the dam to furnish power only to nearby camps and the like.

[Salt Lake Tribune; August 23, 1959]

40-MILE RUIN RINGS LAKE

WEST YELLOWSTONE, MONT., Aug. 22—Earthquake jars last week caused damage in an area approximately 40 miles in diameter, with the center of the damage area beneath scenic Hebgen Lake.

Union Pacific Railroad trains could not travel into this town until late Thursday because boulders and rocks littered the railroad tracks for some 40 miles south of here.

Windows in many downtown curio shops and restaurants were broken out. More than 260 panes of glass were broken out of the Union Pacific lodge here alone.

Chimneys toppled, construction projects were torn apart.

Damage was heavy in the Hebgen Lake area where water courses were changed and the level of the lake's Madison branch was down six feet.

The huge multimillion-dollar Hebgen Lake dam

was cracked.

Waters seven miles below the dam are forming another huge reservoir behind nature's dam—a huge slide caused by the earthquake.

In Yellowstone Park, some 75 miles of road were closed by the earthquake as slides covered roads and rocks were loosened and left hanging high above traveled ways.

The force of the quake was felt throughout western United States.

But even as far east as Fishing Bridge in Yellowstone Park, people were tossed from bunks.

In Ennis, Mont., below the huge earth slide on the Madison River, the whole town was ordered evacuated when the extent of damage was made known.

Roads as far south as the Idaho-Montana line were cracked.

[Salt Lake Tribune; August 23, 1959]

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SALT LAKE TRIBUNE

EARTH TREMORS WIN SHEER-TERROR TITLE

Nature At Its Worst

By William C. Patrick
Tribune Science Editor

From the beginning of time, earthquakes have been among the most terrifying of all the angry moods of the natural environment.

Safe refuge usually can be found against the perils of excessive heat and cold, of raging blizzards, pouring rains and shrieking winds.

But when the solid earth itself shakes, convulses, breaks apart with shattering effect on buildings, houses and other structures, an intense fear is created in all earth-bound creatures.

This was demonstrated again with dramatic force when last week's earthquake, one of the most violent in recent western history, struck the Madison River Valley near famed Yellowstone National Park.

Actually, earthquakes strike hundreds of times a year on various parts of the globe. They are of varying degrees of severity, ranging from mild shakes that do no more than rattle the dishes to devastating upheavals that change the face of the landscape.

A major displacement on the distant floor of an ocean may go unnoticed except by scientists.

But when the same thing happens on land—particularly in a populated area—the result is death and destruction.

Earthquakes are the result of the processes of adjustment that have been going on in the earth's crust for millions of years. Huge, subterranean rock masses are constantly on the move, slowly but inexorably.

Pressures build up and then suddenly something has to give way. This occurs at the points of least resistance—pre-existing cracks in the earth, known as faults.

The movement may be vertical, horizontal or a combination of the two. The vibrations arising from the huge rock masses rubbing against each other deep in the earth may be transmitted for great distances. Within close range of the center of the disturbance, they may be violent enough to cause surface destruction.

Thus it is seen that a fault is not the cause of an earthquake as many seem to believe, but simply the point at which the release of tension takes place.

Dr. Kenneth L. Cook, professor of geophysics, University of Utah, explains that the focus of an

earthquake usually is many miles below the surface.

Whether it is manifest on the surface depends on the magnitude of the displacement. Earthquakes are classified as of surface, medium or deep focus origin. Even those described as surface quakes actually may arise from movement several miles down.

Slippage may occur on only one fault line, or on parallel lines. This will result in sinking and tilting of a large surface area. Cracks in the ground will open up in various directions.

This apparently is the picture of the Madison Valley quake, which sent an estimated 30 million tons of material roaring down into the canyon, killing and injuring campers and damming the flow of the Madison River. It also resulted in tilting the ground beneath Hebgen Lake.

Campers along the shore reported that the surface of the lake itself seemed to be tilted. This, of course, was an illusion.

Dr. Cook points out that in a major displacement of this kind, the underground balance for miles around is upset.

The force of gravity then sets in to restore equilibrium. This results in a series of slippages that give rise to aftershocks, sometimes for periods of months or even years.

He believes that the unsettling of subsurface rock layers from the Madison Valley quake may extend for up to 100 miles in all directions from the epicenter. If this is true, aftershocks may be expected over a wide area.

As a rule, the initial shock from a major earthquake is the heaviest, but there have been exceptions to the rule. Whether the general rule holds with the Madison Valley quake remains to be seen. The best guess is that it will.

Scientists are unable to predict when and where an earthquake will occur. But they do know that certain parts of the earth's surface are more unstable than others.

The Intermountain Area contains an earthquake zone rated as of secondary importance. This may sound strange in view of the recent Montana disaster, caused by a disturbance of major character. One of similar violence occurred in 1935 in Helena, Mont.

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The quake in Utah's Hansel Valley in 1934 also could be classed as major as far as ground displacement is concerned, but it was in a sparsely settled section.

While earthquakes in the Intermountain Area do not occur as frequently as in California, for instance, and so far have not hit with destructive violence in a thickly populated section (except for the one in Helena), but scientists say this is by no means an improbability at some time in the future.

Utah, with other Intermountain states, contains a number of active faults, and since pioneer times nearly 300 quakes have been recorded. Only three have been classed as major—on the Elsinore fault in 1901 and again in 1921 and on the Hansel Valley fault in 1934.

One of the heaviest quakes of recent years hit the bare, unsettled Dixie Valley of Nevada in December, 1954.

According to geologists, the underground movements of the Intermountain Area might be considered a sort of backwash from the intense activity on the Pacific Coast.

Since no one can do any more about an earthquake than about the weather, what is the answer?

An engineer was quoted in a Sunset Magazine article some time ago as saying:

"Earthquakes are dangerous solely because we make them so, by erecting buildings and houses which can be shattered or shaken down."

The article continued:

"The objective of (earthquake resistant design) is to insure that the structure will overcome inertia and move with the earth as a unit, not as an unrelated

assembly of parts."

It pointed out further: "The basic essential is sufficient rigidity, obtained by adequate bracing and structural continuity, with secure anchoring and bonding of all elements—frame, outer and inner walls, upper floors, roof; in short, a building well-balanced and well-tied together."

Having learned things the hard way, California's cities have strict building requirements. They are embodied in the special earthquake provisions of the Pacific Building Code. Although Salt Lake City follows many provisions of this code, it has not yet adopted the special earthquake provisions.

It is understood, however, that most local architects voluntarily include them in their designs for schools and other large buildings in which numbers of persons assemble.

Also vital in an overall earthquake protection program is means of assuring a water supply in case of fire.

If supply mains cross fault lines, as some of Salt Lake City's do, there should be facilities for immediate repair in case of breaks.

Alternatives would be emergency supplies that would not be cut off by movement along a fault, or development of some type of flexible section of pipe for installation at points where faults are crossed.

And finally, fire-fighting equipment should not be housed in old, insubstantial structures that might collapse in an earthquake, imprisoning facilities of vital importance in case of disaster.

[Salt Lake Tribune; August 23, 1959]

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DISASTER SITE WEARS BADGE OF COURAGE **Hebgen Lake Horror**

By Jerry Voros

WEST YELLOWSTONE, MONT., Aug. 22—
This is the story of the kid next door who took a death
defying ride on an earthquake-rocked lake.

This is the story of a grandma and a grandpa who
awoke one night during their first summer of retirement
to find that nightmares sometimes are real.

It is the story of a man in a wheelchair who
watched while new found friends struggled to get out of
a station wagon they were sleeping in, couldn't and died
before his eyes.

But it is also the story of a world gone mad. Of
nature on the rampage. Of a mountain moving and a
river which stopped running.

It is the story of a night spent in the Hebgen Dam
area 25 miles northwest of here, when horror mixed
with courage and death failed to spare the rich, the
young, the old or the poor.

This is the story of an earthquake zone. It is the
story of some 500 persons trapped by nature and
fighting for survival.

This is the story of men who thought dust was
water and of women who nursed the injured while hurts
caused by deaths of loved ones ripped their hearts.

EARTHQUAKE SHAKES THE WEST, the
headline read.

Shake is right. And twist and turn and bulge and
slice and heave.

Names mean little in this story.

For all America lived it.

If not in fact, in dreams, in thoughts, in reflection.

"It could have been me," said the tens of millions
who have visited this area.

The night of Aug. 17, 1959, will never be
forgotten in western Wyoming.

Not in the little town of Indiana where a mother sat
and heard the news and she ached to learn if her family
lived.

Nor in thousands of other towns where fear
reigned while telephone lines were down and contact
with loved ones was impossible.

Now as men slowly plod along the rocky cliffs and
the muddy soggy meadowland searching for the dead,
nature stirs. The earth quivers.

Is it a warning? men ask.

What will come next?

The sleepless night of volunteers, of the state
police, of the frightened survivors, are now behind.

Funerals are being held in Idaho, in Montana, in
Utah and California.

For some then, the night is over. But for most, the
night lives on.

Little, said some scientists, of the power of the
quake.

Big, said the men who witnessed, of the hearts of
those who could help and of those who needed help.

As stories go, this night of stories has little plot. It
lacks the punch of sudden conclusion. For beneath a
lake and a pile of earthquake slide may be the final
chapter, the answer is the nagging question: how many
died.

[Salt Lake Tribune; August 23, 1959]

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FEARING WORST, SHE WAITS - THEY'RE SAFE!

MOLINE, ILL., Aug. 21—The heart of a Moline, Ill., woman sank Tuesday as she scanned a paragraph in her newspaper, "At least half a dozen witnesses say they saw an automobile occupied by a man, a woman and a crippled child buried by an avalanche."

The account concerned the great earthquake which wrought destruction in portions of Montana, Wyoming and Idaho.

She thought vividly of her brother-in-law, Jerry Cunningham, 26, of Rock Island, who shortly before

had taken his wife and their crippled child, Stephen, 4, for a vacation trip to the earthquake area.

With fear in her heart she waited, hoping and praying.

Then two days later, the telephone rang.

It was Mrs. Carl Cunningham, who had been traveling with the family. She reported the travelers were well and happy and would be home soon.

[Salt Lake Tribune; August 23, 1959]

'I'M SO HAPPY,' FAMILY'S SAFE

YELLOWSTONE PARK, WYO., Aug. 22 (AP)—"I'm so happy," said Jean Amstutz, Bethlehem, Pa.

With those words the 19-year-old coed Saturday told a newsman she had heard from her parents and brother, once feared lost in the quake-ravaged southwestern Montana area near Yellowstone National

Park.

Jean, working at a general store in the park, said she received a post card Friday, postmarked in Minnesota and saying the family had left Yellowstone for Pennsylvania about an hour before the quake.

[Salt Lake Tribune; August 23, 1959]

UTAH FAMILIES 'BACK HOME' FROM QUAKE-STRUCK AREA

The last Utah family unaccounted for in the Yellowstone quake disaster—that is, families officially reported missing by various agencies—checked in safe early Sunday morning.

If other Utahns are missing, their names haven't been reported.

A midnight telephone call to The Salt Lake Tribune brought the good news: Dr. and Mrs. John Rupper, their four children; Mrs. Stella Rupper and Michael Rupper, Provo were all back home.

News came from a sister-in-law, Mrs. William D. Rupper, 4152 S. 1540 West, Murray, who earlier had received no word from the family.

Meanwhile, four more Utahns on the "missing" list and feared lost in the park also checked in earlier in the

day.

Mr. and Mrs. William C. Livingstone, 142 American Ave., Murray, arrived home early Friday, according to a neighbor, Mrs. Ray J. Harmansen, 141 W. American Ave.

Mr. and Mrs. Willard V. Fuller, 4252 Highland Dr. (1650 East), their son George, 8, and daughter, Yvonne, 12, returned late Friday.

Mr. and Mrs. Osmond L. LeCheminant, 870 N. 4th East, Bountiful, also returned Friday evening.

With the LeCheminants were a son, Randall Scott, 7, a daughter, Leslie Ruth, 5, and Mrs. LeCheminant's mother, Mrs. Vera Haycock, also of Bountiful.

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MOVING DAY HITS HARD AT COTTAGE

From a house on the lake to a house in the pines. Such was the transferral of real estate characteristics for Mrs. Frederick R. Hinckley, 1283 E. South Temple, who "stood out" the big earthquake Monday amid the wreckage of her cabin interior at the upper end of Hebgen Lake.

Last Monday evening Mrs. Hinckley was alone in her log cabin about 100 feet from a lake, a pier and a boat. Her husband, earlier, had driven to Idaho Falls in the family automobile.

A few hours later, the cabin, which had no chimney to tumble down, was some two blocks away and the pier and the boat were ridiculous phenomena sticking up out of a mud flat.

"I've been in earthquakes before," said Mrs. Hinckley. "This time I had no children, no family to be worried about, so I really was not frightened.

"I was in bed when it started. I jumped up as I

heard the noise. Everything in the house tumbled about and the furniture got in the way of the doors, so I just stood and watched it," she said.

"Things were flying around," Mrs. Hinckley said. "For a time I thought it might have been an atom bomb."

I heard the whoosh of the water in the lake (in this case the water was racing away, tipped in the opposite direction)." Mrs. Hinckley explained, "When things began to really rock, I thought that maybe 'this was it'."

The neighbors were all very wonderful, she declared. When it calmed down a bit, neighbors went to the Hinckley cabin to ascertain her safety and by 4:30 a.m. she had been driven out of the disaster area and had made telephone connections with Mr. Hinckley.

[Salt Lake Tribune; August 23, 1959]

EXPERTS PINPOINT EPICENTER OF MONTANA QUAKE

WEST YELLOWSTONE, MONT., Aug. 22 (UPI)—Scientists estimated here Saturday the center of this week's big Montana earthquake was located five miles northwest of Old Faithful Geyser in Yellowstone National Park.

The epicenter was pinpointed from information gathered by 50 seismic stations throughout the world.

The earthquake was located about 20 miles

underground in the heavily wooded uninhabited area of Yellowstone.

No damage was reported at the epicenter, scientists said, but the damages fanned out on all sides.

The quake left its mark in the little-traveled Western section of the park in cracked and torn roads, small landslides and fallen trees.

[Salt Lake Tribune; August 23, 1959]

NEW JARS SHAKE PARK TERRITORY

WEST YELLOWSTONE, MONT., Aug. 22 (AP)—Two Yellowstone National Park ranger stations at Mammoth and Old Faithful reported more than a dozen new earth tremors here Saturday.

Each jolt lasted only a few seconds rangers said, but some were strong enough to rattle windows and shake buildings.

[Salt Lake Tribune; August 23, 1959]

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TEMBLOR OUT-PUNCHES H-BOMB'S BLAST

The What And Why Of It

By Dr. Robert R. Kadesch
University of Utah

Faster than a rifle shot and much more powerful than an H-bomb blast, a major earthquake spreads destruction as the earth seeks to realign a small portion of its crust.

Last Monday's Montana quake raises many questions. Does science know the what, when and why of earthquakes? The what is mostly known. The when, if it regards the prediction of a major temblor, finds geophysicists almost completely in the dark. For the why, there are at present only theories, merely seeds of ideas.

A few earthquakes can be associated directly with volcanic activity. Most quakes, however, occur along lines in the earth called faults.

A fault is merely a crustal break along which slipping has occurred previously. Few earthquakes show visible fault displacement.

Great historic earthquakes seldom produce fault displacements in excess of a few feet. Such displacements may be vertical, horizontal or oblique.

The greatest single displacement on record (1899) left Alaskan beaches 47 feet above the sea. The great San Francisco quake of 1906 showed a maximum of 21 feet of horizontal displacement and a vertical shift of but three feet.

The earth usually manages to slide rock on rock slowly and safely without developing earthquake activity.

Slippage along some fault lines may have occurred intermittently throughout all geologic time. In Scotland, the Great Glen fault shows a total horizontal displacement of some 65 miles.

Closer to home, the Pleasant Valley earthquake which rocked central Nevada in 1915 created a new cliff up to 16 feet in height along the western base of the Sonoma Range.

Geologic evidence here indicates that this shift was merely the most recent slippage in an accumulation of some 2,000 feet.

Tremendous energy is released annually by quakes the world over. It is estimated that on the average, earthquakes generate approximately three billion kilowatts of power.

If we could but use this energy and sell it at the going rate of 2½¢ a kilowatt hour, it would be worth some 750 billion dollars yearly.

The destructive violence of an earthquake can usually be explained by what is known as the "elastic rebound" theory.

Think of two elastic and rectangular sponges pressed together. The fault line is represented by the boundary between the two sponges. A line perpendicular to the two sponge faces may represent a fence row or line of trees marking the original alignment of the earth's surface.

Over a period of years the earth's crust some miles back and to either side of the fault line shifts, one side to the north, say, the other side to the south. Along the fault line nothing happens—yet.

This earth movement is represented by motion of the back sides of the two sponges. The originally straight line across the fault is gradually bent into an S-shaped curve.

This process builds up, and in so doing, stores immense energies in the elastic strain in the rocks. Suddenly, the earth on both sides of the fault line can stand the bending no longer, rock grates on rock as the earth, or sponge, faces slip by each other along the fault.

This is the temblor, releasing as it does the vast pent-up energy of millions of tons of elastically bent rock.

The curving fence row or line of trees becomes two straight but offset lines, a jog of perhaps several feet appearing at the fault.

Earthquake waves spread out rapidly from this region, called the "focus" of the quake. In some cases, the focus lies as much as several hundred miles beneath the earth's surface. The epicenter of the quake is the spot on the earth's surface directly over the focus.

Of the many different kinds of waves emanating from the focus, the fastest are the compressional sound waves traveling through the earth.

Their speeds range from 12,000 miles per hour near the surface to 18,000 miles per hour in the deeper crustal layers.

The mechanics of the events occurring during most earthquakes is reasonably well known. Prediction of

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quakes is quite another matter. In a few isolated regions where intensive studies have been made, the build-up of stresses along a fault have been carefully observed.

Such information, however, does not reveal either the month or year of an impending quake. Continued study may or may not improve the prognostication of

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major earthquakes.

As for the ultimate causes of quakes, geophysicists can only suggest plausible possibilities. The first thing to do is to look the earth over in its entirety in a search for some agent which could supply the enormous energies released.

[Salt Lake Tribune; August 23, 1959]