

MOUNT ST. HELENS Diary A Sunday HOLOCAUST

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"The Columbian" Vancouver, Washington May 28-1980.



Photo by TY KEARNEY Copyright 1980 by Ty Kearney and Alan Kearney.

Moment of the blast. North side of Mount St. Helens explodes in a rush of ash and gas at 8:32 a.m. Sunday, May 18.
"The Columbian" Vancouver, Washington May 28-1980.

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Credits

Section layout and design by Dan Tolva and Larry Winslow; color processing by Eric Rasmussen; paste-up by Mel Dunn.

All of a sudden, the laughter died. It was snuffed out by a massive, searing explosion of primordial death. Peaceful Mount St. Helens in Southwestern Washington state had become a killer.

Perhaps Associated Press Writer Steve Graham of Portland summed it up best when he wrote:

"For two months, reawakening Mount St. Helens was fun to have around. We told volcano jokes and enjoyed the notoriety of living so close to a natural wonder....

"T-shirt makers had a ball creating

slogans. Silk-screened creations appeared with captions such as 'I Survived the Mount St. Helens Eruption.' Entrepreneurs on the mountain slopes were offering genuine volcanic ash, or so they said.

"On Sunday, May 18, the fun stopped. The mountain, without warning, unleashed a blast of pent-up gas and volcanic material not unlike that of an atom bomb, minus the radiation."

Dozens of persons are dead or missing. Some may never be found, their bodies buried under hundreds of tons of volcanic ash. Damage to buildings, timber,

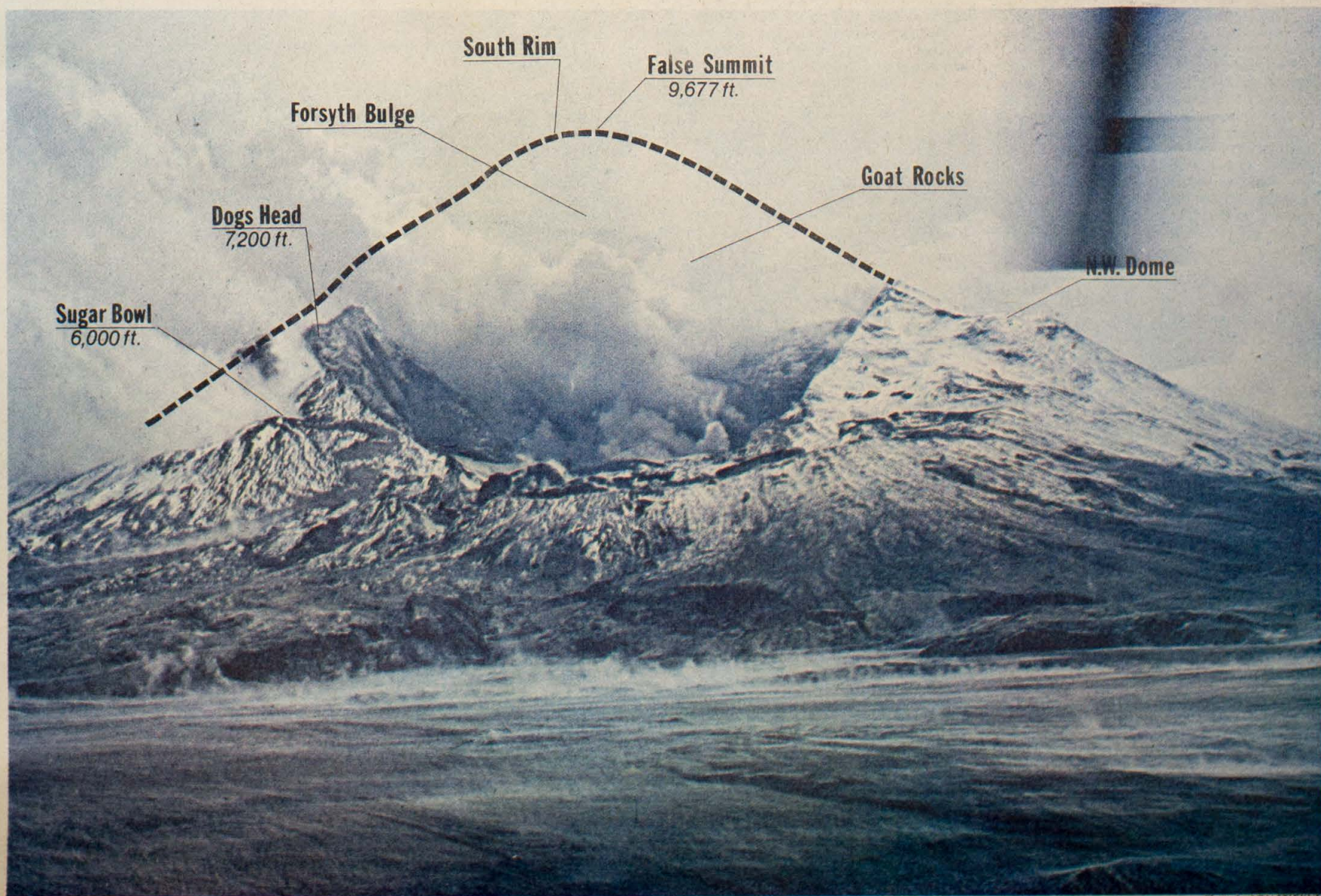
crops and wildlife has been put in the \$1.6 billion range.

The full effect of the St. Helens blast might not be realized for years. The speculation by geologists that the mountain could continue to erupt for months, even years, raises the prospect of several decades of recovery for the Pacific Northwest and other areas of the nation affected by ash fallout.

On March 20, 1980, a little-noticed earthquake signaled Mount St. Helens' first stirrings in 123 years. Since then, The Columbian, published about 45 miles

southwest of the mountain in Vancouver, Wash., has spent thousands of hours covering the volcano. The first *Mount St. Helens Diary* was published April 10, 1980, with stories and photos on the volcano reprinted from the pages of The Columbian.

This is the second volume of that diary. It covers the mountain's cataclysmic explosion May 18; the subsequent floods and mudslides; the confusion and dangers spread by a continent-girding trail of ash; and the shock and grief as more bodies are recovered from near the shattered mountain.



Dotted line shows original profile of the north slope of Mount St. Helens, with old landmarks indicated.

Photo by LON STICKNEY

"The Columbian" Vancouver, Washington May 28-1980.

Prelude: March 20 to May 17, 1980

Earthquakes give way to first eruption of St. Helens in 123 years

By BILL STEWART
Columbian Writer

It started with a shiver that was felt only in a tiny corner of the woods not far from Clark County.

Like an actress building to a dramatic scene, Mount St. Helens marched through a series of activity plateaus. The play is not over, and as officials try to count the dead and assess the damage, nature is mulling over the next act.

Thus far, each new plateau has eclipsed the previous one in magnitude and sheer energy. Disbelievers found that the warnings of scientists were more than horrible fiction stories dreamed up to scare but not hurt.

● **SHIVERS:** The first chapter of the drama started March 20:

A relatively light earthquake was the first sign of activity. The quake, measuring 4.1 on the Richter scale, was localized and was not felt by persons away from the peak. There was a single seismic station on the west side near the treeline which announced the arrival of a new Mount St. Helens — except no one realized it.

But that Friday's quake was followed by additional activity Saturday, March 21, and even more on Sunday. None was very strong, but seismologists were interested.

The activity grew daily. The faster the mountain shook, the faster the University of Washington and the U.S. Geological Survey rushed to install earthquake metering devices. Most of the quakes were in the range of 3.0 to 4.0 and were limited to the peak and its north slope.

Scientists began to suggest something volcanic might be happening, but the first instrumentation was not complete enough to diagnose the peak's case of indigestion. As a precaution, primarily against quake-triggered avalanches, the peak was closed to the public on March 23.

On March 24, the quake activity, primarily of the much smaller shakes, grew so much that the instruments became unreadable. The quakes overlapped. But the area where the shaking was felt continued to be restricted to the Spirit Lake area and on the peak.

● **ERUPTION:** Shortly after noon on Thursday, March 27, the mountain started Act 2. An explosion heard in many areas of Clark County spooked already nervous residents of northern communities. It was cloudy, and no one could see anything from the ground.

But a news team from The Columbian, after circling the cloud-shrouded cap for almost three hours, finally was rewarded: There was a hole in the snow near the false summit on the north part of the peak. The pristine snow was smudged with black ash encircling the roundish hole and fanning out eastward. The top, especially the north side, was shattered. Large fissures, later measured at more than a mile long, wound down and to the troubled north side.

The hole was about 200 feet across and about 100 feet deep.

With the new activity, a number of residents from near Spirit Lake moved out. Some of those later moved back again after the mountain's eruptions became routine.

Earthquake frequency was consistent, although there were a few days in which the number would be higher or lower.

● **ASH:** The mountain started slow, with brief pulses of steam and occasional ash. Much of the time the peak hid in spring weather, but every time the clouds parted, the mountain had turned a little darker. Seismic activity grew in intensity and frequency.

Scientists warned of mud and ash flows. In fact, they warned so often that the threats became routine, and soon people began to disbelieve.

Ash began to pour out of the peak regularly, dusting the Northwest with a light coating of gray.

A second crater formed on the peak. Eventually that merged with the first one to form a pit seven football fields long and about two fields deep.

When the press hounded scientists for lava, the mountain responded with a blue flame visible only from the air at night. But no lava.

Good weather brought out hundreds of planes, buzzing the peak like angry bees. Despite a closure to the general public, the airspace was jammed because most claimed to represent some press outlet. The five-mile limit around the peak shrank and shrank, until it appeared that there was a competition to see who could get closest. Some people actually landed on the crater rim and climbed inside.

One crew of climbers used camouflaged



Photo taken May 8 shows growing bulge of ice and rock at left of steaming crater.

STEVE SMALL/Columbian

clothing as they made it to the top — and filmed two beer commercials.

Ash eruptions got stronger, quakes more frequent, and scientists competed to see who could come up with the best theory about a bigger show.

Then on April 3 came the first "harmonic tremors," indications that lava is moving somewhere inside the mountain. Where normal earthquakes are sharp, abrupt movements, a harmonic tremor is an undulating ripple caused by lava flowing. But the harmonic tremors came and went at odd intervals. Still no lava.

As the situation seemed to worsen April 4, roadblocks moved spectators farther away from the peak. That prompted all sorts of complaints from businesses, loggers and spectators.

● **RESTING:** On April 22 the mountain refused to spurt. The quakes continued, but the mountain was not erupting. During the following few days, the volcano was downright boring for spectators — after all, what can be seen of an earthquake?

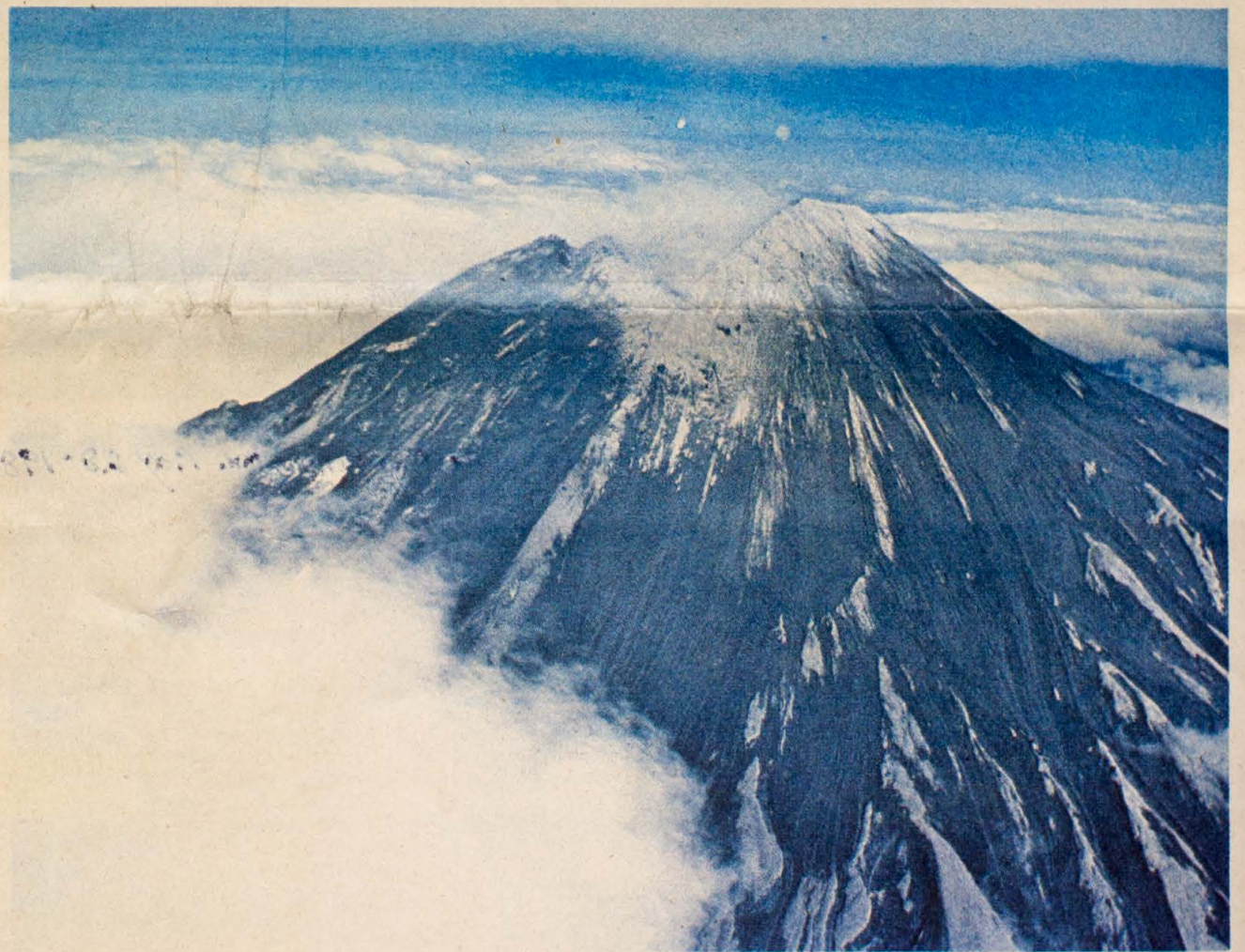
● **BULGE:** Someone looked up at the north slope April 30 and said the mountain was bulging. That was prophetically proclaimed as "the most serious potential hazard posed by current volcanic activity."

Scientists determined that the bulge of ice and rock was moving north and northwestward at a rate of five feet per day with little variation. They warned that the danger was that the slope would overextend itself and shear off. The bulge, about two miles around the slope and 0.6 mile vertically, was to slide down the north slope into Spirit Lake, triggering a large tidal wave of water and mud.

On May 7, with the bulge still growing, the peak erupted with ash again. Quakes continued to strengthen, with the top reaching 5.0.

Warnings got louder, and the governor ordered a strict closure of the peak, admitting only scientists to the inner "red" zone. The outer "blue" zone was restricted to day use, and only a few people qualified for permits. That did not keep people out, though. Many made their way down logging roads to circumvent the padlocked roadblocks.

Several new steam vents appeared, as did "hotspots" as the mountain continued to shed its now blackened snow. The crater continued to grow, and when it reached the edge of the top, it started eating down the sides. The



Expanding crater notches St. Helens' once-rounded summit in this May 13 photo.

STEVE SMALL/Columbian

false summit was consumed first, then the marching pit started to nibble southward into the true summit.

Still the bulge swelled. More warnings.

On May 12, an earthquake of 5.0 snapped loose an avalanche on the north side. Scientists measuring the bulge looked up at an overhanging wall of ice and decided it was

time to move back to a safer vantage point. That avalanche did not reach Spirit Lake, though, where 83-year-old Harry R. Truman was refusing to leave his Mount St. Helens Lodge.

With the blister of ice moving with two newly formed peaks at its crest, the volcano continued to spew ash, steam and an

occasional chunk of rock or ice. Quakes did not exceed the 5.0 level, but the stronger tremors grew more frequent. Still it was another plateau.

Scientists warned; residents watched; and everyone wondered what the mountain would do next.

They did not have long to wait.



Photos by TY KEARNEY Copyright 1980 by Ty Kearney and Alan Kearney.

Mountain's north flank explodes and collapses May 18, sending a searing shock wave of heat, ash and gas over 154-square-mile area.

Big blast chases pair from camp

By SALLY JAMES
Columbian Writer

In the time it took to snap the shutter of his camera six times, Ty Kearney captured the angry, boiling growth of Mount St. Helens' eruption May 18 from only a few miles away.

In a wild ride down a mountain logging road moments later, Kearney and his wife,

Marianna, watched the cloud roll toward them with lightning fuming inside it.

"Things were falling off and I was on my knees on the floor of the van holding the radio," Mrs. Kearney said, as she and her husband remembered the moment from the safety of their Clark County home.

Kearney, 58, is an amateur radio operator

who volunteered to spend a week monitoring the volcano for the state Department of Emergency Services from a spot about eight miles west of the mountain's summit.

The Kearneys were camped about 2½ miles northwest of Goat Mountain, they said. She was working on a sketch when she first noticed the mountain begin to erupt.

"I heard Ty say something about an earthquake, I didn't really feel it like he did. One or two minutes after that we saw the first cloud start to boil out, and I took my pencil and started to sketch in the clouds," she said.

"I thought, 'gee, this is going to be interesting, we'll get a little show,'" she said.

Monday, May 19

Stunned residents begin to comprehend the destruction caused by catastrophic explosion

By BILL STEWART
Columbian Writer

Mount St. Helens, the once-serene, cone-shaped peak that dominated the skyline northeast of Clark County and stood guard over the beautiful Spirit Lake recreation area erupted with a force likened to an atom bomb Sunday, killing at least six and leaving 21 missing.

The mountain, about 45 miles from Vancouver's back door, blew at 8:32 a.m. Sunday with an explosion that was heard 200 miles away in Canada but was unheard throughout the Vancouver-Portland area. The blast left the snow-capped mountain about 1,300 feet shorter than it was two days ago

and spread death and destruction throughout the Toutle River valley north and west of the mountain and sent a gigantic ash cloud to the east. By late morning today that cloud had fanned out across several Northwest and Rocky Mountain states and was expected to continue all the way to New England.

Nine persons, apparent survivors of the eruption, were spotted by rescue helicopters today near the mountain. It was unknown whether they were among the 21 reported missing earlier.

Five of the persons were found about eight miles from the volcano, which continues to spew huge amounts of ash and steam. Four others were found four to five miles from the

mountain, near Fawn Lake. They were described as two adults, a child and an infant. No names were available.

Helicopters could not land to pick up the nine because of poor visibility caused by volcanic ash.

Other survivors were seen 20 miles from the volcano, searchers reported, and helicopters were sent to them.

A volcano expert on Monday predicted Mount St. Helens will continue spewing ash for two or three days, then lava will emerge. Al Eggers, a geography professor at the University of Puget Sound, also said lava and mud flows could continue to spill from the mountain for 15 or 20 years. The last

eruption of the volcano, in 1857, lasted that long.

The Pandora's box of nature's fury following the Sunday morning explosion unleashed the following:

- A series of mudflows raced down the two forks of the Toutle River, killing motorists, snapping a dozen or more highway bridges, sweeping away homes, cars and large logging equipment rigs. Many of the destroyed bridges were small spans across tributaries of the north and south forks of the Toutle, as well as over the Toutle forks.

- A searing explosion ripped a fan-shaped swath out of the forest on the northwest side of the peak, killing several people by the

shock of the blast or the heat. In some areas the trees were clipped neatly at about 20 feet above the ground; in other areas not even a stump remained. The swath was eight miles long and 15 miles wide.

- Ash, several feet deep in areas close to the peak, was pushed as far as 500 miles to the east where it "turned day into night." One of the hardest hit is the Yakima area, but the impact is widespread. It has closed airports, halted all but the more serious emergency services, triggered school closures, and become a major health concern. By mid-morning today the ash cloud was as far east as Montana and Colorado.

Through it all, Clark and Skamania counties and the Longview-Kelso area escaped virtually unscathed as winds blew the ash away from those nearby populated areas south and west of the mountain.

As scientists reconstructed the chain of events, two major earthquakes struck the peak about one minute apart while most of the area's residents were preparing Sunday breakfast. Those quakes are believed to have concentrated their force in the northside bulge of ice and rock that had been growing for several weeks at the rate of about five feet per day.

That blister of rock parted without warning. The Goat Rocks formation reportedly moved westward and the pent-up force of the peak burst forth with the searing explosion that was to be likened by many observers to the force of an atomic bomb.

Geologist Dan Miller said that studies of the peak indicated such an explosion had not taken place in the past 32,000 years.

In addition to snapping the trees, the heat burned the paint on logging gear miles from the summit. Large blocks of ice and rock rained down on the area that had just been stripped of vegetation. Hot ash and cinders — several feet deep in a short time — came next, triggering forest fires. Hot gas flowed out of the hole in toxic levels.

Overhead, a giant gray cloud rose to 60,000 feet, creating its own weather, spawning a lightning storm that started even more fires. The total of fires from lightning strikes and hot cinders was more than 200, with some as large as 3,000 acres. But the ash then smothered most of the blazes.

The top of the once conical peak was sawed off at 8,400 feet, well below the old elevation of 9,677 feet above sea level. The crater which once was 1,700 feet wide, now is described as being as much as one mile wide. The whole north side, blister and all, is gone, leaving a horseshoe or scoop-like chute which funneled load after load of white-hot ash down the north side and into Spirit Lake.

One scientist said the ash, believed composed of shards of natural glass mixed with gases, possibly as hot as about 1,500 degrees, was rolling down the north slope toward Spirit Lake for at least three hours Sunday.

Observers say Spirit Lake, site of a popular recreation area six miles north of St. Helens, is virtually gone. The once-majestic, picturesque lake is said to be a cauldron of logs, and boiling mud and water heated by repeated ash flows. There has been no word of feisty Harry R. Truman, 83, who had refused to leave his Mount St. Helens Lodge, but a geologist said today that there is only a "very slim" chance Truman survived. A helicopter pilot said there is no trace of the lodge, and the area is covered with 30 feet of ash.

The missing also include Reid Blackburn, 27, a photographer for The Columbian, and David Johnston, about 30, of Menlo Park, Calif. Johnston is a volcano expert for the U.S. Geological Survey. He and Blackburn were in camps about a mile apart about eight miles northwest of the mountain when it blew Sunday.

Geologists said today that water from the smaller St. Helens Lake, north of Spirit Lake, appears to be consolidating with the remnants of Spirit Lake to form an entirely new lake.

Flooding of the Toutle has pushed tens of thousands of logs, cleaned out of several Weyerhaeuser Co. sorting yards, downstream, wiping out steel and concrete bridges. A Weyerhaeuser official at corporate headquarters in Federal Way said "six to 12 Weyerhaeuser employees and families are missing. They may have gotten out to safety but we are still looking."

Water was splashing over the closed Interstate 5 bridges at Castle Rock.

Among the survivors were two seriously burned loggers — they hiked eight miles to get help.

Among those killed were two California sightseers, a family of three trying to drive to safety ahead of flood waters, and a camper. In a volcano-related death, a pilot in Kittitas County, Wash., died when his plane hit power lines after the ash cloud turned the area to darkness.

A rescue pilot described one couple, found dead in their car 15 miles west of the peak near Camp Baker, as having been "fried" in the heat. "Trees and all the vegetation were laid out flat — singed, burned, steaming, sizzling — a terrible looking thing."

Another pilot, Dwight E. Reber of Columbia Helicopters, risked his life three times during the afternoon in an effort to find Blackburn at the U.S. Geological Survey camp near Coldwater Creek. He said every tree is lying flat in a west-northwest direction, apparently knocked down by the blast. "There is a flow of white burning everything it touches as it moves down the west side of the mountain," he said Sunday after a flight over the area. "Everything is hot and gray. There are places where the water of the north fork of the Toutle River appears to be boiling."

Reber said, "It looks like the aftermath of an atomic explosion." He said paint of logging gear was scorched.

Interstate 5 has been closed several times as officials watch mud brush the bottoms of the twin spans. The freeway was opened again at mid-morning today, at least temporarily. Just downstream is the Burlington Northern railroad bridge, also closed. When I-5 is closed, the detour over winding roads through Raymond, Wash., is a nightmare.



Thousands of tons of ash boil 60,000 feet into the air May 18.

STEVE SMALL/Columbian

Tuesday, May 20

New lake grows behind volcano-made dam; toll of missing and dead rises

By BILL STEWART
Columbian Writer

As the combined toll of the dead and missing volcano victims climbed past 100 today, officials sweated out the feared collapse of loose ash and mud at the foot of Mount St. Helens that would send about 80 billion gallons of muddy water toward the Longview-Kelso area.

One scientist said it was not a question of whether the dam would burst, but rather how fast.

The dam itself is 17 miles long, about one mile across the Toutle River valley, and 200 feet high. The "dam" impounds some 80 billion gallons of water and mud, not counting the mud in the actual dam.

Dr. Dwight "Rocky" Crandell, U.S. Geological Survey expert on volcanic hazards, said today that the dam is expected to break, but the question is whether it breaks a little at a time or surges westward all at once.

If it does break loose, the town of Toutle, downstream from it, is empty, but the 60,000 residents of Longview and Kelso would have about 90 minutes' warning, officials reported.

The official death toll today included six persons — two Californians whose deaths were reported Monday, and a family of four from Olympia. The list did not include a family of three which was swept away in mud as a rescue helicopter watched Sunday, or the victim photographed by the press Monday. That body was in the back of a pickup truck.

And Sheriff Les Nelson said today that he believes he knows where another eight bodies will be discovered.

The list of missing jumped from 29 Monday to nearly 100 today. Nelson said he has 83 names, while Skamania County Sheriff Bill Closner said he has 15. Both officers said there may be some overlap — the lists had not been compared by late morning today. Nelson added that not all of the names are "confirmed missing" — some were added by concerned friends and relatives who are not positive the persons were going to be at Mount St. Helens.

The mountain remained relatively calm today, sending plumes of steam and occasional ash into the air to altitudes of 12,000 feet. But none of the eruptions equalled the Sunday holocaust.

Bad visibility continued to hamper observation on the north side of the mountain. That is one of the reasons no one noticed the massive dam on the North Fork of the Toutle, according to Crandell. He said the dam extends from Spirit Lake — now 200 feet deeper than it was Saturday — westward to near Weyerhaeuser Co.'s Camp Baker 17 miles away. And as the dam nears its



JERRY COUGHLAN/Columbian.

Ash and steam appear to rise from two sources May 18. Mount Rainier to the north is at left.

westward end, the dam becomes shallower, making it harder to distinguish than if it reared abruptly from the valley floor.

The dam is made up of ash, mud and chunks of rock, many the size of a man's fist. Crandell said that water seeping through the dam will serve only to speed the collapse, and will not solidify it.

"It will go. We know that. It is just a matter of when," Crandell said there is no advantage to artificially collapsing the dam because it already is full of water.

Just north of the dam is the bulk of the forest area knocked flat in a massive and "unprecedented" lateral explosion of the volcano. That blast, signalling the start of the present round of eruptions, flattened an estimated 100,000 acres, or 156 square miles, much of it in virgin timber. The bulk of the forest leveled is on private or state land. And some of the federal trees were in areas normally not logged commercially. Loss estimates vary, but range from about \$100 million to \$200 million for the trees alone.

Thus far, no federal assistance has been asked by Washington Gov. Dixy Lee Ray. The state Department of Emergency Services is compiling a list of damages statewide, from the lost bridges around the volcano to agricultural losses in Eastern Washington. The assessment will be used by the governor in deciding to ask for federal aid.

The lost bridges include everything from small structures to long new concrete highway spans on the two Toutle River forks, at least one forest railroad bridge, about eight assorted forest road bridges on the south and east sides of the peak, and the big bridge at Eagle Cliff on the east end of Swift Reservoir.

The Eagle Cliff Bridge was ripped out by a massive mudflow Sunday afternoon, the Skamania County Sheriff's Office reported today.

U.S. Forest Service personnel and deputy Mike Grossie have been cleared out of the reservoir areas near the bridge site, but six people, and possibly a seventh, remain, a sheriff's spokesman said.

Jim Gipe, owner of Jim's Grocery at Eagle Cliff, reported the bridge being washed out and the occupants of three nearby cabins refusing to leave the area, the sheriff's spokesman said.

Gipe described to sheriff's deputies the mudflow coming down the Lewis River into the reservoir as looking like "a giant mass of brown bread dough."

The mud mass slammed against the bridge shoving it out of its way as it flowed into the reservoir, which is the backwater from the Pacific Power & Light Co.'s Swift Creek Dam. PP&L has been drawing down the reservoir level to absorb any giant mudflows

that might reach the Lewis River, where the dam is located.

Forest officials today attempted to get an accurate tally of the number of active forest fires east of the volcano. There were as many as 200 started Sunday when chunks of hot ash and rock, possibly as hot as 1,500 degrees, rained down on the woods for some 15 hours. Accompanying the ash was a severe lightning storm created by the mountain.

The fires now are restricted to a fan-shaped area of 50,000 acres immediately east of the peak. Heavy clouds have limited observation, but a number of fires are believed to have been smothered by the same hot ash blanket.

The forest will remain closed until further notice, and such public activities as camping and wood cutting will be halted.

Ash from the volcano was heading for the East Coast today as Eastern Washington took advantage of a lull to start digging out from several inches of the gray powder. The ash was blamed for a precautionary landing of a DC-9 airliner after ash caused engine problems. The Federal Aviation Administration would say only that the plane was in "western skies at 33,000 feet" when the problem occurred. Eastern Washington airports, except Walla Walla where fallout was light, remained closed today.

On the ground, Interstate 90, the main

highway between Seattle and Spokane, was closed to eastbound traffic again today, while westbound traffic from Ellensburg was on a limited basis.

Closer to the volcano, Interstate 5 at Castle Rock was open but not to overweight loads. Debris is said to have damaged the freeway bridges. And officials fear that if the mud dam breaks, those spans could be swept away. At present, only one major bridge over the Toutle remains between the freeway and the volcano — the high bridge near Kid Valley escaped the torrent of mud.

Continuing mud flows are expected to further block the shipping on the Columbia River where mud from the Toutle created an instant sandbar that has grounded vessels. And that mud is hot, threatening the fish not only in the Toutle, and Cowlitz rivers, but also in the Columbia. A check of the lower Cowlitz, below the Toutle, on Monday showed that stream to be 90 degrees, far too hot for any fish to survive. That heat could kill Columbia River salmon and steelhead runs, too.

State officials said most communities in Cowlitz County are empty. Sheriff Les Nelson said that no exodus has been ordered from Longview or Kelso "but no one is more than two miles from a high spot in case we have to move fast."

Many towns deserted as nearby residents flee

By STEVE PIERCE
and BILL DIETRICH
Columbian Writers

Here is a summary of the situation Tuesday at various places around Mount St. Helens and the Toutle River:

● **TOUTLE:** The town is "dead as a doornail," almost completely evacuated, Bonnie Peterson, an employee at the Toutle Grocery, said this morning. The Cowlitz County Sheriff's Office ordered the evacuation late Monday because of fears that a

mud dam above Camp Baker on the Toutle River might collapse. Ms. Peterson, who was in a hurry to leave, said she "snuck back in" to retrieve a few supplies. Some Toutle residents have refused to leave their homes, said Nolan Lewis, director of emergency services in Cowlitz County. About 175 homes are without electricity in the Toutle area, and the community's water supply plant has been washed out. But there still is a two-week supply of water in some town reservoirs — for anyone still in the area.

● **LEXINGTON:** Some residents living in

the lowlands along the Cowlitz River were emptying their houses of their belongings Monday and today because of the threat of flooding. Four or five businesses on higher ground in this community about two miles north of Kelso and just west of Interstate 5 remained open today. The Cowlitz County Sheriff's Office was warning lowland residents not to stay in their homes overnight.

● **SILVER LAKE:** Owners of cabins around Silver Lake have been advised to sleep elsewhere. There is a threat that the lake could rise, since there has been some

backup of water at the point where the lake empties into the Cowlitz River. Silver Lake is about five miles east of I-5.

● **CASTLE ROCK:** All schools are closed today "because of the impending wall of water" from the mud dam up the Toutle River, according to a school district spokesman. However, by midday there had been no wall of water. The district's 1,700 students also were out of school Monday. Some lowland residents have evacuated their homes, and the entire community of about 2,500 persons remains on standby in case an

emergency evacuation is necessary. Businesses were open as usual today.

● **WEYERHAEUSER LOG CAMPS:** Three Weyerhaeuser logging camps on the Toutle River are destroyed but no company employees are killed or missing, a company spokesman said. At Camp Baker, on the north fork of the Toutle, 38 log trucks, 22 crew buses and more than 2 million board feet of logs are gone. Another 2 million board feet of logs was washed away from a Weyerhaeuser sorting yard on the south fork of the river near the town of Toutle. That camp also was heavily damaged.

● **KELSO-LONGVIEW:** Schools here are closed today because of the threat of flooding. The filter system on Longview's water supply system has become clogged with silt and debris from the Cowlitz River, so water is coming from Kelso's wells. Some lowland residents in Kelso-Longview have evacuated their homes, although most of the cities' residents remain in their homes. Businesses were open today.

● **COUGAR:** "It's kind of like a ghost town here," reported Cougar Store owner Dot Elmire. "You walk around and there is nobody here. It's really strange." Cougar is southeast of the mountain just across Yale Lake from northeastern Clark County. Despite the presence of the Elmiere, most residents of both this logging and recreation community and of Yale to the west have evacuated. There has been no damage and no ashfall in Cougar, she said.

● **ARIEL:** As of late morning, there was no cause for concern in this community at the west end of Lake Merwin in Cowlitz County. No evacuation was in effect, but a deputy at the Cowlitz County Sheriff's Office said fire department sirens will be used to alert residents in an emergency. Emergency vehicles would move through the area with sirens blaring, he said, and persons should move to high ground.

● **WOODLAND:** After traffic congestion Sunday, as tourists tried to approach the volcano, this community is near normal, officials report. Schools are open.

● **INTERSTATE 5:** Closed for hours in the Castle Rock area on Sunday and Monday, the state's main north-south artery was open this morning. Officials, fearing that Toutle River flood waters may have weakened the steel-and-concrete northbound and southbound spans, were enforcing truck legal weight loads. No permits were being issued for trucks exceeding the limits. Early this afternoon, crews were to inspect the structures for damage.

● **RAILROADS:** Train traffic returned to near normal today after being virtually halted Sunday by ash falls in Eastern Washington. Burlington-Northern spokesman Kim Forman said the railroad trestle across the Toutle River near Interstate 5 sustained some damage from flooding but is still usable. Trains are using only the western-most of the two tracks across the bridge.



CHERYL HASELHORST/Columbian

Hundreds of millions of dollars worth of timber was stripped clean by blast.



New vent about four miles west of Spirit Lake erupted about 8 p.m. May 19. Base of mountain is at right in this view looking east.

DAVE OLSON/Columbian

'This is it!'

Last words herald mountain's fury

By AP, UPI

"Vancouver! Vancouver! This is it!" Those fearful words, came from David Johnston, a field volcanologist with the U.S. Geological Survey, who was stationed at Coldwater 2 Observation Post near the Mount St. Helens' north summit Sunday.

The message bore out the predictions the 30-year-old volcanologist had been making since March: that Mount St. Helens was like a dynamite keg with a lit fuse.

Yet that didn't stop him from spending day after day on the volcano exploring its mysteries. Black ash and blackened forest are all that is left of the site where Johnston, a colleague and a trailer once were. Johnston is officially listed as missing.

"This is like standing next to a dynamite keg and the fuse is lit, but you don't know how long the fuse is," Johnston told reporters after St. Helens first erupted in late March.

Johnston was speaking at an impromptu news conference in a parking lot at timberline on the north face of Mount St. Helens. It no longer exists.

"This is extremely dangerous where we are standing," he said.

Such a statement was hard to believe at the time. The sun was out, the mountain, still white, loomed in the background.

"If it exploded we would die," he said as an earthquake rattled the ground and pieces of

ice cracked off glaciers higher up the mountain.

Johnston spoke of hot avalanches roaring down the flanks of the mountain producing mudflows that would fill the valley below. It sounded like science fiction. He was right.

"David took risks," his father, Thomas, said. "A couple of years ago he was trapped on Mount St. Augustine in Alaska just before it erupted, but they got him out with a few hours to spare."

"Not many people get to do what they really want to do in this world, but our son did," said Johnston. "He would tell us he may never get rich but he was doing what he wanted. He wanted to be near if the eruption came. In a phone call on Mother's Day, he told us it's a sight very few geologists get to see."

"Early in May he went part way down the crater to collect water samples from a small lake and discovered gases that showed the presence far below of slow-flowing lava," said Johnston. "He said it could be explosive when it finally came up to the top."

Even though their son predicted — and waited for — the volcano, the Johnstons have some comfort.

"He was doing what he wanted to do, and it is rather consoling to know that," Johnston said.

'A description of hell'

By THOMAS RYLL
Columbian Writer

MOUNT ST. HELENS — The helicopter pilot's description of this steaming wasteland ran like a tour guide's description of hell.

"This," he said, his voice crackling through the heavy protective earphones that blotted only some of the engine's noise, "is the end of the world."

There was no reply from three stunned passengers aboard the National Guard Jet Ranger helicopter, all of whom had seen newspaper photographs and television footage depicting the holocaust of May 18 and its tragic aftermath.

Barely two miles away was the hideously ugly form of what had been a beautiful mountain. It was as if St. Helens had been decapitated. The black rivers of ash and mud covering her shoulders looked like dried blood.

Officially, we were making a reconnaissance flight through the miles of forest stripped of all life by the hot gases and explosion of the mountain. The pilot, John Haroian of Edmonds, may have wanted a closer look himself.

Our flight late Tuesday afternoon was one of dozens that had been made daily since Sunday's eruption, in the search for survivors.

We found no life, aside from the tracks of an animal — an elk, perhaps — leading to muddy waters.

At one point we spotted a late-model sedan near a streambed, coated with ash, but intact. The passenger's door was open as if someone

had fled. While our 'copter circled, a second hovered for a closer look, kicking up clouds of ash. It landed nearby, its rotor still turning while a Guardsman raced over the naked ground to the abandoned vehicle.

The sighting was a false alarm: it was a Seattle television station vehicle whose occupants earlier had escaped unharmed.

Several other vehicles were spotted, all empty. Other flights had had more luck.

Before taking off, the front-seat observer had smiled wryly while I examined the helicopter's flimsy passenger door.

"They come apart real easy," he said, donning a blue helmet and climbing in.

It did nothing to ease my apprehension as we hovered in the nauseating stench above what was left of Spirit Lake. As the craft turned to leave, white clouds surrounded us, obscuring the rugged cliffs to both sides.

Haroian swung the dark green bird from the right to the left side of the second Jet Ranger, fairly visible in front of us. Passing through its rotor wash, our fragile machine bucked and swayed in the violent draft as Haroian sought to regain sight of the ash-covered slopes and re-establish his bearings.

The dirty white slopes loomed out of the clouds, and the haze disappeared as quickly as it came. Later, as the 'copter's rotor churned to a stop at Kelso Airport, Haroian, a grocery store manager from Edmonds when he is not in the National Guard, acknowledged, "It was kind of spooky, in the eerie canyon."

We found no survivors during the two-hour mission.



Sullen plumes of ash preside over devastated Toutle River Valley.

RALPH PERRY/Columbian

Aftermath



Overturned trucks at Weyerhaeuser camp.



Weyerhaeuser Co. logging camp on the south fork of the Toutle River was I

Pair win fight with roaring river

By THOMAS RYLL
Columbian Writer

KELSO — Two young Tacoma residents learned firsthand the ominous wrath of an angry volcano Sunday when they fought for their lives in a torrent of tumbling logs.

What started as a quiet weekend of fishing became a heart-stopping brush with death when Roald Reitan, 19, and Venus Ann Dergan, 20, awoke in their tent to find a wall of water and logs rampaging down the south fork of the Toutle River toward their campsite.

From their beds at St. John's Hospital here Sunday afternoon, the battered, bruised and dirty travelers told how they somehow survived the bone-crunching struggle with hundreds of logs and the remains of a railroad bridge.

After it all, Reitan remarked, "I'm getting the hell out of this county and never coming back."

As miraculous as their survival was their lack of serious injury. An emergency room doctor reported that Ms. Dergan had a possible cracked wrist — but no other broken bones. Reitan was bruised but unharmed.

"I woke up and the river just didn't sound the same," said Reitan, who had pitched his tent only 30 feet from what was to become a raging, timber-choked waterway before he and Ms. Dergan could escape. "All of a sudden, I see this wall of logs coming straight toward us."

Unknown to him, Mount St. Helens had erupted, feeding the headwaters of the Toutle River with acres of mud and melting snow, triggering a tidal-wave-like motion that swept downed trees into the river.

"I started throwing stuff in the car, and I looked down and saw the water around my ankles. Then I looked up and saw what looked like a piece of a railroad bridge. It was holding all the logs back in one huge pile. And then it started to move."

"Man, that thing was snapping trees when it came down the river. It was pure havoc. Havoc and a half."

Terrified, the couple scrambled to the top of their car to flee the rising waters. Seconds later, the currents swept the

vehicle down a steep embankment, and they jumped for their lives.

"She started screaming. I thought, 'Man, this is it,'" said the dazed Reitan, who delivers furniture for a Tacoma firm.

Seconds later the 5-foot-2 Ms. Dergan was caught under a log.

"It just sucked her under," said Reitan. "Her head was caught between two logs. All I could see was her nose."

Ms. Dergan, her hair and face caked with dirt, said she thought she was going to die.

Reitan said he straddled a log and pulled himself along to reach his girlfriend. "I had her hair," he said. "Then I pulled her up. She said, 'You aren't leaving me, are you?'"

Surrounded by the deafening roar of the sea of logs, the two somehow managed to reach the edge of the splintered mess. There, they ran in mud up to their knees to reach a road, said Reitan.

Fearing the waters soon would wash out the roadway, they fought their way up a steep hillside.

"We sat down and asked each other if we still were alive," recalled Reitan. "I was afraid shock would set in so I decided we better get moving."

That was when he heard a loudspeaker.

"I yelled as loud as I could," said Reitan.

Several hundred feet away, Toutle-area residents Randy Peck, Fred Winningham and Ted Frandson and Mike West of New Jersey heard Reitan's screams. All four, said Peck, waded through 200 to 300 feet of mud to reach the couple. A short time later, they were ferried by a Weyerhaeuser helicopter to Toutle High School, and from there by ambulance to Longview. Ironically, Ms. Dergan works for Weyerhaeuser.

"That's the most terrified I've ever been in my life," said Reitan.

Said a doctor to Ms. Dergan, "Looks like someone put you in a washing machine."

Reitan's comment: "I don't feel too bad. But I haven't had a cigarette for four hours and it's killing me."



Massive mudflow creates bleak view of Toutle River Valley west of St. Helens.



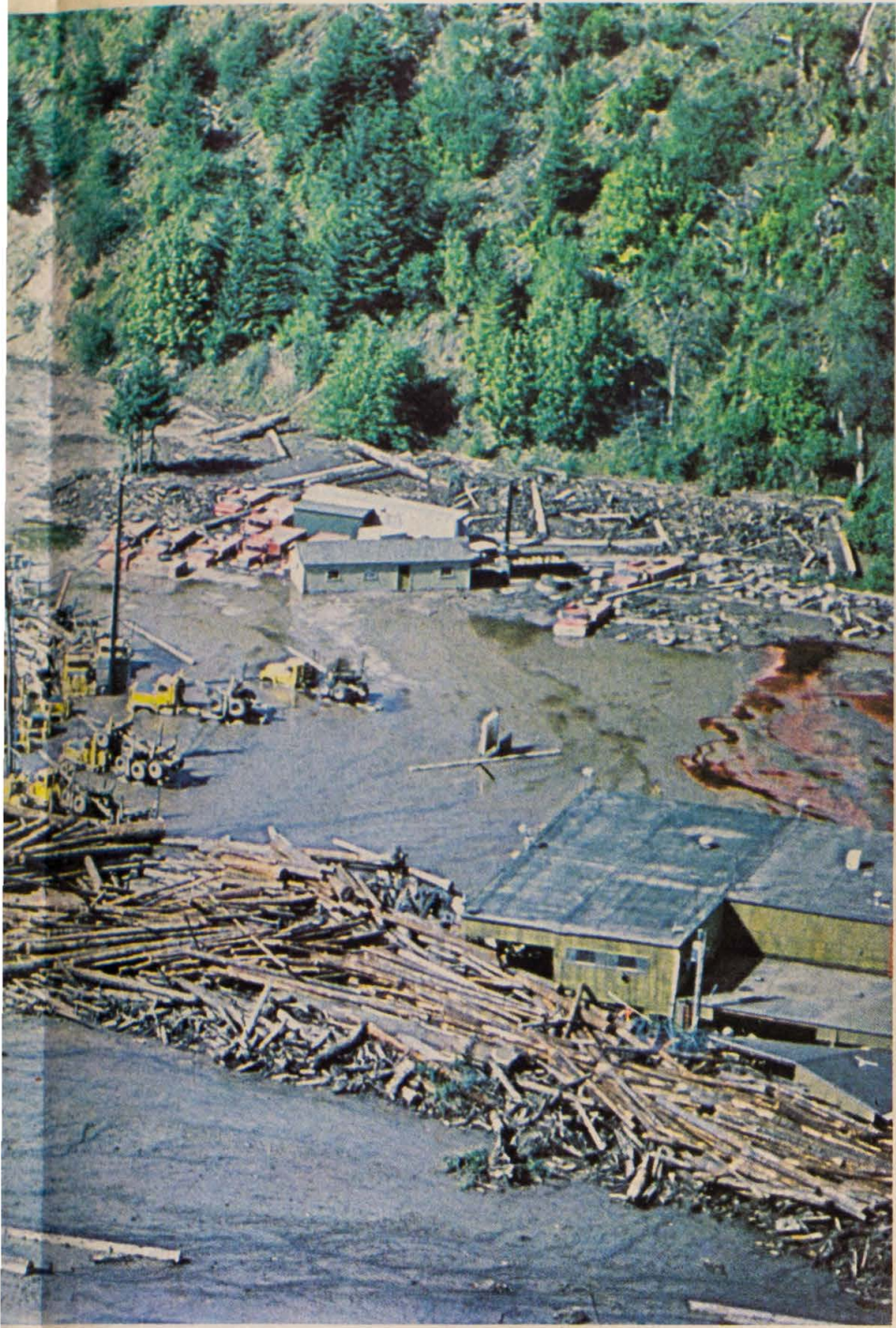
Roald Reitan and Venus Ann Dergan recuperate at Kelso hospital.

Columbian photos by Dave Olson, Ralph Perry,
Cheryl Haselhorst and Thomas Ryll
Columbian map by Jim Shinn

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Scenic area turned to waste by blast

By **BRUCE BARTLEY**
Associated Press Writer

KELSO (AP) — The upper Toutle River Valley below Mount St. Helens was once as scenic a drainage as could be found anywhere. Now, it is a barren landscape of total desolation.

A swath several miles wide and perhaps 15 miles long extending northwest from the volcano is devastated.

There is no sign of life — animal or vegetable.

Huge old-growth fir trees are flattened like a million wooden matches.

The area resembles old photographs of no-man's land from World War I.

The force of the blast necessary to cause such damage is beyond comprehension.

The few trees still standing are stripped of all their branches.

Blue smoke from numerous small fires mixes with steam and ash to create a hellish aura.

The slopes of the volcano are pockmarked, much like the lunar landscape.

In some areas near the 4,000-foot level, hundreds of tiny steam vents spew in sharp contrast to the black and gray flank of the peak.

Above, ash and steam continue to simmer from the flattened mountain top, now nearly 1,300 feet lower than when the eruption began Sunday.

A U.S. Forest Service plane flying over the crater estimated its depth at 3,000 to 4,000 feet.

Although parts of it were concealed by clouds and steam, virtually no water is visible in the massive Spirit Lake. It appears to have been consumed by mud and millions of broken trees that look like so many jumbled toothpicks.

Everywhere there is ash, gray-white ash several feet deep in places.

There is virtually no ice or snow left anywhere on the mountain.

Beyond the cone of destruction, the floor of the valley has been scoured from canyon wall to canyon wall.

Everywhere there is mud, mud of countless shades of brown and gray.

A few logs and stumps remain but mostly only boulders perched on smooth mud.

A chunk of ice two feet across is melting. It generates a light brown slime that makes it look as if someone had dropped a large scoop of chocolate ice cream on the floor of the river bed.

More of the main road is covered than is visible. In places where bridges were, there is no sign they ever existed.

Even high on the ridges, the evergreens are more gray than green. The dismal colors are made even bleaker by thick fog which is settled into pockets of the valley.

On a steep hillside, a small herd of elk grazes as if nothing had happened. But farther on, a cow elk wanders aimlessly through the muddied mess on the valley floor as if she's lost.

Although the main channel of the Toutle River has been swept almost clear of timber, the mouths of the tributaries leading into it are choked with timber debris.

After the massive flow of water down the river Sunday, a surprisingly small torrent now cuts its way toward the Cowlitz River. In places, the current has etched cutbanks with vertical walls 20 to 30 feet high.

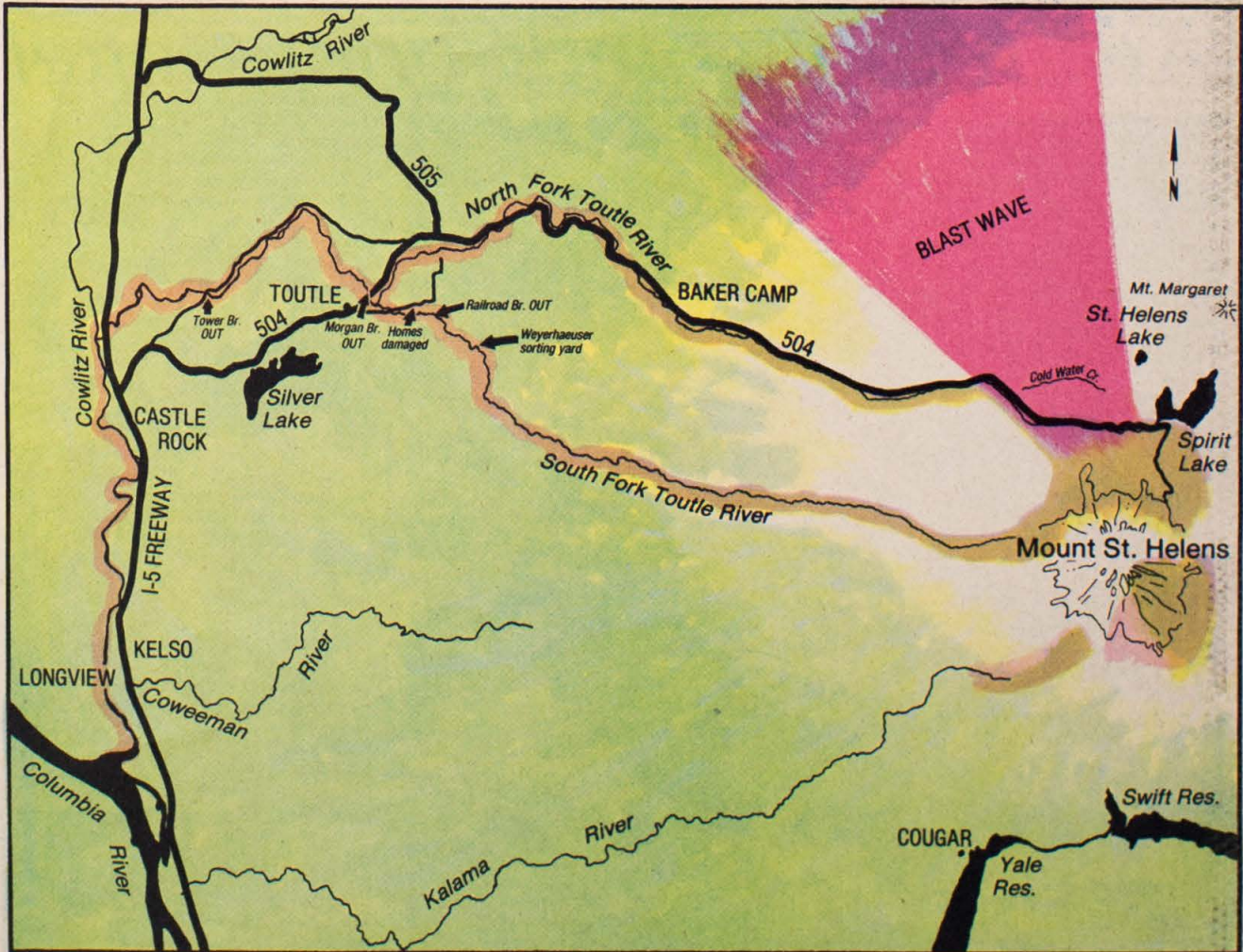
But over the ridges which define the Toutle drainage, the countryside is lush and green. Life in the forest there goes on as if nothing had ever happened.



Part of state Highway 504 is washed out by mudflow and floods.



Logs clog Toutle River after being washed away from logging camp.



Mapping the damage

Aside from spewing ash for thousands of miles to the east, Mount St. Helens wreaked havoc in Southwest Washington. The initial blast, shown in red, ripped through forests with the power of a hydrogen bomb. Rivers draining from the mountain were swollen by mud and debris, washing out several bridges. And several forest fires were ignited near the peak but later snuffed out by falling ash.

Wednesday, May 21

Silt causes water supply problems for already anxious residents

By BILL STEWART
and THOMAS RYLL
Columbian Writers

President Carter is due in the Vancouver-Portland area tonight to assess the damage around shattered Mount St. Helens. He is to make an inspection tour Thursday of the areas affected by the volcano.

Meanwhile, the 50,000 residents of the Longview-Kelso area held their breath today as a massive natural dam of ash and mud continued to hold back an estimated 80 billion gallons of muddy water upstream.

Bad weather grounded helicopters that have been maintaining a watch on the mud dam just west of Spirit Lake on the north side of the mountain.

As the hours passed Tuesday, experts calmed down, revising earlier predictions that the whole mud plug, plus the lake it is holding back, would break loose to race downstream toward the as-yet unevacuated Kelso and Longview.

The description today, by geologist Tim Hait, of the U.S. Geological Survey, was that the "juicy dam" is more likely to break away in a series of mudflows instead of a massive single event.

One scientist said that it is possible the material will congeal to form a permanent natural dam. He said the same process 300 years ago formed Spirit Lake. That lake now is smaller in area but 200 feet deeper than it was prior to Sunday's violent eruption of the mountain.

The official death count stood at 10 today, boosted Tuesday with the recovery of three unidentified bodies. There have been additional sightings of bodies but those have not been added to the tally because subsequent mudflows swept the bodies away. And various observers have reported seeing bodies but recovery has been put off while all available helicopters look for survivors.

After peaking at 98 missing, unofficial canvasses Tuesday located 27 of those listed. Cowlitz County had started with a list of 83 missing. Skamania County had 15 names, but some of those were known to have been out of the area when the mountain blew up. There also were some duplicated names.

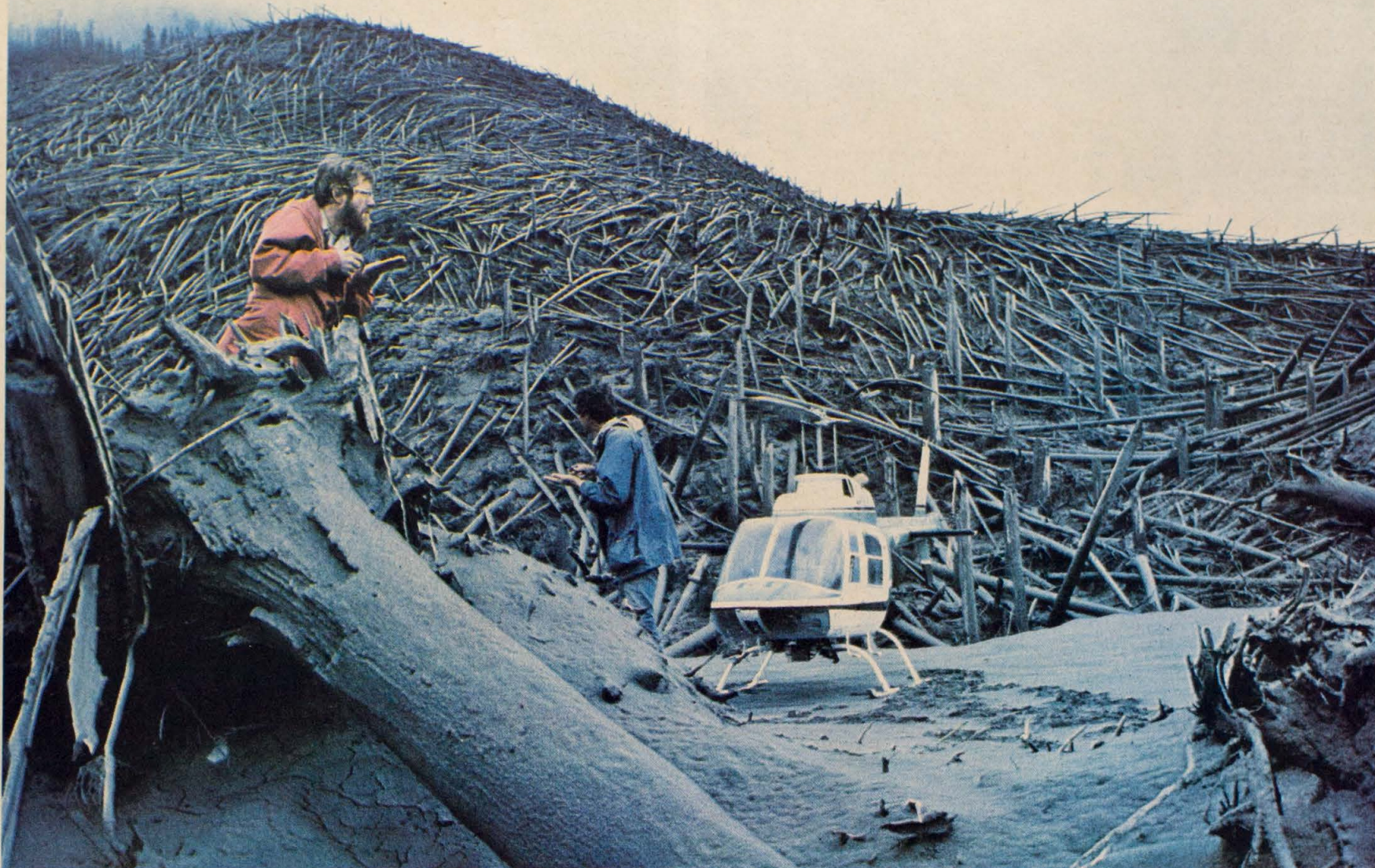
The mountain was relatively quiet Tuesday, with eruptions limited to steam plumes. Visibility was hampered by the weather. And earthquake activity dropped dramatically, according to the Geological Survey, although exact figures were not available.

One USGS scientist estimated the Sunday lateral explosion and eruption represented the equivalent of 50 million tons of TNT. The first atomic bombs were 20,000 tons, so the volcano theoretically was 2,500 times more powerful.

President Carter, who already has promised to speed action on a Washington request for federal disaster aid, will fly to Portland this evening.

The president will meet with state, local and federal officials, including Gov. Dixy Lee Ray, for a full briefing on the mountain, the various mudflows and their damage, flooding and the sealing of the Columbia River to shipping because of accumulations of mud from the volcano.

Other discussion topics include health problems in Eastern Washington because of heavy ash fallout, damage to crops, cost of cleaning streets and possible curtailment of business because supplies cannot get through.



Government scientists review an area devastated by the May 18 blast.

Photo by LON STICKNEY

Scientists weigh effects of ash

By AP, UPI

To get an idea of how much material St. Helens let loose, imagine a piece of land a mile wide and a mile long. Pile on ash and rocks as high as three Empire State Buildings.

That's how much material geologists say Mount St. Helens has spewed since it erupted violently Sunday.

Bob Christiansen of the U.S. Geological Survey said Tuesday the volcano has churned out material with a volume of six-tenths of a cubic mile — or a square mile covered almost 3,200 feet deep.

And a lot of that material — in the form of fine ash — is being inhaled by human and animal alike. The ash, which has marched its way across the nation, can cause some respiratory problems, scientists say. Its overall effects on plants and animals are still uncertain.

Charles Knowles, an associate professor of geochemistry at the University of Idaho, said scientists already have found cattle with respiratory problems due to the volcanic ash. He calls it "dust pneumonia."

One thing is certain. The ash is extremely damaging to machinery. The abrasive, dust-laden air has worn out hundreds of car and bus engines. Air filters became clogged with the grit.

Under a microscope, the particles appear white, yellow, orange and red. They're jagged and angular with tiny slivers, spears and daggers. They are so small they make a grain of sand appear huge under the microscope, said Thor H. Kiilgaard, geologist with the U.S. Geological Survey in Spokane.

"Common window glass has a hardness of 5.5 on our scale," he said. "Most of the ash has a hardness of 7. Then there's plagioclase — feldspar — with a hardness of 6. A lot of the ash fallout is glass, of course."

Kiilgaard said the dust is no great danger to human or animal lungs. Even though the particles are jagged, they can be absorbed by the body, he said, adding that hard-rock miners work in similar dust and it takes a matter of years for silicosis to develop.

Silicosis is an asthma-like disease caused by inhalation of silicon.

However, Russell Schaff, senior environmental specialist with the Idaho Department of Health and Welfare in Lewiston, said people should not become complacent about the ash.

"It can be respired deep into the lungs. There may be no acute symptoms now, but problems could occur many years later," he said.

The potential for severe adverse health effects exists, scientists said. It is the size,

shape and silicon composition of the ash fragments that pose the most hazard.

The ash is primarily silicon and contains small amounts of iron, zinc, lead, arsenic, fluoride and mercury, they said. It is slightly acidic and poses little threat to plant life. It is minimally radioactive.

Most of the particles are in the inhalable size range, they said, meaning they would be caught by the upper respiratory defense system. A portion are respirable — they will travel deep into the lungs.

Victor Kroll, inhalation therapist at St. Joseph's Hospital in Lewiston, said the silicon composition poses the danger of silicosis.

"The potential for danger is there," said Robert Clark, a pathologist. "This hasn't happened before. People who get exposed to this type of thing over a period of many years develop lung problems. I don't think anybody knows what the effects of a broad exposure to a single dose will be."

"People will probably be doing studies on us," he said.

Volcanic dust might help aquatic life in Yellowstone National Park, but could cause respiratory problems for other wildlife.

If Alaska's experience is any indication, volcanic ash from Mount St. Helens will not cause widespread devastation, says a University of Alaska scientist.



ASSOCIATED PRESS

Howard Miller sells particle masks on a street in Missoula, Mont., 400 miles east of St. Helens.

Awesome tragedy brings legend of dead to life

By BILL DIETRICH
Columbian Writer

The name "Spirit Lake" was given to one of Washington's most scenic points because the Indians believed the entire region belonged to the dead.

On Sunday, an awesome, bitter tragedy made the legend come true. The volcano's eruption has turned a picture-postcard view into a moonscape. In the process, a century of human development around the lake has been erased.

The lake has grown, as a result of Sunday's eruption, by 200 feet in depth. A natural mud dam now holds back its waters.

The certainty is that the most popular recreation spot in the Gifford Pinchot National Forest is gone. The cost in human lives is only being learned slowly. Added to it is the destruction of pristine old-growth forests, wildlife, fish, roads, campgrounds, lodges and the haunting blue of the lake itself.

Those who have visited the Spirit Lake area know the beauty that is gone: water so pure one could look 40 feet to the bottom, campgrounds set in natural cathedrals of trees, fields of alpine wildflowers in summer and crisp winds from the volcano's pristine snowfields.

There were four public campgrounds on the lake, three reached by trail or boat. There were four more private campgrounds serving the Boy and Girl Scouts, Longview YMCA and Portland YMCA. There was the St. Helens Lodge, accessible by car, and the Harmony Falls Lodge on the east end of Spirit Lake, accessible by boat. There were also about 100 private cabins a mile from the lake. Presumably, all are gone.

The lake itself sat in a natural amphitheater, the timbered walls of which rose 2,000 feet. It formed when ancient volcanic eruptions dammed the Toutle River with lava and ash flows. This most recent eruption, instead of obliterating the lake itself, appears to be adding to it. The 1,262-acre lake was 184 feet deep.

Indian fear of the lake, white men later

surmised, may have come from the cries of loons over the deep water and peculiar ripple patterns, possibly from gases of decomposing trees on the bottom. The area also had several tree casts, formed by trees buried in volcanic eruptions that subsequently rotted away.

The 19th-century eruptions may also have kept Indians away.

Modern development of the area began about 1876 with establishment of the town of Toutle. Logging began in the Toutle area about 1887, and a logging railroad was completed up the valley in 1895, serving eight log camps. Even recently, large clear-cuts were a regular part of the scenery on the way to the lake.

Robert C. Lange homesteaded about one mile west of the lake in 1879, creating the Lange Trading Post, and a post office at St. Helens opened in 1892. Another homesteader named Marsh is believed to have built on the lakeshore itself before 1900.

Development mushroomed in 1891 with mining discoveries made by Andy Olson, who found ore north of the lake on Paradise Creek. The copper drew enough miners to prompt Cowlitz County to hack out a wagon road to the lake in 1901. By 1902, barges were built on the lake for transportation of ore.

Enough copper was removed from the Sweden Mine to cast a bronze statue for a city park in Portland, but by 1911, the ore played out.

Meanwhile, fires caused by mining operations had razed the Mount Margaret area north of the lake in 1906, 1908 and 1911.

Recreation use also started. The U.S. Forest Service moved its Toutle River ranger from Toutle to Spirit Lake in 1913, at which time a fire lookout was built on top of the volcano.

In 1908, the Mazamas climbing club of Portland is reported to have camped at the lake before climbing Mount St. Helens.

Permanent campgrounds followed. The Portland YMCA was first, camping where the St. Helens Lodge later was built. They eventually moved to the north side in the

1930s.

In 1929, a family named Gustofson built the Spirit Lake Lodge a mile west of the lake. The construction dates of the St. Helens Lodge managed by Harry Truman and the Harmony Falls Lodge could not be obtained immediately, but Arthur Schoeni of Dallas, Texas, recalled that he vacationed at the Truman establishment as early as 1933.

A public recreation site also was developed in the 1930s, once serving 2,250 people in one weekend. By July 1939, a road was completed from Castle Rock to Spirit Lake, and the public campground was started by the Civilian Conservation Corps. The road was actually asphalt paved to the lake itself in 1946.

The surrounding national forest also was growing. First consolidated by President Theodore Roosevelt in 1908, the Columbia National Forest became the Gifford Pinchot in 1949, named after the founder of the U.S. Forest Service.

By 1950, there was talk of a road to the mountain's timberline, which was unique in that it was "moving" to reclaim the slopes of what was assumed a dormant volcano. In theory, the trees would have ascended from 4,200 feet to as high as 6,500 feet in elevation someday.

Former Congresswoman Julia Butler Hansen, who battled for the money for the Timberline road and parking lot, cut the ribbon to open it in 1962.

The Duck Bay boat launch was completed in 1965.

By last year, Spirit Lake had become the most heavily used recreation site in Gifford Pinchot National Forest. The view of Mount St. Helens across its water was a calendar and postcard standard. Thousands of climbers tackled the volcano itself, while others used a large network of hiking, horseback and ski trails.

On Sunday, it came to an end. A blast with the power of several atomic bombs flattened an estimated 156 square miles of forest, ignited fires and ravaged the lake.

The land that belonged to the dead had been reclaimed.



Photo by HUGH ACKROYD

This is how most Southwest Washington residents remember Spirit Lake and Mount St. Helens.

Thursday, May 22 *'It's the worst thing I've ever seen,' an awed President Carter says*

By COLUMBIAN STAFF
 "The moon looks like a golf course compared to what's up there," President Carter said this morning after he emerged from a helicopter that carried him over the devastated Toutle River Valley.
 He also said that although the eruption of Mount St. Helens is of incredible magnitude, within a year the peak and its devastated surroundings could become "a tourist attraction that will equal the Grand Canyon."

And he said the devastation caused by the volcano is "the worst thing I have ever seen." Speaking at the Kelso Airport this morning after a 90-minute helicopter flight over the ravaged area west of Mount St. Helens, Carter said that despite a briefing in Vancouver Wednesday night, he was not mentally prepared for what he saw this morning. He called the destruction wrought by Mount St. Helens "much greater than I expected."

At the Portland press conference later in the morning, Carter called the Sunday eruptions "a natural disaster of unprecedented dimensions."
 "It is literally indescribable. It is (total) devastation," the president said. He said the explosion had the impact of 10 million tons of TNT and blew away about one cubic mile of earth.
 Carter reiterated promises of federal financial help to the region.

But he also said local governments "must take care of their local home needs as much as possible."
 Carter did not get a chance to see the volcano crater during his flight because of a cloud cover at higher elevations.
 He said he had hoped that many of the fallen logs could be salvaged but upon viewing the area said he could see that many were buried "some 200 feet deep under the muck."
 Carter was greeted at the Kelso Airport by about 200 cheering persons who stood in a driving rain to get a glimpse of the president.
 Originally, it was thought the president would be briefed in Vancouver this morning, after his helicopter tour. But late Wednesday afternoon, it was announced he would come to Vancouver Wednesday night for the session at the Gifford Pinchot National Forest headquarters, 500 W. 12th St., Vancouver.
 "The area is completely devastated. There's ash several hundred feet deep, clouds of steam and enormous icebergs the size of a mobile home," the president told the Kelso crowd.
 He said that during his helicopter flight he could see a few fires but said, "There is no danger of (greater) fire, in my opinion, because there is just nothing to burn."

Gov. Dixy Lee Ray and Idaho Gov. John Evans accompanied Carter on the helicopter flight down the Columbia River to the Cowlitz and Toutle rivers.
 He praised local officials for their handling of the catastrophe and credited them with saving many lives.
 Carter traveled from the Kelso Airport to Longview's Cascade Middle School, a Red Cross evacuation center.
 The president worked his way through rows of cots on the school gymnasium floor, shaking hands and greeting evacuees, including many children whose dislocated parents still have jobs and were at work.
 The gym was stacked with boxes of clothing, magazines and children's toys. It is home for about 50 evacuees by day and an estimated 150 at night. Some persons go to friends' and relatives' homes at day and return to the center.
 "He (Carter) asked me if I live on the (Toutle) river," said Judy Rashake, who said she lives on high ground near the devastated Camp Baker logging operation.
 "He said it (the area) was just a mess."
 A helicopter ferried Ms. Rashake, her husband and two sons out of the hell on earth Sunday, she said.
 "This bed's not the best," she said of the spartan accommodations at the relief center.



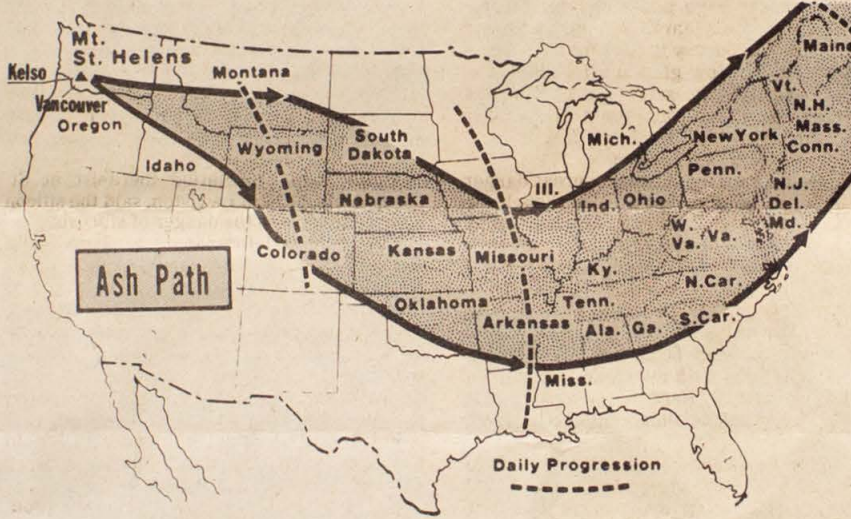
President Jimmy Carter visits volcano command center in Vancouver May 21.

CHERYL HASELHORST/Columbian

Ash *Almost every state beyond Rockies gets dusting*

By ASSOCIATED PRESS

A cloud of volcanic ash from Washington's Mount St. Helens moved over the eastern third of the nation Wednesday as thousands of stranded motorists sought shelter in the West and residents of a half-dozen states used plows and hoses to clear away inches of the fine powder.
 Water rationing was imposed in Spokane as residents tried to wash off cars, streets and buildings. School districts in Idaho postponed trustee elections after the governor declared a state of emergency. Businesses and schools remained closed in six Montana counties under emergency orders.
 The ash began pouring into the atmosphere Sunday with the eruption of the volcano and by Tuesday cities across the West were trying to cope with grit up to 7 inches deep.
 For parts of the Midwest, the ash meant a light dusting and some disruption of travel. The cloud of ash rose higher in the atmosphere as it moved east and weather officials in New York City predicted the cloud would be above rain clouds that were forecast for the area today.
 The ash was expected to cover every state east of the Rockies except Texas, Louisiana and Florida.
 Scientists say that as the ash spreads it takes the form of a powdery but gritty dust containing microscopic dagger-like particles of silicon that will turn sunsets into brilliant displays of scarlet and are abrasive enough to take the paint off airplanes flying through the cloud.
 The ash is not poisonous and poses no immediate health threat to most people, but scientists say those with severe respiratory problems might be more comfortable staying indoors while the cloud is overhead. But as to longer term effects on atmosphere and environment, scientists say they have no idea yet what the ash might do.
 "People exposed to this type of thing over a period of many years develop lung problems," said Robert Clark, a Lewiston, Idaho, pathologist. "I don't think anybody knows what the effects of a broad exposure to a single dose will be."
 Meanwhile, dozens of commercial flights were canceled Tuesday as the Federal Aviation Administration warned that the ash could pock plane windows and clog engines.
 Mail service ground to a standstill in some areas of the Northwest, and postal officials in Pasco, Wash., said that if residents want to mail the ash to friends and relatives, they should do so in plastic bags. Envelopes stuffed with the stuff had burst open and damaged machinery.
 Idaho state police lifted a travel ban on ash-clogged highways but ordered traffic to keep to a 40 mph speed limit. Meanwhile, Washington Water Power Co. officials cut power at one-hour intervals to allow transformers to be cleaned and Gov. John Evans declared a state of emergency in eight northern counties, permitting school districts to delay Tuesday's trustee elections.
 Some of the 2,000 travelers stranded in Ritzville, Wash., by 6 inches of gritty ash rebelled against a travel ban and decided to leave town. About 12 of the 75 cars were forced to return due to bad road conditions.
 An odd-even water rationing plan - based on house numbers and days - was imposed in Spokane as residents tried to hose off the ash that covered their lawns and cars. Some food items such as milk were running low in some eastern Washington counties and street crews worked to clear roads around dairies.



Map shows path of ash fallout across the country.

ASSOCIATED PRESS



Boiling clouds of ash darken sky over Richland, Wash., 130 miles east of St. Helens, on May 19.

ASSOCIATED PRESS

Mountain rumbles; level of lake drops

By COLUMBIAN STAFF, AP

Mount St. Helens has begun rumbling again, but scientists disagreed over whether molten rock may be moving within the mountain again.
 The report of movement came on the heels of the first visit Wednesday by scientists to Spirit Lake, where they took ash temperatures and samples.
 The activity was recorded by University of Washington instruments from 5 p.m. Wednesday to 1 a.m. Thursday.
 U.S. Geological Survey scientist Tim Hait said he considered the "seismic noise" an "expectable part of the general lowering of seismic activity" on the volcano.
 UW seismologist Craig Weaver described the noise as being similar to a harmonic tremor, which indicates the movement of molten rock within the mountain.
 "The most probable interpretation is that it represents the upward movement of the material again," said Weaver.
 Hait said the seismic noise should not be taken as an indicator of any movement of molten rock or imminent eruption.
 "We're watching the activity. It's way too soon to say it's a tapering off to a point of no activity or an in-between activity," he said.
 Hait said the noises are a textbook example of what happens after a major volcanic eruption.
 Despite the new rumblings, water behind a "juicy mud dam" has dropped in the past 24 hours at Mount St. Helens, lessening the threat of a massive mudflow and flood for the cities of Longview and Kelso.
 The level of Spirit Lake, impounded by a 12-mile-long dam of debris from the volcano, now stands 150 feet below the top of that blockage as water from the lake seeps into debris and oozes out the bottom.
 As President Carter spent much of the morning touring damaged areas west of the peak, the death toll rose to 15 with the report that the body of Columbia photographer Reid Blackburn had been found in his car, parked at his devastated camp site about about seven miles north of the mountain.
 In addition, 71 persons are considered missing. One new body was recovered by a Lewis County ground crew at about midnight Wednesday. Others found dead were left on

the mountain while the search for survivors continues.
 Volcanic ash around the peak now is described as up to several hundred feet deep. Entire landscapes have been changed, with streams in some areas now flowing the opposite direction.
 Geologist Sue Kieffer today said she is continuing to refine calculations on the energy expended Sunday during a savage explosion and some 15 hours of ash eruptions that followed.
 She said a "conservative" tally of the result of the initial explosion, after figuring it five ways, came to 10 million tons of TNT, or 500 times greater than the atomic bomb dropped on Hiroshima.
 Three geologists landed on the ash near Spirit Lake Wednesday and even flew into the gaping crater, now estimated to be almost 1 1/2 miles lower than the former height of the peak.
 During the visit to Spirit Lake, where ash and pumice samples were taken, repeated small explosions part-way up the torn north face of the volcano startled the geologists. The blasts were steam explosions as hot ash touched water, blowing up with a bang and a cloud of ash.
 "It got to be a little scary, spooky," said geologist Hait in relating the experiences of the three others.
 The geologists said they broke through the ash at several points but stopped when it became knee deep.
 The temperature of the ash now is above 120 degrees Fahrenheit at a depth of two feet. The thermometer could not go any deeper.
 The water of Spirit Lake, fed by cold glaciers before Sunday, now is a steamy 92 degrees. The lake is described as being full of logs, floating pumice or light rock and dirty water.
 Earthquake activity overnight included two quakes of 3.0 or higher on the open-ended Richter scale of 3.0 or higher on the open-ended Richter scale, with the top of 3.6 at 9:25 p.m.
 With scientists saying the overall picture has not worsened, residents downstream from the peak continued to adjust.

'No one would listen,' county sheriff laments

By PAT MOSER

Columbian Writer
 STEVENSON — "No one would listen," Skamania County Sheriff Bill Closner said today of property owners and sightseers in the Mount St. Helens danger zone before Sunday's massive eruption.
 Dozens of persons are missing because of the explosive eruption, and Closner said an undetermined number were in the restricted area illegally.
 "It didn't matter what we did," Closner said. "People were going around, through and over the barricades. As you know, people were climbing right up to the rim of the crater."
 "Maps were being sold showing back country roads around the barricades," Closner said. There were two barricades on Highway 504 leading to Spirit Lake — one in Cowlitz County, the other at the Skamania County line six miles to the east. Closner said the Skamania County barricade was pulled down on occasions and regularly showed signs of tampering and damage.
 When unauthorized persons were unable to penetrate the area through a network of logging roads into the areas, some of them used fake identification, passing themselves off as members of the scientific community,

who were allowed to get closer to the mountain, Closner said.
 Until Sunday's eruption, Closner said, law enforcement officers were the target of verbal and written abuse, some of it by owners of cabins in the Spirit Lake area.
 Closner said news reports of the confrontations and threats from some property owners not to pay their property taxes brought enough pressure to bear on state authorities so that the Gov. Dixy Lee Ray consented to allow property owners into the Spirit Lake area.
 The first one-day excursion was held Saturday, the day before the giant eruption.
 Closner said it was impossible for local agencies to keep the public out of the danger zone because of the web of logging roads throughout the area.
 "Only the U.S. Army could have kept the people out," Closner said.
 "As it turned out, the worst thing that could have happened, did," Closner said.
 As for the destroyed cabins in the Spirit Lake area, the Skamania County Assessor's Office said today the owners can sign a form so this year's property values beginning in January will be pro-rated at a lower amount because of the destruction.

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Friday, May 23

More bodies recovered as earthquake rattles area nine miles away from mountain

By BILL DIETRICH
and THOMAS RYLL
Columbian Writers

The number of recovered bodies from the eruption of Mount St. Helens climbed to 17 today, with 15 sites identified where more bodies might be found. In the meantime, government officials began mobilizing efforts to deal with rehabilitation of the devastated area.

Another 71 people still are missing.

Meanwhile, rumors that the south side of the volcano was bulging or that a major eruption had started again evidently were the work of a crank citizens band radio operator Thursday night.

"There is absolutely no indication of any bad things on either the south or the east side," said Tim Hait today. He is a geologist with the U.S. Geological Survey.

The volcano remained relatively calm through midday today. Steam shot 20,000 feet into the air Thursday and at 8 a.m. today, and an earthquake measuring 2.9 on the Richter scale was detected about 10 kilometers below the peak at 6:51 a.m.

Another earthquake nine miles northwest of the peak — the first away from the

volcano itself — was recorded Thursday, but scientists have placed no significance on it. No firm prediction has been made yet of what the peak will do next, but scientists Thursday said a second disastrous explosion, if possible at all, probably would take several weeks to form.

The single-runway Toledo Airport in Lewis County looked like a Vietnam military base Thursday as about 25 government helicopters began retrieving bodies. The only creature found alive by rescuers to date in the volcano's area of devastation has been a dog, apparently part of a family hit by the blast. Authorities did not know if that meant some might have survived the explosion.

Members of the press were kept several hundred feet from the olive green aircraft as crews landed and carried body bags into a military tent morgue. Names of the recovered dead are being held pending notification of next of kin.

At the volcano, there has been no recent sign of lava or significant amounts of new ash. Scientists said the mountain's new horseshoe shape at its new summit would be expected to funnel any new eruptions to the north because the open end of the horseshoe

faces north.

Geologists Dan Miller and Norm Banks landed north of Spirit Lake Thursday and took a temperature probe 15 feet into the blast deposit. The temperature there was 201 degrees, the boiling point at that altitude. The temperature at the next nine feet was 294 degrees, and the top three feet were again at about a boiling temperature, except for the top few inches near the surface.

Geologist Pete Lipman also landed near Spirit Lake and described it as "an unattractive, wierd place. It is an evil Spirit Lake right now."

Geologists said the sides of the new crater are unstable and constantly avalanching, with one slide Thursday big enough to register as an earthquake.

Hait said melting ice, shifting water, decaying debris and other such factors may prevent final ground stability near the mountain for months or even years, even if the volcano has spent its force.

Natural reseeding, the U.S. Forest Service estimates, will take seven years. Foresters do not know yet if the ash, after it cools, will immediately support plant life.

Government officials are considering ev-

everything from massive human rehabilitation of the area to leaving it entirely alone. The U.S. Forest Service has created a team of specialists to consider road repair, how to deal with mud flows, an expected influx of tourists, salvage of timber, scientific research, and access to the volcano area. Federal officials were also reported to be considering naming the site a National Monument.

The massive mud dam choking the former valley of the Toutle River appears to be holding steady, with water seeping underneath it. The surface of Spirit Lake is presently 150 feet below the top of the dam.

A new worry raised today was that because the Cowlitz River channel is more shallow due to volcanic siltation it may increase the chances of flooding during spring runoff.

Adult Chinook salmon normally scheduled to travel up the Cowlitz to spawn are instead skirting the mouth of that overheated river and ascending the Kalama River to the south.

"They're smarter than we thought," said Tony Floor, information officer for the Washington Department of Fisheries.

A Forest Service spokesman said people

with property or relatives in the devastated area were being increasingly vocal in demanding to get into the area. "All you have to have is a couple days of quiet and people think the danger is gone," he said. "It may or may not be."

President Carter urged citizens here to obey local law officials.

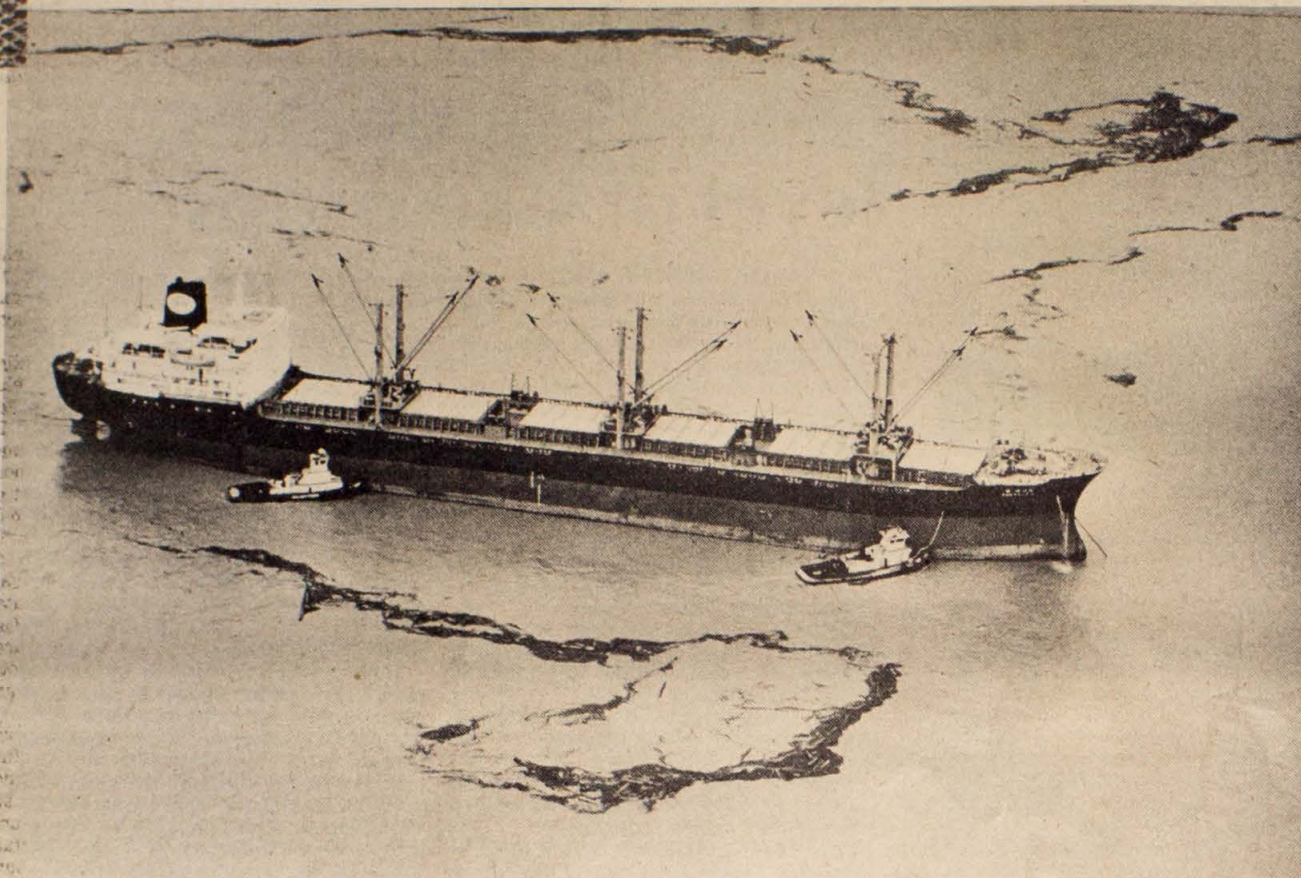
Sen. Henry Jackson, D-Wash., was scheduled to fly over the devastated area today and speak at a news conference in Longview.

State Rep. William Fuller, R-Chehalis, asked Thursday for a special session of the Legislature to consider disaster relief. Gov. Dixy Lee Ray was traveling with Carter and had no immediate comment.

Some 21,000 particulate dust respirators donated by the 3M and Sanderson Safety Supply Co. were turned over today to the American Red Cross for use in Eastern Washington.

Damage estimates of the blast, still very sketchy, have soared past half a billion dollars, according to the Associated Press.

Hait, meanwhile, called Sunday's explosion "a 10,000-year event. The odds of having another within a few weeks or years are statistically very small."



Tugboats guide freighter through mud-swollen waters of Columbia River near Longview May 20.

CHERYL HASELHORST/Columbian

Ships test clogged river channel

By UPI, AP

LONGVIEW — Four ships made it through a special channel in the Columbia River Friday, the first to resume navigation after debris from Sunday's killer eruption of Mount St. Helens volcano clogged the river.

Three of the vessels were outbound from Portland and one was incoming from Astoria, Ore.

The three outward bound ships included a general cargo vessel, an alumina ore carrier that came in earlier, and a container vessel. Only one of the three vessels waiting to get in made it through the "open window" as the specially dredged part of the river channel is called.

The window was open between noon and 1 p.m. to move the ships to the coast, and was open between 1 p.m. and 2 p.m. to bring the one vessel in.

The river pilots were able to take advantage of the tides and U.S. Army Corps of Engineers' emergency dredging of the river channel, which was but 18-feet deep because of silt from the volcano mudflows, but high tide waters elevated the river level three feet above the 18-foot minimum for navigation.

The dredging crews indicate they should get navigational depths to 25 feet by next week, which could allow U.S. Navy vessels to navigate the river to participate in Portland's Rose Festival week, which is an annual tradition.

Outbound vessels had been trapped in their Columbia River ports from Longview to Portland following the volcano mudflow into the Columbia from the Cowlitz River.

The Coast Guard said vessels would be banned with a draft of more than 13 feet

from operating in the still plugged areas of the river. However, the dredged channel will allow ships to transit the silt-filled sector near Rainier, Ore., so long as the depth of the channel is sufficient to allow the vessels to pass at high tide during daylight.

Ships wanting to transit the area must give the Coast Guard 24-hour notice.

There had been 19 working ships upriver from the plug Thursday and 14 naval and other vessels undergoing repairs at Portland's Swan Island, with another nine anchored at Astoria awaiting orders.

The Army Corps of Engineers had all three of its hopper dredges working Thursday and was bringing in five private pipeline dredges to assist. The Port of Portland has assigned its big dredge, which sucks up about 10 million cubic yards of mortar-like silt that poured into the Columbia from the Cowlitz Monday.

The silt-filled area of the Columbia River was estimated by Corps officials to be over a 5½-mile stretch.

The Army Corps of Engineers estimated that as much as 10 million cubic yards of the muck washed into the Columbia at the confluence with the Cowlitz River and nearby Longview.

Thus far, more than 108,000 cubic yards of silt-fill had been dredged up.

In the \$15 million crash program, dredges worked Thursday to remove silt that would pile a mile high on a football field.

Meanwhile, Portland-area grain elevators are expected to be full by next week and unable to accept additional wheat shipments because of the closure of the river.

Two railroad companies, Burlington



Boats on the Coweman River near Kelso are stranded by silt.

MIKE GOWRYLOW/Columbian

Northern and Union Pacific, placed embargoes on export shipments of all commodities to the ports of Portland, Vancouver and Kalama. The railroads are the principal handlers of grain to the area.

Volcano aid agency established

By WENDY REIF
Columbian Writer

In quarters that early Friday morning looked like a disaster, the Federal Emergency Management Agency began setting up a Vancouver headquarters to coordinate federal volcano relief efforts throughout the state.

About 50 persons from various federal agencies involved with the volcano are expected to inhabit the 11,000-square-foot, still uncompleted third-floor of the First Federal Plaza building, 1220 Main St., by this weekend.

The headquarters will act as the information center for the press and provide a hotline to provide information to volcano damage victims. The telephone company was installing phones Friday.

Meanwhile in Kelso, a disaster assistance center for volcano victims opened today at Huntington Junior High School. Representatives of several agencies there are prepared to offer several types of assistance, said Paulette Gilliam, spokeswoman for the emergency management agency.

The office will be open from 1 to 7 p.m. today and from 10 a.m. to 7 p.m. Saturday. It will remain open daily as long as there is need.

The government is prepared to provide free temporary housing for as long as one

year for residents displaced by the volcano and unemployment for displaced workers.

Cash grants will be available for small repairs needed on slightly damaged homes, Ms. Gilliam said. Low-interest, long-term loans for major repairs will be available through the Small Business Administration, according to the person's ability to repay.

A grant program will be established to help those who do not qualify for loans, she said. A maximum will be established. In other disasters, the ceiling usually has been about \$5,000.

Ms. Gilliam described the headquarters operation for the Mount St. Helens relief effort as "very much like Three Mile Island."

"We can all check each others' rumors. Then we can take the fear of the unknown away," she said.

The public assistance division of the agency's Vancouver headquarters will provide financial reimbursements to local governments involved in disaster relief.

The first tangible evidence of federal aid coming to the state, since President Carter declared it a disaster area, were five helicopters from Fort Lewis, said Robert Stevens, federal coordinator of the agency's Vancouver headquarters and veteran of two Hawaiian volcano disasters.

Harry Truman

Peak gave him something to live for

By WENDY REIF
Columbian Writer

The mountain that killed is what gave Harry Truman life.

Ultimately, it destroyed his home in the end, but it revived the 83-year-old owner of Mount St. Helens Lodge Lodge, which once sat by Spirit Lake at the north base of the mountain.

"By God, a guy gets to his age and didn't have anything to do," said Mark Smith of 4949 St. John's Road, Vancouver, who used to work for Truman. Smith's family, owners of the nearby Spirit Lake Lodge, were among the friends the cantankerous Truman welcomed in his home of half a century and among those whose property lies beneath the volcano's torrent of mud and ash.

Truman remains among the dozens missing since the volcano erupted. His lodge and the lake it adjoined are devastated.

When St. Helens did what scientists and neighbors knew eventually it would do, "he'd be danged if he wouldn't live it for what it

was worth," said Smith. "He really enjoyed it. It kept him alive. It gave Harry someone to talk to and something to talk about."

Drinking his Coke-hi — a blend of cola and Schenley's whiskey — Truman stole the show, even when the mountain cranked out its most picturesque plumes.

And he knew it.

"If I hadn't been here these past five or six weeks, you tell me boys what the media, the press and the TV would've gotten out of Mount St. Helens," Truman told photographers visiting with him before Sunday's eruption. "I'm the only one they got up here to talk to."

"They wouldn't have gotten anything that would've interested anybody except that ol' mountain," he said, punctuating his chatter with swear words. "They'd had no personal interest and that's what means so much to the damn public — if ya got a human being involved."

Truman loved to entertain his guests by playing Name That Tune, with the help of his player piano, said Rob Smith. Rob, Mark's

brother, was the only other resident of Spirit Lake, where he ran the St. Helens Lodge and often helped out Truman. He left the lodge when the area was evacuated after the initial eruptions started March 27 but he returned periodically to visit Harry and deliver his mail.

Truman insisted on being the social director when he had guests, he said. If he didn't like what you were doing he would kick you out.

Mark remembers Truman asking a customer who'd just bought potato chips and pop, "Now, what the hell are you waitin' for? Go on outside and eat'm on the porch. I don't want you messin' up the place."

He would tell the Smiths they had to cater to the public because they wanted to make money but that "he had made his. Now they (the public) could just wait for Truman to wait on them."

Truman would tease car buffs with his pink-with-gold-chrome Elvis Presley '57 Cadillac but got annoyed when offered money for it.



Harry Truman

RALPH PERRY/Columbian

They worked until cows came home

By JERRY COUGHLAN
Columbian Photographer

CASTLE ROCK — When Mount St. Helens released its fury Sunday morning, the cows did not come home. Some of them got stuck up to their heads in volcanic mud.

As helicopters were churning the airborne ash while trying to save humans, another type of rescue effort was taking place in the Cowlitz River bottomlands near Castle Rock.

William and Betty Franz, owners of a 35-acre ranch that is home for about 35 head of polled Hereford breeding cattle off the Westside Highway, had an easier time evacuating themselves Sunday than they did their cattle.

Mrs. Franz said her husband flew into the flooded barn area by helicopter and cut fences to allow most of the cattle to move to higher ground. But three prize bulls and one heifer were stuck in the barn and five other heifers had floated about a half mile downstream and were encased in mud four and five feet deep, unable to move.

Since they did not want to shoot their prized cattle, the Franzes were faced with the problem of how to save them.

The animals were trapped about 200 yards offshore in mud that was setting up like concrete around their legs, but which rescuers found to be as treacherous as quicksand.

Volunteers from the Cowlitz County Humane Society, neighbors and friends, labored through the night Tuesday but had little success until the next day when Weyerhaeuser forester Jim Oldis showed up with his skidder and two friends, John Shepherd and Jim Harris.

Their plan was to pull the four barn cattle out by a sled attached by a cable to the skidder on shore. The problem: how to get 200 yards of cable out to the barn.

They rigged up homemade "snowshoes" and trudged over the mud for several hours before reaching the barn.

The three then began pulling sheets of corrugated metal siding off the barn, laying them end to end, back toward the shore.

Meanwhile, a half-mile downriver, a number of men from a wrecking crew were trying to dig five more heifers out and not having much success.

Along came Virgil Bales, another experienced cattle rancher.

He rigged up a rope harness and suggested laying the animals on their sides, gently pulling them across the dark, gray mire.

After that, "Operation Cattle Drag" went smoothly and one by one stunned but injured cows were coaxed up the bank. Within minutes, the beleaguered bovines were munching grass, something they had not seen in three days.



Shattered Mount St. Helens looms behind ridge of timber stripped by blast.

Photo by LON STICKNEY

Sunday, May 25

Damage estimate passes \$1.6 billion as officials ponder scope of tragedy

By DAVID KERN
and BILL STEWART
Columbian Writers

The dollar damage figure from the Mount St. Helens blast has grown so large that the eruption soon might be termed the most costly natural disaster in the nation's history.

As the estimated damage figure rose above the \$1.6 billion mark, federal officials were wondering if any previous natural disaster in the United States had caused as much loss to property.

The cost in lives as of Saturday was listed at 18 confirmed dead with 72 listed as missing. Three additional bodies were discovered Saturday by a deputy and his dog in the Spirit Lake area, near a collapsed cabin, but those were not removed and had not been added to the official victim list by late Saturday.

Searchers now will use helicopters through Wednesday.

Maj. Gen. Robert Collins said, "Unless they had provisions or got to a sheltered area," it is unlikely that anyone else survived. Collins is the adjutant general of the Washington National Guard.

Starting today, the helicopters are to carry ground search parties into isolated areas. Ground operations have been limited because of the danger of flooding and uncertainty about the status of the volcano and because so many roads and bridges were obliterated.

With the Memorial Day weekend under way, finding a place to camp was a problem. All 1.3 million acres of Gifford Pinchot National Forest are off limits to any recreation use, and 14 state parks are closed. Twelve of those parks are in Eastern Washington.

Scientists said Saturday they could not predict what could happen next but said much of the mountain's pressure had been relieved and another major eruption was not likely. There is a good possibility, however, that lesser eruptions of steam and ash could continue to spew for a decade or more, said

Tim Hait of the U.S. Geological Survey.

One of the scientists, who in a 1978 report suggested the fuse of Mount St. Helens had been lighted, said Saturday that there are two possible events ahead for the mountain. One is an eruption of sticky lava which would build domes characteristic of previous flows on the peak. That could start the rebuilding of the missing top.

The other option, according to Dr. Dwight "Rocky" Crandell of the USGS, is a "pumice eruption" which would be more dangerous. Pumice is a lightweight rock made up of a light froth of glass and stone. Crandell said such an eruption could get as high as the jetstream and could rain rocks down on six northern tier states.

Crandell said that, by comparison, the dome formation process would be no danger to the general area, but could pose a threat to loggers nearby and to sightseers.

Here's where officials get their \$1.6 billion damage estimate:

Timber on Gifford Pinchot National Forest land valued at \$500 million; fish, \$200 million; and \$970 million for a variety of losses including unemployment resulting from the disaster, damaged bridges, street and highway cleanup, emergency shelters and temporary housing.

"What was lost out there, Fort Knox?" asked federal emergency coordinator Robert Stevens when told of the damage figure.

Stevens heads the new Vancouver office of the Federal Emergency Management Agency, which will coordinate all disaster relief services.

Thirteen persons, injured initially when the mountain erupted, remained in hospitals Saturday, and 10 more persons had been hospitalized in Washington state from problems caused by volcanic ash. In addition, at least 150 persons had visited hospitals as outpatients with complaints about ash, according to state officials.

An estimated 180 persons still were looking for permanent homes after the mountain's rage ruined their houses. Between 10,000 and 15,000 persons became stranded during last week's shower of ash on the state.

State officials said 123 houses and cabins in

Skamania County had been destroyed, with 23 more sustaining major damage and 11 with minor damage. They said 75 houses and cabins and two businesses in Cowlitz County were destroyed by the volcano.

By day's end May 24, about 100 families had visited the emergency agency's Kelso office. Officials said 37 had asked for temporary housing, 26 requested grants, 51 were interested in Small Business Administration loans, 57 wanted to know about Internal Revenue Service rules about lost or damaged property and 57 were interested in disaster unemployment benefits.

Officials said Saturday they intend to enforce a strict ban on entering the volcano area. That includes the territory evacuated around Toutle, east of Interstate 5. One person caught Saturday inside the area without permission was a free-lance photographer who was hiking toward the peak and was inside the 100,000-acre blast area.

Tim Hait of the U.S. Geological Survey said Saturday that the material that was first blasted out of the volcano had a recorded temperature of 279 degrees centigrade or 554 degrees Fahrenheit. Those temperatures were taken below the mountain's surface Friday and were the highest readings found thus far.

Much of Clark County, virtually untouched by the deadly and expensive volcano eruption, got a light taste of Mount St. Helens fallout Saturday.

The afternoon dusting left as much as 1/4-inch of ash in some places in northern Clark and western Skamania counties. But the ash cloud dissipated as it moved south as far as Salem, Ore., leaving only a trace in Vancouver.

Gifford Pinchot National Forest officials said a minor eruption at 7:36 a.m. Saturday sent an ash plume 500 feet above the summit. It sent ash cascading down the southeast slope of the mountain.

That was followed about 2 p.m. by another ash plume that rose about 3,500 feet above the top of the peak. The mountain has been burping small amounts of ash and steam intermittently since the massive eruption last Sunday. The Saturday events were termed minor by a U.S. Forest Service official.



Virgil Bales of Castle Rock drags weakened animal across the mud.

Lateral explosion like champagne bottle uncorked

By DOUGLAS GANTENBEIN
Columbian Writer

In the hands of the gods, Mount St. Helens was like a champagne bottle.

Last Sunday, they loosed the cork.

University of Oregon geology professor Dr. Brian Baker, a member of the school's Center of Volcanology, made that analogy in describing the sequence of events that led to the cataclysmic eruption one week ago today.

The force of that eruption has been estimated to be the equal of the largest hydrogen bomb ever exploded, or 2,500 times more powerful than the bomb that destroyed Hiroshima.

But what were the exact mechanics of this blast — a blast in which nature duplicated with just heat and rock the highest technology of man and his wars?

In essence, Mount St. Helens was like a large bottle of carbonated soda pop or champagne with its cap still on. The earthquakes that shook the mountain were similar to a person shaking the capped bottle. When the cap came off, the "beverage" — ash, smoke, rocks and the like — spewed out.

Baker explained that the magma scientists now know was welling up inside the mountain, forming a giant blister on the north side, was dacite, a silica-rich magma common in the Cascades and quite unlike the fast-flowing magmas found in Hawaii.

Baker said that the chemical composition of dacite allows it to hold a great quantity of water vapor, carbon dioxide and sulfur in gaseous suspension.

The heated water and gas form a highly pressurized material that was unable to expand due to the weight of the "cork" — in this case the blister on Mount St. Helens — sitting atop it.

"When the pressure is released on the liquid (the dacite magma) the result is very similar to what happens when you uncork a champagne bottle," Baker said. "You can't

see the gas before you uncork it — and then it comes out instantaneously."

Baker said it is plausible that the weight of the blister had been just enough to hold the dacite in place until the earthquake scientists say preceded the eruption by a few minutes.

That quake, Baker said, could have upset the equilibrium in the mountain. Photo sequences of the eruption show geysers of ash and rock blasting out of the upper and lower fringes of the blister as if the cap had moved and the first spurts of explosive dacite were bursting up around it.

The rest is history.

"There is strong evidence in the Cascade volcanoes that similar eruptions have occurred repeatedly — although they tend to be rather weak," Baker said, adding that the current horseshoe shape of the new crater is characteristic of volcanoes in Japan and Alaska.

While Baker said it would have been virtually impossible to estimate the force with which Mount St. Helens blew, he said that explosive activity in the Cascades — even lateral blasts of the type that leveled 156 square miles of forest — are relatively common.

"This was the type of eruption that we could expect to see in the Cascades every thousand years or so — although that's a wild guess," Baker said, adding that nearly every Cascade volcano bears evidence of blasts similar to, although smaller than, Mount St. Helens'.

If Mount St. Helens stays true to form, the next step will be the rebuilding of the cone.

Baker said this likely would be a slow process, as the remaining dacite creeps to the surface.

This material, what Baker referred to as the "flat champagne" leftover from the big pop, presents very little danger.

"It doesn't even look red-hot, although beneath the surface it could be," Baker said

of the formation of a dacite dome. "It is quite possible to sit within a few hundred feet of a growing dacite dome."

A dacite dome in Guatemala, for example, has been growing steadily since 1922, and aside from occasional jets of steam the only way to tell that it is growing is through the use of time-lapse photography.

Baker said that the most dangerous phase of the eruption is certainly past, and that for all the anticipation over seeing lava, that material never presented the greatest danger.

"Now that things are uncorked," he said, "things should be much quieter for a while."

Glossary of volcano terms

● **Composite volcano:** A volcano formed of varying layers of solidified lava and softer ash. Mount St. Helens is this type of volcano. Like all volcanoes, however, it got its start when a crack in the earth's crust allowed hot gases and molten rock to seep to the surface.

● **Magma:** Molten rock found beneath the surface of the earth and now, apparently, just beneath the surface of Mount St. Helens. It may burst out of a volcano as ash, which consists of small bits of cooled and pulverized magma, or as lava, which is liquid magma.

● **Mudflow:** Ash, volcanic debris and water which can race down the slopes of a volcano at a high rate of speed.

● **Pumice:** A solidified form of rock and volcanic glass which is filled with tiny gas bubbles, making it highly buoyant. Pumice is usually light in color.

● **Pyroclastic:** Derived from a Greek word meaning "fire-broken," a pyroclastic flow consists of volcanic fragments of varying size and hot gas. These flows also are capable of high rates of speed, and have been occurring frequently on Mount St. Helens since Sunday.



Scientists are dwarfed by pyroclastic material created by May 18 explosion.

Photo by LON STICKNEY



Researcher contemplates wasteland stretching toward Mount St. Helens.

Photo by LON STICKNEY

Monday, May 26

It's Western Washington's turn to cope with ash from 'discontented' peak

By BILL STEWART
Columbian Writer

Western Washington, warned that Sunday's blanket of ash could be repeated again and again by a discontented Mount St. Helens, today started the gritty chore of cleaning up.

But the volcano today was described as the quietest it has been since a deadly explosion rocked the peak May 18.

In another development, two federal experts today announced completion of tests on a 17-mile-long debris dam down the Toutle River's north fork from Spirit Lake and declared the dam stable.

Les Youd and Ray Wilson of the U.S. Geological Survey said there is no danger of the dam collapsing and causing a flood of the Longview-Kelso area.

They said the dam could withstand earthquakes as strong as those that triggered the May 18 eruption.

As much as three inches of the gray-white powder piled up in Kelso, but much less than that covered Clark County to the south. The ash choked autos, grounded airlines, shorted electric lines, stalled rescue efforts and generally fouled up the Memorial Day holiday weekend.

City flushing trucks were called out in Portland, to help clean the streets, but Clark County towns generally left the cleanup to the winds.

No new deaths were reported as a result of numerous ash eruptions late Saturday and during the day Sunday, but there was an 11-car accident amid blowing ash on Interstate 5 near Chehalis.

The ash triggered stampedes for face masks, car air filters and food staples. Supplies of face masks were quickly depleted in most area stores.

Five hikers were ticketed Saturday after being spotted in the closed zone by a helicopter rescue team. They refused a helicopter ride out of the area, and after the second major eruption May 25, were believed to be missing.

In addition to the ash eruptions, which reached as high as 45,000 feet, Mount St. Helens loosed a mud flow above Swift Reservoir, but the flow solidified before it reached the lake.

The communities of Yale and Cougar were evacuated when ash made speedy road travel impossible. In the Kelso-Longview area, ash piled as deep as three inches, with part of that accumulating as mud balls when rain mixed with the airborne ash.

Earthquake activity was down, but a series of harmonic tremors were reported during the day. Harmonic tremors are wave-like ripples caused by the subterranean movement of liquid rock or lava.

Scientists with the U.S. Geological Survey said the ash, as inconvenient as it proved,



National Guard helicopter hovers over vehicle in ash-scoured area north of Mount St. Helens on May 22.

RALPH PERRY/Columbian

was a good sign. "We may be darn lucky if we have the volcano clearing its throat once in a while — a series of little things. Every time the volcano clears its throat it's relieving pressure," said Tim Hait, geologist for the USGS. If the pressure is relieved, the chances are less that the peak would blow with the explosive force of May 18.

Twenty-one persons have been confirmed dead, with many other bodies sighted but not brought out. Seventy-six persons are missing.

The May 25 eruptions resulted in ash going both north and south as winds swirled like an eggbeater. Aircraft have been grounded from Tatoosh on the far northwest corner of Washington south to Newport, Ore., and

eastward to Yakima.

Portland International Airport was closed all day Sunday until 4:30 a.m. today. Vancouver's Pearson Airpark was limited to non-instrument flights, and there were few of those.

On the ground, traffic fought limited visibility. Interstate 5 was never closed, but the Washington State Patrol was discouraging motorists from using it in Cowlitz and Lewis counties. Motorists were telling each other to "stay in the ruts of ash" between Chehalis and Kelso. Some cities lowered speed limits down to 15 mph.

Other highways around the state have been closed at times.

In the Vancouver area, Vancouver Mall

was closed Sunday but Jantzen Beach Shopping Center was open — with a few stores closed. Some restaurants termed the day normal, but others encountered a slow day and closed early. Some churches canceled services while others reported slender attendance.

Grocery stores reported a brisk trade Sunday as shoppers, fearing the worst, stocked up on staples such as bread, milk and eggs. One Battle Ground store reported a record business Sunday.

Pharmacies said they were hit by the requests for masks as well as a rush to refill prescriptions, especially those related to respiratory ailments.

Jim Unterwegner, spokesman for Gifford

Pinchot National Forest, said today that the St. Helens Ranger Station was moved Sunday for the second time since the mountain started shaking in late March. The first station was evacuated because it was too remote, and was moved to Cougar. But the ash Sunday prompted a second evacuation, this time to Chelatchie in northeast Clark County.

Unterwegner said there is no truth to the rumor that the volcano only performs on Sundays.

Hait said today that there is no bulge on the south side of the peak. That rumor has been floating around since a bulge on the north side exploded with the start of the peak's eruption.



Reid Blackburn

Reid Blackburn

He lured our senses in awareness

"Photography is a small voice, at best, but sometimes — just sometimes — one photograph or a group of them can lure our senses in awareness."

— Photographer W. Eugene Smith

These words, written on a small scrap of paper, hung in the darkroom of Reid Blackburn, the Columbian photographer who died when Mount St. Helens erupted May 18.

Reid was working for The Columbian and donating his time to *National Geographic* magazine and the U.S. Geological Survey at an observation camp about seven miles from the volcano. His job was to operate radio remote-control cameras that had been placed to observe the mountain's troubled north side.

Radio contact with Reid was broken with the Sunday morning eruption. Four days later, his body was found in his car, which was buried to its windows in ash.

Known for his wry humor and meticulous work, Reid, 27, enjoyed backpacking, bicy-

cling and cross-country skiing with his wife of nine months, Fay. He had climbed Mount St. Helens several times.

Reid, a Columbian photographer for five years, once said he felt his job was to provide informative pictures that document life in an unbiased manner.

Above the scrap of paper with Smith's words, Reid kept one of his favorite photographs. It was that of a wide-eyed kitten peering from a Humane Society cage, silently pleading for a new owner to save it from certain death.

Steve Small, The Columbian's photo editor and Reid's boss, described the young photographer as an "Old World craftsman."

"Reid was gifted with a special insight into all living things — people and animals. He was one of those rare people who could combine superior technical skills with a deep sensitivity."

A scholarship fund in Reid's name has been



Remote-control camera captures volcano before fatal eruption.

REID BLACKBURN/Columbian

established. Contributions to the fund may be made to The Columbian in care of Steve Small, P.O. Box 180, Vancouver, Wash. 98666.

Columbian Editor Tom Koenninger called Reid "a professional, a man totally and completely dedicated to photojournalism."

"His humor was wry and sometimes

acerbic. Yet, he was gentle, displaying aggression only when necessary for him to get close to the subject he was photographing. His photographs show life and death, sadness and humor."

The Columbian dedicates this *Mount St. Helens Diary* to Reid.