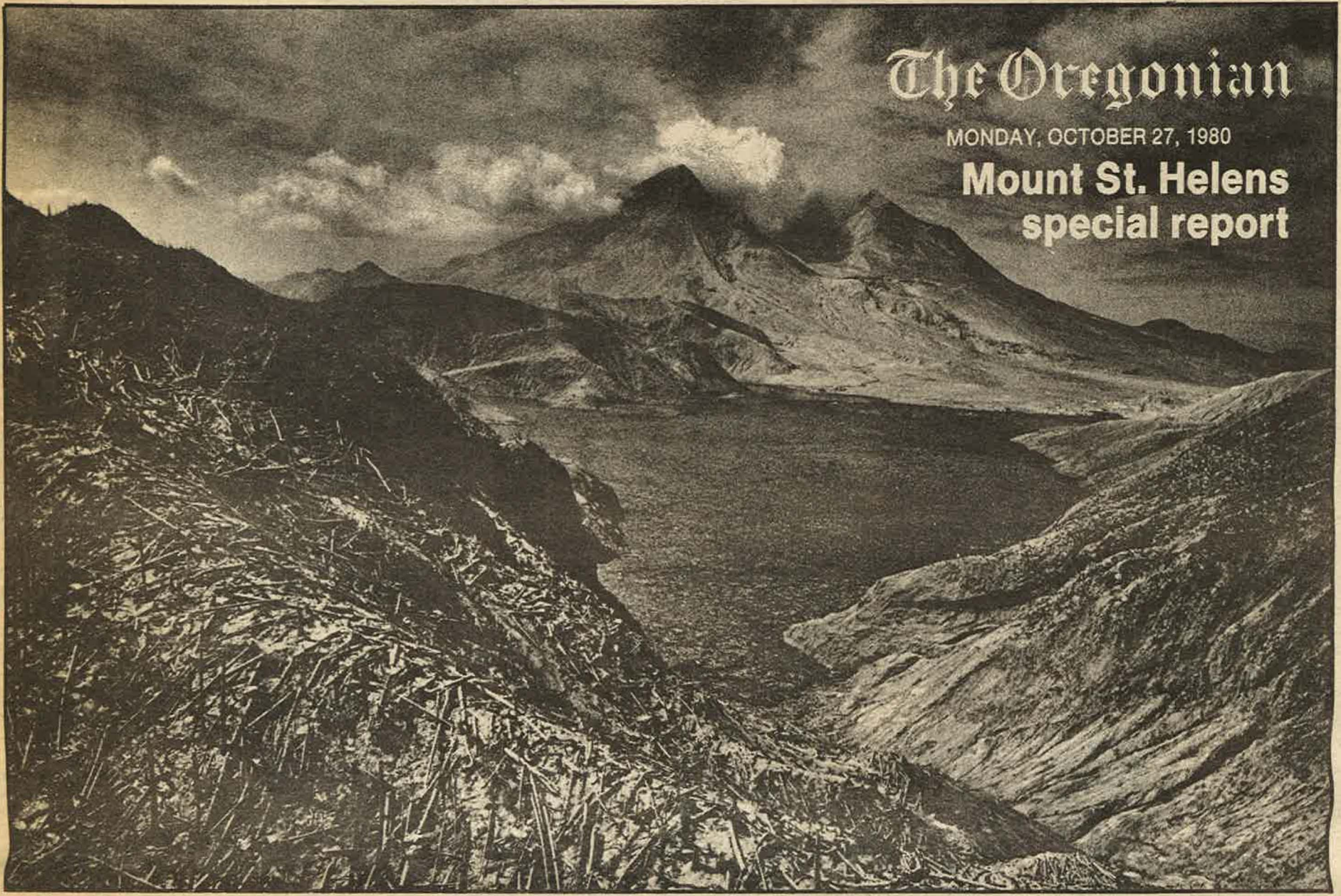


# The Oregonian

MONDAY, OCTOBER 27, 1980

## Mount St. Helens special report



MOUNT ST. HELENS AND SPIRIT LAKE

Staff photo by JOEL DAVIS

# A terrible beauty

By ALAN K. OTA, JOHN SNELL and LESLIE L. ZAITZ  
of The Oregonian staff

## The tree

**E**vilanty Sharipoff's last hope of salvation was a sturdy young hemlock tree that stood back from the water's edge along the North Fork of the Toutle River.

More than 14 miles to the southeast and rising 8,000 feet above him, a mountain he no longer could see was trying to kill him.

Serene, symmetrical Mount St. Helens, a 9,677-foot volcano in the southern Washington Cascades whose beauty rivaled that of Japan's sacred Mount Fuji, had stirred to life more than eight weeks ago after 123 years of silent grandeur. And on this Sunday morning of May 18, 1980, it had sent two violent shudders through its flanks to trigger a cataclysmic eruption that set in motion the detritus of the ages. Part of that debris was bearing down on Sharipoff right now from the Toutle's headwaters east of him.

Upstream he could hear — perhaps even see — a churning mass of hot, stinking mud, boulders, chunks of glacial ice, tons of water and uprooted trees that was slithering down the valley like a wall of wet concrete higher than a house. It stretched across the valley from north slope to south, scouring trees off the edges as it came. Clouds of steam rose from its surface. Tree trunks tumbled end over end.

Already horribly burned, his trachea and lungs slowly filling with tiny particles of glasslike volcanic ash, Sharipoff reached for a lower limb and painfully began the climb to escape this latest deadly danger.

As a logger he knew conifers had shallow roots. He may have wondered whether the hemlock would stand its ground. Its height was questionable, too — 25 or 30

boat landings, heavy machinery — were blown apart and buried under 40 feet of mud. Streams altered their courses.

Another sudden drop in air pressure jolted Sharipoff. That kind of thing had been happening all day. He became dizzy, disoriented. His ears began to ache. The pressure rose again and the air packed in around him. The atmosphere itself had

They shed needles, limbs, patches of bark and finally their grips on the planet that gave them life. Clouds of steam distilled turpentine from their needles and splashed an orange stain over parts of the countryside. Many trees crashed over in orderly rows as if run through by a giant comb. Others toppled in swirls, falling back toward the mountain as the heavy wind slowed and changed direction around lesser hills and ridges. Some timber simply was ground to bits.

A searing blast of heat had burned Sharipoff and each of his co-workers over nearly half their bodies. The sky — an azure blue touched with only a light haze earlier that morning — was now a purplish black, shot through with horizontal lightning bolts.

Up on the mountain, a yawning crater 2 miles long and a mile wide was opening up. A constant crackle of static electricity filled the air. Sharipoff was in the midst of a giant field of energy created by billions of colliding airborne ash particles. Balls of mud, ice and boulders rained from the sky. The trembling forest floor, shaken by more than 10,000 earthquakes in the last eight weeks, lay covered with hot volcanic ash. Hundreds of small fires were beginning. And the whole world stank of sulfur, fire and rotten eggs.

Already a survivor of burns, rockfalls and crashing timber, Sharipoff beat the disintegrating mountain once again. He es-

*All changed, changed utterly;  
A terrible beauty is born.*

— William Butler Yeats  
"Easter, 1916"

feet might not be enough. But a tree was a familiar thing to a logger and, more important, it was the best hope he had. If the flow spread where the valley widened, he would have a chance.

Sharipoff no longer knew what had happened to the other three members of his tree-thinning crew. He had left them behind on what he hoped was a trek to survival.

Now the world was coming apart around him. Everything was changing. The very ground beneath him would change within minutes. In the higher reaches of the valley, whole lakes had disappeared. Water from the largest had sloshed 400 feet up a hillside. Traces of humanity — resort lodges, summer homes, ranger stations,

changed, taking on 10 times normal density as it filled with volcanic ash to become a stone wind.

Earlier in the day, that stone wind, ricocheting across the ridgetops at 100 mph, swirling and eddying in the valleys, had gone through the forest with a roar that blotted out all other sound. The ash it carried — a finely pulverized rock dust with microscopically sharp edges — gave the wind a destructive force like a 300 mph hurricane. But the tropical seas that spawn true hurricanes had never produced a storm approaching such awesome power.

The stone wind hammered across the land, uprooting tens of thousands of stately firs, hemlocks, cedars and pines that had stood on these slopes for up to 600 years.

caped the threat of immediate death in the flowing mud that filled the Toutle River Valley. It shook his tree, clutched high enough to discolor his boots and passed him by. Now a slower death was free to overtake him.

Before the sun went down, Sharipoff, 41, of Mount Angel, Ore., would suffocate on the tiny particles of pulverized rock that were packing his respiratory passages with every labored breath. Rescue helicopters that clattered up the valley would pass his tree long before dark, but by then Sharipoff's body — gray with rock dust like everything else in that awful landscape — would be hidden from view.

After one week in the hemlock, what remained of Evlanty Sharipoff would be dusted by a second eruption. More weeks would pass, and a third eruption would coat his body again, this time pelting it with marble-sized bits of pumice.

The corpse would stay in the tree for 52 days before a German shepherd search dog named Hausser would find it three feet off the ground. In the valley below the leaping, barking dog, a railroad car was buried almost out of sight by the same mudflow that had tugged at Sharipoff's boots.

When he climbed to what would become his death perch that gloomy afternoon, Sharipoff could not possibly have known the extent of the devastation he had seen. One hundred fifty-six square miles of pristine high country had been transformed into a moonscape.

And all around him that Sunday in May,

dozens of others lay dead or dying — killed by toppling trees, killed in falls, struck by stones that rent the air at ballistic speeds, scalded, drowned, burned, blown to pieces, buried alive or suffocated — as Sharipoff himself suffocated, on about a teacupful of the millions of tons of rock dust the mountain vomited into the atmosphere.

Next day, Washington Gov. Dixy Lee Ray would say in an interview with Seattle's KIRO-TV that many of those who died in the May 18 eruption "were people who deliberately ignored the warnings" of concerned officials, including herself. Admittedly it was an early assessment — what some would call a rush to judgment. There were only five confirmed dead and 21 persons missing when she spoke. Even then, Mount St. Helens ranked as the most lethal volcano in North America's recorded history.

But only three among the minimum of 53 men, women and children now listed as the mountain's known or presumed victims are believed to have suffered their fatal injuries inside the Red Zone established by federal, state and local authorities as the area of greatest danger. Those three had permission to be where they were.

None of the 34 known dead was inside the Red Zone. No evidence exists to suggest that any of the 16 others now presumed dead were in it. Sharipoff had not been in the Red Zone at all that Sunday. His sturdy young hemlock, surrounded before his death by a mudflow a quarter of a mile across, was in an area the government considered safe. ■



## The land

Even without the extra excitement of the volcano's early rumblings more than eight weeks before, it would not have been surprising to find the Mount St. Helens region crowded with visitors that Sunday.

Down through the centuries, its natural wealth, an abundance of game and fish, and its spectacular forested ridges and alpine lakes had attracted both Indians and European explorers.

From a time long before the first white adventurers made their landfalls in North America, the mountain had developed a mystique among the Indians in the region that later would be known as Southwest Washington. It was rooted in the tranquil symmetry of the mountain's eternally snow-laden slopes and its occasional fits of volcanic activity, some of which the Indians had witnessed.

A British expedition led by Capt. George Vancouver, an early explorer of the West Coast, recorded the first sighting of the mountain by Europeans from the deck of the sailing sloop *Discovery* on May 19, 1792. In his log, Vancouver described it as a "high round mountain . . . situated several leagues to the south of Mount Rainier." He noted that it seemed "covered with perpetual snow, as low down as the intervening country permitted it to be seen."

Vancouver christened the peak in honor of Lord St. Helens, the envoy of King George III to the court of Madrid. But the Klickitat Indians already had a name for the peak — one with a greater affinity for its geologic past. They called it *Tah-one-latchah*, Fire Mountain. The volcano was endowed with a rich mythology by the Indians, who believed it to be a sacred and forbidden place inhabited by spirits.

According to some legends, it was the home of ancestral spirits who were angry at the Indians for permitting the westward encroachment of whites onto Indian land. To punish the Indians, the spirits had forbidden — under penalty of death — any hunting, fishing or foraging on the mountain or around the deep, shimmering lake at its northern base.

Other legends told of Indians who ventured onto the forbidden lake — later called Spirit Lake — only to be pulled into the depths by wrathful spirits and never seen again. The lake, created by an earlier volcanic eruption, became a preserve for big fish and flocks of hooting, fish-eating loons. In more modern times, drowning victims would continue to disappear in the sparkling clear, glacial waters of Spirit Lake, sinking to depths beyond the effectiveness of grappling hooks or the physical endurance of recovery divers. At its deepest point, the bottom of the 1,262-acre lake plunged 184 feet below the surface.

In the drainages of the Toutle, Kalama and Lewis river systems that radiated outward from Mount St. Helens, the Indians found abundant wildlife and foraged for huckleberries, camas roots and herbs. Three tribes coexisted in the environs of the mountain — the Cowlitzes, Klickitats and Yakimas.

During the mid-19th century, whites began to venture into the densely forested terrain surrounding the mountain for recreational reasons. Flanked on the north by Mount Rainier and on the east by Mount Adams, this youngest and smallest of the three volcanoes was accessible only to so-

journalers approaching from the south and west. Thomas Dryer, the founder of *The Oregonian*, a newspaper in Portland on the south bank of the Columbia River 52 miles south, was a member of the party that made the first recorded ascent of the mountain in 1853.

In 1860, an unidentified soldier wrote after climbing the peak that he was confronted by Klickitat Indians who "manifested the most serious apprehensions for their people. To their superstitious minds, the fact that one of their people had been our guide was sufficient to produce the greatest alarm. The *Sah-lah-ly-Tie* (Indian spirits) would be angry, and the people punished if not destroyed." □

It was not until the 1860s and 1870s that homesteaders and gold miners began to move up the Toutle and Lewis river valleys leading toward the mountain from the west and south. These early settlers soon displaced the Indians from their traditional hunting grounds. Prospectors panned the length of the Lewis for elusive specks of gold.

By 1876 there were three families in the tiny settlement which would become known as Toutle. It was 35 miles west of the mountain along the Toutle River's course, though along a straight line from the summit it was only 25 miles away. The settlers found richly timbered valleys and ridges that would come to support a lucrative shingle bolt industry. Split log bolts soon were floating down the twin forks of the Toutle — narrow, winding, westward-flowing streams that derived their name from an Indian word meaning "upriver tribe."

The North Fork of the Toutle originated at Spirit Lake, and the South Fork began from the northwestern base of the mountain. The two merged near the settlement of Toutle and then flowed another 15 miles to the sawmills at Castle Rock, below the Toutle's confluence with the larger Cowlitz.

Twelve miles southwest of the summit, homesteaders attracted by cheap land and the rich bounty of game and fish around Mount St. Helens formed the community of Cougar on the Lewis River.

Turn-of-the-century miners searched for what they hoped would be thick veins of precious metals on the jagged, tree-lined ridges north and northeast of the mountain, but found only hard luck and low-grade copper ore. Nonetheless, they built an extensive road system and 72 log bridges in their shattered expectation of hauling out tons of valuable ore. When they finally abandoned the region in the early 1900s, they left a small legacy of place names as a testament to their failure and despair — a mine called the Last Hope, lakes called Deadman's, Ghost and Obscurity.

Logging became and remained the staple industry of the settlements that formed along the Toutle east of Castle Rock and the Lewis east of Woodland, a town some 34 miles southwest of the mountain near the Lewis' confluence with the Columbia. The bounty of the region's timber was obvious even to a layman. Great carpets of thick forest covered the land, fed by rich nutrients in the thin, volcanic soil and amply watered by some 60 to 80 inches of rainfall each year.

The giants of the forest, including several varieties of firs and cedars, had stood there as long as 600 years. They were 200 feet tall and 10 feet wide.

Water was abundant throughout the region. For countless centuries, storm systems carrying masses of warm, moist air had swept inland from the Pacific Ocean, cooling as they climbed over the Southwest Washington mountains and condensing into thick blankets of mist and rain. Giant ferns and broad-leaved deciduous plants thrived under cover of a wide assortment of tree life, including Douglas and Noble firs, Western hemlocks, Alaskan yellow and



Photo by MIKE CAIRNS

EVLANTY SHARIPOFF — A sturdy young hemlock was his last hope.



Delano Photographics Inc.

123-YEAR SLEEP — *Tah-one-lat-clah*, to the Indians, was a sacred place inhabited by spirits.

Western red cedars, Western white pines, red alders, Western larches and black cottonwoods.

In winter, the rivers were fed by torrents of rain. In summer, they swelled with brownish runoff from the melting snowpack and the partial melting of several small glaciers on the mountain. The four largest icefields were the Forsyth, Wishbone, Ape and Shoestring.

The Kalama River originated from a large spring at the southwestern base of the mountain. Three smaller streams — Swift Creek, Pine Creek and the Muddy River — drained the mountain's southeast slopes and emptied into the Lewis. Beyond the alpine lakes that dotted the high country immediately north of the mountain was a broad arc formed by the valley of the Green River, a tributary of the Toutle that joined the North Fork above the town of Toutle. Trees crowded the stream banks and the shores of the high lakes.

□

Logging companies whose initial interest was in timber at lower elevations west of the mountain moved gradually eastward along the stream courses and onto the higher slopes. In 1902, the worst forest fire in the region's history devastated a sprawling region south of Mount St. Helens, charring a 12-mile-wide swath called the Yacolt Burn, which covered 230,000 acres. The huge fire spread a pall of semi-darkness over the countryside that stretched as far north as Tacoma, some 75 miles northwest of the mountain, and as far south as Portland.

In the fire's aftermath, large-scale logging began in earnest in Southwest Washington. One firm that joined the scramble to recover and mill the damaged logs was the Weyerhaeuser Co., a large timber corporation originally based in Rock Island, Ill. It recently had begun operations in Tacoma and Everett. When the salvage was

completed two decades after the fire, Weyerhaeuser focused on timber acquisitions east of the twin communities of Kelso and Longview and west of Mount St. Helens.

Weyerhaeuser would become the dominant commercial enterprise in the region, operating from Longview a 473,000-acre tree farm that extended around the western flank of the mountain. The company would spread its diverse forest products operations around the world, but the one based in Longview would remain its largest.

By the 1920s, the mountain already had become a popular tourist attraction and was the centerpiece of the government's newly established Columbia National Forest. The federal reserve, which later would be renamed for Gifford Pinchot, first head of the U.S. Forest Service, was set aside in 1908 by President Theodore Roosevelt. It was part of a plan to quadruple the size of the national forest system and to protect the nation's timber resource from speculation and monopoly.

The eastern boundary of Columbia National Forest was a zigzag line that skirted the western base of Mount St. Helens along the Cowlitz-Skamania county line. That same boundary would be an important one to those who were on the mountain 72 years later, on May 18, 1980. It would define the western limit of the government-established volcano danger zone.

Throughout the early years of the 20th century, campers and other lovers of the outdoors flocked to the high country around Mount St. Helens to climb its slopes, to hunt and fish or to tour remnants of its volcanic past — including a series of five caves, called lava tubes, that once had been bubbles in a 1,900-year-old, 8-mile-long lava flow extending from the summit down into the Lewis River Canyon. One of them, Ape Cave, was the longest known lava tube in the United States, running for about two miles.

In 1938, carpenter Harry Gardner helped Harry Truman, a transplanted West Virginian, build the chalet-style Mt. St. Helens Lodge at the west end of Spirit Lake. Truman had rented lakeshore cabins to summer visitors there since 1929. His Mt. St. Helens Lodge would be among the earliest of several resorts and about 100 vacation homes on the shore of or near Spirit Lake.

With the advent of bulldozers in the 1930s, Weyerhaeuser began to build a network of primitive roads through the woods for its fleet of logging trucks. And after World War II, when the introduction of power saws revolutionized the logging industry, the forest bustled with activity. Each spring after the winter snows melted, yellow company buses carried logging crews steadily closer to the mountain.

But despite increasing logging pressure, the high country never lost its lure. During the late 1970s, the Mount St. Helens region was Washington's top-rated elk-hunting area and one of its best for blacktail deer. Streams around the mountain had well-deserved reputations as steelhead trout and salmon fisheries. The winters were ideal for hunters and fishermen, and the extensive Weyerhaeuser and Forest Service road systems provided easy access.

When the volcano the Indians called Fire Mountain began to shake and rumble in the spring of 1980, Weyerhaeuser logging crews were preparing to move up to patches of old-growth timber within five miles of tree line. The annual tourist influx was about to begin. In the cool, damp, reddish-brown loam of the woods, delicate wildflowers were coming alive — white trillium and avalanche lilies, red ladyslippers and blue clover. Elk and deer were entering their calving season.

It was a spring like any other — except for the new sounds and smells and vibrations that were starting, up on the mountain. ■



## The ring

Merlin "Jim" Pluard had worked the woods within sight of Mount St. Helens most of his adult life. This was the spring that members of his logging crew would learn to fear it. Not with a gnawing, constant dread, but enough that the men would complain to Pluard's boss about having to work so near the mountain.

Some of the things they found in the high country this spring were new and strange to them. When their complaints were shrugged off, they would go on working. That was their job.

Pluard himself saw the mountain as just one more hazard in a hazardous job. Death was a simple fact of life in the woods, and you watched your step. A careless man could misjudge a tree, run the wrong way or trip over his own boots, and his fate would be out of his hands.

Like many men bred in the small towns and hamlets around Mount St. Helens, Jim Pluard had logging in his blood. His father was a woodsman and Pluard's own sons, David, Lee and John, were following in his footsteps.

At 60, Pluard, the foreman of a Weyerhaeuser tree-cutting crew, had gained a reputation as both an expert woodsman and as a friendly man who could be counted on to mooch a cup of hot coffee and share some talk wherever he went. He and his yellow Weyerhaeuser pickup truck had become familiar sights near the mountain.

Pluard's logging experience around Mount St. Helens dated to before World War II, when trees were felled by teams of men using axes and the big crosscut saws they liked to call "misery whips." In those days a man had to highball to make a living because he was paid according to the amount of timber he cut and had to rely on his own two hands.

Pluard learned that hard work and hustle were the first requirements for survival in the woods.

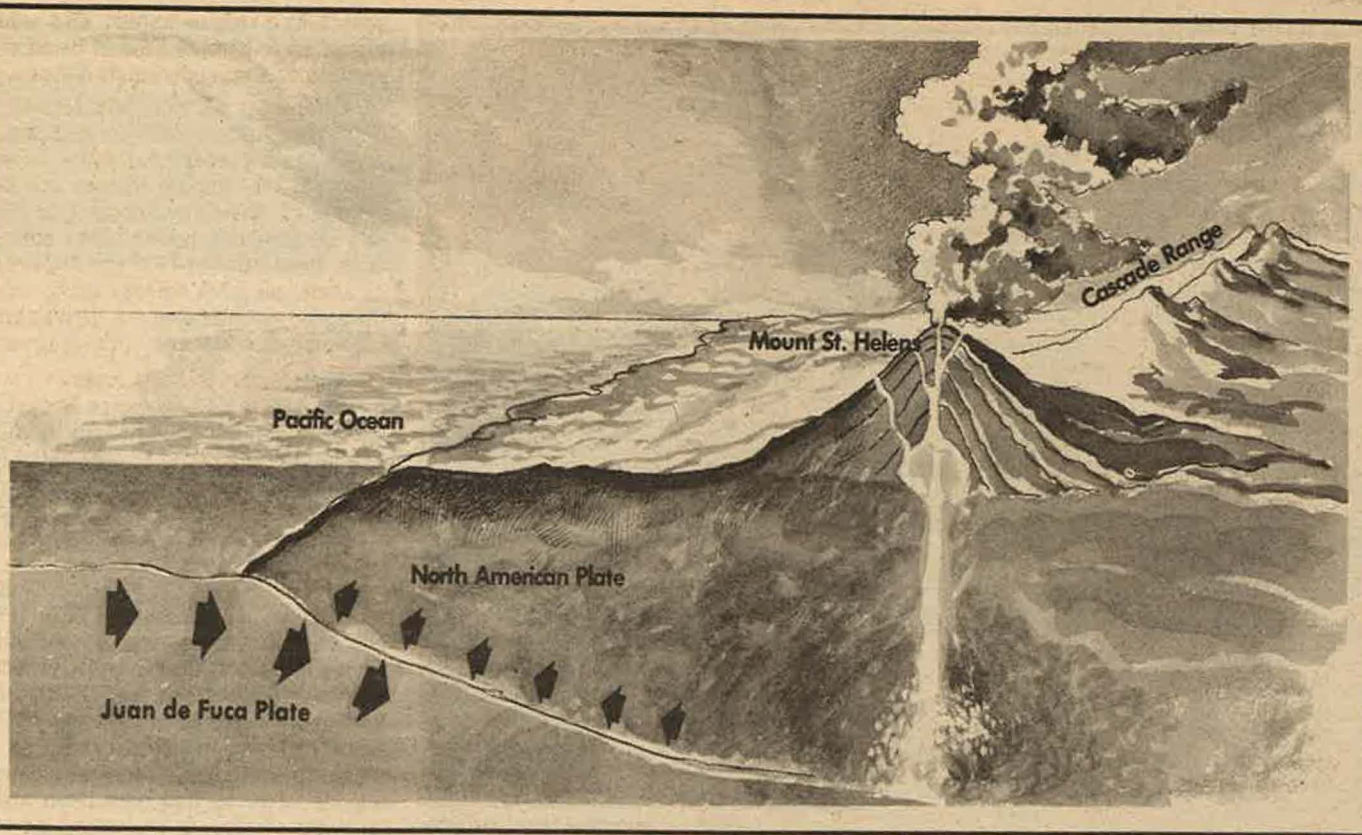
After his wartime service in the Pacific Theater, Pluard and his brother Lester ran a small timber crew and sawmill that manufactured decking material for railroad cars. The outfit cut timber, hauled it from the woods and sawed the logs into planks for railroad companies. When that business failed, Pluard went to work for Weyerhaeuser.

The postwar years brought rapid change to the forest around Mount St. Helens. Pluard saw the misery whips disappear and the tranquility of the woods disrupted by a proliferation of great two-man, gasoline-powered saws the loggers called "timber hogs."

Over a period of three decades, most of the old-growth timber would disappear. Logging crews and timber hogs moved systematically through the forest from the west and edged gradually higher toward the peak. Under Weyerhaeuser's comprehensive timber management plan, great patches of older forest were clear-cut and replanted with seedlings. When the spring of 1980 began to creep into the high country, Weyerhaeuser was preparing to harvest some of its last stands of old-growth timber in the shadow of the mountain. That was in March.

□

Another man who would become vitally concerned with events on Mount St. Helens



**THE CALDRON** — Far beneath Mount St. Helens, above, the Juan de Fuca Plate sinks deep enough under the North American Plate that it turns molten, adding large amounts of material to the magma pool expanding there. The Juan de Fuca Plate, one of many tectonic plates that together cover the Pacific Ocean floor, begins at the zig-zag Juan de Fuca Ridge, right, and moves eastward until it dives under the North American Plate.



Drawing, map by staff artist PAT McLELLAND

that spring — but for entirely different reasons — was Steve Malone, 35, a University of Washington seismologist in Seattle. By late March, Malone had been working for weeks to organize a research project that would be conducted jointly by the U.S. Geological Survey and the university's geophysics program.

Federal scientists and university geophysicists and seismologists planned to study the southern Washington Cascades and their potential value as a geothermal energy source. They also would study the earthquakes that occasionally rocked Puget Sound and Washington's Olympic Peninsula.

Malone had rounded up several graduate students for the project, and the Geological Survey had put one seismologist, Craig Weaver, at Malone's disposal to help set up and monitor a network of 64 seismic stations scattered across Washington. Plans were being made for 18 more stations after Oct. 1. Very soon the researchers would have more earthquakes than they wanted.

Earth scientists like Malone had come to believe that volcanoes were products of continental drift — the gradual moving apart of the Earth's largest land masses. Map makers for centuries had been intrigued by the Atlantic coastlines of South America and Africa, which looked as if they almost might fit together. Moreover, mountain ranges ended abruptly on the coast of one continent and continued with the same rock types on the adjacent coast of the other.

Despite such evidence — and more that existed in the magnetic fields of volcanic

rocks on the two continents — the theory of continental drift was widely derided before it finally had won acceptance in recent years. In 1962 a Princeton University professor, H.H. Hess, theorized that the Earth was not the solid mass of crust, mantle and core that it once was held to be. Hess thought the land masses and the sea floors together made up a thin crust that floated on a sea of molten rock.

He suggested that the Earth's surface was a 62-mile-thick crust, the lithosphere, that floated on a mass of fluid rock, the asthenosphere, which churned and circulated below the surface in the way boiling water circulates in a pot. Hess believed there were cracks and ridges in the ocean floors, and that as currents within the molten material below them pushed liquid rock up through the cracks, it solidified and forced apart massive pieces of the sea bottoms that adjoined one another along the cracks.

Accepted theory today is that the Pacific Ocean floor is a series of tectonic plates — huge chunks of the lithosphere separated by rifts and fissures, but overlapping like playing cards spilled on a table.

As the Pacific floor spreads and the plates are pushed apart, the outer edges of some plates are thrust beneath the surfaces of the continents, creating what geologists call subduction zones. Some tectonic plates are large and dense enough to create under-sea trenches miles in depth where they begin to slide under the continents. Some are active enough to cause frequent earthquakes.

As the plates' edges are thrust farther and farther beneath the continental shelves, they become warmer, heated indirectly by

radioactive decay deep inside the Earth. At a depth of about 75 miles, the rock eventually becomes part of the asthenosphere — the molten sea on which the continents float.

Some molten rock is more buoyant than the material surrounding it, and like a cork thrust deep underwater and then released, it begins to rise and to form magma chambers — pools of molten rock near enough to the surface to fuel volcanoes.

A great chain of volcanoes encircles the Pacific — some of them active, some dormant, others long extinct. It runs from New Zealand's North Island northwest through the New Hebrides and Solomon Islands; west across Papua New Guinea and Indonesia; north through the Philippines, Japan, the Kuril Islands and the Kamchatka Peninsula on the east coast of Soviet Siberia; east through the Aleutian Islands into mainland Alaska; and then south down the west coasts of North, Central and South America.

Volcanoes are likely to form along the lines where the tectonic plates grind past one another, shoving cubic miles upon cubic miles of the lithosphere into the caldrion deep within the Earth. Mount St. Helens is part of this necklace of Pacific volcanoes known as the Ring of Fire.

Part of the University of Washington research would center on how the Juan de Fuca Plate caused earthquakes and fueled its share of the 18 active or dormant volcanoes in the Washington and Oregon Cascades, but the program's main purpose was to determine how it created the thermal energy that scientists hoped to tap as an energy source.

Scientists knew that relatively little magma was produced by the Juan de Fuca Plate, whose origin was about 350 miles west of Mount St. Helens. It moved eastward very slowly from the Juan de Fuca Ridge, and was not as thick as other Pacific plates. As a result, only small amounts of rock were melted over long periods of geologic time. In other parts of the Ring of Fire, the plates created enough magma to fuel a volcano every 45 miles. Throughout the Cascades, however, magma was less abundant, and while the active volcanoes were spaced fairly uniformly down the West Coast, they were about 100 miles apart.

Nonetheless, the Juan de Fuca Plate had been active enough in recent times to rattle windows in the Puget Sound region. Thousands of years ago it had produced enough molten rock to cause violent eruptions of the young volcano, later called Mount St. Helens, that threw ash across what is now

the Western United States and boulders all the way to modern-day Alberta, Canada.

Volcanic eruptions may include ejections of mud and ash, fluid or chunky lava, or boulders and pieces of a light, porous rock called pumice. During its geologically brief eruptive history, Mount St. Helens had tried them all, making it a composite or stratovolcano composed of diverse layers of materials from different kinds of eruptions. Its symmetry was testimony to its youth, giving it an appearance similar to Japan's Mount Fuji and Italy's Mount Vesuvius.

Most of what could be seen on the surface of Mount St. Helens before May 18 — whether rock, snow or ice — had been deposited there within the last few hundred years. Goat Rocks, on the north flank, was a lava plug dating from the 19th century, and the Dogs Head outcropping on the east flank also was of fairly recent origin.

There had been no time for running water on the lower slopes or for frost and the ever-present winds howling around the summit to break down the rock and wear it away, no time for glaciation to carve the smoothly rounded peak into irregular cirques and ridges like some other Cascade volcanoes that had been dormant for longer periods.

Mount St. Helens was born some 36,000 years ago, a product of changes on the ocean floor. The youngest of all Cascade volcanoes, its violent history included a series of explosive eruptions that deposited 18 inches of ash and pumice on the slopes of Mount Rainier 50 miles north. As recently as 450 years ago, it had erupted constantly, sending out virtually non-stop pillars of smoke and ash for a full century. Scientists since have used Mount St. Helens and its many layers of ash as a means of dating the early development of the region around it.

The mountain erupted again in the fall of 1842, littering the countryside and shattering portions of its summit. After 15 years of intermittent activity, it grew quiet once more in 1857. But the Juan de Fuca Plate was continuing its slow creep beneath the continental shelf, pushing ever more material into a sea of molten rock below Southwest Washington. A 123-year stillness was about to shatter.



## The warning

Seattle's mild spring days were just beginning. Cherry trees had begun to bloom in the Quad, a parklike strip surrounded by social sciences buildings on the University of Washington campus, and Frisbees flew across the brick and cobblestone walkways. Students were easing into shirtsleeve weather.

Thousands of young men and women on their 3:20 p.m. class break crowded the Red Square that surrounded the two main libraries, the administration building, a lecture hall and a campus concert auditorium.

Clearly visible in the distance was 14,410-foot Mount Rainier, most famous of the dormant Cascade volcanoes, framed by rows of trees and the spray of Drumheller Fountain. Flowers were beginning to bud in an alcove to the south, where the drama department, a small arena theater, the Quaternary Research Center and the office of the geophysics program were located. It was March 20, 1980.

Within minutes after students flooded

back to their classrooms that spring afternoon, a seismometer a little more than two miles from the summit of Mount St. Helens jostled in a strong earthquake. One of Steve Malone's graduate students logged its time as 3:47 p.m. and calculated its magnitude. It was the strongest in the southern Washington Cascades since instruments had been put in place seven years earlier.

The quake's epicenter was at fairly shallow depth just northwest of the summit. It was moderately strong — registering as a 4 on the Richter scale — but was not much more than a sharp jolt in such an unpopulated area. Probably few humans noticed.

Unlike other quakes, however, this one did not stop within a few minutes. Aftershocks troubled the mountain for hours. University seismologists had no ready explanation.

Coincidentally, four portable seismographs that stored their data on tape recorders were being flown to Seattle that night for use in the university's and the U.S. Geological Survey's study of earthquakes caused by the Juan de Fuca Plate. Malone called the Geological Survey office in Menlo Park, Calif., and notified officials there of the quake on Mount St. Helens, but opted to wait another day to see if aftershocks continued before deciding whether to go to the mountain to install the new equipment.

Next morning, computer records showed the aftershocks had persisted. Because of snowy conditions on the mountain, the university called the U.S. Forest Service in Vancouver, Wash., and asked for help in placing the instruments. Malone headed for Seattle-Tacoma International Airport to pick them up, then drove directly to the mountain.

"If this mountain gets busy and does anything more, maybe we'll see you again," Malone told District Forest Ranger Chuck Tonn after installing the machines on the north, south and east sides. The two men joked about the possibility of an eruption and parted company.

Malone then drove back to Seattle, checking a seismograph at the university when he arrived. "Hey," he remarked to whoever might be listening. "Something is going on."

On Saturday, March 22, the tremors increased and a second big quake hit the mountain; this one slightly stronger than Thursday's. Again the aftershocks continued, and now there was a concern for human safety.

The university notified the Forest Service's Avalanche Control Center in Seattle, warning of the possible risk to anyone on or near the peak. Geological Survey seismologist Craig Weaver and others involved in the study had re-evaluated their information. They decided they were not seeing a series of aftershocks, but rather a swarm of separate earthquakes.

Deep beneath the mountain, molten rock and superheated gases were pooling in a magma chamber, slowly and silently pushing back the overlying rock to create a bulge on the north slope near Goat Rocks that was still too small to be detected. All the signs were there.

Rhythmic, one-cycle-per-second harmonic tremors — often a sign of magma movement — pulsed quietly through the mountain as fluid rock gathered miles below its base. But other seismic noise — an almost constant barrage of low-level earthquakes — drowned out the tremors and prevented their smooth sine waves from appearing in detectable form on seismograph charts. They would continue unnoticed for nearly two weeks.

The earthquakes continued that Sunday, March 23, including a third with a Richter magnitude of 4. University teams went to the mountain to check the newly

installed portable seismographs but found most of them not working properly. Battery failures had stopped two instruments and a third had developed an electrical timing problem.

Malone and Weaver looked for a reason that would explain the sudden earthquakes and their enduring aftershocks. Privately they began to suspect volcanic activity. Malone resolved that on Monday morning he would call Dwight "Rocky" Crandell and Donal R. Mullineaux, two volcano experts who worked in Geological Survey headquarters at the sprawling Denver Federal Center.

Crandell and Mullineaux literally had written the book on the Cascade fire mountains. Throughout the 1960s and 1970s they wrote a series of scientific papers assessing the odds of violent eruptions by each of the mountains and the hazards they could pose for people who lived near them.

The two experts had concluded five years earlier that the same little-known volcano in Southwest Washington that had been shaking for the last several days was potentially the most violent in the 48 contiguous states. They were sure Mount St. Helens would blow up again — perhaps even by century's end.

That Monday saw a dramatic increase in earthquakes. Forty times each hour the mountain shook with intensities exceeding Richter magnitudes of 3.

Malone became convinced the volcano was stirring. Staff and graduate student volunteers began to monitor the seismographs through the hours of darkness and were left with strict instructions to alert the Forest Service immediately if disaster seemed imminent. Within a week, the volunteers would go on the payroll.

*Molten rock climbed ever higher, snaking along subterranean cracks and up through the belly of the mountain, splitting and shoving tons of solid rock aside to enlarge the magma chamber, sending out ripples of still-undetectable harmonic tremors. The mountain was expanding, bulging imperceptibly on its north flank, preparing to explode.*

By noon Tuesday, March 25, a seismograph station just west of the peak was saturated with earthquakes. They were too many and too strong for scientists to tell where one began and its predecessor ended.



Associated Press Laserphoto

EDWARD CHOW JR., Washington state Emergency Services chief: "I'll be here in the office if you want to talk."

By late afternoon every station within five miles of the mountain was saturated. It was now impossible to separate genuine quakes from background seismic noise, like gusts of wind or an elk walking past a seismograph.

University crews moved the equipment back to points more than 18 miles from the mountain. Like an art lover with his nose pressed against the Mona Lisa, they had been too close to see the total picture.

And now there was increasing worry among Forest Service officials. They recommended nighttime evacuations on the mountain's north flank, fearing that avalanches or eruptions might occur after dark and complicate rescue efforts. They told the public Mount St. Helens was following a well-defined pattern that preceded eruptions of Japanese and Italian volcanoes.

All that day, government agencies had been gearing up for disaster. At 8 a.m., Mullineaux called from Denver to brief Rick Lavalla, a young, blond-haired mountaineer who joined the Washington Department of Emergency Services in 1967 as its

search-and-rescue expert and who had moved up to become head of its emergency preparedness and operations division.

Emergency Services was formed in the Cold War year of 1951 to help the Evergreen State prepare for possible nuclear attack. It was known then as the Department of Civil Defense, working to stock air raid shelters and plan civilian emergency drills. Legislation in 1972 and 1974 changed its name, but civil defense work remained the agency's chief concern. It was branded in January 1980 as a do-nothing agency.

A performance audit report — written for Washington's Legislative Budget Committee and released only two months before Mullineaux called Lavalla about Mount St. Helens — said Emergency Services had not outlined the duties of its employees. Many of them would not know what to do in case of disaster, the report added.

Moreover, legislative auditor Thomas R. Hazzard pointed out that the Federal Emergency Management Agency, the government's central superagency for disaster response planning and relief, had called Emergency Services one of the worst agencies of its kind in the country.

Neale V. Chaney, the federal agency's regional director, had been blunt about it. "It is our opinion, in evaluating the overall operation of this State's disaster response programs, (that) Washington ranks at or near the bottom of the list," Chaney wrote.

"We do not sense a serious commitment to disaster response programs or to disaster preparedness."

Edward Chow Jr., a restaurateur and former campaign worker for Gov. Dixy Lee Ray who had been appointed to head Emergency Services in December 1979, had wasted little time trying to whip the ragtag department into shape.

He pinpointed needless waste, like some employees' use of expensive engineering graph paper for scratch paper. He demanded that employees set and meet deadlines. He set a personal example. It was not long before employees started asking for raises or promotions because of the increasing workload Chow was heaping on them.

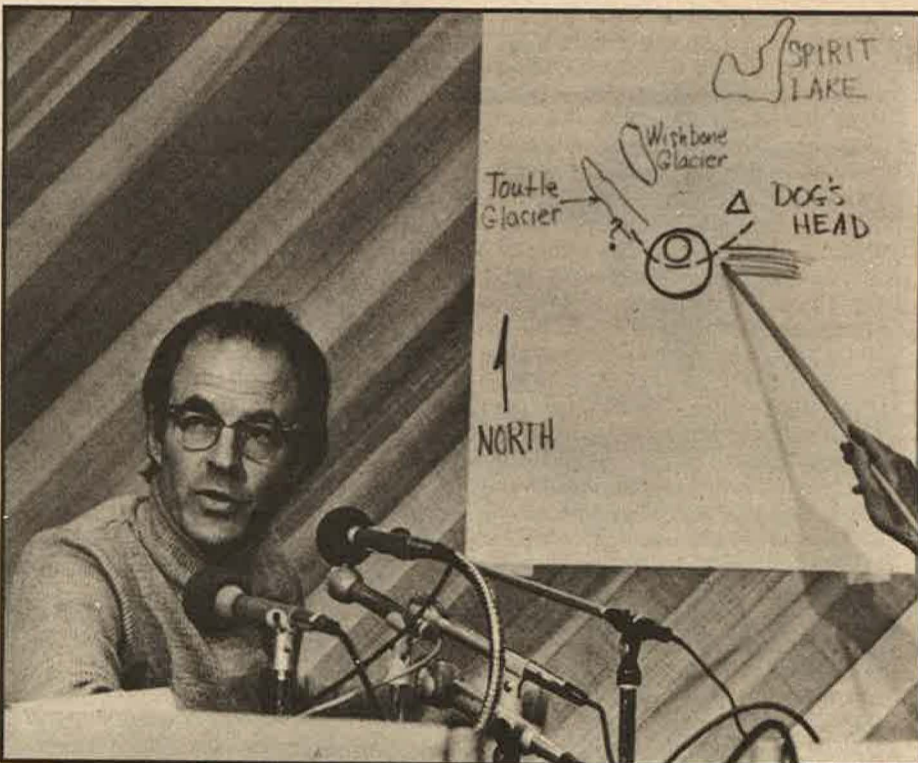
When employees brought up such requests, Chow would look them over and say, "Fine. I'll discuss it with you. How about 8:30 tonight?" Employees who pointed out they would be at home by then would hear Chow respond, "Well, I'll be here in the office if you want to talk." They soon learned the new boss would tolerate nothing less than extra effort.

It was in this atmosphere — charges that the agency was prepared for enemy attacks and little else, top-level staff changes, employee disgruntlement — that the Department of Emergency Services began to prepare for the worst natural disaster it had ever faced.

"Don Mullineaux of Denver called," Lavalla jotted in the March 25 office log. "The Forest Service flew over — did not detect anything unusual. Don said there was 3 quakes . . . about 3 on the Richter scale. There is no evidence that there is or is not volcano activity at this time." A few hours later, at 3:10 p.m., Mullineaux called back.

"Increased activity," Lavalla wrote. "Alerted Forest Service for possible eruption tonight (have to consider). Mainly on the north side. Unsure of east and south side."

It was the earliest record made that would show anyone in an official capacity suspected an eruption might be imminent. That same day, the Forest Service would declare an administrative Red Zone closing off the whole mountain above timberline. It was done in response to fears of earthquake-triggered avalanches. Everyone except persons with explicit Forest Service entry permits would be turned back from Mount St. Helens. ■



Staff photo by JOEL DAVIS

DONAL R. MULLINEAUX, U.S. Geological Survey volcanic hazards expert. He was the first person in an official capacity to suspect an eruption might be imminent.



## The plan

To the public and scientists alike, it was all pretty exciting stuff in late March. Many times before, the Pacific Northwest had been through scares that one or more of its dormant volcanoes actually might come to life.

Mount Baker, a 10,778-foot mountain in northwestern Washington near the U.S.-Canadian border, had steamed lazily for the previous five years. Mount Hood, an 11,235-foot peak some 50 miles east of Portland, was widely known to contain hot spots and to vent steam occasionally from fumaroles near its summit. Mild earthquakes shook the Oregon mountain nearly every summer.

But this time the scare was different. The rumblings from within Mount St. Helens were stronger than those from other volcanoes in the region and were taken much more seriously.

With the slopes above timberline already closed to public access the day before, the U.S. Forest Service on March 26 called an emergency meeting to discuss possible disaster on Mount St. Helens. Private and corporate landowners from around the mountain and a broad assortment of federal, state and local government officials attended. In the two months to follow, there would be more such meetings to "develop a framework from which a united and coordinated response could be made to emergency situations," in Forest Service parlance.

The sessions would bring together a handful of men who soon would have dominant roles in formulating public policy to deal with the mountain:

— Dwight "Rocky" Crandell and Donal R. Mullineaux, the two federal geologists from Denver who were considered the nation's best experts on Mount St. Helens.

— Basil "Ben" Bena, a former Seattle policeman who was operations chief for the Cowlitz County sheriff's department. Though the mountain itself and broad expanses of wild country on its north, east and south sides were in Skamania County, inside Gifford Pinchot National Forest, Cowlitz County controlled the main approaches from the west and contained the communities closest to the mountain.

— Jack Schoening, woods manager for the giant Longview-based Weyerhaeuser Co. logging operation. The company was the largest owner of land immediately west and northwest of the volcano and was Cowlitz County's single largest enterprise.

— Edward Chow Jr., director of the Washington Department of Emergency Services, and Rick Lavalla, the agency's emergency preparedness and operations division manager.

— Ed Osmond, a Forest Service recreational land and watershed specialist who recently had been named as that agency's disaster coordinator in charge of the volcano.

— John DeMeyer, southwest regional director of the Washington Department of Natural Resources. The state agency owned some 10,000 acres of timber west of the mountain.

Much of the March 26 emergency session focused on three small hydroelectric dams owned by Portland-based Pacific Power & Light Co. along the Lewis River Valley south of Mount St. Helens. Crandell and Mullineaux had identified the dams in 1978 as the biggest single threat to human

safety if the mountain erupted. A mudslide down the south slope conceivably could raise the waters of Swift Reservoir, 10 miles south of the summit, to a level the dam could not possibly control. That dam would fail, triggering other failures downstream at Yale Lake, the middle reservoir, and finally at Lake Merwin to send more than 1.8 billion tons of water flooding into Longview some 35 miles away.

It was a planning session, with officials hashing out administrative decisions about traffic problems, airspace control and inter-agency communications. Bena, an often blunt-spoken policeman of 18 years' experience, listened patiently but thought it was all too general, leaving unanswered crucial questions about jurisdictions and responsibilities in case of catastrophe. Finally he spoke up.

"Who's going to be in charge?" he asked of no one in particular. "If the mountain blows, who is going to take control?"

Bena received what he thought was a non-committal answer — the Forest Service would handle communications among the different agencies. He asked if that was all they had in mind, and was told it was.

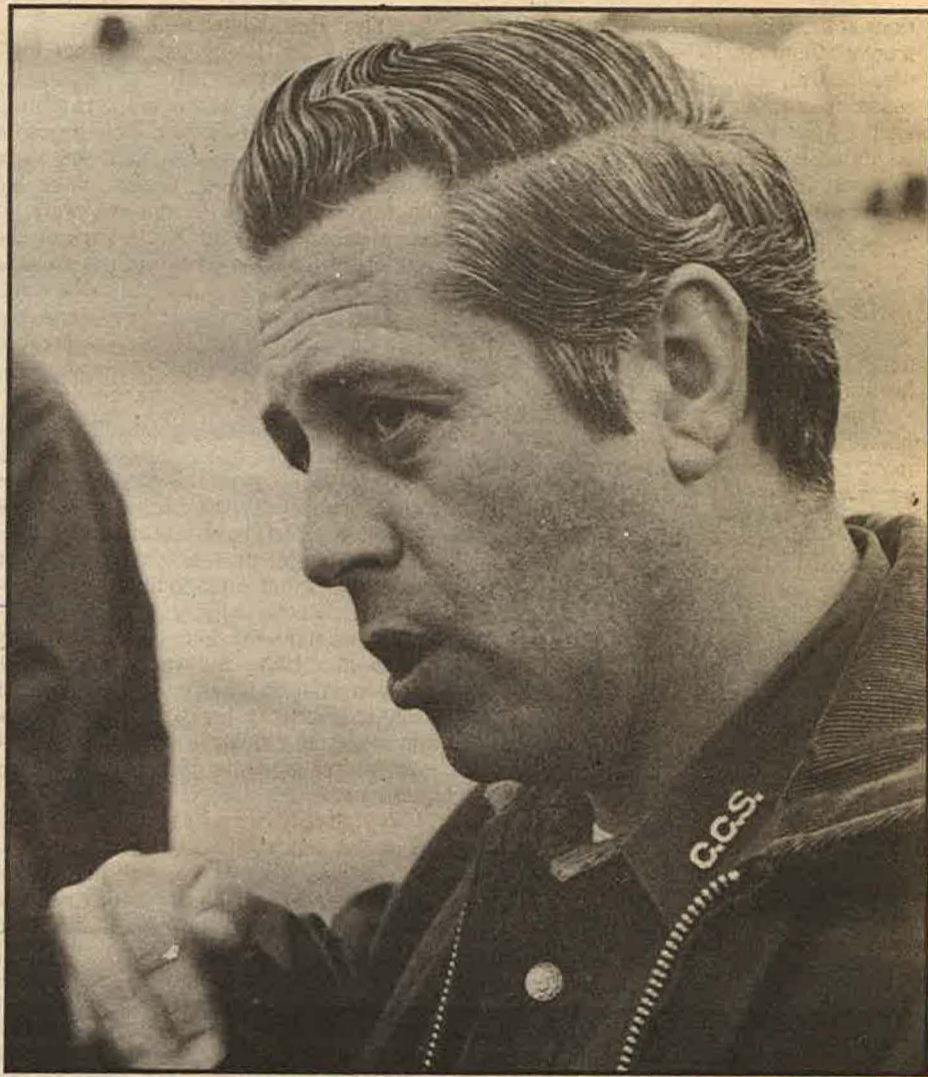
In the ensuing weeks before May 18, no state or federal agency would take charge of disaster response coordination. There would be no detailed emergency plan for dealing with a major eruption, no plan for air search and rescue, no comprehensive scheme for closing off roads to the mountain, no detailed plan for evacuating some 1,000 Weyerhaeuser Co. workers from their job sites in the woods.

Decisions affecting the public welfare would be made by committee, and the committee often would relent to pressure from private interests — in some cases powerful interests.

Reports from Crandell and other government scientists about the extent of potential hazards and the possibility of sudden, unpredictably large eruptions would be ignored. For their part, the scientists would refuse to translate their own hazard estimates into proposals for shutting off the mountain to public access.

After several hours, that first meeting at Gifford Pinchot National Forest headquarters in Vancouver ended. The Forest Service announced it was forming an Emergency Coordination Center to provide accurate communications and "linkages" to other agencies and private companies.

Osmond was assigned to write a volcano contingency plan. It would contain an organizational chart of the Vancouver communications center, general descriptions of



BASIL 'BEN' BENA, Cowlitz County sheriff's department operations chief: "Who's going to be in charge? If the mountain blows, who is going to take control?"

the agencies involved and their responsibilities, and a list of telephone numbers. Some agencies were to be represented at the Forest Service communications center in the interest of quick access to volcano information.

By meeting's end, Bena would remember, he imagined that chaos would result if a catastrophe actually happened. He resolved to draft an emergency plan for his own department. Weeks later Bena would receive a copy of Osmond's contingency plan and file it away. It established lines of communication but little else.

While the March 26 emergency meeting was in progress, sightseers in private and

chartered aircraft crowded the skies over the mountain for closer looks, forcing the Federal Aviation Administration to restrict airspace. From now on, no plane but those carrying passengers on official business would be allowed to fly below an altitude of 20,000 feet or within five miles of the summit.

And Leonard Palmer, a geology professor at Portland State University, told the *Oregon Journal* that the mountain could erupt at any time — within a day, within 100 years. It was the kind of science talk to which Northwesterners already had grown accustomed. To a geologist, "soon" meant it could happen sometime in the next eon.

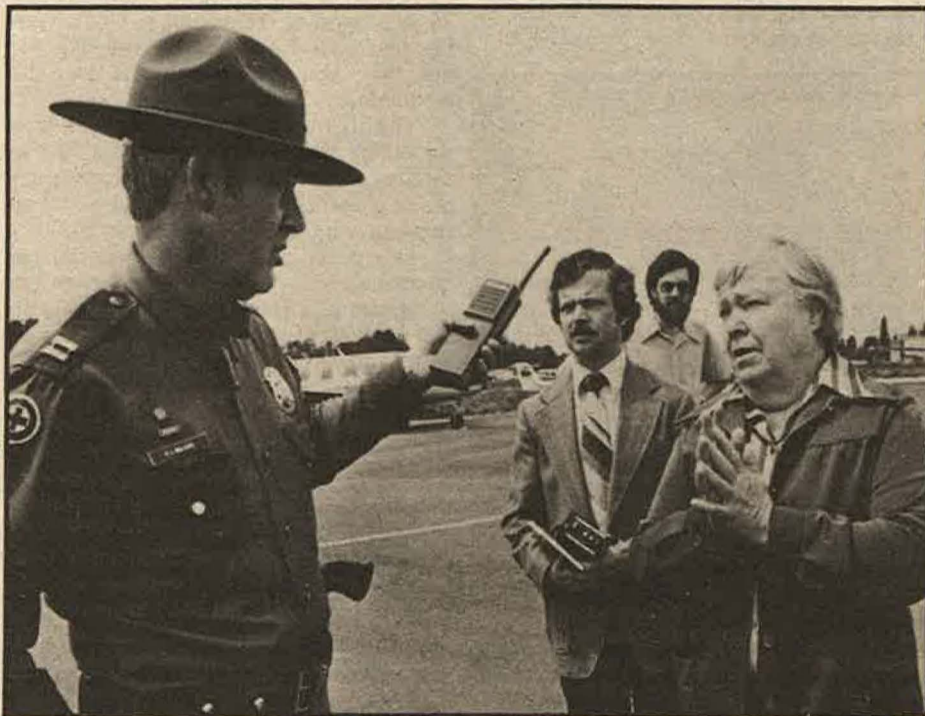
Nightfall came and went again. The earthquakes eased, dropping in frequency and intensity. It had begun to look like another scare story after all.

On Thursday morning, March 27, Chow received a letter at Emergency Service from the U.S. Geological Survey. Chow's office was in a rear alcove of his agency's headquarters in Lacey, a town just east of Olympia, the state capital.

The building was unimpressive — a most run-down. It had been abandoned earlier when the Washington State Patrol moved its own headquarters to a large building across the parking lot. Chow's headquarters had precious little space and no special arrangements for disaster response management. There was very little of anything — work force, telephone lines or operating budget. Chow sat behind his desk in the alcove and began to read.

"It is not possible at this time to indicate which possible geologic effects of an eruption might take place," wrote earthquake specialist Robert Wesson, an assistant to Geological Survey Director H. William Menard in Reston, Va. "Our concern is great enough, however, that we have initiated a Hazard Watch and are alert to other state and federal agencies of heightened concern."

Chow sent the letter along to his op



GOV. DIXY LEE RAY: "I've always said, for many years, that I hoped I lived long enough to see one of our volcanoes erupt."

Photo by ANN YOW, © 1980, The Seattle Times

tions staff, which entered it in the department's Mount St. Helens log. Within minutes the University of Washington called to report the mountain was seismically active again. A new swarm of earthquakes had begun at 9:35 a.m. A note of that contact, too, was filed away routinely, but the on-again, off-again alerts were enough to put some people on edge.

Don Parker that Thursday was drinking an after-lunch cup of coffee, sitting in camp north of Mount St. Helens and waiting for his brother and two nephews to return.

Parker, 45, of Westport, Ore., shared his coffee with Martin Remen, 73, who lived near Ashford, a little town off the southwest corner of Mount Rainier National Park. Remen was a friend who had stayed with Parker while the others hiked in 10 miles to the abandoned Black Rock Mine, in the upper Green River drainage near 4,508-foot Norway Pass.

The old gold mine was about a mile and a half northeast of Spirit Lake, and the Parkers, Remen and others were thinking about trying to work it for copper. Parker's older brother, Jay, 52, of Olympia, and the two nephews, Bob, 27, of Seaside, Ore., and Rick, 28, of Shelton, already were at the mine. They were taking turns with a shovel to probe beneath the snow for the mine entrance.

Parker's and Remen's coffee break was interrupted at 12:56 p.m. by two loud bangs — each somewhat louder than artillery fire. "Well, God damn him anyway," Remen muttered, cursing Jay Parker. "He must have taken some powder up there with him. He never said anything about taking any powder with him." Near the Black Rock Mine, the other men were still digging. They heard the booms, too — probably reports from passing jets breaking the sound barrier.

But above them, some 9.5 miles to the southwest, the overlying rock that had capped a seething mass of hot water and magmatic gases on Mount St. Helens had finally ruptured. When the pressure released, tons of water flashed to steam. A small hole opened up on the northeast side of the summit and a wisp of vapor and 123-year-old ash rose slowly out.

Weyerhaeuser Co. crew boss Jim Pluard, who was at work 20 miles west of the mountain, heard about it on the two-way radio in his pickup truck. He was ecstatic. Pluard drove to a ridge above the slope where logger Keith Hall was working and shouted the news out loud.

"Can you hear me?" he yelled down the hillside toward Hall, a quarter of a mile below him.

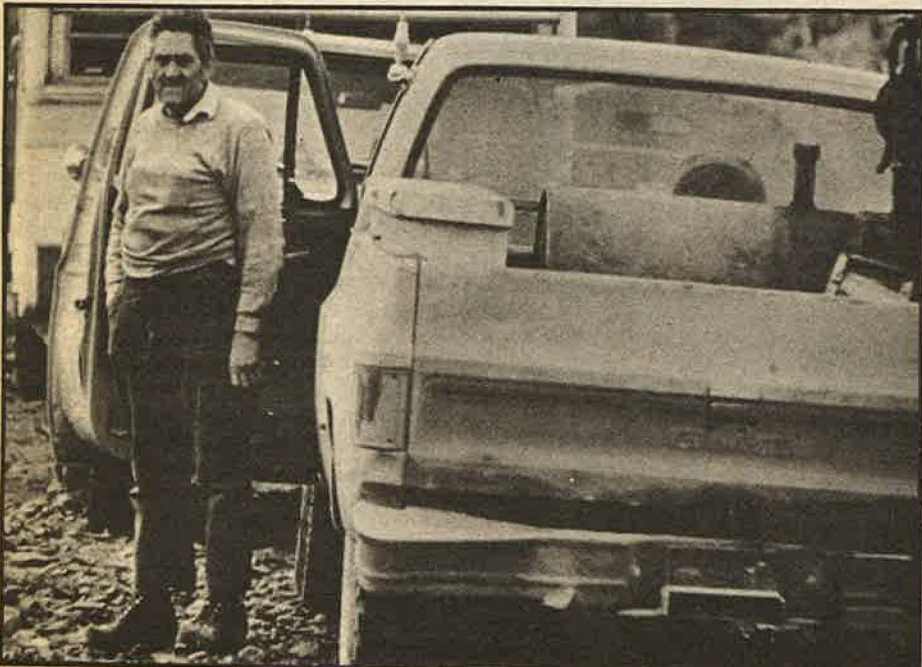


Photo by HARRY GLICKEN

JIM PLUARD, crew boss for Weyerhaeuser: "Mount St. Helens just blew her top!"

"Yes!" Hall shouted back.

"Mount St. Helens just blew her top!" Pluard excitedly reported.

Other loggers heard loud, rumbling booms when the mountain first began to vent. There were about 1,000 of them working out of Weyerhaeuser's three big logging camps west of the mountain — Camp Baker, along the North Fork of the Toutle; the 12 Road Camp on the Toutle's South Fork; and Camp Kalama in the Kalama River Valley. For at least a while, the peak's awakening would become a cause for celebration and a topic of beery, wide-ranging talk among loggers in taverns.

In Port Ludlow on the western shore of Puget Sound, Gov. Dixy Lee Ray was addressing a gathering of Washington Superior Court judges on the subject of prison reform when her press aide, Ray Walters, passed her a note.

A pocket beeper had signaled Walters to call his office, and he learned of the eruption from an Emergency Services staff member. Finishing her speech, the governor conferred privately with Walters before returning to the microphone to field questions.

Ray already had gained a reputation as a colorful and highly controversial governor. She had risen to national prominence during the Nixon administration, when she was named to head the old U.S. Atomic Energy Commission.

"I was appointed because I was a woman," she had told *The Christian Science Monitor* in 1973, "and that's all right with me."

The former director of Seattle's Pacific Science Center and a biology professor for more than 20 years at Washington State University in Pullman, the governor recognized the scientific importance of the eruption and was pleased to announce it to her audience.

Her scientific background often came to the fore in her public appearances. During press briefings, the governor's occasionally abrasive manner toward reporters melted when she was asked science-related questions. Some responses were almost like classroom lectures, complete with examples and analogies.

"I know the chairs you're sitting on are not the softest," she told her prison reform audience, "so don't feel there is any requirement that you ask questions. But I'll be happy to respond to any, including subjects other than what I discussed."

"While you are thinking about that, I might just read you the note that has just been handed to me," she continued. "We have received information that Mount St. Helens has erupted at 12:58 today." A mur-

mur of oohs and aahs rose from the assembled judges.

"The Forest Service has evacuated the Swift Creek Ranger Station," the governor went on. "The information is that a 7,000-foot crack has appeared on the rim of the northeast side. There has been some subsidence into the crater. And I'm sorry to read this last bit of that, because it says that the airspace around the mountain has been closed. I was hoping that on our way home we might take a little detour."

"I've always said, for many years, that I hoped I lived long enough to see one of our volcanoes erupt. Maybe soon I will get a chance. Any questions? Please don't question me about the volcanic activity. I'm a biologist, not a geologist."

The judges had no questions. After thanking them, the governor was driven to an airport in Port Townsend, where she departed by plane for Mount St. Helens. Air closure or not, Dixy Lee Ray would make the detour.

Mike Beard was one of scores of reporters who had flown over the mountain in the past seven days. He was the only one lucky enough to be there around the time it finally happened.

"There's smoke and ashes pouring out of it," he blurted into his microphone. "There is no doubt the eruption is starting. You can see the ash very, very clearly against the snow."

Beard, a reporter for a Portland radio station, KGW, was over the mountain nine minutes after the vent opened with its initial steam explosions and reported vivid details to his listeners.

At their headquarters in Lacey, Emergency Services workers heard about Beard's report and rushed to deny that an eruption had been confirmed. They tried to get through to Portland to find out firsthand what Beard had seen, but telephone lines between the two cities were jammed. They finally called the Oregon Emergency Services Division, their sister agency in Salem, 100 miles south of the mountain, and asked that officials there contact KGW.

Skamania County sheriff's deputies immediately evacuated the Spirit Lake area and persons living around Swift Reservoir in the Lewis River Valley on the southeast flank.

Deputies raced up and down the Spirit Lake Highway, Washington 504, with sirens shrieking and red lights flashing on their patrol cars. Signs announcing the closure of the Spirit Lake Highway were posted on Interstate 5, the north-south freeway 35 miles west of the mountain. Until deputies found out precisely what was happening, they would not let anyone near the mountain.

The lights-and-sirens technique was something that would become familiar to area residents in coming weeks. Evacuation orders were issued whenever mudslides or flooding were thought to be imminent.

Late in the afternoon of March 27, the mountain's snowy summit was disfigured. A blemish of a crater — 1,000 yards long, 120 yards wide and 50 feet deep — puffed steam and old ash, dirtying the summit and the snow around it. Twenty separate cracks and fissures were discovered, 14 within the crater itself. Scientists called it "the primary stage of an ash eruption," and the watchword around Forest Service offices was conservatism.

"We don't want to unjustly panic anybody, but we don't want to give them any undue reassurances, either," said Kurt Austermann, a Forest Service public information officer who was more accustomed to dealing with forest fires than volcanoes.

"Nobody really knows whether it is going to start spitting thunderbolts at Portland or just lay down and go back to sleep." ■



Staff photo by MICHAEL LLOYD

PUFFING IN LATE MARCH — "We don't want to unjustly panic anybody, but we don't want to give them any undue reassurances either."



## The prophet

Up on the mountain the afternoon of March 28, in the Timberline Turnaround parking lot at the end of Washington 504 some 4,000 feet below the summit, 11 clamoring reporters gathered around a U.S. Geological Survey man who could tell them all about it.

David Johnston, 30, of Menlo Park, Calif., had just stepped from a helicopter after circling the summit. Johnston's appearance was somehow neat despite a stubble of beard. He wore a buffalo plaid wool shirt and stocking cap. And he was not as serene about the mountain's potential for danger as some of his superiors seemed to be.

Dwight "Rocky" Crandell, for one, would say again that night that ash and pumice might settle over the countryside like light winter snow, but the real problem would be if mudflows cascaded down the south flank and triggered floods on the Lewis River.

Johnston had seen at least one other active volcano firsthand. He was a member of a climbing party that scaled the 4,304-foot Augustine Volcano — which forms an island near the mouth of icy Cook Inlet southwest of Anchorage, Alaska — after it erupted in 1976.

Collecting gas and rock samples near the summit, Johnston had fallen into a fissure and lost his gas mask. Later on the same trip, his helicopter crash-landed and he and six others spent five days in chilling cold on the Augustine Volcano with only three blankets among them. They were rescued 12 hours before the mountain erupted again.

So when Johnston began his impromptu press briefing in the Timberline Turnaround, he spoke as a man who knew something about volcano dangers.

"Until I saw the steam, I felt it had a 60 percent chance of erupting," he said of

Mount St. Helens. "This is an extremely dangerous place to be. If it were to erupt right now, we would die."

Johnston's comments were interrupted by the sound of cracking ice far upslope, as avalanches — loosened by repeated earthquakes and gathering heat — slipped down the mountainside.

He had the close attention of every reporter in the parking lot as he explained how a *nuee ardente*, a turbulent cloud of volcanic debris so hot it actually would glow, could boil over the lip of the new crater up there and be on top of them within seconds.

A *nuee ardente* — a "glowing cloud," or pyroclastic flow — would move at speeds approaching 100 mph and would scorch the bark off the trees as it came. It would be charged with hot gases and be loaded with enough debris to make it almost fluid, like a river of glowing rocks and ash that would hug the mountainside as it sped downslope.

"We're standing next to a dynamite keg and the fuse is lit," Johnston said while microphones and ballpoint pens recorded his words. "We just don't know how long the fuse is."

"I'm genuinely afraid of it."

Other scientists and public officials would remain more modest in their comments, stressing, as the U.S. Forest Service's Kurt Austermann did, that nobody really knew what would happen next. Scientists were not in the business of deciding which roads to close or who should be evacuated. Government and law enforcement officials were not in the business of predicting what dangers might spring from the Earth.

Many scientists who came to the Northwest during Mount St. Helens' earliest stirrings remembered the 1976 fiasco in the Lesser Antilles. In that same year that David Johnston was in trouble on the Augustine Volcano, a 4,813-foot volcano called La Soufriere, on the French island of Guadeloupe in the Caribbean Sea, had begun to quake and explode with mild eruptions of steam and ash.

French scientists were aware that La Soufriere had a penchant for violence that made it equally as dangerous as 4,430-foot Mount Pelee, which in May 1902 had killed 30,000 persons on the island of Martinique



Staff photo by BRENT WOJAHN

ANN KATZER, a Cougar store owner. Many were "taking it like a joke."

south of Guadeloupe.

Mount Pelee had given ample signs of impending disaster, including a series of violent explosions. Ash and gases suffocated birds and larger animals. Yet the people of Martinique swarmed for safety into the harbor town of St. Pierre, less than six miles southwest of the volcano's summit. The government and the local newspaper, *Les Colonies*, urged them to stay so they might vote in an important election scheduled for a Saturday, May 10. Pelee blew up two days before, at 7:52 a.m. Thursday.

"I saw St. Pierre destroyed," wrote the assistant purser of the *Roraima*, a ship that barely survived destruction in St. Pierre's harbor. "It was blotted out by one great flash of fire. . . . Before the volcano burst, the landings at St. Pierre were crowded

with people. After the explosion, not living being was seen on land." Only man survived — a stevedore imprisoned underground in a stone dungeon.

So in 1976, French scientists who gazed on Guadeloupe had Pelee much on their mind when they gave local officials their prediction about La Soufriere — it could erupt within days and kill thousands. The government took them at their word. Sixty-two thousand people were evacuated from areas around La Soufriere. Those who did not leave voluntarily were forced from their homes.

After 15 days, however, the people returned. There were no catastrophic eruptions, no explosions that would have threatened lives. The mountain did nothing of any consequence for three years, and in 1979 was classified once again as dormant.

But Haroun Tazieff, who as director of the Global Physics Institute's volcanology service in Paris was one of the world's foremost volcano experts, wound up losing his job in the dispute that followed. Tazieff had insisted from the start that La Soufriere would not blow up and had left Guadeloupe before his superiors thought he should have.

In the minds of many scientists who came to Mount St. Helens, La Soufriere only underscored their ignorance of volcanoes. And it reminded them how risky the business of predicting eruptions could be.

On the morning of March 28, the same day Johnston expressed his fear of Mount St. Helens, sightseers already were streaming around the roadblocks and eastward down the river valleys to get a look at the volcano from closer vantage points. Deputies tried to maintain an absolute seal on the danger area, but it was pointless. Eight thousand miles of trails and logging roads was too much to handle.

"No trouble with Toutle River. Change of color of water," read the Emergency Services operations log for March 28. "Main problem is with tourists. She has stopped trying to keep people out. (Washington) 504 closed at I-5, but getting through on back logging roads."

Running the roadblocks already was a game. An enterprising group of locals with an intimate knowledge of the region and a back roads would begin selling maps and showed tourists how to slip in. Loggers would pick up extra money as guides. People who had grown up with a daily view of Mount St. Helens and who considered the changeless neighbor were puzzled by the excitement.

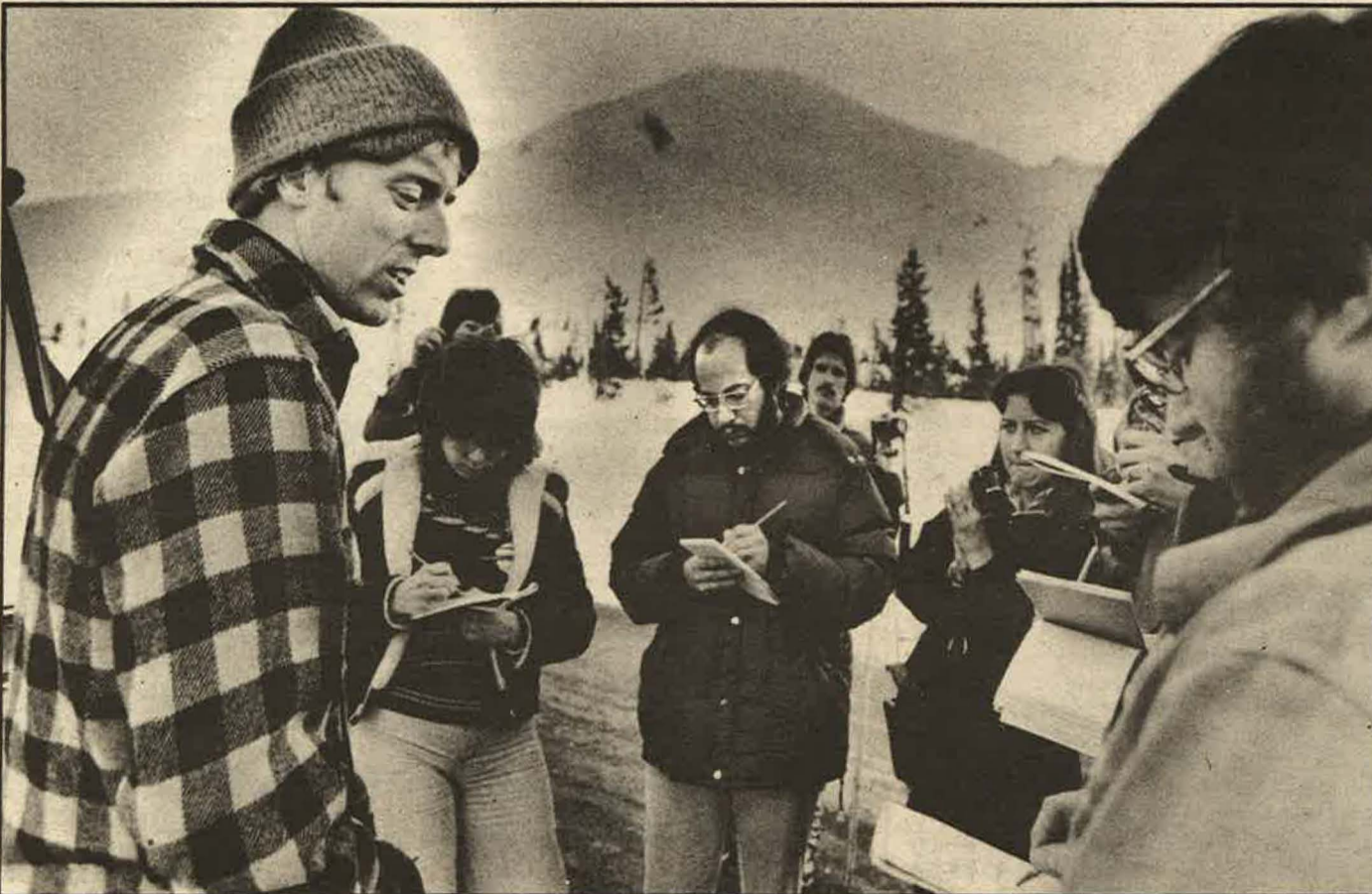
"This could go on for years," said Dunkle, who was working the graveyard shift at Weyerhaeuser's Camp Baker, 17 miles west of the summit. "I was worried what can, will and may happen. We'd all be raving maniacs."

"As far as we can see on this side of the mountain, it still looks like a big scoop of ice cream," remarked Lois Livingston, a night manager at the Cougar General Store 12 miles southwest of the summit. "People around here are taking it like a joke."

Most geologists now were calling the mountain dangerous, but they usually considered that volcanic activity so far was relatively minor. Small mudflows occasionally washed down the slopes — sometimes two or three miles — but were doing any real damage.

On March 30, geologists took advantage of a stroke of luck. Oregon's Army National Guard, stationed in Salem, was only two such units in the United States to be equipped with Mohawk OV-10A reconnaissance planes.

Assigned to the 1042nd Military Intelligence Company — Airplane Surveillance — the planes were designed to talk



Staff photo by DONALD WILSON

DAVID JOHNSTON, March 28: "This is an extremely dangerous place to be. If it were to erupt right now, we would die."





Staff photo by BRENT WOJAHN

COMING ALIVE — By moonlight Friday, March 28, Mount St. Helens sends up its first major plume.

resolution aerial photographs, as well as infrared images and radar photographs, that could use radio waves to pierce cloud cover and produce razor-sharp images of the mountain. The first mission that was flown found the area around the crater to be so hot that the infrared line scanner aboard the aircraft went to the top of the scale. That meant temperatures of at least 2,000 degrees Fahrenheit.

Within a week of the first eruption, the eastern half of the mountain was filthy with ash. But it had grown calmer, and only occasionally did the crater vent steam and ash. The Washington Department of Natural Resources began to urge that it be allowed to send a 10-man tree-planting crew into an area south of the volcano, just above Yale Lake. It wanted to reforest a logged-over ridge, but the request was tabled by Emergency Services.

Early on, Emergency Services operations manager Rick Lavalla, Cowlitz County Sheriff Les Nelson and Skamania County Sheriff Bill Closner had talked about closing off broad areas all around the mountain. Besides the tourist problem and the campers and summer cabin owners who would return to the high country soon, there was a chance the eruption would entice even more mountaineers to the slopes of Mount St. Helens than the peak usually attracted — which was a lot.

The summer before, some 7,700 climbers had registered to give it a try, and probably there were other hundreds who did so without signing up beforehand. The two sheriffs thought climbers might see it as a once-in-a-lifetime opportunity to scale an active volcano. Nelson and Closner checked with the prosecuting attorneys of their respective counties to see whether ordinances could be passed to deny public access. They could not. Only Gov. Dixy Lee Ray had that kind of authority.

Preparing for a long siege, the Forest Service on April 1 sent moving vans to clear out its ranger stations at Spirit Lake north of the volcano and at Pine Creek on the southeast side. Earlier in the day, Norman Rasmussen, a University of Washington seismologist, called Emergency Services to make a report that was filed in the agency's log:

"Smaller quakes have been decreasing. Large quakes are the same rate and with the magnitude in the 4.5 range. NOTE: The quakes are moving toward the south." A note was scrawled in the margin beside the next entry: "Don't release this."

That entry read: "Norm says this is only a guess, but what the above could mean is that it is much larger than previously anticipated. (Not for public release)."

That same day, the U.S. Geological Survey would issue a statement describing the mountain's recent activities.

"The present level of activity presents virtually no danger to the lives or health of people in areas more than 20 miles north, east and south of the volcano or more than 10 miles west of the volcano," its press release said. It did note that molten rock could be erupted "perhaps within the next few days or weeks." But a final paragraph of the draft release had been crossed out before being logged in the files at Emergency Services:

"Geologists are now carefully watching the volcano to detect advance signs of an eruption of molten rock, but there is no certainty that such signs will appear and be recognized before such an eruption begins."

On April 2, Ray announced formation of a Mount St. Helens Watch Group — a committee that would prepare the state for a major eruption and deal with the more immediate problems of crowd control and interagency coordination. The Watch Group, composed of the heads of eight state agencies, held its first meeting the following day.

The governor subsequently signed her April 3 Mount St. Helens Proclamation, declaring a state of emergency throughout Washington. Issued primarily so the Washington National Guard could be called upon for help with the roadblocks, it said in part:

"Volcanic activity at Mount St. Helens has created conditions that may threaten life and may result in widespread damage or destruction to private and public property in the state of Washington. The possibility exists that rapid evacuation of all people in the affected political subdivisions may become necessary.

"Since the severity and magnitude of the potential damage or destruction, should that occur, and the attendant need for rapid evacuation would be beyond the capabilities of affected political subdivisions, I find that an emergency affecting life, health, and property exists within the state of Washington." It was the first clear sign that state government would take the lead in dealing with the volcano.

But right away there was dissent among major state agencies about who was in charge. Under Washington law, Emergency Services had the overriding authority, but some other state officials had little respect for the tiny agency and did not hide their feelings.

Emergency Services Director Edward Chow Jr. went with a friendly agency head to talk to the governor about it. When he described the bickering, she slammed her fist on a table.

"I'll back you all the way," she told Chow. "You're in charge." She insisted on knowing who was trying to question his authority, but Chow asked instead that he be allowed to handle the problem on a personal basis. The governor agreed.

As Chow left the meeting, he turned to the friend who had sat through the session with him.

"How do you interpret what she said?" Chow asked.

"Well," said the friend, "I guess that

means I call you 'Sir.'"

*Despite the early explosions and the clouds of steam and ash that trailed from its summit, none of the magma pooling below the mountain had been released. The first crater was opened indirectly on March 27. The intense and rising heat had caused groundwater to flash to steam and break through the overlying rock. The mountain's undetected swelling continued, as did the rhythmic patterns caused by the movement of more magma from deep within the Earth into the bowels of the mountain.*

"There are volcanoes in other countries we are familiar with and we are trying to extrapolate from their experience," Geological Survey geologist Bob Christiansen said that April 3 afternoon. "It's a problem of not having direct experience with comparable volcanoes. . . . We are indeed hampered by the lack of experience."

That night the mountain suddenly seemed more sinister. Geological Survey officials announced for the first time that they had detected evidence two days before of harmonic tremors — smooth sine waves on seismograph charts that probably meant molten rock was migrating toward the surface. The tremors had started at 7:27 p.m. April 1 and lasted only three minutes, but they were a bad sign. ■



Staff photo by BRENT WOJAHN

EXODUS — A convoy of vans moves the Forest Service out on April 1.



Drawing by a Cowlitz County sheriff's deputy

NOBODY who could see, walk or drive had any problem getting around the roadblocks on the Spirit Lake Highway.



## The barricades

**N**obody who could see, walk or drive had any problem getting around the roadblocks on the Spirit Lake Highway, Washington 504.

From the outset, it was the most popular entry route for volcano-watchers, though there were similar barricades, similarly ignored, on Washington 503 southwest of the mountain and on some of the major U.S. Forest Service roads.

The Spirit Lake Highway wound along the Toutle River's North Fork, with logging and Forest Service roads branching away from it in all directions. In a period of 35 days between March 27 and April 30, the barricades would bounce up and down the valley among five different locations as officials sought to keep at least some of the people out. None of it worked.

During the first week in April, Brad Backstrom, 26, a bus driver for the Mukilteo School District, west of Everett, found a way that was as good as any to avoid the roadblocks.

He went to a service station in the town of Toutle and asked an attendant how he could get within "decent picture-taking distance" of Mount St. Helens. The attendant pointed out a nearby store where free Sportsman's Maps were being distributed. They showed in some detail the intricate maze of Weyerhaeuser Co. logging roads on the west side of the volcano.

"Welcome to our lands!" read an inscription on Backstrom's copy. Weyerhaeuser, which helped prepare and distribute

the maps, took pride in its reputation for opening its logging properties to the enjoyment of campers and sportsmen.

The service station man showed Backstrom several routes leading to choice viewpoints behind the roadblocks, then a Washington State Patrol responsibility. Backstrom chose one that led to the top of a 4,640-foot hill called Spud Mountain, two miles south of the Spirit Lake Highway and barely more than seven miles northwest of Mount St. Helens.

When Backstrom went around the early roadblocks, he was well within his rights. State Patrol Capt. Richard Bullock would recall weeks later that although his troopers had established barricades on Washington 504, they had no authority to enforce the road closures. Anyone who wanted to get around the barricades badly enough to press the point with Bullock's troopers was let through.

Both the highway and the area behind the barricades were legally open to the public until April 30. After that date, Backstrom avoided the problem entirely by turning off the Spirit Lake Highway onto logging roads before he reached the roadblocks. That was entirely legal as well. The pavement beyond the roadblock was closed, but the area on either side of it was not.

When Backstrom returned from his first trip to Spud Mountain and had his film developed, he showed prints to friends at work. His pictures of the steaming volcano were an immediate hit. Backstrom began to sell them. One man bought some and returned later with \$300 from other people who wanted copies.

"People were buying them like crazy," Backstrom said. "It was something I never expected. People would buy 20 or 30 at a time. I found myself in a money-making situation."

When Backstrom's friend Don Selby learned of the money to be had, he bought a secondhand Pentax 35mm camera, complete with telephoto lens, in preparation for joining Backstrom on the forays to Spud Mountain. Selby, 48, of Everett, wanted to get the first pictures of a lava eruption. An

unemployed millwright, Selby had worked at several jobs and recently had occupied his time writing a book about the possibility of life on other planets.

"We were aware of the roadblock," Backstrom said. "I heard the governor say, you know, keep away from there. But you know they had loggers in there. They were planting trees right near where we were. People were fishing in there. When you see that, you just don't think it would be dangerous."

The earliest roadblocks, manned by sheriff's deputies, were where the Spirit Lake Highway crossed the Cowlitz-Skamaniamania county line, slightly more than five miles west of the volcano's summit. Later ones, staffed with help from State Patrol troopers and Washington National Guard troops, ranged northwestward for a distance of 26 miles before they started to creep back toward the volcano — ending at a point 11 miles from the summit.

Skamania and Cowlitz counties quickly drained their small overtime budgets trying to maintain the barricades, and routine law enforcement duties suffered as well because the checkpoints had to be manned around the clock if they were to be even marginally effective. And even the State Patrol's help during the early days was not enough. Something more was needed.

Within the first few days, county officials had started talking to the Department of Emergency Services about bringing in the National Guard. Edward Chow Jr., Emergency Services director, drafted a sample request the counties could submit to the governor's office. Skamania County's went like this:

"Due to the increased number of people seeking entry into areas of Skamania County made dangerous by the volcanic eruption of Mt. St. Helens and the limited manpower abilities of the Skamania County Sheriff's Department, Skamania County does hereby request that the Honorable Dixy Lee Ray, Governor of the State of Washington, activate the state National Guard to immediately provide the following assistance to Ska-

mania County. . . "

Both counties would file such requests, leading to the governor's declaration April 3 of a state of emergency.

Her declaration did make possible the later use of National Guard troops, but a call-up order had not been issued. Under Washington law, that was the governor's responsibility, too. But it was State Patrol Chief Robert Landon who actually called in the Guard. Ray learned about it while watching a television news program the evening of April 4. Landon had made the request directly to Guard officials.

An hour after the news broadcast, Brig. Gen. George E. Coates, Washington's assistant adjutant general, notified Emergency Services that his troops were being summoned to duty — not in a formal call-up, but on a volunteer basis. Sixty-six members of the 146th Battalion of the Army National Guard, in full battle dress and carrying M-16 rifles, would start pacing the roadblocks at 6 a.m. Saturday, April 5. They would be posted to barricades on the Spirit Lake Highway and on Washington 503 and the Wind River Road south of the mountain.

Because of the governor's embarrassment at learning from television about the Guard's involvement, Emergency Services officials decided their agency would be the sole outlet for information released to the public about the volcano. Emergency Services would handle the responsibility poorly, proving sluggish in providing information and, in some instances, serving as a state censor.

On the same Friday in April that his chief sought National Guard help, Bullock, the State Patrol's Southwest Washington district commander, ordered the Spirit Lake Highway roadblock moved from a point four miles above Camp Baker and some 13.5 miles from the summit to a new location that was 26 miles northwest of the mountain. That was where it would be when the Guard came in.

Bullock thought this new location, at Washington 504's intersection with Washington 505, was the "most logical choice" because it would give tourists access to several scenic viewpoints along the highway while denying easy entry to logging roads. But Bullock's more distant location would last for only 15 days while pressures built up to move the barricades closer again.

They would be moved up three miles to Maple Flats, east of the hamlet of Kid Valley, on April 19. That was still 23 miles from the volcano. On April 30, however, they were put in place about 6.5 miles above Weyerhaeuser's Camp Baker and only 11 miles from the mountain. There they would stay until May 18.

Months later, Sgt. C.W. "Wick" Elder, the State Patrol's station supervisor, would remember that he thought the last choice of location was both "uncomfortable" and unsafe. But it was now a State Patrol responsibility again after the Guard's withdrawal on April 20.

On Bullock's orders, his troopers initially were assigned to man a locked gate there throughout the daylight hours. Within just a few days, however, that scheme was abandoned in favor of the troopers' making regular daylight checks. Finally they were told to make two checks a day — one at dawn and one at dusk.

Bullock made the changes because he felt there was little his troopers could do to prevent sightseers from circumventing the road closure. Elder did not know the reasons for the decision but supported it.

"As far as I was concerned," he would recall, "what we were doing was safety. We were getting my (troopers) out of there. . . . As far as I was concerned that was the safest thing that could happen to my people." But Elder did not communicate his concern about the location to his superi-

ors. It was not his place to question orders.

By mid-April, Don Selby and Brad Backstrom had made their first trip around the barricades together to Spud Mountain for pictures, but had to turn back because of overcast skies that blocked their view of the summit.

In discussing the hazards they might face, the two men decided the worst would be ashfalls or flooding. Either should be manageable as long as they stayed at higher elevations. Although they were circumventing the roadblocks, they thought their precautions were well-reasoned and prudent. Selby bought an Army surplus gas mask and rigged it with an oxygen canister to combat any breathing problems.

In the upper Green River Valley beyond Norway Pass, Don and Jay Parker, their friend Martin Remen and an assortment of friends and relatives had begun to work their Black Rock Mine in earnest.

An assay report on ore samples taken from the claim showed mineable quantities of copper, and some of them had begun to believe they would make a fortune. Their only barricades had been bureaucratic.

After nearly two years of studying environmental impact, the Forest Service finally approved the venture. The miners neatly skirted one last obstacle — denial of their request to build a spur road to the Black Rock — by deciding to haul supplies and ore on a big sled, before the late spring snow melt.

Remen led the first supply trip at the controls of his 35-year-old D-7 Caterpillar tractor, starting on April 8 to drag a sled laden with lumber, a dynamite magazine and a pneumatic drill compressor over snowpack that was more than seven feet deep. The arduous trip across nine miles of snow lasted three full days.

"It's either us or the mountain," Remen told his grandson, Tim Grose, 21, of Longview. Grose would put it all down on lined writing paper. He was keeping a diary.

The supply trip was plagued by mechanical failures and a cold, slushlike rain. On April 10, Rick Parker suffered a painful, 3-inch gash in one knee when it was caught in the flywheel of a snowmobile. He had to be evacuated. But the miners stubbornly pressed on. They built an A-frame shack on their claim and bulldozed a steep road over a treacherous slope of pumice to their new mine entrance, about 100 feet below the old shaft.

In his diary, Grose wrote of hitting a "big beautiful copper lead. I have been getting so pumped about finally getting rich that I can hardly sleep at night dreaming about the fun and exciting places I will be able to go and do."

The mountain continued to swell as its

hidden magma chamber expanded, slowly raising the north flank and building up pressure for a cataclysmic burst of energy that would wreck the countryside. Already there had been many hundreds of earthquakes. Gases trapped in the magma were slowly venting, but far too slowly to release the mounting pressure. Dartmouth College researchers discovered that the volumes of sulfur dioxide and carbon dioxide gases that were being released from inside the mountain were too small — a sign that magma was trapped and looking for a way to burst out. A bulge near Goat Rocks was barely visible now, if only someone had been looking for it.

Despite the volcano's outward calm during the month of April, there was growing alarm among loggers who worked around it, coupled with steady pressures from government and private interests to make certain they kept working.

On April 4 — the day after the governor proclaimed the state of emergency to permit National Guard help on the roadblocks — John DeMeyer called Department of Emergency Services headquarters in Lacey. He was disturbed about the apparent closure of state forests that resulted from the manned barricades.

DeMeyer was southwest regional director for the Washington Department of Natural Resources, and it was his job to see that state-owned timber was harvested. Since 1889, the proceeds of state timber sales had been distributed to local school districts to help pay construction costs.

Timber sales had meant \$175 million to public education in Washington the year before. DeMeyer suggested that Emergency Services consider the coming summer's \$86 million timber harvest and what its loss might mean to Washington school districts that were counting on the money.

"We were anxious to continue to harvest timber," State Land Commissioner Bert Cole, DeMeyer's boss, would say weeks later. "We were concerned about the safety of lives, too. But we had timber sales going on in there that had to be taken care of."

Cole said neither his agency nor private timber harvesters like the Weyerhaeuser Co. believed the volcanic hazard analyses in April. They wanted to keep on working to bring out timber.

Jim Pluard's Weyerhaeuser crew was one of those that protested, though their complaints did not go outside the company. His men's excitement about the first venting on March 27 began to sour when they learned they would be working that spring on high stands of old-growth timber. And Weyerhaeuser did not plan to alter its heavy spring work schedule to suit unpredictable Mount St. Helens.



Staff photo by DONALD WILSON

CHECKPOINT — A National Guardsman, new on the scene April 5, lends muscle to Gov. Dixy Lee Ray's declaration of a state of emergency.

Snow in the higher elevations was quickly disappearing, and traditionally the months between May and October were the best for harvesting the rich timber that carpeted the jagged ridges and valleys close to the peak.

"Our judgments, our locations and decisions about where to operate were based upon data and judgments from (the U.S. Geological Survey)," John Wilkinson, a Weyerhaeuser vice president and manager of its Southwest Washington region, would say later. "And then we observed the lines that were drawn by the state."

Jack Wolfe, Weyerhaeuser's Tacoma-based vice president for land and timber management, said he "felt the (volcanic hazard) information we were getting was overstated..."

"People who work in the woods are used to dealing with a wide range of natural phenomena," Wolfe said. "I'm sure that most of these people assumed that if there was a catastrophe, they would deal with it. To them, it was 'So what's the big deal?'"

But shortly after the mountain's early venting, loggers began telephoning the Washington Department of Industry and Development to complain that they were being asked to work in areas near the mountain that were considered too dangerous for use by the general public. The calls, averaging about three per day, were referred to Les Ludwig, senior safety inspector in Longview for the department's Division of Industrial Safety and Health.

Most callers were Weyerhaeuser loggers — Pluard's men were not among them

— who asked Ludwig to prevent the company from sending crews into areas behind the roadblocks where the public was being advised not to go for safety reasons. Ludwig called several logging companies working the high country and asked them to file summaries of any precautions they had taken to assure their crews' safety and evacuation in the face of danger.

Ludwig said the summaries — including one from Weyerhaeuser containing an evacuation plan — were submitted in early April. Weyerhaeuser's plan was developed by April 9. It said the company would "insure communications" to crew foremen in case of emergency.

It referred to a "contingency travel plan" that would apply to logging crews' places of work, including "safe routes" for departure from work sites and "prior identified routes" by which the crews could reach high ground above possible flooding.

"Possible threats are greatest next to mountains and in the river bottoms," the document said. "Specific response actions should be away from these areas. All operations have 'up-hill' available routes."

Ludwig would say after the May 18 eruption that he considered the submissions voluntary and adequate and that he felt he had no authority to require additional steps.

"It wasn't my jurisdiction," Ludwig explained. "You don't go in and tell a company like Weyerhaeuser not to go in and work. They could have been in there for months and nothing could have happened. Then they would have come back to us with a bad taste in their mouth."

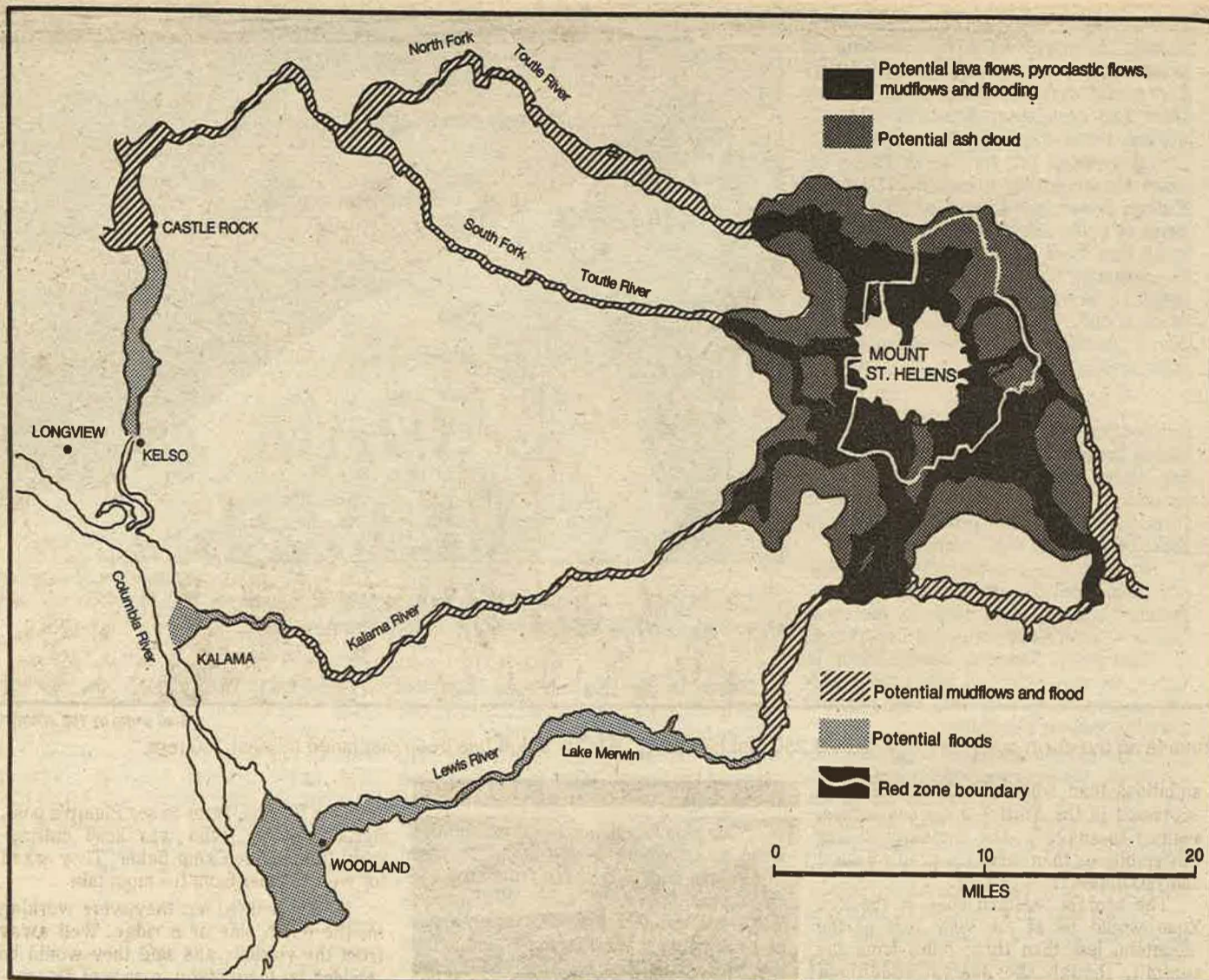
Ludwig contended that he "recognized the voices" of some loggers who complained. "I thought that most of the complaints were from people who wanted a way to get out of work," he said. "Frankly, I thought they were out to get unemployment (compensation). Now, I wouldn't want this to get out in the press, but that's what I thought."

It was in this kind of atmosphere — compounded by lack of a comprehensive disaster plan and the relative timidity of scientists who were asked for advice on where to draw the safety lines — that a formal Red Zone would be defined around the mountain and be declared off-limits by the governor. It would replace the Forest Service administrative closure of March 25 that applied only to the slopes above timberline. Virtually all Weyerhaeuser and state land would be outside the new Red Zone, and special Blue Zones would be created to permit continued logging.



Staff photo by BRENT WOJAHN

EARLY ROADBLOCK — The unmanned barrier on the Cowlitz county line.



Map by staff artist PAT McLELLAND

**THE ZONE** — Although it was thought in March and early April that the area of greatest hazard was south and west of the mountain, the government-established Red Zone (outlined in white) was smaller than the zones of potential danger

identified by scientists. "We showed that ash deposits had been three feet thick up to 20 miles north of the mountain," Geological Survey scientist Dwight Crandell said. "They chose to ignore that. I'm not sure why."



## The zone

**T**hroughout the weeks of April and early May, officials responsible for dealing with Mount St. Helens became increasingly schizophrenic about its potential danger to human life.

That was one reason it took a full month for Gov. Dixy Lee Ray to establish, by executive order, a Red Zone defining the area of greatest danger and raising for the first time a possibility of fines and jail sentences for those who ignored the roadblocks.

The need for stiff measures to keep the public away from the volcano was recognized as early as March 31, when the Department of Emergency Services announced that road closures would be in effect until further notice.

"If people were allowed beyond the road closures," its announcement said, "it would be logistically impossible to notify them to evacuate in time to leave the area. . . . The public must try to realize at this time that there is no way to predict what specific events [a euphemism for volcanic activity] will occur on the mountain or their timing."

Yet a press conference was held the following day, April 1, at which officials said, "The present level of activity probably presents no danger to the lives or

health of people more than 20 miles north, east and south of the volcano or more than 10 miles west of the volcano." West was where most of the people and most of the access roads were.

The scientific waffling would continue. A joint statement from the U.S. Forest Service and U.S. Geological Survey a week later, on April 8, described Mount St. Helens as being in a "constant mode of activity," but added that "all these observations imply that there is no indication that a major eruption of molten rock will occur in the near future."

Donal R. Mullineaux, one of the Geological Survey's two most knowledgeable experts, announced that there was enough sophisticated equipment in place on April 8 for scientists to give warning of any major eruption.

Scientists said the volcano could continue its pattern of earthquakes and mild eruptions for decades. They were beginning to relax a bit and so was the public. After all, the last eruptive interlude of more than a century ago had lasted 15 years. In the valleys west of Mount St. Helens, postcards, T-shirts, vials of volcanic ash and bumper stickers were all the rage. Sightseers with cameras, binoculars and telescopes crowded hills and ridgelines waiting for the big one.

But some county officials still feared the worst. Frustrated by the studied vagueness of Geological Survey and Forest Service announcements, Cowlitz County Sheriff Les Nelson would complain that "trying to pin those people down is like trying to corner a rat in a roundhouse."

To the men and women staffing the roadblocks and seeing a steadily growing throng of tourists go by from across the nation and around the world, there was more danger than they cared to think about. They wanted a clearly identified

danger zone extending around the mountain for 20 miles in all directions. They would not get anything like it.

Added impetus for closing off the mountain came on April 24, when officials acknowledged the existence of an ominous bulge that had appeared high on the north slope in the area of the old lava plug known as Goat Rocks. It was not mentioned in the scientific report issued only the day before, but apparently it had been there since late March.

"Instrumental recording of tilt of the ground surface showed small erratic changes that did not define a coherent pattern of surface deformation of the volcano as a whole," said the Geological Survey's April 23 report. Next morning the agency had changed its mind:

"Photogrammetric measurements made from recently taken vertical aerial photographs of the mountain show that its north flank underwent *large bodily displacements at about the time of the first eruptive activity in late March,*" [emphasis added] said the April 24 report.

"A pinnacle on the north crater rim now stands 250 feet higher than did the corresponding point before the first eruption . . . a large bulge at the head of the Forsyth, Leschi and Loowit Glaciers has been displaced at least 300 feet upwards or outwards (or both) from its former position." The glaciers lay just east of Goat Rocks.

Scientists now called the bulge the biggest threat so far to human safety, saying it might slump to the north base of the mountain, displace the water in Spirit Lake and cause massive flooding down the North Fork of the Toutle. Some Geological Survey scientists, like Bob Christiansen, believed it was inconceivable that the whole, mile-wide slab could break loose. But others were not so sure.

"It would be a pretty extreme scenario," said David Johnston, the geologist who had held the parking lot press briefing in the Timberline Turnaround a month earlier. "But it could happen — in which case I wouldn't want to own a house up there." Johnston said there was a strong possibility the bulge meant molten rock had gathered below the surface and might erupt as lava.

The Red Zone grew out of a series of meetings the Forest Service held in Vancouver, starting with its emergency session of March 26. Among those present were representatives of the Forest Service, Geological Survey, sheriff's offices, Emergency Services and the governor's office. So were people representing private interests, such as the Weyerhaeuser Co., International Paper Co. and Pacific Power & Light Co. International Paper was logging east of the mountain on land owned by Burlington Northern Inc., and Pacific Power & Light operated the reservoirs on the south side.

The meetings continued throughout April, but most records of the proceedings have vanished in the months since, according to Ed Osmond, the Forest Service disaster coordinator who last had them in his possession. Osmond said that only notes had been taken at the March 26 meeting, and that no detailed record had been made of any other. What records he did have were misplaced, Osmond said.

In fact Maggi Courville, a Forest Service stenographer, made a verbatim transcript of the March 26 session from tape recordings. Minutes were taken at a half-dozen others by Penny Hiatt, secretary to Gifford Pinchot National Forest Supervisor Robert Tokarczyk. Ms. Hiatt and a Forest Service file clerk said all records of volcano-related meetings before May 20 were gone from the central filing system. Tokarczyk said his secretary had spent "over 30 hours" trying to find them.

Cowlitz County Deputy Ben Bena recalls that Weyerhaeuser officials and representatives of the Washington Department of Fish and Wildlife argued at some meetings against a restrictive closure zone, saying it would affect not only timber harvest but also fishing and hunting access to the country west of the mountain.

Leonard Bacon, a public relations man for Pacific Power & Light, remembers that Weyerhaeuser and International Paper wanted to make certain the zone infringed on neither their property rights nor their ability to keep logging. He said the zone map was drafted by Osmond in early April and was not modified significantly during subsequent meetings.

Jack Wolfe, Weyerhaeuser's vice president for land and timber management in Tacoma, said company headquarters was not involved in the discussions leading to creation of the danger zones. The talks were left to officials at the Longview office.

Jack Schoening, woods manager for Weyerhaeuser's Longview-based logging camps west of the mountain, said he and other company officials "obviously were expressing our opinion" at the meetings. He explained that Weyerhaeuser's principal concern was controlling public access to company land, since the loggers who worked it were equipped to deal with emergencies.

"They had two-way radios . . . and vehicles that were suited for driving on woods roads," he said. Moreover, Schoening said, the loggers knew both the road system and the country, "as opposed to someone from Minnesota pulling a house trailer with a '62 Lincoln sedan."

Yet Dwight "Rocky" Crandell, of the Geological Survey, warned both government and industry officials that mudflows and pyroclastic materials could spread as far as the confluence of the Cowlitz and Columbia rivers, near Longview 35 miles west of the mountain. At the April 1 press conference, officials had said people would



Staff photo by TIM JEWETT

STILL GROWING IN LATE APRIL — "A pinnacle on the north crater rim now stands 250 feet higher . . . a large bulge has been displaced at least 300 feet."

be safe beyond 10 miles west. Crandell's own assessment was that the danger could extend 25 miles farther, with mudflows and pyroclastics conceivably running down both forks of the Toutle.

Crandell would recall that his meetings with Forest Service officials and others dealt not only with volcano hazards, but also with timber harvest considerations, political subdivision boundaries "and, of course, people who wanted the zone to extend as far out as possible, as long as it didn't include their land. That's human nature, isn't it?"

Crandell said he drew hazard maps to show the paths of potential mudflows and pyroclastics. Although Crandell was not directly consulted by the state, he said those same maps were available to state officials later when they drew their own danger zone map.

"We also showed that in the past, ash deposits had been three feet thick up to 20 miles north of the mountain," Crandell said. "I know of cases where people have survived ashfalls of one foot, but if we had three feet accumulate over a period of 24 or 48 hours, I think that would seriously endanger people. . . . They chose to ignore that. I'm not sure why."

"We just advised them where the hazards were," Crandell said. "We didn't draw the restricted areas. That's a local decision and not our function. In retrospect, though, it would have been nice if the boundaries had been larger and the roadblocks more people-proof."

Both the Forest Service and Les Nelson, the Cowlitz County sheriff, requested on April 29 that a formal Red Zone be declared by the state. Nelson's appeal, made in a letter to Emergency Services, was an emotional one:

"Having watched the progressive deterioration of stability on Mt. St. Helens through daily reports and meetings," he wrote, "I am convinced in my own mind the situation has progressed from dangerous to the point of imminent peril on the north slope. . . . A proclamation from Governor Ray is respectfully requested and urged to close the area for the protection of lives." It was time to quit chasing the rat and do something.

In the end, the governor's April 30 Red Zone declaration — based on Forest Service advice — was much less ambitious than the 20-mile radius law enforcement people like Nelson had in mind. It was less

ambitious than what scientific opinion, as expressed in the April 1 press conference, seemed to suggest. And certainly it was less ambitious than what Crandell's hazard analysis appeared to call for.

The nearest western edge of the Red Zone would be at the very foot of the mountain, less than three miles from the summit, though the nearest roadblock would be another eight miles west of that. The farthest western edge was only 3.6 miles from the summit — about 1,000 yards west of the volcano's base — where the Skamania-Cowlitz county line ran through Sheep Canyon. That line also defined the boundary between Gifford Pinchot National Forest on the east and private timberland owned by Weyerhaeuser on the west.

The northernmost point was west of Grizzly Lake, only two miles beyond the eastern arm of Spirit Lake and less than 14 miles from the summit. On the east, the Red Zone boundary went a mile past Smith Creek Butte, or eight miles from the summit. The southernmost point was near Ape Cave, less than six miles from the summit. The southern boundary did not enclose the area around and below Swift Reservoir, which many scientists had identified from the outset as a major flooding threat.

The governor and the Forest Service on April 30 also declared custom-made Blue Zones to permit continued logging in the shadow of the mountain. The Blue Zones would be open to loggers during daylight hours and to property owners who obtained special permits. The governor's declaration further included a provision for fines of up to \$500 and jail sentences of up to six months for violations of the zone system.

Red Zone boundaries ran along the tops of ridges where the Black Rock Mine owners and Jim Pluard's Weyerhaeuser logging crew were working. Unaware of the new boundary, the miners on April 30 detonated their first 11-stick dynamite charge to open a new mine shaft and began breaking up the rubble with a jackhammer.

In the Toutle River Valley west of them, the gate across the Spirit Lake Highway was moved forward to its final location, 11 miles from the summit, where it would remain until May 18. By April 30, too, loggers who thought they were working too close already had complained, and scores of roadblock-runners like Brad Backstrom and Don Selby already had tested circuitous routes for getting as close as they dared. ■



## The lull

In the drizzly days of early May, Mount St. Helens' importance as a newsmaker was starting to fade. It was no longer a guaranteed chiller on the front page or the eyewitness news, no longer a hair-raising tale of imminent death and destruction. People were bored with that.

It became a chronicle of plucky Harry Truman, a bourbon-and-Coke drinker of some repute and, at 84, a rugged individualist who defied authorities and refused to leave his home at Mt. St. Helens Lodge on Spirit Lake, even though earthquakes occasionally knocked him out of bed.

It was the continuing saga of Dinky the Cat, a tom that ran up a tree during the first eruption on March 27 and refused to come down. Dinky eventually died, apparently a victim of feline psychosis. The New York General Desk of The Associated Press, which calls itself the world's largest news-gathering organization, requested Dinky's obituary and carried it on its national news wires.

But despite the volcano's lighter touches, many loggers on the mountain clearly were troubled. On April 28, only two days before Gov. Dixy Lee Ray established the formal Red Zone, Jim Pluard's Weyerhaeuser Co. crew was told to start work on a tract of storm-damaged timber on a ridge above South Coldwater Creek, less than six miles north of the summit. The assignment was strongly opposed by most of Pluard's men.

When they reached the job site, the loggers found drifts of snow still dotting the landscape. They were covered with an odd layer of coal-black material that the loggers determined was volcanic ash — something they had not been expecting to see in such quantity. Pluard heard their complaints without sympathy. Next day three of the eight men, Jack Gillen, Keith Hall

and Don Vernon, went to see Pluard's boss, Gordon McVey, who was head cutting-crew foreman at Camp Baker. They asked for work farther from the mountain.

McVey pointed out they were working on the north side of a ridge, well away from the volcano, and said they would be shielded by topography in case of an eruption. They could take a leave without pay if they thought the location was unsafe, but McVey refused to change the assignment.

"The job is up there if you want it," he said.

The men did not press the matter. When the governor subsequently established the Red Zone, Pluard's men discovered the boundary ran along the top of the very ridge they were working. Even then they stayed on the job.

"We were working close," logger Louis Fanony said. "It was in an area where we shouldn't have been — there's no question about that."

"We were all shaky-legged about it. But it was a job, and I guess we took a long shot along with the rest of them. I didn't like it up there. We just took a long shot and tried to make a dollar."

Weyerhaeuser Vice President John Wilkinson would say months later that he was "surprised" by the Red Zone boundary because "it seemed to follow (Weyerhaeuser) property lines." But he denied that Weyerhaeuser had anything to do with drafting it.

On May 1, the U.S. Geological Survey stationed a small, white trailer on top of the ridge where Pluard's crew worked. Harry Glicken, 22, a scientist from the agency's office in Menlo Park, Calif., used the trailer from which to monitor the mountain and to take laser measurements of the bulge near Goat Rocks. His view from the trailer was virtually unobstructed.

On May 9, Pluard's men had just begun their 11 a.m. lunch break inside their yellow crew bus, parked near the work site, when the floor began to move. Instead of rocking side to side as the bus often did when its engine was running, it seemed to rock forward and back, like a ship plowing through a heavy sea.

Up on the ridgetop, Glicken also took notice. In his log he wrote a brief description: "11:06 a.m. Relatively strong quake felt. Rolling motion of trailer with some shaking of dishes, approximately five seconds duration. Jumped outside, heard a roar fading away in approximately 30 seconds."

A roar punctuated by muffled reports."

Pluard's crew now planned an escape route onto high ground farther north in case of a major eruption. They thought the company's advice — to return to Camp Baker if an eruption occurred — was unwise. Glicken liked the escape plan when the loggers explained it to him, but said they should not be afraid.

"We thought the one danger at the site would be an ash cloud surge associated with a pyroclastic flow," Glicken said. "In other words, hot ash and gas that comes off the top of a pyroclastic flow. But we thought the chances of that were pretty slim."

Another sentinel in the high country in early May was Gerry Martin, a retired U.S. Navy chief warrant officer and ham radio operator from Concrete, Wash.

Martin had moved his mobile home into camp April 11 on a ridge just south of Davisson Lake, also known as Riffe Lake. He stayed through May 4. From that vantage point, 18 miles north of the mountain, he served as a volcano monitor for Portland State University. He had borrowed a set of high-powered, night-vision binoculars with which he could watch.

During his weeks in camp off the east end of Davisson Lake, Martin came to believe in Leonard Palmer, the Portland State geology professor with whom he worked. Palmer said the mountain was primed for a big blowup.

And even before his university duty was done, Martin volunteered for additional service as a volcano-watcher for RACES — Radio Amateur Communications for Emergency Services. It was a ham operators' radio network that helped the state disaster response agency in dealing with floods and other calamities. At 60, Martin liked to be where the action was.

Under the leadership of Reade Apgar, another ham who lived in Olympia, RACES devised an early-warning system under which one radio operator — a "point" man — would be stationed close to the mountain and relay information from there to Apgar's command post in his home. Three other radio operators would be stationed around the mountain, but at greater distances than the point man.

With the details worked out, Apgar called his people together for a final briefing before they went on station. Palmer was there to tell what he thought could happen on Mount St. Helens. To make his point, Palmer described what had taken place on the flanks of Martinique's Mount Pelee on a May morning some 78 years before.

"Never turn your back on the mountain," Palmer warned. "It's more dangerous than you believe."

On Mother's Day, May 11, unemployed millwright Don Selby and school bus driver Brad Backstrom made another picture-taking trip to Spud Mountain. Again the weather was poor — hazy and rainy — so they returned home that night. Without good weather, it seemed they would never get the clear view necessary for marketable pictures.

Selby told Backstrom he had a feeling the mountain would stage a big eruption soon. He planned to go back to Spud Mountain in his 1975 Ford pickup camper the following Wednesday. Selby was prepared to wait out the bad weather. Backstrom decided he would go along.

On Monday, May 12, Edward Chow Jr., director of Emergency Services, asked Cowlitz and Skamania county officials to forward him copies of their plans for coping with possible disaster. He wanted to pin down the numbers of people living on the flanks of Mount St. Helens and to determine how the state might help the local governments.

The data he sought would be "for inclusion in the final federal, state and local (planning) effort," Chow's request to the counties said. "I would appreciate this information by May 19, 1980."

The same day Chow made his request, the architects of the April 30 danger zones decided in a meeting at Gifford Pinchot National Forest headquarters in Vancouver that the western Blue Zone boundary was too close to the volcano. They wanted to extend it to take in more of the North and South Forks of the Toutle. That way the roadblocks could be moved farther away from the mountain and more people could be warned out of the western valleys, at least during the hours of darkness.

Three days later — on Thursday, May 15 — data on which to base a Blue Zone extension was sent by teletype to Emergency Services in Lacey. Officials there drew up a proposed extension and hand-delivered it to the governor's office Saturday for her signature. It would still be on her desk Sunday.

Martin Remen and his grandson, Tim Grose, worked the Black Rock Mine through early May, steadily lengthening the new shaft and laying about 75 feet of track for an ore car. Others in the mining party, including Don and Jay Parker and

Don's wife, Natalie, 50, worked the claim periodically between trips home for supplies.

On May 12, Jay Parker brought in a note from Remen's wife, Lucy, hinting that Remen should come home. She was worried about the volcano. The next day, Remen and Grose were leaving when they met a Forest Service employee, David Purcell, who was installing a locked gate across Forest Service Road N100 on the way to the mine. Purcell said there were new volcano restrictions and questioned the men about the mine's location.

But he agreed to arrange special vehicle permits so they could put their own lock on the gate and have continued access. That night Grose wrote in his diary:

"We got home and Granny was elated to see us. . . . I watched a news flash and they were saying something about the tides affecting the mountain and a prediction for it to go this weekend."

On May 15, Remen and Grose returned to the gate across the N100 road to meet Purcell, who brought the vehicle permits. Purcell walked with Grose to the mine and wrote a permit for Jay Parker. Now edgy about talk of a major eruption, the miners decided to leave with Purcell.

On their way out they met Don, Natalie and Rick Parker, who had come to the gate to begin several days' work on the claim. The three could not be persuaded to go home. Purcell wrote out their vehicle permits and they started up the valley.

While Jim Pluard's men worked steadily despite their fear of the volcano, dissatisfaction among other Weyerhaeuser loggers now came to a head.

On Friday, May 16, Joel Hembree, a Longview-based safety representative for Local 3-536 of the International Woodworkers of America, drove up the Toutle's South Fork to talk to about 50 men from Weyerhaeuser's 12 Road Camp who were working stands of timber within five miles of the mountain's base.

The day before, logger John Handel had become the first man to actually walk off the job. When Hembree met with the loggers that Friday, he quickly realized the situation was worse than he had expected. The men at 12 Road threatened a work stoppage, claiming the company had not followed through on commitments to provide specific escape routes from logging sites.

"They were working right next to the mountain," Hembree would recall. "Their concerns were, 'What do we do if the mountain blows?'"

Hembree, a sorting yard shovel opera-

tor, also felt Weyerhaeuser had failed to follow through on verbal commitments made by company officials at a May 1 safety meeting attended by union and company men in Weyerhaeuser's Longview office. Among the Weyerhaeuser officials who attended were George Steig, woods safety coordinator; Ren Broomhead, superintendent of the 12 Road Camp; Dexter Salsman, construction foreman at Camp Baker; and Jim Brooher, engineering foreman at Camp Kalama.

Minutes taken at the safety session said that "each (logging) district was instructed to discuss and develop an evacuation plan." Hembree felt that a majority of work crews were covered later by specific escape routes, but in "many cases" routes either had not been worked out at all or had not been conveyed to the crews who would be expected to use them.

Local 3-536 President Buck Davis, who did not attend the May 1 meeting, said he also "doubted" whether evacuation routes had been provided for all the crews. Davis, a logging truck driver, said he had been assured by Weyerhaeuser woods manager Jack Schoening in April that an escape route would be drawn for each crew.

Schoening later would acknowledge that the company's evacuation plan had been drawn "loosely," with a provision — which may or may not have been followed — that crew foremen would be responsible for details, including specific escape routes.

"Every crew was supposed to have a bus and a radio, but it wasn't being done," Hembree said. That Friday, however, Hembree remained essentially neutral and urged the 12 Road loggers to keep cool.

"We got the best experts in the world," he told them. "Supposedly you're going to get two hours' notice, but all I can tell you guys is if it blows, it blows. Who's to say it won't happen tomorrow, or 10 years down the line?"

As the weekend of May 17-18 neared and clear weather showed signs of returning for the first time in weeks, public safety officials braced for a renewed onslaught of tourists. Cowlitz County Deputy Ben Bena finally convinced Weyerhaeuser and others that a new crowd-control approach would work.

They could build a barrier six miles farther back on the Spirit Lake Highway and bulldoze a loop that would take traffic to what they considered a safe vantage point just above Camp Baker, turn it around and head people back down the valley.

The loop could be one narrow lane with nowhere to park, and the tourists would wind up controlling themselves. None would risk the wrath of other sightseers by dallying in the loop too long. In the end the plan was approved. Weyerhaeuser would start to build it the following Monday — May 19.

Brad Backstrom left Spud Mountain that Friday to spend some time at home. Don Selby remained in camp, and Backstrom would be back Sunday morning. Selby had parked his pickup camper below the top of Spud Mountain so a side window faced directly toward the volcano. That way he could just point the secondhand Pentax out the window and shoot. Money in the bank!

"I really thought that if there were hazards there, they would have shut down the Weyerhaeuser logging operations," Backstrom said. "But people were in there making a living. That was the thing about it. People are fishing and logging and everything. You figure if these people are in there, then why can't you take pictures?"

An early overcast nearly scrubbed the last flight over the volcano for EG&G Inc.,

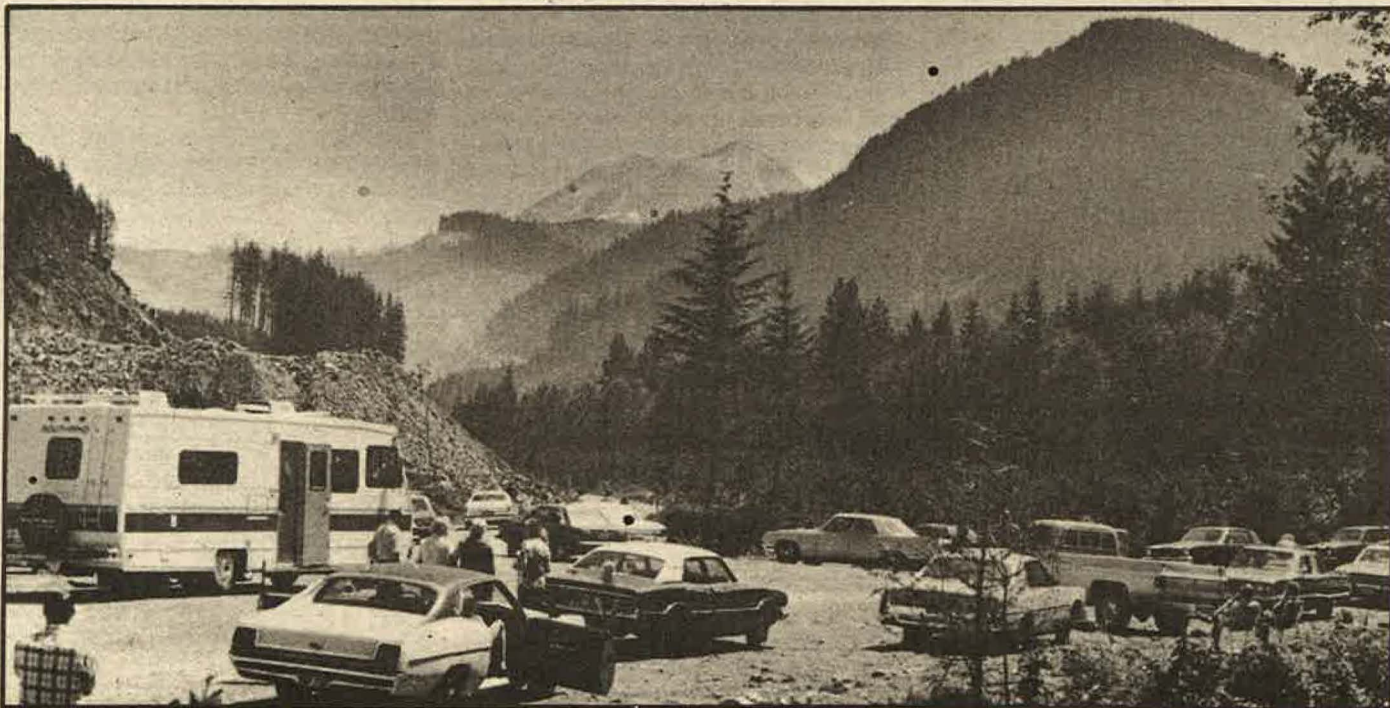


Photo by JESSE WILT

'WELCOME TO OUR LANDS' — The gravel turnaround on Weyerhaeuser's 3500 road on Saturday afternoon, May 17.

a Las Vegas, Nev., company that was scanning the slopes under a contract with the U.S. Department of Energy. The twin-turboprop Convair 580 scanner plane carried sophisticated computer equipment that could detect and analyze hot spots on Mount St. Helens.

It was scheduled to make its flyover early Friday, giving computer technicians time to evaluate the information before the weekend began. Data from the flight would help the Department of Energy make a case for underground storage of radioactive wastes.

For years the agency had talked of using rocks deep below the surface as vaults to store nuclear reactor wastes. Deep basalts were considered stable enough, but once the radioactive wastes were inserted, mankind would surrender control over materials deadly enough to kill millions. There was always a risk, however slight, that the wastes could rise back to the surface and release an uncontrollable cloud of death.

If the public was going to buy the idea of underground storage, it would have to be convinced that rocks chosen to hold the wastes would be stable — so stable that nothing, not even volcanic activity like that on Mount St. Helens, could free the materials during their centuries of radioactivity.

Coordinating the EG&G flyovers was Hugh Kieffer, a young research geophysicist at the Geological Survey office in Albuquerque, N.M. The Energy Department was sharing its information with Kieffer, who would use it as another tool for gauging the hazards of Mount St. Helens.

The first scanner mission, using a smaller Beechcraft Bonanza, was flown April 10 at a cost of \$11,000. The second and last mission finally began when the cloud cover lifted that Friday afternoon.

The big Convair made a series of passes over the now-quiet volcano as a specially designed mirror spun wildly under its fuselage, gathering raw data about temperatures on spots along the Goat Rocks bulge

and storing what it detected in an on-board recorder.

As the plane passed over the north flank of the mountain, its whirling mirror detected masses of hot rock and melting glacial ice. It saw that the magma deforming the north flank was now at a depth so shallow that it was heating surface rocks and lubricating the Goat Rocks bulge with melting water.

The mirror saw what the nine persons aboard the Convair could not — that the bulge was now dangerously loose and that a slight jar, like one of the thousands of sharp earthquakes that had jolted the mountain for the last two months, might knock the north flank down into Spirit Lake and flood the countryside. The mirror saw all those things but recorded them as raw information written in a language that only computers could understand.

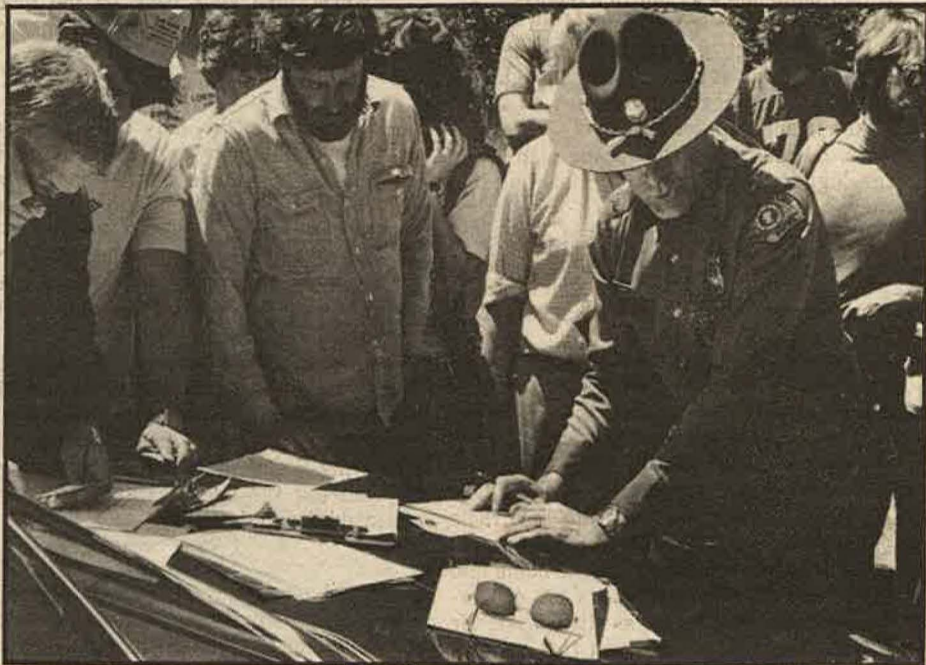
The Convair touched down in Las Vegas by late afternoon. EG&G called Hugh Kieffer, the Albuquerque geophysicist.

The mission already had cost \$10,000, and analyzing the data — including production of thermal photographs — would cost another \$5,000. It was late in the day, and a rush job to complete the several hours' work involved would cost nearly \$1,000 in overtime if Kieffer wanted the data by Saturday. Did he want it then, or should they wait until Monday?

Kieffer thought about it only briefly. The money involved was not that much. He would say later, in fact, that hindsight made it insignificant. But the mountain had been seismically stable and Kieffer did not expect to find anything radically new from that Friday's flyover. Besides, he was a Geological Survey man who was being asked to spend money that belonged to another agency, the Energy Department.

Kieffer made an off-the-cuff decision — one that need never have been made at all, if only the weather had cleared a few hours earlier.

"Let's wait until Monday," he said. The data was set aside and the Las Vegas technicians went home for the weekend. ■



Photos by LESLIE L. ZAITZ

A PIECE OF THE ROCK — Cabin owners sign permits, above, allowing them to enter the Red Zone. A long procession, below, awaits the road opening.



## The weekend

A confrontation was shaping up on the western slope of Mount St. Helens that third Saturday in May. In the days that followed Gov. Dixy Lee Ray's April 30 executive order establishing the danger zones, a quiet rage had overcome the owners of summer cabins that were clustered along the Toutle River's North Fork a mile below Spirit Lake. That was three miles inside the Red Zone and off limits to everyone.

Cabin owners worried about looting or that their summer places needed maintenance. They were angry, too, about having to pay taxes on property they could not use under the Red Zone restrictions. They had been sending letters to the governor's office demanding that they be let back in.

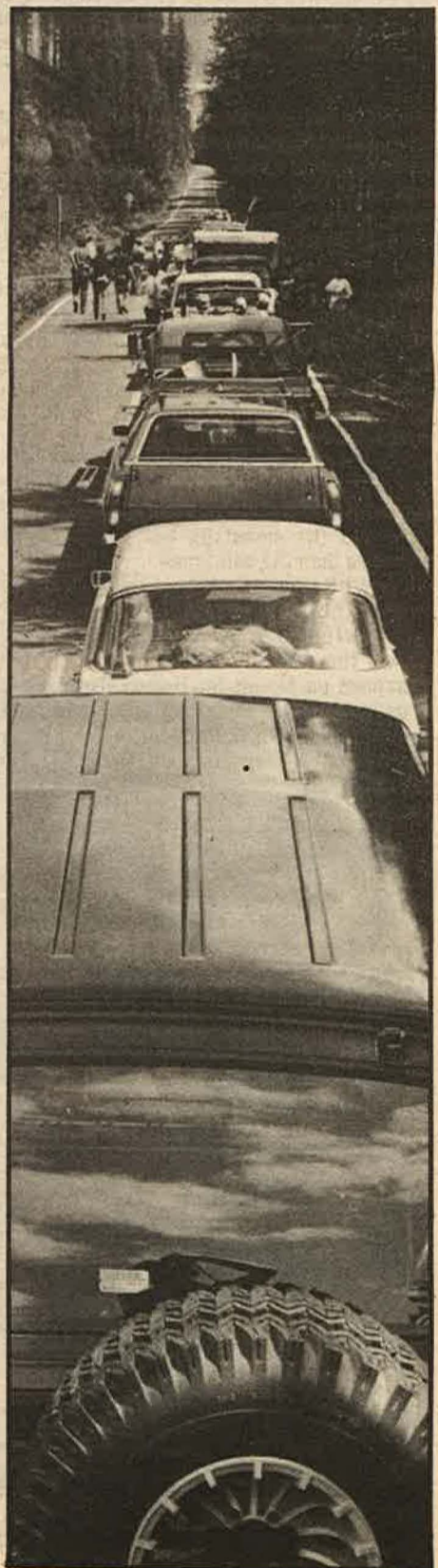
On Friday night the owners had vowed they would form a caravan Saturday and drive in protest to the roadblock 10 miles below the cabins. They said they would not go past the barricade, but their mood was sour and no one was certain what would happen. Reports had filtered back to the sheriff's offices that some hotheads planned to arm themselves and run the roadblock. Anticipating trouble, the Washington State Patrol sent in eight extra cars.

At mid-morning Saturday, when the owners arrived in the Toutle High School parking lot, they were told the governor would permit a convoy but that it would have to wait until the paperwork — permit forms — could be brought from Olympia.

So they waited in the sunshine and grumbled about the governor. Each wore a sky-blue T-shirt patterned after an insurance company's television commercial and proclaiming, "I own a piece of the rock." But a likeness of Mount St. Helens was behind the black lettering, not the Rock of Gibraltar.

When word finally came that permit forms were available, the owners were told to form a caravan and drive to the roadblock 11 miles west of the summit. There, leaning over the hood of a State Patrol car that served as a writing surface, each driver filled out a form absolving state and county officials of responsibility for whatever might happen.

That done, the vehicles were lined up single file, two police units leading and one behind, for the trip on up the mountain. "We hope the good Lord will keep that



EG&G Inc. photo

HOT SPOTS — Shaded areas in the thermal picture of the north flank taken on May 17 indicate imminent disaster, but only a computer could interpret the image.

mountain from giving us any trouble," said State Patrol Chief Robert Landon as the caravan departed. It would have to be out by 6 p.m. Overhead, a State Patrol plane crisscrossed the north face of the mountain to watch for any sign of danger.

Dave Smith took three employees along to his Spirit Lake Lodge, a log cabin affair that was rebuilt beside the Toutle below Spirit Lake in 1934 after the original lodge of 1880s vintage burned to the ground. Smith was angry because Memorial Day weekend, one of the lodge's three biggest moneymakers, was only seven days away.

As they wound up the valley, the property owners could catch only occasional glimpses of the mountain. There were no eruptions of even the mildest sort, no steam or ash, no earthquakes. Only a light dusting of ash on trees and other foliage was different from the usual sights they had come to know over the years.

When they reached their property, some owners took care of chores. At one cabin, two couples packed some of their more valuable possessions into a pickup truck backed into a gravel driveway. One of the first things they loaded was a pinball machine they had moved in only weeks earlier.

Up the highway a bit, Pauline Lund ripped open a 10-pound sack of food for her black cat, "Princess." Mrs. Lund and her husband, Jim, had lived in the cabin for five years. They had evacuated as ordered, but Princess stayed behind. Princess should be well-fed, Lund thought as she poured out the food. She would leave a second bag open in case they were not back before this one ran out.

State troopers and sheriff's deputies who escorted the caravan waited nervously as property owners went about their business. Many were edgy about being in an area they felt was unsafe. A private pilot had flown over the mountain earlier in the day and had taken pictures of several cars parked inside the Red Zone.

But the officers decided not to go up and move the people out. There was no point in risking their own lives to argue with people who would just sneak back around them anyhow. While they had time to spare, several patrolmen drove to the west edge of Spirit Lake to visit stubborn Harry Truman at his Mt. St. Helens Lodge.

Truman and his late wife Edna — he called her Eddie — had lived together between Mount St. Helens and Spirit Lake for 37 years, and Truman was not about to



Photo by ROGER WERTH, © 1980, Longview Daily News

**GATES OPEN** — "We hope the good Lord will keep that mountain from giving us any trouble."

leave now. His memories were there.

Eddie had suffered a fatal heart attack three years ago, on Labor Day afternoon. "I've kind of let the place go to hell since then," Truman would tell visitors. "Go look at the old pictures I have on the wall over there. She was *some* woman."

Cabin owners and police were not the only people on the slopes below Mount St. Helens that Saturday. There were scores of others. Some had arrived earlier in the week. Others were still arriving. Still more would arrive Sunday.

There were campers and sightseers who had moved in close, thinking they were secure in valleys protected from the mountain by intervening ridges. There were loggers and miners who knew the timbered slopes well and had work to do. There were scientists and other volcano observers, professional and amateur.

Nine miles north and a little west of the

cabins clustered below Spirit Lake, a group of young people from Kelso had set up camp in the Green River Valley the night before. They had found a clearing on the north bank of the Green, below the point where Miners Creek emptied into the larger stream, as a place to pitch their tents. The air had that clean, woodsy scent, and through the young, unthinned forest that surrounded them they could hear the Green burbling by.

They would have easy access to drinking water and could go along a nearby trail to an old cabin that was built years ago by miners. It was only 30 yards or so away. Sue Ruff, 21, and Bruce Nelson, 22, had set up their canvas pup tent while a few yards away, Karen Varner and her boyfriend, Terry Crall, both 21, worked on a red nylon model. Crall's dog, Tie, and her three pups played in the open woods while the group made camp. Dan Balch, 20, and Brian Thomas, 22, would share a third tent. They were nearly 14 miles north of the volcano's summit, which was out of view behind a ridge across the river.

More than eight miles southeast of the campers, where the Green River Valley swung south and climbed toward the river's source, Don, Natalie and Rick Parker were in the A-frame shack they had built at the Black Rock Mine below Norway Pass. They had been there since Thursday. The shack was 9.5 miles northeast of the volcano.

Allen Handy and Clyde Croft would wind up more than 11 miles northeast of the crater rim near Ryan Lake. They had arrived in darkness early Saturday. Handy, 34, soft-spoken and quiet, and Croft, 37, fun-loving and gregarious, made an odd pair but had become friends while working together as warehousemen at the West Coast Grocery Co. in Tacoma. Handy lived in Puyallup and Croft in Roy.

They shared a taste for country-and-Western music and had planned a pack trip to visit the high lakes and old gold mines north of Mount St. Helens for nearly a year.

Croft had borrowed a pickup truck and trailer to haul two of his horses. After working the swing shift, the two men set out around midnight Friday from Croft's small ranch. Within hours, they had driven past the U.S. Forest Service ranger station in Randle and turned south off U.S. 12 and up the Quartz Creek Valley to reach Ryan

Lake, where they parked and spent the night. Saturday morning they had set out for the horseback phase of the trip on a 13-year-old bay named Cochise, whom Croft sometimes called "Big Guy," and an 11-year-old Appaloosa named April.

They made their way by trail up a steep, knifelike ridge toward Deadman's Lake, a stunningly beautiful body of water with white, granular pumice beaches and a dark blue surface at an elevation of 4,330 feet. It was three miles northwest of Ryan Lake.

By sundown Saturday, Croft and Handy would reach the Polar Star Mine, an abandoned shaft on a Forest Service road about two miles west of Ryan Lake. They would bed down near a small creek, laying out their sleeping bags under a sheet of plastic that served as a tent.

Melvin Kaseweter, 65, missed the start of the caravan toward his cabin below Spirit Lake and was speeding to catch up when he first noticed the animals.

He had just talked the state troopers into letting him, his wife and his daughter's family through the locked gate across the blacktop when he saw a small herd of what he thought were deer, maybe a half-dozen in all, standing motionless in the roadway.

Their necks were craned upward and their eyes riveted on the mountain. As Kaseweter slowed his 1977 Chevrolet pickup, he saw that two animals were different from the others. One he thought was an elk. The other, he finally decided, was a coyote.

As the truck passed, the animals slowly stepped aside, but their attention did not stray from the volcano. Kaseweter looked back to see them still grouped tightly together, prey and predator, still watching. He said it gave him an "eerie feeling."

Kaseweter, a retired upholsterer, had started after the caravan not to gather his belongings but to get a better look at the mountain. And he did not have a monopoly on scientific curiosity in the family. His wife, Millie, 60, their daughter, Connie Pullen, 38, and her husband Larry, 41, were interested in Mount St. Helens, too. So were the Pullens' two children.

Kaseweter's son Bob, 39, owned a cabin near his own. He was spending the weekend there with Beverly Wetherald, 34, a friend of his who worked, as Bob did, at Portland General Electric Co. The whole



Photo by LESLIE L. ZAITZ

**WELL-PROVISIONED** — Princess gets a pat and extra food from Pauline Lund.



family lived in Portland.

Bob Kaseweter was a chemist for the utility and held a geology degree from Portland State University. Beverly Wetherald was a budget management technician. Together they had obtained a special permit that allowed them inside the Red Zone to operate scientific instruments for the Earth Sciences Department at Portland State.

The elder Kaseweters and the Pullens would spend the afternoon talking with Bob and Beverly. By the 6 p.m. deadline for leaving the Red Zone, they would be back on the road toward Portland and home.

□

Throughout the week, tourists, picnickers and the idle curious had gathered in a makeshift parking lot and campground that was near the roadblock 11 miles west of the summit. Two miles northeast of the barricade was Elk Rock, a 4,391-foot hill on the north bank of the Toutle that had a four-wheel-drive road leading to a viewpoint on top.

Near the gate closing off the paved highway was Logging Road 3500, built and maintained by the Weyerhaeuser Co. It crossed the blacktop from north to south just in front of the roadblock and swung east to parallel the highway as it ran toward the mountain. Weyerhaeuser had installed its own gate across the logging road where it ran west toward Camp Baker on the north side of the pavement, but the gate was not locked and tourists could pass through at will.

Many sightseers who heeded the Spirit Lake Highway closure either parked their cars along the pavement or pulled a short distance off the asphalt onto the 3500 road. It widened there into a large, gravel-covered area which state troopers manning the highway barricade had come to call the "gravel turnaround."

Souvenir hawkers and food vendors had joined the crowd that gathered in the turnaround that Saturday. Smells of food and campfire smoke filled the air. Radios blared music and people mingled in small groups. There were hitchhikers of several nationalities, photographers, painters, amateur geologists and vacationers of wide description.

□

Among them were Ed and Eleanor Murphy, a retired couple from Renton who had been there since Wednesday to see Mount St. Helens. Prepared for an indefinite stay, they had brought both their brown and white 1979 Southwind motor home and their bronze 1971 Dodge Cricket.

Murphy, 62, a former Boeing Co. employee and citizens band radio buff whose CB handle was "Bucket Mouth," had spent the last three days talking with campers and passers-by while his wife, 57, sold her knitted animals and dust mops from a card table set up in front of the Southwind.

There was Bruce Faddis, 26, a golf course manager for the Black Butte Ranch west of Sisters, Ore. He parked his sister's green Subaru in the turnaround about noon Saturday and began walking east along Logging Road 3310 toward Elk Rock. Road 3310 ran along the north side of the highway beyond the point where Logging Road 3500 crossed to the south side.

Faddis had stopped a half-mile or so east of the turnaround, apparently to hide his pack behind a tree in the woods, when Bill and Susan Tilton of Seattle came along and gave him a ride to the end of Logging Road 3310. That was 8.5 miles west of the volcano.

Faddis told the Tiltons he would take some pictures and spend the night near the mountain. As the Tiltons turned around after dropping him off, Faddis stood there in the road peering up at the peak through a pair of binoculars. He was wearing a windbreaker, a green and white golf cap and hiking boots. He had a map in his pocket.

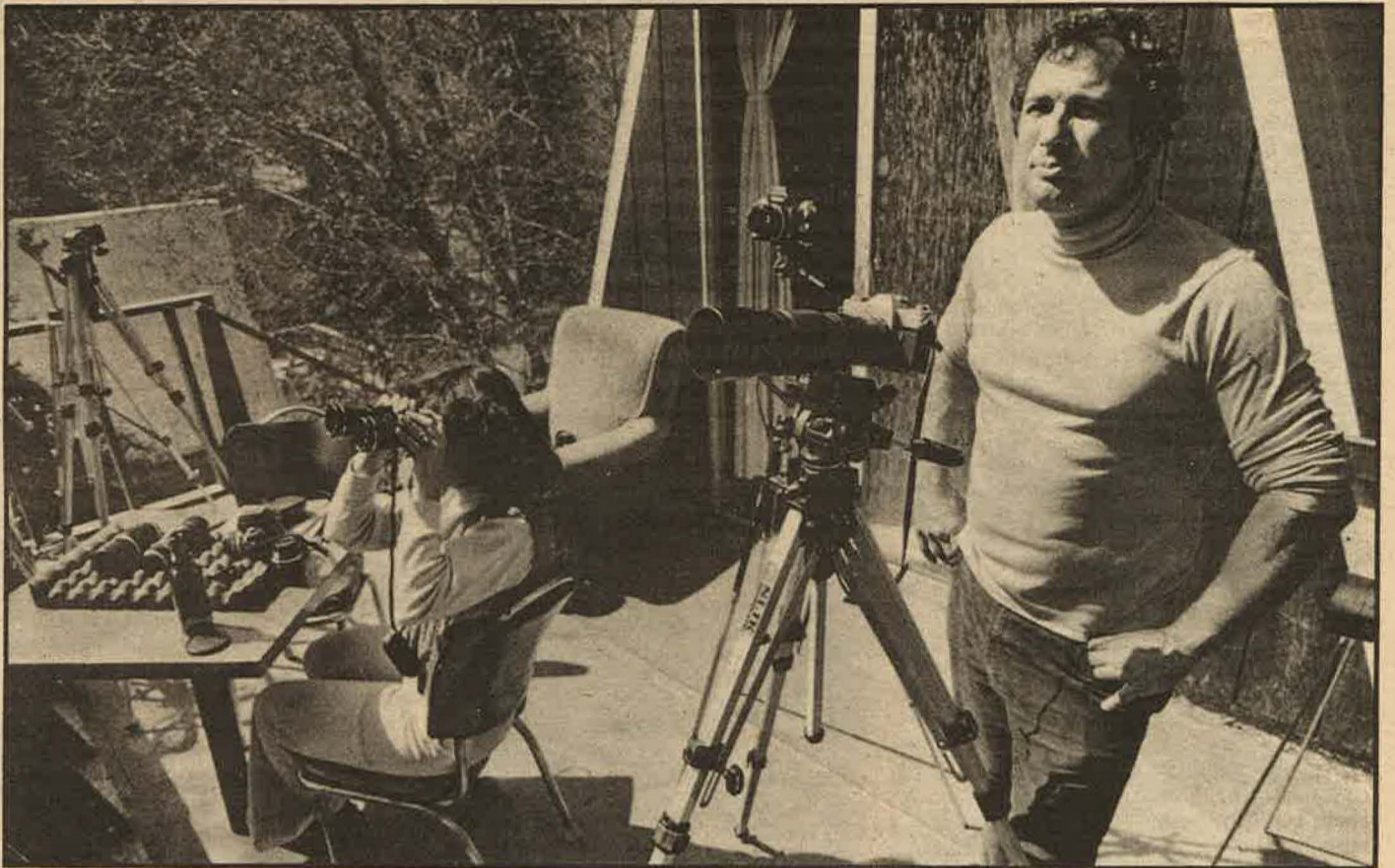


Photo by ROGER WERTH, © 1980, Longview Daily News

'EERIE FEELING' — Beverly Wetherald and Bob Kaseweter watch the mountain, as did the animals along the road.

On Saturday afternoon Jesse Wilt, editor of *The Southwesterner*, a newspaper for Longview-based Weyerhaeuser employees, arrived at the roadblock to take photographs for publication of visitors who had gathered on company land.

She talked with many people in the turnaround that day. One elderly couple had come all the way from Texas. A young hitchhiker with a pack and sleeping bag confided mystically that he had come to "hear the music of the mountain" and

disappeared into the woods.

About 3 p.m., she was two miles west of the roadblock, taking pictures on Logging Road 3500, when James and Velvetia "Velvet" Tute of Mission, British Columbia, hailed her. They were driving past in a Volkswagen van. Jesse Wilt talked to the couple for several minutes, mostly answering questions about the volcano.

Velvet Tute, 51, planned to do an oil painting of Mount St. Helens. Her husband, 56, a mate on a timber tugboat who lived

away from home for weeks at a time, had brought a camera to take photographs. They had driven as far as the roadblock and then turned around to head west on the 3500 road searching for a less crowded campsite with a good view.

Looking east from where they talked, Jesse Wilt and the Tutes could see Mount St. Helens framed between parallel lines of second-growth firs that crowded the roadsides. Jesse Wilt took a picture of the Tutes. She wrote down their address and promised to mail her new friends a copy.

□

David Johnston, the U.S. Geological Survey man who made no secret of his fear of Mount St. Helens, arrived near the peak about 1 p.m. in his cream-colored government car, a Ford Pinto. He pulled up beside the small trailer on the ridge above South Coldwater Creek where Harry Glicken had been stationed for two weeks. Johnston was replacing Glicken as the Geological Survey's volcano sentinel.

At 1:10 p.m., a helicopter landed to fly the two geologists across the North Fork of the Toutle and up toward the summit, where they would collect gas samples from two fumaroles near Goat Rocks. About three hours later, they saw that a green and white motor home had moved into position on a ridge above and behind them. They did not know it, but that was Gerry Martin, the retired Navy man who was a member of the RACES ham radio network.

At 8:31 p.m., Glicken — using a laser ranger — measured the distance to the still-growing bulge at Goat Rocks. The crater lay less than a mile beyond the old lava plug. Glicken noted that the bulge was now 7737.1 meters south of him — 4.8 miles away.

That was exactly 17 meters less than when he took his first measurement May 4. It had swelled outward by nearly 56 feet in 13 days. And it was 2.5 feet closer to camp than it had been the day before. Glicken drove away at 9 p.m., leaving Johnston alone on the ridge.

□

Camped on a ridge above the Toutle west of Johnston and about eight miles northwest of the summit was Reid Blackburn, 27, a professional photographer and amateur radio operator. Blackburn had taken a leave of absence from his job at *The Columbian* in Vancouver, Wash., to operate

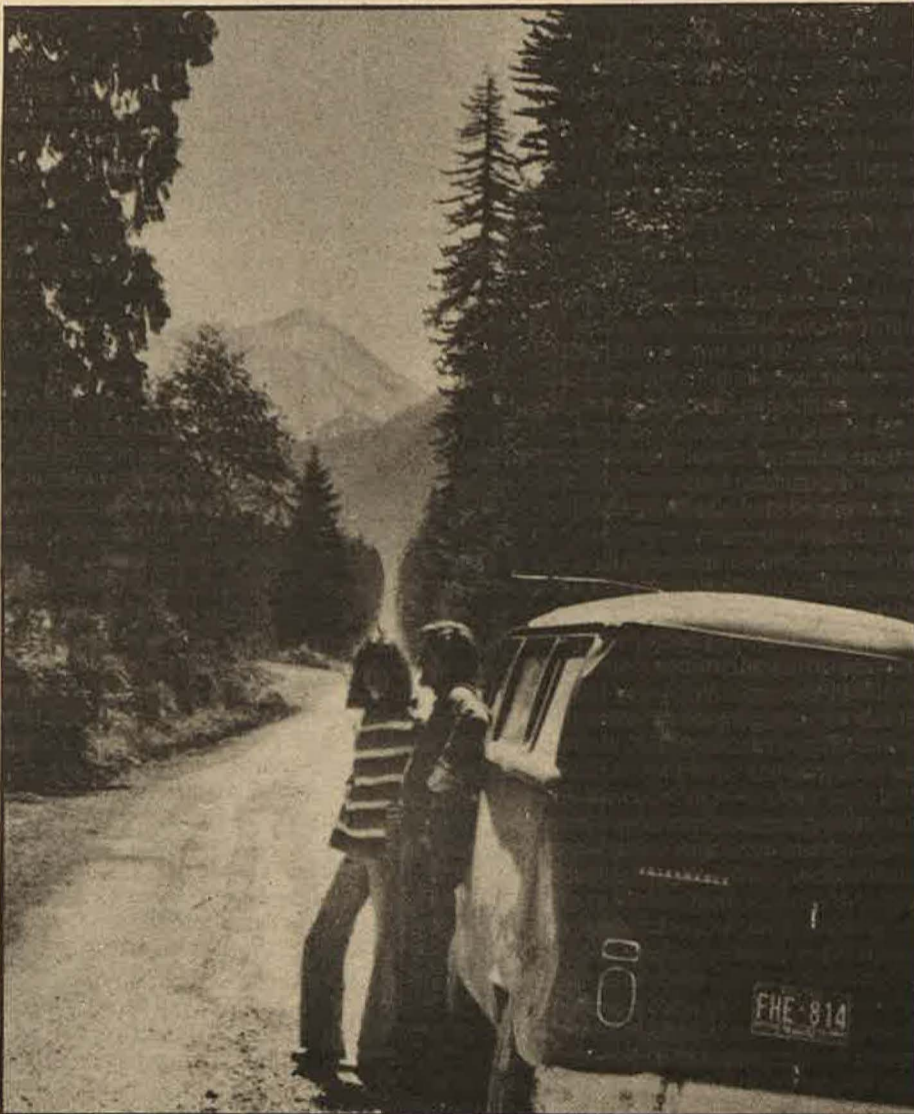


Photo by JESSE WILT

SATURDAY SNAPSHOT — Velvetia and James Tute, on the lookout for a campsite near the mountain, stop to admire the view along Logging Road 3500.

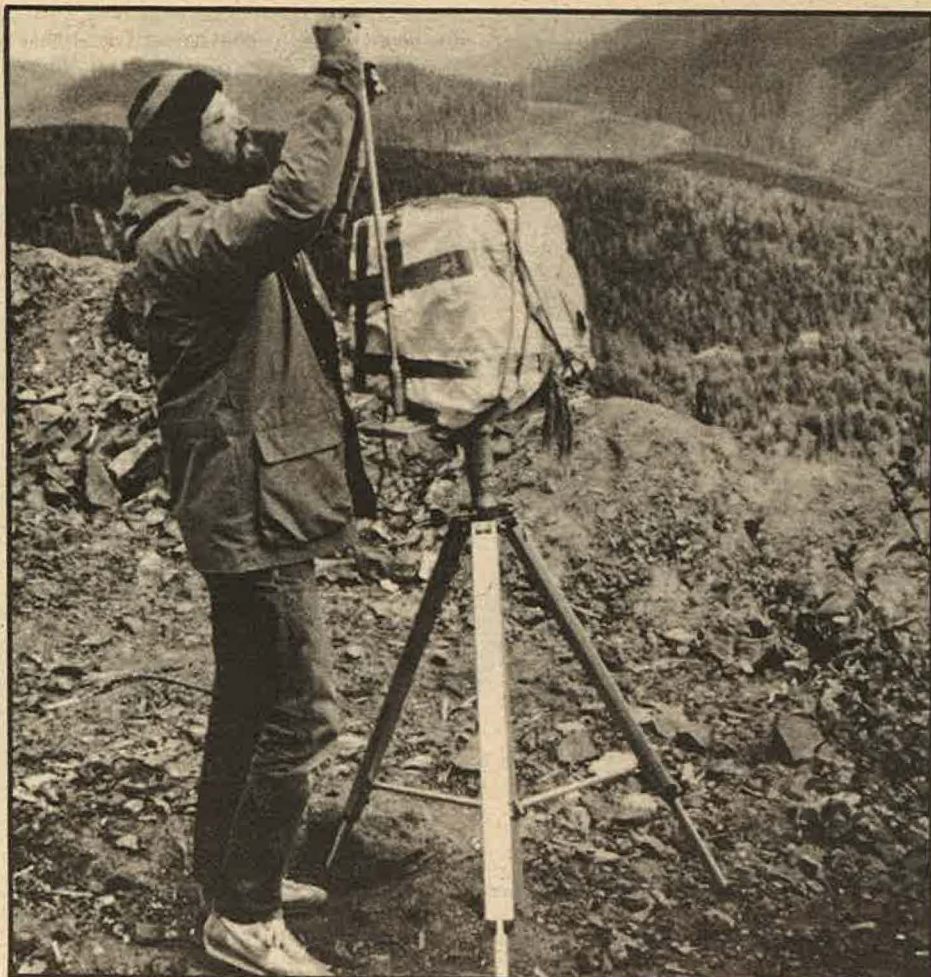


Photo by STEVE SMALL, © 1980, The Columbian

**SETTING UP** — Reid Blackburn, who was scheduled to leave the volcano Saturday, then decided to stay, sets up one of his cameras.

a network of radio-controlled cameras for *National Geographic* magazine and the Geological Survey.

The group originally planned to use a network of six such cameras at sites scattered around the mountain. Blackburn was to be stationed on the south side, where he would trigger the cameras by remote control.

The triggering system worked well. TERAC — the Tektronix Employees Radio Amateur Club — had made the camera triggers from discarded Bell Boy telephone pagers. Blackburn could press a button from camp and send out two separate tones that would trigger individual cameras.

The six camera stations were at locations chosen by the Portland State University Earth Sciences Department. *The Columbian* would provide the camera equipment — which it planned to borrow from Nikon Professional Services — and *National Geographic* would charter a helicopter to fly to each station to change film magazines and battery packs.

But there was a last-minute change of plans. Nikon Professional Services had made a major commitment to send cameras to photographers covering the Kentucky Derby and only two were available for *The Columbian* to use at the volcano. Both were set up on the north side of the mountain. One would be radio-controlled and Blackburn would operate the other from his new camp.

Blackburn was both a conscientious worker and an outdoorsman who had come to love the Mount St. Helens area. He often stayed in the high country for days at a time. His only contact with the outside world on this project was a Bearcat 220 police scanner radio which TERAC had loaned him to monitor U.S. Forest Service frequencies. Blackburn listened to the scanner for an hour or two each day. If he used it much beyond that, it drained his car battery too much.

He was scheduled to leave camp that Saturday and be replaced by TERAC member Roger McCoy, but the project had only five more days to run. Blackburn decided he would see it through.

Blackburn parked his silver Volvo in a turnaround on Logging Road 3536 and

joined the others in camp — Fred Stocker, a free-lance photographer for *National Geographic*, and Jim McWhirter, a paraplegic who served as Stocker's unpaid assistant. About midnight, Stocker and McWhirter would head down the valley for beer and supplies. They would spend the night away from camp.

Martin had parked his mobile home in a clear-cut area just west of a rounded, tree-fringed hump of land that was called Coldwater Peak. It was 5,000 feet above sea level and formed a high point on the ridge between Coldwater and South Coldwater creeks, which joined west of him to empty into the North Fork of the Toutle. A mile east of Martin, but out of view behind Coldwater Peak, lay St. Helens Lake.

Martin was preparing to go on duty as point man for RACES, the ham radio operators' emergency network that was helping the Department of Emergency Services. He had come up two days early to replace Ty Kearney and his wife, Marianna, who had spent the previous week on a ridge above

the South Fork of the Toutle, eight miles west of the mountain and south of where Martin chose to camp. Martin would not take over officially until Monday.

Martin had volunteered for point duty, telling friends in the ham radio network that he wished he could have been on the ridge where the government geologists camped, 900 feet below him and 2.5 miles in front — closer to the mountain. Stepping out of his motor home, Martin could look across the wooded ridge toward the west and see the North Fork Valley and the forest beyond.

At the summer cabins below Spirit Lake late that Saturday afternoon, part-time Skamania County Deputy George Barker and State Patrol Sgt. C.W. "Wick" Elder found they had time to kill. In separate four-wheel-drive vehicles, they had led the caravan of angry property owners into the Red Zone, beyond the second locked gate three miles below Spirit Lake. Now, waiting for the cabin owners to finish loading their belongings, Elder decided to pay one more visit to Harry Truman.

The sergeant had known Truman for most of the two years he had been assigned in this patrol district, and considered the lodge owner a friendly "old gentleman." Friends of Truman had said the attention Truman received after the mountain came to life made him begin to snap out of his depression over his wife's death three years before. Television cameras had made him a national celebrity.

When Barker and Elder arrived, Truman was setting out lawn sprinklers in front of his lodge. The day was beautiful and the conversation relaxed. Soon they were joined by Skamania County Sheriff Bill Closner and Elder's boss, Patrol Chief Robert Landon.

Because of Truman's insistence on staying, Closner had deputized him May 5, making it legal for him to be inside the Red Zone. Truman led the officers to his myrtlewood bar and they sat in big overstuffed chairs, chatting and looking out a picture window over the glassy surface of Spirit Lake.

Truman enjoyed talking, but every yarn he spun was laced with language that would make a longshoreman blush. Elder watched Landon flinch at each four-letter word that stung his ears. A devout churchgoer, the chief would not permit such talk from his troopers, but with Truman he let it pass. Landon pointedly offered Truman a ride out to safety — anyplace he wanted to go. Truman declined.

Up on the south canyon rim above the South Fork of the Toutle, Pat Sullivan sat

in the cool evening air taking a breather as the sun began to set. From his viewpoint five miles west of the crater, Sullivan watched a herd of about 25 elk move gradually up the canyon wall to his right toward Goat Marsh, over the top and out of view behind his right shoulder.

The animals' pace was unhurried. As they grazed along, they stopped every few feet to turn and look toward the volcano. Sullivan watched for more than an hour before the elk finally passed out of sight.

As a choker-setter working out of Weyerhaeuser's 12 Road Camp, Sullivan knew his own escape route well. He would drop behind a ridge that would give him protection and valuable seconds to escape. He would be out very quickly. But Sullivan now saw in the distance that a man with a lime green car had lit a campfire across the river to the northeast.

That man's choice of campsite could not have been worse, Sullivan thought to himself. It was less than two miles from the base of Mount St. Helens — four miles directly west of the summit at the end of Logging Road 4170. If the mountain sent an avalanche or pyroclastic flow down the South Fork Valley as the experts predicted, the man would have no escape.

Sullivan was not aware of it then, but the camp was that of Robert Landsburg, 48, a Portland professional photographer. Landsburg was closer to the mountain than anyone else.

And very close to Landsburg's camp was another that was beyond Sullivan's view. Day B. Karr, 37, a wholesale produce merchant who was separated from his wife but was expecting a reconciliation soon, had loaded his pickup truck at home in Renton to take his sons camping. He and the two boys, Andy and Michael, would camp at a place they had been before, a little more than four miles west of the summit. It, too, was on Logging Road 4170 beyond the Spirit Lake Highway roadblock. Andy had turned 11 less than two weeks before. Michael was 9.

Fred and Margery Rollins had left their mobile home in Hawthorne, Calif., early Friday, bound for the mountain that was making headlines. Now they were preparing to spend the night at a motel in Salem, 100 miles south of the volcano. It was an impulsive, spur-of-the-moment trip, like so many they had taken before.

They often left in the evenings, without planning or notice, to head for the hills on camping trips. Other times they packed their white 1976 Ford Torino station wagon and went to drop in on friends or relatives. Sometimes they drove to the Nevada casinos just a few hours away.

The Rollinses were a conservative couple. Her daughter, Margie Garritano, de-



Photo by C.W. "WICK" ELDER

**STAYING** — Harry Truman sits at his lodge with Washington State Patrol Chief Robert Landon at 5:55 p.m. Saturday, May 17.

scribed them as straight-laced, law-and-order "rednecks." Margery Rollins was 52, her husband 58. He had carried nitroglycerine pills since his 1979 heart attack, and caution was his watchword. He was the kind of man who would never even consider speeding up to make it through a yellow traffic light.

The couple had made good time Friday, staying in a motel in Redding, Calif., 551 miles from home. Saturday they drove up Interstate 5, across the Siskiyou Mountains and through Southern Oregon. Saturday evening found them in Salem. They would rise very early Sunday and begin the final leg of their trip to Mount St. Helens.

□

It was 7 p.m. when Elder reached the roadblock gate. The Saturday caravan was over. Everyone was out and on the way home. For those who wanted to go back, a second trip was scheduled Sunday.

Elder told Trooper Russ Cavens to change his schedule Sunday morning. Originally Cavens was supposed to be at the gate at dawn, but the sergeant said he would not be needed until 10 a.m., when the second caravan would move through.

As Elder unlocked the gate and drove past the barrier, he noticed several cars and a large motor home parked in the gravel turnaround. He felt a twinge of uneasiness. The turnaround had taken on a festive air that he found unsettling.

There were times when Elder wanted to warn the tourists that a locked gate between them and the volcano up there was no guarantee of safety. But that Saturday evening he drove past the turnaround with only a brief glance at the parked vehicles it contained. He knew he had no authority to order them away.

□

Joel Colten, 29, was one of the last tourists to turn east on the Spirit Lake Highway from Interstate 5 that Saturday night. The semi-professional photographer from Wyncote, Pa., had driven to the West Coast in his black 1980 Volkswagen Dasher. He and two other Philadelphia-area photographers had opened a show of their photographs in Bellingham.

Colten had been living from the car, bedding down in a sleeping bag and roughing it outside when the weather cooperated. He carried a Rand-McNally road map of Washington and circled the places he hoped to visit. His accommodations were not the best, but the trip was a mixture of work and vacation. Colten had taken pictures at national parks across the country and planned to take care of some business for his parents' retail brassware shop, where he worked.

Colten was cruising south along the interstate past the Olympia Brewery in Tumwater when he picked up two young hitchhikers, Maggie Murphy, 22, and Annie Stepash, 23. They had thumbed rides from Eugene to Seattle, hoping to catch the afternoon ferry to Alaska. They had missed it by five minutes, and decided to go back home.

A native of New Jersey, Maggie Murphy started the conversation by comparing the livability of the East and West coasts. Colten liked the West, saying he planned to head for California after seeing the mountain. Colten and the two women made a few stops along the way, taking pictures of Mount St. Helens and buying postcards from a stand at one of the official viewpoints.

The Pennsylvanian exchanged addresses with Maggie Murphy and said he would visit her in Eugene. He gave her a poster advertising his photo exhibit — a shadowy black and white print of a woman peering through an open door. The women got out at the freeway exit to Washington 504, just as the sun was setting about 8:30 p.m. Colten, dressed in a black T-shirt, beige pants and sneakers, headed east on the road toward the mountain. ■



## The sentinels

**E**arly Mass was at 8:30 a.m. at St. Patrick Roman Catholic Church in Maple Ridge, British Columbia.

St. Patrick's was built in 1954, a modest little parish in a town on the north bank of the Fraser River 35 miles east of Vancouver, the province's largest city. The church grounds were tidy, and the rectory, convent and parochial school all had a traditional, conservative look.

The Rev. David Anthony Verrall said early Mass every Sunday. His routine seldom varied. Out of bed and done with breakfast by 7:30 a.m., he left the rectory and strolled across the lawn to the church building.

Verrall walked up the steps this Sunday — May 18, 1980 — and unlocked the doors. Inside, laminated beams supported a sharply peaked roof and multicolored rays of sunshine flooded through stained-glass

windows. Verrall walked down the center aisle past 22 rows of pews that could hold 550 parishoners and stopped at the altar. There he genuflected, turned and entered the sacristy.

As he went about his routine, the priest — as he always did — casually looked over the building to make certain that no one had broken in during the night. He took the communion wafers to the front door and set them near the font of holy water. Those attending Mass would place a wafer into the ciborium if they intended to receive Holy Communion. Verrall opened the doors, walked past the white concrete walls of the church and entered the confessional to hear repentant sinners.

Ten minutes after Mass began, at 8:40 a.m., the priest was reciting the Gloria when a deafening blast thundered through the air and violently shook the Canadian church. Verrall paused, and 600 eyes inside the church flicked upward in search of signs that the roof might collapse.

"Something's got to give in this joint," Verrall thought. Ten minutes later, as he read the Gospel around 8:50 a.m., a blast louder than the first shook the building again. The main line of the Canadian Pacific Railroad was only a half-mile away. Verrall was certain a tank car had exploded. He wondered why he was not hearing sirens.

□

Eighty-five miles south, George Wed-

ding was trying to convince a friend that he had heard a series of sharp explosions. Sitting on a dock overlooking Puget Sound near Marysville, Wash., Wedding had heard four distinct reports, a pause, two more, another break of two or three minutes, and finally two more.

Wedding, on vacation from his job as a newspaper photographer for the *San Jose (Calif.) Mercury*, was standing now over the bed of his friend, *Everett Herald* photographer John Davidson. He was trying to tell Davidson that he was sleeping through something big.

"I really think you should get up, John," Wedding said. "It could be St. Helens." Groggy-eyed, Davidson squinted up at Wedding as a ninth explosion shook the house. He was out of bed in seconds.

□

Ty Kearney was up and about that Sunday more than three hours before John Davidson leaped out of bed. He would be logging the temperature and doing his paperwork for the RACES early-warning network that was helping the Washington Department of Emergency Services.

The retired U.S. Department of Transportation employee, 58, and his wife Marianna, 56, both of Vancouver, were camped on Logging Road 5700, eight miles due west of the mountain between the Kalamia River and the South Fork of the Toutle. Southeast of them was a small hill called Goat Mountain, and beyond that lay Goat Marsh.

Kearney had been awake when the sun rose at 5:38 a.m. On his homemade bed inside his 1965 Dodge Campwagon, he propped himself up to watch the eastern sky lighten behind Mount St. Helens. He thought about crawling out of his sleeping bag to snap a photograph but decided the colors were too pale to warrant the effort. Kearney was about to lie back beside his sleeping wife when the radio set on a small folding table beside him crackled to life.

"Good morning," a voice said from the radio.

Kearney thought he recognized it as that of Gerry Martin, who had arrived in the high country two days early to replace Kearney on Monday as point man for the RACES network. Kearney had spoken to Martin for the first time only the day before. He reached over to pick up his transmitter microphone and returned the greeting simply: "Good morning. It looks like it's going to be a beautiful day. It's sure gonna be nice."

Always an early riser himself, Martin had been out of bed before dawn. His motor home was still parked on the clear-cut ridge eight miles north of the mountain and west of Coldwater Peak. Below him he could see the camp of David Johnston, the U.S. Geological Survey geologist who once had talked of standing next to a dynamite keg. Johnston was 2.5 miles closer to the mountain than Martin was, and less than five miles from the ominous bulge at Goat Rocks.

Martin fixed his own breakfast and fed his three cats. He said nothing about it on the radio, but his custom was to take a walk every day in the brisk morning air. Usually he put leashes on the cats so they could join him on the morning constitutionals.

At around 7:15 a.m., Kearney began his daily chores as the state's official volcano sentinel by noting the weather. With a small thermometer he measured the temperature outside his van — exactly 47 degrees. The air was calm. The sky was hazy with a high overcast. The National Weather Service would describe the overcast as thin cirrus clouds at 20,000 feet. It was on the way to becoming a clear, beautiful morning, just as Kearney had said on the radio.

While Kearney recorded his climatological data, Reade Apgar was in Olympia 68 miles northwest of the mountain, already

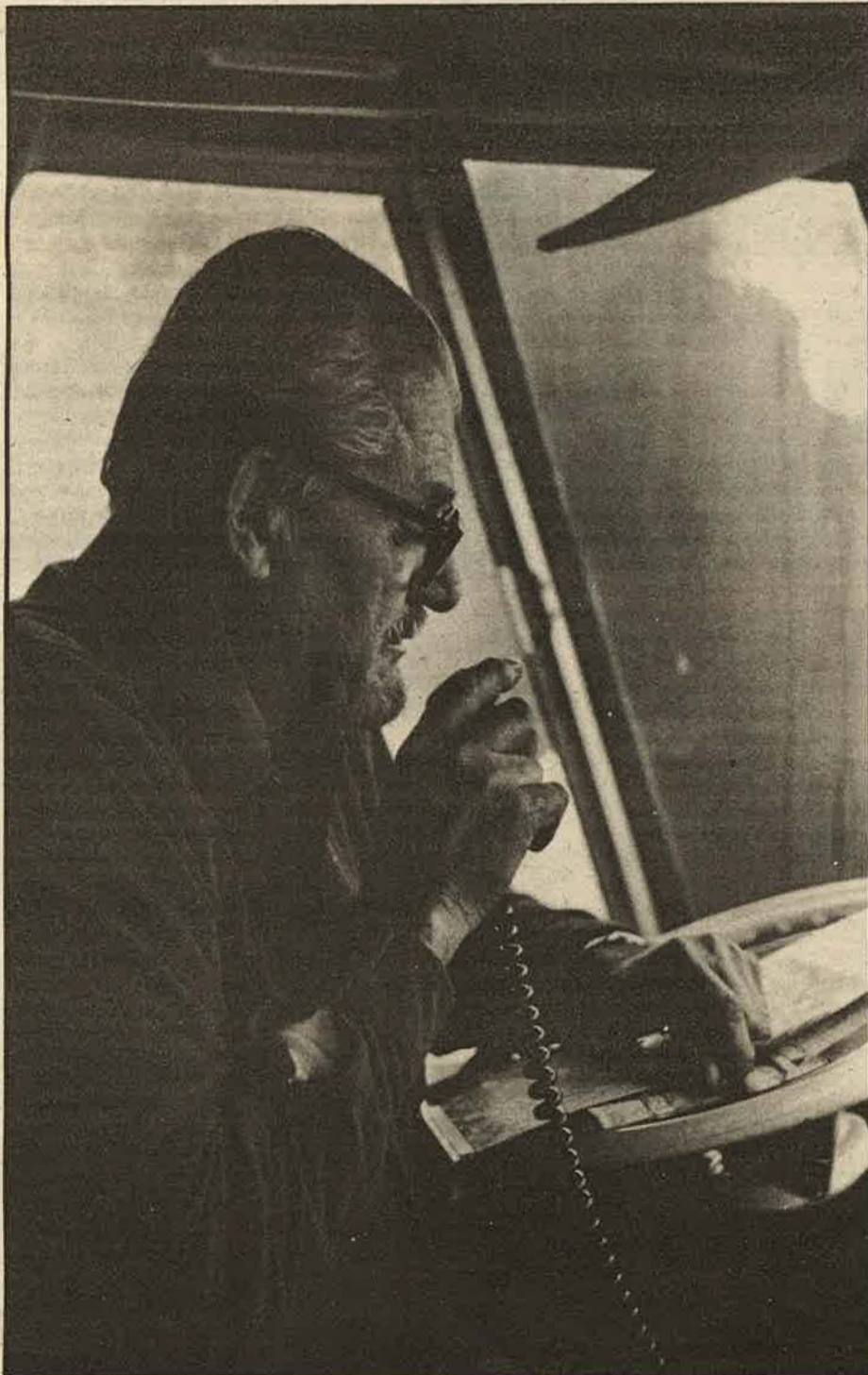
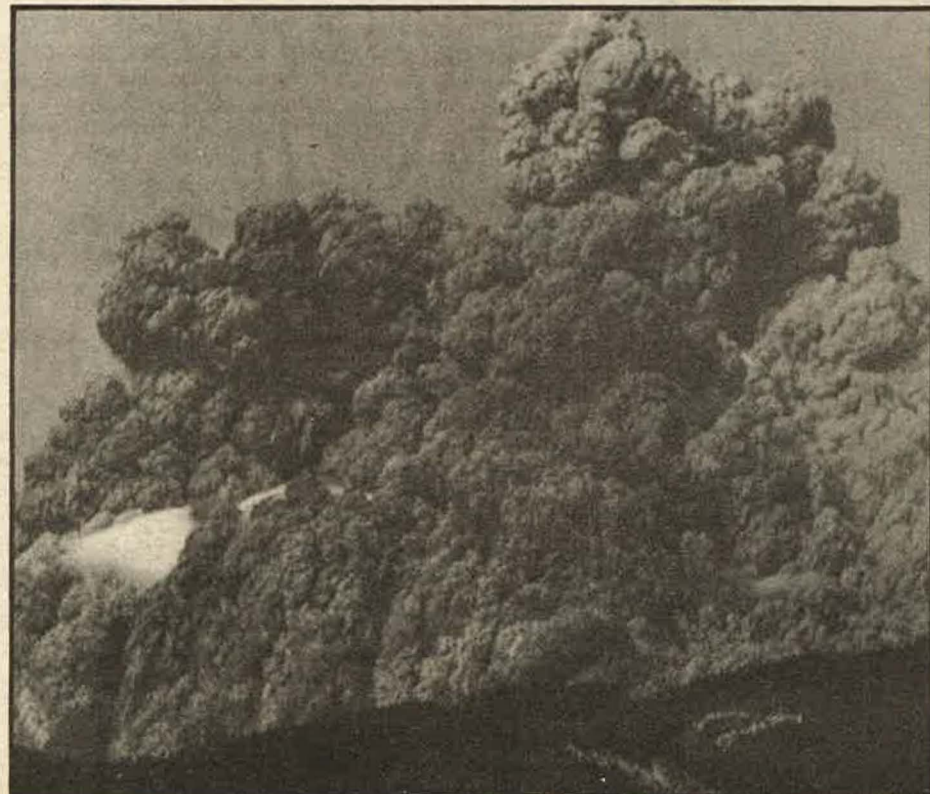
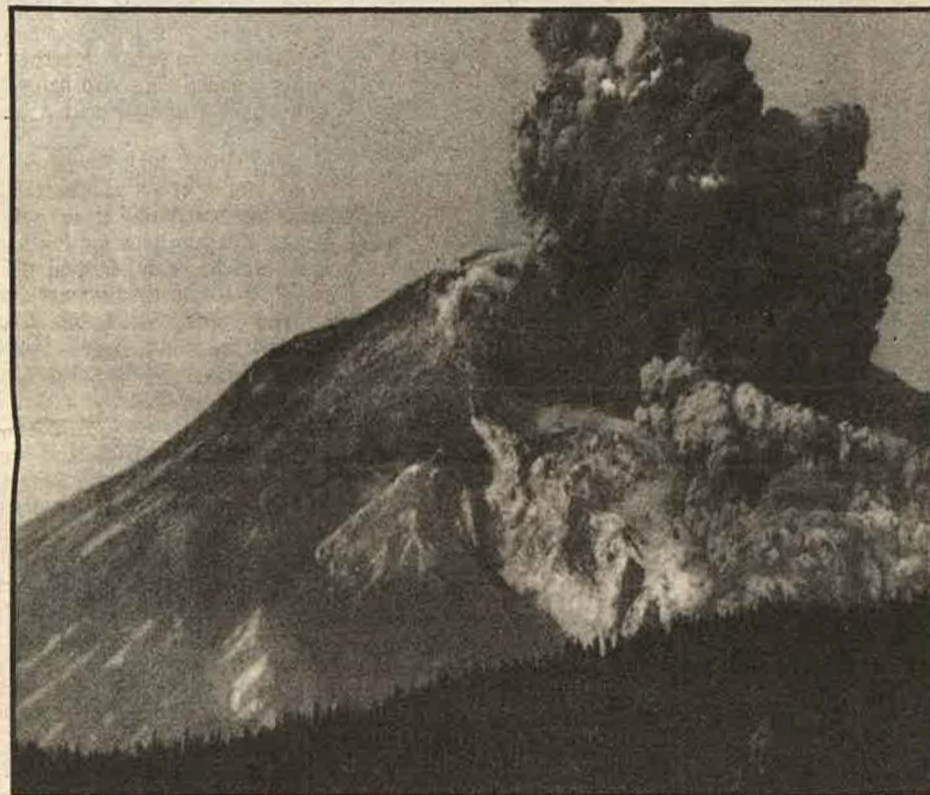
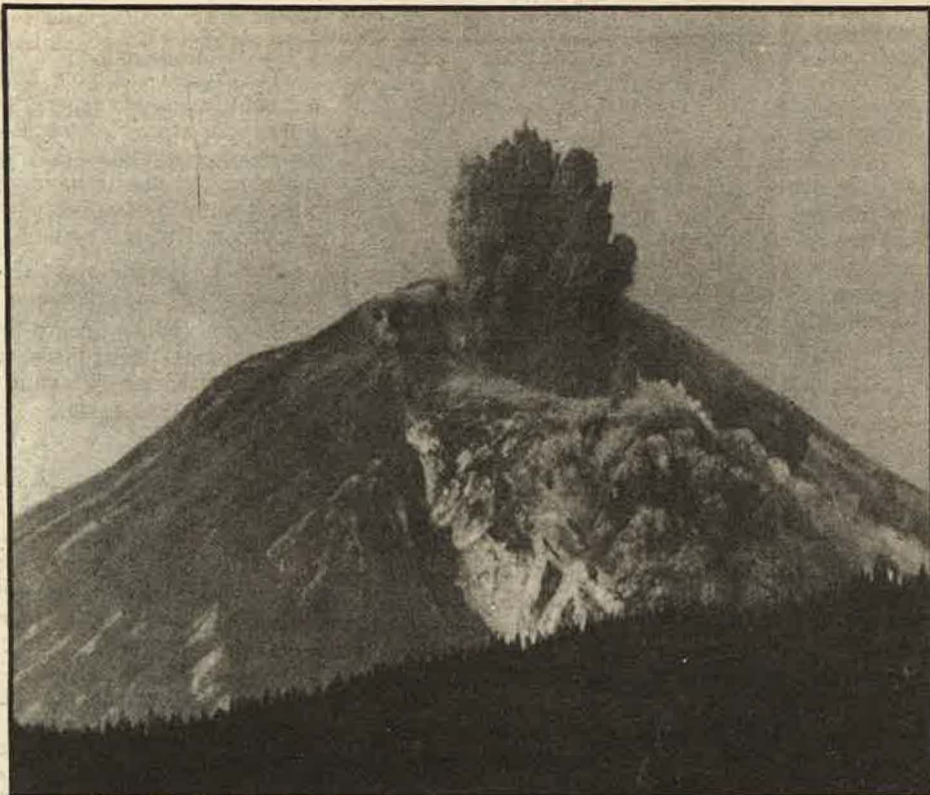


Photo by PAMELA REAMER

GERRY MARTIN: "The whole northwest section and north section blowed up."



dressed and sitting down to morning coffee. A retired engineer, Apgar had designed the early-warning network and was proud of his involvement with it. At 7:30 a.m., Apgar glanced through his Sunday newspaper, *The Daily Olympian*. There was little of local interest. The day's headlines were mostly about news abroad. South Korea was under martial law. Ten refugees from Fidel Castro's Cuba had died during boat passage to the United States.

Shortly after 8 a.m., Apgar began his roundtable discussion with the ham radio operators in his volcano watch network. He hailed Kearney and Martin. Call letters filled the airwaves as a dozen different hams around the Pacific Northwest joined the free-for-all conversation about the mountain, the weather, anything else they wanted to mention.

At 8:31 a.m., Kearney and Martin were on the air, discussing one of three steam vents they could see sending plumes of vapor off the summit of Mount St. Helens. Somewhere another ham radio operator had started a tape recorder that preserved most of the conversation.

□

Martin: "Now that's a new one that's just opened up there."

Kearney: "Uh huh. Well, I reported it yesterday, but that's OK. You're seeing the same thing I'm seeing."

Martin: "(inaudible) . . . But it's coming out of the crater, going straight up that south wall of the crater and coming over the top. Over."

Kearney wanted to go outside for a while. "OK," he said, trying to end the conversation. "W7WFP. I'm gonna be clear." In front of the parked van, Mariana Kearney was seated in a lawn chair, drawing a pencil sketch of the mountain in a notebook. Two sightseers, Francisco Valenzuela of Vancouver and Robert Rodgers of Portland, had just parked their car nearby and were getting out to look for a vantage point. Martin, apparently fascinated by the new steam vent, kept on transmitting.

Martin: "It's the north face, north face of the crater of the south wall. OK, there's one, two, three big craters in there. Maybe it's 400 feet deep over one on the east-northeast side. OK, coming right up against the bottom, right against that wall it comes up. Now there's a mouth forming here . . . there's a cloud here on the . . . Oh, oh. I just felt an earthquake, a good one, shaking . . . uh, there's a (inaudible)."

Seconds passed. Kearney tried to raise Apgar to report that he, too, had felt the earthquake shake his Campwagon. Apgar did not respond. His attention was fixed on Martin.

Martin: "(inaudible) . . . Now we've got an eruption down here. Now we got a big slide coming off. The slide is coming off of the west slope. Uh, now we've got a whole great big eruption out of the crater. And we got another opened up on the west side. The *whoole* west side, northwest side is sliding down."

Martin spoke matter-of-factly, reflecting his years of training and experience as a U.S. Navy radioman. Even so, Apgar began to realize Martin was reporting a major disaster.

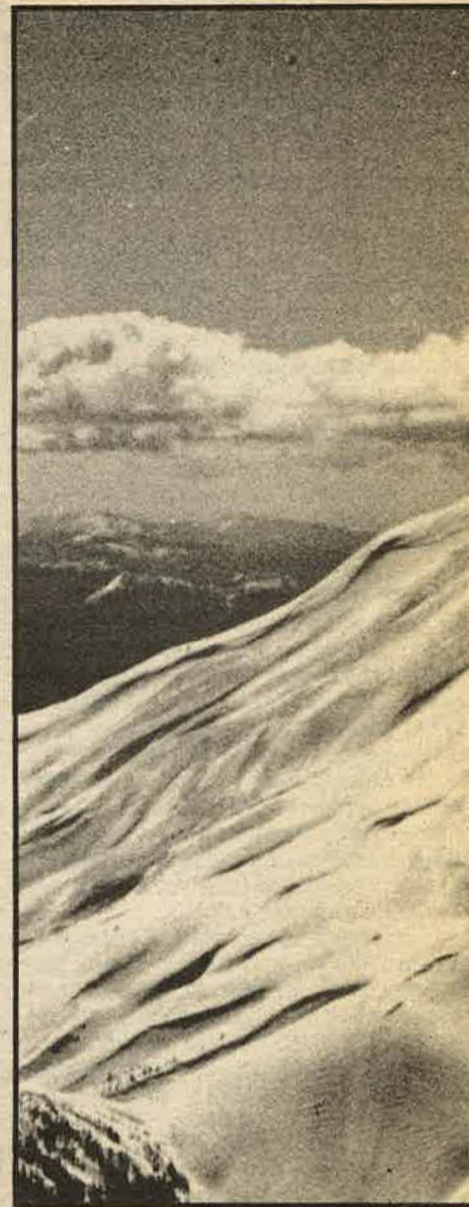
"Keep going, Gerry," he said into his microphone.

Al Kinder, an Olympia ham operator in charge of long-range, 75-meter-band communications for the emergency network, broke in to tell Apgar that Martin should switch to the long-range frequency for better reception.

Martin: "All right, we got it, boy. The whole northwest section and north section blowed up, trying to come up over the ridge towards me. I'm gonna back out of here."

Kinder: "OK, I'll stay on 75."

Martin: "Gentlemen, the camper and



TERRIBLE BEAUTY — The top of Mount



Photos © 1980 by VERN HODGSON and the Everett Herald

THE BLOWUP — Sunday, May 18, 8:32 a.m. "Vancouver! Vancouver! This is it!"



the car that's setting over to the south of me is covered. It's gonna hit me, too."

The cadence and pitch of Martin's voice did not change. His reports were as calm and concise as ever. Volcanic ash filled the air, creating lightning discharges that interrupted his words with static. Apgar and the others waited several seconds for Martin's next report. Finally it came.

Martin: "(inaudible) ... get out of here."

His tone implied finality. Two, perhaps three seconds later, there was another pulse as a microphone switch opened and closed, but no words came.

□

Even as the ash cloud descended on Martin, Ty and Marianna Kearney scrambled to escape. Kearney took down the van's folding aluminum top and his wife threw her lawn chair inside. She was going to retrieve a can of gasoline and a canister of propane gas, but Kearney shouted, "Leave it!"

"We're leaving the area, we are leaving the area," he radioed. He put the van in gear and raced down the circuitous network of logging roads while his wife knelt in back holding the radio. Kearney had to outrun the ash cloud, but the road he was on led toward the mountain before it would zigzag back to safety. Kearney hit a bump and a wooden cupboard banged open, spilling out a teakettle and a jar of instant coffee.

"Ty, good luck," radioed his friend, Frank Bosch of Woodland. "I know it sure looks like something from there. Catch you later." Kearney was far too busy either to hear him or reply. Behind the van as he raced along was the two sightseers' car.

The boiling black cloud was coming toward them all, expanding to within a quarter of a mile. Kearney could see now that Coldwater Peak — where Martin had been — was engulfed. Slender, white-barked alders along the road began to bend in a growing wind the mountain had created as Kearney and his pursuers turned onto a road heading south, away from the mountain. The death cloud came no closer.

On U.S. 12 north of Davisson Lake some 25 miles northwest of the volcano, another ham operator reported in to Apgar, who sat rigid with tension at the desk beside his closet-mounted radio in his Olympia mobile home 68 miles away.

"Reade, you wouldn't believe it," said James Carlson of Renton. "It's covering an area 15 or 20 miles in length. And it's going clean up in the clouds now. It's like pure black, and it's unbelievable!"

"Coldwater Peak is in the cloud," Marianna Kearney reported from the back of the jouncing Campwagon. "It was headed right that way."

"... toward Coldwater Peak?" asked still another ham operator, Bob Clark of Toledo.

"Yes," she replied. "Gerry is in it."

□

No trace of Gerry Martin's body was found. Nor was there any trace of his campsite or his 26-foot, green and white Superior mobile home.

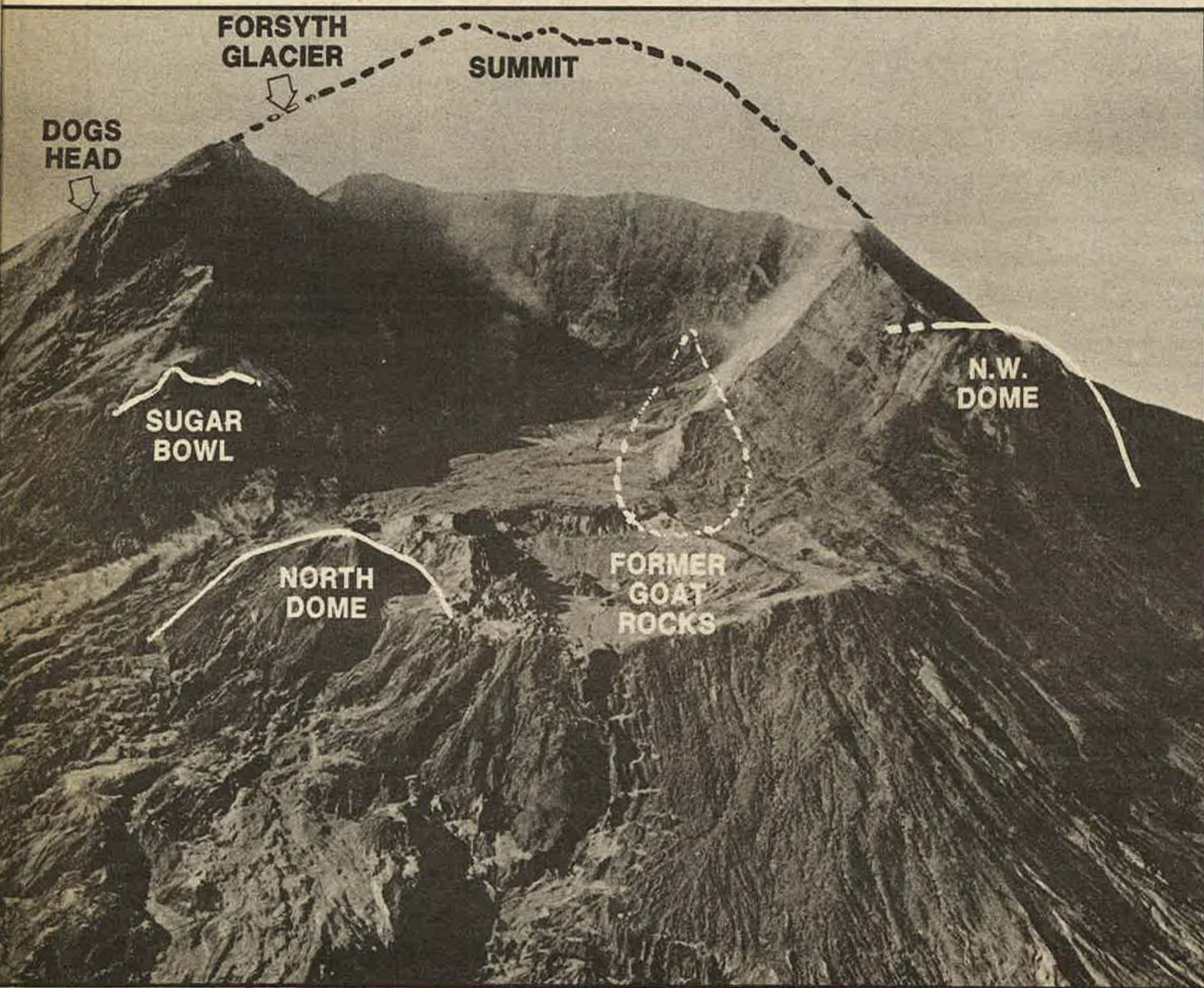
But even before the racing cloud reached Martin, David Johnston, the California geologist who was "genuinely afraid" of Mount St. Helens and whose camp Martin could see, was blown through the air off his ridge 5.5 miles north of the volcano like a fly hit by the stream from a high-pressure fire hose.

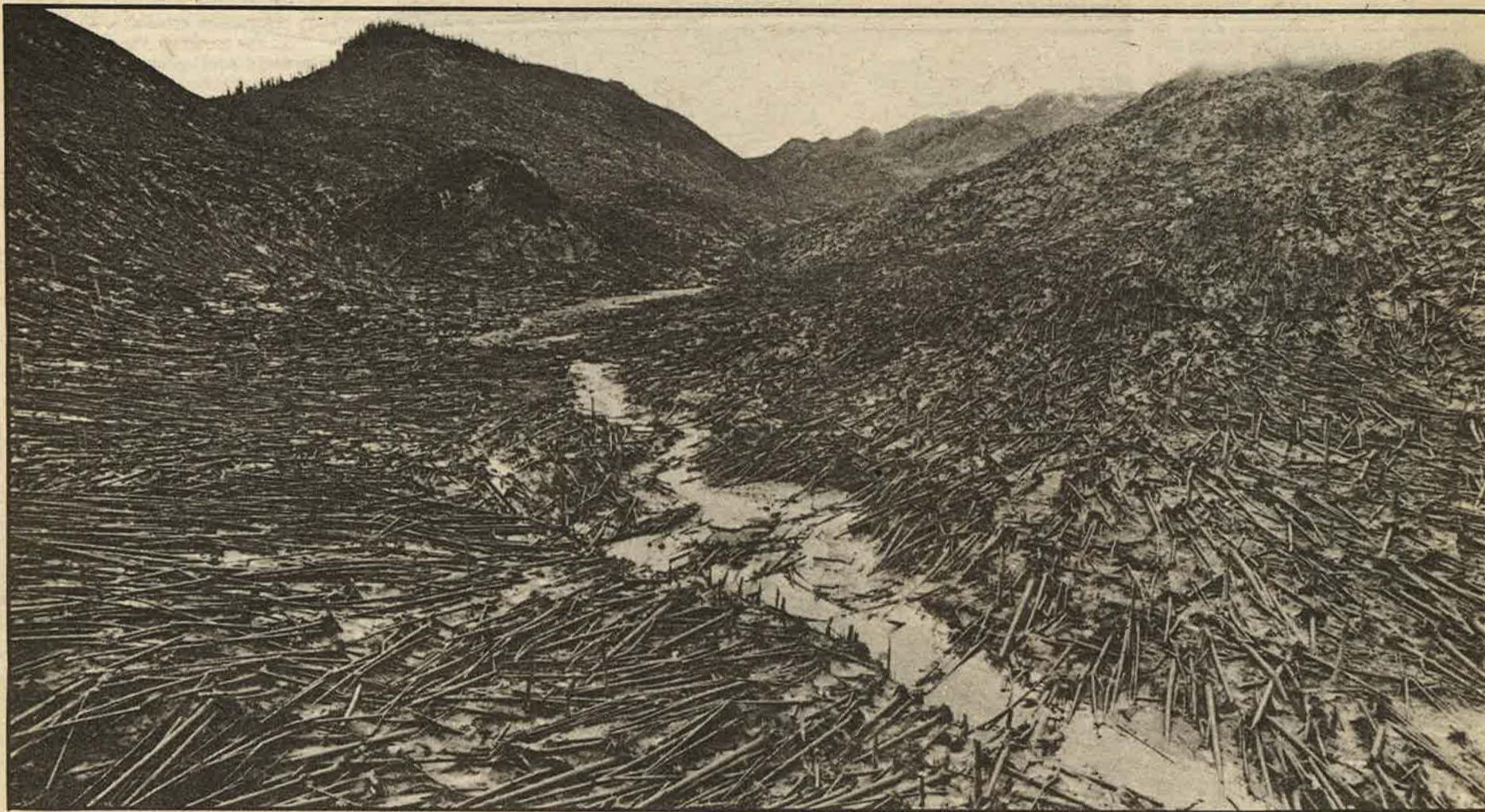
Johnston had shouted into his own radio microphone: "Vancouver! Vancouver! This is it! ... Is the transmitter working?"

In the next instant he was gone. A few bits of Johnston's camp trailer — a piece of framework, a license plate, a tail light, a yellow toothbrush — came to rest against a tree stump 550 yards away. Nothing else was found. The Ford Pinto simply vanished. So did Johnston. ■

270 feet of snowy serenity, was blasted away May 18, leaving a gaping crater amid the ghosts and skeletons of former landmarks.

Staff photos by WES GUDERIAN





Staff photo by TIM JEWETT

STONE WIND — Uprooted and stripped trees, weighing tons apiece, lie prostrate and facing downwind after the passing of the ash hurricane.



## The witnesses

**R**eld Blackburn already had tripped the shutter on the remote-control camera several times that morning. As each photograph was taken, Blackburn — a meticulous worker — opened his notebook and carefully listed the time, the subject and his comments.

He was near his car when the mountain came apart. He quickly fired off three shots with a hand-held camera, made nearly illegible scribbles in his log and leaped into his silver Volvo. Within seconds the windows blew out and hot ash began to fill the car. Blackburn would be buried up to his neck as the ash inside climbed to where the windows had been. He was dead long before that.

In camp beside his lime green Dodge Coronet station wagon four miles west of the crater, Robert Landsburg saw it coming. Just as Pat Sullivan had thought when he saw Landsburg's camp from across the South Fork canyon at dusk Saturday, there was no escape.

Landsburg did have time to fire off 14 pictures with his tripod-mounted Nikon, literally tear it off the tripod and stow it in his tan knapsack along with the wallet that would identify his body. Then he suffocated in the cloud of ash that enveloped him.

Don Selby was blown to bits on Spud Mountain. His Ford pickup camper exploded, tipped over on its side and began to burn. A propane tank inside the camper shell helped feed the flames. Selby's se-

cond hand Pentax with which he had hoped to record the big eruption on film would never be found.

His friend Brad Backstrom had just reached the town of Toutle on his way back to Spud Mountain when he saw a huge mushroom cloud in the sky. Realizing the volcano must have erupted as Selby had hoped, Backstrom cursed his luck. Don would be getting some stupendous pictures. Seeing no police around Toutle to stop him, Backstrom headed up the Spirit Lake Highway toward the mountain.

Elsewhere in the western valleys of the Toutle, two Weyerhaeuser Co. employees saw the eruption through their own camera viewfinders.

On the shore of Silver Lake 28 miles west of the volcano, Ed Hinkle, 47, a Weyerhaeuser production management instructor, was trying out a new piece of equipment. His job sometimes required him to use new and unfamiliar training aids in the classes he taught.

Hinkle needed to learn more about this particular gadget, and his boss had suggested that he take it home. The sky was relatively clear and the light was right in the early morning hours. It would be a good day to practice.

On the upstairs deck of his lakeshore home, Hinkle set the Hitachi color television camera on a tripod and put the videotape recorder on the bedroom floor. The tape was rolling as he zoomed in on Mount St. Helens. It was quiet at 8:10 a.m. Birds flew past, and in the left side of his viewfinder Hinkle could see the much-discussed bulge near Goat Rocks.

The bulging seemed more prominent today. In fact, the north side of the peak was visibly expanding — slowly enough to make Hinkle wonder whether he was imagining it, fast enough to convince him it was true.

Hinkle played with the color controls and focused on Silver Lake to set the greens and blues. Still water and Hinkle's boat moorage were centered in the field of view for some minutes as he walked in and out of the house. A trout jumped, and as its belly hit the lake surface again, a shimmer

of waves spread out and kissed the shore near Hinkle's home. It was the last bit of normalcy Hinkle would remember all day.

Hinkle would not remember why, but when he returned to the deck from inside the house, he looked toward the mountain in time to see a small plume rising off the north side. He swung the camera in that direction.

The plume grew, and in an instant the whole north side of the mountain slipped out from beneath it. A second vertical plume rose from the peak as the first cloud of ash and debris shot away from the mountain sideways. Hinkle's camera rolled on. More material came, sweeping down the north flank, cascading down the crevices and ridges that radiated away from the summit. A crater now was apparent, and yet a third plume rose from what Hinkle thought was near Spirit Lake.

Hinkle trained the camera on the summit and saw hundreds of feet of rock on the south side of the new crater slip down into the hole. A wall of ash flowed over the south edge of the crater and down the south flank, stopped, and was drawn back in as though the videotape somehow had run in reverse.

There was no sound, no noticeable change in air pressure. More birds flew past Hinkle's viewfinder. But lightning now bolted horizontally through the ash cloud and the skies were turning purple.

Hinkle shouted to his wife, Elsie, to turn on the police scanner and listen for evacuation orders from the sheriff's office.

At Weyerhaeuser's big 12 Road Camp some 10 miles up the South Fork of the Toutle from where Hinkle stood, watchman Harold Terry, 59, was taking a picture of his three-legged Doberman pinscher, Hobb, when he saw a black plume of debris appear in his viewfinder. He could not see the mountain from there — it was 24 miles away behind an intervening ridge — but he knew what the plume meant.

Using words very similar to what crew boss Jim Pluard had used when he learned of the first venting March 27, Terry radioed Weyerhaeuser security headquarters in Longview that Mount St. Helens had

"blowed her top" and left on his morning rounds of camp.

Terry was alone at 12 Road and easily could have driven to safety right then, but he attached no special importance to this eruption. After all, the previous ones had been harmless. Besides, Terry and other Weyerhaeuser employees had been told they would have at least two hours' advance warning of any flooding if a major eruption should occur.

Erwin and Hazel Reece, who lived in rural Cowlitz County west of Toutle, were on their way up the Spirit Lake Highway that morning to retrieve a bulldozer he had left at a cutting site for shingle bolts. Their destination was seven miles inside the road-block.

They had just reached the gate 11 miles west of the mountain and Reece, 59, was starting to turn his 15-year-old Chevrolet flatbed truck onto Logging Road 3500 when he noticed a puff of smoke spurt from the summit. Then a big black cloud seemed to rip from the mountain and spread toward them.

"There she goes!" Reece said. "How pretty!" was his wife's first reaction. But fear quickly overtook her. "What are we going to do?" Reece did not reply. He was already wheeling the truck around to head back down the valley. In the gravel turnaround just north of the pavement, Reece thought he saw at least four parked vehicles.

As he came out of the turn and speeded up, a blue pickup truck with a camper shell pulled off the road ahead and a middle-aged man got out and started to walk back toward the volcano. Hazel Reece, 57, waved in warning, but the man ignored her and kept walking.

As they raced down the highway, the Reeces saw no other vehicles ahead or behind. The black cloud had turned pure white now and was rolling toward them in accelerating waves.

"It's catching us," Hazel Reece cried, rising from her seat to look back. "There's no way we can make it. Lord help us!"

"Set down and keep quiet," her husband muttered, struggling to hold the old

truck on the curves. The air became suddenly warm, like a midsummer wind. As they neared Camp Baker, the Reeces saw the white Ford Torino station wagon that carried Fred and Margery Rollins coming the other way. Reece blinked his lights and leaned on the horn. His wife was screaming.

"Get out! Get out! Get out!" Hazel Reece shouted. But the white station wagon kept going. Reece did not start to let up until he reached Kid Valley, 12 miles below the roadblock and 23 miles from the erupting mountain behind him.

The Reeces may have been the last ones out of the gravel turnaround. The volcano would leave a path of destruction all the way to Camp Baker and beyond. The logging camp was more than six miles past the locked gate that was supposed to ensure public safety. It was more than 15 road miles beyond the point where the western edge of the Red Zone crossed the Spirit Lake Highway.

□

Somewhere behind the Reeces as they fled down the North Fork Valley that morning were Weyerhaeuser crew boss Jim Pluard and his wife Kathleen, 56. Pluard had wanted to go up and check his cutting crew's work site near David Johnston's camp.

It was not something the company required, but Pluard was a conscientious foreman. He worried about the equipment and possible fuel thefts from the work site. He went up to have a look almost every Sunday.

As they left home in Toledo, the Pluards ran into Wally Bowers, 41. Bowers, a Winlock logger, was a member of Pluard's crew who was headed up the mountain himself to do some moonlighting. He was working extra to help pay his cancer-stricken wife's hospital bills, and was waiting for a man who would go with him, Tom Gadwa, 35, of Montesano.

The Pluards departed about 7:30 a.m. in his yellow Weyerhaeuser pickup. Pluard left a note on the door of their mobile home that said: "Went to the mountain. Be back in two hours." They were never seen again. Nor was he able to say anything over the pickup's two-way radio.

□

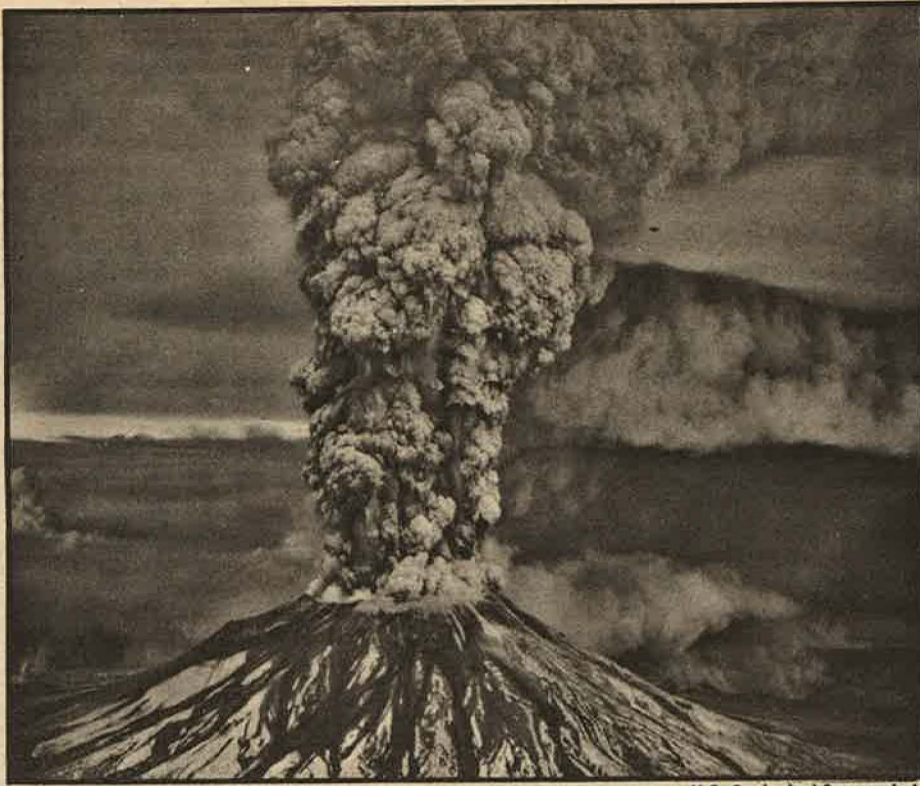
In subsequent weeks, misinformation about the May 18 eruption would be widely circulated. There would be talk of a multi-megaton explosion on Mount St. Helens with the combined effects of several atomic bombs. There would be reports of shock waves knocking down trees, of pyroclastic flows that skittered instantly down the mountain to kill dozens of people, of lava being released from the moment the eruption began. None of that was true.

Eleven seconds after 8:32 a.m., a major earthquake shuddered through the volcano. Measured at the University of Washington, it registered 5.1 on the Richter scale — causing 11 times the ground motion of the initial March 20 quake and releasing more than 30 times as much energy.

Its epicenter was only a mile north of the summit and at very shallow depth, about 990 feet below sea level. A second quake of 5.1 magnitude hit the mountain 110 seconds later, but the damage already was done.

Within the first few seconds, the destructive force of 26.5 megatons of TNT was unleashed to wreck the high country — not in a sudden, percussive blast, but in a silent torrent of energy lasting eight to 15 seconds.

The pool of magma that had gathered beneath the mountain since late March had heated surface rocks, melted glacial ice to saturate the peak with ground water and lubricated fault lines around the edges of the mile-wide bulge at Goat Rocks. The mountain needed only a slight nudge to send the bulge sliding downslope toward



U.S. Geological Survey photo

#### PENT-UP ENERGY — A century of buildup released in a day.

Spirit Lake, just as scientists had predicted.

Inside the mountain, an estimated 55 million tons of ground water — more than 13 billion gallons — had collected in rocks between the steadily growing magma chamber and the surface. The water heated to somewhere between 305 and 424 degrees Fahrenheit but it could not boil. Like the contents of a pressure cooker, it was kept liquid only by the sheer weight of the overlying rocks that held it in place.

Some 15 to 20 seconds after the triggering shock of the first earthquake, the avalanche began. Sheets of ice and other material slipped into the crater. The Goat Rocks bulge cascaded downslope. Countless tons of rock, ice and earth thudded into the valley below.

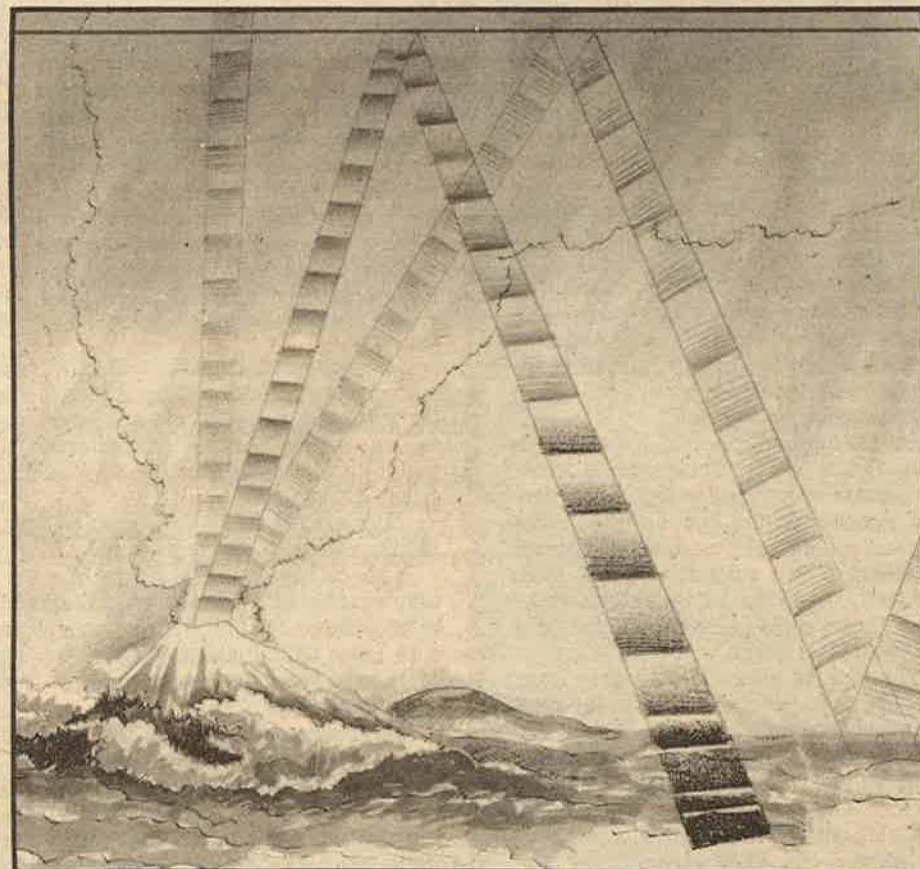
In an instant, the lid was gone and the water flashed to steam. The superheated vapor pulverized solid rock, picked up old volcanic ash and shot down the north face of the mountain, destroying whatever stood

in its path and gathering in more debris as it went. Other vents opened to spew more steam. Volcanic glass, rock dust, soil and shattered remnants of timber filled the air, compressing the atmosphere, giving it 10 times its usual density and driving it downhill with ramrod force.

It moved at surface speeds nearing 100 mph, but the ash gave it the force of a natural wind three times that speed. For the first few miles, the steam-powered air mass showed no respect for topography. It struck Spirit Lake, ripping the lodges, homes and other buildings along its shore — and probably Harry Truman — to tiny shreds.

It spilled tons of debris across the south and west shorelines, splashing lake waters 400 feet upslope on the wooded ridge opposite. It snaked over the first ridges and hills beyond the lake as if they were not there, neither pausing nor swirling as floodwaters do when they hit major obstructions.

Uprooted trees weighing tons apiece



Drawing by staff artist PAT McLELLAND

**SOUND WAVES** — An inversion at 150,000 feet (line at top) caused the energy surge to ricochet and be heard as booms hundreds of miles away, while near the volcano no blast was heard, only the stone wind's hiss and the thudding of trees.

crashed over in lines pointing downwind. But each obstruction created a drag, and farther from the mountain the ash wind started to swirl as it encountered new obstacles. There the trees began to fall in spiral patterns, some toppling back toward the source of their destruction. There were no shock waves that tore buildings apart or blasted timber down as though a dozen nuclear bombs had detonated — only the dense, awesomely powerful stone wind that laid waste to the land.

The first series of earthquakes lasted 12 minutes. Three minutes after that, the eruption turned phreatomagmatic — a combination of steam explosions and direct releases of molten rock — as solid material overlying the magma chamber tore away. At 12:17 p.m., it would become totally magmatic. Powered by tons upon tons of hot gases that were discharging from the magma chamber, a froth of molten rock would blow into the air to solidify as ash particles. The towering cloud of ash would rise directly above the crater to an altitude of 63,000 feet and finally swing northeast in the high winds that would take it on an eight-day trip around the world.

Ash quickly smothered the countryside in a fan-shaped pattern north of the volcano, mixed with the remains of timber that was ground to dust. Scientists later would find cars and trucks that had been picked up by the wind and dumped atop layers of ash and powdered trees. Boulders would be found as far as five miles from the summit, thrown there from sources hundreds of feet inside the mountain and so badly weakened by temperature and pressure extremes that they crumbled when struck with hammers. Some chunks of ejected rock found nearer the mountain towered three stories high.

There was no order to the destruction. Within three to 10 miles of its source, the stone wind lifted D-8 Caterpillar tractors and stripped them of their tracks and bulldozer blades, shredding solid steel to confetti and spreading it a mile and a half. Only the frames and diesel engines of the big rigs were left.

In places closer to the volcano and in direct line with the heavy equipment, compact cars were found relatively undamaged, with only windows blown out. Tires and fuel tanks that should have ruptured because of dramatic changes in atmospheric pressure remained intact. In other areas, paint was sandblasted off cars to expose bare metal on the sides facing the mountain. Grille plates were packed with fractured rock, tree bits and other debris.

More than a cubic mile of material would be discharged into the air — a ton of debris for every man, woman and child on the globe — and the top 1,270 feet of Mount St. Helens would disappear. It was beautiful no more.

□

The force of the prolonged energy burst rocketed into the upper atmosphere and slapped the skies like a salesman slapping a waterbed.

Vertical ripples spread through the atmosphere to cause lazy fluctuations in air pressure. Hours later in Washington, D.C., scientists would record the "gravity" waves from Mount St. Helens crossing the Eastern Seaboard. There would be six slow cycles of air-pressure changes that would pass over the nation's capital and undulate across the Atlantic Ocean until the force of gravity finally flattened the atmosphere again.

Near the mountain itself, there was no sound of an explosion. All that could be heard was falling timber and tumbling rocks clacking against one another as the wind moved across the countryside, plus the incessant hiss and crackle of static electricity as ash particles rubbed against one another.

But there were other sounds — "loud"

sounds that were still in too low a frequency range to be heard by man or animal. The inaudible roar mushroomed in every direction, raking across the land and high into the skies. The leading edge of the waves plowed into undisturbed air, compressing it. As the higher, thinner air compacted, it warmed slightly, enabling later portions of the waves to travel even faster in a race to catch up.

The unheard roar shot through the upper atmosphere and into the stratosphere, where light sprays of volcanic dust already were collecting. As the waves picked up even more speed, they began to compress as well as pile up on one another. Around 150,000 feet, they struck temperature inversions in the atmosphere — layers of cold air trapping masses of warmer air below — which acted as reflectors.

Some waves hit the inversions at angles that were too shallow or too steep, and they never became audible. But others ricocheted back to Earth. And some of those instantly sprang skyward for repeat trips, to bounce between atmosphere and Earth again and again. The result — after the returning waves reached speeds that compressed them into audible forms — was a random barrage of ear-splitting booms, heard in some places but not in others.

None was heard in Portland, for example, only 52 miles south of the volcano. But somewhere over Seattle, as the waves raced back toward the ground 100 miles north of their source, the trailing edges finally caught up with the leading edges and audible shock waves formed.

Thunderous explosions rocked parts of Seattle, startled George Wedding in Marysville and caused 10 distinct blasts on Orcas Island in the American San Juans. The booms were heard as far away as Edmonton, Alberta; Butte, Mont.; and Redding, Calif. Reports of similar explosions lit up switchboards at police stations in southern British Columbia. Two of them shook the walls of St. Patrick Church in Maple Ridge.

Uniformly, people thought they had heard explosions from close by, either in their neighborhoods or only a few miles away. And they were right. Sonic booms had formed above their heads, but were caused by a mountain hundreds of miles away. People whose lives were in jeopardy only a few miles from the crater heard nothing at all to warn them.

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Evlanty Sharipoff had heard no explosion. He was hard at work that last morning of his life by 7:45 a.m.

The night before, he and his three-man crew had decided to finish work on the last three acres of a 40-acre timber tract they were thinning under a contract with the Weyerhaeuser Co. The job began April 23, and it took nearly a month to remove the younger, weaker trees. Sharipoff, the foreman, thought they might be able to finish by nightfall Sunday. After weeks of sleeping in tents and eating meals cooked on a camp stove, the men were ready for a rest.

Sharipoff revved up his chain saw that morning and began felling smaller trees to make room for the brawnier firs. The vibrations of the saw flowed through his arms and a light sweat began to appear on his forehead.

Standing in the shade of the dense forest, splashed by occasional streams of sunlight that broke through the foliage overhead, Sharipoff could look up from his work and, 50 feet away, see James Scymanky, 36, of Woodburn, Ore., working his way up the lower end of a tree-covered slope.

To one side, Leonty Skorohodoff, 30, worked the blade of his saw through the trunk of a young tree, then stood back to watch it fall. Jose Dias, 33, a Mexican national who was the fourth member of the crew, lay asleep in Skorohodoff's pickup truck. A devout Catholic, Dias would not

work on Sundays.

Skorohodoff and Dias both lived in Sharipoff's home town, Mount Angel, Ore. Skorohodoff had been a good friend of Sharipoff since childhood, when both their families moved from China to South America. The two men with Russian names were immigrants whose parents had fled the Soviet Union in the latter years of the Romanov dynasty to escape religious persecution.

They and their families were Old Believers — people of the Starover, a Russian religious sect founded in 1656 when Nikon, the sixth patriarch of Moscow, purged old Muscovite texts, rituals and icons from the Russian Orthodox Catholic Church. Despite sometimes harsh penalties for doing so, generations of Old Believers had clung to the old ways ever since.

Seeking religious freedom early in the 20th century, many Old Believers had fled their native country, settling for the most part in Manchuria or the Tien Shan Mountain region of western China. Still later they would flee Chinese communist persecution, this time to Hong Kong in the 1950s. With World Council of Churches help, the impoverished group ultimately left the British crown colony to make new homes in Australia, New Zealand, Brazil and Argentina.

Sharipoff's and Skorohodoff's parents were among those who fled to China, where the two boys were born in the western province of Sinkiang. The families later went to Argentina and farmed along the banks of the Rio Negro.

In the early 1960s, the Sharipoffs, Skorohodoffs and other Old Believers migrated to Oregon, finding jobs in Portland factories or on farms near Woodburn. Sharipoff's family settled in Mount Angel and Skorohodoff's soon followed. The Old Believers followed traditional ways in America as they had done in other countries for more than 300 years.

Devout men did not shave their beards and women did not cut their hair. The dev-



Staff photo by TIM JEWETT  
ASH CAMOUFLAGE — A battered artifact of man lost in a fallen forest.

out wore their *pois* and *krest* — belt and cross — at all times. Music was not permitted except for the hymns of the church. Radios and television sets were banned, as were most other influences of modern American culture.

Living in a tight enclave of Old Believers in Marion County, Ore., neither Sharipoff nor Skorohodoff gained a working knowledge of English. Both had retained many of their religious beliefs. But there was some slippage. Skorohodoff, for example, owned a transistor radio to which he listened on trips away from home, even though he did not know enough English to make sense of what he heard.

Sharipoff worked well with his men, communicating in the Spanish he and Skorohodoff had learned as boys in Argentina. Scymanky had come to know the language when his father was stationed with the U.S. Air Force in Uruguay, Argentina's eastern neighbor. Dias was born in a Spanish-speaking country.

None of the four men was overly concerned about the activity up to then on Mount St. Helens. The foreman's nephew, Gabriel Sharipoff, a co-owner of the small tree-thinning company that employed them, had driven to the job site in early May and told them to leave if they ever had second thoughts about working near the volcano. Skorohodoff had heard it mentioned a few times on his radio but was never sure what was being said.

Scymanky, a former baker and aircraft mechanic who was happy in his new work, figured the worst that could happen would be an eruption from the mountain's very summit or an avalanche down its snowy slopes. He was the only member of the crew who spoke or read English. He had seen newspaper and television stories about the volcano but had not paid much attention. After all, the mountain was 13 miles southeast of the work site, and it seemed serene.

Scymanky straightened up from a crouch over his saw at 8:30 a.m. and watched as another tree went down. Skorohodoff's pickup, in which Dias now lay asleep, was out of sight on the ridge above him. Dias was a friend of Skorohodoff who had started work Friday to learn to operate the big chain saws. The work was simple — saw right through the small timber that was crowding out the healthier stands, but notch and wedge the larger stuff before sawing, to control where it fell.

While this last tree fell, Scymanky had shut off his saw to catch a breath. As he turned to see the two Russians working down the hill, he thought he heard the faint sound of a man's voice. His ears still rang from the drone of the saw and his arms were numb from its vibrations. He concentrated and listened again. He could not make out the words, but there was panic in the voice.

He wondered if perhaps a saw had bucked and injured one of the Russians, but the voice was coming from a different direction — from upslope in the direction of the pickup. And the shouting was moving closer. It was Dias.

Scymanky strained once more to hear, and the words finally became clear.

"*El volcan esta explotando!* The volcano's exploding!" Dias shouted as he raced barefoot down the hill. His eyes were wide with terror. But frightened as he was, he could not outrun the ominous sound that began to fill the air.

As Scymanky stood on the wooded slope, saw in hand, the sound of a thousand rattlesnakes rolled out of the southeast and roared through the forest. The bright spring morning darkened suddenly and a warm wind brushed Scymanky's face. His own panic set in. Scymanky turned to run downhill through his trail of fallen timber to look for an escape route. Before he could take a step, a wave of heat struck his back and knocked his hard hat to the ground. His

body froze in a half-crouch as the daylight faded. He could neither run nor fall.

The heat felt like molten steel as it swept over his body. The hiss became deafening. Scymanky dropped the saw and held his breath. He sensed only the pain of his burns, the roar of the ash and an odd, prickly feeling on his back from the barrage of minute, superheated rock particles.

When he reached the end of his endurance to live without air, he thought he was going to die. But then, just as suddenly, the fury passed. Darkness turned into a misty gray haze. Scymanky fell to the ground, his chest heaving, drawing in deep gulps of air.

Regaining his feet, he stumbled through brush, fallen trees and a thick ground cover of ash toward a creek at the bottom of the hill some 30 yards away. The water was hot, black, saturated with the same grit that covered the ground. Exhausted and in excruciating pain, Scymanky sat down in the creek and scooped the dirty liquid over the raw burns on his back. Soon he was joined by the other three loggers. No words were exchanged. They only groaned and whimpered as they sought to soothe a pain that would not go away. ■



## The ordeal

From their campsite on the north bank of the Green River below the mouth of Miners Creek, Bruce Nelson and Sue Ruff could not see Mount St. Helens, nearly 14 miles away. They had crawled out of their pup tent that Sunday and were huddled over a campfire to dispel the early morning chill while they waited for a pot of coffee water to boil.

Their friend Terry Crall had risen early to take his spinning rod down to the river and try for a steelhead, even though the season would not open for another week. Brian Thomas and Dan Balch were just beginning to stir in their own tent, 50 yards downstream, and Crall's girlfriend, Karen Varner, was asleep in a third one nearby.

As Nelson and Ruff warmed themselves by the fire, Crall broke through the trees and ran to tell them about a legendary fish that got away.

"It was at least this big," Crall exclaimed, spreading his hands to indicate a genuine whopper. "Bruce, you've got to come down and see it." But before Nelson could turn, their attention was drawn to the south, where a small plume of smoke was rising above the valley wall.

"Wow! Look at the sky! There must be a fire somewhere," Ruff said, heading back to her tent to rummage for a cigarette. The two men saw the smoke rise quickly above the distant ridgeline, then spread in all directions, filling the sky and coming toward them.

With her package of Camel Lights in hand, Ruff emerged from the tent and was on the way to rejoin Crall and Nelson when a strong wind whipped up, building force until it felt like a hurricane. Flames from the campfire shot out flat against the ground. A hellish, brownish-black cloud churned toward them at terrifying speed, hissing through the trees as it came.

"Karen!" Crall cried. He dived for the red nylon tent where his girlfriend still slept as the cloud closed over the camp.

Nelson and Ruff instinctively backed away from the fire and clung together between two large fir trees that were behind their tent and Crall's.

The first jolt of the cloud hit from the west — not from the south where the



mountain was. It came barreling up the Green River Valley and knocked Ruff to her knees. Nelson managed to stay on his feet.

Within seconds, trees by the hundreds were thundering to the ground. The two firs on either side of Nelson and his girlfriend fell toward each other, shaking the ground and showering debris over the couple as their roots tore from the soil.

Allan Gould Jr., a contract logger who was working more than six miles northwest of Nelson and his friends, saw the way the cloud split in two after it burst from the volcano. Gould, 31, of Castle Rock, said it rolled northward like a giant surf wave, but divided momentarily as it smashed into Elk Rock — the 4,391-foot hill northeast of the Spirit Lake Highway roadblock.

The cloud's eastern edge boiled northward around Elk Rock to pass over Fawn, Hanaford, Elk, Lonesome and Tradedollar lakes. The western edge swung west toward Camp Baker, then seemed to circle back on itself and shoot northeastward up the Green River Valley to join the other edge. From his high ridge two miles north of the Green, Gould felt a backwash of wind as the western edge swept up the valley to knock Sue Ruff off her feet. The cloud spent itself on the valley's south-facing slope, where the Kelso people were camped.

Clyde Croft was to have met his brother on the tee of a Tacoma golf course that morning. Instead, Croft and his friend Allen Handy were still in camp two miles west of Ryan Lake. They had chosen a spot for their plastic shelter about 50 yards from the abandoned Polar Star Mine, on the north bank of the Green more than 11 miles from the volcano.

They had just rolled out of their sleeping bags when the Goat Rocks bulge pounded into Spirit Lake far in the southwest and the mountain's north flank burst outward in their direction. Handy ran up a small knoll to take cover in the brush-covered mine entrance. He lost the race by 20 yards.

The ash cloud boiled up and knocked him flat on his back. Handy's jaw froze open as hot ash filled his throat and he gasped for a last breath. The horses, April and Cochise, fell dead near a small creek that ran by the camp. Intense heat shriveled the plastic tent.

Croft dived into the creek and lay in the icy water to protect himself from steam and ash that rolled toward him from across the river. He had thought to grab his sleeping bag, too, and pulled it over himself to filter the air he breathed. When the darkness passed some two hours later, Croft set out on the trail to Ryan Lake. He walked at a normal pace, the sleeping bag still wrapped around his head. Croft intended to be a survivor.

A stout man and a combat veteran of the Vietnam War, he took pride in his toughness. Born into a poor farming family in a rural area east of Abilene, Texas, Croft had seen hard times both at home and in Southeast Asia. He figured he was capable of whatever he set out to do.

As he stumbled along the trail, though, his breathing became more and more labored. His arms and chest were covered with burns from the ash-laden steam cloud. Somehow he pushed on. Within three hours, Croft reached Handy's truck in the parking lot at Ryan Lake. It was unusable, blocked in by fallen timber. He fumbled with the door and pulled out half a case of warm Olympia beer. Tearing open the cardboard case, he drank one can and then another. He threw the rest into the truck bed and set out to walk again.

Dale Davis, 56, a husky heavy equip-



Photo by ROGER WERTH, © 1980, Longview Daily News

**THE IRRESISTIBLE FLOOD** — Spirit Lake Highway bridge over the North Fork of the Toutle River yields to the onslaught of water, mud and debris that rips it from its foundation, breaks it up and adds it to the destructive flow.

ment operator, had climbed out of his 1975 Ford pickup that morning with his camera ready. He, his wife, Leslie, 57, and their friend Al Brooks, 42, a forklift operator, had driven onto a ridge above Shultz Creek to look for elk. The three Mossyrock residents were on Logging Road 2800 eight miles northwest of the mountain.

Davis had seen elk every time he had been there in the last 18 years, but he would not see elk today. As Davis focused his camera on Mount St. Helens, a black wave rolled out of the mountain directly toward him. Davis jumped back into the pickup where his wife and Brooks still sat.

Within minutes, the ash-laden wind hit the truck and rocked it like a heavy earthquake. The temperature inside began to climb. There was darkness all around — a darkness so terrifying that all three began

to cry. A flying stone broke the wing window on the passenger side, and Brooks stuffed a rag into the hole to block the grit that was blowing in.

Davis clutched his wife. "My God, what have I done to you?" he said. Brooks kept repeating, over and over, "Oh, my God! Oh, my God!" Davis began to pray. "Lord, let it stop," he pleaded. "Make it stop so we can go home and see our kids. We've come so far, it can't end like this."

Moisture beaded inside the windshield as the temperature rose, and they wiped their hands on it to moisten their faces. After 30 minutes, with the air in the truck becoming increasingly stale, Leslie Davis told her husband, "I don't want to die in the pickup."

Taking the rag from the broken window, a container of coffee and a flashlight,

the three abandoned the truck and prepared to walk. The Ford would not start, and even using the headlights it would have been too dark to drive. Though Davis knew the 2800 road thoroughly, the air was so black that he had to shine the flashlight on the road's edge to lead the others along. They headed for Shultz Creek in hope of following it downhill to safety.

The creek was thick with ash, its banks caked with hot mud. Leslie Davis fell into the mud once and screamed in fright. Her husband pulled her out. They tried the road again, but ash that was now a foot deep floated up and engulfed them.

Bruce Nelson peered into the darkness, straining to see shapes. "Sue?" he whispered. "Are you OK?" He heard something stir nearby. "Yeah," Ruff responded weakly. "OK."

Sound did not travel well. Their voices were muffled, and as they spoke their mouths filled with a fine grit. "My God, Sue," Nelson said. "We're dead."

Nelson probed with his hands and felt hot tree trunks above and beside him. The two large firs, which had stood some 20 feet apart, had formed a natural roof over the couple and supported a tangle of more than a dozen other fallen trees.

He thought they might be entombed by the downed timber, but at least they had not been crushed. "We're not dead yet," Ruff replied. "Keep digging."

Their campsite was covered with hot ash. Nelson gradually picked his way out of the downed timber and reached to pull his girlfriend out of some broken limbs. For a moment, the sky cleared. Nelson yelled for others in the camping party but heard no reply.

Ruff had just enough time to remove her ash-coated contact lenses before the darkness came again. They pulled their sweatshirts over their faces to keep from choking on the ashen fog around them. It thickened and thinned, fluctuating from complete darkness to lighter periods when shapes could be seen 10 to 15 yards away. After several minutes, the two made their way up a hill that rose behind them, hoping they could climb above the deadly fog.

But as they climbed, the fog lingered. After half an hour, pellets of rock and ice began to rain from the sky, and they crouched for cover under some tree trunks. They waited there for more than an hour.

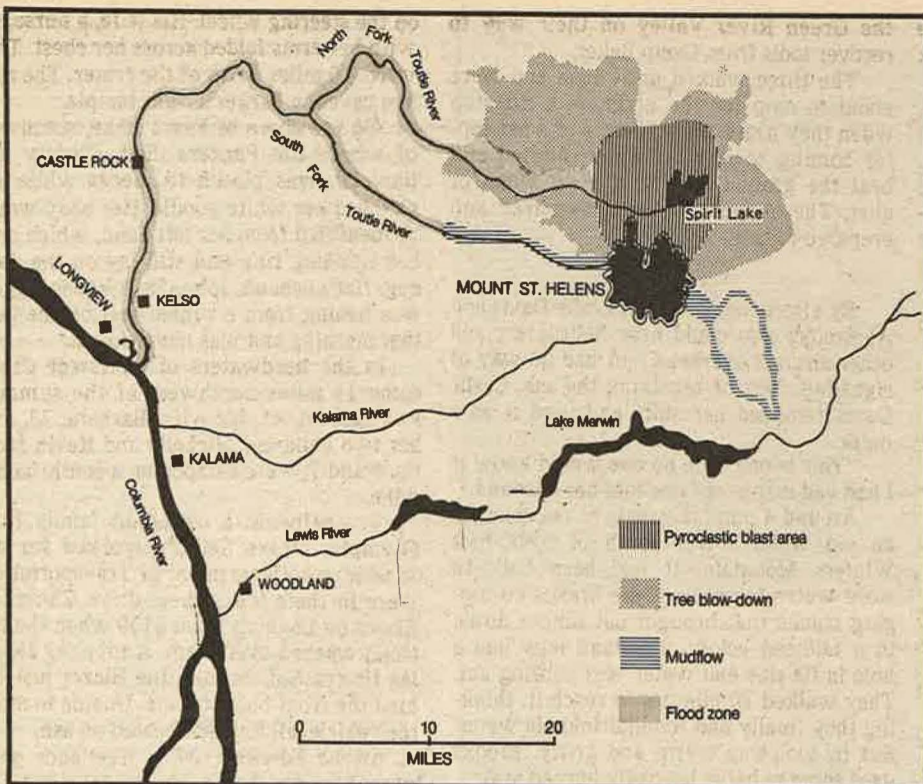
"If we get out of this alive," Nelson said, "you're going to marry me." Ruff said she would. In an hour and a half, the fog lifted.

Thirty minutes had passed before the four tree-thinners — James Scymanky, Evlanty Sharipoff, Leonty Skorohodoff and Jose Dias — felt strong enough to move again. They struggled out of the creek bed where they had washed their burns and climbed toward Skorohodoff's pickup, 150 yards away at the top of a hill.

Powerful forces had shoved the truck's front end into a ditch at the side of the road. Its aluminum canopy, under which Dias had slept less than an hour before, was torn away. It lay on the ground, the tailgate jammed shut and a large hole blown in the rear window.

As they reached the truck, the sky darkened anew, and a fine mist of rock particles began to fall. The four men crowded into the cab as a black fog settled over them. In the close confines of the truck, they wedged their burned bodies together and waited for sunlight to return. With second- and third-degree steam burns covering 46 percent of his body, Scymanky prayed for another blast that would end his life quickly. But after another half-hour the darkness lifted again.

They decided to head south for the Spirit Lake Highway, which now was covered



Map by staff artist PAT McLELLAND

**DESTRUCTION ZONE** — The areas of greatest damage on May 18 extended far beyond Spirit Lake and down the two forks of the Toutle River. Superheated gases and ash flayed the land, showing no respect for the boundaries drawn by governments or for the people who stood in the way.

with smoldering trees. They climbed on hands and knees over downed trees that blocked the logging road. Bark on the 5- and 6-foot-thick trunks was hot to the touch — in some places hot enough to burst into flame if the ash blew off and it came into contact with the air. Despite the loggers' thick work gloves, their hands were singed badly, becoming so blistered and swollen that they lost all feeling.

Then on a shaded bank of rock beside the logging track, the men found a spring of fresh water about three feet off the ground. It was the only drinkable water they had seen since the eruption, and they knelt and slurped it up. They spat, coughed and tried hard to vomit. But they could not clear their ash-clogged throats and lungs.

They made slow progress downhill toward the paved highway until they came to a seemingly insurmountable avalanche of boulders and dirt that blocked the logging road. To Scymanky it looked six stories high.

There they lay down on the still-warm ash and began to shiver. Pain and shock blurred their minds and chills shook their bodies. Scymanky and Skorohodoff lay back to back, trying to warm themselves, but nothing seemed to help. They stayed for some minutes, arguing about what to do, where to go.

In the end there appeared to be no choice. They would have to turn back. The four loggers started for the spring and more water. But after a short distance Sharipoff veered away, vowing he would reach the North Fork of the Toutle. Skorohodoff and Scymanky followed briefly, arguing that Sharipoff should stay, but he insisted on finding the river. Exhausted and hurting badly from their burns, the two men let him go.

Dias already was there when Skorohodoff and Scymanky returned to the spring. They rested for a time, lying down, standing, testing for some position that would produce the least pain. Then Dias announced he would go back to the avalanche of debris and climb over. He disappeared around a curve in the logging road that slanted away downhill into the North Fork Valley.

Watchman Harold Terry was sitting in the prefabricated building that served as a security office in Weyerhaeuser's 12 Road Camp about 9:40 a.m. that Sunday when he

heard the roar of a violent wind. He did not immediately connect it with the eruption on Mount St. Helens that he had seen in his camera viewfinder more than an hour before.

Terry stepped outside to look up the slender South Fork of the Toutle that meandered through camp. As he watched, hundreds of logs in the camp's sorting yard began to jiggle and dance, then turned end over end in a wall of water that snapped up everything in its path and sent giant spurts of foam into the air.

The floodwaters passed 40 feet from where Terry stood, diverted by a logjam that formed at the upper end of camp. Terry watched in awe as the advancing water circled around the jam and through 12 Road, overturning logging trucks and lifting a string of railroad cars off their track to spread them slowly over the sorting yard.

The heavysset watchman hurried to his radio and told Weyerhaeuser's Longview office to notify the Cowlitz County sheriff's department and to warn people downstream in the town of Toutle about the approaching flood. Then he ran for higher ground.

Two miles below the 12 Road Camp, Roald Reitan, 19, and his girlfriend, Venus Dergan, 20, both of Tacoma, were awakened inside their tent by the distant wail of a siren on a sheriff's department patrol car.

"What's the noise? There's some kind of noise outside," Reitan said drowsily.

"I'll go out and look," Dergan said. She wanted to fix breakfast anyway and get ready for a day's fishing. She walked down to the river and saw steel-gray water polluted with ash. "I don't know what's happening," she said when she returned. "The water is rising."

Reitan stepped outside and together they watched the river swell. Grabbing some of their belongings, they ran to Reitan's 1968 Oldsmobile — parked on a bank over the water's edge — and began to toss them inside. Seconds passed. The water rose faster and faster. Suddenly the once-gentle stream was a raging torrent. Upstream, like a scene in a slow-motion movie, they saw a wooden railroad trestle floating lazily toward them atop a great wall of water.

Reitan yanked up the tent and threw it into the car. He fumbled with the keys and

tried to start the Oldsmobile's engine, but it balked. The water now had climbed over the embankment and was spreading through the trees behind them, cutting off the only escape back to the main highway.

"Get out!" Reitan yelled. They scrambled on top of the car, but flood debris battered against it until it lifted off the ground and tilted over on its side. Reitan and Dergan were thrown into a lukewarm sea of muddy water that was laced with hundreds of logs from the 12 Road Camp. Reitan clambered on top of a floating log, but saw timber everywhere and more water coming.

"Venus!" Reitan screamed over the din. "Oh, my God! Oh, my God!"

He finally saw her raise a hand as she struggled blindly to stay afloat. They clutched at each other, but could not hold on. The logs began to bunch together as they eased into a slower current. Suddenly Dergan was gone, a pair of logs closing over her head.

"Venus!" Reitan screamed again. "Oh, my God! This is it!"

But the logs parted once more, and her hand came back up. This time Reitan managed to pull her out.

They floated slowly along on their life-saving log until they were able to wade to solid ground. Hours later they would be flown to safety by a Weyerhaeuser helicopter that was flying rescue missions along the river.

Twenty minutes after the South Fork flood hit 12 Road Camp, a 12-foot wall of water spilling from battered Spirit Lake roared down the North Fork.

It was brown and soupy like melted ice cream and carried logs and other debris as it went. Eventually those early floods along the twin forks of the Toutle joined below the town of Toutle and emptied into the Cowlitz more than 50 miles from their source without causing major damage. Many people in the lower valleys west of Mount St. Helens thought they had seen the worst the mountain could do. Some chose not to leave their homes.

The eruption went on and on, powered by hundreds of steam explosions that gradually tore away the rock above the magma chamber deep inside the volcano. All morning the ash churned out of the crater, propelled by rising steam and gases released from molten rock.

Upper winds pushed the plume northeast. By 10:30 a.m., ash had fallen as far north as Mossyrock and as far east as Yakima. A bright Sunday morning was turning black as midnight. People turned on radios and television sets to find out what caused it. Street lights came on and animals huddled in fear, confused by the sudden darkness. Before long, life in Eastern Washington ground to a virtual halt under a weird purple sky.

Hundreds of motorists pulled off the roads and holed up in little towns. Cars and trucks began to stall as ash choked their air filters. By noon there would be no Emergency Services vehicles still running in southeastern Washington's Adams County. The Washington State Patrol did what it could to set up roadblocks and divert motorists into motels, restaurants and truck stops. But the patrol cars, too, were not immune to the grit and soon stalled. There was nothing anyone could do.

Two hours after the eruption began, Dale and Leslie Davis and Al Brooks reached an uncut patch of forest and saw for the first time that trees were down. They picked their way through the still-hot timber, stopping only to empty ash from their shoes. Leslie Davis and Brooks were wearing tennis shoes. Dale Davis had on his brown oxfords.

They found a badly burned mouse in their path, and Dale Davis paused long enough to pick it up and set it on a stump.

They tried rinsing the ash from their mouths with the coffee they carried but desperately wanted water. Dale Davis dipped his handkerchief into a small creek. It was hot and muddy.

"Maybe this is doomsday," he said, looking at his companions. Leslie Davis thought of her son-in-law, Keith Moore, 37, a logger who also lived in Mossyrock. He had gone fishing Saturday on the Green River.

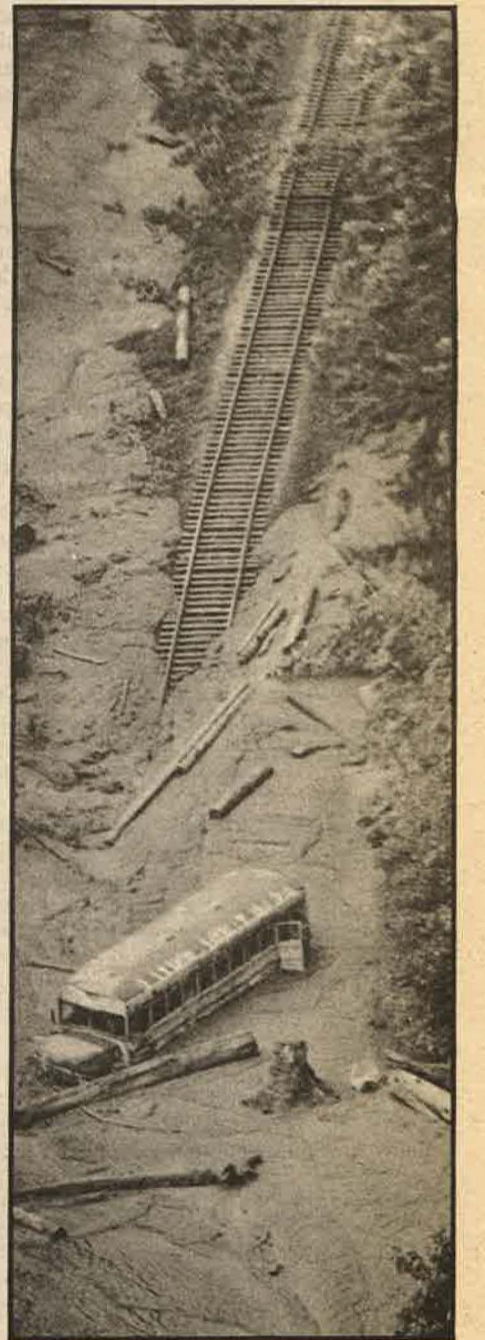
She told herself something had happened to Moore and that she was needed at home. That thought kept her going for what would become a 10-hour walk. And she was right about Moore. He would be among the missing, apparently drowned.

When they got back down to camp from the timber-covered hill where they had sought refuge from the second ash cloud that closed over them, Bruce Nelson and Sue Ruff thought they heard a shout.

"Terry, are you all right?" Nelson yelled back, thinking it was Crall. But it was Dan Balch. Balch and Brian Thomas both were injured, sitting on a pile of trees at the base of the hill. There was no sign of Crall or Karen Varner, or even their own campsite. Everything was covered with downed timber.

Balch and Thomas had had time to get out of their tent before the stone wind hit. But Balch had burned his hands on a scorched tree and Thomas' hip was shattered.

"Look at my hands," said the nearly incoherent Balch. His arms, scalp and the back of his neck also were burned. Nelson



Staff photo by TIM JEWETT

**END OF THE LINE** — The devastation at Camp Baker.

and Ruff started to carry Thomas toward the old mining shack that stood about 30 yards away. Balch tried to help, but yelped each time he used his hands.

"You're saving my life. You're saving my life," Thomas kept saying, his face contorted with pain. It took more than an hour to move him because he had to be lifted and rolled over tree after tree. Downed timber had crushed the cabin as well, leaving only the front wall standing. They placed Thomas on the porch and propped boards over him as a lean-to shelter. Then, without a word, Balch walked away toward his parked pickup truck.

Explaining that they were both unhurt, Nelson and Ruff told Thomas they could bring help faster if they did not try to carry him out.

"My God!" Thomas blurted, realizing they intended to leave. "Don't leave me here to die!" He wanted the woman to stay behind while Nelson went for help. Nelson bluntly told him they were all going.

"We won't leave you here to die," he promised. "We'll be back." Nelson had to pull his girlfriend away. They caught up with Balch at the vehicles, which were undamaged but blocked by trees. They would have to walk. Within a short time, though, Balch also would be left behind along the Green River, incapable of taking another step because of blisters and burns on his feet and shins from walking through hot ash in his stocking feet.

Clyde Croft headed north from Ryan Lake on the Quartz Creek road leading downhill toward the U.S. Forest Service ranger station at Randle, 25 miles away in the Cowlitz River Valley. Each step brought added pain. The glasslike ash that filled the air had dusted the insides of his lungs despite the sleeping bag over his head, and residual heat caused it to burn into his lung tissues.

His chest was now pumping like a bellows, but less and less oxygen was being delivered into his bloodstream. Two miles below Ryan Lake, his steps became more erratic, weaving back and forth across the road from one side to the other. The footprints he left in the ash behind became a record of his determination.

Croft came to a large tree, one of the tens of thousands uprooted by the volcanic wind, and went to the small end where it would be easiest to climb over. But he found that he lacked the strength even to scale this 3-foot obstacle. So he turned and pushed the hot ash aside to crawl underneath.

He got up on the other side and went on, finally leaving tracks beyond the volcano's destructive reach, where the timber still stood. Tractors and other heavy equipment had been parked along the road, the keys left inside by their crews. Croft tried to start the machines one by one, but none would turn over and run. There was no choice but to keep walking.

Three miles farther down Quartz Creek, Croft's strength was nearly exhausted and he stopped to rest. He moved to the side of the road, lay down in a gully and pulled the sleeping bag over him. He had gone eight miles under conditions few men could have endured. Croft tucked one arm under his head and went to sleep. He would not awaken.

Brad Backstrom, who drove in from Toutle that morning to find his friend Don Selby on Spud Mountain, now found himself in danger instead. Near Camp Baker, he had turned off the Spirit Lake Highway onto Logging Road 1900 on the south side of the blacktop.

As he drove to the top of a ridge, his path was blocked by trees across the road and several inches of ashfall. Backstrom retreated and tried several other ways, hoping to find a route to Selby. Each time the road was impassable. When he gave it

up and tried to go back to the highway, he discovered that flooding on the North Fork had washed out a bridge on the 1900 road.

Backstrom drove to another ridgetop, where he found a stranded couple who had driven into the blast area after the eruption. About 1 p.m., a helicopter appeared and landed to pick them up. Over the loud backwash of the chopper blades, Backstrom shouted to a crewman that his friend Selby would need help.

"He's on Spud Mountain," Backstrom said. "You've got to go in after him."

"He ain't coming out of there," said the helmeted crewman, shaking his head.

"What do you mean?" Backstrom asked.

"We're not allowed to go in there because of the danger," the crewman said.

That afternoon, Leonty Skorohodoff and James Scymanky saw a massive black mudflow on the logging road below them, near the spot where they had last seen Evlanty Sharipoff. Scymanky thought it was lava.

"Vamos a morir por seguro," Skorohodoff mumbled. "We are going to die for sure."

Scymanky and Skorohodoff stood amid the debris and watched the mudflow roar by in the North Fork Valley, carrying trees and boulders along with it. They were high enough that they were beyond its reach. They spent the rest of the afternoon watching for some sign of Sharipoff or Jose Dias, who did not return, and listening for helicopters that had begun flying up and down the valley. Several times they tried weakly to flag down the rescuers, but like everything else in the landscape, they were covered with ash and faded into their surroundings.

Bruce Nelson and Sue Ruff walked along an ash-covered road laced with animal tracks. It appeared that many thirsty animals had walked to the Green River only to turn away from its black, undrinkable water. A dazed elk stood in the road, apparently in shock, its hair singed and its nostrils plugged with wet grit. They petted it and walked on.

They drank from a mud puddle, spooning up the foul water with the cellophane wrapper from Ruff's Camel Lights package. It was late afternoon before they met Grant Christensen, 59, of Chehalis, who was walking along the same road. He had driven with his brother onto a ridge above

the Green River Valley on their way to recover tools from Camp Baker.

The three walked until dusk and were about to stop for the night on a ridgetop when they heard the pounding of a helicopter coming their way. They shouted and beat the ground, raising a great cloud of dust. The chopper hovered overhead and prepared to land.

By afternoon, Dale and Leslie Davis and Al Brooks also could hear helicopters and other aircraft overhead, but had no way of signaling. Sick of breathing the ash, Leslie Davis removed her shirt and used it as a mask.

"This is one time no one would know if I had bad manners," she told her husband.

Around 4 p.m., they saw in the distance an old water tower south of 3,800-foot Winters Mountain. It had been built to store water for cooling the brakes on logging trucks that brought cut timber down to a railhead below. The tank now had a hole in its side and water was pouring out. They walked 20 minutes to reach it, thinking they finally had found drinkable water. But it, too, was warm and gritty. Brooks used some to bathe his badly burned arm.

Two hours later, two dairymen drove up in a pickup truck. The three quickly explained what the volcano had done. Apparently not believing them, the men said they would drive in a little farther and look for themselves. They said they would be back in about 15 minutes but they were gone more than an hour. The trio finally had a ride to safety after walking more than 25 miles in the heart of the destruction zone.

Leslie Davis suffered burns on her legs and buttocks. Brooks burned one arm and both legs. Dale Davis had only a blistered foot. When she got home, Leslie Davis would write down everything she could remember about that awful Sunday.

While some fought for their lives and won, others never had a chance. Bill and Jean Parker of Portland had driven their pickup truck along Logging Road 3500 to a bluff that faced toward the mountain above the north shore of Hanaford Lake.

There a watermelon-sized rock crashed through the windshield and killed Parker, 46, where he sat. His wife, 56, died of ash inhalation in the seat beside him. It all happened very quickly.

When the bodies were found, Parker, a microwave technician for Pacific Northwest Bell Telephone Co., still had one hand

on the steering wheel. His wife, a nurse, sat with her arms folded across her chest. They were 9.5 miles north of the crater. The rock had caved in Parker's right temple.

On the shore of Fawn Lake, southwest of where the Parkers died, Christy Killan, 20, was blown to pieces while she clutched her white poodle. Her body would be identified from her left hand, which bore her wedding ring and still lay on the dead dog. Her husband, John, 29, a Vader logger, was fishing from a rubber raft on the lake that morning and was never found.

In the headwaters of Hoffstadt Creek some 11 miles northwest of the summit, Ron Seibold, 41, his wife, Barbara, 33, and her two children, Michelle and Kevin Morris, 9 and 7, were camped on a south-facing ridge.

The Seibolds, a close-knit family from Olympia, where Seibold worked for the Washington Department of Transportation, were in their four-wheel-drive Chevrolet Blazer on Logging Road 3130 when the ash cloud washed over them. A toppling Douglas fir crashed through the Blazer just behind the front bucket seats. Unable to move the vehicle, all four suffocated on ash.

Arlene Edwards, 37, a free-lance photographer, and her daughter Jolene, 19, a waitress, had driven up the four-wheel-drive road to the top of Elk Rock. It was two miles northeast of the Spirit Lake Highway roadblock and 10 miles northwest of the crater.

Mrs. Edwards was blown over the edge of a cliff and died of chest injuries when she landed in a hemlock tree 600 feet below. Her daughter was blown 25 feet into some trees on top of Elk Rock and died of ash inhalation. Their two dogs also suffocated.

At the Black Rock Mine 9.5 miles northeast of the mountain, Don, Natalie and Rick Parker died in their A-frame mining shack. Although a 2,000-foot ridge separated them from the volcano, the ash cloud washed through Norway Pass to smother them. Waves of heat burned their bodies beyond easy recognition even as human remains.

The two amateur geologists who had stayed in the cabin a mile below Spirit Lake, Bob Kaseweter and Beverly Wetherald, were the only victims inside the Red Zone except for Harry Truman. Avalanches buried their cabin and Truman's lodge in a matter of seconds, reducing the buildings to splinters and burying the debris in falling rock hundreds of degrees in temperature. Steam vents shot from the west end of Spirit Lake near where the buildings had been.



Staff photo by BOB ELLIS

SMOTHERED — 12 Road Camp on the South Fork of the Toutle River lies inundated and stilled by the mud.



## The living

While up to 53 men, women and children were dead or dying and others struggled to stay alive in the steaming valleys around Mount St. Helens, authorities reacted slowly to the disaster for which they had planned so many weeks. Military commanders had two strokes of luck that should have made the job of saving lives easier.

The Washington Army National Guard and the U.S. Air Force Reserve's 304th Aerospace Rescue and Recovery Squadron both had their helicopter pilots on duty that morning, conducting separate weekend training exercises. There would be no immediate need to call civilian reservists to active duty. But the readiness advantage was frittered away.

No one thought to plan for air search and rescue operations before the day the mountain blew apart. No one thought to take charge after it happened. No one thought to establish a central command center from which search and rescue teams could be dispatched. No one thought to assign a single radio frequency so helicopter crews from different military units could communicate with one another. No one thought to make certain that aviation fuel supplies would last more than a few hours.

Months later, Jim Rasmussen, a Salkum real estate man who served as the volunteer chief of sheriff's reserves in Lewis County, north of Mount St. Helens, would summarize it like this: "For the first few days, people were all running around being in command. Everybody was trying to be in charge and nobody wanted to spend time getting organized. I think it cost us a lot of lost time and wasted effort."

National Guard Chief Warrant Officer Mike Cairns of Bellevue, a pilot, complained of "confusion at upper levels. I don't know if it was from somebody wanting to get their name in the paper, but that's what we thought. . . . Some of the pilots got pretty upset about that. There were too many controlling agencies." Those were the conditions under which the confused search for survivors began May 18.

By shortly after 10 a.m. — some 90 minutes after David Johnston, Reid Blackburn and most of the others were dead — the 304th received orders to get going. Normally only 10 reservists in the Portland-based unit would have been on duty that weekend, but the 304th was holding a survival training exercise in Mount Hood National Forest near Estacada, Ore. Fifty uniformed men were in the field only 64 miles from Mount St. Helens.

Lt. Col. Tom Jones had told them of a possible call-up 30 minutes earlier, and relayed the official order at about the time that Clyde Croft was drinking his first hot beer at Ryan Lake and trying to clear his throat of the ash that would kill him. By noon, seven crews of the 304th were on the way to the volcano or already there.

Maj. Mike Peters, 40, a husky, serious, full-time reservist who lived in Gresham, Ore., led the first flight of two 13-passenger Bell UH-1 "Hueys" to Toutle, 25 air miles west of the mountain. Sheriff's deputies had set up a search command post there on the Spirit Lake Highway 11 miles east of Interstate 5. Capt. Tom Nolan, 36, a



**BLINDED** — A Washington Army National Guard chopper flies over a hellish landscape, above, in the search for life. Below, it stirs up a cloud of ash, hampering its search for survivors eight miles north of the volcano.



Photo by GEORGE WEDDING, © 1980 San Jose Mercury

Hyster Co. executive from Sherwood, Ore., flew the second machine.

When he landed late that morning, Peters ducked out from under his Huey's still-whirling rotor blades and approached a cluster of National Guard crewmen who had arrived earlier.

"Who's in charge here?" Peters asked.

Nobody yet, someone told him, but Guard commanders were on the way.

"OK, then," Peters said. "I'm in charge."

They quickly divided the mountain into eight search sectors, and by midday the 304th's two Hueys were heading up the Spirit Lake Highway and clattering through the leaden sky above Evlanty Sharpoff, who was then still wandering somewhere along the floor of the North Fork Valley.

About that same time, Don Swanson, an awe-stricken U.S. Geological Survey geologist, was in a fixed-wing spotter plane circling high above the volcano. "The whole situation is overpowering," Swanson radioed to Vancouver at five minutes after noon. Three minutes later he added, "It looks like a bomb hit the area."

But to Peters' and Nolan's crews the landscape along the lower Toutle seemed normal enough. Only minor flooding had occurred. Soon they encountered a haze of ash in the air and sulfur fumes began to sting the crewmen's throats. It was not until they rounded a small hill about a half-mile upriver from the Weyerhaeuser Co.'s Camp Baker that they saw what the mountain could do.

"Look at that!" one of Peters' crewmen blurted. "What the hell happened?" Trees

were flattened and stripped of foliage. Wisps of smoke snaked up from where the Toutle used to be, and everything, everywhere, was a dull and lifeless gray. They pounded along 200 to 300 feet off the ground, trying to navigate in visibility that already was poor and was worsening by the minute.

About 2½ miles farther upriver, the Huey crews saw a white Ford Torino station wagon with someone lying on the ground beside it. Peters and Nolan changed pitch on their rotors, increasing the *whop-whop-whop* of the blades in an effort to rouse someone. There was no sign of life.

Nolan prepared to land. But each time his chopper dropped to within 150 feet of the ground, ash churned up and threatened to envelop it. He finally flew over the river bed and hovered three feet off the mud while two rescue men jumped out. Tech. Sgts. Dave Ward, 34, a Salem millworker, and Garvin Williams, 27, a full-time reservist from Portland, began to wade through the warm muck toward the car on the highway above.

It was then 12:31 p.m. Fourteen minutes earlier the eruption had turned totally magmatic and a pyroclastic flow had raced down the north flank of Mount St. Helens. Swanson noted from the spotter plane a color change in the ash that boiled from the crater. Minutes later Swanson would report the volume of ash was steadily growing. "The mountain is *getting with the program!*" he radioed.

As Williams and Ward labored for more than 20 minutes to reach the blacktop, the two 304th pilots took their Hueys upriver in search of David Johnston's camp on the

Staff photo by TIM JEWETT

ridge above South Coldwater Creek. Pieces of glaciers lay in the river bed. Chunks of rock as tall as two- and three-story buildings pocked the valley, thrown as far as five miles from the mountain. Ash was three to five feet deep in places.

Then they saw their first mudflow creeping down the valley. Already miles upstream from where they had dropped off Nolan's rescue men, they watched the flow engulf one car and threaten two others. Peters decided the men on the ground would have to come out — fast.

A rescue man aboard Peters' chopper, Master Sgt. Mike Cooney, 33, radioed Williams and Ward that the mudflow was on its way down. His voice was anxious, almost panicky. Cooney's emotional description of the destruction it wrought put Williams and Ward close to panic themselves.

But they reached the station wagon and found a dead man lying face down, covered with two inches of ash. Inside the car on the passenger side was a woman who seemed frozen in death, one arm in her lap, the other flung out to the side and resting on the seat. Her watch had stopped at 8:52 a.m. Williams prayed that he would find no children as he crawled into the car and rummaged through grocery bags and camping equipment. No kids.

He pulled out the man's wallet and the woman's purse. Identification papers showed they were Fred and Margery Rollins, 58 and 52, the retired Hawthorne, Calif., couple who had left their home near Los Angeles two days earlier for a weekend drive to Washington.

A professional photographer had been killed by a flying rock during an eruption of Hawaii's Kilauea in 1924, and a U.S. Army sergeant had disappeared during an eruption of Alaska's Mount Cleveland in 1940. With these two deaths on the Spirit Lake Highway, reported to Vancouver at 12:56 p.m., Mount St. Helens already had earned a reputation as the most deadly volcano in U.S. history. It was a reputation that would multiply before the day was done.

Ward and Williams examined the bodies only briefly. Their clothing was unburned and intact. The woman's mouth was flung open in a horrifying grimace. Searchers would see similar sights again and again in days to come.

Reports from the helicopters now were urgent — the two rescue men would be buried in mud if they did not get out quickly. They turned and ran downriver while the helicopters swept along from above. After less than a mile, Williams and Ward came across reporter Jim Reed, the Tacoma bureau chief for Seattle radio station KOMO-AM.

Reed, 33, had started for Toutle to interview flood evacuees but took two wrong

turns and wound up heading toward the mountain instead. Standing there beside his rented Ford Pinto station wagon, Reed was puzzled by the terror he saw on the faces of the men running toward him. All was quiet where he stood. Why the panic?

Wasting no words, Williams and Ward ordered Reed into the car and told him to drive downriver where a helicopter could land. But it was Reed's job to ask questions. He inquired what they found in the car up above. He wanted details about the mudflow.

In answer, the exasperated rescue men shoved Reed into his car and told him to drive. "I can't drive that fast in this stuff," Reed protested. But he did, after Ward and Williams threatened to throw him out and drive themselves.

Peters' helicopter was waiting when they arrived downriver and piled out of the Pinto. Acting by reflex, Reed turned and began to lock the doors. The rescue men grabbed him and dragged him to the helicopter. Two minutes after they were airborne, the mudflow smashed the little station wagon into the trees.

Now running low on fuel after more than four hours in the air since leaving Portland, Peters and Nolan flew to Kelso, the Cowlitz County seat. There they were met by sheriff's deputies, more National Guard crews and Washington State Patrol troopers. Peters' report was pessimistic. There was no point in looking for anyone alive in the destruction zone. No one could have survived.

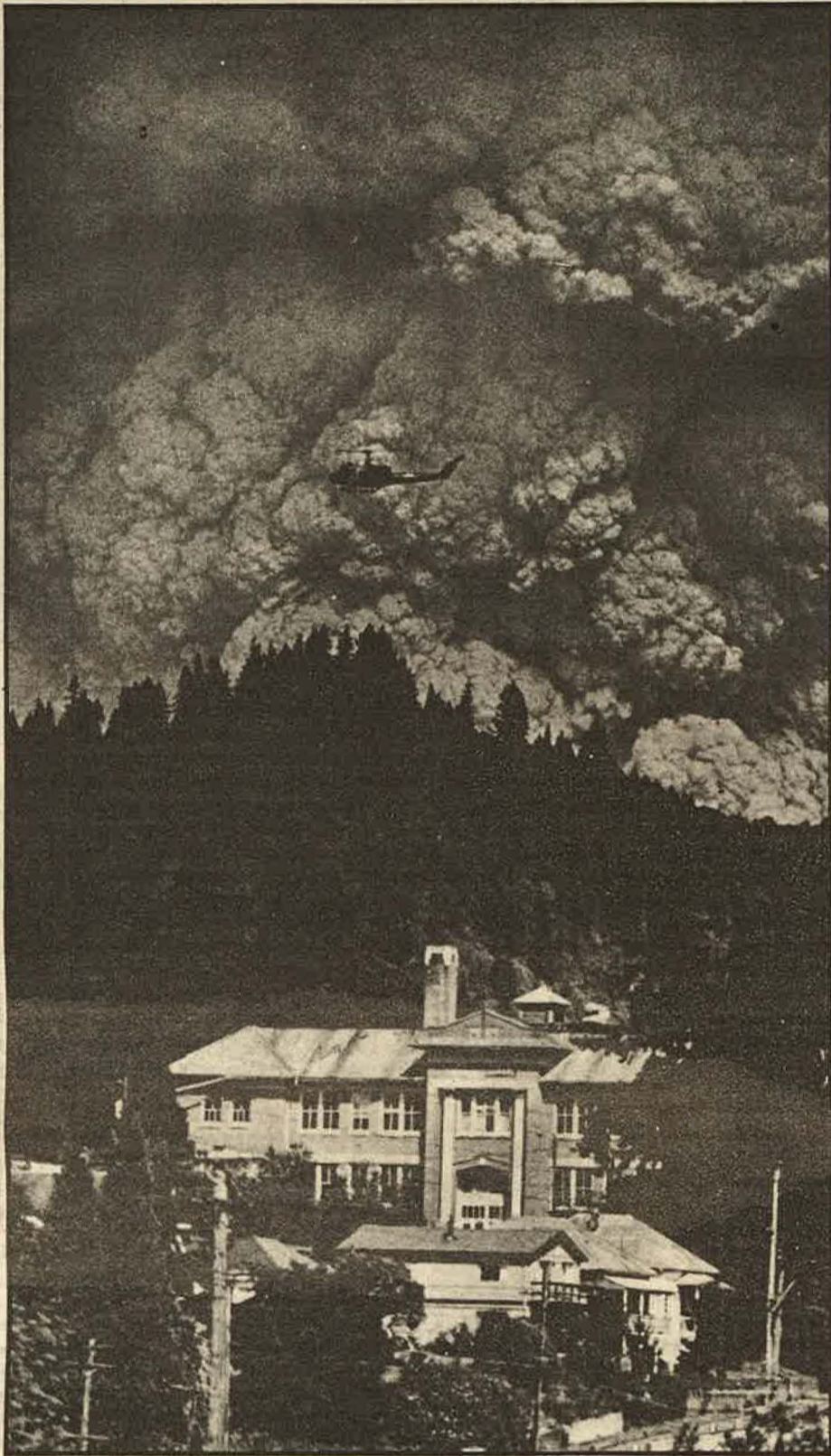
Peters also gave a quick briefing to Gov. Dixy Lee Ray, who had flown in from Olympia to promise the rescuers whatever they needed. The major then strode back to the airfield, boarded his helicopter and took off toward the volcano again. Even as Peters wrote off any hope for finding the living, survivors were scattered throughout the destruction zone, washing their burns and trying to walk to safety.

Bruce Nelson and Sue Ruff were on their way out to bring help for the injured Brian Thomas and Dan Balch. James Scymanky, Jose Dias and Leonty Skorohodoff lay badly burned and exhausted. Evlanty Sharipoff was still alive. Clyde Croft was dead or nearly so, and a Seattle television cameraman who had gone in that morning to film the destruction was composing on a sound camera what he thought would be his epitaph.

Peters' and Nolan's second mission was outside the destruction zone, rescuing people from mudflows and floods that swept down the river valleys. By the time they returned to the upper North Fork in mid-afternoon, the largest and swiftest mudflow of all had begun — the one that would force Sharipoff to climb the hemlock where he died.

Thirty feet deep, it surged over the tops of smaller flows and rumbled down the valley at 50 mph. Roaring through Camp Baker like a tidal wave, it broke through the upper end of a large mill building and exploded out the other. Twenty Weyerhaeuser crew buses were smashed within seconds. Loaded logging trucks, railroad cars and decks of logs that had stood 50 to 60 feet high became tumbling engines of destruction that crashed into bridges below. The railroad trestle at Camp Baker was the first to go, then a logging bridge, then a highway bridge.

Peters flew ahead of the mass of mud, using the helicopter's loudspeaker to warn people off bridges that stood in its way. Some sightseers sat in lawn chairs and hoisted beer cans toward him. At one bridge on which he saw people running, logs already had begun to break away the supports. Months later he still would not know if the runners reached safety. By the end of the day, the 304th would have seven of its 10 Hueys pounding through the skies over the flood-stricken valleys west of Mount St. Helens. Their crews would log



NEARBY PLUME — Ash billows ominously at Longview's back door.

55 "saves" before darkness ended the search.

The 116th Armored Cavalry of the Washington Army National Guard also had a head start that Sunday. The entire troop was in uniform at the Army's Yakima Firing Center 100 miles east of Mount St. Helens. Moreover, the 116th was on standby alert in case it was needed to evacuate the second caravan of Spirit Lake cabin owners that was scheduled to enter the Red Zone at 10 a.m. There had been an 8 a.m. weather briefing and the unit's helicopters were fueled and ready to fly.

But it was 90 minutes after the eruption that members of the 116th first learned the volcano had blown itself apart. From their classroom seats at the firing center they saw what appeared to be thunderclouds rolling toward them out of the west, darker and more ominous than any Oklahoma dust storm of decades past. There had been no mention of storms at the weather briefing. Soon a snowlike shower of volcanic ash began to fall over Yakima.

The Guard crews scrambled for their helicopters. Maintenance men stood in

front of each machine, wiping dust from windshields until they could take to the air. But only 20 out of 32 managed to get off the ground. The falling ash quickly became too thick and visibility too poor to fly safely.

At noon — 3½ hours after the eruption — the Guard unit that was on call for volcano rescue work arrived at the Kelso airport 35 miles west of Mount St. Helens.

At the forward base in Toutle, Guard Capt. Mark Edelbrock took command. Using a helicopter parked on the Toutle Lake School baseball field as a command post, Edelbrock, 36, dispatched helicopters to airlift residents out of harm's way along both forks of the Toutle. Like Peters, Edelbrock decided not to send his crews in close to the mountain. It was dangerous flying and there had been no reports of survivors. Edelbrock believed the threat of more flooding was his most urgent concern.

Helicopter crews from other units began to swamp the Toutle operations center with reports of sightings in the destruction zone: four cars on the same bluff, two cars here, a pickup truck there, a body seen floating downriver from where a logging bridge once stood, a car believed to contain

three people was buried in mud as a helicopter approached.

Three Hueys of the 116th had been working above Camp Baker for an hour late that afternoon before they discovered a survivor more than three miles upriver from the logging camp. There was a man waving to them from a tree trunk atop a mudflow that was still oozing slowly downvalley. It was Jose Dias.

Capt. Darald Stebner, 38, of Olympia, lowered his chopper over the floating tree while a flight surgeon, Maj. Robert E. Williams, 44, of Port Orchard, Wash., leaned out the open door to extend a hand. When they touched, a jolt of static electricity that had built up in the helicopter shot between Dias and Williams, knocking both men flat.

Stebner lifted away while Williams recovered, then flew back and took the Huey down until one skid rested on the tree, electrically grounding the machine. But Dias now was afraid of more shocks and resisted help. He could not understand the crew's shouts. Williams had to drag him inside for the trip to St. John Hospital in Longview. He was horribly burned and covered with mud.

By 10 p.m., all rescue aircraft had cleared out of the high country and the Guard helicopters had returned to their home base near Tacoma, Gray Army Airfield at Fort Lewis. Edelbrock, who lived in Tacoma and worked as a Seattle firefighter, had closed the Toutle operations center at 8:30 p.m. and returned to Kelso to evaluate the day's work. There were at least 12 known dead, more than 120 evacuees who survived the floods, and scores still missing.

Like many officers in the 116th, Edelbrock worried that the Guard might lose overall control of the rescue effort. He was particularly concerned about the 304th, the Air Force Reserve outfit from Oregon that seemed to operate on its own without consulting Guard commanders. That night, Edelbrock laid plans to assign the 304th to search the south side of Mount St. Helens, well away from the devastation zone where there was little to do.

Jess Hagerman, 38, a Weyerhaeuser pilot from Puyallup and a captain in the Guard's Seattle-based 81st Infantry Brigade, was one of those who heard the 304th's Maj. Mike Peters say there was no point in looking for anybody alive. After the briefing, he spoke with Warrant Officer Chris Lane of the 116th. Lane told Hagerman that Guard helicopters not yet committed to the search were to sit idle on the runway shoulders in Kelso until they were called to duty at the forward operations center in Toutle. Hagerman instantly protested.

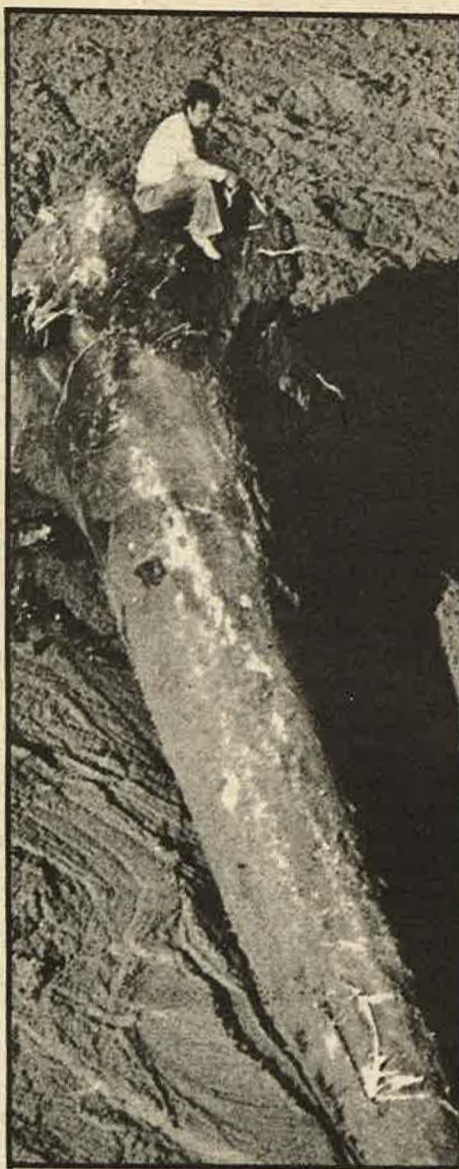
"Chris, we've got to go look for people," he argued. "We're the only ones who can do it. The sheriff can't do it. There might be someone who got down behind a ridge or something who still might be alive."

Lane repeated that his orders were to wait. Not satisfied with any delay, Hagerman tracked down the 116th's commanding officer, Col. Robert Watling, who was sitting in the Kelso airport lounge. Watling agreed that a search should start immediately and directed Hagerman to go back to Lane and order all aircraft into action.

Hagerman outlined a search plan for the other pilots. They would use the five helicopters at Kelso to search the North and South forks of the Toutle. Hagerman would lead the way in a smaller Bell OH-58 scout helicopter with the four big Hueys following.

By 3 p.m., 6½ hours after the eruption began, Hagerman's flight went up the North Fork Valley to within two miles of Spirit Lake, but turned back. The ash was too thick to continue. They were on their way down again when Hagerman saw his first sign of life.

"Hey, Randy," he said to a crewman, Spec. 5 Randy Fantz, 25. "There's a truck



**RESCUE** — Tree thinner Jose Dias waits on an uprooted tree in the mud-filled North Fork of the Toutle River, left, for his rescue by helicopter. Once aboard, he is treated for burns, above.

Photos by GEORGE WEDDING, © 1980 San Jose Mercury

or something down there. Looks like some tracks." Hagerman hovered for a moment 150 feet above a pickup truck that was partway off the side of a logging road that hugged the north slope of the valley. Then he flew downslope for nearly four miles, following tracks that led away from the wrecked truck.

"Jess, look right below you," radioed another pilot. "There's somebody down there." Hagerman and Fantz peered out for several seconds but saw nothing on the gray landscape below. Finally Hagerman caught sight of two men, one lying prostrate, the other propped up on one elbow and waving weakly. It was James Scymanky and Leonty Skorohodoff.

Hagerman decided against landing on the road because of its heavy blanket of ash. He flew 200 yards below the men and hovered over the slow-moving sea of mud. Fantz, a college student from Gig Harbor, jumped into the hot mud, sinking to his waist and then struggling toward dry ground.

Hagerman swung away and tried to land, but within 30 feet of the closest firm surface, ash that was whipped up by the rotor blades began to windmill back down, generating a whirling cloud of ash. Flying blind for three or four seconds, he set the helicopter down by intuition alone. When it came to rest on something solid, Hagerman locked his controls and ran to help lift the two survivors into the helicopter.

"What happened?" the mud-covered Fantz asked James Scymanky. "Your face looks awfully sunburned."

Scymanky tried to explain, but lacked the strength to tell it. He did say that two other men — Jose Dias and Evlanty Sharipoff — were still out there wandering through the destruction zone. Not understanding the words his rescuers used, Skorohodoff said nothing.

Scymanky and Skorohodoff were lifted into the scout helicopter and strapped into metal seats. As Scymanky looked around the cockpit, the faces of the men around him began to blur. His field of vision turned

white. Within two minutes of liftoff, he and Skorohodoff both lost consciousness.

After flying the two loggers to St. John Hospital, Hagerman went back up the North Fork to look for their companions. He had seen other tracks on the earlier flight. Locating a set that led down a logging road, he landed in a turnout beside the road and he and Fantz set out to follow on foot. But the tracks dropped abruptly off the road, over an embankment and down into a maze of fallen timber. After 40 minutes, the two rescuers gave it up. The tracks headed straight for the mudflow.

Near dusk Hagerman was asked to find Brian Thomas, who was still where Bruce Nelson and Sue Ruff had left him — at the old cabin below Miners Creek in the Green River Valley. Once he located the wrecked cabin, though, Hagerman had nowhere to land.

He finally hovered over the one-lane bridge that carried Logging Road 2500 across the Green while Fantz jumped to the bridge deck and cleared away fallen tree limbs to make a landing spot.

Despite his shattered hip, Thomas, fearing that he had been left to die, had not waited for help to arrive. He had set out to crawl from the cabin porch to Nelson's

Chevrolet Blazer and Dan Balch's Ford pickup. Thomas told the two guardsmen that he had crawled, dragging himself with his arms and skidding along on his good hip, for nearly eight hours. He had gotten about 100 yards from the porch when they found him.

Balch had been left behind by Nelson and Ruff because of burns he suffered while trying to walk out in his stocking feet. But about 1 p.m. he was hailed by a Toutle logger, Edward "Buzz" Smith, 31, and Smith's two sons, Eric, 10, and Adam, 7.

"Hey, survivor!" Smith yelled. He and the boys had been camped Saturday night a mile east of Tradedollar Lake and 11 miles north of the mountain. Smith's truck was parked near Nelson's and Balch's vehicles, but like theirs, it was unusable.

Smith loaned Balch a pair of tennis shoes to wear, and they walked together along the 2500 road toward the point where it crossed a ridge to drop down into the North Fork Valley below Camp Baker. About 7 p.m. they came upon Harlen Christensen, 55, of Onalaska, who was standing beside his stalled Chevrolet pickup northwest of Camp Baker.

Christensen and his brother, Grant, 59, of Chehalis, had gone into the devastation zone Sunday morning to retrieve the younger Christensen's tools from the logging camp. The truck had stalled on the ridge above it. Grant Christensen was taken out with Nelson and Ruff. Balch, the Smiths and Harlen Christensen were picked up by a passing helicopter about 7:30 p.m., some nine miles west of Balch's camp on the 2500 road.

While Jess Hagerman gained his first experience with an erupting volcano that Sunday, it was familiar stuff to Capt. Tom Walters, 30, a U.S. Air Force pilot from San Antonio, Texas. Walters was stationed with the U.S. Coast Guard in Warrenton, Ore., as part of a military exchange program.

Earlier in his career he had been assigned to Iceland, where he flew over several active volcanoes. Normally assigned to ocean patrols during his Coast Guard tour, Walters was ordered that Sunday to take his Sikorsky HH-3F helicopter up the Columbia River to watch for logjams. Soon he was pressed into service for rescue missions around Mount St. Helens.

It was on his first flight into the devastation area that one of Walters' crewmen saw flames. Three signal fires surrounded a man, shrouded in gray, who was slumped

on a log about 200 feet up a slope above the South Fork of the Toutle.

From his experience in Iceland, Walters thought the man probably would not survive overnight in the falling ash. He ordered a rescue litter lowered to the end of a 250-foot cable and began to troll for David Crockett, 28, a cameraman for Seattle's KOMO-TV.

But instead of jumping into the litter right away, Crockett used up precious seconds loading his camera equipment. Ash churned up to surround the Sikorsky. One of Walters' crewmen, Aviation Survival Man Steve Cooper, 21, of Woodbridge, Va., saw through a momentary break in the dust that Crockett was in the litter and signaling to hoist away. Cooper began to reel in the cable. Five feet off the ground, Crockett fell out.

Walters now was very low on fuel and faced a Hobson's choice. He could risk running out of fuel by hovering a little longer in hope that Crockett would climb back in or he could order the cable sheared and fly out. Walters chose to stay. Flying on instruments as ash swirled around him, he hovered perhaps 10 seconds over the place where he thought Crockett should be.

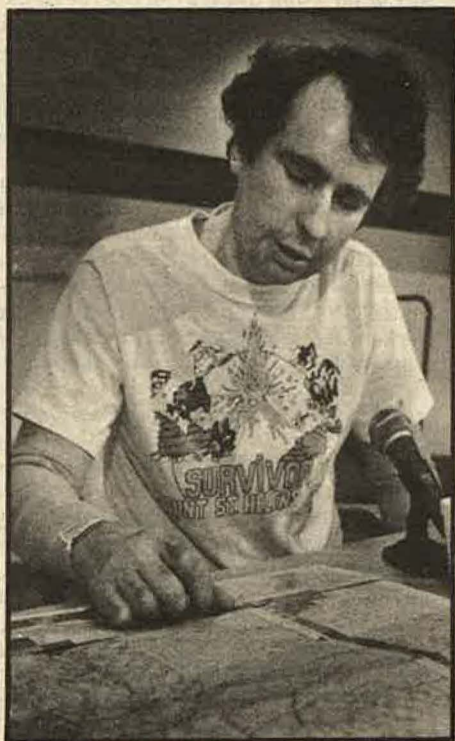
Cooper reeled in the litter as Walters swung away. The litter thumped against a stand of trees. Cooper could see only about 10 feet through the ash and was not certain they had Crockett even now. But as the litter drew closer, the young technician saw a dust-covered face appear.

"How are you doing?" Cooper asked. "I'm alive!" Crockett answered. On the trip back for refueling, he drained two 15-minute tanks of oxygen. Crockett's sound camera carried a vivid record of his earlier walk through clouds of ash as, breathing raggedly, he repeated over and over that he was going to die.

By late afternoon, Walters and his crew were helping National Guard helicopters evacuate flood victims along the North Fork of the Toutle when they drew one of the day's last missions — checking a report of a destroyed truck in the headwaters of Hoffstadt Creek, a North Fork tributary.

They quickly found the truck and saw from the air what looked like footprints. Although it was growing dark, Walters decided to land. It would turn out to be more like a controlled crash. As he descended inside another ash cloud, there was a thump as the chopper hit what Walters hoped was the road, then a lurch and it stopped.

Cooper and two Cowlitz County sheriff's deputies, Bruce Rasche, 36, and Mau-



Staff photo by MICHAEL LLOYD  
**JAMES SCYMANKY**



Photo by RICK PERRY, The Seattle Times  
**GRANT CHRISTENSEN**

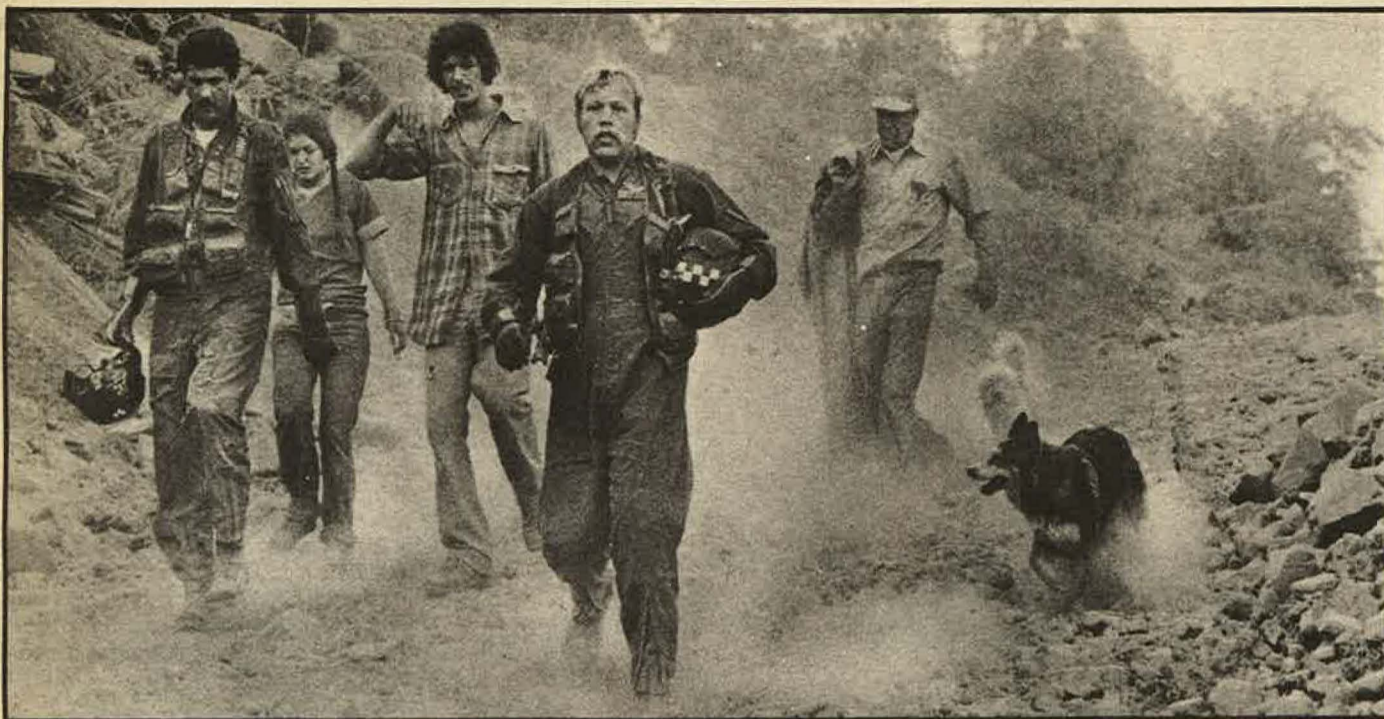


Photo by RICK PERRY, The Seattle Times

COMING OUT — After hours of walking through steaming mud and fallen timber, Sue Ruff (braided hair) and Bruce Nelson (plaid shirt) emerge from the wasteland. Grant Christensen (carrying sleeping bag) made it out with them.

rice "Sax" Saxon, 39, started toward the truck in single file, Cooper in the lead. As they trudged along, Cooper detected a tiny movement, low and to one side. Startled, he looked to the ground and saw a mouse scamper through the dust toward him.

Cooper froze as the mouse ran to his boot and nestled against it, perhaps seeking comfort, perhaps protection. Cooper stood motionless for several seconds, astounded by the animal, then lifted his boot to walk again. There was a puff of dust as the mouse ran across the newly fallen ash to a pile of broken trees in which it disappeared.

The three men hiked a mile up the road to find a red Chevrolet Blazer crumpled by a fallen fir. Ron Seibold's body was in the driver's seat. His wife, Barbara, was dead in the bucket seat on the passenger side. Her 7-year-old son, Kevin Morris, was kneeling beside his mother, his lifeless eyes staring toward the rear of the Blazer in the direction of the mountain.

Saxon wrote down the Blazer's license number and the three men returned to the helicopter. In the gathering darkness they had not seen 9-year-old Michelle Morris, who lay dead on the floor in back. She would be found Monday by Jess Hagerman's crew.

Joseph Andrew Smith, 62, of Rainier, Ore., piloted his 44-foot tug *Rascal* toward the Peter Crawford and Allen Street bridges that crossed the Cowlitz River at Kelso.

Washington State Patrol Trooper Dave Gardner had flown over Smith's and two other tugs, warning them of an approaching logjam. The big mudflow that had crashed through Camp Baker at 2:56 p.m. had picked up an estimated 50,000 cut logs and sent them cascading down the Toutle and into the Cowlitz. Other hundreds of fallen trees had come from the flanks of the volcano itself.

Through the loudspeaker attached to his Cessna 182, Gardner asked if the tug crews would try to corral the jam before it reached the Columbia, where it could tie up oceangoing shipping. With thumbs-up signals toward the plane, the tug crews agreed.

Gardner had seen the jam, which covered the Cowlitz from bank to bank. It was more than two miles long, and with tidal help it had begun to swing upstream in the Cowlitz above the Toutle's mouth — creating a wake as it moved against the normal current.

Water temperatures in all the rivers west of the mountain were rising dramati-

cally. The lower Green River, where it joined the Toutle's North Fork above Kid Valley, was running at 98 degrees Fahrenheit — nearly twice its normal temperature of 52. Below the Toutle's mouth, the Cowlitz reached 85 degrees. Salmon and steelhead flopped onto the river banks to escape the heat. And the Cowlitz was rapidly filling with mud that would reduce its flow to 10 percent of normal.

Smith and his son, Ian, 19, stayed by the bridges and waited. A Scotsman by birth, the elder Smith had worked 27 years for Smith Tug and Barge Co. in Longview and knew the Cowlitz well. As he waited, he thought the water seemed strangely calm. Gardner banked the Cessna over the *Rascal* every 20 minutes or so to report the logjam's progress. Smith and his son waited for three hours.

It came downstream about 6 p.m., a crushing torrent of floating logs that were thudding against the river banks and grinding against each other. The tide had turned, and the giant raft of timber was now heading for the open sea, 92 miles below Camp Baker.

Smith was terrified by what he saw but had little time to think about it. He swung the *Rascal's* bow into the tangle in hope of sliding the massive timbers past the bridge pilings. The tug shuddered and creaked, rose and fell as the seemingly endless raft of logs rammed past.

Smith could see the other boats behind him working through the jam, their bows lifting whole trees out of the water. As the hours wore on, the water grew steadily shallower with the falling tide. Ian Smith took sounding after sounding to make sure there was enough to keep the *Rascal* afloat. The torrent of logs only grew worse.

At 11 p.m. Joseph Andrew Smith decided he could wait no longer. After nearly five hours, he had begun to fear the *Rascal* would go aground in the rapidly silting Cowlitz. Exhausted, he turned downriver and headed toward the Columbia and home. The bridges had held.

At dawn Monday, the volcano was still erupting — though less violently — and the confusion that had plagued the Sunday rescues returned. Helicopters crisscrossed the devastated terrain in a frenzied hunt for signs of movement. But still lacking a central command to sort information and direct the aircraft, their crews often had to rely on instincts and experience.

In addition to multiple commands and backbiting among military units, pilots could not work together easily because no

one thought to give them identical maps that showed the same areas on the same scale. In the area of worst destruction north of the mountain, topographic features were changed and lakes had shifted position or disappeared, which only heightened the confusion.

No one thought to establish a central clearinghouse for reports of missing persons from relatives who thought their loved ones might be among the victims. No one thought to enlist the aid of relatives or friends, even though many knew exact locations where the dead, injured or missing had camped Saturday night. In several cases, search commanders failed to act on such information when they received it. No one thought to organize the loggers who were intimately familiar with the terrain and who volunteered to start ground searches for survivors. But the men flying rescue missions tried to rise above it all and save lives regardless.

A big Lockheed HC-130 communications plane rolled down the runway at Portland Air Base early that Monday and banked north toward Mount St. Helens.

Helicopter pilots had begun to realize Sunday that crowded skies and poor visibility over the mountain made in-flight collisions a very real possibility without some way of directing traffic. The HC-130 rescue communications plane, flown to Portland Sunday night by the U.S. Air Force Reserve's 303rd Aerospace Rescue and Recovery Squadron at March Air Force Base, Calif., would become a flying control tower over Mount St. Helens.

It could monitor the movement of more than 70 aircraft and, bouncing radio signals off a satellite overhead, provide communication between the helicopters in the air and authorities on the ground. Nearly 24 hours after the eruption began, rescue workers at last would be able to talk to one another.

While rescue workers west of the mountain still were trying to coordinate the massive search that was needed there, the Lewis County Sheriff's Department already had a fairly smooth-working search organization in place in the small town of Salkum, on U.S. 12 about 25 miles north of the mountain. Jim Rasmussen, director of Lewis County sheriff's reserves, had started Sunday to turn the mobile home that served as his real estate office into a command post.

The Third Squadron of the Army's Fifth Cavalry, Ninth Infantry Division, arrived in

Salkum from Fort Lewis by noon Monday. Sheriff's deputies and military commanders ignored formalities and went by first names. Although pilots and their crews were eager to go in and search, the ridges north of Mount St. Helens were socked in by heavy clouds and the troops were grounded.

While the bad weather held, Salkum townspeople mapped search areas, organized teams, and tried to judge how many people might be in need of help. Housewives set up a mess hall and recreation room at the Salkum Fire Department. Rasmussen rented every room in the Wide Spot Motel so the soldiers would not have to sleep in tents.

Pilots, mechanics, fuel truck drivers and others volunteered for ground searches, but even four-wheel-drive vehicles could not navigate the heavy ash in the devastation area. An organization of sorts — independent of military brass — was beginning to develop.

Rescue flights west of the mountain started early in the day. The Washington National Guard pulled four persons off a rooftop near Toutle.

More bodies were located, including that of Reid Blackburn, the *Columbian* photographer who operated the radio-controlled camera from the ridge above Coldwater Creek. Blackburn was buried to his neck in the hot ash that had filled his car. His face was recognizable, but below the chin his body was reduced to bare skeleton. Following unwritten policy, rescue workers left the body behind. There was not yet time to recover the dead.

At noon Monday, the 304th, now operating from Yale Lake on the south side of the volcano, found a family of four alive on the Green River, above Bruce Nelson's and Sue Ruff's camp and some 13.5 miles due north of the mountain. Rescue men were lowered by hoist from a hovering Huey to help Mike Moore, 33, of Castle Rock, his wife, Lu, 31, and their daughters, Bonnie Lu, 4, and Terra Dawn, 3 months.

Sgt. Richard Harder, 27, a rescue specialist whose regular job was with the Portland Fire Bureau, held his radio microphone in front of Terra Dawn, and someone at 304th headquarters in Portland noted the result in the squadron log: "The sound of a healthy but angry baby crying assured the crew that the survivors were, for the moment, OK."

It was Jess Hagerman's little National Guard scout helicopter that landed on a rock in the Green to take them out. Terra Dawn was placed aboard in a rucksack. The Moores had gone up Saturday for a weekend of backpacking and were still in their tent when the mountain erupted. They were outside the area of fallen timber and spent Sunday night in their nylon shelter after moving to a protected area off an elk trail. Monday morning they had started to hike west toward their car, which was parked in the devastation zone.

Geologists got close enough to the volcano that Monday to see what had happened. The Goat Rocks bulge was gone entirely, along with much of the cone that had risen nearly a mile above the surrounding terrain to give Mount St. Helens its symmetrical shape. On the north side, the crater rim was torn away down to the 4,400-foot level, leaving a wide opening like the pouring lip on an old-fashioned pitcher.

Ash intermittently spurted hundreds or thousands of feet above the rim and fell back to settle over what was left of the mountain. A dam of debris had formed across the west end of the old Spirit Lake bed, leading to fears of more flooding should it break and release the water and mud behind it. Geologists called the natural dam "the most important remaining hazard" posed by the volcano. ■



## The dead

George Wedding, the *San Jose Mercury* photographer who had heard explosions Sunday morning on the shore of Puget Sound, managed to hitch a ride Monday afternoon on a flight that would search for bodies. He had taken a dramatic series of photographs Sunday of the Washington National Guard's rescue of Jose Dias and had given copies Monday to everyone on Capt. Darald Stebner's chopper crew. The men were thrilled by the pictures and offered to let him fly again.

There were reports of a body in the bed of a pickup truck more than four miles west of the summit, and Stebner's flight surgeon, Maj. Robert E. Williams, wanted to try to determine from the air how the victim died. The chopper flew over the truck and hovered. Wedding felt his stomach sink as the body came into view.

Through the dust, Wedding thought it was a man — probably a logger — who lay on his back, stripped of clothing except his underwear. Wedding realized the picture might anger many who would see it, but he focused the 300mm lens on his Nikon and tripped the shutter.

Hours later, at the Associated Press office in Portland, Wedding stood alongside darkroom technician Eric Risberg as the print began to come up in the developer.

"George, this guy looks awfully young," Risberg said.

Wedding felt his stomach sink again. "This can't be a kid," he said. But it was. Wedding thought for a moment about whether to use the photograph of the still-unidentified boy.

More than any other, it seemed to symbolize the grim deaths that had taken place on the mountain. The picture was transmitted across the country two minutes after it was dry. Next morning, the boy's grandfather, who was visiting from California, saw the photograph on the back page of the *Renton Record Chronicle*, the newspaper in the Puget Sound community where his daughter lived. He immediately recognized his grandson, 11-year-old Andy Karr.

The Karrs were among dozens of relatives who began to flood authorities with requests for information. Most found themselves put on "hold" or bounced from agency to agency. No one took the responsibility for dealing with them.

Anton and Gabriel Sharipoff also were among them, trying to learn something about their Uncle Evlanty, who had been logging on the mountain that Sunday. With telephone lines jammed and long-distance calls taking hours to complete, they contacted agencies ranging from the Washington Department of Emergency Services to the American Red Cross and the Cowlitz County sheriff's department. But they learned little.

On Monday, the Sharipoffs went to the Oregon Burn Center in Portland's Emanuel Hospital, where James Scymanky told them how Evlanty Sharipoff had struck out on his own before the rescue helicopters came. The Sharipoffs then went to Kelso to ask about the search for their uncle.

They were told that Jess Hagerman and Randy Fantz had looked for him Sunday, but apparently no one was looking any more. The Sharipoffs wanted the search to continue. They tried to tell someone —

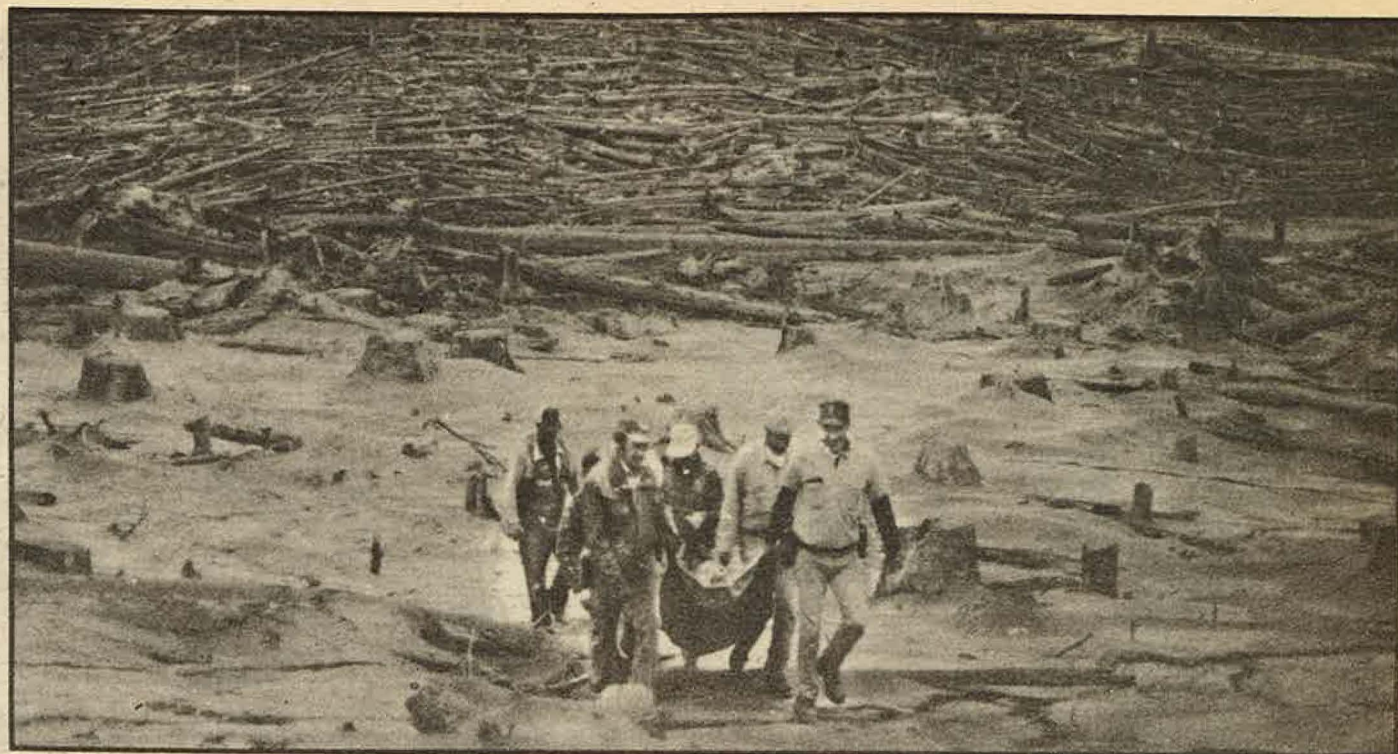


Photo by MIKE CAIRNS

WILDERNESS PALLBEARERS — Searchers carry out the bodies of two victims found north of Tradedollar Lake.

anyone — where Evlanty Sharipoff had been. No one was able or willing to relay the information to men in helicopters. In his halting English, Anton Sharipoff, 25, of Woodburn, Ore., sought permission to go along on a flight.

"Can you take me in the helicopter?" he asked. "I'm gonna show you exactly where they are, where they was working, because I know the area much." The answer was no. After several hours, a helicopter search was ordered in the area Sharipoff had marked on a map. When the chopper returned, the crew members said nothing. Anton Sharipoff realized that the searchers thought his uncle was dead. He asked whether more searches were planned. They were not.

"We knew he was alive that first day," Guard Chief Warrant Officer Mike Cairns, 33, would say later. "If he had been where we could have spotted him (on Sunday), he could have been saved. Obviously he lived long enough." Cairns was one of the men who, weeks later, would remove Sharipoff's body from the hemlock tree that still stood in the North Fork mudflow.

About 7 a.m. that Monday, Bruce Nelson received a call from a Cowlitz County deputy to come to the sheriff's office in Kelso and pinpoint the campsite where Terry Crall and Karen Varner had been. When he arrived, a deputy asked him questions and took notes on a piece of scratch paper that Nelson noticed was torn from a paper sack.

Nelson had written down the same information for a National Guard helicopter crewman when he and Sue Ruff were rescued Sunday. As the deputy wrote, he turned the paper sideways and finally upside down to fill the space. When he finished, the deputy thanked Nelson.

"Hey," Nelson said. "You guys aren't going to find them unless you take me back in there. You just aren't going to find them."

"We can't take you back up there," the deputy said simply. Nelson listened for news of a search for the couple throughout Monday and Tuesday but heard nothing. He began to worry that no one was looking.

Cowlitz County Deputy Ben Bena spent much of Tuesday trying to bring National Guard operations under a central command. Sheriff Les Nelson had given Bena the job of overall search supervision west of the mountain, and Bena wanted the Guard to be part of a team — not an independent entity.



Staff photo by BOB ELLIS

SEARCH DOG — Lewis County Deputy Brian Hill follows his dog, Hauser, in the hunt for buried victims.

Duplication of missions was still a major problem. As a helicopter from the 304th Aerospace Rescue and Recovery Squadron would leave a search sector, a Guard helicopter would enter and go over it again. Guard commanders' attitudes were the subjects of heated discussions. At last, Bena asked Emergency Services officials for help, and the U.S. Air Force Rescue Coordination Center at Scott Air Force Base, Ill., joined in to bring pressure on the Guard. Rick Lavalla, the Emergency Services operations officer, sent a teletype pointedly underscoring who was to run the show:

"Emergency Services will call headquarters of all units to re-affirm that sheriff is in charge of all SAR (search and rescue missions), and all units are in support of sheriff and must be tasked only by or in coordination with the sheriff's EOC (emergency operations center)," the message said.

More relatives of those missing or killed streamed into the command center, some offering help, some demanding information. Logger Don Crick, 53, who lived near Toledo, was one of those who appeared Tuesday. He had begun to feel that the hunt for his son-in-law, Tom Gadwa of Montesano, was going nowhere and decided to take matters into his own hands.

Gadwa and Wally Bowers of Winlock, a member of Jim Pluard's Weyerhaeuser Co. crew during regular work hours, were weekend employees of Crick's small logging company. They had been cutting trees Sunday morning near Shultz Creek, north of the Green River and seven miles north of Mount St. Helens.

On Tuesday, Crick went to Salkum and was told that helicopters had found trucks near the confluence of Miners Creek and the Green but had not landed to determine who owned them. Crick thought one of the vehicles could be Gadwa's.

Lewis County Deputy Mike Copenhafer told him the ash was too deep to land a helicopter there or to put a man on the ground. Copenhafer said they were thinking about dropping water on a nearby bridge to clear away the ash and make a safe landing area. But he added that it would take at least two days to complete the paperwork and get permission from the U.S. Forest Service.

"Good God, man," Crick said. "If there's anybody in there alive, they'd be dead by then!" No one told Crick that Jess Hagerman had landed on the same bridge Sunday, without benefit of water drops, when he recovered Brian Thomas. Crick



began to badger deputies and National Guardsmen at Salkum, asking why they had not organized ground searches, checked the abandoned vehicles or enlisted the help of loggers who knew the country.

That afternoon, Crick joined about 20 other loggers bent on forming a search party of their own. They believed that Gadwa and Bowers, as well as Jim and Kathleen Pluard, might have survived and made their way to Miners Creek, where the abandoned vehicles were seen.

Crick outlined the loggers' search plan to Lewis County Sheriff Bill Wiester, who unilaterally agreed. Wiester told Copenhaver to give Crick written permission to search the Green River area, and the deputy wrote a makeshift permit on a slip of pink paper and signed it.

That same afternoon, more than 47 hours after the big mudflow roared through Camp Baker at 2:56 p.m. Sunday, the leading edge of a giant raft of logs — now extending for 20 miles — finally reached the open sea in the Columbia River estuary near Astoria, Ore.

By Tuesday night, rescuers decided there was no hope of finding anyone else alive in the devastation zone. The land itself was dangerous. In some areas covered by pyroclastic materials, geologists found temperatures of 290 degrees Fahrenheit only two feet below the surface. From now on, all flights would be dispatched as body recovery missions.

That same night a sense of coordination finally began to emerge in the search for the missing. At the Cowlitz County sheriff's office in Kelso, representatives of the three sheriffs involved met to divide the remaining job into segments with individual commanders.

Cowlitz County's Ben Bena was placed in charge of air search and communications problems. Lewis County Deputy Bill Logan was assigned to oversee ground searches, which would start Thursday, and Skamania County Deputy Ray Blaisdell took over the job of identifying the dead and developing a list of the missing. To combat logistics problems that stemmed from having different search teams based at Yale Lake, Toutle, Kelso and Salkum, it was decided to establish a central command post at the Toledo airport, 35 air miles northwest of Mount St. Helens.

The National Guard in April had begun to evaluate possible rescue bases and had picked Toledo as the most logical location for a military organization. The airstrip there was only an hour's drive away from Fort Lewis, where aviation fuel trucks would be filling up to supply the helicopters.

Guard trucks and troops began to rumble toward Toledo late Tuesday. When they arrived, guardsmen would throw together in four hours what would become search headquarters for the next 10 days. Wednesday morning the Guard was joined by U.S. Army regulars from Fort Lewis. Their help was needed to recover the 18 bodies that searchers knew were out there and to find the 85 people then listed as missing. By midmorning, a tent city for 1,700 troops was in place.

An operations office was established in an airport hangar, and a nearby tent became a communications center. Also established was a briefing center, where Army and Civil Air Patrol commanders could brief pilots about weather and mountain conditions and explain what had to be done. Returning pilots were interviewed about what they had seen on each mission.

Each bit of information was carefully jotted down on big, easel-mounted sheets of plastic, and the reported locations of victims and vehicles were marked with pins on a large map. The hope was that such data finally would eliminate duplication.

But the growing concentration of military brass only added to the headaches the sheriffs' departments had experienced with

the Guard. It seemed that every officer wearing silver eagles, or oak leaves of whatever color, wanted to be in charge. The constant infighting slowed decisions and caused more duplication — the very thing the new organization was supposed to correct.

When military officers insisted that the Salkum base clear its missions through Toledo as a matter of course, Wiester, a man without concern for convention, went to Toledo and looked up Col. Robert White of the Ninth Infantry Division's 593rd Support Group, commander of all Army forces in Toledo. Wiester told White that his Salkum base could not be assigned a general territory to search, but beyond that it would operate on its own. White acceded, and Wiester got his way.

Toledo citizens — farmers, truck drivers, loggers, children and housewives — did what they could to make the searchers comfortable.

The Toledo Grange Hall became pilots' sleeping quarters, and Civil Air Patrol cadets took over housekeeping chores. One 10-year-old assigned the task of stoking the grange hall's wood-burning stove did the job so enthusiastically that an Army pilot had to take him aside and admonish him gently to go easy. It was too hot to sleep.

The boy's enthusiasm was matched by other townspeople, who brought pies, cases of ice cream, casseroles, whatever they thought the soldiers would enjoy eating — even though the Army had set up its own mess hall. "We had steak several nights," White later would say of the official GI menu. "We couldn't get (the troops) into the mess hall. Nobody competes with home cooking."

Another colonel would recall strolling along the airstrip late one evening, heading for the grange hall, when a pickup truck pulled up beside him. A man who appeared to be in his early 20s asked where the mess hall was. Thinking him to be a volunteer in search of a meal, the colonel asked what he needed. The man raised a thumb toward the truck bed and confided, "I work at a food locker and I thought you guys might like some pork chops. I've got 25 pounds. I don't think the boss will mind. I'll tell him in the morning."

At night, Toledo housewives did soldiers' laundry, and the Toledo School District opened the high school locker rooms to provide showers.

On Wednesday morning, Don Crick and three other loggers headed for the Green River with Crick's pink pass authorizing them to enter the devastation zone. But a Forest Service employee stopped them five miles north of Ryan Lake and challenged the pass. He said no such permits were being issued and radioed his superiors for guidance.



Associated Press Laserphoto

CAMPSITE — Army Warrant Officer Charlie Wester pulls a saddle from the ash at a camp near the mountain. The body of Allen Handy was found nearby.

After a lengthy conversation, Crick heard Wiester's voice crackle from the radio: "I gave the permission but I have now rescinded it."

"Rescinded like hell," Crick replied. "I'm going in." Crick drove past the Forest Service man, who made no move to stop him. But the search would be in vain. Crick and his companions would hike past the bodies of Clyde Croft and Allen Handy without knowing they were there. Eventually they would find the abandoned vehicles at Miners Creek, but they were registered to Bruce Nelson and Dan Balch — not to Crick's son-in-law Tom Gadwa.

"I drew maps," Crick recalled weeks later. "I don't know how many, showing exactly where (Gadwa and Bowers were cutting timber). I told them to take me in, and I'd take them right to the spot. I knew where they should have been working. The only way I ever got in was on my own. I guess they told me I was wrong when I did that, but I wasn't."

While Don Crick was slogging through the ash in hope of finding Gadwa alive, Ben Bena was trying to get the military to start bringing out bodies. Rain had overcome one objection to body-recovery flights — that loose, blowing ash stirred by helicopter rotors made landings too dangerous to risk unless lives were at stake. Now the ash had turned to mud.

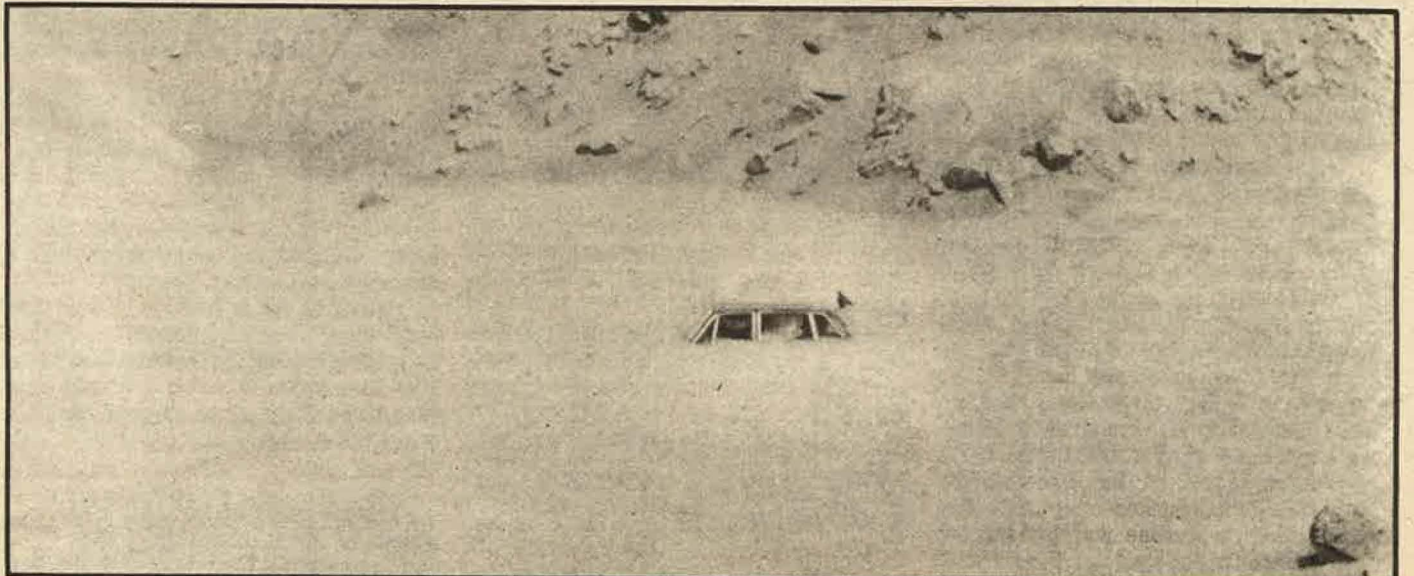
Bena asked the 304th to go in for bod-

ies, but Maj. Mike Peters replied that his orders would have to come from the Rescue Coordination Center at Scott AFB. And before Air Force officers in Illinois could order such missions, they needed a special request from Emergency Services in Lacey. The National Guard worried about its legal liability in picking up bodies and refused to do it.

Bena again asked Emergency Services for help. Scott AFB officials then agreed to issue orders for the 304th and called the National Guard Bureau in Washington, D.C., which in turn called Washington National Guard headquarters in Tacoma. While steady rains Wednesday kept the helicopters grounded, the orders were sent back through Emergency Services and down the local chains of command.

With a break in the weather Thursday afternoon, the job of body recovery finally began. Considerable pressure had been applied to bring back one body as soon as possible. Relatives of Andy Karr, the boy in the bed of the pickup, had called sheriff's offices and military commanders ever since the appearance of George Wedding's picture to demand that Andy be brought down from the mountain.

An Army helicopter that Thursday landed on a hill downslope from the pickup. Sgt. Jeff Sharrard, 28, of Nottingham, England, a medic and crew chief in the 54th



Associated Press Laserphoto

SEA OF ASH — Reid Blackburn's Volvo appears to float in the deadly ash.



Photo by GEORGE WEDDING, © 1980 San Jose Mercury

## CHECKING FOR SURVIVORS — Capt. Jess Hagerman of the Washington National Guard searches north of Spirit Lake.

Medical Group at Fort Lewis, would be among the first military men to take part in the grim task. Sharrard and four other men jumped out of the chopper and hiked up to the truck.

They found the 11-year-old lying face up, his hair tinted orange by the steamy heat and his arms and legs showing signs of scald burns. His knees were locked in a slightly bent position, and his arms had contracted into what coroners call the pugilist position — raised over his chest in a way that he might use to carry a load of wood.

Sharrard went to the father. Day Karr, clad only in undershorts, lay on his back on a slope as if flung there by a powerful wind. His neck appeared to be broken. Sharrard had never encountered human death. He found himself staring in horrified fascination at Day Karr's face while his commander shouted at him to come away. He would not forget it for a long time.

The men loaded Karr into a green plastic body bag and took him to the helicopter. Sharrard went back to the pickup, climbed onto the hood and looked through the windshield. Nine-year-old Michael Karr lay on the floor, his face turned toward the seat. Sharrard thought the boy must have crammed his head underneath in search of air before he died. Michael was dressed in pants and boots. Sharrard sprayed the body with disinfectant, then reached in to pull it out and place it in a body bag.

After the helicopter returned to Toledo and the bodies were taken to a temporary morgue, Sharrard had a cup of coffee and nervously tried to joke a little with other crewmen. No one was in a joking mood.

□

While Sharrard was still on the mountain, Bruce Nelson and Sue Ruff were at the Toledo operations center waiting for clearance to search for their friends, Karen Varner and Terry Crall. The two survivors had appeared on NBC television's *Today* show and told of their own brush with death.

After telling their story at a Portland television station, which relayed it to New York, the couple ate breakfast at Portland's Benson Hotel with their interviewer, NBC news correspondent David Burrington. They told Burrington of their problems getting information about Crall and Karen Varner, and complained that the searchers apparently were not looking.

Burrington offered to charter helicopters and take a private search team, including Nelson and Ruff, to the Miners Creek camp while a cameraman filmed it all. They set out from Kelso later that same morning but the helicopters were ordered to land when they approached Toledo.

They were told to wait while National

Guard officials went over their flight plan. The wait lasted five hours. Finally Burrington told Nelson he had had enough. Followed by a television cameraman, the two men walked toward a pair of search officials. Burrington opened the conversation:

"Let this kid find his friends," he said, "or we're going to make you guys look like the asses you really are on national TV." After another wait — a brief one this time — Nelson was told that he alone could go on a helicopter mission.

About 3 p.m., an Army helicopter and two National Guard choppers took to the air, one piloted by Jess Hagerman. Nelson said later that they had not been equipped for mountain rescue work. They carried no water and no chain saw or other tools for cutting through fallen timber. Nelson took along a borrowed saw, an ax and his own water.

Once the helicopters landed near Miners Creek, Nelson led a ground party to the camp, which they located after spying a gasoline lantern hanging from a still-standing tree. Capt. Steve Epperson, 32, of the Ninth Infantry Division's Ninth Aviation Battalion, would think more than once of Vietnam as he prowled the devastation zone with Nelson and Hagerman that afternoon.

He had been on the ground in Vietnam after B-52 carpet-bombing strikes, and the thought struck him that the "Arclight" raids could not compare with what the mountain had done. The ground crunched as they walked across a thin crust of solidified ash.

Soon they heard a sound of barking dogs that came from a pile of trees. Epperson and Hagerman saw a spot of red — the tent they were looking for. Hagerman knelt, brushed away the ash and cut a foot-long slit in the nylon fabric. The stench of rotting bodies wafted out. Epperson again thought of Southeast Asia.

Terry Crall lay on the right side of the tent, his arms around Karen Varner. It was the position they had assumed five days earlier, when Crall ran back to camp thrilled about the steelhead he had hooked, then dived into the tent to warn Karen about the cloud that was bearing down on them. He was in jeans and work shirt, she still in the long underwear in which she had slept.

They had clung together cheek to cheek before a toppling tree landed on Crall's head and crushed them both. Hagerman started the chain saw to cut through the tree and free the bodies. It took four men to load each of them into body bags. Crall's dog, Tie, and her three pups were still alive. Nelson took them home.

□

Thursday was the day, too, that Mu-

kilteo school bus driver Brad Backstrom went back to the Kelso airport for help to find Don Selby, who had been photographing the volcano from Spud Mountain.

Backstrom had been there Monday as well. He had pointed out his friend's camp on a map for some National Guard helicopter crewmen, but they would not let him go on a mission. He was told the Guard had not yet scouted Spud Mountain. In frustration, Backstrom had stood back and cursed at a Guard officer.

When he returned Thursday afternoon, he saw the familiar figure of Gov. Dixy Lee Ray, who had just stepped from a plane in preparation for meeting President Jimmy Carter. The president was flying over the destruction zone in a helicopter that day and would decide the volcano damage made the moon look like a golf course.

"May I have 10 seconds of your time?" Backstrom asked the governor. She looked at him tentatively, then said, "Make it 10 seconds."

"I've got a friend in there," Backstrom said. "I want to get him out." The governor said Backstrom should talk to the person in charge.

"Aren't you in charge?" he asked as she turned to leave. "Where does the buck stop?"

That night in Portland, President Carter would say — as Ray had said in a television interview Monday — that Mount St. Helens' victims were mostly people who had ignored official warnings.

"One of the reasons for the loss of life that has occurred is that tourists and other interested people, curious people, refused to comply with the directives issued by the governor, by the local sheriff, the State Patrol and others," Carter said at Portland's Marriott Hotel. "They slipped around highway barricades and into the dangerous area when it was well-known to be very dangerous. There has been a substantial loss of life."

The governor's and the president's claims that many volcano victims ignored official warnings were repeated by other officials. When another weekend began that Saturday of May 24, Nolan Lewis, Cowlitz County's emergency services director, declared the whole county east of Interstate 5 off limits to the public.

He said he did so "to save some of these fools' lives." Lewis contended that almost everyone then known to have died in the May 18 eruption was in a restricted zone, "and most of them had no good reason to be there."

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Though much of the next eight days would be spent removing bodies, there were occasions when rescue men did have to go in for the living who defied renewed

warnings. Such was the case that same Saturday.

A team of photographers was sighted by an Army helicopter crew near Hanaford Lake, nine miles northwest of the volcano. The pilot, Capt. Dick Carroll, 31, landed and talked with Russe Johnson, 29. He told Carroll the men were heading for Spirit Lake to shoot motion picture film of the mountain.

Carroll bluntly told them they were foolish, noting as well that they seemed ill-prepared for worsening weather. Johnson talked to the other four — group leader Otto Sieber, 44; Joel Turgeson, 33; Dale Peterson, 31; and Mike Lienau, 21. All but Lienau were from Seattle. He lived in Klamath Falls, Ore. The men talked for a moment and decided to stay.

Three hours later, a helicopter carrying part-time Skamania County Deputy George Barker landed near the camera crew, which by then had hiked to within half a mile of the Spirit Lake Highway after traversing logging roads through the destruction zone. Barker cited all five men for trespassing, saying they were violating the governor's closure order.

He told the group that geologists expected the mountain to erupt again — it had settled recently into a pattern of almost continuous steam venting — and that a bad weather system was on its way. He ordered them to get out the same way they had come in, warning of more tickets if he returned and saw any footprints beyond those already made. Tired and running short of supplies, particularly water, Sieber asked if they could get a helicopter ride out.

"No way!" Barker shot back. "You bastards hiked in here. You can hike out." Turgeson pleaded to be taken out because of an injured knee. Barker refused. Pointing toward two military helicopters flying overhead, Sieber asked Barker if he would call for a National Guard aircraft. Barker refused again.

"You better start walking," he said. He



Photo by GEORGE BLOMDAHL

## OVERWHELMED — One of the mountain's victims who didn't have a chance.

climbed back into his own helicopter and left. Sieber and the others sat stunned. They thought about hiking on down to the Spirit Lake Highway but decided against it. They did not want to violate Barker's order.

Returning to camp, they sat and waited as the temperature dropped and snow began to fall. At 2:30 a.m. Sunday, May 25, Mount St. Helens indeed erupted again, dusting the countryside anew with a heavy layer of ash. The photography team started to walk out at daybreak. By the end of the day, they had covered barely two miles after sinking in pools of wet ash and struggling in syruplike mud on the logging road.

They found a 5-foot-thick cedar that was down across the road and made camp for the night, pitching sheets of plastic from tree trunk to ground to shield them from the bitter weather and falling ash.

On Monday the men started hiking again, but a sleet storm drenched them after a short distance and they returned to their shelter. That afternoon, they ignited some road flares to signal a 304th Huey that appeared overhead, and it landed to take them out. ■



## The bodies

There was an air of professional mystery and excitement about it. Orley Leeson felt it on the plane. The two dentists from Eugene felt it in the car on the way north, and the two medical examiners from Portland felt it when they first volunteered to work in the temporary morgue that was established in Toledo.

None of the men involved in identifying the victims of Mount St. Helens had ever worked with volcano victims before. For that matter, no one else in the United States had gone through what they would encounter. It was the excitement of the detective work that made them eager to do the grisly task.

The U.S. Army already had set up its canvas morgue by the time Leeson, 52, and his men from the FBI body identification team arrived from Washington, D.C., that Friday, May 23. A large tent was pitched near the search operations center at the Toledo airport. Nearby were two refrigerated trucks painted with patches of green and beige camouflage. The trucks contained what was left of the victims.

Inside the tent, morgue procedures were simple. Each victim was procured on a board where the FBI men and the dentists logged what information they had — where the body was found, what personal effects were found with it, vehicle license plate numbers and, finally, an identity. The floor inside the tent was the dirt and grass of the airfield. The tent flaps were raised occasionally to let a cool breeze through. There was very little odor of death.

Two tables were in use side by side. On the left, the FBI fingerprint experts would work on one victim, while on the right, Drs. William E. Alexander, 57, and Richard L. Shoemaker, 42 — the two dentists — would examine teeth and dental work on a second victim. Then the investigators would switch tables.

Alexander had brought "The Box" with him, an X-ray cabinet of his own design. A portable X-ray unit was inside the lead-shielded plywood box. Sections of teeth and jaws were placed inside to make X-ray negatives for comparison with dental records that suspected victims' family dentists mailed to Toledo.

When Leeson's men entered the refrigerated trucks, they were astounded by the condition of the bodies. Most had been outdoors for four days, yet they were remarkably well-preserved. Seattle medical examiners would say later that they could not have established times of death — or even the day — without knowing the time of the eruption. The FBI men also had expected to see putrefaction and maggot infestation, but there was none.

The bodies literally had been parboiled by the clouds of steam that came from the volcano. They had been pasteurized by heat that killed the internal bacteria that normally would have caused decomposition. Maggots — often an important clue in fixing times of death — were not present because there were no flies. The volcano had killed them all.

There were varying degrees of injury. Some victims were intact and fully clothed. Others were decapitated or dismembered, their rib cages and leg bones broken through the skin. One man was reduced to a small, stonelike mass of mud. He was identified by a necklace — discovered only by X-ray — that had become imbedded in



Photo by GEORGE BLOMDAHL

IDENTITY SEARCH — Drs. Richard L. Shoemaker (left) and William E. Alexander examine a victim in the Toledo tent morgue.

his remains. Another man was so completely blown apart that rescue workers initially failed to recognize his fused heart and liver.

Most victims, however, showed little outward physical damage. Their flesh may have been cooked, but their clothes were not burned and their hair was not singed. The two Portland pathologists from the Oregon Medical Examiner's office, Drs. Larry V. Lewman, 39, and Ron O'Halloran, 30, saw no apparent signs of blast injuries even though scientists originally said Mount St. Helens had exploded with the force of a 50-megaton nuclear bomb.

In fact, the stone wind that hammered across the ridges on the morning of the big eruption had no characteristics of a shock wave. It was strong enough to knock down the forest and splinter buildings, yet it did not cause air-pressure changes explosive enough to rupture delicate human organs.

The body-identification teams saw early evidence of the strange and terrible nature of the ash hurricane. One man's body was recovered along with his camera. The metal in the camera had melted but plastic parts were intact. And with few exceptions, the victims' hair was bright orange — a condition that, much later, was attributed to the peculiarly moist heat of the steaming ash. Leeson's men seriously wondered at the time if somehow the volcano had killed only redheads.

"The more I sit back and think about it," Leeson would reflect later, "the odder the whole thing gets. I saw a couple of them there like I've never seen before." As a special agent in the latent fingerprint section of the FBI's Identification Division, Leeson was a man whose expertise had been sought around the world, at disasters ranging from floods to airline crashes in which jet fuel seared bodies beyond all recognition.

"It was as if somebody had put them in a pot of boiling water and boiled the meat away," he said of the volcano victims. "There is nothing I've ever seen that compares to this, in terms of destructive force."

The work went slowly at first, starting with the children. The FBI men, clad in blue overalls with red and white stripes

and blue baseball caps with "FBI" in white letters across the front, began their work on Andy Karr, the boy who had lain in the pickup west of the mountain. Because of George Wedding's photograph, there was pressure to have Andy identified quickly and returned to his relatives for burial.

Some who were involved in the Toledo operation felt the identification process moved too slowly. FBI men fingerprinted children before moving on to adults — who would be more likely to have prints on file — and were using procedures that some critics felt were too painstaking in cases where driver's licenses and other identification had been found on the bodies.

Fingerprint identification was difficult in some cases because victims' skin was so fragile that it would slide whole from their fingertips. Leeson's men had to slide their own fingers gently into the shells of flesh and make the impressions themselves.

Some of the bodies had no hands. In those cases — and in all cases involving children — the investigators finally worked from dental records. In other cases, arms and legs had pried loose when the bodies were moved. The men then worked with dismembered hands alone. Ultimately, half of the 22 victims examined by the FBI team were identified through fingerprints.

Twelve bodies from the Toledo morgue were airlifted to Harborview Medical Center in Seattle, which serves as headquarters for the King County Medical Examiner's office. Chief Medical Examiner Dr. Donald T. Reay, 43, and Medical Examiner Dr. John W. Eisele, 38, began the unusual autopsy work.

Their first surprises came when they made their earliest incisions. After a matter of inches, the scalpels they were using lost their sharp cutting edges, dulled by the abrasive ash particles embedded in the skin and body tissues.

Inside the bodies the pathologists found more ash. It had been packed into the victims' respiratory systems in quantities greater than it seemed they could have held. In most cases, the victims died of suffocation — strangled on about a teacupful of ash packed into a ball of mud in the

upper trachea. It was fine and powdery like confectioners' sugar.

Eyes and tear ducts also were clogged with the grit. Scald marks and steam burns were apparent on most of the 12 bodies they examined. In those instances where breathing passages were packed with ash and the bodies also burned, Reay and Eisele established the cause of death as asphyxiation. It takes less time to suffocate than to die of burns.

Three victims — Don, Natalie and Rick Parker, the prospectors who hoped to get rich at the Black Rock Mine — were burned by pyroclastic flows, cooked by steam, and contracted into unidentifiable forms after prolonged exposure to the intense heat.

Reay and Eisele consulted Dr. David Neal, 30, a Harborview eye, nose and throat specialist, to verify Lewman's and O'Halloran's suspicions. There had been no blast injuries — no broken eardrums or ruptured internal organs as would have happened in a sharp, concussive explosion.

"The ones who suffocated probably felt panic at first," Reay said, recounting the manner in which he described the most common cause of death to family members. "They breathed, but nothing was there. They probably began gasping and trying to suck in air. Of course, they only sucked in more ash."

"After a period of panic and trying frantically to do something to protect themselves," he said, "there probably was a period of euphoria much like a drowning victim feels toward the end. The brain is being robbed of oxygen, and the realization of what is happening and the panic begins to fade away."

Unconsciousness and death probably came within five or six minutes in most cases, Reay said. The single exception to that theory was Clyde Croft, the horseman who pulled a sleeping bag over his head and stopped to drink two cans of beer as he tried to walk to safety.

Croft did die of ash asphyxiation, Reay's autopsy showed, but he apparently inhaled ash over a much longer period of time than did anyone else. There was no ball of mud clogging his upper respiratory passages. Instead the ash was spread even-

ly through his lungs in a fine layer — the same sort of thing that happens when a grain elevator worker falls and drowns on the fine dust in a wheat bin.

Croft's blood-alcohol test was negative, indicating to Eisele that the two cans of beer he stopped to drink at Ryan Lake had metabolized fully. That meant Croft lived at least two or three hours after leaving the truck and starting down the Quartz Creek Valley.

Croft's death certificate was much the same as those of other victims the King County Medical Examiner's office examined. "Cause of Death: Asphyxia by inhalation of volcanic ash." But while certificates for the others showed the "interval between onset and death" as being "instant," Croft's merely said the time factor was "unknown."

Eleven days after Mount St. Helens' cataclysmic May 18 eruption, the searchers began to feel they had done all they could. The few survivors had been recovered early. The missing either were killed in the eruption or died like Evlanty Sharipoff and Clyde Croft, seeking help that never came.

Airborne search teams had scoured the countryside, flying over the same landscape time after time and searching the same cars and campsites on nine and 10 occasions. Calling it off was a political problem — not one of logistics. The three county sheriffs, with some military commanders also present, met in Toledo to discuss how the public might react to ending the search when the known dead numbered 22 and the list of missing still stood at 58.

And the victims' families and friends still had to be considered. From the outset, the rescue centers had undergone a barrage of inquiries from those wanting to help, wanting answers, wanting to know why they could not join the search when they had precise information to offer. In the end, the sheriffs decided to ride out the firestorm of criticism they expected. Lewis County's William Wiester emerged as the leader, the man willing to make the difficult choice.

"We're not writing off 60-odd people still missing," Wiester announced at 5 p.m. Thursday, May 29, even though the missing indeed had been written off as dead two days earlier. "But we no longer feel this part of the operation is accomplishing anything." With that, the Toledo air search came to a close.



Staff photo by TIM JEWETT

**WILLIAM WIESTER:** "We're not writing off 60-odd people still missing. . . . But we no longer feel this part of the operation is accomplishing anything."



## Epilogue

**B**y the end of the air search, most autopsies had been completed and the victims' remains had been returned to their families for cremation or burial. But even then, the volcanic ash that had killed most of them would not let them rest. It formed a hard, ceramic shield — much like a potter's glaze — on some bodies burned in crematories.

For weeks after the search officially ended, more names were added to the list of victims of Mount St. Helens. Leonty Skorohodoff, 30, the logger rescued along with James Scymanky by Capt. Jess Hagerman's Washington National Guard helicopter crew, died May 28 in the Oregon Burn Center at Portland's Emanuel Hospital, a victim of steam burns and the thermal pneumonia that scarred his lungs.

Six days later, Jose Dias, 33, the man who ran barefoot down the hill screaming in Spanish to warn his friends that the volcano was exploding, died in the same hospital of complications arising from burns inside his lungs.

Scymanky, 36, the only English-speaking member of the four-man logging crew, lived to be released from Emanuel on July 18, two months after the eruption. Doctors said he probably survived because he drank so much water at the spring where he, Dias and the two men with Russian names rested during their attempt to reach safety.

Robert Landsburg, 48, the Portland free-lance photographer who had camped closer to the mountain than anyone else on the morning of May 18, was found June 4, a victim of ash inhalation.

Ronald L. Conner, 43, of Tacoma, was found June 24, also dead of suffocation.

Evlanty Sharipoff, 41, who lived through a searing blast of heat that morning, then wandered for several miles before climbing his sturdy young hemlock — was found July 9 in the center of the North Fork mudflows. No autopsy was performed, but Cowlitz County Coroner D.F. Winebrenner ruled that Sharipoff died as Clyde Croft died — asphyxiated by ash over a period of undetermined length.

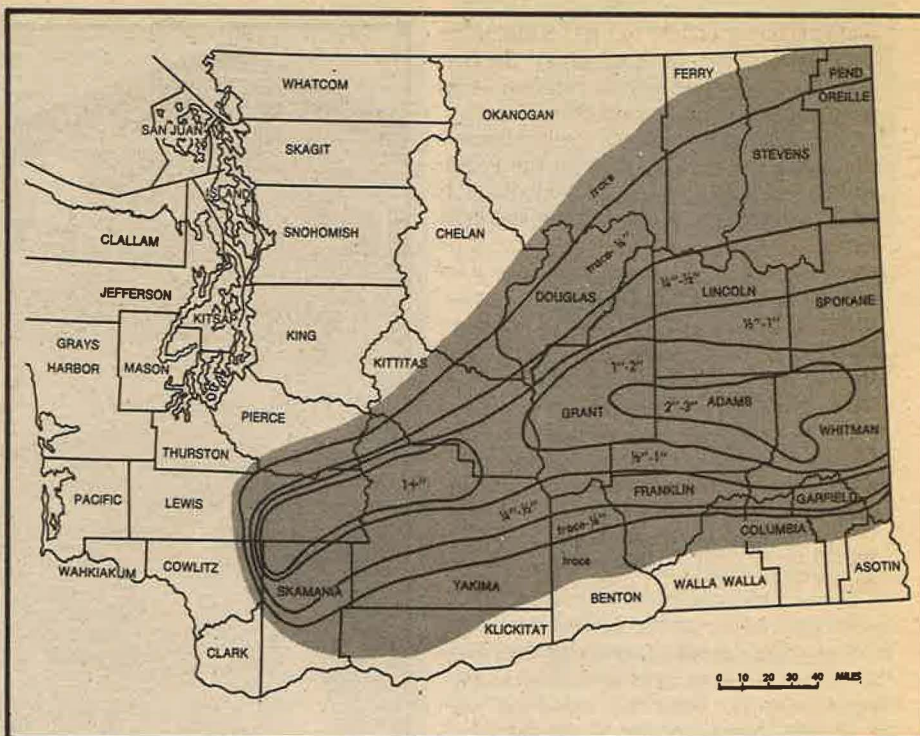
Jerome L. Moore, 45, and his wife, Shirley Ann, 49, both of Kelso, were found July 10, also victims of ash inhalation. Christy Killian, 20, of Vader, was discovered July 17 — blown to pieces, but dead of what the coroner said were traumatic head injuries. The lower half of her body has not been found.

Arlene H. Edwards, 37, the Portland free-lance photographer whose daughter Jolene, 19, had been found May 23, was discovered July 21 in a hemlock 600 feet below her chosen vantage point atop Elk Rock. She died of massive chest injuries.

Don Selby, 48, the unemployed Everett millwright who wanted pictures of the big eruption, was not identified until July 24. A notation on his death certificate said his body was "nearly totally incinerated in explosion and fire of vehicle."

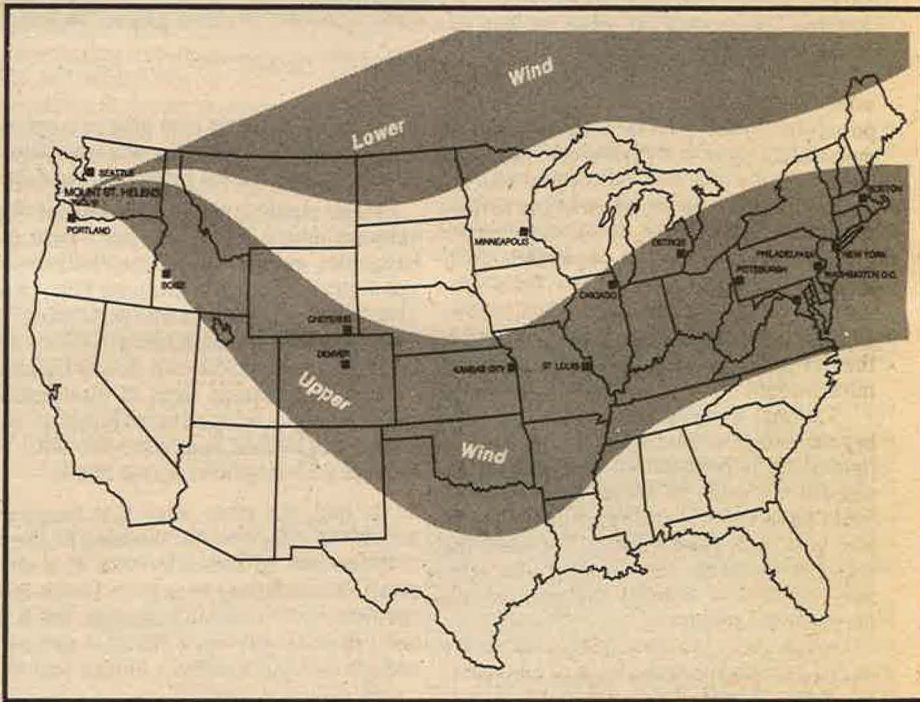
Crews working for the Weyerhaeuser Co. turned up three more bodies Sept. 30. Klaus Zimmerman, 27, a Spokane commercial artist last seen alive in the gravel turnaround May 17, was found dead in his car along the Spirit Lake Highway about a mile above Camp Baker and 16 miles west of Mount St. Helens. The car had been buried by a mudflow. Its ignition switch was still on when the car was uncovered.

The bodies of Harold R. Kirkpatrick and



Maps by staff artist PAT McLELLAND

**THE CLOUD** — The ash moved unevenly across Washington state, above, settling in thin layers near the mountain, and forming thick blankets farther out. Across the country, below, it spread out in two directions. The lower part of the plume, pushed along by low-altitude winds, moved across Eastern Washington and into Canada. The upper part, scattered by high-altitude winds, moved across the continent and was eventually distributed around the world.



his cousin, Joyce M. Kirkpatrick, both 33 and both from Newberg, Ore., were found next to the remains of their pickup camper on a hill about a mile north of the gravel turnaround. Their campsite was two miles northwest of Elk Rock and about 12 miles west of the volcano. A Weyerhaeuser surveying crew discovered the pickup under fallen trees and volcanic ash.

There are believed to be at least 19 other bodies still on the mountain — people who simply vanished on May 18. Skamania County Coroner Robert K. Leick issued findings of probable death in those cases, basing his conclusions on what he said was "clear, cogent and convincing" evidence.

It seems likely that most of those victims lie buried under fallen timber, rockslides or deep layers of mud or ash. Gerry Martin, Wally Bowers, Tom Gadwa, Jim and Kathleen Pluard, David Johnston and John Killian are among them, as well as people who were gathered in the gravel turnaround outside the Spirit Lake Highway roadblock the Saturday before May 18.

Some may have been pulverized or so badly burned that their remains would not be identifiable as human. Except for Harry Truman, Bob Kaseweter and Beverly We-

therald, there has been no evidence developed to suggest that any of them died in the official danger zones.

The Washington Department of Emergency Services refused at first to fully identify the dead and missing, releasing only their names and omitting their ages and hometowns. It was reported at the time that this policy was an effort to spare relatives the added grief of news media inquiries. But it went beyond that.

Emergency Services shift supervisor Bud Lien said during the first week after May 18 that his agency also was refusing to verify identifications to private citizens who had friends with the same names as those missing or killed. Workers at the state disaster-response agency said they were following the directives of the sheriffs' offices. The sheriffs' offices, in turn, said they were withholding identities at the request of Emergency Services.

As *The Oregonian* reported on events of May 24, "Agencies still were refusing to release the names of the dead Friday. Public information officers at the rescue center in Toledo were hanging up on callers, while sheriffs in Cowlitz and Lewis counties . . .

were referring callers to the Toledo office. The Department of Emergency Services said it is not certain who is responsible for releasing identities of the bodies."

Agency representatives freely acknowledged that dozens of people in the Pacific Northwest alone had names identical to or similar to those of the missing and dead. Hometowns without specific addresses eventually were disclosed, but ages were not. William Parker of Portland was one of those killed by the volcano. Officials refused to give Parker's street address even though there were 12 William Parkers listed in the Portland telephone book.

Federal Emergency Management Agency representatives who worked with Emergency Services were dismayed at the state agency's attitude and privately expressed concern about the unnecessary grief it would cause friends and families of living people who had similar names.

□

Hundreds of scientists and a vast array of sophisticated equipment costing millions of dollars to build and operate were brought to bear on Mount St. Helens.

An extensive network of seismographs was employed to detect and analyze the more than 10,000 earthquakes that shook the mountain during the 60 days that preceded May 18. Optical instruments were used to evaluate the gas content of plumes from the smaller, early eruptions. Observation planes made daily passes over the summit to gather gas samples. Collectively, that equipment was supposed to give two hours' warning of any major eruption.

Scientists also installed tilt meters, which, like carpenters' levels, were supposed to detect angular changes on the mountain's slopes. There were expensive laser rangefinders like the one Harry Glicken used to measure deformation at the surface. A wide variety of high-resolution photographs and other images were made of the mountain, including some taken from space satellites and by a high-altitude Lockheed U-2 photoreconnaissance plane operated by the National Aeronautics and Space Administration.

Thermal imaging techniques that went beyond infrared photography and into the field of digitally produced computer images showed hot spots on Mount St. Helens and could have given warning, if only the data had been processed earlier. But even that warning would not have been of a cataclysmic eruption — only of the massive avalanche that preceded it.

When all was said and done, there was no way to predict what happened May 18. Like La Soufriere on Guadeloupe four years earlier, Mount St. Helens was a reminder that scientists still knew very little about the potential dangers of the world's volcanoes, said Dwight "Rocky" Crandell, the U.S. Geological Survey volcanic hazards expert. Charles Zablocki, deputy chief of the Geological Survey's office of geochemistry and geophysics, was more direct. "We were going to school on this one," he said.

□

There have been other sizable eruptions of Mount St. Helens — on May 25, June 12, July 22, Aug. 7 and Oct. 16-18 — the worst effects of which were additional layers of ash that dusted the Washington and Oregon countryside. No one was hurt after May 18.

Scientists have said the deaths and widespread destruction probably are over. But the ash fallout will go on, perhaps for years, to become even greater than the blanket which covered the western United States on May 18. If Mount St. Helens follows a pattern foreseen by Crandell and others, it will take three to five years for the volcano to develop a lava dome that will nearly fill the existing crater and cap the volcanic vent below.

There will be several attempts before the mountain finally caps itself. Its first lava dome was destroyed by the July 22



Associated Press Laserphoto

**STUCK IN THE MUD** — A home in Castle Rock wallows in 4-foot-thick mud.

eruption and its second by the eruptions of Oct. 16 and 17. A third began to form Oct. 18.

There may be no more destructive lateral eruptions and no more lives lost, Crandell said, but as each of the early lava domes shatters, the mountain will eject more tons of ash into the atmosphere — probably four or five times as much as the one-half cubic mile of ash that was discharged May 18. Boulders may fall as far as 12 miles away. And scientists again hope that next time, they will be able to give warning to evacuate people from around the mountain before it happens.

Meantime, authorities are gradually taking steps to ease the Red and Blue zone restrictions so loggers and others can move in closer to the volcano.

□

Mount St. Helens touched the lives of millions of people around the globe. In Eastern Washington, many thousands of people — as well as their animals, machines and homes — suffered under a blanket of ash. Crops were damaged, tourists were stranded and lives were disrupted.

After his tour of the devastation zone,

President Carter declared all of Washington a disaster area, permitting the use of federal funds for cleanup and to help those who were dislocated by flooding.

Five months after May 18, authorities still were trying to refine their damage figures, but it seemed certain that early estimates were too high. They climbed from \$1.6 billion soon after the eruption to \$2.72 billion by July 19.

But the figures changed almost daily, depending to a great extent on who was doing the talking and which cleanup and restoration costs they chose to include in their estimates. Nobody could agree on seemingly simple questions such as how much forest land was affected. There is still no clear damage summary available.

But on Sept. 16, the U.S. International Trade Commission released a study done for the House Ways and Means Committee. It concluded that total economic damage to the region affected by Mount St. Helens was closer to \$1.2 billion — less than half the July 19 figure — and said that even that amount was "small in relation to the economy of the Pacific Northwest and, in relation to the U.S. economy, virtually insignificant."

The commission said the volcano laid



Associated Press Laserphoto

**NO FRESH AIR** — Homemade masks protect lungs May 18 in Yakima.

waste to as much as 120,000 acres of forest land in the eruption and subsequent flooding, destroying or damaging 3.2 billion board feet of timber. That was higher than the earlier estimate of 2 billion board feet, but less than the 4 billion to 5 billion board feet lost annually to disease, insects and forest fires in the Pacific Northwest. Also, it was less than one-third of the more than 10 billion board feet blown down by the Columbus Day storm that hit the region in 1962.

Sixty percent of the volcano-affected timber was on privately owned land, 35 percent on federal land and the rest on state property, the commission said. Seventy percent of the actual timber was privately owned, and the rest was split evenly between state and federal ownership. The timber's total value was put at \$652 million, up from \$500 million in earlier estimates. But some of the timber — guesses range from 20 percent to 80 percent — may be salvageable as wood pulp. The commission surmised that less than half would be worth saving.

Estimated damage to agriculture was reduced in the trade commission's report to \$192 million, compared with an original estimate of \$300 million for Eastern Washington alone. The commission's figure on agricultural losses was equivalent to about 3.5 percent of the region's 1979 agricultural production. Bigger wheat, barley and apple crops this year might make total 1980 production exceed 1979's despite the volcano, the commission said.

The Washington Department of Fisheries estimated that 12 million juvenile salmon were lost, which ultimately would have grown to 358,000 adult salmon worth \$8 million. Another 400,000 young salmon died when they were forced through turbine blades on the Lewis River dams, whose reservoirs were drawn down to guard against flooding. Total fisheries losses were set at \$95 million. The cost of cleaning ash from public roads was about \$75 million.

The trade commission concluded that economically, at least, Mount St. Helens was not as bad as government officials originally thought.

□

Hundreds of interviews were conducted and thousands of pages of documents were reviewed in the preparation of this report, including 13 volumes of daily logs, each an inch thick, compiled by the Department of Emergency Services. Also examined were U.S. Forest Service logs, private notes and diaries, recordings of rescue communications and hundreds of photographs taken by people who were on the mountain May 18 or soon afterward.

Despite repeated attempts to interview Washington Gov. Dixy Lee Ray, including three personal visits by *Oregonian* reporters to her office in Olympia and a number of telephoned requests, her aides said she simply could not make the time available for such an interview. Her schedule — which included a number of campaign appearances in her quest for re-election — kept her too busy to discuss her role in preparing for the worst natural disaster in Washington history.

The governor ultimately lost the Sept. 16 Democratic primary to State Sen. Jim McDermott, a Seattle psychiatrist. In an interview she granted another reporter three days after her defeat, Dixy Lee Ray said of Mount St. Helens:

"The fact is we were prepared, and because we were prepared there was very little loss of life. There is no way we could have made the eruption of May 18 more or less severe than it was, or determine where the ash was going to go.

"And of all the consequences," she added, "the one of greatest concern to me is the possibility of winter flooding off the

Continued on Page 40.

# The dead and missing

## Bodies recovered



**Reid Turner Blackburn**, Vancouver, Wash., a photographer for *The Columbian*. Born Aug. 11, 1952, in Washington, D.C. Died May 18, 1980, of asphyxiation by volcanic ash in the driver's seat of his car, parked on a ridge above Coldwater Creek, eight miles northwest of Mount St. Helens.



**Terry A. Crall**, Longview, Wash., an unemployed lumber mill employee. Born Aug. 10, 1958, in Longview. Died May 18, 1980, of massive blunt-impact injuries to his head when a tree fell on his tent below Miners Creek in the Green River Valley, 14 miles north of Mount St. Helens.



**Ronald Lee Conner**, Tacoma, Wash., a port engineer for Kaiser Aluminum & Chemical Inc. Born Aug. 7, 1936, in Muncie, Ind. Died May 18, 1980, of asphyxiation by volcanic ash near an outhouse on the east side of Ryan Lake, 12.5 miles northeast of Mount St. Helens.



**Clyde Andrew Croft**, Roy, Wash., a grocery warehouseman. Born Dec. 14, 1942, in Coleman, Texas. Died May 18, 1980, of asphyxiation by volcanic ash beside the Quartz Creek road 15.5 miles northeast of Mount St. Helens.



**Jose Arturo Dias y Miranda**, Mount Angel, Ore., a logger and farmworker. Born Jan. 30, 1947, in Mexico. Died June 3, 1980, in Portland's Emanuel Hospital of pulmonary and skin burns sustained May 18 while running through the woods on a ridge between Hoffstadt Creek and the North Fork of the Toutle River, 13 miles northwest of Mount St. Helens.



**Arlene H. Edwards**, Portland, Ore., a free-lance photographer. Born March 30, 1943, Sunnyside, Wash. Died May 18, 1980, of chest injuries suffered when she landed in a hemlock tree 600 feet below Elk Rock, 10 miles northwest of Mount St. Helens.



**Jolene H. Edwards**, Portland, Ore., a waitress. Born March 20, 1961, in Portland. Died May 18, 1980, of asphyxiation by volcanic ash after she was blown into some trees near her mother's four-wheel-drive vehicle on top of Elk Rock, 10 miles northwest of Mount St. Helens.



**James F. Fitzgerald Jr.**, Moscow, Idaho, a graduate student. Born Oct. 3, 1947, in Canton, Ohio. Died May 18, 1980, of asphyxiation by volcanic ash in the driver's seat of his car on Spud Mountain, seven miles northwest of Mount St. Helens.



**Allen R. Handy**, Puyallup, Wash., a grocery warehouseman. Born Sept. 10, 1945, in Valley City, N.D. Died May 18, 1980, of asphyxiation by volcanic ash near the Polar Star Mine, 11.5 miles north of Mount St. Helens.



**Day Andrew Karr**, Renton, Wash., a student. Born May 6, 1969, in Seattle. Died May 18, 1980, of asphyxiation by volcanic ash in the cargo bed of his father's pickup truck, parked near Sheep Canyon in the upper South Fork of the Toutle River, four miles west of Mount St. Helens.



**Day Bradley Karr**, Renton, Wash., a wholesale produce company owner. Born Oct. 7, 1942, in Spokane, Wash. Died May 18, 1980, of asphyxiation by volcanic ash on a slope near his pickup truck, parked near Sheep Canyon in the upper South Fork of the Toutle River, four miles west of Mount St. Helens.



**Michael Murray Karr**, Renton, Wash., a student. Born Oct. 16, 1970, in Seattle. Died May 18, 1980, of asphyxiation by volcanic ash on the floor of his father's pickup truck, parked near Sheep Canyon in the upper South Fork of the Toutle River, four miles west of Mount St. Helens.



**Christy Liann Killian**, Vader, Wash., a forklift operator for the Weyerhaeuser Co. Born Nov. 30, 1959, in Willits, Calif. Died May 18, 1980, of traumatic head injuries — associated with explosive disintegration — near Fawn Lake, nine miles north of Mount St. Helens.



**Joyce M. Kirkpatrick**, Newberg, Ore., a supervisor at an egg processing plant. Born Nov. 26, 1946, in Rapid City, S.D. Died May 18, 1980, of asphyxiation by volcanic ash near her camp on a hill northwest of Elk Rock, 12 miles west of Mount St. Helens.



**Harold R. Kirkpatrick**, Newberg, Ore., a pipefitter. Born Nov. 1, 1946, in Grand Island, Neb. Died May 18, 1980, of asphyxiation by volcanic ash near his camp on a hill northwest of Elk Rock, 12 miles west of Mount St. Helens.



**Robert Emerson Landsburg**, Portland, Ore., a free-lance photographer. Born Nov. 13, 1931, in Seattle. Died May 18, 1980, of asphyxiation by volcanic ash near his station wagon parked near Sheep Canyon in the upper South Fork of the Toutle River, four miles west of Mount St. Helens.



**Jerome Lloyd Moore**, Kelso, Wash., a painter for International Paper Co. Born Jan. 30, 1935, in Toppenish, Wash. Died May 18, 1980, of asphyxiation by volcanic ash near his pickup camper on the north side of Tradedollar Lake, 11 miles north of Mount St. Helens.



**Shirley Ann Moore**, Kelso, Wash., a Washington Department of Transportation employee. Born April 24, 1931, in Philadelphia, Pa. Died May 18, 1980, of asphyxiation by ash inhalation on the north side of Tradedollar Lake, 11 miles north of Mount St. Helens.



**Kevin Christopher Morris**, Olympia, Wash., a student. Born Sept. 25, 1972, in Seattle. Died May 18, 1980, of asphyxiation by volcanic ash between the front seats of his family's four-wheel-drive vehicle in the headwaters of Hoffstadt Creek, 11 miles northwest of Mount St. Helens.



**Michelle Lea Morris**, Olympia, Wash., a student. Born Nov. 1, 1970, in Seattle. Died May 18, 1980, of asphyxiation by volcanic ash on the floor under the back seat of her family's four-wheel-drive vehicle in the headwaters of Hoffstadt Creek, 11 miles northwest of Mount St. Helens.



**Donald R. Parker**, Westport, Ore., a miner and retired engineer. Born Feb. 21, 1935, in Wauna, Ore. Died May 18, 1980, of asphyxiation by volcanic ash in a shack at the Black Rock Mine in the upper Green River Valley, 9.5 miles northeast of Mount St. Helens.



**Natalie All Parker**, Westport, Ore., a housewife. Born Aug. 28, 1929, in Carrollton, Ohio. Died May 18, 1980, of asphyxiation by volcanic ash in a shack at the Black Rock Mine in the upper Green River Valley, 9.5 miles northeast of Mount St. Helens.



**Jean Isabell Parker**, Portland, Ore., a nurse. Born July 13, 1923, in Three Hills, Alberta, Canada. Died May 18, 1980, of asphyxiation by volcanic ash beside her husband, William, in the seat of the family's pickup truck, parked on a bluff north of Hanaford Lake, 9.5 miles north of Mount St. Helens.



**William Paul Parker**, Portland, Ore., a microwave technician for Pacific Northwest Bell Telephone Co. Born Jan. 3, 1934, in Longview, Wash. Died May 18, 1980, of an accelerated head injury caused by a watermelon-sized boulder that crashed through the windshield of the family's pickup truck, parked on a bluff north of Hanaford Lake, 9.5 miles north of Mount St. Helens.



**Richard A. Parker**, Shelton, Wash., a miner. Born March 10, 1952, in Shelton. Died May 18, 1980, of asphyxiation by volcanic ash in a shack at the Black Rock Mine in the upper Green River Valley, 9.5 miles northeast of Mount St. Helens.



**Margery Ellen Rollins**, Hawthorne, Calif., a housewife. Born May 25, 1927, in Lincoln, Neb. Died May 18, 1980, of asphyxiation by volcanic ash in the front seat of her family station wagon on the Spirit Lake Highway above Camp Baker, 17 miles northwest of Mount St. Helens.



**Fred D. Rollins**, Hawthorne, Calif., a retired security guard. Born Feb. 5, 1922, in Pomona, Calif. Died May 18, 1980, of asphyxiation by volcanic ash beside his station wagon on the Spirit Lake Highway above Camp Baker, 17 miles northwest of Mount St. Helens.



**Donald James Selby**, Everett, Wash., an unemployed millwright. Born Feb. 27, 1932, in Des Moines, Iowa. Died May 18, 1980, of explosive disintegration and incineration near his pickup camper on Spud Mountain, seven miles northwest of Mount St. Helens.



**Barbara Lea Selbold**, Olympia, Wash., a teacher's aide at Olympia High School. Born March 1, 1947, in Seattle. Died May 18, 1980, of asphyxiation by volcanic ash in the front passenger seat of her family's four-wheel-drive vehicle in the headwaters of Hoffstadt Creek, 11 miles northwest of Mount St. Helens.



**Ronald Dale Seibold**, Olympia, Wash., a program engineer for the Washington Department of Transportation. Born Nov. 15, 1938, in Olympia. Died May 18, 1980, of asphyxiation by volcanic ash in the driver's seat of his family's four-wheel-drive vehicle in the headwaters of Hoffstadt Creek, 11 miles northwest of Mount St. Helens.



**Evianty V. Sharipoff**, Mount Angel, Ore., a logger. Born Oct. 10, 1938, in Sinkiang Province, China. Died May 18, 1980, of asphyxiation by volcanic ash in a hemlock tree beside the North Fork of the Toutle River, 14 miles northwest of Mount St. Helens.

## Leonty Vasiliyevich Skorohodoff

Mount Angel, Ore., a logger. Born Feb. 20, 1950, in Sinkiang Province, China. Died May 28, 1980, in Portland's Emanuel Hospital of burns he suffered May 18 in the woods on a ridge between Hoffstadt Creek and the North Fork of the Toutle River, 13 miles northwest of Mount St. Helens.



**Karen Marie Varner**, Longview, Wash., a receptionist for a doctor's office. Born Dec. 19, 1958, in Ellensburg, Wash. Died May 18, 1980, of massive blunt-impact injuries to her head when a tree fell on her tent below Miners Creek in the Green River Valley, 14 miles northeast of Mount St. Helens.



**Klaus Zimmerman**, Spokane, Wash., a commercial artist. Born Aug. 13, 1952, in Hamburg, Germany. Died May 18, 1980, of asphyxiation by volcanic ash in the front seat of his car, which was covered by a mudflow on the Spirit Lake Highway a mile above Camp Baker and 16 miles west of Mount St. Helens.

## Vanished and presumed dead



**Wallace Norwood "Wally" Bowers**, Winlock, Wash., a logger. Born May 23, 1938, in Toledo, Wash. Last seen leaving for work from Toledo about 7:30 a.m. May 18, 1980. Believed to have been cutting trees near Shultz Creek, seven miles northwest of Mount St. Helens.



**Joel K. Colten**, Wyncote, Pa., a photographer and employee of a retail brassware company. Born Dec. 23, 1950, in Philadelphia, Pa. Last seen about 8:30 p.m. May 17, 1980, driving from Interstate 5 toward Mount St. Helens on the Spirit Lake Highway.



**Bruce Edward Faddis**, Sisters, Ore., associate golf course superintendent at Black Butte Ranch in Sisters. Born June 5, 1953, in Bend, Ore. Last seen about 12:30 p.m. May 17, 1980, at the end of Logging Road 3310, about 8.5 miles west of Mount St. Helens.



**Thomas G. "Tom" Gadowa**, Montesano, Wash., a farm implement salesman and part-time logger. Born March 16, 1945, in Aberdeen, Wash. Last seen leaving for work from Toledo about 7:30 a.m. May 18, 1980. Believed to have been cutting trees near Shultz Creek, seven miles northwest of Mount St. Helens.



**David A. Johnston**, Menlo Park, Calif., a geologist for the U.S. Geological Survey. Born Dec. 18, 1949, in Chicago, Ill. Last heard from about 8:32 a.m. May 18, 1980, via radio transmission from a trailer parked on a ridge above South Coldwater Creek, 5.5 miles north of Mount St. Helens.



**Robert M. Kaseweter**, Portland, Ore., a chemist for Portland General Electric Co. Born Sept. 18, 1940, in Portland. Last seen on the evening of May 17, 1980, at a cabin below Spirit Lake, five miles north of Mount St. Helens.



**John G. Killian**, Vader, Wash., a logger. Born Sept. 1, 1950, in Canyonville, Ore. Last seen in a Toledo sporting goods store about 9:30 a.m. May 17, 1980, on the way to camp with his wife, Christy, at Fawn Lake, nine miles northwest of Mount St. Helens.



**Robert Lynds**, Kelso, Wash., a logging truck driver for the Weyerhaeuser Co. Born Dec. 24, 1954, in Colville, Wash. Last seen about 4 p.m. May 17, 1980, at a campsite near Hanaford Lake, 9.5 miles north of Mount St. Helens.



**Gerald O. Martin**, Concrete, Wash., a ham radio operator and retired U.S. Navy chief warrant officer. Born May 21, 1915, in Greensburg, Ind. Last heard from about 8:32 a.m. May 18, 1980, via radio transmission from his motor home parked west of Coldwater Peak, eight miles north of Mount St. Helens.



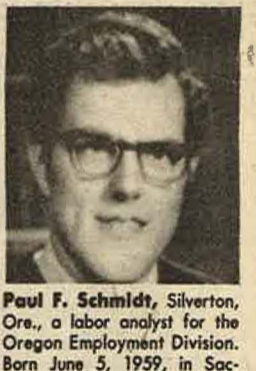
**Keith A. Moore**, Mossyrock, Wash., a surveyor. Born Aug. 15, 1942, in Chehalis, Wash. Last seen about 8:32 a.m. May 18, 1980, by his fishing companions, Robert Payne and Mike Hubbard, near the bank of the Green River 11 miles north of Mount St. Helens. Payne and Hubbard dived into the river to escape the oncoming ash cloud and were unable to find Moore afterward.



**Edward Joseph Murphy**, Renton, Wash., a retired planner for the Boeing Co. Born Aug. 13, 1917, in Tacoma, Wash. Last seen about 1:30 p.m. May 17, 1980, with his wife, Eleanor, near their parked mobile home in the gravel turnaround near the Spirit Lake Highway roadblock, 11 miles west of Mount St. Helens.



**Eleanor Jeanne Murphy**, Renton, Wash., a retired secretary and former gift shop manager. Born June 30, 1922, in Pennington County, S.D. Last seen about 1:30 p.m. May 17, 1980, with her husband, Edward, near their parked mobile home in the gravel turnaround near the Spirit Lake Highway roadblock, 11 miles west of Mount St. Helens.



**Paul F. Schmidt**, Silverton, Ore., a labor analyst for the Oregon Employment Division. Born June 5, 1959, in Sacramento, Calif. Last seen in Woodburn, Ore., about 2:30 p.m. May 17, 1980, on his way to take pictures of Mount St. Helens. His car later was found in debris near Disappointment Creek, a tributary of the South Fork of the Toutle River, about six miles west of Mount St. Helens.



**Merlin James "Jim" Pluard**, Toledo, Wash., foreman of a tree-cutting crew for the Weyerhaeuser Co. Born Jan 25, 1920, in Bucoda, Wash. Last seen leaving home in Toledo with his wife, Kathleen, about 7:45 a.m. May 18, 1980, to visit his work site six miles north of Mount St. Helens.



**Ruth Kathleen Pluard**, Toledo, Wash., a housewife. Born March 30, 1924, in Bucoda, Wash. Last seen leaving home in Toledo with her husband, Jim, about 7:45 a.m. May 18, 1980, to visit his Weyerhaeuser Co. work site six miles north of Mount St. Helens.



**Harry R. Truman**, Spirit Lake, Wash., owner of Mt. St. Helens Lodge on Spirit Lake since 1928. Born Oct. 30, 1895, in Ivydale, W.Va. Last seen about 6 p.m. May 17, 1980, at his lodge five miles north of Mount St. Helens.



**Velvetia P. "Velvet" Tute**, Mission, British Columbia, a yoga instructor and artist. Born Dec. 7, 1928, in Vancouver, British Columbia. Last seen about 3 p.m. May 17, 1980, with her husband, James, on Logging Road 3500, about 13.5 miles west of Mount St. Helens.

**James S. Tute**, Mission, British Columbia, a mate on a timber tug. Born March 19, 1924, in Victoria, British Columbia. Last seen about 3 p.m. May 17, 1980, with his wife, Velvetia, on Logging Road 3500, about 13.5 miles west of Mount St. Helens.

## Still missing

**Albert T. Brown**, 32, Seattle, Wash.

**Ellen Joy Dill**, 53, Kirkland, Wash.

**Robert William "Bill" Dill**, 61, Kirkland, Wash.

**Cathleen Ford**, age and hometown unknown.

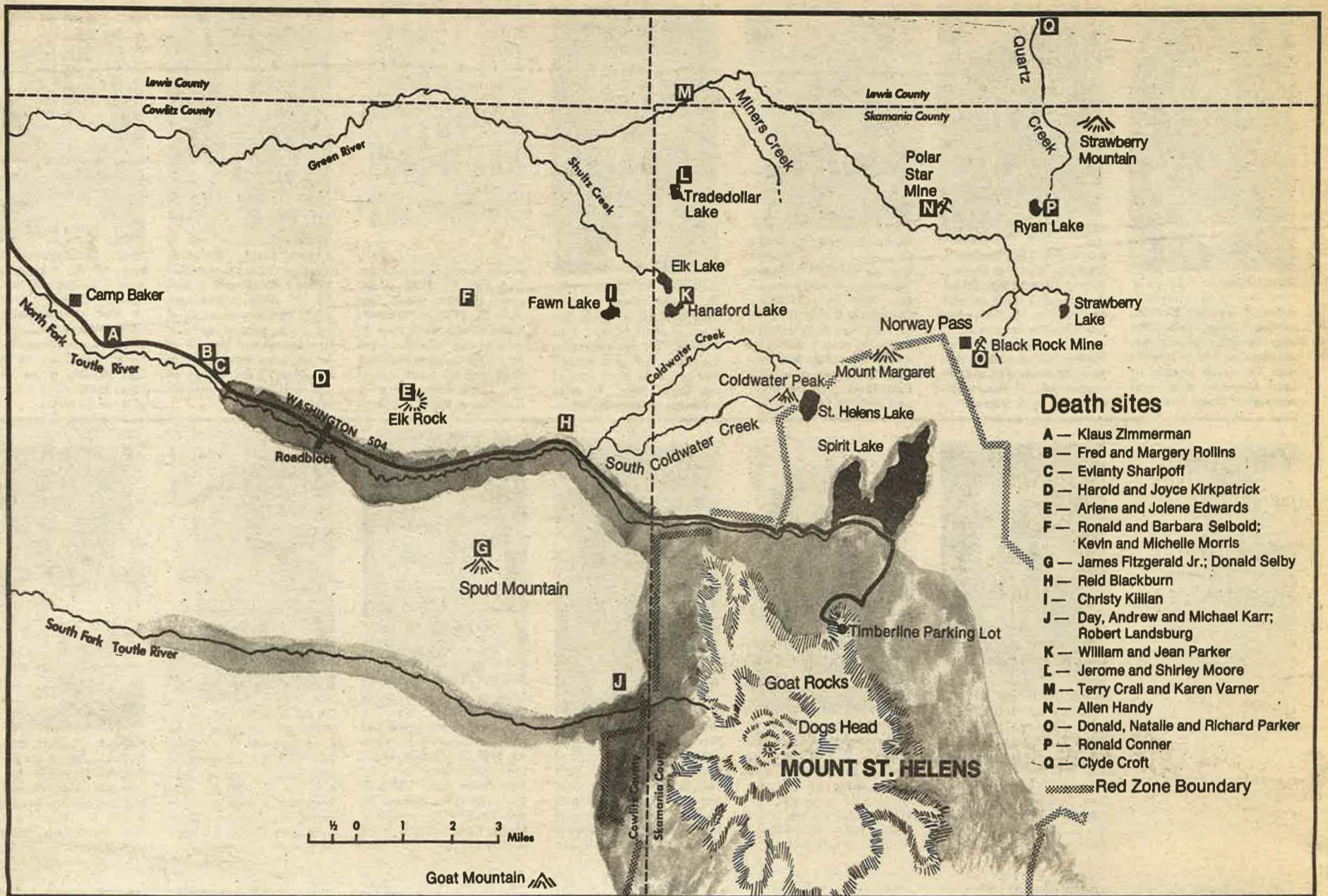
**Jim Ford**, age and hometown unknown.

**Paul Hiatt**, age and hometown unknown.

**Dale Douglas Thayer**, 25, Kelso, Wash.

**Gary Wheeler**, 26, hometown unknown.

**Beverly C. Wetherald**, Portland, Ore., a budget management technician for Portland General Electric Co. Born Aug. 3, 1945, in Jackson, Miss. Last seen on the evening of May 17, 1980, at a cabin below Spirit Lake, five miles north of Mount St. Helens.



Map by staff artist PAT McLELLAND

**WHERE THE VICTIMS DIED** — In the area north and west of Mount St. Helens, letters pinpoint the locations where 32 bodies have been found. Two other victims, loggers Jose Dias and Leonty Skorohodoff, came away from the volcano alive but later died in the hospital from their burns.

## Epilogue

Continued from Page 37

mountain. Not just down the Toutle and the Cowlitz, but off the other flanks of the mountain as well." She praised the U.S. Army Corps of Engineers, which was dredging the river channels and building flood-control dams to handle any high water.

Even though no autopsy was performed, the manner of Evlanty Sharipoff's death was described in this report to reflect the official ruling of the coroner.

There were conflicting reports about Jose Dias' citizenship, if any, and the spelling of his name. His death certificate showed his place of birth as Puerto Rico and spelled his name as Diaz. The same document spelled Gabriel Sharipoff's last name as "Shopoff." When he checked into Portland's Emanuel Hospital, Dias used the name Raymond Casillias.

He was described in this story as Mexican and the name Dias was used for several reasons. He was not a citizen of the United States, as Puerto Rican birth would have made him. His wife, who lives in Stockton, Calif., said Dias was in fact born in Mexico. She added that Dias with an "s" was the proper spelling of his name. That also was the spelling under which friends in Oregon knew him.

Wally Bowers' wife, LaVada, whose hospital expenses were the reason for his taking the weekend work that led to his probable death on the mountain that Sunday, died of cancer Aug. 5.

Even though Bruce Nelson asked Sue Ruff on May 18 to marry him, and she agreed, they still had not set a date by late October.

Eight Washington National Guardsmen, including Chief Warrant Officer Mike Cairns of Bellevue, Spec. 5 Randy Fantz of Gig Harbor, Capt. Jess Hagerman of Puyallup and Maj. Robert E. Williams of Port Orchard, received the Valley Forge Cross for heroism in the Mount St. Helens rescue effort.

It is the highest honor bestowed by the National Guard Association of the United States for peacetime service. Other winners of Valley Forge Crosses were Staff Sgt. Robert M. Williams and Sgt. James J. Heitzman, both of Tacoma; Chief Warrant Officer Fred B. Phillips Jr., Bellevue; and Sgt. Michael A. Samuelson, Edmonds.

It may be that in coming months or years Mount St. Helens will yield up more of its dead. As scientists have noted, the mountain is certain to go on changing. As it changes, it may yet uncover more human remains or additional evidence to point a way for the families of the dead or for future search parties.

Perhaps some winter, when the heavy rains come and their insistent drumming on an unstable slope causes a great mass of ash and earth to slough off into a ravine. Perhaps some spring, when the snows retreat before a warm sun and avalanche lilies bloom again and rivulets of snowmelt join to become freshets that carry away a thin layer of overburden, grain by grain and pebble by pebble. Perhaps never. ■



THOMAS



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## The authors

This special report was prepared over four months by Alan K. Ota, John Snell and Leslie L. Zaitz, three reporters on The Oregonian staff, under the direction of Dick Thomas, an assistant metropolitan/northwest editor.

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SNELL