

Thereafter, he saw to the evacuation of the injured, the safety of the survivors. He even returned on Tuesday to assist us in locating the buried tent.

Having personally been to the scene of the tragedy, and excluding the use of hindsight, I cannot say that, had I been the party leader of that class, I would not have established camp in the same place. (Source: Paul M. Williams, Operations Leader, Mountain Rescue Council. Published in *The Seattle Post-Intelligencer*.)

*PARTY SEPARATED, FAILURE TO FOLLOW ROUTE; CONTRIBUTING FACTORS: UNROPED, FAULTY USE OF EQUIPMENT, BAD WEATHER, EXPOSURE—Washington, Mt. Rainier.* On November 27, 1975, Mark Boatsman (23), Norman Hill (22), Tompkins, and Welsh registered at Paradise for a summit climb via the Disappointment Cleaver route. Tompkins and Welsh returned to Paradise November 29, while Boatsman and Hill remained at Muir to attempt a climb. On November 30 Boatsman and Hill left Muir at 1430 in a whiteout weather condition. The winds were very strong and it was snowing hard. They felt confident on navigating down the snowfield and were not worried about getting lost. They felt if they got off route they would bivouac. Boatsman and Hill climbed to 12000 feet with a party of three that left Muir Saturday. They also could have come down Saturday but decided to wait until Sunday. Hill had received a traffic citation November 27, and had a court appearance Monday, December 1. Therefore, they also felt a need to leave Muir Sunday to be at Longmire for the court date. They admitted it was unwise to leave Muir as late as 1430. Hill stated that he did not know until later that a ranger from Paradise (Lange) had recommended all parties remain at Muir November 30. Boatsman said that it was also a matter of challenge in navigating from Muir to Paradise in a whiteout. Therefore, it was a combination of reasons why they left Muir: they had confidence in making it; they felt responsibility to be in court Monday; it was a continuation of their mountaineering outing and a challenge. When they left Muir, Boatsman and Hill were roped up and traveling on skis. They made very slow progress and had to sideslip due to icy conditions. They left from the point of Muir Rocks, and followed a compass direction of approximately 180°. It was difficult traveling because of the snow blowing hard into their faces. After traveling about two hours they hit a rocky ridge that led to some steep cliffs to their west. They believed they were on the west edge of the snowfield above the Nisqually Glacier. They realized they were off course and had to travel to the east more. They found a rock for shelter and decided to camp for the night. It was getting dark. They did not erect their tent, but dug out some snow on the leeward side of a rock and spent the night in bivy sacks and down bags. The snow was wet and heavy. By morning they were wet but in good shape. They were aware of the avalanche hazard. The approximate elevation of the bivouac was between 8600 and 8800 feet on the west ridge of the Muir snowfield.

They didn't sleep much during the night and were ready to travel at the first light. It was snowing and the winds were very gusty. In order to get to the east side of the snowfield, they had to first cross a very icy rock rib on the west side of the snowfield. Their plan was to put on crampons to cross the rock rib, then change to

skis on the main part of the snowfield. Boatsman strapped his skis onto his back but Hill had to carry his in his hands. They did not feel they would get separated on foot and, therefore, did not rope up. When they left Muir on skis the day before, they were roped up because there was more chance of getting separated. The same thought was applied after the bivouac. After they crossed the rock ridge on crampons, they planned to rope up and descend the snowfield on skis. Boatsman started out first on crampons to cross the ridge and was a few minutes ahead of Hill. Both men were aware of the objective to put skis on just over the rock rib, then to proceed to the east side of the snowfield. At that point they would pick up the main east ridge of the snowfield and follow it down to McClure Rock. The wind was blowing Hill off his feet and his travel was quite slow. The last visual contact he had with Boatsman was as he (Boatsman) was crossing the top of the rock rib. When Hill arrived on the leeward side of the rock rib he couldn't see Boatsman. He looked along the rib and felt sure Boatsman wasn't there. Hill could see the east side of the snowfield and thought Boatsman would have sought shelter there. Visibility changed variably from zero to 100 yards. Hill spent quite a while on the east ridge of the snowfield ("felt like an hour") and finally decided to follow the east ridge down to McClure Rock.

Both men had camped at McClure Rock the previous week, and also about two weeks before that. They were both familiar with the east snowfield ridge and the terrain along the ridge from McClure to Anvil Rock. Hill followed the east ridge to McClure Rock and waited for Boatsman there. He also searched the area around McClure, thinking Boatsman was ahead of him.

It appears that Boatsman, meanwhile, had been seeking shelter from the wind in some rocks on the east ridge of the snowfield. He waited there for quite a while and looked along the ridge for Hill. The wind was blowing so hard he couldn't hear anything. Boatsman did have brief breaks in the clouds to see the east ridge angle down toward McClure Rock, but then there would be a whiteout weather condition. He finally decided Hill was below him and descended down the east ridge. At about 7800 feet Boatsman got off course and went around the east side of Sugarloaf onto the Paradise Glacier. At about 7600 feet he saw cracks in the ice and decided to stop. He set up his tent and made camp at this point—on the leeward side of Sugarloaf at 7600 feet on the Paradise Glacier. Twenty-five feet south of this point are major crevasses at the upper part of the Paradise Glacier icefall.

Boatsman remained at his camp until the morning of December 4. At one point he had difficulty breathing and tried to get out of the tent. He then realized that the tent was buried under several feet of snow and he thought he had been buried by an avalanche. He was tempted at this point to give up. However, he finally pushed a hole through the snow and got some air. His condition rapidly improved and he then realized he was suffering from oxygen deficiency. The weather was clear. He left all his gear at the camp and headed west toward McClure. A rescue team led by John Dalle-Molle found Boatsman in good condition at 1055. Boatsman walked down to 7100 feet with the Dalle-Molle team and was then picked up by a Thykol at that point and transported to Paradise. He was in good condition but quite cold. He was given food and liquids, and transported

by his parents to Seattle. Lange recommended he drop into an emergency room for observation. He did and was not admitted; he had some frostnip on one toe, which was wrapped.

When Hill did not find Boatsman at McClure, he decided to head into Paradise via Panorama Point. Hill felt confident he could get from McClure to Paradise, but was worried about the avalanche hazard on Pan. He tried to follow the ridge from McClure to Pan, but cut too far south. He fell down a steep gully and slid about 100 feet in an attempt to find Pan Point. He was on skis and both safety straps broke; he lost one ski. None of the terrain looked familiar to him and it was getting dark. Therefore, using a cook pot, he dug a snowcave and spent the night of December 1 at the bottom of the slope he slid down. (Lange believes Hill slid off a ridge below McClure down into the Paradise Glacier in the area of the ice caves about 6500 feet.) He had a couple of ensolite pads and spent a cold but fairly comfortable night.

The morning of December 2 brought no improvement in the weather. Hill saw a ridge with a prominent rock outcropping and thought it would lead to Paradise (he was climbing up onto Stevens Ridge). He followed the ridge but soon realized he was going in the wrong direction. However, he believed the ridge would take him down to the Stevens Canyon Road. He soon came to a falls and a small drainage. He decided to follow the drainage down rather than stay on the ridge. The drainage was probably Williwakas Creek. He followed the creek down until it came to a steep area that he had to skirt around. He spent the night of December 2 somewhere on Williwakas Creek before the steep area of 4800 feet in a tube tent which he used to get some protection from the heavy rain. He could not light the stove because his matches were wet. Most of his clothing and sleeping bag were wet. He stayed in the bowl under a large tree for protection. His feet were getting cold but he didn't think there was anything wrong with them because the temperatures were warmer and it was raining.

On December 3 he continued to follow Williwakas Creek downhill. In an attempt to skirt around the steep area of the drainage, he slipped off the edge of a dropoff and fell 50 feet. He was shaken up and a little woozy, but was soon ready to continue on. The travel was quite slow due to the deep, wet snow. He camped in similar fashion as the previous night at about 3800 feet.

By late afternoon on December 4, Hill reached the Muddy Fork of the Cowlitz. He had heard a helicopter, but it was some distance away. He made camp under some trees near an open area where the Williwakas and Cowlitz converge. He did not cook any food because the matches were still wet. He ate candy and "gorp-type food." There was no problem with water due to the heavy rain. Camp was at about 3300 feet.

Hill got up early on the morning of December 5; the weather was clear. He marked an SOS with bright clothing in the open area on the Cowlitz River bed. He saw and heard helicopters, but they were making their turns before they were over his location. He stayed at the Cowlitz Camp until 1200, hoping he would be seen by helicopters and picked up. When they had not seen him by noon, he started walking down the Cowlitz toward Box Canyon. When he arrived at the road at Box Canyon, he decided to walk downhill toward Ohanapecosh, rather than

uphill to Paradise. He also figured there would be more snow on the road toward Paradise. The previous day, the maintenance crew from Ohanapecosh had plowed the road from Ohana to Nickle Creek to check Box Canyon; also in case Hill walked out that way. Therefore, Hill walked on bare pavement from Nickle Creek to Ohanapecosh, where he arrived at about 2300 hours. He had second-degree frostbite on toes of both feet. He was transported by Morton ambulance to Elbe; from there by private vehicle to Providence Hospital in Seattle, where he was admitted for frostbite and treatment. At the time of this report it was not expected that he would lose any toes. Hill's overall physical condition was good except for some dehydration. (Source: David Lange, NPS, Mt. Rainier.)

*Analysis:* (1) Underestimation of weather intensity and complications of navigation in such weather: party should have remained at Muir rather than leave at 1430. (2) Knowledge of map and compass: a compass direction of 180° bearing is too far west: if they had plotted the direction they intended to travel on the map before leaving Muir, they would have realized a 180° bearing is incorrect; it also appears neither member had a thorough knowledge of map and compass navigation. (3) Use of rope: the party used good judgment in roping up at Muir, but should have done the same before leaving the bivouac camp. This would have prevented their separation. With two heads considering the navigation problem from McClure, they may have been able to reach Panorama Point. Together, it is quite likely they would have reached McClure Rock, since Hill made it there December 1. (Source: David Lange, NPS, Mt. Rainier.)

*PARTY BECOMING SEPARATED—Wyoming, Tetons.* Christopher Church (20) and David Hamilton (23) were climbing the Owen-Spalding route when they experienced a hailstorm. They descended from a point just above the rappel to the Upper Saddle via the standard rappel. Hamilton was ahead and told Church to follow him down the standard route. Church, however, became disoriented and descended the Exum Couloir. Hamilton waited for Church several times, then descended. Church, meanwhile, made his way down the couloir to the cliff band immediately above the Dike. While down climbing the band, he slipped and fell about 15 feet, injuring his back and right ankle. His shouts were heard by Hamilton, who went to his aid, along with Downey and Klein. (Source: Jim Olson, NPS, Moose, Wyoming.)

*Analysis:* Church, who could not keep up with Hamilton, became disoriented and descended the wrong couloir (one which ends in short cliff bands). Hamilton should not have gone ahead without Church. Both were inexperienced climbers. (Source: Jim Olson, NPS, Moose, Wyoming.)