April 30, 1979

Daniel J. Evans, President
The Evergreen State College
Olympia, Washington 98505

Dear President Evans:

In response to your letter of March 7th, 1979, asking us to review the circumstances surrounding the accident which took the lives of Willi Unsoeld and Janie Diepenbrock, we are able to take the first step in discharging this task by submitting the attached narrative report placing on record the details of this accident as we have been able to ascertain them.

It is our further intention to complete this task by reviewing the background of training and preparation for the field trip which led to the accident and offering our recommendations about the conduct of such field trips in the future. This latter review will address both the immediate details relating to the field trip and its context in the larger framework of the Outdoor Education Program.

Sincerely yours,

Edward R. Lachapelle
Dee Molenaar
George Senner

Attachment
THE
REPORT TO THE PRESIDENT OF EVERGREEN STATE COLLEGE


Submitted April 30, 1979, by the Accident Review Panel

Edward R. LaChapelle
Dee Molenaar
George Senner
Introduction

This account sets forth in detail the events surrounding the fatal accident on Mt. Rainier on March 4th, 1979, which claimed the lives of Willi Unsoeld and Janie Diepenbrock. The account is based on interviews with all of the surviving participants in The Evergreen State College (TESC) Outdoor Education Program field trip to Mt. Rainier, faculty and administrative personnel at TESC, National Park Service officials and other interested parties. The narration embraces the 14-day period from departure of the TESC group from the Paradise parking lot until the recovery of the victim's bodies, with the major emphasis placed on the events immediately before, during and after the avalanche accident on the slopes below Cadaver Gap. Circumstances surrounding the rescue attempts and body recovery are treated in greater detail in a National Park Service report.

Sunday, February 25th

The Mountain Environment Group of the TESC Outdoor Education Program assembled in the Paradise parking lot at Mt. Rainier on Sunday afternoon. They consisted of 27 students (see roster in Appendix D), leader Willi Unsoeld of the TESC faculty and assistant leader Nancy Goforth, a former TESC student and friend of Unsoeld. The students had all been training in mountain work under Unsoeld during the winter academic quarter. Goforth joined the Mt. Rainier trip as an assistant to Unsoeld and to help carry his pack. (Unsoeld had artificial hip joints and was under doctor's orders not to carry heavy loads.) Unsoeld picked up a portable two-way radio from the NPS rangers in order to receive daily weather reports and for emergency communication. Weather was poor on Sunday and a severe avalanche danger existed on Mt. Rainier and elsewhere in the Cascades. (See Appendix B.)

The party departed late in the afternoon and made their first stage a short one of only a few hundred yards to the Alta Vista area just above Paradise, where they camped for the night. The party was using avalanche cords. They planned to advance slowly up the mountain for purposes of training and furthering winter camping experience, as well as to wait out the bad weather and avalanche dangers. The party was equipped with a normal complement of winter clothing, tents,
food and fuel as well as standard mountaineering equipment. Supplies were transported by backpack except for a toboggan-load of extra food and fuel, ropes, shovels and other gear.

Monday, February 26th

The party spent about five (5) hours on the next ascent stage, camping that night in the vicinity of Panorama Point. Owing to the new snow accumulation, the party used avalanche cords again during this stage. They stayed in snow caves, some of which had been left by a previous party.

Tuesday, February 27th

This day was spent in the snow caves, during poor weather.

Wednesday, February 28th

The party was up at 0530 and left the snow caves at 0730 for the next stage to Camp Muir.

One student (Peterson) decided unilaterally to return to Paradise to the dismay of the party leadership. Goforth followed his tracks to the base of Panorama Point to make sure he was on the right route down. He made it back to Paradise without incident.

The toboggan with extra food and fuel was cached at Moon Rocks below the Camp Muir snowfields. Goforth, who up to this point had shared leadership decisions with Unsoeld, turned back according to plan (she had other obligations) and descended to Paradise, having carried Unsoeld's pack as far as feasible on this day. Three students joined her return: Bergen felt ill, Schieder out of shape and Weiss disinterested in continuing. They returned to Paradise without incident. The main party, now reduced to 24 persons in all, reached Camp Muir around 1500 and established camp in the large shelter. Avalanche danger in the Cascades had diminished by this time and the USFS warning was terminated on Wednesday.

Thursday, March 1st

A day of clear weather. Unsoeld, Fitzgerald, Dash, Ostermann, Kessler, Dodd and Newcomb scouted a route across the upper Cowlitz Glacier to the top of Cadaver Gap, leaving Camp Muir about 1230 and returning around 1630.
Their route approaching the base of the Gap through a crevassed area from the lower right was marked with wands. On the descent they returned diagonally across the lower Gap slope to avoid the crevassed area. They found the snow in good step-kicking condition without evidence of avalanche activity. One group of students, Miller, Casebolt, Diepenbrock, Heller, Yolles, Kaplan and Dempsey, went down to Moon Rocks and brought up the toboggan with the extra food, fuel and gear.

Friday, March 2nd

Two more of the students, Newcomb and Heller, elected to return to Paradise and did so without incident in the continued fair weather. Johnson felt ill and elected to stay at Camp Muir while the rest made the summit attempt. The summit party, now reduced to a total of 21, departed for high camp on the Ingraham Glacier by way of Cadaver Gap, taking with them a three-day supply of food and fuel. A route to the Gap was chosen on the higher traverse line used for Friday's descent, avoiding crevasses encountered on the previous day's reconnaissance. The new route was marked with wands by Yolles. Snow conditions were good ascending to the Gap and there was no evidence to indicate any avalanche hazard. Once through the Gap and onto the Ingraham Glacier the party found softer snow, sinking into their knees in places. The party swung out to the center of the Ingraham Glacier and continued their ascent. About 1330 a high campsite was located on a small snow bench close to the Gibralter Rock wall at 11,800' elevation. After camp was established, a small group consisting of Unsoeld, Yolles, Dash, Zoller and Casebolt scouted a route further up the Ingraham Glacier, breaking and wanding a trail to around the 13,000' level. Good weather and visibility persisted during the day.

Saturday, March 3rd

A light snowfall began about 0300. The party was up at 0330 and started for the summit around 0530. After reaching the 12,500' level, two of the students, Butler and Gerson, decided to return to high camp and a third student, Miller, opted to accompany them. The main party continued on in deteriorating weather, reaching about the same altitude as the reconnaissance party had reached the previous day. At this point they turned back owing to increasingly poor weather. The summit party was described as doing quite well on this attempt but moving slowly owing to the large number of people, deep snow and adverse weather. They got back to high camp around 0930-1000. An attempt to contact the Park Service by radio was made at this time to get a weather
report, but failed to get through. A weather report for three days of deteriorating weather was received on another radio try later that day.

Some discussion then ensued about the next step, some of the party favoring return to Camp Muir Saturday afternoon and others preferring to stay over until Sunday morning in the hope of another chance at the summit. Unsoeld discussed these points with several students but ultimately reached his own decision, which was to stay another night at high camp. The descent route for Sunday morning was designated at this time: down the Ingraham Glacier and around the lower end of Cathedral Rocks at Cathedral Gap.

The high camp of six tents was situated close to the side of Gibraltar Rock to take advantage of the only level space and to secure shelter from the wind. No rockfall was observed, but as snowfall intensity increased later Saturday afternoon and evening, heavy drift deposition began to form around the tents. This proved a constant problem during Saturday night as the tents had to be repeatedly dug out to keep them from getting buried. Some of the tents were damaged by the snow loads during the night and at least one (Unsoeld's) was torn. Several students reported starting out the next morning fatigued from the all-night effort of keeping the tents dug out.

Sunday, March 4th

Bad weather continued, with high winds and snowfall. By this time about three feet of new snow had accumulated on the upper Ingraham Glacier. The party was slow breaking camp and got away on the descent around 1000. Unsoeld at this time reaffirmed that descent would be by Cathedral Gap and pointed out that the new snow would create avalanche danger in Cadaver Gap.

The deep snow had buried all but four or five wands placed on the ascent route Friday and the party soon lost this route owing to poor visibility in the blowing snow. They descended farther to the true right of the Ingraham Glacier, closer to Gibraltar Rock, and were slowed down while making their way through a heavily-crevassed section of the glacier. Unsoeld and Yolles noted that the snow appeared more stable than expected. Some rope teams waited up to an hour and a half to get through this section and reported difficulty maintaining contact between the teams in the blowing snow. This deviation from the ascent route was probably made to maintain visual contact with rocks below
Gibraltar, leading to a more direct approach to Cadaver Gap and away from
the easier going down the middle of the Ingraham Glacier, the normal route
to Cathedral Gap. Yolles led the first part of the descent, then Unsoeld took
over the lead through the crevassed area.

The first ropes reached Cadaver Gap around noon and took what shelter they could
from the adjacent rocks while waiting for the rest of the party. The wind
was estimated at 60 mph through the Gap and the waiting very cold. A critical
route decision was made at this point by Unsoeld after some discussion with
members of the first two rope teams. The following factors affected this
decision: the party had proven to be unusually slow in the very bad visibility
and snow conditions, several members appeared to be weakening and the heavily
crevassed area next to the Gap would have to be traversed or circumvented to
regain the descent route to Cathedral Gap. Given the slowness of the party
and their condition, there was some doubt about whether the longer route could
be accomplished without problems from exhaustion and hypothermia. The damaged
conditions of tents also discouraged the prospect of another night on the glacier
with a continuing severe storm. Unsoeld thought that the strong up-slope wind
on the Camp Muir side of the Gap might have removed some snow and diminished
the avalanche danger, but he also commented on the possibility of wind slab
formation at this site. His teammates discussed the possibility of an
avalanche with him and he said it was still possible but seemed less likely than
it had earlier. He decided to descend Cadaver Gap.

The party had all assembled at the Gap by about 1240 and Unsoeld immediately
gave orders to start down, spacing the rope teams a hundred feet apart.
(A few students thought they heard 100 yards.) The descent route first
traversed to the left along a ledge of Cathedral Rocks, then swung right into
the steep slope below the Gap. Unsoeld's rope led off with him in front.
Diepenbrock was behind him on the rope, then Miller, then Kaplan at the rear.
The wind was high, visibility very poor and progress difficult. The ledge
traverse was trying in the high wind and delayed considerably the following
rope teams. Kaplan was worried about avalanche danger and kept his pack loose
for easy discard. (These and other avalanche precautions had been explained
to the students by Unsoeld in an earlier training seminar but not in the
high-wind milieu at the top of the Gap.) Miller and Yolles exchanged yells
to maintain contact between the first two ropes.
As Unsoeld and Diepenbrock went over the dip in the slope, they suddenly slid out of sight. Miller thought they had fallen and went into an ice ax arrest but was swept away by the force on the rope. Kaplan saw the snow start to move all around him and was also swept away. A hard slab avalanche had broken loose, with a 3-foot fracture line running all the way across the slope below Cadaver Gap. (See Appendix C for a technical discussion.) Miller and Kaplan recall being tumbled by the avalanche and occasionally pulled by the rope. Miller was completely buried as the moving snow came to rest, but managed to get one hand above the surface. Kaplan was able to shed his pack during the descent and made attempts to keep himself near the surface by a swimming motion. He succeeded well enough to be able to pull himself free when the avalanche stopped.

Kaplan immediately followed the climbing rope in search of Miller and found the latter's hand sticking out of the snow. He tried digging with his hands but got nowhere. He got out a shovel from his nearby pack and resumed digging for Miller. He got Miller's face clear of snow and then Miller fainted. Kaplan kept digging to get Miller free, impeded by drifting snow that kept covering him again.

In the meantime, the second rope team of Yolles, Clifton, Schroeder and Ridley had descended to the point where Yolles fell over the unexpected step of the avalanche fracture line. He immediately recognized that an avalanche had fallen and moved his party quickly to some rocks on the right. Through a break in the clouds they saw Kaplan waving at them from below. It took them a moment to connect the fracture line with a possible accident, then they hurried down to join Kaplan. The avalanche fell around 1310, the second rope team reached Kaplan around 1325.

Schroeder and Clifton helped Kaplan dig out Miller and soon got him free. Yolles and Ridley followed the climbing rope from Miller to Diepenbrock's position and started digging her out. This they managed to do with their hands, finding her about two (2) feet below the surface, face down, hands away from her face, cyanotic and apparently dead; she was still wearing her pack, which was cut away by the rescuers. Yolles, an EMT, immediately started artificial respiration (time around 1340). Ridley started following the next leg of the rope to Unsoeld and was joined by Kaplan and then Schroeder.
The rope was twisted back and forth among slab blocks and difficult to follow. They quickly dug down to Unsoeld and found him about three (3) feet under the surface, face down, pack still on his back. The pack was cut away and artificial respiration started while he was still partially buried. Ridley started resuscitation, had some difficulties and passed the task on to Yolles.

The third rope consisting of Casebolt, Dempsey and Downey had in the meantime arrived at the accident scene. Casebolt got out a shovel and helped dig out Unsoeld, while Dempsey and Downey relieved Yolles with resuscitation attempts on Diepenbrock. Dempsey, also a trained EMT, started cardio-pulmonary resuscitation on Diepenbrock. As soon as Unsoeld's pack was retrieved, Miller, who had by this time recovered enough from his burial to join the rescue work, got out the two-way radio and at 1355 (NPS radio log) reported the accident to ranger headquarters at Paradise, advising that the two victims were not breathing. The ranger staff advised the TESC party that they were on their own as far as immediate rescue efforts were concerned. The rangers immediately placed a call to MAST (at McChord AFB) requesting support of a rescue helicopter.

Even though at least two shovels were available, the rescuers had trouble digging out Unsoeld due to the burial depth and presence of hard snow blocks. The high wind also kept drifting snow back into the hole as it was being dug. Visibility continued poor. Time from the avalanche until recovery of Diepenbrock was about 25 minutes, until the recovery of Unsoeld about 40 to 45 minutes. Neither showed any signs of life during resuscitation attempts.

The last three rope teams had been slowed by the severe winds and difficulty of descent. As they descended in turn they encountered the fracture line, crossed over to rocks on the right and descended to the accident site. By the time the fourth team of Ostermann, White, Butler and Gerson reached the bottom of the avalanche the resuscitation attempts on the victims were being concluded. Neither victim had shown any signs of life and routine checks for vital signs produced no results. Casebolt was the last one to work on Diepenbrock's resuscitation and was joined by others in confirming her apparent death. Yolles was followed by Clifton with attempts to revive Unsoeld, but neither could find any vital signs. The victims were covered and wrapped by sleeping bags during the resuscitation attempts. Diepenbrock's body was freed completely and laid out on the surface, Unsoeld's remained partially buried at the bottom of the pit where he had been uncovered. The time record becomes unclear at this point. It appears that resuscitation efforts were finally abandoned sometime around 1430-1445.
The last two or three rope teams to reach the accident scene all had similar experiences in falling over the slide fracture line, hearing shouting below, and wondering if these were signs of elation or of warning; some thought they indicated some one had fallen into a crevasse. Some members of the party had difficulty descending the Gap, and faced inward to the slope and backed down in places. The avalanced slope was described as firm, and the climbers were sinking in only to their ankles here. The fifth rope team arrived at the scene after AR had been discontinued, and spent only five minutes there before continuing to Camp Muir. The sixth team arrived when others were getting ready to head for Muir. Except for Dash, who was told of the tragedy at the scene by Yolles, that team did not learn of the deaths of Unsoeld and Diepenbrock until they arrived at Muir.

As the last rope teams arrived the decision had already been made to regroup the party and head for Camp Muir. Yolles had assumed leadership up to this point but was exhausted by the resuscitation efforts and asked Casebolt and Ostermann to lead the party to Muir. Both victims were wrapped in sleeping bags and their positions marked with wands. The party was grouped together, rope teams reorganized and the party set out for Muir with Kessler as rear-guard at about 1500. The weather continued to increase in severity with winds so high that it was difficult to stay upright. Some of the weakest members abandoned their packs in order to make any progress against the headwinds; one of the party even fainted but was helped along by companions. The leaders were seriously concerned about more avalanche danger from the slopes above Camp Muir and about the prospects of losing their way in the whiteout and getting into a crevasse field on the Cowlitz Glacier. The path of a recent avalanche was crossed where going was difficult on a hard, slippery surface just below the fracture line. The party reached Camp Muir around 1630, hitting it dead-on in testimony (vocalized by several of the students) to the navigating skills of Casebolt and Ostermann. The storm and snowdrift conditions were so severe that Johnson had braced the door with a shovel and ski poles and they had difficulty getting it open until assisted by Johnson from within.

At 1633 (NPS radio log), Yolles called Paradise and reported the party safely back at Muir with the two victims still at the accident site. The rangers advised them that no rescue attempt could be made until the weather
improved. A rescue helicopter had made an attempt to reach the scene on Sunday afternoon but was turned back by bad weather.

The wind continued so severe at Camp Muir that excursions outside the shelter door could be made only with the greatest difficulty. A fixed rope was finally put in place to provide safe access to the separate outhouse.

Monday, March 5th

At Park Headquarters an early forecast for bad weather had been received and no attempt to get a helicopter into Camp Muir was scheduled. Although the climbing party at Camp Muir was safe and in no difficulty, the report that one member, Miller, had possibly broken ribs called for some urgency in evacuation. A ground party of ten persons, consisting of three Park rangers, three Guide Service personnel and four from Tacoma Mountain Rescue was organized to go to Camp Muir.

At 0800 a radio report from Camp Muir told of clear skies, a cloud deck below and wind at 10-15 mph. Park Headquarters immediately notified MAST and a helicopter was dispatched to Hewitt Field near Ashford. In the meantime the weather at Muir was deteriorating and by 0830 the wind was up to 40 mph and clouds were closing in. Yolles as acting leader advised the Park Service by another radio call that the weather had turned poor and that the party was safe and did not require emergency rescue efforts. The helicopter tried for a landing at Camp Muir, but was turned back by high winds, although sufficient visibility persisted to permit a landing. In the meantime the ground party was turned back around 1000 by high avalanche danger and observation of three avalanches running from Panorama Point. The ground party returned to Paradise but four members of the Tacoma Mountain Rescue Council established a camp at the base of Panorama Point. Weather deteriorated in the afternoon and no further attempts were made to reach Camp Muir.

When the weather cleared at Camp Muir early Monday morning, the TESC party could clearly see the Cadaver Gap accident site. There was no evidence of additional avalanching at that time. Numerous wands were still visible as well as the sleeping bag wrapped around Diepenbrock. One of the packs abandoned on the retreat to Camp Muir was also spotted.
Tuesday, March 6th

The weather forecast called for good flying weather but it did not materialize. Three helicopters were standing by, but they could not fly. Two ground parties left in the morning for Camp Muir, where winds of 40-50 mph were reported. The first group led by Ranger de St. Croix reached Panorama Ridge at 0805 and Camp Muir at 1054. The second group following close behind reached Camp Muir at 1131. Members of the Rainier Guide Service under Lou Whittaker accompanied the TESC party on their descent to Paradise, which was reached that afternoon.

The Park rangers, de St. Croix, Cahill and Hoehr, stayed at Camp Muir to search for the two victims and were joined by two from the TESC party who remained behind--Jeff Casebolt and Bruce Ostermann. An initial search was started that evening without results.

Wednesday, March 7th

The search for the bodies at the foot of Cadaver Gap was continued by the rangers and the two TESC students. They saw at least four additional avalanches which had covered the accident site since Sunday. Casebolt and Ostermann returned to Paradise that afternoon.

Thursday and Friday, March 8th and 9th

During a period of largely poor weather a search party was organized for an extensive effort to recover the victim's bodies.

Saturday, March 10th

A 21-person party was assembled at Camp Muir to continue search for the bodies. This consisted of six Park Rangers, one avalanche expert from the Department of Transportation, one U.S. Forest Service snow ranger and thirteen volunteers from the Tacoma Mountain Rescue and Olympia units. The Forest Service ranger, Ken White, brought a 75mm recoilless rifle which was used to shoot the avalanche slopes still endangering the accident site. Fifteen rounds were fired at slopes surrounding the Upper Cowlitz Glacier. The snow proved stable except for some small pockets of steep snow high on the rocks of Gibraltar. Snow settlement and melt had by this time uncovered some of the wands left by the TESC party, narrowing the search area. A coarse probe line located the bodies and they were evacuated that same afternoon, bringing finally to a close the proposed group ascent of Mt. Rainier which had begun two weeks before.
APPENDIX A

General Weather and Avalanche Conditions on Mt. Rainier Immediately Prior to and During March 4, 1979

(Summary by Richard Marriott, USFS duty forecaster at avalanche forecasting center in Seattle.)

Thursday and Friday were dry and cool with freezing levels at 2000-3000 ft. The freezing level rose to 4500 ft. on Saturday morning, followed by onset of precipitation and passage of a front Saturday night.

On Sunday morning, the freezing level was at 6000-6500 ft. Precipitation for the past 24 hours recorded at Paradise was 0.39" of rain and 6.5" of snow with a water content of 1.02". Temperatures were rising with current weather precipitation of mixed snow and light rain.

The avalanche hazard on Sunday morning was deemed high and in consultation with NSPS staff was expected to become extreme for this area by the afternoon.

At 2:30 p.m. on Sunday Marriott decided to issue a warning of extreme hazard for the entire Cascades and this was done at 3:00 p.m.

Precipitation at the 10,000 ft. level on Sunday was confined entirely to snow and general meteorological conditions indicated 50-knot winds from the S and SW at this level.
APPENDIX B

Summary of Public Avalanche Warnings for Cascades for Week prior to March 4th, 1979
(issued by U.S. Forest Service Forecasting Office in Seattle)

Sunday, February 25  Extreme hazard at all elevations

Monday, February 26  High hazard at all elevations

Tuesday, February 27  High hazard at all elevations

Wednesday, February 28  Moderate hazard above 4000 ft., low hazard below 4000 ft. Warnings terminated for this hazard period.

Thursday, March 1st  No warnings issued

Friday, March 2  (Routine weekly bulletin prior to weekend.) Avalanche advisory for moderate hazard about 5000 ft., low hazard below 5000 ft.

Saturday, March 3  Moderate hazard above 5000 ft., low hazard below 5000 ft. Increased hazard is expected by Sunday.

Sunday, March 4  High hazard above 4000 ft., moderate hazard below 4000 ft. At 3 p.m. a warning up-date was issued raising hazard to extreme at all elevations.

Data furnished by Steve Businger
APPENDIX C

Technical Evaluation of the Accident Avalanche

The accident occurred during high winds and poor visibility. Additional snowdrift soon obscured the release zone, erasing most of the details which might have been visible when the weather cleared on the morning of March 5th. No direct observations are thus available of the snow conditions other than those of the climbing party made during very adverse circumstances. We deduce from the report of a 2.5-3 ft. fracture line that the avalanche probably involved only the new snow which had fallen in the past 24 to 36 hours. The snow above the fracture line was reported hard ("good step-kicking"), that of the bed surface after the slab fell as firm but still soft enough to allow a boot to sink in. Some of the snow debris deposited on top of Unsoeld bore the characteristics of hard slab.

On the basis of this limited evidence, we conclude that the avalanche most probably was a direct action hard-slab avalanche involving only the current storm snow and not any of the snow deposited prior to March 3rd. Although in places soft to a person on foot, the high density and packing from the high winds place it in a hard slab category. It is highly probable from the described sequence of release that the avalanche was triggered by the first rope team and was not a natural fall which overwhelmed them from above. It thus followed the pattern predominant in most avalanche accidents, wherein the avalanche is started by the victims themselves. It is highly probable that the additional fallen avalanches encountered by the TESC party during their return to Camp Muir were triggered by the fall of the accident avalanche and thus came down at the same time as it did. From this standpoint the triggering of the Cadaver Gap slope by the first rope team was fortunate. If it had been triggered by a later rope team, such a sympathetic release of the adjacent slopes under Gibraltar Rock might have caught the earlier rope teams on their traverse to Camp Muir.

High winds and heavy snowfall for the period just prior to the accident are well-known weather conditions which build dangerous slab avalanches. The occurrence of an avalanche at this time and place is thus consistent with the normal criteria of avalanche formation. The TESC party perceived a possible stabilizing influence owing to the windward exposure of the Cadaver Gap slope, while still recognizing the likelihood of slab formation. Apparently the
snow was indeed stable at the top of the Gap slope, but this turned out not to be the case farther down, probably due to cross-wind slab deposition among the rocks.
APPENDIX D

Membership of Climbing Rope Teams in Order of Descent from High Camp on March 4th

I - Willi Unsoeld
    Janie Diepenbrock
    Peter Miller
    Frank Kaplan

II - Ian Yolles
    Wanda Schroeder
    Bruce Clifton
    Dave Ridley

III - Jeff Casebolt
    Penna Dempsey
    Sean Downey

IV - Bruce Ostermann
    Marjorie Butler
    Sheri Gerson
    Douglas White

V - Rhea Dodd
    Mary Ellen Fitzgerald
    Eric Kessler

VI - Rowland Zoller
    Bob Dash
    Paul Fitch -- a total of 21 persons

Remaining at Camp Muir during Summit Attempt

    Lloyd Johnson -- one person

Returned to Paradise Prior to Camp Muir Stage of Ascent

    Nancy Goforth
    Jim Bergen
    Tom Weiss
    Doug Peterson
    Lon Schieder -- a total of 5 persons

Returned to Paradise on Friday after Reaching Camp Muir

    Scott Newcomb
    David Heller -- a total of 2 persons

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-- a total of 29 persons started the ascent on February 25th
Figure 1  Location of the accident site on the southeast flank of Mt. Rainier, at approximately 46° 50.5' North Latitude and 121° 44' West Longitude. Map section is taken from USGS 7.5' series, Mount Rainier East quadrangle. Contour interval is 40 feet, scale is 1:24,000.
Figure 2  View from high camp at 11,800 feet on Friday afternoon, March 2nd. The Ingraham Glacier descends to the middle of the picture, Cathedral Rocks are on the right. The arrow points to Cadaver Gap.
FIGURE 3.—View across upper Cowlitz Glacier from near Camp Muir, showing avalanche paths below Cadaver Gap.

FIGURE 4.—Closeup view of avalanche site showing approximate location of initial fracture line of slab avalanche of March 4, and fracture line of avalanche(s) that subsequently covered burial site. From photo by Glenn Kelsey, member of party that recovered the bodies on March 10.