It turned out that John's only serious injury was a broken back-compression fractures of three vertebrae. His leg was not broken. The injury caused no damage to the spinal cord and John enjoyed a complete recovery.

Source: L. D. Lewis. Analysis: L. D. Lewis.

Conversation with John Auld after the accident seems to show that the mistake of climbing the wrong rock was not a factor of the cause of the fall. Apparently the accident resulted entirely from John's failure to judge the rappel properly. The erroneous report of the scene of the fall probably delayed the rescue another two hours. The accident shows the deceptive nature of vertical distances and points up the need for climbers to familiarize themselves with both the location of the rocks and the local agencies of rescue before making climbs in unfamiliar areas.

Wyoming, Grand Teton National Park (1)—On June 6, 1955, Victor Milligan (23), a student from Belfast, Ireland, and his companion had been hiking up the Glacier Trail when they came to a point where the trail was still completely covered by snow. They left the trail at this point to travel about 300 yards to a stream in Glacier Gulch for a drink of water. In descending into the gulch, Milligan came to a rock outcropping and in climbing down this face a rock handhold gave way causing him to fall about 30 ft. into a snowfield and slide headfirst into a large boulder.

His companion descended by a safer route and administered what first aid he could and made the semi-conscious Milligan as comfortable as possible. He then hurried to the Jenny Lake Store, a distance of about 2 miles, for help.

The Park Rescue Team, with all necessary equipment, reached the scene of the accident within one hour and forty-five minutes after the initial report was made. Milligan was evacuated to the Jackson Hospital where, after an emergency operation, he made a complete recovery in a month's time. He had received a compound skull fracture and multiple lacerations and bruises over his entire body.

Source: Ernest K. Field, Acting Superintendent, Grant Teton National Park.

Wyoming, Grand Teton National Park (2)—Fred Ford (25), John Austin (26) and Robert Bartholomew (20) spent the night of June 27 in high camp in the lower saddle between the Grand and Middle Teton. In the morning of the 28th day they set out to climb the Grand, via the seldom climbed Petzoldt Ridge. Ford, as the professional guide, was authorized to choose the route in terms of the strength of his party and the condition of the weather. All three were strong climbers, varying in mountaineering experience. Only Ford was familiar with the mountain, and he had not climbed the ridge before. The weather on the day of the climb was splendid, his party physically strong, and Ford elected to use the Petzoldt ridge for these reasons.

The ridge starts at the black dike at about 11,000 feet. It lies between the Exum and Underhill ridges on the south side of the mountain. Class 4 and 5 rock climbing is involved for about 1,000 feet. Here the ridge ends in a couloir which continues to the summit mass. There are three general route possibilities from which to choose at this point. One bears slightly west and picks up the Exum Ridge, making a long rock climb; one bears slightly east onto another ridge, making a rock climb with small amounts of snow, in the couloir for a short distance. The one selected by the party is the most apparent. It continues straight up the couloir on snow. This was an early season climb, with an abundance of snow. It was a warm day on a southern exposure.

The party was well-equipped, with two 120-foot nylon ropes, hardware, and three ice axes. They were very well clothed. Ford had a down parka of the British Everest expedition, and Bartholomew, who stayed on the mountain, had a heavy alpaca-lined parka, but very light trousers. (Concerning first aid equipment, food and sling ropes, there is no information.)

After climbing about 500 feet up the couloir, with Ford in the lead, two large pieces of ice and a rock two feet long and "egg-shaped" fell from the side of the couloir without warning. Ford was struck in the head with a large block of ice and on one arm with the rock. His fall was stopped, and he was found to be unconscious and delirious. He was taken out of the couloir onto the rock on the Exum Ridge side, where a ledge was found. It was described as "adequate," and he was not tied in. This took place at about 1:00 p.m. Austin, being the more experienced (and a strong and capable climber as it turned out), started down to report the accident, leaving Bartholomew with the injured man. He took all climbing equipment with him except the two extra axes. He started down the couloir which splits around the Petzoldt Ridge. On one side it empties out over 800 feet of high angle rock, and on the other it becomes precipitous, narrow and flanked by smooth rock slabs. Hence, Austin turned and went back up, found his way over onto the Exum Ridge, and near the summit found the series of shelves which traverses down and joins the Owen Route, by-passing the summit on the south-west. Here he stumbled upon the traditional rappel point, from which he descended 100 feet to the upper saddle.

Austin left the two ropes in the lower saddle, and arrived at the Mountain Registration Office of Teton Park about 6:00 or 7:00 p.m.

Members of the Park Service rescue team were located, organized and equipped, and on their way by about 10:00 p.m. They consisted of 8 climbers, all highly experienced and familiar with the range, only one of whom had climbed the Petzoldt Ridge. The party reached the lower saddle about 3:30 or 4:00 a.m., and were not able to locate the two ropes left there! They used guide service equipment in the saddle to prepare a thermos of hot cocoa, then started up for the Exum Ridge, planning to traverse over to where the victims were judged to be. They had used crampons to the saddle, the snow being frozen hard, but since the climb above would be mostly rock alternating with snow in quick succession, the crampons were left in the lower saddle.

During the night while climbing to the saddle the weather, which was nice to start with, showed bad signs, with very high clouds gathering. In the saddle, with visibility to the west, it was found that a smoldering mass of low clouds were banked up against the range held back by an east wind blowing across the saddle. By the time the party reached the first rocks above the saddle, the low clouds climbed out of the western valleys and onto the peak, bringing cold powder snow. The storm which followed

and lasted for two days is difficult to describe. The winds on the Exum Ridge were upwards of 60 m.p.h. In the lower saddle it was difficult to stand. In the first 3 hours the rocks gathered all the snow they could hold and about 18 inches gathered on the Middle Teton Glacier.

In the meantime, the rescue party gained the Exum Ridge beyond "Wall Street" and started checking each alternative route for a traverse eastward into the couloir. For reasons of both time and safety, 4 members were left on the Exum Ridge in the most sheltered spot. Two ropes of two, with the cocoa and first aid equipment on the first rope, went out looking. No traverse was found under those conditions until considerable elevation was gained, although such routes are plentiful on a warm dry day. The high route led the first rope, which had given up efforts to maintain contact with the second, to a point directly above Ford and his companion. They untied, and set up a single line rappel of about 100 feet which ended right on the ledge with Ford. Doug McClaren remained at the rappel point prepared to give an upper belay when given a rope signal. Emerson went down with the pack and an ice axe.

He found a ledge about 18 inches wide and ten feet long, outsloping on one end, and insloping on the other, where Ford was lying. Ford was not conscious at this time, although he had been making delirious conversation not long before. Bartholomew had been alternately standing and squatting on the only available spot. He was extremely cold and weak and shaking. He had been without shelter for 20 hours and was suffering from exposure and shock. Since Ford could not be made to take any hot drink, it was all given to Bartholomew. One of Ford's arms hung off the ledge, the glove had

fallen off, and his fingers were completely frozen.

It was quickly decided that Bartholomew must be removed, for the rescue member could stand only by straddling him in a precarious position overlooking the ice-filled couloir. A rock projection was found directly above Ford. A nylon sling was attached to this but would not reach Ford with enough left to tie him, so a second sling was used to lengthen it with a double sheet-bend. This was tied around Ford's chest, tightened with a butterfly cinch between the shoulder blades. The extra end was used to hold his arm and hand across his chest, for which a spare glove had been found. The rescuer then climbed down on a fixed line and retrieved Bartholomew's axe from the snow in the couloir. He tied Bartholomew in about 10 feet from the end, himself in on the end, and gave the signal for an upper belay.

The plan was to take Bartholomew back to the Exum Ridge (about 4 rope lengths), find a secure spot for him with what shelter there was, pick up a sleeping bag and Stokes litter (which the second rope had), and return for Fred Ford. When the second rope was met near the ridge, the clouds had opened and Fred could be seen. He was conscious and trying to sit up, but seemed unable and dropped back in his previous position. One person saw that his arm was across his chest and thought he might be pulling at the rope, but it was tied there by the extra end. When the ridge was gained and they were preparing to untie Bartholomew, someone saw a pack bound down the couloir. There were two packs on the ledge with Ford. One was a park service pack with first aid equipment, which had the anchor rope passed through its straps to hold in on the ledge. If that was the pack they

knew Ford was loose. The couloir was visible in one small spot. Someone saw snow sliding at that spot. Several members jumped to a platform from which the lower snow fields were vaguely apparent. In a few seconds, Ford was seen rolling fast about 2,000 feet below.

With this, the party retreated with Bartholomew. They met Petzoldt and other climbers coming up in the lower saddle, and all returned to the valley. The storm had not relaxed a bit. Four of the 8 rescuers had frost-bitten fingers which cost them nothing more than the skin and some nails from their fingers. The members of the rescue team had been climbing for 22 consecutive hours and had been without rest for a total of 40 hours. They had climbed and descended over 14,000 feet and covered nearly 20 miles of steep arduous climbing through the worst storm ever encountered by any members of the party.

When the storm let up two days later, Petzoldt and Bill Buckingham, with McClaren and Emerson from the Park Service, located the body. They radioed down for the needed equipment and men who arrived the next morning. The evacuation involved lowering the body over a 400-foot overhang. Ford was prevented from taking this last drop by a single boulder in the snow which spills over this wall.

It is not known just what Ford's condition was. He had lost considerable blood and was never conscious of his situation. From things he said to Bartholomew, when conscious, he felt he was still climbing.

In the next week, individuals from the rescue team returned to the scene to get equipment and learn all they could. The sling ropes were still hanging on the rock. The butterfly cinch was still tied, but the sheet-bend, which turned out to be at his chest, was untied.

Source: Ernest K. Field, Acting Superintendent, Grand Teton National Park and Richard Emerson, member of rescue party.

Analysis: Richard Emerson.

"There is little doubt that Ford's party was in the drainage path for debris coming from a large section of the mountain. But at that spot, it is by far the least involved and most inviting route. Also, rock-fall is not the only factor a leader must weigh. If the accident happened at 1:00 p.m., time could have been in the front of his mind, though he had a margin. The nature of his route within the couloir is not known to me.

"The rescue effort and the decisions it involved are not so clear-cut. One thing is certain, however, someone should have stayed with Ford, despite the fact he was tied in. This, however, could not have been done safely without waiting for the second rope which was laboring with the litter. Bartholomew could not be put on a rope with one man in any safety. The second rope had reached to within a couple of rope lengths of the rappel, and might have been used for this purpose. But—the strength of the climbers was wearing very thin, the climbing was class 4 in nice weather, and the rescue party was not clothed for such a storm.

"With hindsight, it is my opinion that a successful operation would have involved either a bivouac of two men with Ford for two days before attempting to move him across exposed rock traverses, or an extremely hazardous effort during the storm, using reinforcements. We were planning the latter hoping the storm would let up as most of them do. I am still glad we split

our party and I think I would do the same again. But I would hope to have the equipment sorted into packs and carried up in a better order. The sleeping bag should have been on the first rope, despite considerations of speed."

Wyoming, Wind River Range, Mt. Sacajawea—On July 20, 1955, Thea Welsh, Tony Prauses (34), and Damon Phinney (27) left their camp in the Titcomb Lake Valley below Fremont Peak at 6:00 a.m. to climb Mt. Sacajawea. Their route was a steep couloir up to the ridge between Sacajawea and Fremont. The first half of the 3,000 foot climb was over talus, grass, and easy slabs. The next thousand feet or so was in the couloir and they stopped for lunch before attempting to climb over the steep walls just below the ridge. A rope had been used twice on short pitches to bring up a second man. Otherwise they were climbing unroped. Between the left side of the buttress and the wall of the couloir a narrow chimney presented itself. This chimney opened out into an inside corner which ran upward from the top of the buttress to a large chockstone 20 feet above when the corner became a chimney again. Above the chockstone the climbing appeared to be easy scrambling. Up to the chockstone it looked like rather easy climbing. The pitch was close to being vertical and badly exposed. Phinney led this route. After climbing only a few feet above the lunch spot, he fell. Apparently all the rocks on which he was standing and to which he was holding came loose. The dislodged rocks swept the platform where they had lunched. They knocked Prauses off his feet, and Welsh was thrown down the ledges to their right. Welsh recovered herself within a few feet. Phinney fell about 100 feet. He suffered cuts on his head and left knee and a broken right arm. The others administered first aid. Phinney could walk but climbing down was difficult so he was roped down the rock pitches. They reached the valley floor at dark. Final evacuation was by horseback two days after the accident.

Source: Damon Phinney.

Analysis: Damon Phinney.

"I fell because I did not properly evaluate the condition of the rock. It was not suitable for climbing. In retrospect it is obvious that I should have been roped before starting the pitch. Satisfactory belay positions were available and, in fact, Thea had recommended that I do so but I ignored her good advice. My companions reacted coolly and competently, applying the necessary first aid and getting me back down. This argues for the importance of a knowledge of first aid and general climbing competence in people who may find themselves in small parties on high mountains."

Montana, Glacier National Park: On the afternoon of July 21, 1955, June B. Johnson (20) and two other girls employed by the Glacier Park Company at the Many Glacier Hotel decided to climb the northeast face of Mt. Altyn. They proceeded up Appekuney Creek to a point about four miles from the hotel. They then climbed up the almost perpendicular face of Mt. Altyn to a point some one thousand feet or more above their start. At this point they decided to descend and return to the hotel. Mary Jensen, of Northfield, Minnesota, and Dell Beauchine, of Red Lake Falls, Minnesota, were a short distance ahead of Miss Johnson. They had gone a short