WEATHER FACTORS

Throughout November and December the snow cover in the Wasatch Mountain area was shallow (less than three feet) with many periods of fair weather. This led to extensive depth hoar formation, especially on north and northeast exposures. By mid-December the snowpack had become very unstable and avalanches began to run following snowfalls only a few inches deep. One accident occurred on High Rustler when two ski patrolmen were caught in a slide, but they escaped uninjured.

The snow storms of early January brought heavy avalanching. Large climax slides fell naturally, and were released by artillery fire on many of the major slide paths in the ski area. On 12 January, two people in a touring party narrowly escaped injury when caught in a large slide on the north side of Cardiff Pass. (See No. 64-1) Nine inches of snow fell on 18-19 January, followed by high winds on 20 January. These factors combined to trigger further natural slides and establish conditions for artificial slide releases on 19 and 20 January. In all cases the very fragile depth hoar in the lower snow layers provided the basic weakness needed for avalanching. The accompanying fracture line profile from the Greeley Bowl slide of 8 January, (artificial release), illustrates this unstable character of the 1963-64 winter snow cover. The profile for the Ballroom Traverse slide on 25 January indicates that these climax slides were still breaking loose on the same fragile depth hoar layer.

The dangerous avalanche situation in the Wasatch Mountains was thus clearly demonstrated prior to the arrival of the severe storm of 21-24 January, the largest single fall of snow recorded at Alta since February, 1958.

A period of high winds, reaching 50-60 m.p.h., preceded the storm on 20-21 January. Precipitation began early on the afternoon of the 21st with the arrival of a strong cold front. Snow fell heavily for several hours, diminishing somewhat during the evening, while the wind diminished rapidly after passage of the front. Temperature fell sharply, then remained around 10-15 degrees during most of the storm, falling again to 5 degrees at the end of the storm period. Snowfall set in with renewed vigor during the night of 21-22 January, diminished early on the morning of 22 January, then by 10:00 a.m. reached the highest snowfall intensity of the storm. Snow fall continued throughout the day of 22 January. Wind occasionally rose above critical levels, but did not remain high for extended periods. By afternoon of 23 January, snowfall had become intermittent, with occasional periods of fairly good visibility. Precipitation ended shortly after dawn on 24 January, followed by rapidly clearing skies. A total of 51 inches of snow had fallen during this storm.