INDEX OF FLOWS (continued)

B. Debris avalanches and debris flows originating in Mount Rainier rocks

4. Willis Wall—Extensive history as source of debris avalanches on surface of the Carbon Glacier. Cover of rock debris on glacier is predominantly of this origin. Additional sources of debris include Liberty Ridge and the west side of Curtis Ridge. A major triggering mechanism of flows in this group (including those below) is probably Neoglacial recession and consequent unloading of the steep lateral walls of previously ice-filled embayments.

5a. Sh. 5c. Curtis Ridge—June 1974 (Sh): August 16, 1989 (Sc): October 23, 1992 (Sc). Debris avalanches on Willis Wall. Originated as rockfalls/rockslides from the same general area as upper Curtis Ridge. Boundary of the 1974 avalanche (Sh) is from Frank (1983); and written comm., 1989; boundary of the 1992 avalanche (Sc) is from Norris (in press).

6. Little Tahoma Peak—December 6, 1965. A series of avalanches originated as rockfalls from the side of Little Tahoma Peak facing Emmons Glacier. Debris avalanches extended to within 1.0 kilometer (0.6 mile) of the White River campground. Small debris flows, probably of a secondary, downslope origin, extended approximately another 1 kilometer in the White River channel. Boundaries of the flows (similar to those of the deposits in this case) are from Crandell and Fahrenheit (1965). Date of occurrence misreported by Norris (in press) from seismic record.

7. Gifford Peak—March 1975. A debris avalanche originated as a rockfall from the east face of Gifford Peak and then flowed across the Cow Glaicer. Description and boundary of the avalanche are from Frank (1985).

8. Tahoma Glacier—1910 to 1927. A debris avalanche originated as a slide of clay-rich, hydrothermally altered material, part of a highly altered volcanic complex exposed at the head of the Sunset Amphitheater. Dated as 1910 to 1950 by Crandell (1971); dated as 1910 to 1927 based on ground photographs. Although originating from the Sunset Amphitheater (Crandell, 1971; Frank, 1985), the flow is most commonly known as the Tahoma Glacier debris avalanche (Frank, 1985).

C. Major debris flows from glacial outburst floods and precipitation-induced glacier collapse

9. Nisqually Glacier—Area of recurrent inundation over last 100 to 200 years. Largest debris flows at Rainier in the 20th century occurred October 23, 1947. Small flows occurring as recently as 1987 reached the crossing of the Wonderland Trail. The series of 1947 flows was associated with intense precipitation and collapse of the lower 1.6 kilometers of the Nisqually Glacier (Frank, 1985; Edman and Johnson, 1993).

10. Tahoma Creek—Numerous 20th century flows. Many glacial outburst floods have occurred due to periods of warm weather and to intense precipitation. Some debris flows, such as that of June 29, 1947, were magnified by collapse and incision of areas of stagnant ice. Area shown approximates inundation by all 20th century flows combined.

* See accompanying pamphlet for reference cited.