

## **Bootpacking and “Systematic Application of Explosives”: Shear Plane Disruption Technique in The Continental Climate**

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Ski areas have long practiced avalanche risk reduction in order to provide continual skiing opportunities to guests in avalanche terrain, which differs from the backcountry practice of avalanche terrain avoidance during periods of poor stability. This paper explores the relationship between early season boot packing or “Systematic Application of Explosives” (SAE) and shear plane disruption or limitation in a ski area setting in the Colorado Rockies. Alternatives to boot packing, particularly the use of 1kg cast explosives in a 10 x10 meter grid (SAE), are presented. Shear plane disruption is stressed as the primary goal of boot packing, SAE, or ski compaction, and is presented in this paper as an effective method of avalanche risk reduction. Rationales based on the literature are cited. Follow up methods to ensure continual shear plane disruption with each storm throughout the season are discussed. An experiment designed to evaluate the snow strengthening effect of explosives used for the SAE disruption technique is presented. Twenty years of results clearly indicate interference with the 10+ year natural avalanche cycle; the empirical evidence supports the contention that shear plane disruption is an effective method of avalanche risk reduction.