

How to turn your kid's bike into a bomb tram for avalanche control work

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Bomb trams have been used for many years in the ski industry to deliver an explosive air blast to avalanche starting zones. During the last few years, the Heavenly Mountain Resort Ski Patrol has been developing a tram with features for use in specific locations at Heavenly that have been difficult to control with hand-placed charges. The tram is attached to a belay cord and lowered down a fixed cable strung over an avalanche path. A mechanical advantage keeps the explosive charge next to the tram until the tram hits a fixed stop on the line above the avalanche path. As the user continues to feed out the belay cord, the explosive charge is lowered vertically by the lowering cable to the desired height above the snow surface, at which position the charge detonates. As the user winds back the belay cord, it first retracts the lowering cable back into the tram and then pulls the tram back to its original uphill position on the fixed cable where it is ready to be used again. This paper will describe the tram and how to construct one, present results from its use during the 08/09 and 09/10 ski seasons, and discuss its limitations.