

Abstract

This paper gives a brief summary on using rigging to move rocks in order to construct a fish ladder in Crazy Creek.

The Project

The fish ladder project was initiated by the fisheries biologist on the Bitterroot National Forest as the old Warm Springs trail had caused a six foot vertical drop in the stream ford on Crazy Creek and was a barrier for the native bull trout population. A portable backcountry tripod was set up in a talus field directly above and across the creek from the project. The anchor grip hoist was attached with multiple straps to a very large boulder which was estimated to weigh between 30-40 tons. The working cable was from the grip hoist, thru the cable from the tripod, to a spar tree, and then finally to an anchor tree.

Using this set up, the four person crew was able to move approximately 25 yards of material weighing about 65 tons over several days.

Problems and Benefits

The main problem with using rigging to move rocks is that the math involved is pretty complex. Rigging heavy loads is dangerous work and should not be attempted by inexperienced personnel. A failure of one component of the system has the capacity to inflict serious injury or death.

The basic safety factor when working with rigging is 5 to 1. This means that you never lift/pull a load that is more than 1/5 of the load rate of your weakest link.

The benefits of rigging are immense. Not only can you move large amounts of rock with little effort, it enables you to gently release them exactly where you want them.

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