

Klondike Derby Sled Directions, Mark 2, Mod 1 27 January 2004
Redwood District, Pacific Skyline Council
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This set of sled plans came out of a desire to make sleds that were "easy enough" for patrols to construct with a little help and which could be readily assembled and taken apart for ease of transportation and storage. Younger patrols may well want a narrower sled. The rules in your Derby may dictate size and construction details. It is fairly easy to substitute runners made from 1"x4" for the skis if you are not allowed to use skis.

The skis for this project are assumed to be downhill skis of wood or fiberglass construction. The skis need to be about 5 ½ to 6 feet in length and at least 2 ¼ inches wide at the narrowest point. If the skis are shorter, the length of the sled body is shortened and the spacing of the support blocks and cross pieces reduced or the back runner foot step length is reduced or both. This description assumes a 48" by 22" sled body and a one foot back runner step.

This design is a medium duty cargo sled. A lighter sled can be made by substituting 1"x2"s for some of the 1"x3"s. A stronger sled can be made by substituting 1"x4"s for some or all of the 1"x3"s or by adding additional bracing. If I were adding additional bracing it would be an "X" or angle brace on the back piece and bracing on the floor bolt rails. Bolt rail bracing could take the form of additional cross pieces set vertically at each horizontal cross piece and reaching from rail to rail, or as simple 45 degree triangles which go from the bolt rail to the cross piece (shown as optional [opt] on diagrams). To widen or narrow the sled, the following pieces must be changed: B, N

Unless otherwise indicated, all wood joints are pre-drilled to avoid splitting and glued and screwed. Pre-drilling and placing screws as far as practical from the ends of 1"x3"s will minimize splitting. The main strength at the joints comes from the glue in any case and minor splits should not affect the final product. All screw joints use 1 ¼" drywall screws except block (A) to the skis (#10 screws).

Construction steps:

1. Remove all hardware from the skis. Ideally, the holes for the screws should be filled with plastic wood or epoxy.
2. Cut all the wood in accordance with the cut plan and stack by type.
3. Mark the skis with the locations for the 2"x4" support blocks (A). For five uprights, the back edges should be, starting at the end of the runner step, at 0", 11.5", 23", 34.5", and 44.5". At each mark, find the center line. On many skis, there is a snow groove on the bottom which makes this easy. The blocks should be positioned with the outer face on the centerline.
4. Measure the thickness of the ski at the center of each block location. The height of each block should be 6", minus the thickness of the ski. An easy way to do this is to put the ski on a flat, hard floor, push down the center to remove the camber and then set each 6" block alongside the ski at its correct location. Scribe a line on the block at the ski top. Label each block, 1 – 5, front to rear, and note the front edge of the block. Cut the blocks on the lines.
5. For each block: Drill two 3/16" holes, ¼" off the center line and 1 ½" apart, under each block location. Counter sink from the bottom of the ski. If the ski has particularly wide