

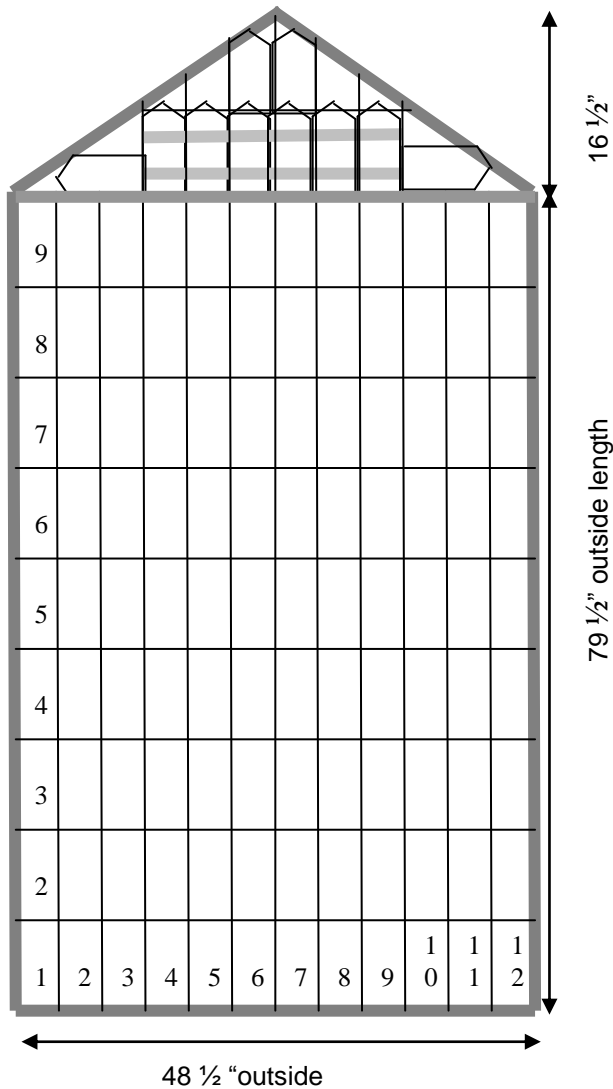


## Milk Carton Derby Raft - Options

### Build a raft with a bow

Cut a point on a 4 x 8 sheet of plywood that runs from the center out to each side. Frame the bow with 2 x 4's as shown in diagram. Secure the plywood to the frame using nails or screws. Add cartons to fill the bow area. You may need to deform cartons to make them fit into voids.

Materials are same as raft, except add one more 2x4 (total 4-2x4x8's). This boat will have 9 rows that are 12 cartons wide (108 cartons) plus 10-12 cartons in the bow. The approximate capacity of this boat = 472 lbs (118 x 4 lbs per ½-gal = 472 lbs total displacement) – 77 lbs (wood) = 395 ÷ 1.5 = 263 lbs.



### Build a smaller boat

Build a narrower boat that is 10 cartons wide. Cut the 4 x 8 plywood to 41" wide by 96" long. Add a point and build a frame as shown above. This boat will have 9 rows that are 10 cartons wide (90 cartons) plus 6-8 cartons in the bow (total carton displacement = 384 lbs). Materials are same as raft with bow. The approximate capacity of this boat = 384 lbs (96 x 4 lbs per ½-gal = 384 lbs total displacement) – 77 lbs (wood) = 307 ÷ 1.5 = 204 lbs.