



The Great Cardboard Boat Race



INTRODUCTION, BOAT BUILDING & RULES

INTRODUCTION

The Great Cardboard Boat Race is the official launch of Greater Longview United Way's fundraising campaign. This event raises awareness, gets people excited, raises funds to help families, celebrates the spirit of working together, and helps increase workplace campaigns so that we can better advance the common good.

Being a part of the Great Cardboard Boat Race can be a great Team Building activity for your business. Your employees get to design, name, build and sail their own boat. On Race Day, the other employees can come to cheer them on. There are a number of workplace benefits:

- Facilitates better communication
- Promotes creativity
- Deepens relationships
- Increases morale
- Improves problem-solving skills
- Celebrates giving

Boats are made entirely of cardboard and powered by two paddlers. They will race around the Teague Park Pond. Boats compete in individual heats for honor, glory, and some pretty awesome trophies.

As part of our fleet you will:

- Have a boatload of fun.
- Compete in an amazing event.
- Get five pieces of 4x8 foot cardboard (with the chance to buy additional pieces)
- Have a safe racing environment on race day.



COMMITMENT

Captains and Crews who wish to participate in the Greater Longview United Way's Great Cardboard Boat Race event make a commitment to the following:

- Construct a boat out of cardboard and duct tape.
- All boats are human-powered (oars and paddles are acceptable as propulsion tools; you provide the oars/paddles, a minimum of 2 people) .
- Participate in the entire event which includes:
 - Bringing completed boat to park on Saturday, September 7th before 8 a.m.
 - Attending the Pre-Event Boat Crew Orientation on Saturday morning, 8 a.m.
 - Attend the race on Saturday.
 - Stay for brief awards ceremony after the race.
 - Dispose of or remove your boat from the property after the race.



AWARDS

The Awards Ceremony will be held after the final heat, and all boats are out of the water.

First, Second, and Third Place trophies will be awarded to the top three boats in the final heat. Boats competing in the final heat will be determined based on the fastest boats during the initial heats. Times will be kept by designated volunteers and reported to staff.

A cardboard boat must complete the course length to qualify as a “finisher.” Swimming crew members pushing a boat (or some portion of it) through the course is not considered “racing.” The boat (or some portion of it) must be maneuvered and propelled by paddling crewmembers.

Special Trophies will be awarded for the following:

Best in Race Award (1st Place) – The first boat to cross the finish line in the final race. **2nd & 3rd Place** trophies will also be awarded.

Rising Tide Award - Awarded to the winner of the Junior Division race.

Judge’s Choice Award - Awarded by the judges based on creativity, showmanship, and team spirit. Costumes and props are encouraged!

The Cardboard Crusader - Any boat still seaworthy (and a “finisher”) and not in the finals is allowed to participate in the Cardboard Crusaders race. This one-lap race has a special trophy for the winner.



AWARDS

Way to LIVE UNITED – The staff awards this to the team that embodies the LIVE UNITED spirit.

The Wonder That Went Down Under Award (Most Spectacular Sinking) – Awarded to the crew that, in the judges' opinion, was the most spectacular in the way the ship and its crew went down. (As long as at least one paddling crew member propels the boat or some part of it, the boat may continue to the finish line.)

People's Choice Awards – People's Choice Awards are presented to the boat that receives the most "votes" (in monetary terms). These awards are given to honor organizations that go above and beyond in their support of United Way. The money raised during our Great Cardboard Boat Race is part of the annual campaign. There are two distinct People's Choice Awards:

People's Choice (Largest Treasure Chest) – presented to the company that raised the most money.

People's Choice (Most Mates) – Presented to the company with the most donors. Pre-race voting can be done on the GLUW website. "Votes"/donations are also cast/given on race day. Donations can be made either by check or cash.



CONSTRUCTION AND RACE RULES

- The ENTIRE boat must be built of cardboard, duct tape, and one-part polyurethane. (Any part of your boat that touches the water must be cardboard. This includes the hull, decking, keel, cowling, superstructure, oar locks, seating, and rudder. Nuts, bolts, washers, and staples are NOT allowed in hull construction. The cardboard may be as thick as you want, but may not be glued or attached to wood, plastic, fiberglass, etc.) *The only exceptions are the paddles & decorations.*
- Use cardboard boxes, “blocks,” and carpet tubes.
- NO pre-treated cardboard is allowed.
- NO Sona-Tubes, waxed or “treated” cardboard
- NO wood, plastic, Styrofoam, or fiberglass
- NO caulking compounds or two-part/mixed adhesives.
- NO wrapping in duct tape, plastic or fiberglass, or similar product.
- Duct tape may be used to reinforce seams.
- Duct tape, masking tape, or adhesives such as “liquid nails” CAN be used to connect cardboard to cardboard and CAN be used to reinforce all seams and stress points. It **CAN NOT** be used to waterproof boats.
- Waterproof the boat with Varnish, Paint, or Polyurethane (one-part, paint-like substance). (If you don’t want your boat to sink, waterproof the entire boat with any paint-able, one-part substance like Varnish or Polyurethane inside and out.)



CONSTRUCTION AND RACE RULES

- The boat must be a **NEW** build. Please **DO NOT** reuse boats from previous races.
- Decorations are encouraged – as long as they don't affect structural strength or buoyancy.
- The crew compartment **CAN NOT** be enclosed so as to interfere with escape.
- Boats **CANNOT** tow anything behind them for the safety of other boats.
- Every crew member must wear an age-appropriate personal flotation device (PFD) and proper footwear. **Please provide your own PFDs.**
- All crew members **MUST** sign a Participant Waiver/Hold Harmless Agreement on or before race day. **Participants under 18 must have a parent or guardian present to sign an agreement on their behalf.** Boats will not be allowed to race without each participant's signed agreement.
- Minimum of **TWO** crew members.
- For the junior division, both participants must be between 12 and 17.
- Children 8 and up are allowed to ride in the adult division if at least one adult crew member is in the boat.
- **All crew members under 18 must have a parent or guardian present during the races.**



CONSTRUCTION AND RACE RULES

- Human crew members only. No pets are allowed to ride in boats.
- All boats are human-powered (the oars and paddles you provide are acceptable as propulsion tools).
- Alcoholic beverages in boats are **NOT** permitted at any time.
- Boats should weigh less than 200 lbs. –This rule is for us. (If you need help getting out of the pond, we need the odds stacked in our favor.)
- Boats should be **less than 6 feet wide**. Here, more is not better.
- Care should be taken that construction does not include pointed objects and sharp edges that could injure anyone.
- Surfboard-style designs are **NOT** allowed.
- Consider “staying dry” as part of the challenge.



CONSTRUCTION AND RACE RULES

- Raft-style designs **ARE** allowed. (The distinguishing feature of a raft design, as opposed to a surfboard style, is the use of cardboard “logs” and other such accouterments as one would expect to find in/on a raft. Think Huck Finn.)
- RACE DAY – Please check in (entire crew) at the registration table on race day **no later than 8:00 a.m.** Boats can arrive after 8:00 a.m. Unload your boat in the display area. After unloading, please move your vehicle to the parking lot. Set up your boat display. After the safety inspection, other boats will race around the pond. After the race, boat crews must remove all cardboard, decorations, and other materials from the water and ground. Volunteers will be on hand to help. You can take your boat home or dispose of it in on-site recycling bins.
- If there is any doubt about the construction, the judges reserve the right to use a probe, such as an ice pick, to test and verify that only cardboard has been used. Failure to abide by any design, race rule, or the direction of a race official shall be cause for disqualification. The judges’ decision shall be final. Please contact GLUW offices if you have any questions.
- Any crew member who enters the water by accident or on purpose cannot attempt to sabotage, capsize, or deter the progress of another boat in any way.



CONSTRUCTION MATERIALS

Permissible Materials

- Corrugated Cardboard
 - Appliance or grocery stores
- Cardboard “blocks”
 - Furniture stores
- Cardboard Tubes
 - Carpet/linoleum stores
- Fastening material
 - Duct or masking tape
 - Liquid Nails adhesive
- Latex Paint, Varnish

Materials NOT Allowed

- Wood, Styrofoam
- Plastic Sheeting
- Fiberglass
- Sona-Tubes, coated cardboard
- Silicon, Wax, Tar
- Caulking compounds
- Metal
- Staples, clamps, screws

Judges decide on the interpretation of the rules.



CONSTRUCTION MATERIALS

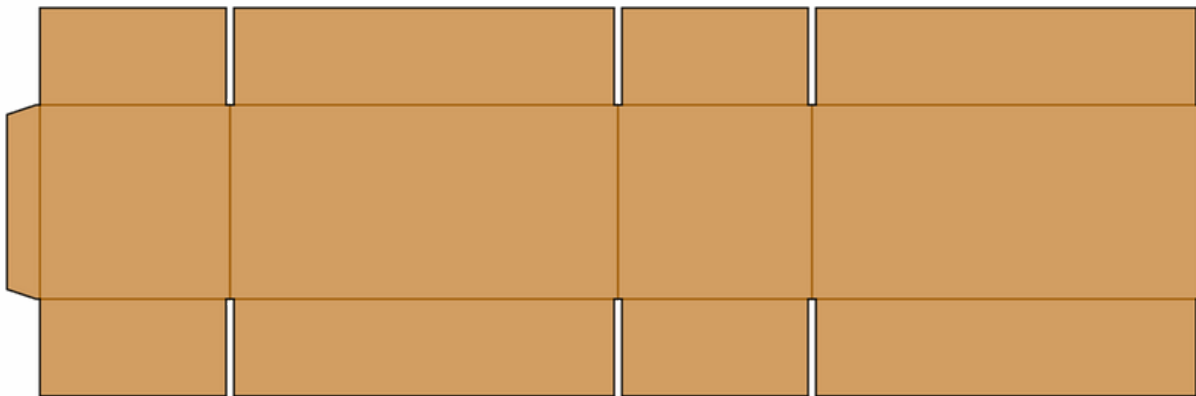
EXAMPLES



Carpet Tube (about 4 1/2" dia.)



Cardboard Block (2-3" thick)



Cardboard box – cut open



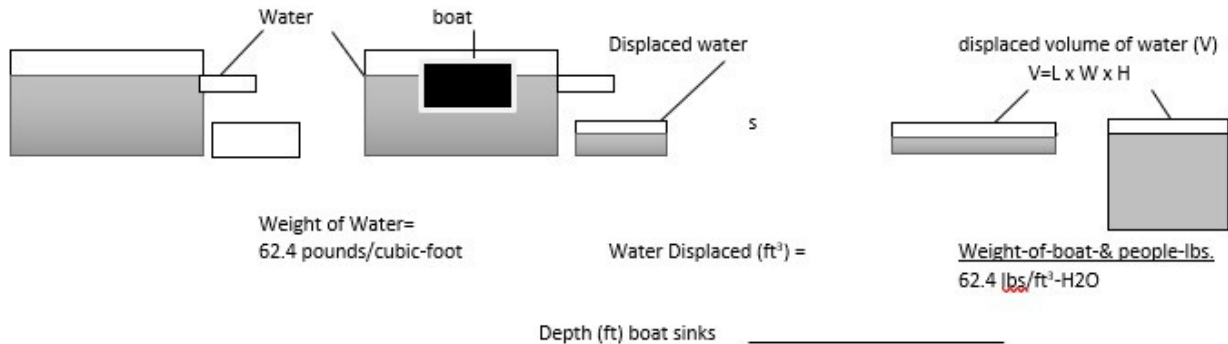
CARDBOARD BOAT DESIGN

- Consider the size of the boat –building & transporting
- Big enough to hold crew, small enough to transport and carry.
- Wider is better for stability, but still must be able to paddle.
- NO surfboard-style designs are allowed
- Rafts are allowed
- Consider the total weight of all materials when wet
- EVERYTHING must be removed from the pond
- Boat decorations and crew costumes are encouraged – use your imagination; you will be rewarded for your creativity!



CARDBOARD BOAT PHYSICS

"How much will you sink?" - Displacement



EXAMPLE:

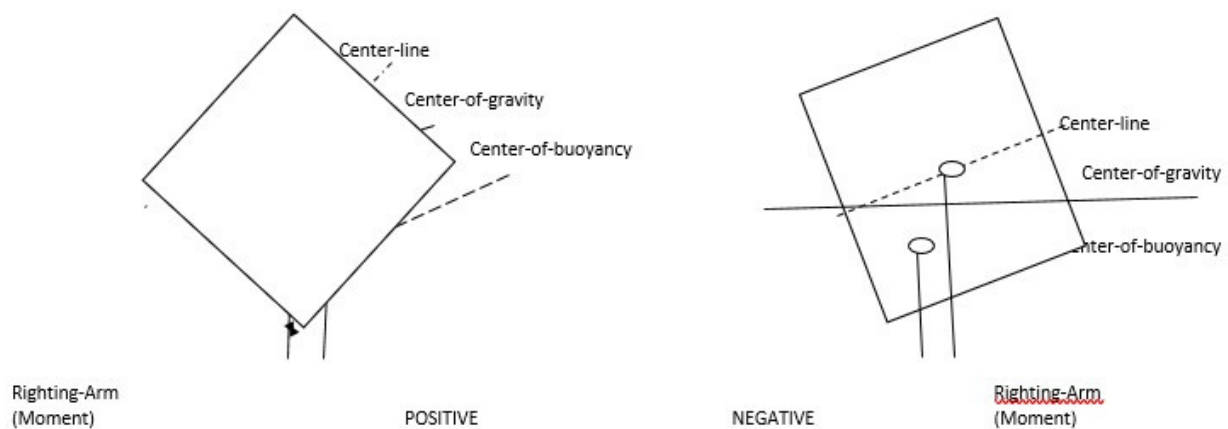
Box boat, 3ft x 6ft, 1 ft tall (high)

Boat volume = 3' x 6' x 1' = 18 ft³

Boat displacement = 18 ft³ x 62.4 lbs./ft³ = 1123.2 lbs.

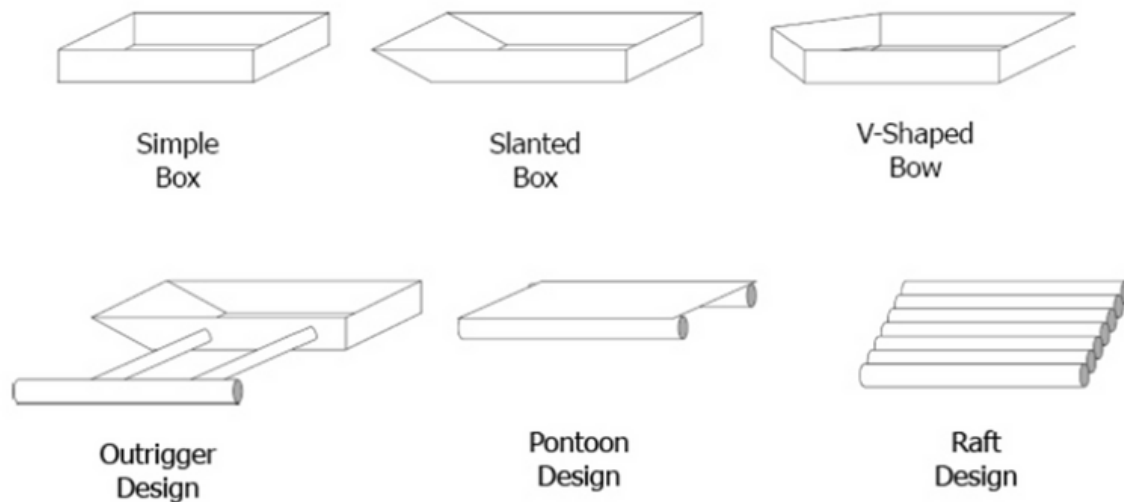
Which equates to 93.6 lbs. per inch of boat height

"Wider is better" – Center of Buoyancy



CARDBOARD BOAT PHYSICS

MOVEMENT THROUGH THE WATER



BOAT DESIGN SUGGESTIONS

- Long boats go fast – but are harder to turn
- Short boats (<8') – are difficult to keep straight
- Best Length: 8-12 feet
- Best Height: 18 inches
 - Allows room to sit/kneel & still paddle over edge
- Best width:
 - 18" – 30" (max) for 2 or more people front and rear
 - Minimum 48" wide for 2 people side by side
- Kneeling is a "power" position but sitting is more comfortable

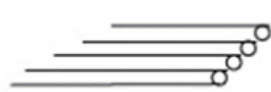


CONSTRUCTION TIPS & TECHNIQUES

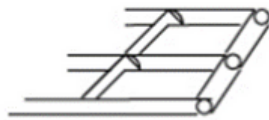
- Cover all edges of cardboard – acts like a siphon.
- Cardboard tubes make great frames.
- Cut for joining & bending.
- Fasten tubes together.
- Cardboard Hull
 - 1-2 layers, fasten & cover the seams
 - With two layers, overlapping the seams & polyurethane in between.
- Decorate, paint & varnish.
- Reinforce the area where you sit, kneel, or stand.
- Carpenter's glue and liquid nails work well.
 - (hot-melt glues will melt in the heat and sun)
- Duct tape only non-painted surfaces (tubes or frames that will be covered)
- Duct tape shrinks when painted
 - Duct tape should be covered with masking tape if you need to paint it.
 - Clear tape melts when painted.
 - Masking tape works well on glued edges & seams.
 - Kraft paper with spray adhesive may also be used.



CONSTRUCTION TIPS & TECHNIQUES



Solid Tube
Frame



Center/Cross
Beam
Frame

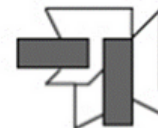
FRAMES

CONNECTING TUBES

Cardboard
Wrapper for Tubes
End-to-End



Cardboard
Wrapper for Tubes
At Right-Angles



FRAME ANGLES



V-Shaped Cuts



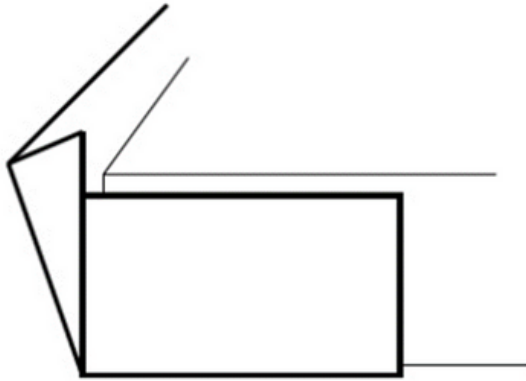
Multiple Cuts
for Sharper Angles



TUBE CUTTING TEMPLATE



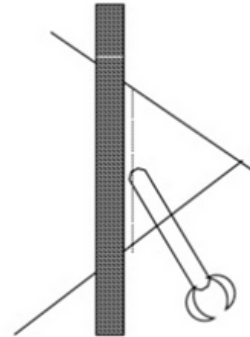
CONSTRUCTION TIPS & TECHNIQUES



FOLD & OVERLAP
CARDBOARD
AROUND CORNERS

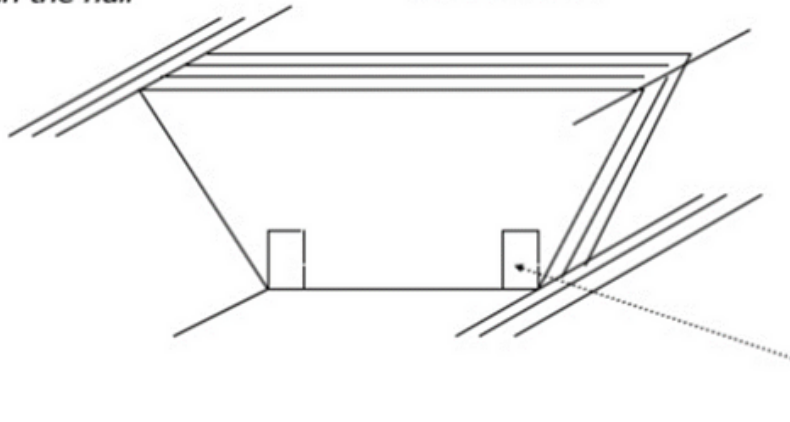
Crease/Score a line
for a nice

STRAIGHT
FOLD



Multiple cardboard layers
"glued" together on the sides
strengthen the hull

Multiple trapezoid-shaped pieces
"glued" together to form a
"support block"



A sheet of cardboard
could be folded &
"glued" together to form
tubes/beams

