



## 'How to Build A Killer Boat and Race It'

### **Paddlin' 4 Paws 4<sup>th</sup> Annual Cardboard Boat Regatta Races**

Randolph County Animal Shelter fundraiser **Saturday 5/12/2012, Check in by 11am**, Races start at 1pm

Check back for rule updates. [www.highairs.com](http://www.highairs.com) (256)363-1056 or [www.randolphshelter.org](http://www.randolphshelter.org) (256)357-0101

The Lake Wedowee Air Junkeys and RCAS invite you to build and race your homemade human-powered boat made of cardboard boxes and tubes that can float long enough to complete our race course. The goal is to have a good time and fun for all - staying dry and finishing the race is part of the challenge ! Boats will be timed as some awards are based on fastest time. Build any size boat and have as many crew as you want as long as they are at least 4.5 years old. All racers must be able to swim 25 yards without a life jacket or any assistance.

No matter how fast, slow, big or small, sensible or outrageous; your mission is to build a raft, a single or multi hull boat, kayak, canoe, or paddlewheeler....out of untreated corrugated cardboard, carpet tubes, tape and water sealer, **but don't** use any wood, plastic, vinyl, inflatable devices, metal, or hardware. Start building early for maximum fun. You will have all the fun in the sun on race day as you row past envious Sissy Shoreline Snails ! \*Only animal shelters and pre-approved rescue groups may bring an animal to the event IF that animal is a boat occupant.

## **Row~sink~swim fun day on Lake Wedowee**

### **If you can dream it you can build it!**

Our boats won't be as fancy as these: [www.youtube.com/watch?v=aLPb5AHM3b8](http://www.youtube.com/watch?v=aLPb5AHM3b8) but will fire up your imagination. (more vids/pix links below). You could win awards too. Increase your chances by dressing in costume and decorating your boat. All rowers 9 and under can win an award just for braving the high seas !

### **Boat Categories and Fundraiser Entry Fee**

1. \$25 **Non Profit Boat:** individuals, groups of friends, clubs, and similar non-profit organizations build and row their own boat. Non-profit signage is allowed on boat hull.
2. \$50 **Sponsored Boat:** a 'for profit' business builds and rows their own boat. Promotional signage is allowed on the boat hull.
3. \$100 **'Adopt A Boat':** a 'for profit' business sponsors a crew to build and row their boat. Includes \$50 entry fee + \$50 materials\* Sponsor supplies boat hull advertisement wording/ signage to the Boat Captain/Leader.  
\*When the 'adoptee' Boat Captain presents his boat/crew at Registration, he is given his Sponsor paid \$50 for boat materials

### **Order of Races** (see Entry Form for boat and age classifications)

1. **Timed Heat Trials:** all boats race in the heats
2. **Grudge Match Race:** you and your arch rival both register to oppose each other in this race.
3. **Parent – Youth race:** Parent(s) & Youth(s) team up in the same boat. Youth(s) must be 11 or under.
4. **Flotilla Race:** Open to all boats that can still float.
5. **Water NASCAR Demolition Derby;** Open to all boats that don't mind 'trashing' their boats. The last boat floating, with the entire crew inside the boat, wins the highly coveted **Plundering Pirate award**. This is a 'friendly' event; you may not strike any crew member, but you can try to sink their boat with water soaker guns, pull crew members out of their boats, or tip their boat over. No sharp objects or battering rams.

**2012 Schedule: Central Time Zone** Music by Lard Bucket Blue Grass Band 10:00am - 3:30pm

- 8:30 - 11:00 Racers check in; boat inspection, team registration, official team race photos. Breakfast available  
10:30 - Lunch hot off the grill. Serving til 4pm. Take out BBQ too !  
12:15 - 12:55 Inner tube races: Adult & Youth races. Adults compete solo. Youth's compete in teams of 2.  
1:00 - 3:30 Cardboard Boat Races  
3:30 - 4:00 Load up boats while awaiting awards. Pickup BBQ by the # and pre-purchased bakery items  
4:15 - 4:30 Race Awards next to the Big Tent !

**2012 Paddlin' 4 Paws 4<sup>th</sup> Annual Cardboard Boat Regatta Race Awards**

**Photo plaques with team/boat pre-race photo**

**Photo plaque awards at 4:15 next to the Big Tent: winners need not be present to win**

Youth rowers 9 and under must be present to receive their 3" gold medal we give them just for rowing, regardless if they won a plaque. If you need additional plaques for your team; order and pre-pay by 5/21/12. Pickup at RCAS after 6/4/12. Cost \$13 each

**Race age groups: Youth 4 ½ - 12 years Adult 13 years and over**

Photo plaque awards based on time:

- |                                   |  |
|-----------------------------------|--|
| 1. Full Speed Ahead Award (youth) | The fastest one or two man vessel in race trials |
| 2. Full Speed Ahead Award (adult) | The fastest one or two man vessel in race trials |
| 3. Robinson Crusoe Award (youth)  | The swiftest 3 or more man vessel in race trials |
| 4. Robinson Crusoe Award (adult)  | The swiftest 3 or more man vessel in race trials |
| 5. Popeye's Spinach Award         | Fastest Finisher of Grudge Match Finals          |
| 6. Greased Lightening Award       | Swiftest Boat in the Flotilla Race               |

Photo Plaque awards not based on time:

- |  |  |
|--|--|
| 7. Pint Size Pirate Award,                 | Crew average age 12 years & under  |
| 8. Old Wheezy Geezer Award                 | Crew average age 55 years & over   |
| 9. Rah ! Rah ! Spirit Award                | Most enthusiastic crew   |
| 10. Best Landlubber Fan Base Award         | Largest & loudest fan base   |
| 11. Mr. Toad's Wild Ride Award             | How did we ever make it ?  |
| 12. Smarty Pants Award                     | Best creative, unusual or unique boat design   |
| 13. Captain Bligh's Award                  | Best 'clean' boat name   |
| 14. Full Monty Award                       | Best costume and theme   |
| 15. Dead Mackerel Award                    | Ugly duckling boat   |
| 16. The Tug Award                          | Largest vessel to finish race with crew inside                                       |
| 17. The Dinghy Award                       | Smallest vessel to finish race with crew inside                                      |
| 18. Best Hurry Up & Get It Made Boat Award | It's not pretty, but it's ours!  |
| 19. Proud Mary Paddlewheeler Award         | If no paddlewheeler entries; goes to hardest paddlin' team                           |
| 20. Bottom Feeder Award                    | Low rider vessel   |
| 21. Davy Jones Locker Award                | We Didn't Get Anything But Wet   |
| 22. Yellow Submarine Award                 | We didn't have a chance from the start   |
| 23. Swimming 'Round the Bend Award'        | Longest swim through the course  |
| 24. Pirate Parent and Jr. Matey Award      | Distinguished themselves in the parent/youth race                                    |
| 25. Plundering Pirate Award                | Demolition Derby: last boat floating with entire crew inside                         |
| 26. Titanic Award                          | Spectacular sinking after more than 50' of travel<br>You must try to save your ship! |

## **FAQ's: The little stuff you want to know**

1. What kind of stuff will I need to build and race my boat? Basically; a box knife, a straight edge, wood glue, something for scoring the cardboard, some tape, water sealant, and cheap black foam paint brushes. We have some cardboard supplies to share when you prepay your entry fee, as well as boat builder supply discount cards good for 10% discount on approved materials at three hardware stores.
2. Can I build a boat and let someone else race it? Sure, but why would you want to miss all the fun?
3. What's the race course like? All we will tell you is that you will be tired if you finish. And the finish line seems a million miles away. You will be wet if you sink.
4. What kind of stuff will I need to bring for the race? Something to move your boat like hands or oars, an undamaged life jacket that fits and buckles. (loaner oars and jackets may be available). Bring some glue and tape for fixing holes. A tarp to cover your paper boat in event of rain. Optional: rubber ducky, sunscreen, and crying towel.
5. What happens if I can't turn my boat or I sink? If you are sweet, our safety boats on the course MIGHT help point your faltering boat in the direction you want. A sinking ship or crew will only be assisted after everything is wet and real soggy. Although we have rescue boats, we would much rather laugh at you as you swim your boat to shore.
6. Does everybody get an award? Nope, but we can arrange a free sunburn or dunking. Truthfully, every entry is a winner to us.
7. Team/pit crew spirit ideas: wear costumes as hats or t-shirts that match. Get your team interacting with spectator with cheers, chants or singing. Play music on the ramp or shoreline (no electrical devices allowed in or on the water) Decorate your team's shoreline area where you gather.
8. Will there be food and drinks available to purchase? Sure; come hungry and carb load...you will still be starving after the race! Coffee and breakfast items from 8:30am by Wedowee Hospital Auxiliary. Also pies and cakes. RCAS lunch plates only \$5 from 10:30am to 4pm: grilled HB/Hot Dogs or smoked BBQ. Includes chips and drink. Takeout BBQ \$7 #.
9. Will there be bathrooms available? There will be the lake and the porta-potties. We prefer you use the porta-potties.

## **Get Ready: Construction Specs you need to follow:**

1. Boats sizes must be somewhere between a doll's bathtub and a cruise ship. Rafts, paddle wheelers, kayaks, canoes, and multi hulls are OK, but no sailboats or surfboards. Only standard corrugated cardboard boxes and/or cardboard tubes (as typically used to package appliances, computers, etc. are allowed). Any other type of "treated cardboard" that's been processed to make the cardboard waterproof is a major No - No. You may glue layers of any thickness together. Cardboard type rolls from carpet or similar are OK, but you may not use the manufacturer's fitted 'end caps' (as on mailing tubes).
2. Decorations may be made from any material and attached with removable wood fasteners, staples, and nails in very small quantity. Such decorations may not be used to reinforce the boat structure or flotation in any way. Please build so you do not have materials sinking in the lake!
3. Boat signage may have marriage proposals, your Uncle Ralph's seldom used nickname, etc. Be original, but no profanity. Please refrain from using any alcohol related advertising or themes for crew/vessels. Leave room for sponsor signage if you are an 'Adopt A Boat'.
4. **If you have ANY construction questions** call Patt High, (256)363-1056, especially if you think you found a 'wonder' material (it is probably too good to be true ie illegal). You want to avoid the dreaded Boat Inspector 'ice pick' test - where suspect boats are probed for illegal construction that gives your boat an unfair advantage (structural stability, flotation, or speed). That would make you an Outlaw Pirate Boat. FYI: if your boat is sort of illegal, we will let it race, but you can't win awards. If your boat is grossly illegal, we have to disqualify your boat, unless you can modify your boat to pass inspection. This is a fun competition, on a 'level' playing field, so play fair!

### **Allowed construction materials:**

Tape: Duct tape, reinforced paper tape, clear packing tape may be used as long as the tape does not extend more than 3" from a seam or edge. You may not cover more than 25% of your hull surface below the waterline with tape either. Instead use;

Paint and water sealers: 'one part' paints or any lacquer, shellac, varnish or water sealers as Thompson's. You may only add water or paint thinner as needed. Be sure your paint is dry before racing, to avoid toxic chemicals going into our water table.

Adhesives: white or wood glue, contact and rubber cement, liquid nails, caulking, chewing gum, spit, and nail polish are allowed to adhere joints, pieces, edges, and patches.

Paddles, oars, 'gondola style' poles: you buy or make your own with unlimited amounts of cardboard, tape, water proofer's, and paint. You may also paddle with your body parts !

**Not allowed construction materials:** that could cause disqualification

Waxed, oiled or peeled surfaces (nice try !)

Foam, wood, barrels, metal, aluminum, silicone, fiberglass, vinyl, plastic, styrofoam, or rubber

Clamps, screws, staples, fasteners. **Exception:** Paddlewheelers boats must be cardboard, but 'wheel apparatus' may be plastic.

Flotation devices, propellers, motors, sails, swim fins, or self propelling devices (paddlewheelers excluded).

Any fiberglass paint or coating. No 'two part' epoxies or varnishes. No plastic coatings. No roofing products or coatings, including tar.

Tape on more than 25% of your hull surface that is below the waterline

Sandbags or weights

**Get Set: Race and Safety Rules** (Please don't ask for exceptions for your baby, dog, cat, or monkey).

1. No boat shall leave the starting gate unless all crew are wearing their wrist ID band; something to protect your feet if you step on a sharp underwater object; and buckled Coast Guard approved life jacket. Jacket must be worn on top of any costumes. Lightweight costumes are best...you may need to swim it !
2. Minimum standards for boat occupants; 4.5 years old and able to swim 25 yards without assistance or a life jacket. We have boat safety crews on the water to assist and tow you in if necessary. If your boat sinks, we want you to be a 'happy floater' instead of an embarrassing rescue ! Do not enter the races if you have medical or mental issues that could put you or other boaters at risk.
3. Insure your boat has no sharp edges or objects that can harm humans or other boats. Empty your pockets of keys, knives and other sharp objects before entering boats.
4. All boat occupants must be fully visible inside the race boat at all times. Easy entry and exit is mandatory. If your boat has a 'top', it must have very large 'windows' for a fool proof escape route. Remember, the taller your boat 'sides' the harder it will be to climb back aboard if you capsizes.
5. You may not make intentional contact/damage to another boat or crew. No water soaking devices as water blaster guns. No battering rams, flame throwers or swords are allowed at sea. Absolutely no pyrotechnics may be used, except a properly shielded and contained 'smoke' device. If you use such a device, you are fully responsible for it's use and any damages you cause.
6. Water NASCAR Demolition Derby is the exception to the 'no contact' rule as follows; Now you want to make constant contact with other boats. Try to sink or 'turtle' their boat by pulling occupants. Water soaker guns OK. But you may not strike any boat occupant with oars, arms/legs, or other objects. No smoke devices allowed. The winner of the Plundering Pirate award will be the last boat rowing, with entire crew inside the boat. (and was a fierce competitor; ie not one who avoided contact)
7. Please refrain from bringing or consuming alcoholic beverages or non-RX drugs onto the property. Suspected 'users' will be disqualified in shame, keel hauled, and escorted off the property without awards or refund.
8. We request you keep your language clean and the grounds green. Sure, snarl pirate talk at your opponents, but no cussin' or fussin'. By being good guests we will be invited back to Chimney Cove for more racing fun !

### **GO: Registration Check In**

**On race day it gets crazy** with boats being inspected and paperwork to fill out. **You can save \$10 by pre-registering.** That means you turn in your Boat Registration and payment by 5/3/12. You can make changes to submitted forms until 11am on race day. If you pre-paid and can't come, call us after the event for a full refund. There is no downside to pre-registering

## **How the day unfolds**

1. **Registration needs to be completed between 9:00 – 11am so we can setup the race heats.**
2. When you drive in you will be directed where to unload your boat/race equipment/costumes, then go park.
3. Our Boat Inspectors will check your boat for compliance, and possibly probe for illegal materials with an ice pick ! Cheaters never prosper; so bring tape and glue to fix holes.
4. Then gather your entire boat crew, in costume, at your boat. Call the photographer to take your official photo for your possible photo plaque award(s). These photos will appear on our website for you to share (free) with your friends. **Send us your best photos and win prizes too !**
5. Parents of minors, and all other racers go to Registration tent. Finalize your team's paperwork including Liability Waiver. Then you get your boaters ID wristband. (No one gets in the water without an ID tag, a buckled life jacket and lightweight shoes.)
6. Return to your boat and lift it onto our trailer which will take it to the boat ramp. You follow and unload your boat. At 1pm the races start !
7. Look for the boat ID # we placed on your boat hull; if your number is 39 your first race will be in heat 3. You are the 9<sup>th</sup> boat registered.
8. Each boat may have a maximum of 2 helpers to assist rowers in/out of the boat, and to remove your boat from the shoreline after racing.
9. Should your boat capsize or sink or you are frustrated with your boat, go ahead and jump in the water to push/pull your craft through the remainder of the course, while going around all the buoys. Some 'booty' awards are earned just for completing the course with your entire crew, so don't give up the ship or skip part of the race course !
10. To win a 'fastest finisher' award; you completed the course properly. All crew are inside the boat at the finish line. The clock stops when all crew members exit the boat and stand on the shoreline.
11. If you feel you have been grossly fouled or unfairly held up by another competitor, you can request a re-ride from the Starter, before the next race begins. Natch, all Judges decisions are final ! This is not Olympic Rowing ! We hope you will abide by the 'spirit' of the rules and the race official's directions, so we all have a good time.
12. After the races, the Judges huddle and choose the winners. Be patient, this takes time.
13. Our Announcer will call out when the Judges have tallied the votes and have the rower's photo plaques ready.

## **Vids that prove people have been racing 'paper' boats for 30 years, with success !**

Look at vids on boat race page at [www.highairs.com](http://www.highairs.com)

<http://www.youtube.com/watch?v=AASmKsdhaQM> many other vids on YouTube: type in cardboard boat race, cardboard boat regatta

<http://www.capecoralregatta.com/> a great boat design plan. If the webpage doesn't open, look to left. Click boat building.

**Think and Dream Your Boat, First** you can stop reading here and wing it...or take some pro tips;

**First, use Google search engine and type in 'cardboard boats' and 'cardboard boat designs'.** Then....

**Along** the way, you will enjoy encountering and dealing with many small details. But look ahead to the satisfaction of knowing you accomplished something that most people won't even try -- building a boat made of corrugated cardboard. (I can hear it now...."we were so poor as kids we only had homemade paper boats")

**First** things first . . . start with some objective in mind. Maybe you want to build the fastest boat at the Regatta. Perhaps you are more interested in one of awards for design or eye appeal. Perhaps you want to get on television or be the featured photo in the newspaper. Or take home the Titanic Award for the most spectacular sinking?

**Next** . . . start with a **design idea**, a vision of what you want your cardboard creation to look like. But consider this first -- it doesn't have to be a boat at all! It can be any design you like or want to try out. Your imagination could lead you to make jeeps, exotic cars, full-scale pickup trucks, school busses, or fire trucks. Not wild enough? How about a space shuttle, Elvis on his guitar, a PC with a trailing mouse, a taco, a giant Tootsie Roll,

Tessie the Loch Ness Monster, Deidra the Dragonfly, or the Statue of Liberty hand (from "Planet of the Apes"). Imitate other water craft: submarines, aircraft carriers, PT boats, lake freighters, pirate ships, the Exxon Valdez (with simulated oil slick). mmmmm

**Try** this to **save time . . . build a model** using a manila folder or other heavy paper or lightweight cardboard. Folding and overlapping flat surfaces is best. That way, you can fold, re-fold, and fold again to your heart's content. You can cut it up, glue it together, and try out your design idea in small scale before working on a full-sized creation. Or you can throw out an idea that sounded great, but just won't work, then try something else before you have wasted any cardboard.

**How** about **a little science**? If you want, you can toss in a little physics or other sciences. Maybe you will choose to calculate the displacement of your design idea so that you will have some certainty about the buoyancy of your design. Almost any hull shape large enough for the crew to sit in will float the crew but here is the formula: a cubic foot of water weighs about 62 pounds. That means that a 180-pound man will float in a boat that is 1 foot by 1 foot by 3 feet -- of course, that could be a bit uncomfortable! But at least you would know just how much boat you will need for you (and your crew) so you don't over design it and add unnecessary weight.

**Then** again, **how about some art**? Perhaps you have a really creative idea? Unless you get your kicks from putting in lots of hours and making discoveries along the way you may want to at least try out that unique or innovative idea in model form. If you want to put a palm tree in the middle of your "desert island," be sure you won't make the whole thing top-heavy -- unless, of course, you are trying for the Titanic Award.

**Now, go full-scale** . . . but first, think about this: make sure your creation will be able to get out the door of wherever you choose to build it. We have many tales of woe about boats that had to be dismantled -- or even trashed and rebuilt -- just because no one thought about the size of the boat and the size of the door. (If you have a sponsor, make sure to leave room for their name/logo on the hull).

**Creative** problem-solving is the name of the game. Whether you get your creative insights from methodical effort or from wide-ranging trail-and-error, building a cardboard boat can be -- no, make that, will be -- both fun and challenging. Go ahead - wing it!

### **Let's Get Down with it - TIPS**

A flat bottom is recommended. A V-shaped bottom is likely to tip over unless the V is very gentle.

The lowest center of gravity is the most stable; kneeling or standing will cause you to tip over.

Longer boats go faster, but they are harder to turn. Wide boats are stable but slow. Narrow and long boats are unstable, but fast.

Tall boats catch the wind and are hard to maneuver and also slow. Boats shorter than 10 feet are difficult to steer.

For height, allow about 18 inches for you to sit and paddle effectively without the edge of your boat blocking your arms or causing you to capsize if you lean over too far

For width, figure about 18 inches for a kayak, about 23-24 inches for a canoe. Figure about 30 inches maximum for 1 person, 48 inches for two people.

Start with the bottom of the boat first, then add the sides cutting against the grain of the cardboard to insure durability. Use the dull side of the knife to 'score' folds into bending into the proper shape. Then glue the sides to the bottom, cover seams, waterproof, paint and decorate.

A kayak, decked canoe or pirogue design generally works best. It has minimal wetted surface area, a narrow width, and a large amount of lateral support relative to the length. Cut your cockpits out of the deck. Do not extend the cockpit holes all the way to the sides or you will create a weak spot. It would also be good to reinforce the cockpit holes with 1 or 2 additional layers of cardboard glued to the deck. Make the reinforcements with the corrugations perpendicular to each other so there are no weak spots. Design it with minimal joints. Use scores and reverse scores with "darts" to form your curves and tapers. Tape any joints with multiple layers of duct tape. Try to keep the flutes from getting wet. Tape the edges to keep water out. Paint the entire boat inside and out. Double paddles are the most efficient means of propulsion.

## **Down and Dirty Boat Building Designs and more TIPS:** (I haven't checked these links lately)

\* <http://ahome4u.net/cardboard/construction/index.htm> Bob Miller ( 239-574-3096) or Bill Shallbetter (239-542-6426).

\* [http://uwfoxvalley.org/2009\\_Boat\\_Race\\_Page.php](http://uwfoxvalley.org/2009_Boat_Race_Page.php)

\* [http://uwfoxvalley.org/index.php?pr=2009\\_Boat\\_Race\\_Photos&curPhoto=0&curAlbum=#album](http://uwfoxvalley.org/index.php?pr=2009_Boat_Race_Photos&curPhoto=0&curAlbum=#album)

\* <http://foxvalleyunitedway.shutterfly.com/>

\* [http://uwfoxvalley.org/index.php?pr=Boat\\_Race\\_2008\\_Photos](http://uwfoxvalley.org/index.php?pr=Boat_Race_2008_Photos)

\* [http://uwfoxvalley.org/index.php?pr=Boat\\_Race\\_2007](http://uwfoxvalley.org/index.php?pr=Boat_Race_2007)

\* [http://www.jflis.com/leisure/canoeing/boat\\_2002/independance.htm](http://www.jflis.com/leisure/canoeing/boat_2002/independance.htm)

\* [http://www.jflis.com/leisure/canoeing/boat\\_2001/cardboard2001.htm](http://www.jflis.com/leisure/canoeing/boat_2001/cardboard2001.htm)

\* [http://www.jflis.com/leisure/canoeing/boat\\_2001/boats.htm](http://www.jflis.com/leisure/canoeing/boat_2001/boats.htm)

\* [http://www.heber-springs.com/content/?q=festivals\\_cardboard\\_boat\\_races.htm](http://www.heber-springs.com/content/?q=festivals_cardboard_boat_races.htm)

halfway down the page see link to 'Boat Building Information'

\* <http://www.bateau2.com/free/cheapcanoe.htm> this 13" x 30" plywood boat can be adapted with some internal support

\* <http://www.capecoralregatta.com/gallery.htm>

\* <http://www.capecoralregatta.com/boatbuild.htm>

\* <http://www.jflis.com/leisure/canoeing/cardboard.htm>

\* [http://www.jflis.com/leisure/canoeing/cardboard\\_boat\\_race.htm](http://www.jflis.com/leisure/canoeing/cardboard_boat_race.htm)

\* Although we do NOT use milk jugs/cartons or cartons for floatation, this site has some fun boat design ideas...

[http://images.google.com/images?q=Milk+Carton+Derby+photos&rls=com.microsoft:en-us:IE-SearchBox&oe=UTF-8&sourceid=ie7&rlz=117ADBR\\_en&um=1&ie=UTF-8&ei=42c-S4mpHo-1tgfKyoiQCQ&sa=X&oi=image\\_result\\_group&ct=title&resnum=1&ved=0CBQQsAQwAA](http://images.google.com/images?q=Milk+Carton+Derby+photos&rls=com.microsoft:en-us:IE-SearchBox&oe=UTF-8&sourceid=ie7&rlz=117ADBR_en&um=1&ie=UTF-8&ei=42c-S4mpHo-1tgfKyoiQCQ&sa=X&oi=image_result_group&ct=title&resnum=1&ved=0CBQQsAQwAA)

## **Best Materials and Techniques** Blogs from experienced racers:

Ask for spare boxes at warehouse stores etc . Or put on your ninja suit and for a late night raid of recycle bins. Shipping boxes for refrigerators, big freezers, TVs, bedding, bookcases, or other furniture are good choices. Of course, you can also use smaller boxes and glue or fasten them together.

If you can get sheets of cardboard wide enough, you could make the hull from one sheet with the only seams at the ends. Cut your bow and stern curves at the ends and then just fold and duct tape it. Install thwarts at appropriate spots to get the shape and then laminate other strips of cardboard to add strength. The canoe / kayak design is perfect for two and with at least one strong paddler you should get a good turn of speed. The key here is going to be which boat can float for the entire length of the course.

Laminate 6 -7 layers of large cored cardboard two and a half inches wide oriented with all the cores running across the strips. Let these dry then clamp snugly (don't crush) between two very stiff glue resistant strong backs such as heavy plastic or well painted boards. These should be about an inch higher than the cardboard. Place the strip on edge over a trough then pour the glue so as to flood (I use yellow glue cut about 20% with water) into the space on top of the cardboard and between the clamping boards. Let the glue drain through the cores for a few minutes. The cardboard will soften with the moisture, then crush the heck out of it until it is about a 1/4 inch thick and fully collapsed. I used 6 layers equaling 7/8" thick and it collapsed to 1/4". Let this dry for 24 hrs. Then unclamp and let it air dry as there will be quite a bit of moisture in the material. When it is completely dry, play with it and see what you can do.

You can have strength and still keep your boat light if you laminate layers of cardboard. In fact, try placing one layer so that the corrugations run in one direction, then placing the second layer so that the corrugations run at a 90-degree angle to the first layer.

To fold cardboard across the corrugations, consider scoring the line of the fold with the butt end of your utility knife or other rounded edge of a tool.

Don't step on your cardboard! If you break the corrugations -- well, think about it.

To keep your cardboard dry, don't forget to seal the edges with caulk or silicone. If water gets into your corrugations, you can have great fun watching it get drawn through the corrugation just like in a drinking straw. That may be okay when you have time to do something about it, but not while you are in the middle of the race !

The key to keeping your boat afloat longer is the use of paper tape glued over the seams and edges (NOT duct tape) and NUMEROUS coats (as in at least three) of good exterior latex house paint over the inside AND outside of the boat. It creates a very durable "skin" which stands up to water really well and can take a fair amount of abuse.

Common wood glue and reinforced paper packing tape make excellent sealers for the connecting joints and seams. In the gluing process, once the glue has drained down to the upper edge of the strip use some compressed air through a controllable nozzle to blow the excess glue through the cores, thusly cutting down on the draining time. Compressed air will also allow wider material to be made thusly fewer parts required. If the strips were to be made less than 1/8" thick (compressing no more than three layers) they may be flexible enough to form curves if applied while still a bit damp.

Paint all the surfaces before gluing; especially allow time for slow curing oil based paints. Next caulk the edges, then glue (carpenter's glue works great) and waterproof.

Avoid oil-based stains, caulk, and glue because the oil soaks into the cardboard, may never dry, and this weakens the cardboard.

Duct tape shrinks when it is painted.

Clear tape melts when it is painted.

Forget about "glue guns" because that type of glue melts on hot days.

A little bit of Jet-Dry in the water is supposed to help prevent the paper tape from curling up as it dries. I also apply paint-able caulking to my seams before taping. Or the tape won't stick. I'd make your boat twice as strong as you think it needs to be. Cut all your pieces to have a nice tight fit. Extra glue can not makeup for a poor fitting joint. And for an extra advantage finish your paint job off with several coats of water based polyurethane this will give it a slick finish and cuts down on drag. Oh, when you paint your boat apply the first couple of coats lightly and allow 4 hours for the paint to dry between coats...otherwise the cardboard will absorb the moisture from the paint and get soggy.