

# 2nd Annual Rock River Anything that floats

**August 20<sup>th</sup>, 2017** (Rain Date – August 27<sup>th</sup>, 2017)

Event Day time line:

- Live Music, Entertainment, Food, and Drinks starting at 11 AM
- 10:00 AM - Sign in starts for all categories (SUP, Kayaks, Canoes, and Rafts)
- 10:30 AM - Sign in ends for SUP, Kayaks, and Canoes
- 11:00 AM - SUP, Kayak, Canoe race starts
- 11:30 AM – Raft Race Registration ends
- 12:00/Noon – Anything That Floats Raft Race will begin!!!
- 3:30 - Duck Drop off Whitman St. Bridge
- ~4:00 - Awards Ceremony
  - Raft Race is a time trial. All rafts will not leave launch at one time. Your time will start when your nose goes under the Auburn St. bridge and end when your nose crosses the finish line at Prairie St.

Participants can register for the Anything That Floats Raft Race on the anything that floats website – [www.rratfr.com](http://www.rratfr.com) and going to the registration page.

All entries must register before August 1st, 2017 or before all entry slots are filled (limit of 100 rafts). The entry fee is \$ 100.00 per raft crew and \$15.00 for kayak, canoe, and stand up paddle boards. Entry must be received by August 1st before 10am.

## CAPTAINS' MEETING & REGISTRATION August 14<sup>th</sup>, 2017 @ 6 PM

A Captains' meeting will be held at Prairie Street Brewhouse, 200 Prairie Street, Rockford, IL on Monday August 14<sup>th</sup> at 6 PM. **Attendance is mandatory** for all team **Captains**. This meeting also marks the registration deadline for the event. Crew members are also encouraged to attend.

The Captains' meeting is used to present the specific details of the event. The items to be covered will include but are not limited to; safety requirements & equipment, race rules, raft inspection, launching procedures, parking arrangements, towing to the mooring areas, the starting location & cannon, racecourse description, finish line location, navigation, support boats, anticipated race duration, competition classes, awards, amenities during race day, day's end, and any last minute developments and/or instructions. The race committee will also clarify any concerns and respond to comments from the audience.

The race committee will also hand out additional rafting information and materials as necessary.

## SOCIAL HOUR AFTER Captains MEETING

Once all participants are registered and event information has been presented; everyone is invited to stick around for a social hour in the Dockside Taproom to start some good, friendly rivalries over some food and drinks.

## RACE RULES & SAFETY ADVICE

The Anything That Floats Raft Race Committee promotes a safe, family-oriented event. We encourage all participants to act in a responsible sportsman-like manner, obey all safety requirements and raft race rules, assist their fellow rafters when necessary, and above all, enjoy the event. Remember, safety comes first! Watch out for fellow rafters, lend assistance when needed, and have fun.

1. Race course starts at the old coast guard station/mouth of spring creek and goes downriver approx. 1.65 miles to the northern most dock of the Prairie Street Brewhouse.
2. Important times!!!
  - 9 AM - Sign in starts at for all categories (SUP, Kayaks, Canoes, and Rafts)
  - 10:30 AM - Sign in ends for SUP, Kayaks, and Canoes
  - 11:00 AM - SUP, Kayak, Canoe race starts
  - Noon – Anything That Floats Raft Race will begin!!!

\*All entries will be required to accept a tow if found to be floundering mid-race and/or have not finished by 3:30 p.m.
3. All rafts must be of homemade construction.
4. All raft entries have a crew size of 2 and maximum size of 10.
5. No commercially manufactured hulls allowed on any raft. (you can still race, you just wont be eligible to win)
6. Inner tubes or inflatable devices are not allowed.
7. Minimum raft size must be able to support the weight of the crew.
8. A raft's deck must be securely fastened to a frame and the frame securely fastened to the hulls and/or flotation devices.
9. The use of nails below the water line is prohibited.
10. Rafts that have open hulls with no bulkheads shall have Styrofoam flotation fastened to the underside of the raft deck.
11. Marine rigging such as cleats & rope are acceptable.
12. All sheet metal raw edges to be turned over and taped.
13. Any protruding long bolts to be sawed off, filed, and taped.
14. All rafts should be inspected prior to launching and may be subject to modification at the discretion of the Committee.
15. **It is strongly encouraged to test your raft, with all entries on the raft, before race day!**
16. Single entries in the kayak & canoe classes should use the buddy system during the race and/or team up with other entries.
17. All entries must be solely human powered and self-propelled and make use of poles, oars, paddles, paddlewheels, sails, propellers, flippers, etc. or any combination thereof.
18. All rafts must be equipped with a suitable anchor and line that is secured to the raft at all times.
19. Each entry must be equipped with a suitable towline.
20. Each participant must have a Coast Guard approved life jacket that must be worn at all times. Any crew members assisting within 15' of the shore, must also wear a Coast Guard approved

- life jacket.
21. Each captain must review protocol for any crew members who may find themselves overboard. This will be covered in the captains meeting.
  22. All crew members shall wear sneakers or other appropriate footwear to prevent injuries from submerged sharp objects.
  23. Sun-sensitive participants should wear appropriate sunscreen.
  24. No animals allowed on any rafts.
  25. Participants should wear an appropriate hat with a large enough visor to help reduce exposure to the hot sun.
  26. All entries must display their class designation and competition number in plain sight and must be clearly visible to the finish line officials
  27. All Captains and their crew must remain aboard their registered vessel for the entire duration of the Race.
  28. All entries must run entire course under their own power to be eligible for awards.
  29. **No Glass Containers are allowed at any time!**
  30. Each entry must have an adequate supply of drinking water onboard for the entire crew so as to prevent dehydration during the race.
  31. All race entries should be outfitted with a first aid kit.
  32. All race entries must have garbage bags for their own trash.
  33. No mechanical devices or tubing shall be used to propel water balloons, spaghetti, snowballs, or any other dangerous objects.
  34. Anyone exhibiting unsafe behavior will be disqualified and could be permanently banned from the event.
  40. **No diving off any vessel or jumping into the water at any time!** Sections of the racecourse can be very shallow in spots and may include submerged sharp objects.
  41. All entries must have a designated driver for their crew members whenever present at Raft Race functions.
  42. All vessels must be removed from the river at the end of the day unless other arrangements have been made.
  43. Derelict vessels are subject to police action and/or fines from the DNR or Sheriff's dept. and risk permanent disqualification from the event.
  44. Rafts should be no taller than 10'

## EVENT SAFETY

The racecourse will be monitored & medical support provided by representatives from one or more of the following groups depending on availability: Fire Department, Ski-broncs, Sheriff Department, and DNR. Assistance may also be available from one or more of the following groups depending on availability: The Anything that Floats Raft Race Committee and its Officers, Volunteers, and agents.

Participants must obey all safety requirements & raft race rules. If there is an emergency and/or you see someone in trouble it is your obligation to make sure you or someone else gets to any raft and/or participants as soon as possible. Lend a hand if possible. Elapsed race times will be adjusted for those providing emergency assistance to fellow competitors. If your vessel is taking on water and is in danger of sinking, immediately head towards the nearest shore and beach your craft. All rafts are required to accept a tow by emergency personnel if found floundering mid-race or if they have not finished the course by 3:00 p.m. Safety is the foremost concern throughout the day so please act wisely and provide help if needed. Anyone acting without regard for the safety of others, or themselves, will be disqualified and risk permanent disqualification from the event.

All crew members must be present at the morning check in and all crew members must check in at the end of the race to ensure we haven't lost anyone along the way. If anyone on the team has to leave, please notify staff so we know how many crew members should be on each boat.

## **AWARDS**

The Anything That Floats Raft Race will have three different award categories, speed, audience choice for best design, and the Frank Scheir creativity in design Award. There will be first, second, and third place awards for all three categories.

The Kayak, SUP, and Canoe race will all have first, second, and third place winners for speed only.

## **Race Number for Results**

A race number will be assigned to each SUP, Canoe, Kayak, and Raft at registration the morning of the race. For SUP, Kayak, and Canoe, your number will need to be pinned to your life jacket/shirt or attached to your vessel in a easy to read location. For Rafts, the numbers must be affixed so that the judges on the east side of the river can clearly see it.

## **INSPECTION OF RAFTS**

Rafts should be inspected prior to launching and may be subject to modification or disqualification at the discretion of the Anything That Floats Raft Race Committee. The main focus of inspection is to ensure that rafts have no obvious mechanical problems and the construction has been done in a safe manner. Especially important is that all sheet metal raw edges are to be turned over and taped and any protruding long bolts be sawed off, filed, and taped. Issues discovered during inspection must be corrected before the raft can be launched.

If you plan to launch your raft earlier than Sunday 8/20/17, it is imperative that the raft's Captain gets in touch with a Raft Race Committee Member to schedule an inspection. The main concern here is the safety of you and your crew. Be prepared & equipped to make changes to your raft should any issues be found. You should bring along some hand tools, extra fasteners, rope, duct tape, etc.

## **LAUNCHING FACILITIES**

Raft and boat launch information will be determined after the number of racers is known. Launch time and place will be given to each participant at the captains meeting to keep launching vessels as smooth as possible.

Get everything ready before backing down the ramp. Complete any preparations, assembly, and equipment loading for your raft in the parking area. Back down the ramp only after everything is in place. There will be less congestion and waiting time for everyone involved by following this practice. There will be a lot of activity on race day. Move your

raft away from the launch ramp as quickly as possible to make room for the other people coming in behind you. There is a dock next to the ramp and this makes things a bit easier. Please don't hang around here too long. Keep everything moving.

Canoes and kayaks should be launched from Martin Park to spread out the need for parking and to keep congestion to a minimum. If your raft, SUP, canoe, or kayak is small and can be carried to the water by please carry your boat to the launch site to keep traffic to a minimum.

You can drive in close to the shore to unload your equipment and launch your watercraft. Afterwards you will have to move your vehicle & trailer and park it in a designated parking area.

## **FINISH AT PRAIRIE ST. BREWHOUSE**

The racecourse ends on the northern most dock of the Prairie St. Brewhouse. Contestants will see a boat anchored just off shore that has a huge black & white checked flag raised above. This designates the finish line location. As you approach the finish make sure your registration number is not obstructed and it is clearly visible. Pass close to the finish line boat so that race officials can record your raft's registration number and elapsed time in the race. All vessels are to immediately head ashore or to the docks at the brewhouse. There is no boat launch after this and going past could be extremely dangerous. The area adjacent to the finish is in a no-wake zone since it is close to the marina. These conditions provide an inherently safe finish location.

## **SPECTATOR SPOTS ALONG THE RIVER**

There is no one place for spectators to view the entire race. The best way to see the event is in the comfort of your own boat and traveling alongside the race competitors. Spectators can catch a glimpse of the rafts as they pass by any number of vantage points along the Rock River. There will be vendors at various locations at the start of the race, along the race course and at the finish line. Much of the course is along private property. Please be respectful and do not trespass. Other spots include the Auburn St. bridge, the museum campus at burpee and the discovery center, the docks and shore at the Nicholas Conservatory, the symbol park area, and anyplace else where the riverbank is accessible and provides a clear view.

## **AMENITIES AT THE FINISH**

Guests are invited to the Prairie Street Brewhouse to join the post-race activities. The finish area at the Prairie Street Brewhouse has plenty of neat stuff to do during the day. The dock of the Prairie Street Brewhouse is especially inviting as it has the perfect view of the finish line and will have live music, food, and of course, beer.

Vendors will be setup around the Brewhouse and food and other items will be available all day. T-shirts and other raft race items will also be available for purchase. Around 4:00 p.m. an awards ceremony will take place and all winners will be announced and honored.

## **BASIC RAFT CONSTRUCTION**

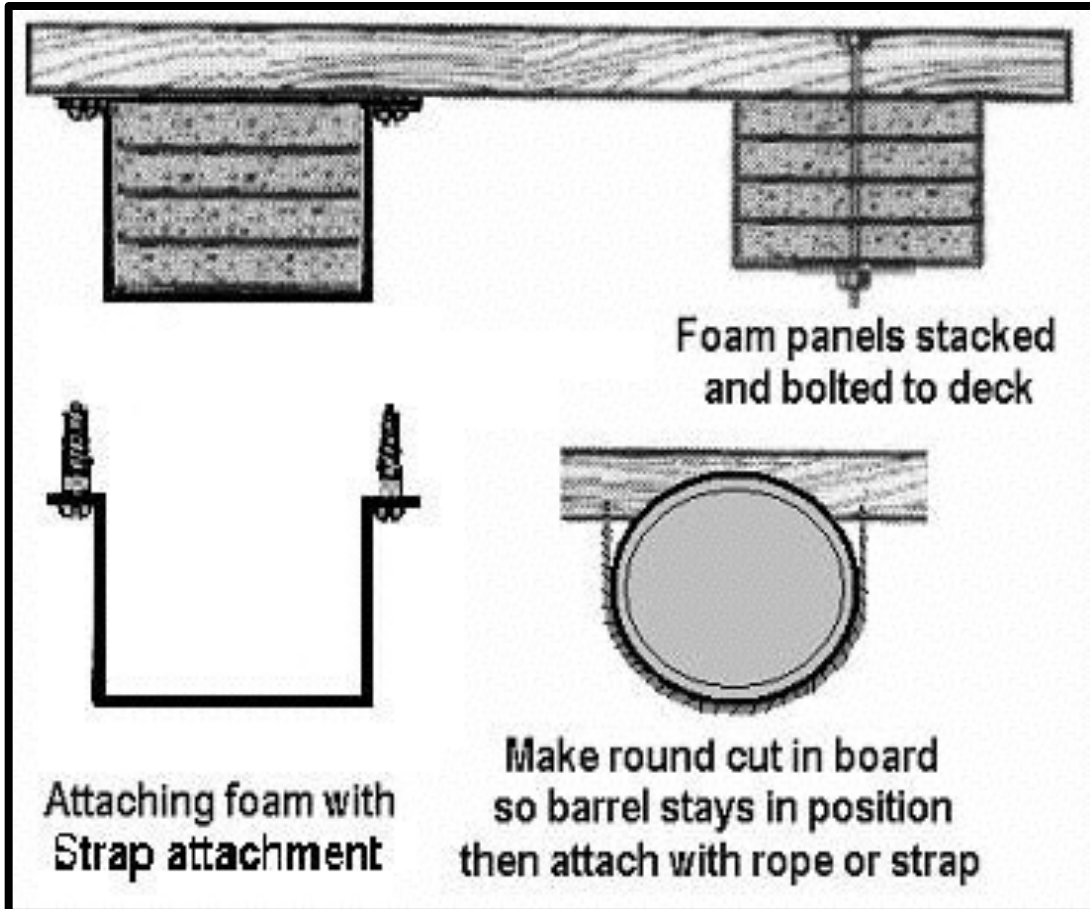
The six basic elements to join together when building a raft are floatation, a deck, propulsion, steering, teamwork, and safety. The information that follows will explain each of these key principles in more detail. This knowledge should give you a good idea on how to build a raft. Rafts can be built from scrap wood, foam, plastic bottles, barrels, and recycled materials of every kind. With a little creativity you can take whatever is around you and recycle it into something that floats. Rafts are as varied as the imagination is capable of conceiving them.

## **FLOATATION MATERIALS – FOAM**

First off rafts are not boats and therefore don't need watertight integrity. This is because they're almost always built from materials that are naturally buoyant. A typical raft can be made out of some combination of foam, plastic barrels or bottles, wood, and anything else that floats. These floating materials will continue to provide lift even when they are damaged. Since a raft doesn't require watertight integrity, it can be built out of anything that is available. The most common material used is foam.

Chunks and odd scraps of foam are often found floating up on riverbanks and beaches. These can be stuffed into a frame you construct out of wood. Expandable foam in a can (used for insulation jobs) quickly spreads out to fill in gaps and cracks. It can be used as glue to hold all your floating objects together inside your hull. The trick is to fill in as much airspace as possible before using the expandable foam. Consider adding things like packing peanuts, small soda bottles with lids, and anything else that is small and will float. If you use a wooden frame to hold everything together be sure to enclose it on all sides with wood to catch any loose pieces of foam.

Sometimes foam scraps can be found at construction sites, in dumpsters, or at the landfill. Always ask for permission before taking any surplus materials being thrown out. Sometimes you can find a marina that has lots of old dock foam pieces piled up. If you ask nicely or offer



do some work for the boatyard you may be able to get some second-hand foam pieces for free.

Foam can also be bought at Home Depot or Lowes if you can't find any for free. The foam there is usually available in sheets and can be cut to size and stacked to form your floats. If you want to glue your foam sheets together, try the adhesive on a scrape piece first to make sure the glue won't dissolve the foam.

### **BUILDING MATERIALS – FREE OR RECYCLED**

Remember, a raft is much more rewarding to build with free recycled materials and on a shoestring budget. Plastic barrels of all types & sizes can also be used as floatation. These can take a lot of abuse without puncturing. These can usually be obtained at your local car wash, bulk juice distributor, or landfill. Be sure to also get the round bungs that are used to cap them and keep them watertight. Don't use a barrel which had toxic chemicals in it as these have the potential to leak harmful pollutants into the river. You could also get a good supply of plastic 5 gallon buckets & lids from a painter or sheetrock worker. Their bulk materials come in these large containers and are perfect for building rafts. Be sure to clean out any residual soap, juice, paint, or plaster before using plastic barrels and/or buckets

The use of plastic buckets for floatation can be very convenient. To begin with they are easy to obtain and can be used as is. They are very durable and do not breach easily when abused or dragged over rocks, mud, or submerged sharp objects. They are also of a manageable size and can be easily adopted into many raft designs.

## HOW MUCH FLOATATION IS NEEDED?

A typical raft must use enough floatation to hold up the raft in the water and support the weight of the crew and any stuff onboard. This will vary for each raft and is dependent on your crew size, the raft's construction, and the materials being used. For each gallon of water you displace with floatation materials you will gain a floating force of about 8 pounds. For example a 55 gallon drum can float and/or support up to 400 pounds of weight and a 5 gallon buckets will hold up to 40 pounds. By comparison 1 cubic foot of foam will provide approximately 60 pounds of floatation. Whatever materials you use to float your raft be sure to build in some margin for error.

For example, let's assume you plan to have three people on your raft and the crew's combined weight is 480 pounds. You might estimate that your raft will weigh another 200 pounds. The total weight would then be 680 pounds. Next, divide this total weight by 8. The answer reveals that 85 gallons of water must be displaced to float the combined weight of the raft & crew. If you were instead going to use five gallon buckets for floatation, 17 would be needed to provide enough buoyancy to float the crew and the raft. If you were going to use foam you would need approximately 12 cubic feet of foam.

It is good practice to have much more buoyancy than what is necessary to just float your raft & crew. This extra floatation allows for a larger margin of safety. This is crucial because it is difficult to estimate the weight of a raft and all the stuff people may decide to bring onboard on race day. You are much better off to have too much floatation than not enough.

The placement of buoyant materials should be equally distributed in order to provide good stability. Most rafts typically place their floatation materials on each side of the raft just like on a pontoon boat. This is your best approach as it will provide good stability. Avoid placing all your floatation materials in one centralized location as this orientation will make your raft very unsteady and tipsy. Another trick to make your raft more stable is to add an outrigger. This is especially effective on longer rafts that aren't very wide.

## THE DECK

The deck of your raft is where you'll be sitting as you go down the river. It should be strong and be able to support the weight of the crew and any gear you'll have on board. The most common deck material used on rafts is plywood that is attached to some sort of wood framing underneath. Don't use old pieces of wood full of splinters as this isn't too comfortable or safe to sit on. Use newer pieces of wood that are strong and robust. Placing a piece of old carpeting on top of the deck will provide a nice surface to sit on.

The deck should have attachment points on the underside of the framing to secure the floatation materials. By drilling small holes in the wood you will create spots

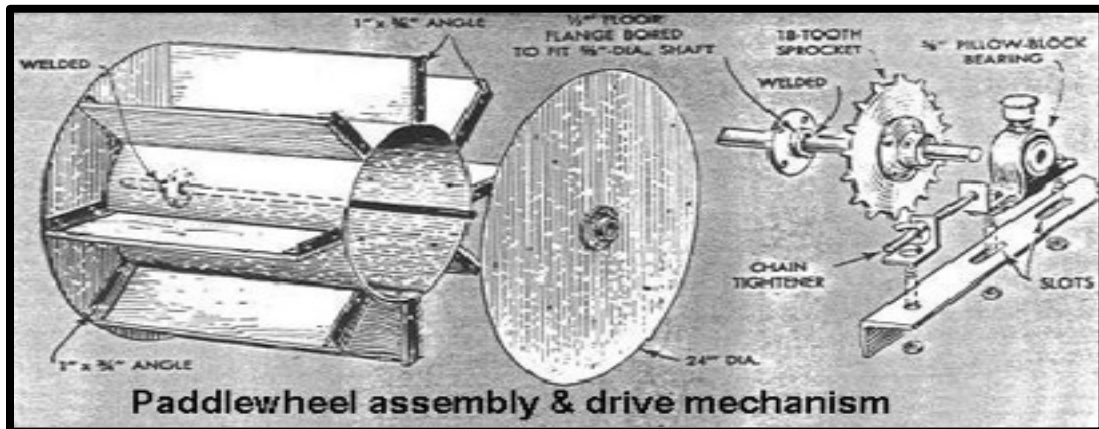


where ropes can be passed thru. You can then tie the floatation materials to the bottom of the raft. A few eyebolts or cleats should also be attached to the deck or framing so that anchor ropes and tow lines can be secured someplace on the raft as well. Screws should be used to connect the deck and framework, don't use nails. Once the raft is wet and starts striking waves it will flex and nails will tend to pull out, get loose, and eventually fall out. Screws stay put much longer. A nice addition to a deck is some sort of canopy to provide shade. A large umbrella will work just fine as will a small tarp and some sort of framework to hang it on.

When designing your deck leave plenty of room for your crew to do their rowing or paddling. If the deck is too small paddlers may bang oars or not have enough room to kneel down or sit comfortably while rowing. You also want some spare room for a small cooler, your first aid kit, anchor, tow ropes, and any other supplies or tools that you will be carrying along on your raft.

## PROPULSION OPTIONS

Rafts will need some way to move through the water. Most participants will use paddles or oars. If you can build some oarlocks this makes the rowing much easier. Another popular choice is to also try using a sail made out of a plastic tarpaulin or bed sheet. Sails are great on windy days but can be unreliable. Sometimes the wind will be blowing the wrong way and other times the wind will blow fast and furious in the intended direction. There is no way to know for



sure if you'll catch a favorable breeze. Be sure to support the mast holding up the sail on three sides with a sturdy rope. This triangulation is necessary to safely hold everything together in a strong breeze.

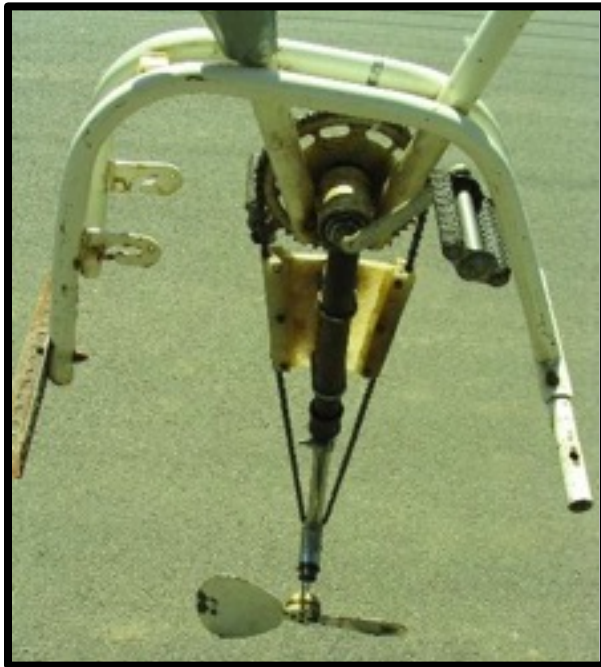
A few raft teams have attempted to build a homemade paddle wheel using an assortment of bicycle parts. These can work quite well if put together properly. A key design element is to have a height adjustment built into the paddlewheel assembly. This is necessary so that the depth of the paddle's engagement in the water can be fine-tuned for optimal performance. Weight distribution on a paddle wheeler must remain stable to ensure good performance.

Another propulsion device that can be built is a homemade propeller. These can

be more complicated to design and may require more than just a few odds and ends from a bicycle. The easiest way to make one is to find an old stationary exercise bike and weld a pipe underneath the sprocket. This pipe should have a T pipe on the opposite end where a sprocket, shaft, bearings, and propeller can be mounted.

The long length of chain needed to run between the two sprockets can be pieced together from two or three separate bike chains. A garage door opener chain can also be used as it is much longer than a bike chain and continuous in length. A chain guide made out of an old cutting board or wood will help keep the chain on the sprockets. This long length of chain will get pushed off the sprockets by the water if it is not supported in some way. You will not need to oil the chain as water is a pretty good lubricant, plus you don't want to be putting oil in the water.

Cut a hole in the deck so the propeller can be put in the water while the frame tubes will rest firmly on the deck.



A homemade propeller blade can be made by attaching a strong piece of metal to a pulley. The pulley can then be mounted on a shaft. Boat & trolling motor props will work but are not optimal for pedal power speeds. A better choice is a larger diameter blade with lots of surface area. You will have to experiment with different shapes to get something that works.

A bicycle driven propulsion system will take a while to refine. The key is to test them out, see how they work, and then make changes until they work right. The extra work can yield a very competitive raft. To see a first class propeller system have a look at the one used on the Little Willie. It has four pedal stations that run two separate submerged propellers. Whatever you end up using for propulsion it is good practice to carry extra paddles with you.

They are handy to have if something breaks and/or stops working properly.

## STEERING

Paddles allow for propulsion and steering around obstructions. But, if you use a paddlewheel, a propeller, or a sail, you will need some other means to steer your raft. In these cases a rudder is absolutely essential. One can be made by simply tying an oar, at its midpoint, to the back of the raft. Some folks use a door hinge and attach a piece of plywood to it. A handle can then be attached to turn the rudder. Being able to navigate

straight on the racecourse and steer clear of obstacles makes rafts safer and easier to control.

## **TEAMWORK**

Teamwork is one of the key ingredients to raft racing. You want to join forces and ideas with as many people as you can. The benefits of this joint effort become evident when looking for building materials, coming up with ideas, and constructing your raft. One of the best parts of the race is the preparation stage. You'll all have fun together and get excited and really make great efforts to get everything done. Each person will have some special talent to contribute. All these different aspects coming together are what make the entire raft race team work.

## **SAFETY**

Safety must be maintained at all times while procuring materials and building the raft. It's no fun to get hurt, so wear safety glasses whenever handling power and/or hand tools. Also

wear gloves when handling your materials and use caution whenever cutting materials. Your teammates may be working nearby on something while you're busy doing something else. Always look out for each other and help one another whenever necessary. A good practice is to use sandpaper or a file to smooth out and remove sharp edges whenever you cut something. Chances are you'll be wearing shorts out on the raft on race day so you don't want to pick up a splinter or get cut on anything sharp. Bend over exposed sharp metal edges and cut off protruding bolts. Then apply duct tape to these sharp edges. Have a first aid kit available during your build sessions and whenever you're out on the water.

## **TESTING YOUR RAFT**

Once you've finished building your raft, test it out to see how it works. This is important because you don't want any surprises on race day. Take your raft to a pond and see if it floats with your crew aboard and everything else you will be carrying. In some cases, you may find that you need a little more buoyancy. In other cases, you might need to reposition some of the floatation materials to help stabilize the raft. Next, find out if your propulsion works as expected. Your crew should try out their rowing stations to see if oarlocks are working right and positioned correctly. Try putting up your sail to verify it is in working order. Be sure to also try out the rudder. Since paddlewheels only need to be submerged slightly they may need to be adjusted up or down to run smoothly. There is a whole list of items that contribute to your raft being a stable platform out on the water. You won't know how well it will work until you try it out. Make any adjustments beforehand and then retest your raft until you get it right. This ensures you will be ready to kick some fanny on race day. Make sure all crew members testing out the raft has on a Coast Guard approved life jacket. Never go out on the water without one and look out for each other at all times.

## EMERGENCY REPAIRS

Be sure to always carry emergency tools, duct tape, bungee cords, rope, fasteners, and anything else you can think of just in case you need to make an emergency repair out on the water. Things can break, come loose, or jam up. You want to be able to mend anything that needs fixing, tightening, or re-attachment. Sometimes periodic adjustments are going to be necessary, especially if you have a paddlewheel. All tools should have a safety lanyard attaching it to the raft or enough foam attached so it won't sink if dropped overboard accidentally. Having the ability to recover from a mechanical problem can be a key factor in winning a raft race. You don't have to succumb to a simple mechanical problem if you bring emergency gear along to save the day.