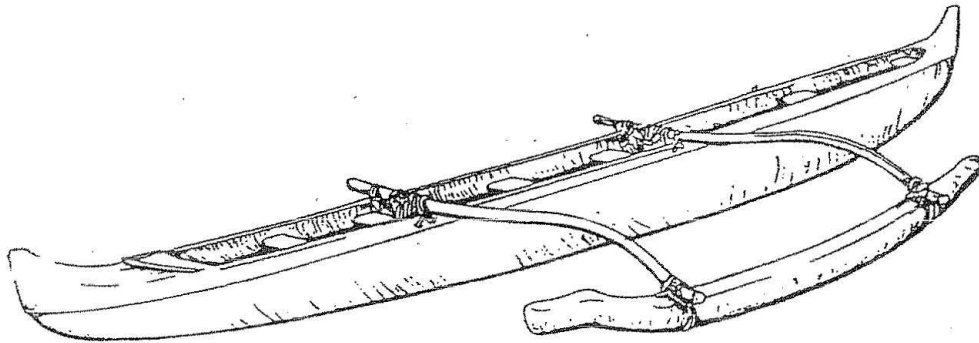


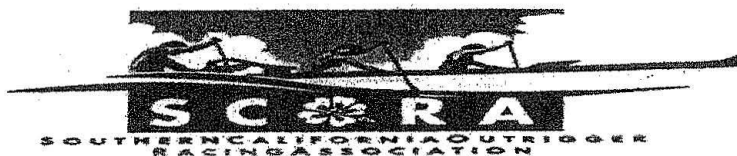
Steersman Accreditation Study Guide

Kama i Ka Huli pu The Art of Righting a Polynesian Canoe



If and when you do Huli pau (capsize), follow these steps and you should be able to be back ho'eing (paddling) again shortly.

Taking into consideration that you haven't gone out in 'ale nui (very big waves, 6 foot +) and in 20 knot makani's (winds) and your pikaos (floatation tanks) are in proper working condition (more than one p'uka (hole) in a tank allows water to enter as air escapes) this method can be used when you are out paddling with your hoa'lohas (friends).



CANOE SAFETY CHECK

1. Plug in tanks
2. Rubber “O” ring on plugs or deck lids okay
3. No cracks, holes, tape patches on tanks
4. No holes or cracks in ama
5. Rigging tight at all 4 points of contact
6. Check buckles for stress
7. If used, check rubber bands for wear and age
8. Proper cord and no wear
9. Check iako for stress cracks
10. Bucket at each wae
11. Check gunnels, seats, and hull for sharp edges
12. Whistle

RIGHTING AN OUTRIGGER CANOE

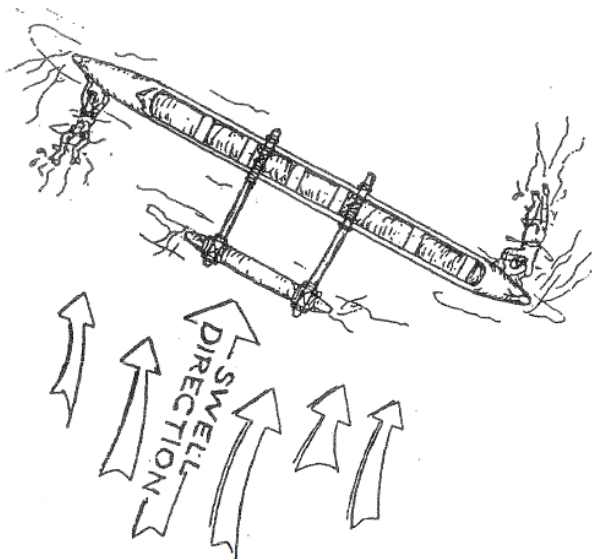
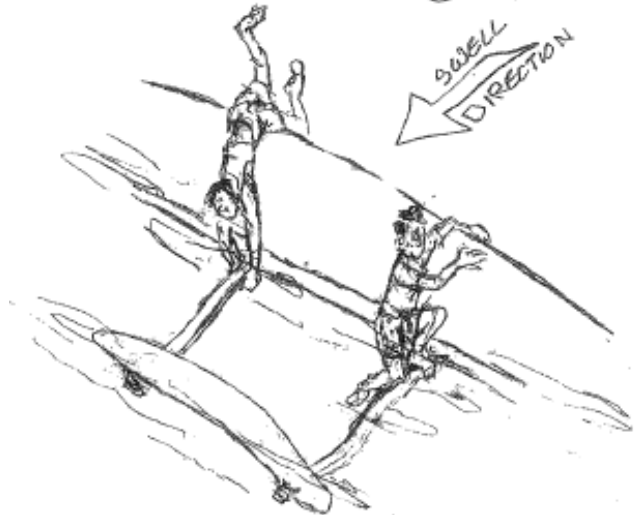
1. Count Heads – steersman take control and have each paddler count off. If you come up one number short, start searching under the canoe.



2. Have one person collect the paddles and any other equipment before they drift away.
3. Get your two or three strongest to go the outer ends of the iakos and stand on them while reaching over the hull grabbing onto the gunnel or iakos and lift. Make sure everyone is out of the way of the ama. If the iako is not protruded over the gunnels on the non-ama side, stand on the iakos on the ama side and reach over to grab the gunnels.
4. If done quickly enough, you can minimize the amount of water that fills the canoe. Have someone read with a bailing bucket to start bailing.

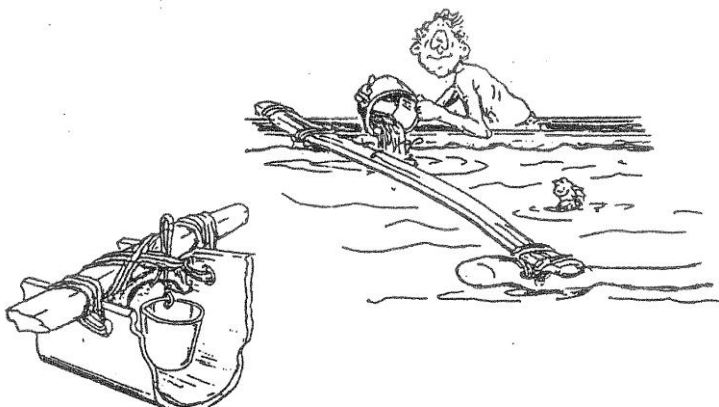
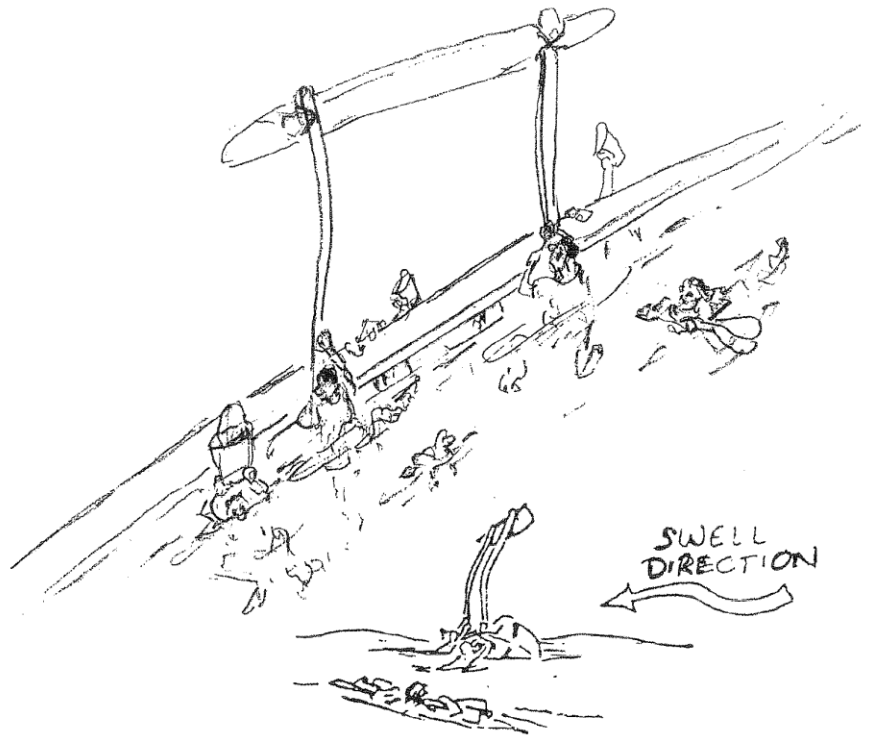


5. If not, consider swell height and direction and position the canoe so that the canoe is parallel to the swell and it is coming from the left side of the canoe



6. Lift the ama in the air, remembering about swell direction so as not to fill the canoe as you are trying to float it as high as possible.

7. The next step takes timing with the swell. Quickly get the ama over and start bailing FAST

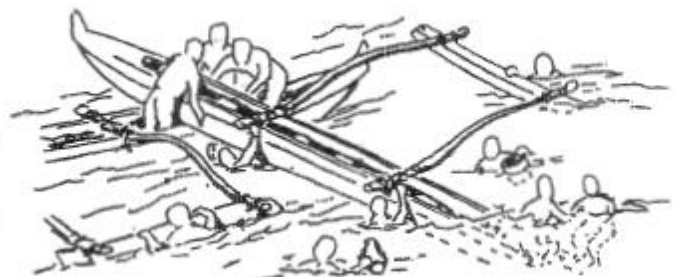


8. If Successful, and your gunnels aren't awash, you can bail out your canoe. When you have a sufficient amount of water out of the canoe, you can put someone in Seat 3 and/or Seat 5 (because of the large bailing area and they are nearest the center of gravity of the canoe) but keep someone on the ama so it doesn't go over again.

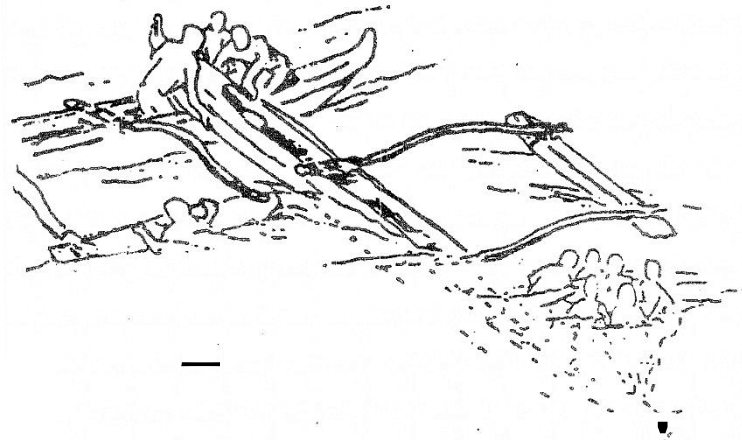
9. While this is going on, have the extra people change with Seat 3 and 5 to help bail and have the person holding the paddles start putting them in the canoe.

10. If you have another canoe around you, you may use it to help bail out water.

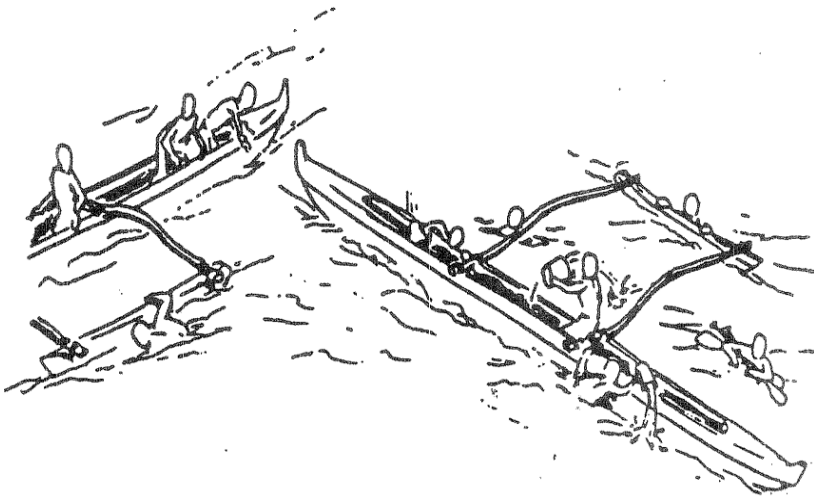
11. One method is to pull the bow of the victim canoe onto the rear of the assisting canoe. This is one of the largest displacement of the canoe and there is more room for pulling. Make sure you keep sufficient weight on the ama or the situation may become more complicated.



12. Either the bow or stern, it is entirely up to the situation but have crew members sit on one end of victim's canoe. This should help raise the other end so it can be pulled out of the water onto the assisting canoe. Be aware at all times of swell direction and bodies in the water.



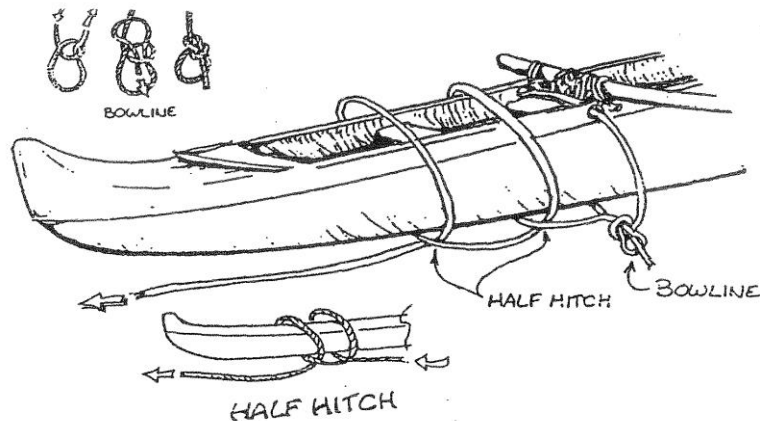
13. When you've pulled the victim canoe out of the water partially, have persons slip off the bow of victim canoe to further get the canoe out of the water. When sufficient water is removed push victim off assisting boat and bail out remaining water.



TOWING A CANOE

If you have to tow the canoe, pull a rope through the iako holes and tie a bowline UNDER the hull (this will help you lift the canoe while it is in tow). Also, tie a half hitch around the bow to help tow the canoe straight.

In large swells, don't stop paddling the canoe forward. If you do, you are more susceptible to swamping or broken rigging.



OTHER "FIX-ITS"

- A big bucket will cut your bailing time down. Two will make the canoe dry faster.
- 4 foot pieces of rubber inner tube can repair any loosened rigging, a broken iako or ama, and tie paddles together
- If a canoe is in disrepair such as faulty floatation tanks, lose or worn rigging, weak or broken iakos or ama, jagged edges or bolts, etc. It should not be used until they are in proper working condition.
- If a canoe cannot be floated by these methods, possibly one way you might try is to rig the canoe for towing. Make sure the half hitches are behind the manu as if you try to tow a fully submerged canoe you may crush the manu as the manufacturers don't realize that the floatation tanks need to withstand towing pressure of a fully submerged canoe. If one tank is compromised (full of water) tow from the other end. Initially towing speed is to be kept to a minimum so as to not further damage the canoe. The towline should be as long as possible, but at least as long as 120' of ½" line. Once the canoe is towing in a straight line have the skipper slowly increase the speed, this usually dumps water from the canoe. Now the trick is to slowly stop and hopefully the canoe has enough water spilled from it. If someone stayed with the canoe and all but one large bucket was left with the canoe (tied in) then maybe you might be lucky enough to have outfoxed King Neptune. Bail like crazy. Have skipper spin around and have someone always handling the slack line as you don't want another situation as a line wrapped around the prop. There are other ways of lifting a submerged canoe but it requires the work of skilled boat operators and riggers.
- If a front manu gets damaged in a race one method of patching it is to place a trash bag over it on the water, but they do make a waterproof duct tape that sticks in wet conditions. They do make a tape that sticks to itself. It can be purchased in a good marine hardware store. One way to dry the nose is to have a couple of your larger paddlers sit near the back of the canoe so as to lift the bow out of the water, so drying enough may have duct tape to stick. Loose rigging can be tightened by using a rubber band long enough to secure the looseness. A 1 inch strip at least 6 feet long should be sufficient.
- A broken iako can be repaired by bundling at least three paddle shafts together then using that bundle as a splint just like a broken leg splint.
- An ama that has a hole or split in it too large to wrap with a rubber band can be burrito wrapped with a yoga mat or cheap air mattress and the 1" wide x 6' long rubber band or any other type of personal floatation device (PFD), ski vest, boogie board, or by placing a couple of 1 liter empty water bottles along the bottom of the ama and rubber banding them in place.
- Whenever you are working on a damaged canoe have your escort driver position his vessel downwind to swell because he'll drift into you, further damaging the canoe and/or persons. Pending on the predicament you should have an extra personnel get on board the escort vessel so as not to have hypothermia become another situation.

Potential needs to address when you do flip or hints to getting you back home safely

- 1) Hopefully your flotation tanks aren't compromised, having two (2) holes in them, then they are compromised, then your chances of getting the boat righted is up to how fast you can bail. A compromised tank will not float an all fiberglass hulled canoe. Towing the canoe is the safest way to get the canoe home.
- 2) Any outside assistance should come from the downwind side. An escort boat is like a sail and the wind and swell would bring the assisting vessel closer to the canoe in peril. Whereby potentially hindering the righting process or people in the water
- 3) If the escort boat had an inflatable, then maybe that vessel could help in righting the swamped canoe.
- 4) Placing other flotation devices under or in the canoe could help in lifting a submerged canoe. Anything that provides flotation and displaces the water in the hull (Beach balls, boat fenders, air mattresses, life jackets tied to underneath the seats, yoga mats, seat cushions, etc.)
- 5) Do not attempt to right a canoe by using a escort vessel as a platform. The reason you flipped was because it was too rough, and trying to get a submerged canoe floated by bringing it aboard a vessel is inviting more hazardous situations.
- 6). Tow a submerged canoe from whatever end is floating. Tie a line around the canoe from behind the iakos (either end), then tie two successive half hitches around the hull at the ends or use a tagline tied to the towline at the bow or stern section. The position of the tag line is about 2' from bow or stern. You are trying to establish a tow point closest to the bow or stern, any farther back the submerged canoe won't follow the tow vessel. In this situation, you will be Towing at about 2 knots. Towing a non submerged canoe can be safely towed about 10 knots.
- 7) Right after you righted the canoe, have the smallest person get in to bail right away. Reason being, the weight of bigger people could resink the canoe. Once the sufficient amount of water is out trade out the smaller for the bigger person so as to get more from them and the canoe bailed faster. Also, have all bailing devices ready for use immediately.

8) Having one person on or holding onto the ama during all this is lessening the potential reflip. Having persons at bow and stern will keep the canoe parallel with the swell, this lends itself to the canoe riding the swells evenly.

9) If you do tow a submerged canoe, there is no need to leave a steersmen in the canoe. They will just end up hurting themselves whereby hindering the towing process.

10) Immediately after counting heads, pick up bailing devices and paddles next. Clothing, water bottles, hats can be replaced.

11) Putting a little spray foam insulation into the nest of the bailing bottle or tying a rope with a small float on it will make those items visible for retrieval to start the bailing process.

12) Doing some simple math of a swamped canoe= A 45' canoe has 115 cubic feet of space that could've filled with water upon submersion. And having 7.4 gallons per cubic ft. You'll have 800 plus gallons to remove, so having one 5 gallon filled bailing bucket, it will take 170 bucket fills to rid the canoe of liquid and you'll to be paddling again. We all know that a full bucket of saltwater weighs 35 pounds, so you will be doing resistance training during the bailing exercise also.

13) If you flip in a 9 man race, it might be smart to have a crew change take place at that point in time. Everybody on the roster can lend a hand to right the canoe. Just be careful getting back into the escort boat you maybe extra tired from lifting the water out of the canoe.