

# Canadian Outrigger Racing Association

# Safety Manual

#### **Introduction**

#### CANADIAN OUTRIGGER RACING ASSOCIATION

- Safety is not just NOT having accidents...it is a SYSTEM of daily practices, it is an attitude, and it is a mind frame we race and train in, and IT IS SIMPLE :
- If it is not safe...stop, do not do it.
- It is of course simple and complex and sometimes only experience will guide you.....this manual is to guide your mind as paddling trains your body
- It is always easier to stop and say NO than to explain later to parents, to the police, to a judge, or to your best friends why you decided to continue doing something that was clearly, IN HINDSIGHT, not safe
- So always be careful....yes all that stuff your mother said......it is true...so do not be unsafe
- This manual is a list of things as a paddler you should already know. The instant we publish this manual it becomes our expected standard of care
- This manual is always under revision and suggestions are always welcome...any suggestions should be emailed, phoned pony expressed, or even sent by Canada post to CORA executive.
- This manual incorporates parts of the Australian, Californian outrigger safety manuals, and by using as a reference the materials from Canoe Kayak Canada

All revisions to this manual must be approved by CORA board members of the current year, and the revision date and summary must be appended here.

Original Publish Date - November 23, 2009

TABLE OF CONTENTS Introduction	- 1 -
CHAPTER 1 - SAFETY MANUAL	- 4 -
CHAPTER 2 - SAFETY OF PARTICIPANTS	- 5 -
CHAPTER 3 - RESPONSIBILITIES OF CLUBS	- 7 -
CHAPTER 4 - CANOES, KAYAKS, DRAGON BOATS, OUTRIGGER CANOES & EQUIP	- 9 -
CHAPTER 5 - SAFETY AT REGATTAS AND IN TRAINING	10 -
CHAPTER 6 - RESPONSIBILITIES OF THE OFFICIALS	11 -
CHAPTER 7 - RESPONSIBILITIES OF THE COACHES	12 -
CHAPTER 8 - RESPONSIBILITIES OF MOTOR BOAT DRIVERS	13 -
CHAPTER 9 - COLD WATER CONDITIONS & GUIDELINES	14 -
CHAPTER 10 - COLD WATER EFFECTS	15 -
CHAPTER 11 - WEATHER	17 -
CHAPTER 12 - SANCTION FOR NON-COMPLIANCE	17 -
CHAPTER 13 - JUNIORS	18 -
CHAPTER 14 - OUTRIGGER SAFETY AND RISKS	20 -
14.1 EQUIPMENT 14.2 INAPPROPRIATE USAGE. 14.3 EQUIPMENT FAILURE THROUGH WEAR AND TEAR OR ABUSE 14.4 RIGGING MATERIALS. 14.5 ADDITIONAL SAFETY EQUIPMENT 14.6 CLOTHING REQUIREMENTS. 14.8 SITE WATER SAFETY. 14.11 RESCUE AND TOWING TECHNIQUES. 14.13 USE OF POWER BOATS 14.16 HYPOTHERMIA. 14.17 HYPERTHERMIA. CHAPTER 15 - OPEN WATER SAFETY AND RISKS	- 21 - - 21 - - 21 - - 23 - - 23 - - 23 - - 24 - - 29 - - 30 - - 30 - - 34 - - 36 - - 37 - <b>39 -</b>
<ul> <li>15.1 METEOROLOGY</li> <li>15.2 Oceanography</li> <li>15.3 WAVE AND SWELL ACTION</li> <li>15.4 BEACH TYPES</li> <li>15.5 WAVE TYPES</li> <li>15.6 TIDES AND CURRENTS</li> <li>15.7 HEADLANDS AND REEFS</li> <li>15.8 RESCUE AND TOWING TECHNIQUES</li> <li>15.10 USE OF POWERBOATS</li> </ul>	- 41 - - 42 - - 43 - - 45 - - 46 - - 46 - - 47 - - 47 - - 48 -
CHAPTER 16 -OUTRIGGER PADDLING AND THE LAW	49 -

CHAPTER 17 - OUTRIGGER SAFETY - A SUMMARY	54 -
APPENDIX A - PARTS OF OUTRIGGER	59 -
APPENDIX B – Canadian Red Cross – AquaQuest 6	60 -
APPENDIX C - CANADA SHIPPING ACT	61 -
APPENDIX D – Accident Report Form	62 -
APPENDIX E – FIRST AID KIT CHECKLIST	64 -
APPENDIX F - PARTICIPANT PROFILE	65 -
APPENDIX G - COLD WATER CONDITONS WAIVER	66 -
APPENDIX H -EMERGENCY ACTION PLAN (EAP)	67 -

#### CHAPTER 1 - SAFETY MANUAL

The implementation of a Safety Manual is a complex task because many people are involved at various levels. Thus, one of the key elements of effective implementation is teamwork. In other words, all the people concerned with outrigger racing need to know their roles and how to evaluate and minimize the risks faced by any individual involved in the sport. Please identify which role(s) you assume in our sport.

Who are you in the risk management team?

- Participant (Athlete)
- Coach
- Official
- Parent
- Volunteer
- Boat Driver
- Spectator
- Site Manager or Employee
- Administrator

After you have identified your role(s), you will be able to better intervene and interact with the other team members. In this way, you will contribute to the creation and maintenance of a secure and safe environment.

The C.O.R.A. Safety Manual operates under the Regulations of the Canadian Coast Guard's Office of Boating Safety. All users of this Safety Manual should be familiar with the Office of Boating Safety's publication, "Safe Boating Guide". For convenience, the Guide is referenced in this document. It can be accessed at the following Internet address:

www.ccg-gcc.gc.ca/obs-bsn/sbg-gsn/main e.htm

The Office of Boating Safety can be reached at: 1-800-267-6687 (in Canada only)

#### CHAPTER 2 - SAFETY OF PARTICIPANTS

- 1. A participant is defined as a person who is taking part in an on-water canoeing activity under the sanction of a C.O.R.A. member club.
- Clubs must ensure that potential participants have sufficient swimming ability prior to their participation in water-related programs. All participants should, as a minimum, be able to swim at the level of the Canadian Red Cross "AquaQuest 6". To reach this level the participant must meet the requirements detailed in Appendix B – Canadian Red Cross – AquaQuest6.
- 3. Any participant who does not pass a club swimming test must wear a Government of Canada approved Personal Floatation Device ("PFD") in the manner in which it was intended, while engaged in all on-water activity.
- 4. Cold Water Conditions require special safety precautions. When the water temperature is below 8 degrees Celsius, the following precautions apply:

# Participants below the age of 18 must wear a Government of Canada approved Personal Floatation Device (PFD).

Participants 18 years of age or older are strongly advised to wear a Government of Canada approved Personal Floatation Device (PFD). Should participants 18 years of age or older choose not to wear a Government of Canada approved PFD during training they do so at their own risk. Clubs should ask these athletes to sign a Cold Water Conditions Waiver (see Appendix G)

*NOTE:* Coast Guard Regulations with regard to safety equipment still apply. (See Chapter 9 – Cold Water Regulations & Guidelines and "Chapter 10" – Cold Water Effects).

5. All participants engaged in dragonboat paddling must wear a Government approved PFD while in the boat.

#### Awareness of Risks and Waiver

- 6. All participants should be aware of the risks and dangers involved in practicing canoe or kayak.
- 7. In order for a person of less than 18 years of age to participate in a training program or competition, one of their parents, or legal guardian, shall sign a Waiver form stating that they are aware of the risks of practicing Outrigger Canoe Paddling and Racing.
- 8. In order for a person aged 18 years of age or older to participate in a training program or competition, they shall sign a form stating that they are aware of the risks of Outrigger Canoe Paddling & Racing.

#### Responsibilities of the Participant

- 9. Participants must observe all safety rules that may affect their own safety or the safety of fellow participants.
- 10. The participant needs to:
  - (a) inform the Coach of any change in their health which may affect their ability to safely participate in Club programs, or which affects their well-being, or many endanger the safety of the other participants;
  - (b) inform the Coach that they are using or under the effect of any medicinal drug;
  - (c) refrain from drinking alcoholic beverages or using drugs, which may affect their ability to train or compete in a safe manner;
  - (d) be aware of hypothermia and other water-related dangers, and know how to take the appropriate measures and precautions.
- 11. Participants must take responsibility for their own safety (note Sections 3, 4 and 5).

#### CHAPTER 3 - RESPONSIBILITIES OF CLUBS

- 1. Every Club should develop and post a "Safety Manual" based upon this manual. The Club should promote this "Safety Manual" and any visual aids on-water safety, lifesaving, hypothermia or resuscitation procedures.
- 2. Every Club should appoint a Club Safety Officer. The Safety Officer shall be responsible to ensure that the Club adheres to this Safety Manual as well as any other safety measures that may apply. The Safety Officer shall ensure that the Club has sufficient safety equipment and that all safety equipment is in good working order. The Officer shall monitor environmental conditions and shall issue appropriate safety directions such as those referred to in Chapters 9 and 10.
- Clubs must ensure that potential participants have sufficient swimming ability prior to their participation in water-related programs. All participants should, as a minimum, be able to swim at the level of the Canadian Red Cross "AquaQuest 6". To reach this level the participant must meet the requirements detailed in Appendix B – Canadian Red Cross – AquaQuest 6.
- 4. Every Club should have an Emergency Action Plan (EAP), which has to be known by key administrators, employees and Coaches (See Appendix H).
- 5. A list of emergency telephone numbers should be displayed prominently in the EAP and posted at a visible location (see Appendix H Emergency Number Card).
- 6. Every Club should maintain a First Aid Kit (see Appendix E Sample First Aid Kit Checklist) and a telephone.
- Every Club should record accidents that occur during Club sponsored activities. Accident Reports shall be maintained with the Club membership database (see Appendix D – Sample Accident Report Form).
- 8. Clubs should ensure that all equipment is in proper condition. (see Section 4).
- 9. Clubs should promote water safety and take active steps to encourage members to learn life-saving techniques.
- 10. Clubs should take active steps to ensure that coaching staff are trained in lifesaving and resuscitation procedures by attending courses and other appropriate measures.
- 11. Clubs should promote the "Safe Boating Guide" published by the Canadian Coast Guard. <u>www.ccg-gcc.gc.ca/obs-bsn/sbg-gsn/main\_e.htm</u>
- 12. Club activities should be coordinated with those of other water users to minimize the risks of an accident.

13. Clubs should require all new participants to complete the "Participant Profile" before engaging in Club programs. The Club should keep a copy of the profile on file and it should be readily accessible in emergencies.

CHAPTER 4 - CANOES, KAYAKS, DRAGON BOATS, OUTRIGGER CANOES & EQUIP

- 1. All canoes, kayaks, dragon boats and outrigger canoes shall be maintained in a safe and floatable condition.
- 2. Racing canoes and kayaks have special exemptions under the Canada Shipping Act, Small Vessel Regulations.
- 3. All motor boats or other craft used for Coaching, officiating, or for Regatta safety must meet the minimum requirements as set down in the Canada Shipping Act, Small Vessel Regulations (See Appendix C). In addition, there may be Provincial or Municipal Regulations, which may also need to be followed.

The following website address will take you directly to the minimum equipment Regulations for powered pleasure craft not over 6 meters in length:

http://www.tc.gc.ca/BoatingSafety/menu.htm

#### CHAPTER 5 - SAFETY AT REGATTAS AND IN TRAINING

- 1. All the appropriate emergency measures shall be put into place on the Regatta site and the following items should be available:
  - .. drinking water
  - .. ice
  - blankets
  - .. adequate sanitation
  - .. first aid kit
- 2. Telephone communication shall be available at the site to use in the event of an emergency
- 3. At least two (2) safety boats, including Officials' boats, shall be "on-the-water" during all races. Race conditions, course layout may dictate the need for additional safety boats. Race participants should always be in view of a safety boat.
- 4. At least two (2) members of the safety crews should be trained in basic first aid, life saving and cardiopulmonary resuscitation.
- 5. Where possible, paddlers should stay close to shore during rough water and/or cold weather conditions.
- 6. Outrigger paddlers must use the "buddy system". In other words, each paddler must identify a "buddy" at the start of the practice. In the event of a tip, each paddler must find their buddy.
- 7. In the event of a tip of an outrigger canoe, the captain, coxswain or steersperson must count heads to ensure that all paddlers have their heads above water.
- 8. Paddlers using OC1 and OC2 should use safety leashes at all times.

#### CHAPTER 6 - RESPONSIBILITIES OF THE OFFICIALS

- 1. The first duty of Officials is to ensure the safety of the Participants.
- 2. Officials must be familiar with and enforce this Safety Manual.
- 3. Officials shall know the site's emergency procedures and be familiar with the host Club's EAP.
- 4. All Officials who serve in "on-water" positions should be able to swim to the equivalent of the Canadian Red Cross "AquaQuest 6", or wear a Government of Canada approved PFD".
- 5. In the event of a tip of an outrigger canoe, Race Officials must count heads to ensure that all paddlers have their heads above water.

#### CHAPTER 7 - RESPONSIBILITIES OF THE COACHES

- 1. All Coaches must be familiar with and enforce this Safety Manual as a minimum level of safety.
- 2. All Coaches should be able to swim to the equivalent of the Canadian Red Cross "AquaQuest 6", or wear a Government of Canada approved PFD.
- 3. Before coaching at a new site, a Coach shall become familiar with the site and water conditions in order to become aware of any hazards, obstacles, or currents that may endanger participants.
- 4. The Coach shall also know the Emergency Action Plan for the site and the location of First Aid Kits and any other safety equipment.
- 5. Coaches should be trained in first aid, and cardiopulmonary resuscitation.
- 6. All Head Coaches in charge of, or supervising, on-water activities should have, as a minimum, NCCP Level 1 or ELCC Certification.
- 7. Coaches should be aware of any relevant medical conditions of Participants.
- 8. Coaches should identify medical problems of an athlete when completing Regatta Entry Forms.

#### CHAPTER 8 - RESPONSIBILITIES OF MOTOR BOAT DRIVERS

 All boat drivers (including Coaches & Officials) must comply with Transport Canada's Motor Boat Regulations. Motor boat drivers, known in the Regulations as "operators of pleasure craft fitted with a motor" must have proof of competency as follows:

How this applies to operators	Date for proof of competency required on board
All operators born after April 1, 1983	September 15, 1999
All operators of craft under 4m in length including personal watercraft	September 15, 2002
All operators	September 15, 2009

- 2. All drivers are to operate motor boats and equipment with extreme care. They should familiarize themselves with the Canadian Coast Guard's Safe Boating Guide that can be found at: <a href="http://www.ccg-gcc.gc.ca/obs-bsn/sbg-gsn/main\_e.htm">www.ccg-gcc.gc.ca/obs-bsn/sbg-gsn/main\_e.htm</a>
- 3. Boat operators must take the appropriate course and possess a valid Operator Competency Card issued by Transport Canada.
- 4. Boat Operators must be at least sixteen (16) years old.
- 5. Boats are to proceed at SLOW speed in the vicinity of docks and swimming areas.
- 6. Boats are to approach swimmers, wharves, canoes, kayaks, etc. in the safest possible manner depending on the circumstances.
- 7. Boat drivers are to monitor fuel tanks periodically and avoid interrupting their availability as an on-water safety boat.
- 8. Boat drivers are to be alert at all times, paying particular attention to instructions from Officials.
- 9. Boat drivers are to be observant of all activity in their surrounding area, 360 degrees.
- 10. Motors are to be shut off before final approach to a swimmer, and a rescue boat should use a reaching assist to help retrieve a swimmer.
- 11. Extreme care must be taken to ensure that the wake does not interfere with, or cause hazard to racing boats, either on the course or on the course sides.

- 12. Boat drivers should be rotated as close to the scheduled times as possible, but at no time should a driver abandon his duties until relieved.
- 13. In the event of a tip of an outrigger canoe, the safety boat drivers shall proceed immediately to the area of the swamped or overturned boat. The engine shall be stopped and paddlers' heads must be counted to ensure that all paddlers have their heads above water.

#### CHAPTER 9 - COLD WATER CONDITIONS & GUIDELINES

- 1. The Club Safety Officer and/or Head Coach shall monitor environmental conditions, including water temperature, air temperature, wind, and precipitation. Appropriate safety measures shall be undertaken. They include the following:
  - All persons shall wear protective clothing appropriate for the conditions and their activity
  - Cold water/weather conditions require special safety precautions. When the water temperature is below 8 degrees Celsius, the following precautions apply:

# Participants below the age of 18 must wear a Government of Canada approved PFD.

#### A safety boat must also accompany the participants during on-water training

Participants 18 years of age or older are strongly advised to wear a Government of Canada approved PFD. Should participants 18 years of age or older choose not to wear a Government approved PFD during training they do so at their own risk. Clubs should ask these athletes to sign a Cold Water Conditions Waiver (see Appendix G).

**NOTE**: Coast Guard Regulations with regard to safety equipment still apply.

> Where possible, participants should stay close to shore during on-water

Training. If the on-water training environment is within range of a communications network, Coaches should be encouraged to carry a cell phone while on the water.

(see Chapter 10 for more information on the responses of the human body to cold water as well as general principles for rescue and treatment)

#### CHAPTER 10 - COLD WATER EFFECTS

The human body loses more heat when wholly or partially immersed in water than it does while only expose to the air. Thermal loss in water is 2 to 5 times greater than in the air.

Most experts in immersion, hypothermia and cold water near drowning/drowning define cold water as temperatures below 20C. Hypothermia is defined as a drop in body temperature below the normal level. At this lower temperature, a person's muscle and mental functions are affected. A person exposed to cold water, and becoming hypothermic, can exhibit certain progressive signs and symptoms. They are as follows:

- Shivering and slurred speech, conscious but withdrawn at the early stage
- Slow and weak pulse, slow respiration, lacks co-ordination, lacks muscle strength, irrational, confused and sleepy at intermediate stage; and finally
- Weak, irregular or absent pulse or respiration, loss of consciousness at final stage.

If you end up in the water, do everything you can to conserve body heat.

- Wear your PFD or lifejacket. Valuable energy will be lost keeping your head above water if you are not wearing it.
- Climb onto your boat to get as much of your body out of the water.
- If alone and your boat sinks, adopt a "heat escape lessening position" (H.E.L.P.) by crossing arms tightly against the chest and by drawing the knees up close to the chest.
- If with others and your boat sinks, "huddle" with other persons by getting the sides of everyone's chest close together with arms around the mid to lower back and legs intertwined.

#### Rescue and Treatment

The general principles include:

- The safety of the rescuer(s) as well as the casualty must be ensured at all times.
- The point of rescue is the vulnerable time for rescuers and casualties.
- Victims of immersion incidents should be handled gently, placed and maintained in a horizontal position as much as possible.
- Consider the mechanism of injury for possibility of trauma, but realize the biggest immediate threat is likely to be the airway due to the aspiration of fluids. Medical observation is recommended as the effects of aspiration can be delayed for hours.
- Upon recovery, the objective is to prevent further heat loss. Remove wet clothing if the environment allows, insulate with available materials and remove to shelter.
- Any re-warming attempts of the hypothermic casualty should be passive and focus upon the body core. Rapid full surface warming is to be avoided.
- Pulses in the hypothermic casualty are hard to find and should be assessed for up to two minutes at the carotid artery prior to CPR. If CPR is indicated, it should be at the normal rate for the age of the casualty.

#### CHAPTER 11 - WEATHER

- 1. No boats, canoes or kayaks should be on the water when there is fog with visibility of less than 25m or out of sight of the shoreline.
- 2. If a lightning/thunder storm occurs during training all boats should return to shore as soon as possible.
- 3. If a lightning/thunder storm occurs during a Regatta, all paddlers shall follow the Officials' instructions.
- 4. If any other bad weather conditions occur, all paddlers must go to a safe area.

#### CHAPTER 12 - SANCTION FOR NON-COMPLIANCE

- 1. Clubs are responsible for the enforcement of the Manual of Safety at their Clubs and by their participants at Regattas or other events. Clubs bear the responsibility to discipline or suspend any participants, Coach or organizer violating C.O.R.A.'s Safety Manual.
- 2. C.O.R.A. has the right to discipline or suspend any Club, participant, Coach, Official or organizer who violates C.O.R.A.'s Safety Manual at a C.O.R.A. sanctioned event.
- 3. The Competition Committee at nationally sanctioned events has the right to discipline or suspend any Club, participant, Coach, Official or organizer who violates C.O.R.A.'s Safety Manual.

#### CHAPTER 13 - JUNIORS

Junior development programs must be particularly well planned and safe. Climate and water temperature considerations must factor into almost all aspects of safety. Some of the concerns listed below may seem a little over zealous but remember that we are dealing with youth who don't necessarily think about the potential dangers, and things can go very wrong quickly on the ocean: it is vital that all the potential safety risks are covered to ensure personal safety.

All new junior paddlers must fill in a form that lists any medical concerns and an individuals' swimming ability. The form should also have emergency contact numbers. This could be part of the club's registration package.

A clothing list should be distributed to all juniors before they come to practice. Many youth do not understand the dangers associated with our cold climate. Due to economic considerations we can't expect our juniors to have wetsuit boots or other hightech. warm weather gear but, if not taught otherwise, some youth are certain to come to practice on a cold day wearing nylon shorts or jeans and a cotton T-shirt. They should not be allowed on the water unless dressed properly for the conditions. Cotton clothing of any sort should be discouraged; even in the warm summer months a wet crew wearing cotton on a windy day will get very uncomfortable. Even with a clothing list and a meeting to discuss clothing issues, some juniors will come unprepared: if spare clothing is available then perhaps they can be accommodated. Do not let inappropriately dressed juniors in a boat as this sends the wrong message to others.

Personal floatation devices must be worn by all juniors at all times regardless of swimming ability. The PFD also acts as an insulator.

Junior crews should always have the ama weighted until they become proficient at paddling and righting a canoe.

Juniors must be competent with righting an overturned outrigger. Huli clinics can take place at a local pool prior to going out on the water so that all paddlers are familiar with the procedures before getting into an outrigger. Procedures should be reviewed prior to practices; each seat has a job so just call out the seat number and make sure that each seat knows their responsibility. Once an OC6 suddenly overturns the crew may become disoriented and forget individual responsibilities so give a two minute review before practice. Many juniors love the thrill of jumping into the water so, once the weather warms up a huli clinic can be arranged in the ocean but this should not take place until July so book a pool in the meantime.

**Juniors should stay within 5 boat-lengths from shore**. This is not always easy to control but it should be encouraged as much as possible. They should never be farther from shore than they can comfortably swim.

A coach boat with a qualified power squadron operator should accompany all junior practices on the water. School districts have a Junior/Adult ratio policy. This ratio may differ between districts and for different environments. For example, ratio for land activities will differ from that of water activities. Coquitlam school district has a 1/12 adult to junior ratio for water activities.

#### \*\*\*\*\*

Look at long-term athlete development in terms of a junior program – is the program going to support future generations of paddlers? Physiological and psychological factors must be considered in program planning (good technical training, social implications, over-use injury prevention, education regarding nutrition and hydration, adequate preparation for long distance racing vs sprint type races.)

#### CHAPTER 14 - OUTRIGGER SAFETY AND RISKS

Content

- 14.1 Equipment
- 14.2 Inappropriate Usage
- 14.3 Equipment Failure Through Wear and Tear or Abuse
- 14.4 Rigging Materials
- 14.5 Additional Safety Equipment
- 14.6 Clothing Requirements
- 14.7 Hydration and Fuel
- 14.8 Site Water Safety
- 14.9 Physical Condition of the Paddler
- 14.10 Group Management
- 14.11 Rescue and Towing Techniques
- 14.12 Legal Responsibilities of the Coach
- 14.13 Use of Power Boats
- 14.14 Care, Prevention and Management of Injuries
- 14.15 Warm Up and Stretching
- 14.16 Hypothermia
- 14.17 Hyperthermia
- 14.18 Travel

#### 14.1 EQUIPMENT

Equipment can pose a danger in itself so it is essential that ritualistic and thorough checking of equipment is carried out on a regular basis each and every time before usage and can be categorized into a number of elements:

(a) the canoe and its associated elements (seats, manu, spreaders, bulkheads etc)

- (b) rigging materials
- (c) clothing

(d) paddles

- (e) safety equipment first aid equipment, towing ropes, lighting, bailers, flares
- (f) rescue/support craft and all its components
- (g) all other associated pieces of equipment which may be employed

#### 14.2 INAPPROPRIATE USAGE

Equipment of all types has its limitations. Use of equipment beyond its intended design and functional capabilities can result in undue stress and breakage is often a consequence. Select equipment based upon its intended usage so as it performs optimally within a safe range as its design dictates.

#### 14.3 EQUIPMENT FAILURE THROUGH WEAR AND TEAR OR ABUSE

A common cause of equipment failure is due to general wear and tear or abuse. Wear and tear occurs over time, whereas abuse results from damage in a brief moment. In any event being put at risk due to paddling with equipment that has been subject to either factor is avoidable through appropriate maintenance and constant checking of such equipment.

Some elements of equipment are particularly prone to damage and wear and tear and these in particular need to be constantly checked and include:

**Manu** The front and rear raised extremities of the canoe are often subject to impact through collision and cracks and splits can occur. Should damage occur here this could lead to the potential for water to enter the bulkheads.

**Bungs** Threaded bungs used to seal front and rear bulkheads and ama pose a number of potential flaws. Check the seal around the female attached unit to the craft. These are often sealed with silicon or similar material that is prone to deterioration causing water to seep behind the unit and into the tank.

Plastic and nylon bungs often become "threaded" and therefore loose their seal. Check that no sand is present as this also causes breaks in the seal. Ensure all bungs are functional. Tighten before going on the water and release once back on land. Replace faulty or ill fitting bungs. Ensure they are of the same thread diameter and pattern.

**Seats** Seats should be checked for signs of cracks, particularly where they join to the hull. Check for rough edges.

**Spreaders** (**Wa'e**) The point at which the iako attach to the canoe. These absorb huge amounts of torque and leverage pressures and need to be checked for signs of stress.

**Lashing Holes** Check for stress fractures around edges of holes and ensure there are no sharp edges that can cut into the lashing ropes.

**Iako** These laminated wooden spars are constantly under a great deal of pressure. Check for delamination (separation) of the laminates and in particular for stress around the point at which the iako leaves the canoe. Check the lashing pegs at the extremities of the iako.

**Ama** Check the seams for splits and delamination. Check bung and the iako mounts and lashing holes for signs of stress. Lift ama up and shake to determine if it contains water. Check at the beginning and end of each session. To check if ama is airtight, remove bung and blow inside until pressure is felt, then release. Air should come out under pressure.

Note: If ama contains water, which is hard to remove, once ama is detached from iako, turn upside down and blow inside until pressure is felt, then release pressure and water will be forced outwards. Use this method to detect splits/cracks. Listen for air escaping under pressure, once sealed.

**Non-Slip Flooring** Ensure canoe has adequate non-slip surface where paddlers' feet contact. Non-slip paints can be added or wax. Traction is essential for effective paddling and leg drive.

**Bulkheads** Check overall condition of front and rear bulkheads. Remember two holes within a bulkhead allow water to enter and air to escape so as bulkhead has the potential to fill up with water.

Hull Check the hull for cracks or abnormal wear.

**Gunnels** Check gunnels for cracks. Check area around spreaders for signs of stress.

**Pal Kai (Weatherboard, Splashboard)** Essential in keeping water from spilling over the bow and into the canoe. Check for signs of stress and breakage. Vulnerable to damage.

#### 14.4 RIGGING MATERIALS

The lashing material that binds the outrigger assembly together falls under two areas of concern in terms of the quality of the technique and attention to detail with which the rigging is given. The best lashing materials used will not make up for poor rigging technique just as excellent rigging technique will not make up for poor rigging materials. Each must be of the highest quality to ensure maximum safety and therefore secure lashing of all the outrigger components.

Constant checking of the rigging is essential to the safety of the canoe and its crew.

**Rubber** Check for splits, UV damage and general wear as rubber perishes rapidly when exposed to the elements. Renew rubber regularly.

Ensure that it is pulled extremely tight, that there is no sagging or twists and that it lies flat. Ensure that there is no sand between the lashings as sand is a harsh abrasive that will quickly cut short the life of the rubber.

**Cotton Sash** Cotton, being of an organic nature is prone to reasonably rapid deterioration and is particularly vulnerable to rotting through dampness.

Tell tale signs include black staining in areas where the cotton fails to dry out. Check for "powdering" between the braids. Check for excessive stretching.

Cotton lashing using the diamond weave technique should be re-rigged once a month.

Look for signs of abrasion, particularly where the cord passes through the lashing holes. Always replace worn or rotting cord.

**Snaplashes** Snaplashes, incorporating nylon webbing and stainless steel buckles should be checked for signs of strain to the pivot points of the buckles. Ensure the webbing stitching is firm and the straps remain tight.

**Lashing Mounts** Check all lashing mounts for signs of stress especially where the lashing passes over as undue slack can cause abrasion and damage to iako especially, while tightening of lashing due to movement can cause damage to the fiberglass components of the canoe (lashing holes and mounts).

Check rigging before each session and re-rig if necessary. Lift ama and shake to make sure the lashing is holding firm. Take hold of iako near canoe and check for any excessive movement and tighten if need be. Close inspection is paramount.

In addition to ensuring the essential components of the canoe and its rigging are in good order, further items should be included as part of standard equipment for the sake of safety.

**Bailers** A minimum of two bailers should be present in each canoe, with a minimum two-litre capacity, with handle and of a scoop shape to ensure effective, quick usage.

Bailers must be attached to the sides of the canoe via hanging brackets or similar and not left on the bottom of the canoe. They should be attached via a lanyard (length of cord) to the canoe so as in the event of a capsize they do not float away.

**Spare Paddle** Attach to the rear iako a spare paddle in the event of breakage or loss. This is ideally attached using rubber with the blade over the canoe and the shaft running out along the iako.

A quick release knot must be used, which when pulled releases the paddle immediately. Use of duct tape to attach paddle is to be avoided. A spare steering paddle can sometimes be positioned behind the steerer's seat.

**Paddles** Paddles supplied by the Coach/club must be of a suitable standard and checked periodically. Novice paddlers are often harsh on their paddles. All other paddles should be maintained and checked by the individual paddlers. Check for delaminations and splits in the blade especially around the edging, look for stress fractures at the neck of the shaft. Ensure steerers have blade width of adequate size for the prevailing conditions

**Duct Tape** Heavy-duty duct tape has saved many an ama. If an ama should develop a crack, a few wraps of tape will seal the hole in most cases. It can also be used to fix damage to the manu in the event of collision. In the event of loose rigging (ama to iako), tape can also be used as a temporary means of creating some stability. Attach tape to spreader.

Recommended Emergency Rigging

**Materials** A spare length of lashing rubber of approximately 1-2m wrapped around the spreader can serve as a valuable back up lashing for ama to iako. Spare snaplashes can also be carried in the event of damage to rigging of iako to spreader. (2 per iako).

The need for appropriate clothing and the introduction to the types that provide effective protection from the elements fall into the area of "risk management" as inappropriate clothing can be a hindrance and a danger. Clothing requirements are important and need to be appropriate for the relative air and water temperatures.

First and foremost there must be understanding of the relative differences between air temperature (factoring in any wind chill) and that of the water temperature.

While the air temperature may not pose any threat, extremes of cold water has the potential to kill in only a short time, therefore paddlers need to assess this risk and dress appropriately. This scenario presents the most difficult in terms of choice; dressing for warm air temperatures in the knowledge that the water temperature is low enough to pose a danger if immersion occurs for too great a time.

At the beginning of spring, the water is often at its coldest, while the air temperature is often pleasant; these are particular times of risk.

Death from hypothermia has occurred within the sport of outrigger canoeing from this exact situation: Oxnard, Northern California 1999. Inappropriate cold water clothing contributed to the deaths of two paddlers, when their canoe overturned and became disabled, within only 45 minutes.

#### CLOTHING REQUIREMENTS FOR A RANGE OF CLIMATES/WEATHER

**Torso** The internal organs around the area of the kidneys are prone to cold and must be protected when either the air or water temperature or both pose a danger. Other areas of the body including the arms, chest and entire torso must, of course, be covered. Care must be taken so as to avoid restricting movement to the arms and shoulders first and foremost as this presents a danger in itself.

Cold winds and air temperatures, dictate that the body's extremities need to be protected, notably toes and fingers. Discomfort leads to lack of focus and concentration, which leads to poor performance.

**Polypropylene** Lightweight polypropylene tops, either long or short sleeved, purchased at outdoor adventure shops, provide adequate protection on cool days, worn next to the skin.

**Neoprene Vests** Lightweight (2mm) neoprene vests (sleeveless) worn next to the skin provides excellent insulation to the back, chest and stomach. Combined with a polypropylene top, this adds additional insulation.

To reduce wind chill, a thin lightweight nylon jacket can be worn over the top to provide a final barrier. The advantage of layers is that they can be removed to suit the comfort of the paddler as they or the air warms.

**Neoprene Shortie** Short sleeved, half leg designed wetsuit of 2mm thickness. Ensure that it is designed for surfers and has ample freedom of movement under the arms.

**Neoprene Shorts** Lightweight (2mm) neoprene shorts provide warmth in the groin region and some comfort against the seat. These can be worn in combination with a neoprene vest.

**Steamer Tops** Specialist canoeing and kayaking shops in cool to cold areas often stock specialist white water clothing. Sealed neoprene/rubber neck, wrist and waist gussets provide effective seals against water, while a waterproof material designed to be a loose fit covers the arms and body.

Waist/LegsNeoprene shorts or in very cold conditions, a full-lengthstylewetsuit (long john style – sleeveless).

**Cotton Lycra** Shorts, Leggings and tops Cotton Lycra is worn more often by women than men. Its fashionable look and array of colors makes it an attractive paddle material. Provides no insulation, protection from UV rays and has the advantage of being very flexible allowing the paddler freedom of movement.

**Nylon Spray Jackets** Lightweight nylon jackets can provide effective wind barriers. Keep the pockets zipped up and hoods rolled up as in the water these can be a hindrance.

**Board Shorts** Available at any surf shop, these are practical in warm water/air locations and are hard wearing. Quick dry material recommended.

**Rash Shirt** Short and long sleeved rash shirts as worn by surfers, often made from nylon or cotton lycra or similar material, are popular for keeping some marginal insulation on cooler days. They provide excellent freedom of movement and some protection from UV rays.

**Hats** 25% of body heat is lost through the head. In times of cold weather and high wind chills, a beanie style hat is a definite recommendation. While in times of extremes of heat and glare, a peaked cap, reduces glare in the eyes and keeps direct sun off the head and face.

**Gloves** Gloves are worn to either protect the hands against blisters and abrasion or to protect from the effects of cold (sometimes as protection from sunburn). Gloves can be either of a light leather material as used by dinghy sailors, or neoprene or cotton Lycra. It is essential that the gloves are very flexible and that the paddle can be felt through the material. Gloves can be a great hindrance if not selected properly. Specialist paddling gloves can be purchased at better canoe and kayak stores.

**Booties and Wet Shoes** Neoprene boots to keep feet warm and to protect against sharp objects such as oysters, coral rock, glass etc. Also provides some degree of non-slip anchorage in the canoe.

Neoprene styled footwear: with appropriate non-slip soles are essential to cold climate paddling. Numb feet are highly uncomfortable, tend to lack traction and are prone to pain at the slightest knock and detracts the paddlers' attention away from the action of paddling.

In addition, canoe spray covers should be worn in the case of cold climate and weather conditions. Body heat of the paddlers, becomes trapped inside the hull, warming the lower limbs and reducing wind chill, immersion and excess water along the hull floor.

#### 14.7 HYDRATION AND FUEL

The importance of adequate hydration and fuel (nutrition) prior, during and after exercise is well documented. The extreme physical nature of outrigger canoe paddling dictates that these needs be met.

#### Inadequate hydration or fuelling of the body results in diminished performance, dehydration and hypoglycemia (low blood sugar levels), which can in turn lead to the onset of other complications such as hypothermia (extreme cooling of the body) as the body's fuel has been depleted through exercise and can no longer provide enough heat to keep the body warm.

Sports nutrition is an entire subject on its own, however in regards to outrigger canoeing we need to concern ourselves primarily with supplementary hydration and fuel during paddling.

**Hydration** Advise the paddlers that they are to be hydrated before paddling and that they take with them a minimum of 500 ml – l litre of water (rates of hydration for vigorous exercise in moderate air temperatures is approximately 750 ml – 1000 ml per hour).

Where sessions may exceed 60-90 minutes, sports drink containing electrolytes (sodium and potassium) simple sugars and carbohydrates may be of benefit.

In extreme heat, regular hydration during exercise is crucial. Stress to the paddlers that thirst is not a good indicator of your fluid needs, especially in young paddlers. By the time you are thirsty you are already dehydrated.

Allow for regular drink breaks during training sessions. Show paddlers the method of calling out "seat two drinking, seat two paddling" when paddlers are not using a hands free system.

Familiarize paddlers with the various hydration systems available to them; waist/back worn systems and stress the importance of investing in one.

**Fuel** In the case of sessions over 1 hours' duration, a sports energy bar may be of benefit. Rates of consumption should be in the order of 50-60g of carbohydrates per hour (0.8-1.0g of carbohydrates per kilogram body weight).

Advise that paddlers replace carbohydrate loss (energy/fuel) as soon after exercise as possible and especially within a 2-hour period.

#### 14.8 SITE WATER SAFETY

Should the venue meet most or all of the land content requirements, the body of water in which the canoes are launched and then practiced within, must also be of a certain standard. Areas of concern include:

**Tides** Tides relate to the periodic rise and fall of sea level and it is essential to establish the tidal range of the site from which you base your venue. Excessive tidal ranges (variance between high and low) can make training times dependent on tide times. Timing your return so as there is adequate water levels is a serious concern to avoid strandings.

**Tidal Streams** Knowledge of the local tidal streams and the direction in which they flow while flooding (rising) or ebbing (falling) is essential in being aware of what the tide is doing at any one moment. It also provides information relating to depth of water and therefore affects the steering course taken. Strong tidal areas can be potentially dangerous and post problems to novice paddlers.

**Currents** Currents are seasonal and flow in the same direction for the duration of any one season. These are generally less of a concern, but knowledge of local currents should be noted.

**Fixed Obstructions** These can include a range of structures including, bridges, pontoons, mooring buoys, channel markers, underwater cables and pipes. Beyond this, natural obstructions such as reefs, coral outcrops, rock ledges, tree stumps and sand spits can all provide dangers and should be noted and avoided.

**Wave Action** Does the site provide for safe launching and beaching of the canoe in all weather conditions or will your activities be restricted on certain days according to prevailing wind directions, wind strengths or ground swells?

**Water Traffic** To what extent does additional water traffic within the immediate training area provide a danger to your canoes? Is the area within a shipping lane, ferry routes or other large commercial users? To what extent do other recreational water users pose a hazard to your activities; dinghies, yachts etc? Are you within a water ski reserve area? All these must be noted. Steerers must be made aware of their legal requirements and harbour and marine Regulations.

#### 14.9 PHYSICAL CONDITION OF THE PADDLER

As a prerequisite to participation in outrigger canoeing, the onus is upon the Coach to gain knowledge of the physical condition of first time paddlers.

Without prior knowledge and consideration of such factors as age, fitness levels, swimming ability and pre-existing injuries or health conditions, the Coach is oblivious to the real needs of their students.

It is safe to say that instructing a group of students all within a 45-50 year age range as against 20-25 years, will have different tolerance levels in regards to the levels of intensity their training sessions should take.

Many assumptions are made in respect of first time paddlers, not least of which is that they are physically ready to participate in vigorous exercise.

Outrigger canoe paddlers come from a wide background of ages, lifestyles, sporting backgrounds (if at all) and share a multitude of eating habits and genetic peculiarities. In short, assume nothing until you have established each paddler's:

- relative level of fitness
- swimming ability
- pre-existing injuries or health conditions

A Doctor's Certificate indicating the paddler's readiness to participate in vigorous activity provides some written evidence of "bill of health" and this should be sought if you deem it necessary.

Beyond the sighting of a Doctor's Certificate, the Coach needs to satisfy himself or herself that the paddler is "fit" to participate. This can be accomplished to some degree via observation of the individual, so as to monitor the paddler's ability to cope with the physical demands placed upon them.

In the early stages of learning, issues of strength, flexibility, endurance and speed, while important, are not crucial in ensuring the well-being of the paddler and their limitations. Initial coaching sessions should place minimum physical demand on the paddlers. Over time they will become more conditioned through participation.

#### Application Form Creating and implementation of a

Questionnaire/Application Form that includes questions regarding pre-existing injuries and health conditions. This form shall also ask questions regarding their swimming ability, perceived fitness levels, other sporting interests and lifestyle so as to provide you, the Coach, with prior information. Include a Doctor's Certificate of physical fitness if you feel it is appropriate, however it is recommended.

#### 14.11 RESCUE AND TOWING TECHNIQUES

It is essential that as a Coach, you are familiar with the technique of towing and/or rescuing a disabled canoe. Canoes can become disabled for a number of reasons:

(a) broken rigging
(b) cracked ama
(c) split iako
(d) injured paddlers
(e) fractured hull
(f) broken seas
(g) swamping

The situation may call for action to be taken to provide a jury rig to "rescue" the situation until land can be reached or in more dramatic circumstances, the canoe may need to be towed.

Flat water conditions, provide a relatively stable environment in which to rescue and/or tow an outrigger canoe. Depending on the nature of the damage or situation, your ability to deal with such an "emergency" is essential in safeguarding your paddlers and the canoe itself.

In most cases, it will be necessary that you have with you a number of items in order to facilitate a rescue operation, the most common being:

- (a) heavy duty duct tape
- (b) spare lengths of rubber
- (c) spare snaplash
- (d) sufficient bailers

In order that towing can be implemented, we need to assume a suitable motorized vessel is on hand and that towing line (nylon) of at least 45' in the case of flat water is available. This needs to be part of your safety kit.

**Broken/Loose Iako To Ama Rigging** If possible beach the canoe and rerig or replace with spare cordage/rubber. If the iako to ama attachment is extremely precarious, duct tape can be wrapped around to add support or wraps of rubber. Attempting to re-rig with cordage is difficult and time consuming. Aim to provide temporary support until land can be reached and the cordage re-lashed. (Traditionally the Hawaiians threw a small spare piece of fishing net over the iako to ama to create a tangled web to act as a temporary binder).

If a support vessel with relatively low freeboard is present, the ama can sometimes be lifted partially lengthways onto the side of the boat and secured and then motored to shore or even fixed while out of the water.

**Split Ama** Should the ama take on-water due to a split developing in the seam or through impact damage, heavy-duty duct tape can be wrapped around the damage to reduce the intake until land can be reached. (Also refer to putting the ama on the support vessel as outlined)

**Split Manu** Wrap duct tape firmly around the split or hole to seal the bulkhead.

**Broken/Loose Iako To Spreader Rigging** If possible beach the canoe and rerig. Otherwise wraps of rubber or the use of a spare snaplash can often secure the iako until land can be reached.

Quick fix, temporary solutions must be found when it comes to problems of taking on-water within the ama or bulkhead or in dealing with loose rigging.

Loose rigging is more often than not a factor of poor maintenance and failure to prior check or remove the stretch out of cordage prior to rigging.

Damaged rigging on the other hand can be due to either excessive strain or wear that has gone unnoticed. In any event the importance of ensuring your rigging is secure and free of potential failure cannot be overstated. Self rescue techniques, without the aid of a rescue craft are very often a matter of improvisation and therefore practical skills and ocean and maritime skills are all essential in being able to cope with any given situation.

Whatever the reason, being able to tow a canoe using the correct method is essential to the protection of the canoe. Incorrect towing methods can result in its flipping or sustaining damage to its essential structure.

An outrigger canoe can be towed by small "tinnies" IRB's through to larger vessels. Flat water towing can be achieved successfully with motor sizes of around 15hp due to the streamlined nature of the canoe, however at sea a size of 25hp upwards is more appropriate.

#### TOWING AN OUTRIGGER CANOE

*Extract from Kau Culture Volume 1 – pp102-103 regarding towing and how to create a towing bridal* 

"Towing an outrigger canoe requires understanding of the way in which a canoe handles under tow and the structural features of the canoe hull.

Failure of the skipper of the boat who is providing the "tow" to carry out the correct method of lashing the canoe can result in unnecessary structural damage.

Lashing the towline around the front seats is a classic mistake and in any sort of swell the seat is unceremoniously ripped from the canoe. How a canoe is correctly towed is something a paddler should know. Don't rely on the boat skipper knowing the first thing about towing a canoe, it could be the first time they have ever come within sight of one. If this is the case the canoe captain, generally the steerer, should take control and supervise the lashing procedure to ensure that the canoe is towed in a safe manner.

The most common and suitable line for towing is nylon, being exceptionally strong with the greatest stretch properties of the synthetic cordages, stretching 30-40% before break point. Its inherent shock absorbing qualities protect the structural elements of the canoe; a stiff rope will put a good deal of extra strain on the canoe.

You will need to have in excess of twice the canoe length, 24 meters (80ft) in order that the energy transfer from the towboat back to the canoe is spread over this distance and that the canoe is away from the boat's wake. However, we are considering ideals here and often you will have to make the best of what the towing boat skipper has on board."

#### Lashing Procedure (Creating a Towing Bridal)

- 1. Start by taking a turn around the hull and pass the ends of the rope through the forward iako lashing holes and tie off using a bowline under the canoe. This helps to lift the canoe while being towed. This bowline is one of the most useful of all maritime knots and one of its great advantages is that it will not tighten severely under pressure and can easily be undone after towing.
- 2. Loop the rope around the forward section of the canoe over the area of seats #1 and #2 to create two giant sized half hitches. This is important, as when the canoe is towed the bow will otherwise tend to wander from side to side, resulting in the canoe traveling sideways, broaching and possibly flipping.

Naturally paddlers should not sit in seats #1 and #2 and while paddlers could sit in the remaining seats, remember that unnecessary weight in the canoe will add strain to it during the towing process. You can have paddlers sit at #3 and #4 to act as ballast and stabilize the canoe, or have the steerer in place to ensure the canoe holds a straight course, or all three. Whether you have paddlers in or out will be a factor that will have to be determined given the situation, based on sea conditions, the nature of the tow boat and the condition of the canoe and paddlers.

This simple method will ensure that the canoe holds a straight course when being towed, the rigging remains intact during the towing process and that the strongest elements of the canoe are being used for the towing process.

#### 14.13 USE OF POWER BOATS

The use of powered craft for the purposes of instruction is of great benefit to the Coach and paddler and is strongly recommended in the case of most on-water teaching situations.

While a support craft is able to provide benefits, they can also provide element of risks if not handled correctly around canoes. Beyond this, subject to state and local maritime Regulations, possession of a "Motor Boat License" is required for the driving of vessels powered with engines greater than a specified horsepower.

**Etiquette When Following Canoes** It is preferable that the support craft remains aft of the canoe to minimize wake. Should you want to come up alongside of the canoe, do so on the right hand side (non ama side) so as to minimize wake affecting the ama.

When needing to cross over from one side of the canoe to the other, do so from behind, not ahead. If you can only cross over the bow, ensure you take a wide

sweep first away from the canoe at first and pass 80-100 m or more across the bow to ensure the boat wake has a minimum effect on the canoe.

**Be Aware of Adverse Fumes** Fumes from the engine passing over the paddlers can lead to nausea.

**Regulations and Safety** It is assumed that if you are in command of the vessel, then you shall have prior knowledge regarding maritime Regulations relating to preventing collisions at sea and that you are in possession of a "Motor Boat License". If not, ensure you have a driver who is.

**Safety Equipment** Regulations will dictate the nature of safety equipment required by law that the boat should carry. In addition, it is advisable to carry:

- ... First Aid Kit
- ... Towing Rope (nylon 45'+)
- > .. Spare Length of Rubber for Rigging
- ➤ .. Spare Snaplash
- > .. Roll of Duct Tape
- > .. Fresh Drinking Water
- ➤ .. Spare Paddle
- > .. Waterproof Flashlight
- ➤ .. Sun Cream
- ➤ .. Megaphone

#### DISCLAIMER

The list of injuries categorized in Care, Prevention and Management of Injuries is only to be used as a guide to some of the symptoms that may occur. It is not to be used to diagnose conditions.

Medically qualified persons should only diagnose and prescribe treatment.

The Coach should recognize when a paddler should be encouraged to seek qualified medical assistance.

#### HYPOTHERMIA AND HYPERTHERMIA

Depending on where you live and partake in the sport of outrigger canoeing, you will learn to live with the realities of either one of these potential threats, that of over cooling (hypothermia) or that of over heating (hyperthermia). Depending on the seasonal variance of your climate, one or the other or a combination of both, will pose a greater or lesser threat to paddlers.

Whatever your location, there is no escaping the net effects of either as no matter how "ideal" your climate may be, the threat from either one of these maladies is ever present. Knowledge of how they onset, prevention and treatment of are crucial to your knowledge as a facilitator of the sport.

#### 14.16 HYPOTHERMIA

Hypothermia is when the body cools below 95 degrees Fahrenheit and poses a particular concern to canoeists. Acute hypothermia relates to the condition setting in within less than a two-hour period, which often means, "cold water immersion". Interestingly if the combination of both air temperature and water temperature when added together make less than 100 degrees Fahrenheit, there is risk of acute hypothermia if a paddler was immersed.

Wearing regular clothing, being immersed in water 50 degrees Fahrenheit for a period of 20 minutes or more, will cause severe heat loss. Prevention of hypothermia lies with understanding its potential and wearing insulating layers to protect the body.

Dual factors must be considered and can add complication to the equation. Potentially hypothermic air temperatures will generally ensure paddlers wear wind breaking and insulation garments (see section on clothing), however this can be complicated by warm air temperatures and cold water temperatures, as the air may dictate cool clothing, the water warm insulating clothing. This must be stressed and it is fair to say we need concern ourselves with the water temperature as in the event of a capsize or equipment failure or sinking, paddlers left to the mercy of cold waters will surely perish if immersed for too long, no matter how warm the air may be.

Drowning is more often than not the eventual consequence of hypothermia as the body and mind give in to the cooling effects, so as a "shut" down is reached. The head loses some 25% of the body's heat and importance of keeping it above water needs to be stressed in cases of immersion in cold water.

Wearing of PFD's in this instance can extend survival time and a huddled up position also helps to retain heat (conditions permitting) as will keeping within a close group.

Hypothermic victims once in the hands of rescuers, must not move around, as to retain the warmer core blood near the major organs and not encourage it away to the extremities. External heat must be introduced immediately (hot water baths, fires etc.) wet clothing removed (in a sheltered area) and replaced with dry and many insulating layers to prevent heat loss. Treat patients gently to avoid cardiac problems.

**After Drop** Immersion victims will experience continued core temperature drop even after removal from cold water and it is directly proportional to the rate at which the body was cooled in relation to the rewarming process. Resting the patient is crucial to prevent cold blood from the extremities rushing to the core.

**Insufficient Fuel** Food intake, in combination with vigorous high-energy demands, can lead to hypoglycemia (low blood sugar) and consequently an inability of the body to warm itself and therefore hypothermia. This is a dangerous condition and needs explanation to your paddlers to ensure they fuel up and dress up in cold weather. Insulation blankets, glucose tablets and high-energy food need to be ingested to help reverse the situation should it be encountered.

#### 14.17 HYPERTHERMIA

Overheating of the body's core temperature and associated with vigorous, prolonged activity in high temperatures and often associated with dehydration.

The importance of hydration during exercise cannot be overstated, especially in view of the fact that outrigger canoeing is a high energy, physically demanding sport, practiced increasingly all year round.

Extremes of high heat and humidity can often be an unavoidable reality, which while posing potential harm more especially during endurance races and long training sessions, hydration before, during the after, along with adequate clothing, especially head wear can prevent the onset of hyperthermia.

Races of an extreme nature in very high temperatures of 28 degrees Centigrade and above, together with high humidity of around 80% do exist such as within the Hawaiki Nui Va'a race in French Polynesia. The last leg of this three-day race, held between the island of Tahaa and Bora Bora is 60km long and takes up to 6 hours for the slower crews with no changeovers. Saline drips and bags and bags of ice are set aside in a small shack on the beach to deal with paddlers suffering the ill effects of hyperthermia and dehydration.

What this emphasizes is that it is possible to endure extremes of high temperatures and humidity along with the length of the event, provided adequate precautions are taken.

#### Heat Fatigue

Associated with cramping, fatigue and sometimes fainting.

Cramps

can be severe within the larger muscle groups of the upper and lower back in the case of paddling. Treated with electrolyte drinks, rest, ice and massage. Other symptoms include headaches.

**Heat Exhaustion** This is a more serious condition and is associated with profuse sweating, dizziness, headache, nausea, mental confusion, and rapid pulse. Requires immediate care to cool body and replace fluids.

**Heat Stroke** This is an emergency situation requiring medical attention. Symptoms include mental confusion, disorientation, loss of consciousness, and hot dry skin due to impairment of sweating mechanism. Treatment can include fluid replacement via saline drip, ice packs, fluid intake, and rest with feet elevated.

#### CHAPTER 15 - OPEN WATER SAFETY AND RISKS

Content

- 15.1 Meteorology
- 15.2 Oceanography
- 15.3 Wave and Swell Action
- 15.4 Beach Types
- 15.5 Wave Types
- 15.6 Tides and Currents
- 15.7 Headlands and Reefs
- 15.8 Rescue and Towing Techniques
- 15.9 Essential Safety Gear
- 15.10 Use of Powerboats

#### **OPENWATER SAFETY AND RISKS**

Openwater paddling (as opposed to flatwater paddling) requires additional concerns and precautions in respect of the nuances of an open water environment. Issues of meteorology (wind, weather), oceanography (landforms, wave structures, currents, tides/tidal streams) take on greater significance in relation to issues of safety and risk management.

It is essential that time and experience in open water be accumulated by the Coach and that they are aware of the limitations of equipment and their students' abilities. Coaches must be aware of the limits of their own knowledge and experience in open water conditions.

Putting paddlers at risk by putting them in unfavourable conditions of wind and wave action is neither responsible nor appropriate to a good learning environment.

Be aware of your own local weather patterns along with knowledge of swell directions, currents, tides/tidal streams, sandbanks and ocean conditions.

Long after your students move on, they may find themselves paddling in a host of differing open water environments. General understanding of ocean dynamics and meteorology, arms them with knowledge which they can build upon and use to safeguard themselves and others.

#### 15.1 METEOROLOGY

Knowledge of meteorology will extend largely to the extent of the "weather" that exists at the time of your session or perhaps within the next 24-36 hours. Weather is essentially a localized issue as opposed to "climate" which is a more generalized term covering a much larger area, be it global or regional.

Weather information can be had from information centers (recorded telephone information, via Coast Guard stations, TV, radio etc.) and from your own observations. While climate is largely predictable, the weather is not and your best indication will be from your own local knowledge of "typical" weather patterns within the area you live.

Your decision to take your students into open water must always be weighed up against the prevailing, present conditions, against any forecasted or predictable changes i.e. if your area is calm yet the forecast is for a strong wind warning, what would be your decision?

**Weather** All weather stems from differences in air temperature and pressure. This varies particularly over land creating patchy conditions with bodies of air behaving in differing ways, so as weather can differ within the space of only a few kilometers.

Prevailing winds (trades for example) indicate movement of air from a place of differing temperature and moisture content, but which nonetheless are consistent patterns, determining the essential climate of that coastline. However it is the local unevenness of local air pressures that cause incidental winds.

Air tries to constantly equalize itself, flowing from high to low pressure areas in a circular manner as it cannot do so directly due to the rotation of the earth, spiraling gently from a high until they are close to a low and increasing in intensity towards the center.

Constant changes in the shapes of each high and low pressure area together with their movements create variable winds which when "forecast" are essentially only predictions of what their movement will create.

Most importantly, our concerns should be with the affect that wind has onwater. The effects are applicable to all bodies of water in varying degrees. Its greatest and most dramatic effect will be had on large bodies of waters, be they lakes or on the ocean where the majority of our sport takes place. and used by the British Royal Navy and now internationally, is the best means we have in determining any current wind strength and in predicting sea conditions should winds of a given strength develop.

From a legal viewpoint, activity in open waters with a "strong wind warning" in effect or even forecast but not present, can result in breachment of the insurance Guidelines. This wind strength is 25 knots and over.

Common sense dictates, that if a strong wind warning is not in effect, but localized winds are in this range, then insurance claims will still be contentious and therefore for the safety and well-being of your students and experienced paddlers, activities should be confined to "sheltered waters", preferably within rivers or sheltered bay areas.

In all situations exercise extreme caution even in moderate breezes and be aware of the wind's potential to rise. Are the winds freshening or abating? What would you predict is going to happen? What does the forecast indicate?

**Visibility** Issues of poor visibility caused through low cloud, heavy rainfall or sea mists need to be considered. Paddling in parts of California, Hong Kong and Canada for example, sea mists and low visibility present real dangers whereby paddlers (steerers) become quickly disorientated. Beyond this you then put your canoe at risk of collision, not only with other water craft but with fixed obstructions. Avoid paddling in areas of limited visibility especially in busy areas – attach lights, stay close to known landmarks or cancel session.

#### 15.2 Oceanography

The ocean is a place of great energy deserving of respect and many lives are lost annually worldwide out of ignorance, lack of respect and foolhardy activities in the wrong place at the wrong time.

Outrigger canoeing is essentially an ocean sport and long with its growth, paddlers are venturing further into open ocean conditions and races are becoming more challenging of the elements, both for team canoes and singles. Paddlers and especially your students, need some understanding of the ocean's dynamics to safeguard them and future generations of paddlers.

Studying oceanography, includes landforms and their effects on wave formation (points, spits, bars, reefs, river entrances, open beaches, open ocean), wave structures (plunging, spilling, surging), differing rip currents caused by wave action (permanent, fixed, flash, travelling), beach types which in turn have an effect on wave types (dissipative, longshore troughs, low tide terrace beaches and reflective), ground swells, wind chop, wind against tide and wind over tide. Outrigger canoes of the six person type are not surf craft. They are designed to perform within a variety of sea conditions from flat water, chop and larger sized ground swell or surging type waves. Placing the canoe in areas particularly of plunging or dumping type wave action is especially dangerous to both the paddlers and the canoe and its components, placing enormous strain on the rigging. Waves of this nature of only a small size have a huge capacity for damage.

Specialist 4 person outrigger canoes especially constructed for surfing are used more often than not in spilling type waves and rarely in plunging, dumping waves.

#### 15.3 WAVE AND SWELL ACTION

**Wave and Swell** Both waves and swell is one and the same thing, but assume differing layers and origins. Most waves we see out on the ocean are created by the presence of wind more often than not locally or within a reasonably immediate area. This upper surface movement is often referred to as "seas". These therefore are waves.

Beneath them moves a smoother, more regular wave pattern known as "swell" born out of storms and gales past and often from far away places (residue of energy spent elsewhere). On rare occasions this "swell" may well be caused by seabed earthquakes.

"Seas" describe the upper surface layer, often shore and rapid in movement and "swell" as the lower layer, often larger, smoother and slower (paddlers often refer to chasing the "bumps", these being the upper layer surface action – chasing a bump can sometimes put you on a larger swell.

From an elevated position, the swell often becomes noticeable by its repetitive patterns, while the sea as such is less obvious, yet when you are on the water, the sea often becomes of greater concern as this is what essentially defines whether the ocean surface is rough or smooth.

Winds rarely maintain the exact same direction for more than a few seconds causing surface waves to be confused and choppy at the first onset of increased wind strength. Once these waves move away from the influence of wind they radiate outwards approximately 35 degrees from their origin and direction of wind assuming a curving course across the ocean, forming smoother swell patterns. With the accumulation of time and distance from origin, they mass into low waves moving at equal speeds within a group, the width of which is more or less equal to that of the original width of the "storm front" and whose length is determined by the duration and location of the storm.

Descriptive terms applied to waves:

(a) Wave Crest The peak or uppermost tip

- (b) Wave Trough The lowest point of origin
- (c) Wave Length Measured from crest to crest distance diminishes as wave moves into shallow water
- (d) Wave Height Measured from crest to trough. Height increases as the wave moves into shall water
- (e) Wave Speed Speed of travel of the peak over the ground. This speed decreases as the wave moves over shallow water (an ocean swell travelling at 64km/hr in deep water will slow to 34 km/hr in water 10m deep)

Breaking waves occur when their height is marginally less than the depth of water under them which is useful in gauging approximate water depth and the presence of reefs and shoals. As waves encounter shallow water and slow, successive wave crests spill into each other, grow taller, become unstable and break.

**Steep Choppy Waters** Through experience, it has been noted that short, steep wave action as one might find in shallow bays with strong localized winds, or in areas of shallow water with strong tidal streams where wind against tide causes this effect, stress the canoe, its components and its rigging. Constant jarring and pounding to the hull and ama, results in continual excesses of torque and strain absorbed by the ama to iako rigging and back to the spreaders within the canoe. Rigging can work loose or worse still break under the constant movement. Lashing holes, mounting points, spreaders and iako are all at risk. Strong winds complicate the issue and add increased stress due to the "windage" factor of the canoe's hull especially when side on to the wind. In addition canoes take on a great deal of water without the presence of spray covers. Attention to the rigging and condition of the canoe and its components is of paramount importance.

15.4 BEACH TYPES

Knowledge of the five main beach types is essential in dealing with launching and returning from beaches.

**Reflective Beach** Generally areas of low waves of around 0.5m with steep, narrow beaches of coarse sand often within entrances to harbors and estuaries and occasionally at the latter end of ocean beaches, where wave energy is less. Waves run up the beach in surges rather than breaking and there is no sand bar or surf zone. These beaches present low risk as they are essentially free of surf or breaking wave action and therefore permit easy launching and return.

**Low Tide Sandbar** Tend to be in areas of lower wave energy at the protected end of long beaches within bay areas, with waves of 0.5m - 1m. Often have a moderately steep beach face, with a low flat sandbar sometimes exposed at low tide, with waves breaking heavily on the outer edges of the bar, while at high tide, waves may cross the bar unbroken until reaching the beach. In times of larger wave action, waves may suck up and dump onto the sandbar. Beaches of this nature at certain stages of the tide and in favourable seas, can provide safe passage.

**Bar and Rip Beaches** One of the most common types of beach whereby shallow sandbars attached to the shoreline, alternate with deep channels either side, which form "rips", strong currents of water created by water moving from the shallows of the bars, into the adjacent deep channels. This water then flows back out to sea often rapidly. These rips are confined to the channels at low tide and develop into longshore currents at high tide. Waves over the bar are commonly 1m - 1.5 m in height. Identify the bar and use the "gutter" or rip channel as point of entry and exit from the beach as it will tend to have less wave action and often provide a smoother passage.

**Longshore Trough** Commonly formed after periods of rough seas, tending to have waves of 1.5m or more consisting of an unbroken and continuous sandbar running parallel to the beach 100m – 200m offshore with a 2m – 3m deep trough separating the beach from the bar. Waves break on the bar surge over the trough and onto the beach with rips forming approximately every 250m – 500m back out over the bar. These beaches cause large plunging type waves that are extremely hazardous and should be avoided if possible. Safe passage to and from the beach may be found in identifying areas of rips or gutters more especially at high tide.

**Dissipative Beaches** These are found within areas of highest wave energy, where waves have attained heights greater than 2.5m, with as many as two or three sandbars spread over 300m-500m from the shoreline, with spilling waves breaking on the outer bars which reform and break on subsequent bars to

finally surge up the beach. These beaches are highly dangerous as they generate large waves and present not one sandbank but several and many metres of continual surf action. These beaches should be avoided.

#### 15.5 WAVE TYPES

**Plunging Waves** Break over shallow water, also called "dumpers". Have tremendous force and present the biggest danger to canoes and paddlers. The wave tends to suck upwards, throwing a lip of water forwards. Impact damage is common to canoes and broken rigging is commonly encountered. Avoid wherever possible. These waves slow and increase in height as they peak.

**Spilling Waves** The wave crest crumbles down the wave face keeping the wave rolling without plunging forwards. As the water shallows, due to lower tides, these waves easily form into plunging waves so be aware of the changes.

**Surging Waves** These tend not to break due to the presence of deep water beneath, they maintain speed and neither do they gain height as they approach the beach.

#### 15.6 TIDES AND CURRENTS

**Tides** Tides relate to the periodic rise and fall of sea level. High tides may come twice a day in some areas and once in others. Tidal ranges (variance between high and low) also vary greatly. These variances are due to differing tidal streams either canceling or enhancing each other. Tidal systems exist due to the gravitational pull of the sun and moon. Our area of concern needs to be with the times at which tides are highest and lowest, extremes of tidal ranges and how they relate to your own water activities.

**Tidal Streams** Tidal streams and the direction and strength in which they flow while flooding (rising) or ebbing (falling) are important factors to be aware of. The strength of the flow will need precautions taken in the case of strong flows which affect the canoe's steerage and can make judgment in avoiding fixed objects difficult especially when running with the stream as opposed to paddling into it which presents headway problems relative to the strength of your paddlers. Be aware of tidal changes.

**Currents** Currents can be considered on two levels, those of an offshore deepwater nature and those near shore caused by powerful local water movements created by wave action. Deep water currents are seasonal and flow in the same direction for the duration of any one season.

#### 15.7 HEADLANDS AND REEFS

**Headlands** Landforms such as headlands and points indicate areas of wave action. Waves bend or wrap around them towards their shoreline, depending on the predominant direction of the swell. Often this results in a uniformity and consistency of wave action, but not always as rock ledges or reef outcrops (Bomboras) can cause "freak" waves of greater height to break unexpectedly. Know your headlands and points well and treat with caution.

**Reefs** Reefs, whether of rock, coral or wrecks are often unpredictable by nature in as much as they are surrounded by water and therefore exposed to many influences. Reef beds are often irregular causing further unpredictable wave action. Conversely, in calm seas with moderate swells of consistent direction, the reef reveals itself as a place of order as do headlands and pointbreaks. Fundamentally, reefs generally create plunging waves and need to be treated with great respect. Knowledge of reef "passes" needs to be acquired. Passes are often self evident but not always.

#### **15.8 RESCUE AND TOWING TECHNIQUES**

Rescue and towing techniques apply as for "flatwater", however the nature of an openwater environment brings with it the possibility of greater wave action.

Swamping, capsize and potential damage to the structural integrity of the canoe are all increased proportionally with wave height and increased wind strengths.

Open water rescue situations often take on greater urgency due to their nature and therefore an ability to deal with problems quickly and efficiently take on great importance as any unnecessary time wasting or procrastination can lead to compounding of the initial problem or lead to the creation of new ones.

In the case of "self rescue" situations when a support craft is unavailable, paddlers need often to be creative, practical and rely upon improvisation in order to be successful. It is advisable to have such items as spare rubber, snaplash and duct tape for example and safety equipment extending to hand held flares and even mobile phones in sealed bags. **Covers** If used, need to be zipped up when towing, especially #1 through #2 and all other seats not occupied by paddlers.

Covers in themselves can be considered as essential pieces of safety equipment. Unfortunately they are seldom seen as such and rarely used for training. Most clubs use them only in racing situations.

Covers provide an effective means of preventing "swamping" from oncoming waves or when running with them. Covers should be fitted as a matter of course, given conditions that could lead to swamping. Short, steep waves are particularly notorious for this.

**Towing Rope** Rough water will dictate that you will need a longer length of rope. (Recommended twice the length of canoe, greater than 24m).

The following is an example of being creative in an emergency situation.

"While accelerating down the face of a large wave the canoe suddenly veered uncontrollably to the left to the amazement of the steerer. The front iako to ama rigging had snapped causing drag, resulting in pulling the canoe with it.

The following wave broke and rolled us over. Other breaking sets followed. We let the sets break over us, ensuring we were up the swell of the canoe so as it did not push back onto us, duck diving the waves. Once they had passed we righted the canoe and we realized we could not repair the damage as the front portion of the ama had been fractured badly.

We had the two lightest paddlers sit in the canoe, one in the steerer's seat and another in seat #3. Three paddlers remained on the non ama side in the water, applying weight to the gunnel to keep the ama and iako up, while the sixth paddler swam on the ama side holding the front iako upwards. Water was bailed and we then paddled/swam the canoe to shore. It was slow going but we had initiated a self rescue".

#### 15.10 USE OF POWERBOATS

Use of powerboats in open water requires additional precautions in all aspects of your interaction with canoes.

Rough or sloppy water in close proximity to a canoe and especially at slower speeds or when in neutral, causes instability in both canoe and powerboat and the possibility of being "surged" onto the canoe or vice-versa are potential dangers to be avoided.

In the event of a paddler being collected from the water, ensure the motor is in neutral. It is also safer for the swimmer to approach the boat at their own speed and to judge when to make the grab rather than bearing down on them. **Grab Lines** Effective where rough water surges are present. A length of line approximately 5m long tied to the ransom of the boat with knots at .5m intervals is thrown over to the swimmer onto which they can take hold and pull themselves in.

Let the swimmer come to the boat. Do not grab the paddles. Let the swimmer get himself in. By pulling hard on a paddler's arm may cause injury.

CHAPTER 16 -OUTRIGGER PADDLING AND THE LAW

The law paddlers must know comes in two (2) forms.

First, all the written down Rules, Regulations, Sections of various Criminal or Safety Codes, By-Laws, City Ordinances, and any applicable governmental safety standards. These written down laws are published by the Coast Guard, various federal and provincial agencies, city and municipal authorities. These laws are like the highway traffic signs we see and use everyday.

You know most of these:

- Do Not Paddle Under Lion's Gate or Second Narrows Bridges
- Wear Life Jackets
- Have Bailers
- Right –of–Way Rules
- Motor Boat Safety Certificates
- Trailer Tie Down Rules
- No Alcohol While Operating a Coach or Escort Boat....

you know the list....or if you do not learn them before you paddle!

The second form of law is probably the most important...Judge made law. Judges make laws everyday in their Courtrooms when someone hurts another person one sues someone else claiming "they did me wrong "!

This area of law usually means the loser pays the winner money damages to fix the wrong. Here we need to talk about negligence, gross negligence and Waivers.

Waivers protect good people doing good things in a safe and reasonable manner but Waivers never work in two cases.

- (a) involving children.....persons under the age of 18 years; and
- (b) gross negligence

#### Children

Because children are young persons, their minds are "unformed" and "uninformed" and they cannot sign away their right to sue...neither can their parents so Waivers are useless when children are involved.

#### WAIVERS

Waivers have tremendous educational value. Waivers must be used and signed at every C.O.R.A. race, or C.O.R.A. event and at the beginning of each paddling year when children and adults become outrigger canoe club and C.O.R.A. members, because Waivers spell out the risks and dangers. Waivers also spell out the reasons we paddle. We paddle because we enjoy the many benefits of paddling while acknowledging the risks and dangers. And each time we sign a Waiver, we review the risk of paddling in the untamed ocean. This educational function in signing Waivers is probably the best way to avoid accidents because the Waiver brings into focus the risks and dangers we want to avoid.

#### CHILDREN AND THE STANDARD OF CARE EXPECTED OF PADDLERS

If something bad accidentally happens (injury or some harm) to children in your care as a Coach or person in charge while paddling outriggers you may be made to pay money damages SHOULD the case go to Court.

No surprise here: The law expects all adults to have the highest standard of care when supervising children. We all know this! That is why we have, in many ways, rules for adults and rules for kids.

Practically, this means discipline, safety, and explanations with junior paddlers (legally defined as children, or persons under 18 years of age) are at a higher standard than adults. If you choose, however, not to behave to a higher standard of safety and discipline when supervising children, you are exposing yourself to the real possibility of having to pay some parent money damages if something bad happens and IF THE CASE GOES TO COURT.

In Canada the best example of a similar situation for Outrigger canoe racing is downhill ski racing...the same level of care is required. The latest case (Feb/08) indicates that a Canadian Provincial Court of Appeal expects this higher standard of care when supervising children.

For example all junior paddlers (legally called children) should be in sight and within supervisory distance at all times by Coaches and senior paddlers (adults).

In Quebec, an experienced ski instructor on a bunny ski hill at the end of the day sent 5 of her 6 skiers down the bunny hill by themselves while she stayed back to help an unskilled child learning to ski. One of the good skiers (legally a child) hit a lift tower. The instructor was not supervising all her young charges. She sent them off, down the bunny hill alone! The injury was serious and the ski hill, the ski school, and the instructor were found to be at fault.....and had to pay money damages to the parents.

The purpose of this note is not to scare you. If you were the parent, or any good witness from any Canadian community, you would come to the same conclusion, because everyone knows when with children you keep the group together, because it is safer and because when together you can supervise....which is your number one task. Because the instructor was not supervising the whole group, she was at fault.

For paddling with juniors (legally called children) in both practices and at races, this Court of Appeal case has real consequences. This means outrigger Coaches and clubs need policies THAT ARE WRITTEN DOWN AND FOLLOWED EXACTLY that specifically "make it safe for children". It may mean more escort boats may be needed for junior races, that all escort boats have radios, it may mean Coaches have to adapt their paddling practices to be able to supervise adequately, or it may mean more. These policies must be written down, posted prominently on a club and scrupulously followed. Policies may be different for each club as each club may have different circumstances. If a club does not have a policy that is written down, posted prominently on a wall, and exactly followed, a judge, in the case of accident, will rule against the Coach, the club and C.O.R.A. Obviously, it is clear what is required **JUST DO IT**!

The law expects our policies to be reasonable. This means that our policy, on practices, on race safety, on training, on transporting boats, has to have a reason that makes sense to a "good witness" from our paddling community.

The second area where Waivers are not good enough or "not worth the paper they are printed on" is the case of gross negligence.

Gross negligence is what it says.....a really, really, bad mistake and here are the common examples:

(a) drinking alcohol when paddling or coaching

(b) taking any drugs that may effect your thinking while paddling or coaching

- (c) driving an escort boat while drunk
- (d) going too fast and driving over a paddler
- (e) not tying down boats while trailering or rooftop carrying
- (f) paddling in front of an ocean freighter in a race and ignoring the freighter horn
- (g) disobeying a Coast Guard command
- (h) avoiding a police boat by speeding away and hitting another boat in your escape

and I am sure you can think of a hundred more examples.

In all these type of cases, a Waiver is useless. Any good thinking person can see why the law will not allow people to ignore the basic standards of care called the good neighbour rule.

If you do anything like gross negligence a Judge will make you pay money damages to attempt to correct your wrong action by paying money to the person you harmed.

This is simple: paddle as if your mom is sitting on your right shoulder, and a cranky old Supreme Court Judge on the other shoulder.

#### ALL YOU NEED TO DO IS MAINTAIN THE REASONABLE STANDARD OF CARE

Once published this Safety Manual becomes the standard of care in Canada for outrigger paddling. Thus any Canadian Supreme Court will say the C.O.R.A. Safety Manual represents the standard of care in outrigger paddling because it is a reasonable product made from the combination of Australian and North American paddling safety standards. Thus, in a way this Manual becomes our guide to paddling law in Canada because the law says outrigger paddlers must follow the reasonable standard for the sport.

Reasonable standard is the standard set by the sport's governing body (C.O.R.A.). This means if there is an accident and paddlers DID NOT FOLLOW the standards set out in C.O.R.A.'s Safety Manual, it is most likely the Court will rule against you.

#### CHAPTER 17 - OUTRIGGER SAFETY - A SUMMARY

This is not meant to be a lecture, but a primer.

Reasons for a Safety Primer? Most people in the sport are not practicing or teaching such habits while on or off the water.

Some coaches and steersperson's are not knowledgeable or take for granted the common sense of their paddlers.

If presented in group discussions information will be exchanged.

A safety first attitude goes along with a competitive spirit.

CORA directive (insurance compliance).

Basic Safety Procedures

- (a) Steersmen should be made aware of safety practices.
- (b) Base program must be addressed to all.
- (c) Stretch, warm-up and cool down. Knowledge of Navigational Rights of Way.
- (d) Canoe should be checked once over for maintenance. Proper gear: buckets, iakos, amas, floatation, tanks, rigging, paddles and PFD's.

Know the Water (Weather)

Paddlers, steersmen and coaches should all know the prevailing conditions and possible changes of weather.

1. Wind = Waves

Winds create waves so if it has been windy most of the day, don't practice outside unless prepared. Don't go outside without spray cover, escort, float plan, until all paddlers are knowledgeable.

(a) Be flexible with training schedule if windy use it as a resistance training session inside. Paddle easy downwind and hard into it.

(b) If you are ready to paddle outside in adverse conditions, leave a float plan (departure time, direction of travel and estimated time of return). Life jackets are just that, LIFE JACKETS.

- (c) Don't make bad conditions worse conditions.
- 2. Low cloud and low pressure = Rain
  - (a) Bad visibility

(b) Hypothermia is the lowering of the body core temperature you don't have to be in the water to get it.

- (c) Go out but wear suitable and appropriate clothing.
- 3. Hot day and cool ocean breezes = Fog
  - (a) Don't even go on the water. Make it a weight training day or a run etc.
  - (b) If paddling is essential practice in a controlled area.

#### Know Yourself and Crew

- 1. Swim test is a must 200 yards minimum
- 2. Tread water for 20 minutes
- 3. It's too late to learn when you need it and the canoe is not around
- 4. Medical situation or conditions
- 5. Basic medical equipment should be available at training site.

#### If Caught Outside

Turn toward jetty entrance immediately and head for it. Take other land citing.

Take notice of the time and distance you have to travel and prevailing conditions, i.e. tide and swells.

Don't panic and start sprinting, it will only tire you and the team, plus you will lose concentration on direction of hull and swell pattern.

When calculated time puts you close to entrance be ready for other in or out going craft probably travelling faster and a lot bulkier than your canoe.

If in a whiteout, slow pace down and have someone become your fog whistle, preferably seat 1.

Foggy weather doesn't usually have large swells within its makeup so you can paddle closer to shore to find your way. Be careful not to go inside the shore break.

#### Surf - Swells

- (1) Ideal canoe position is perpendicular to swell direction.
- (2) Speed of canoe has to attain speed of swell.
- (3) It is the job of the steersman to notice one and announce it. (bump, hit it, pick up, etc.)
- (4) it is the job of the stroke to feel the canoe and swell position and react usually by picking up the rate and also applying more pressure on the blade.
- (5) It is the task of the crew to follow the strokers rate and notice the application of power and respond immediately!
- (6) Don't let up on the back side.

#### Riding Waves In - Some Considerations

- (1) If haven't been taught, ask and learn first, don't go by trial and error
- (2) Again know swell direction
- (3) Bottom condition (what is causing wave to break)
  - Reef (bad)
  - Storm (bad)
  - Rocky (bad)
  - Sewer outfall (bad) Swell reaching shore condition (good)
  - Jetty break (okay if knowledgeable of area)
  - Sand bar (ideal)
- (4) Don't surf with people in immediate area.
- (5) Know inside bottom condition, it's too late to find out that the shore has hidden submerged items when you've committed yourself.
- (6) Realistically weigh the wave height and your ability, then proceed in or out.

# \* race canoes are just that, they are not designed to surf beach breaks. If approached properly it's fun, if not it's dangerous!

- (7) Count the waves in the set usually 9.
- (8) Remember on the first wave if you do flip or swamp you'll be in the turmoil longer which may cause greater damage to paddlers and canoe.

- (9) Surf god says third wave of set is largest (surf god lies). The largest wave is the wave you catch successfully.
- (10) If you have a Beachmaster follow his/her commands. He times the sets, counts the waves per set, knows the lull time and place and he controls the beach to notify the area of canoes coming in and going out.
- (11) Follow steersman's commands, get canoe up to speed but not too far in front of wave.
- (12) Once you catch the wave don't try to out paddle wave or you will fill up with white water.

#### IF YOU FLIP:

- (1) Stay to the ocean side of the canoe
- (2) Turn the canoe perpendicular to the wave direction, it makes less of a target.
- (3) Gather paddles and equipment before they become lost or projectiles.
- (4) Steersman, tell your crew what you're going to do and what is expected of each member (in time it will become second nature, but until then discuss it).
- (5) If the canoe does break up, stay away from the edges because they usually are not rounded and soft. Make others aware of the possible consequences of broken equipment.
- (6) Arguing about who or what caused the flip will not bring the boat out. Get it to shore and size up your repairs.

#### GOING OUT THROUGH WAVES:

- (1) Again know your area.
- (2) If kelp beds close by, walk canoe toward that area (waves are smaller inside kelp beds.
- (3) Stay away from submerged rocks and jetties, because of the consequences of not making in out on the first try.
- (4) Time and count your waves to a set and proceed accordingly.
- (5) One man calls the shots.
- (6) Put canoe into water as far as possible.
- (7) Have all but 1,2 and 6 in the canoe. Reason being 1 and 2 are usually the most agile and lighter. The blow will float higher until they are in it. They can lift canoe and deep water out while waiting. Also it is easier to keep bow perpendicular to waves thus creating least resistance. #6 is higher and can see farther. He calls the commands (usually). He would have a clearer shot to see the Beachmaster signals.
- (8) Once you see a large lull with no swells on immediate horizon, get in and paddle as fast and straight as possible.
- (9) Don't stop paddling until outside or swamped.

#### DUSK AND NIGHT

- (1) Don't go outside and try to make a quick trip at dusk.
- (2) Don't attempt outside travel alone. Use more than one canoe.
- (3) If you do, be lighted, it is safe and the law.
- (4) Again float plan and stick to it.
- (5) Don't ever send or leave novices or for that matter any canoe outside your harbour except for ideal conditions (outside air 80 degrees, water temperature 70 degrees and 12 noon Saturday, 6 knots from west, 2 ft. seas, 9 sec. interval) wearing 6 PFD's.



## APPENDIX A - PARTS OF OUTRIGGER

# APPENDIX B – Canadian Red Cross – AquaQuest 6

### APPENDIX A

## Canadian Red Cross AquaQuest 6

	Prepare	When and where to go on ice			
Stay Safe		Stop! Look! Go Slow! Front Recognition/simulate distressed swimmers			
-		Choking rescue, partial blockage			
	Survive	Tread water, 1:00 minute, deep water			
Prepare		Rhythmic breathing, 20 times, 3 ways			
		Head-first sculling on back, 10 metres			
Ε		Feet-first sculling on back, 10 metres			
.E	Stay Safe	Front crawl, 3 x 15 metres (one lesson)			
S.		Back crawl, 3 x 15 metres (one lesson)			
	Survive	Endurance swim, 50 metres			
		SAFETY SCENES			

Taken from the Canadian Red Cross

## APPENDIX C - CANADA SHIPPING ACT

#### SMALL VESSELS REGULATIONS - CRC Vol. XVII, c.1487

#### Exception for Racing Canoes, Racing Kayaks and Rowing Shells

A pleasure craft that is a racing canoe or a racing kayak is not required to carry personal protection equipment, boat safety equipment and distress equipment in accordance with the Act if it, and its crew, are engaged in formal training in an official competition or in final preparation for an official competition and,

- A. it is attended by a safety craft carrying a PFD or lifejacket of appropriate size for each member of the crew:
  - (i) of the pleasure craft, if the safety craft is only attending the pleasure craft, or
  - (ii) of the largest vessel being attended, if the safety vessel is attending more than one vessel, and
- B. it carries:
  - (i) a PFD or lifejacket of appropriate size for each member of the crew;
  - (ii) a sound signaling device, and
  - (iii) if it is operated after sunset and before sunrise, a watertight flashlight.

#### Definitions:

**Official Competition** a competition or Regatta organized by a governing body or by a Club or an organization that is affiliated with a governing body

**Formal Training** a practice for an official competition under the supervision of a Coach or Official certified by a governing body

**Final Preparation for Official Competition** activities to prepare for the competition venue and during the times specified by the organizer of the competition

**Governing Body** a national water sport governing body that publishes written Rules and criteria respecting conduct and safety requirements during skills demonstrations, formal training or Official competition and which certifies Coaches, Officials and recommends training and safety guidelines for Coaches and Officials

# APPENDIX D – Accident Report Form







PATIENT INFORMATION

LAST NAME:		FIRST NAME:		
STREET ADDRESS:		CITY:		
POSTAL CODE:		PHONE: (	)	
E-MAIL :		AGE :		
SEX:MF	HEIGHT:	WEIGHT:	DOB:// 	
KNOWN MEDICAL CONDITIONS	ALLERGIES:			

#### INCIDENT INFORMATION

DATE & TIME OF INCIDENT:		TIME OF FIRST	TIME OF MEDICAL
, ,		INTERVENTION.	SUPPORT ARRIVAL.
//	AM	AM	AM
da mm yyyy	РМ	PM	PIM
CHARGE PERSON, DESCRIBE THE INCI	DENT: (\	what took place, where it to	ok place, what were the
signs and symptoms of the patient)			
PATIENT DESCRIBE THE INCIDENT: (se	e above	1	
	c above		
EVENT & CONDITIONS: (what was the eve	ent durin	g which the incident took p	ace, location of incident,
surface quality, light, weather etc.):			
ACTIONS TAKEN/INTERVENTION:			
After treatment, the patient was:	[		
Sent home Sent to hospital/a cli	nic	Returned to activity	





#### CHARGE PERSON INFORMATION

LAST NAME:	FIRST NAME:		
STREET ADDRESS:	CITY:		
POSTAL CODE:	PHONE: ( )		
E-MAIL:	AGE:		
ROLE (Coach, assistant, parent, official, bystander, therapist):			

#### WITNESS INFORMATION (someone who observed the incident and the response, not the charge person)

LAST NAME:	FIRST NAME:
STREET ADDRESS:	CITY:
POSTAL CODE:	PHONE: ( )
E-MAIL:	AGE:

#### OTHER COMMENTS OR REMARKS

#### FORM COMPLETED BY:

PRINT NAME

SIGNATURE



# First Aid Kit Checklist Appendix G



A complete first aid kit is essential. This kit must be carefully prepared in order to treat the most common injuries, and maintained regularly. Furthermore, it must be accessible to those responsible for the team. Here is a checklist to keep in the first aid kit so that you can verify regularly that it is complete.

ITEM	DATE/ CHECKED BY (Initial)
Surgical gloves	
Peroxide	
Soft antiseptic soap	
Antiseptic wipes	
Band-aids	
Butterfly bandages	
Sterile gauze pads	
Self-adherent wrap	
Second Skin*	
Triangular bandage	
Safety pins	
Juice box	
Plastic bags for ice	
Scissors	
Tweezers	
Duct tape**	
Change for phone	
EMS phone numbers	
Participants medical	
and contact information	
* Cocond Shin is a hrand	d stana for a nordene dras je diteordu sovijad sunor a hiteore ineolul so baso ukon nordežnoste so krasljima je neue forenavel
* While duct tape is not to	a name to a product units ornexcy appredict over a unitate (very user) to nave when participants are prediminin to be used for bandration initiaiss when others no lonkinn in the first aid kir for table for antiment in a hurry they will take the duratane
instead of using your expe	
CARRYING A	CELL PHONE AND USING IT IS THE FASTEST WAY TO ACCESS EMERGENCY MEDICAL SERVICES

# APPENDIX E – FIRST AID KIT CHECKLIST

SUPPORT

# APPENDIX F - PARTICIPANT PROFILE

Name:			_
Age:			_
Emergency Contact #1:	Name:		
	Phone Numbers:	( )	
		<u>( )</u>	
Emergency Contact #2:	Name:		
	Phone Numbers:	<u>( )</u>	
		( )	
Address:			
Phone Number: (	) Description of Con	dition	Procedures in case of Emergence
Phone Number: ( Medical Information Allergies	) Description of Con	dition	Procedures in case of Emergenc
Phone Number: (	) Description of Con	dition	Procedures in case of Emergence
Phone Number: (	) Description of Con	idition	Procedures in case of Emergend

APPENDIX <u>G</u> – C	COLD W	VATER CONDIT	ONS WAIVER	
		APPEN	IDIX J	7
	-	Cold Water Con	ditions Waiver:	· · · ·
	I am fully a conditions. I do so at n that if I cap In any case I hereby re all related damage, e suffer as a	Athletes over 1 aware and understand the risks in I understand, that if I paddle wi my own risk and I assume all the psize while not wearing a PFD, my e, I agree to comply with all applie elease the <i>*name of Canoe Club*</i> persons, groups and associations expense and related loss, including the result of my choice to not wear a	L8 years of age volved with paddling in cold water thout wearing a Government approved PFD, responsibility for my actions. I understand y safety is compromised. cable Coast Guard Regulations. <i>c, its</i> coaching staff, volunteers, directors and from any personal injury, death, property loss of income that I or my next of kin may a PFD.	
	Date	Athlete (printed name)	Athlete signature	
f	Date	Witness	Witness	
-				·

## APPENDIX H – EMERGENCY ACTION PLAN (EAP)

An Emergency Action Plan (EAP) is a plan designed by coaches to assist them in responding to emergency situations. The idea behind having such a plan prepared in advance is that it will help you respond in a responsible and clear-headed way if an emergency occurs.

An EAP should be prepared for the facility or site where you normally hold practices and for any facility or site where you regularly host competitions. For away competitions, ask the host team or host facility for a copy of their EAP.

An EAP can be simple or elaborate but should cover the following items:

- 1. Designate in advance who is in charge in the event of an emergency (this may very well be you).
- 2. Have a cell phone with you and make sure the battery is fully charged. If this is not possible, find out exactly where a telephone is located. Have spare change in case you need to use a pay phone.
- 3. Have emergency telephone numbers with you (facility manager, fire, police, ambulance,) as well as contact numbers (parents/guardians, next of kin, family doctor) for the participants.
- 4. Have a medical profile for each participant on hand so this information can be provided to emergency medical personnel. Include a signed consent from the parent/guardian to authorize medical treatment in an emergency in this profile.
- 5. Prepare directions to provide to Emergency Medical Services (EMS) to enable them to reach the site as rapidly as possible. You may want to include information such as the closest major intersection, one way streets, or major landmarks.
- 6. Have a first aid kit accessible and properly stocked at all times (all coaches are strongly encouraged to pursue first aid training).
- 7. Designate a "call person" (the person who makes contact with medical authorities and otherwise assists the person in charge) in advance. Be sure that your call person can give emergency vehicles precise instructions to reach your facility or site.

When an injury occurs, an EAP should be activated immediately if the injured person:

<ul> <li>is not breathing</li> </ul>	<ul> <li>does not have a pulse</li> </ul>
<ul> <li>is bleeding profusely</li> </ul>	<ul> <li>has impaired consciousness</li> </ul>
<ul> <li>has injured the back, neck or head</li> </ul>	<ul> <li>has a visible major trauma to a limb</li> </ul>