SAFELY ON THE WATER (recreational kayaking)

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Translated Dutch - English with DeepL.com (free version)

- EQUIPMENT AND PREPARATION, a brief introduction:

for references, see “Safety on the water - PART I - Rescue and Self-Rescue”
https://www.academia.edu/120610477/VEILIG_HET_WATER_OP_recreatief_kajak_varen_

https://www.academia.edu/120609861/SAFELY_ON_THE_WATER_recreational_kayaking_

THE KAYAK:

- Kayak: there are countless models that can be rigid, divisible, foldable and inflatable for all kinds of applications and with specific characteristics. There is also a wide variety of materials to choose from. Most clubs allow you to try out different models.

As a beginner, you can start with an ‘all-round’ touring kayak with a retractable skeg, for example.

Once you have mastered the basic techniques and become familiar with the possibilities, you can expand or change and specialise if you wish. Courses are also regularly organised by the kayaking clubs themselves and various organisations.

The main characteristics are:

-the “half log” model - long and narrow with a straight keel line, very directionally stable, difficult to manoeuvre, unstable balance (only primary stability due to center of gravity), low water resistance and therefore fast.

-the “half Easter egg” model - short and wide with a rising keel line at the bow and stern, directionally unstable but very manoeuvrable, high water resistance and therefore slow.

-the “shoe box” model - better balance than the previous two due to “secondary stability”.

The “secondary stability” arises because, when tipping, on the low side the submerged volume increases, and so does the upward force, while on the high side, the submerged volume decreases and so the weight on that side increases. This creates forces that counteract the capsizing. With a semicircular cross-section these volumes remain unchanged, when tipping with a “tree trunk” shape there is no secondary stability.

These main characteristics will be recognisable in most kayaks. The “touring kayak” mentioned above is therefore medium-length, reasonably wide and rather rectangular in cross-section, with a rising keel line at the bow and stern and a retractable skeg to improve directional stability if desired. The skeg can also influence the kayak's “weather cocking” behavior, whereby the kayak tends to turn its bow into the wind, especially in crosswinds. An adjustable skeg is useful for this application. This keel line (rocker) rising at the bow and stern is adjustable while paddling on some foldable models (skin on frame) that

do not have a skeg. When paddling at sea, the rocker can also improve secondary stability because the middle section of the kayak, where secondary stability is greatest, is less likely to be lifted out of the water by the waves. A critical point here is a wavelength and wave height that simultaneously lifts the bow and stern. The speed and direction of the kayak relative to the waves will determine the duration of this instability. At sea, due to the large variations in wavelength and wave height, this situation can sometimes suddenly arise in what at first glance appears to be fairly calm water.

The model in the image with the skeg will also be better suited for navigating through ice due to the more sloping bow compared to the model with a rudder. The more pointed bow will then be more inclined to dip its nose into the water when crossing waves due to its lower buoyancy.

The deck lines are used for rescue or self-rescue or to attach a deck bag or spare paddle.

The size of the cockpit is also important, especially when getting in and out or during rescue and self-rescue. With a “large” cockpit, the kayaker can straddle the kayak, sit down in the kayak on the seat and then bring their legs into the kayak, e.g. when starting backwards. For rescue and self-rescue, one will have to try out the various techniques. With a “small” cockpit, other techniques will have to be used, which usually require greater flexibility and technical skill on the part of the kayaker.

Most kayaks are also equipped with a loop or handle at the bow and stern for carrying the kayak.

The materials from which the kayak is made determine not only its weight but also its strength and susceptibility to damage. The total weight of the kayak, including load, determines the water displacement and is therefore an important part of the water resistance. This water resistance increases quadratically with speed, but most recreational kayakers do not really reach the point where this becomes important. Moving the seat forward or backward (trim) can also affect water resistance, and thus also the distribution of the cargo between the bow and stern compartments, but this will not make a noticeable difference for most recreational kayakers either.

The colour, including that of the underside, is important for the visibility of the kayak, e.g. for search and rescue purposes.

It is important that you like the look of the kayak, even if it is a compromise. A “cool” kayak always performs better.

- **Spray deck**: Naturally, this is only used with closed ‘sit-in’ kayaks. The choice will depend on the application. Care must be taken to ensure that the spray deck can be easily removed after capsizing. The nose loop can be attached to the spray deck (wide fastening) so that it cannot be pulled off in the case of a ‘sharp’ cockpit nose. Pulling is therefore not recommended, especially with borrowed equipment, in most cases pushing will not cause this problem. There are also spray decks with an adjustable strap at knee height, across the cockpit, so that the spray deck can be pushed off with the knees. The disadvantage of this arrangement is that the strap can interfere with certain rescue techniques (cowboy, ladder,..). Some side fastenings can also be used to release the spray deck sideways if release with the nose loop is not possible. In any case, it is advisable not to rely solely on the nose loop to release the spray deck. Pushing with your hands on the kayak next to the cockpit can sometimes also work.

Neoprene spray deck with nose and side loops and upper body protection.

- **Paddle (attachment)**: Paddles come in all shapes and sizes, both in terms of material and shape. To begin with, it may be best to choose a two-piece model so that you can adjust both the length and the angle between the paddle blades to suit your personal preference. Sometimes there is a thickening on

the paddle shaft where the hands are placed, so that less force is required to hold the paddle in the correct position. It can be useful to attach a paddle to the kayak, e.g. with a Velcro strap like the “ankle strap” on a surfboard, so that you don't lose the paddle, e.g. during a technical departure (swimming). If the paddle is attached to the kayak, bear in mind that it can turn away and become inaccessible from the cockpit. To retrieve it, you will have to get out, which can be avoided with a proper attachment. Paddle swimming is also interesting because it is difficult to move forward as a swimmer in “full outfit”. Depending on the circumstances, paddle swimming can be done on your back with your feet forward or in the “crawl” position (head forward). Towing the kayak as a swimmer is then no problem. Consequently, it is part of the “Technical takeoff and landing” (swimming takeoff and landing).

CLOTHING:

- **Headgear**: mainly to provide protection against the elements, wind, rain, sun, cold, hail and snow, etc., but can also be used to bail out water if a lot of water needs to be removed from the kayak or to scoop water to cool down in case of imminent overheating.

- **Neoprene swimming cap**: a neoprene swimming cap can be useful to prevent hypothermia after capsizing. It is therefore best to keep it within reach, e.g. in your life jacket, deck bag, etc. In very cold air temperatures, it can be worn while paddling, but then you need to be careful not to overheat. It can therefore be useful to have several headgear items with you and to try them out in different circumstances. The more professional neoprene caps have an indication of the thickness, time and water temperature (e.g. 2.2 mm / 7-12°C / 1 hour). It is best to choose a bright colour, otherwise swimmers will be virtually invisible to potential rescuers, although this does not apply in a swimming pool. If in doubt, it is best to take measures to improve visibility (hand flare, paddle, buoy, etc.). It is a constant concern for rescue services to run over a swimmer in distress with the rescue vessel because they have not seen them.

- Regular clothing - specialised clothing - spare clothing: The clothing worn while paddling varies greatly. From swimwear in high air and water temperatures to dry suits with different layers of undergarments depending on the water temperature. Appropriate undergarments can also be found in other sports, such as skiing. It is not always clear which clothing is best suited to the air and water temperatures. When the air temperature is high and the sun is shining, it is pleasant to wear light clothing, but this can also be a light shirt and long trousers that provide protection from the sun's rays. Even if the water temperature is actually too low for such clothing, it will still offer more protection than just swimwear when tipping, and also after climbing in or rolling and continuing to paddle in wet clothing. So it's a matter of weighing up the pros and cons. However, there is only one general rule when it comes to clothing: ***it must be suitable for the water temperature.***

Spare clothing can be stored below deck in a waterproof bag so that, after going ashore (or, for example, on the water in a raft formation), you can put on completely or partially dry clothing and take shelter in a poncho, which may be advisable in certain weather conditions. Spare clothing can also be useful for helping others in an emergency. If there is a chance that you will have to walk a long way after an accident and once ashore, it is also useful to have suitable spare footwear with you.

A dry suit is designed, together with undergarments adapted to the water temperature, to keep the kayaker dry after capsizing and then to retain body heat for as long as possible. Of course, the undergarments may be wet from perspiration, which will promote cooling in the longer term, but there

is nothing that can be done about that. In any case, the cold shock will be largely avoided. With a wet suit, cold shock is less avoidable because, in some designs, cold water will penetrate between the suit and the skin. However, rapid further cooling is prevented by retaining the warmed water between the suit and the skin. It is advisable to test this during training in tipping and rescue and/or self-rescue in different circumstances. An intermediate solution that is sometimes sufficient is a windproof vest, water-repellent or not, with regular trousers.
- **Footwear**: With a dry suit, you usually need to go two sizes (EU) larger than normal. This is often forgotten when choosing a sit-in kayak, which can lead to a space problem. The sole is also important, you can choose between thin or thick soles. If you are getting out or going ashore where there are shellfish, sharp rocks or bushes, a thick sole is recommended. If you do opt for footwear with a thin sole, a Kevlar insole can offer a solution.

- **Gloves or pogies**: gloves should also be chosen according to the water temperature. If your hands get too warm while paddling, you can easily cool them down in the water next to the kayak. The aim is to ensure that your fingers do not become numb in cold conditions, even in the water, so that you can continue to use them properly. Once your fingers are numb, all kinds of actions become very difficult and you have to hope that you have made sufficient provisions, such as pull loops on zips and compartment lids, loosening or operating hand flares, using buckles with emergency release, etc. Gloves (e.g. neoprene) are sometimes best purchased one or two sizes too large, with a zip with pull tab on the back of the hand, so that they can still be removed with numb fingers. It is difficult to warm your hands with chemical hand warmers, for example, when they are in wet neoprene gloves. It is best to consider all scenarios of what you would want/be able to do with numb fingers, e.g. take your car keys, take your mobile phone and operate it, etc. Pogies, attached to the paddle, are very suitable for keeping your hands warm while paddling, but are useless when tipping. In very cold weather, you can use the pogies, e.g. nylon, and neoprene gloves together, but this will only be feasible in extreme cold. Thick (neoprene) gloves can be pre-shaped with curved fingers so that they do not require constant effort to hold the paddle. You can also look for suitable material in diving equipment. The thumb is reinforced (in my case) with a Velcro strap to prevent premature wear (after +/- 100 kilometres) caused by the paddle shaft.

- **Helmet:** A helmet is recommended if there is a risk of head injury. This could be the case, for example, on a busy coastline with many surfers, between piers or in shallow water with a hard bottom, obstacles or rocks. Some surfboards have sharp fins that swimmers should also avoid hitting their heads on. Kayakers can also choose to capsize, away from an unavoidable collision with an oncoming object, and use the kayak as a shield to absorb the initial impact.

SAFETY EQUIPMENT:

- Life jacket (PFD): life jackets are usually filled with solid buoyant material (sitting on them can damage them, for example), but you can also opt for an automatically inflatable type, usually with a CO^2 capsule. There are also hybrid jackets that combine both types, or you can wear them separately on top of each other. For kayaking, shorter models are usually used because they need to be combined with a spray deck. Inflatable models are usually of the type that automatically places the swimmer on their back or keeps them in this position. In our application, it is best to disable the automatic inflation mechanism on an inflatable life jacket. The life jacket is not intended to inflate when a wave comes over or when a roll is successful. The disadvantage of disabling the automatic device is that you have to perform an action to inflate the life jacket. If you are wearing a dry suit, this will initially be sufficient to keep you afloat, but it is not reliable in the longer term, as the air will be displaced from the suit by the water pressure and is therefore insufficient as a safety measure.

In addition to the buoyancy of the life jacket, which is specified in Newtons (N) according to the weight of the wearer, the pockets and fastening options are also important.

What do I want to have with me in case of capsizing and loss of the kayak?

The answer will help determine the choice of life jacket and, to a lesser extent, the dry suit, wet suit or other clothing.

An example of what can be useful as a swimmer, e.g. when paddling solo on larger water:
knife - reading glasses - 2 red smoke hand flares - emergency poncho (in case you don't have a dry suit or windproof jacket) - 2.2 mm neoprene swimming cap (in very cold water) - 2 m nylon rope 6 mm with 2 carabiners and 10 cm elastic cord - waterproof mobile phone (or in a waterproof bag) - VHF radio - GPS - waterproof white light - camel bag (drink) - loose hook, carabiner or folding grappling hook - waterproof bag with ID and money or payment card (if not in the sleeve pocket of the dry suit) whistle - first aid kit (if not in dry suit sleeve pocket) - (at sea or other “open water”, you may also want to bring a PLB with return link, strobe flash, compass, etc.).

- **Hand flares**: chemical flares, usually red or orange smoke with a flame, or their electronic counterparts. Both have advantages and disadvantages. Chemical flares are dangerous instruments in themselves. You must ensure that the expiry date has not passed and/or that the metal casing is not damaged. If so, it is best not to use them. When lighting them, be sure to keep the flare away from your face and downwind from yourself. If the flare does not ignite, do not look at it closely, but throw it away immediately. Smoke and fire will be more easily recognised by non-professionals as a distress signal than an electric flash, except perhaps at night. Of course, there is nothing to prevent you from carrying both. The electronic version has a much longer operating time (e.g. 2 days) than the chemical version. For maritime safety equipment, it is best to choose SOLAS (MED, USCG) approved equipment.

- Whistle: An emergency whistle or horn is best water-resistant. For a whistle, this usually means a design without a pea. In most cases (background noise, wind direction, obstacles, etc.), the sound of a whistle carries much further than shouting. It also requires less energy and, if necessary, the SOS signal can be used (... --- ...).

- Mobile phone: There are waterproof devices available, but you can also put your mobile phone in a waterproof bag, although this may not be sufficient if you are swimming. In most cases, mobile phones are also equipped with a light so that you always have some emergency lighting.

- GPS: The most important features are certainly interesting: you can see where you are and, if necessary, report this to the emergency services. Even the simplest devices usually show you how to return to your starting point (waypoint). It is important not to confuse the units of measurement used (degrees, minutes, seconds or decimals) when reporting your position. Any additional features the device offers are, of course, a bonus. Naturally, a water-resistant model is essential for our application.

- Compass: available in all kinds of designs, even in mini versions, e.g. on an emergency whistle. Some GPS devices also have an electronic compass and some designs are for permanent installation on the deck of the kayak in front of the cockpit. It is always useful to have some idea of the compass directions during your trip and the positions of the sun.

- VHF marine radio: Also available in various models, but a floating model with display lighting is useful. You do need a licence for this. Usually, the responsible maritime traffic control centres can be contacted for a radio test, which also informs them of your presence. If necessary, your destination and time of arrival and departure (ETA) may also be of interest to these services. Sometimes the number of kayaks and their colour are also requested, mainly in waters where recreational boating is “tolerated”, e.g. the Westerschelde in the Netherlands. If you have a radio with you, you are obliged to listen to the emergency channel (16) and use the appropriate channels for normal calls. It is advisable to activate the key lock, as kayakers can easily change channels without noticing by accidentally touching the buttons. In principle, you must also carry your permits with you. I keep mine stuck to the inside of the hatch of the rear compartment.

- PLB (with return link): A PLB (Personal Location Beacon) with return link, which provides confirmation of receipt when the distress signal is received, is suitable for all outdoor use thanks to satellite localisation and is therefore not limited to use on the water. The return link is an interesting evolution compared to older systems. Waiting without knowing that the distress signal has been received and that help is on the way can be very frustrating and lead to risky decisions. Without confirmation of receipt via the return link it is impossible to know whether the device is functioning properly.

- Rope with carabiners: in most cases, a flexible 6 mm braided nylon rope of 2 m will suffice (breaking strength 620 kg). Equipped with a carabiner on each side, it is very versatile. For example, securing the kayak to the shore or a buoy, improvised rope ladder or step, first aid for tying off severe bleeding, spray deck clamp when pumping, etc. Metal equipment should be saltwater resistant for our application, e.g. stainless steel 316.

- Knife: a flat design seems to be the most interesting for storage. There are designs with all kinds of integrated tools, such as a bottle cap opener, glass breaker (which can also serve as an ice pick), hook knife, saw tooth, eyelet for string, screwdriver (blunt tip), etc.

- First aid: A distinction must be made between what is absolutely necessary and practical to store in the PFD, and a comprehensive first aid kit. We will only discuss the former, which can be stored in a flat, waterproof container. This should contain two sterile gauze pads measuring 7.5 cm x 7.5 cm and 1.5 m (enough for 2x around the head) of duct tape wound onto a 5 cm x 5 cm piece of plastic. 1 m of regular bandage folded flat, 5 cm / 10 cm. Only intended to quickly stop bleeding. More is also possible, of course, if it can be stored away.

- Poncho with long sleeves and hood: mainly for windproof shelter. It will of course also protect against rain. If necessary, the sleeves can be closed around the arms with short straps and around the hips with a belt. If you think you will have to walk around in this situation for a longer period of time, it is best to wring out your wet clothes and put them back on if no dry clothes are available. There are strong plastic emergency ponchos that can be folded up very small for storage. It is advisable to choose an opaque poncho so that it can also be used for changing clothes.

- Waterproof chemical hand warmers: If your fingers are numb from the cold and you have the time and opportunity to recover, chemical hand warmers are recommended. There are single-use and recyclable versions available. It is best to bring a few along on winter trips. Numb fingers can be a serious handicap in rescue or self-rescue situations.

- Pulling loops: pulling loops are recommended so that you can still operate things such as zips, kayak compartment lids, buckles on waterproof bags, etc., even when your fingers are numb from the cold. They are very simple in principle, but they can make a big difference.

- Energy bar: Basically a mix of fast and complex carbohydrates (sugars). Fast sugars are particularly suitable for briefly compensating for an energy dip. As surprising as the energy dip can be, it is temporary and can be quickly compensated for. It is important to note, especially when using only fast sugars, that the subsequent crash can be more severe. It is therefore advisable to replenish your energy reserves as quickly as possible in a more sustainable way with complex carbohydrates such as bread, oatmeal and wholemeal pasta, or to switch to plan B (return, land, let yourself be towed, let yourself be guided, etc.). Be careful with some industrially produced energy bars, as they may contain only fast sugars and unsaturated fats.

- Drinking: You can choose from all kinds of regular or sports drinks, but the most important thing, especially in hot weather and during strenuous exercise, is to drink enough. To be able to drink even in difficult conditions, without the risk of tipping, a “camel bag” or “drinking backpack” system is

recommended, as it allows you to drink hands-free. Some life jackets (PFD) are equipped for this purpose, or a separate attachment can be fitted. Storing it in the deck bag or in the “day hatch” is also an option if you are sure you will be able to drink without capsizing. If you can land regularly, there is of course no problem.

- Flotation bags: Pointed air bags to fill the empty spaces in the front and rear compartments are interesting additions. They can prevent the kayak from going into ‘Cleopatra's needle’ (vertical) in the event of loss or opening of a compartment lid or, in kayaks with fixed compartments, a leak in the watertight partition between the cockpit and compartment. A leak in the hull is also possible, of course, but is rarer. The “Cleopatra's needle” is difficult to recover from, especially when paddling solo, and requires specific knowledge and training. Filling the empty space with inflated air bags that can be adjusted in volume to fit the unused space is a simple but effective measure. A simple net bag filled with empty plastic bottles is of course also a good option, but it is not adjustable.

- Rescue buoy(s) with CO_2 cartridge: available in various sizes and usually fit into a small bag when not inflated. The technology is the same as for life jackets with CO_2 cartridges. The buoy can be used in various ways. As a swimming aid for yourself or others, together with the paddle blade in the paddle float to quickly climb in, or as a permanent stabilisation aid, to fill a flooded compartment, to recover Cleopatra's needle, to attract attention (orange colour), etc.

- Pump: If larger quantities of water need to be removed from the kayak, a hand pump is useful. The easiest technique is to pull it towards you at an angle rather than lifting it vertically. A foot pump usually has a lower flow rate and will be used to remove some water that has leaked in during the trip.
With a hand pump and in rougher weather, it can be a problem to leave too much of the spray deck open, so that more water comes in than can be pumped out. It can then be useful to place the pump against the cockpit nose, possibly holding it between your legs, and clamp the spray deck to the cockpit edge.

This can be done, for example, with a short (ladder) elastic band (15 cm) with the carabiners hooked behind the cockpit edge across the spray deck. In rougher conditions, it is also best to secure the pump with a safety line so that it is not lost when tipping. An electric pump is also sometimes provided.

The hand pump can be stored under the foredeck, among other places. Of course, it must not interfere with disembarking. Sometimes the pump is attached to the foredeck, either in a deck bag or not.

- Sponge: can usually be stored behind the seat and can be used to remove water from the cockpit. How and when will depend on the circumstances, but it works well. The sponge can also be attached to the seat with a safety line so that it is not lost when tipping.

- Safety strap (rescue straps): This is a strap used to attach the paddle with paddle float to the kayak behind the cockpit, enabling self-rescue while keeping the paddle attached to the kayak. It can also be used to attach the paddle to someone who is unwell and needs to be towed. The ‘“squeeze buckle”' can be pulled loose, which is practical in this setup, as the strap is located behind you.

- **Short loose strap(s)**: e.g. 40 cm straps, 20 mm wide, with plastic safety buckle. Can be used for all kinds of applications, e.g. to make a rescue strap if one is not provided, or on both sides to make an outrigger with paddle floats, to tie down the poncho sleeves to make it windproof, etc.

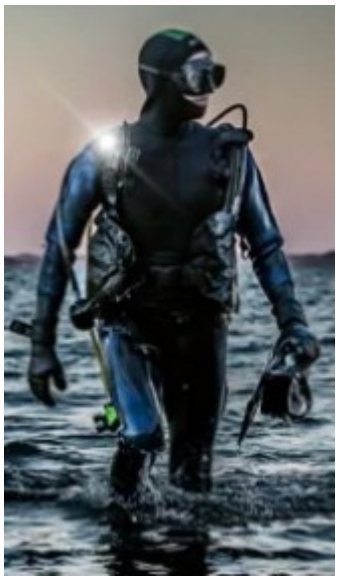
- **Paddle float(s)**: inflatable float with a compartment to insert the paddle blade and a strap to secure it around the paddle shaft. Some have double chambers, while single-chamber paddle floats are equipped with rings to attach the paddle floats to each other, e.g. with small plastic carabiners. It takes some practice to climb in with a single float, and sometimes it is not possible at all, in which case a double paddle float must be used. If you have two paddle floats, you can also stabilise both sides of the kayak for yourself or another kayaker who needs it. They can usually be stored behind the seat. Also available in a fixed version.

- **Safety line**: perhaps the most controversial piece of equipment. With a safety line, e.g. 6 mm nylon with 2 carabiners, the kayaker can attach themselves to the kayak. The main reason for this is to avoid losing the kayak when capsizing, which is usually a bad thing. The line can also be useful when tipping in breaking waves, as the kayak can be used to drag you to the beach, a shallow area or the shore. This is much less likely to happen if you are swimming without a kayak. The line can of course also be used to secure the kayak when landing, etc. Apart from the opponents, there are kayakers who prefer the short (e.g. spray deck nose loop to a deck line) or the long safety line (hip belt to bow handle). When using a safety line, it is advisable to use a “quick release” belt so that you can free yourself quickly if necessary.

- **Spare paddle:** not only useful if you break or lose your paddle, but also to help other kayakers or to perform single or double stabilisation with paddle floats. The type also depends somewhat on the circumstances. Paddling for many kilometres for hours on end with a heavy spare paddle can be disappointing, but if you need to break ice because your landing place is frozen over, for example, a heavy version is better. If you lose your paddle while tipping and you do not have a spare paddle,

certain ways of self resque (e.g. heel hook) will no longer be possible. Paddles are also useful for creating a “fixed” raft formation.

- Deck bag: useful for keeping certain items close at hand, e.g. drinks, spare headgear, swimming cap, sunglasses, short straps, chemical hand warmers, gloves, etc. An additional advantage is that small waves are broken and the kayaker stays a little drier. The disadvantage is that the cover bag catches the wind and can affect the kayak's “weather cock” behaviour. A secure fastening is essential.



- Light: the lighting of a vessel is determined by law. For kayaks, this means at least one white light of a certain strength at the highest point of the vessel. For kayakers, this will usually be on the helmet or headgear or on a special short mast that can be attached to the kayak. Of course, you can opt for a smaller light that does not comply with the regulations, but which you always carry with you and attach to the shoulder strap of your life jacket, for example. In any case, it is a valuable additional safety measure in darkness or sudden fog.

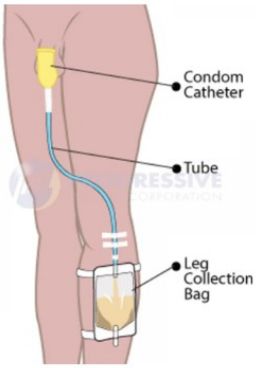
- General: for water temperature (cold shock) // hypothermia / air temperature / wind chill / sun / wind / night / winter (numb fingers) / fog / helicopter rescue (rotor downwash), please refer to
PART I Safely on the water p4.

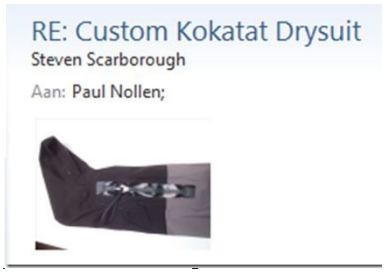
- Urination management: definitely useful when wearing a dry suit or on long trips where getting out of the water is not so easy. For example, there are dry suits that have a zip between the legs from ankle to ankle, which makes things a bit easier. The subject is virtually undiscussable, so this is a start. One of the few discussions I found was on a forum in Australia: *you tilt the kayak so that water runs into the cockpit, then you urinate and pump the kayak empty.* Obviously, this does not apply if you are wearing a dry suit.

https://aviation.derosaweb.net/relief/ReliefSoaringMay2010.pdf
www.flyg.pk2.se/praktiskt/Pee.pdf etc.

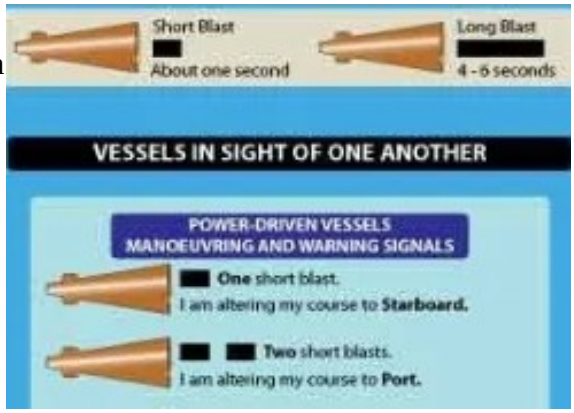
urinal device suitable for ladies

Some dry suit manufacturers relocate or install the zipper at ankle height on request for those who use a urine bag. The final Kokatat design (image) does have a cover over the zipper, like the original zipper, so the zipper is shielded and not visible. Personally, I am in favor of placing the zipper just above the black foot section for this application. This extra access (or others, if desired) is sometimes also used for prosthetic limbs or other medical applications.





- Signals: mutual communication / professional and recreational shipping



The most important manual communication signal between kayakers is the question 'everything OK?' Hand flat on the head, elbow sideways, forming roughly an O, with the answer given with the same movement. If there is no answer, help is requested. Waving with the hand or paddle is also a request for help. The signals can be further expanded by agreement.

The most important signals from commercial shipping for us are two short sound signals (I am turning left) or one short signal (I am turning right). Of course, there are more.

- Trip: Good trip planning is essential, not only for solo- but also for group paddling. When paddling in a group, trip preparation is often taken too lightly, both by the organisers and by the participants. However, it is not impossible that unexpected events could leave you stranded alone.

Knowing the starting point is important, especially if you are paddling in a circle and will therefore return to where you started. The starting point is not necessarily "recognisable" from the water when you return. It is therefore useful to take a look around when you leave. If you have a GPS, you can save the starting point as a waypoint.

While underway, it is certainly useful to estimate where you are, or to remember, for example, named or numbered buoys that you pass. If help is needed, it is useful to know where you are (approximately). Knowledge of the entire route is therefore a prerequisite.

While underway, or in advance when planning, you can keep an eye on the possibilities for leaving the water. It can also be useful to assess the current, e.g. in which direction are the buoys sloping? Tipping in a marina may seem harmless, but it is sometimes unclear how and where to get out of the water. Covered sloping or straight banks are not always easy to land on, especially when there are onshore waves. Landing on rocky banks is also not always straightforward. A technical landing (swimming with the kayak in tow) is sometimes the best option.

Sometimes you have to deviate from the trip plan, and then you need to have an idea of where you are and where you can land or how you can return, if that is even possible.

A risk analysis is recommended prior to some trips. This does not always have to be complicated, but going over the trip can certainly be a reason to pay attention to certain points.

Some kayakers may need guidance or run certain risks, e.g. seasickness. It is certainly useful to discuss this in advance. Towing a kayaker should not be underestimated, also in terms of knowledge, and requires, if possible, guidance from a third kayaker to monitor the towed kayaker. It is not always noticeable to the towing kayak that the towed kayaker is capsizing. If no supervision is available, it may be preferable to take support on the towed kayak rather than a tow rope, as the towing kayak still has some visibility of the bow of the towed kayak.

Quick release shackle

As a towed kayaker, it can be useful to connect with a carabiner with an emergency release. This connection allows the towed kayaker to release the tow line on their own initiative. The safety carabiner can be attached to the bow handle with a tension rubber band, and the release cord can then be secured with some slack

to a fixed point at the height of the cockpit. If the tension rubber band is stretched too far, e.g. when towing two kayakers, or if it breaks, the coupling is automatically released. The kayaker can always release the safety carabiner themselves by pulling the release cord.

Group kayaking also requires expertise from the guides. Before departure, it must be checked that everyone has the appropriate equipment for the planned trip, including safety equipment. It is also an illusion to think that during the trip “everyone will take care of everyone else”. It is no coincidence that sometimes it is only when landing or taking a break that someone is missed. If deteriorating weather conditions are to be taken into account, it is advisable to divide the group into pairs in advance (buddy system) who want to stay together if necessary, as the group will automatically spread out. It then becomes impossible to communicate with the group. If you are unexpectedly caught by deteriorating weather conditions, the pairs will have to be formed at that moment.

It is also useful to agree on how the group will behave when encountering commercial shipping or in busy shipping lanes. Scattering like a flock of birds sends no clear message to any helmsman. Crossing a shipping lane side by side “in front” is sometimes advisable. If necessary, you can cross “in line” behind each other, but without clear agreements this will not work. It is best to indicate your intentions to the helmsman of an approaching vessel as long as you can see the steeringhouse yourself. For example, if you are crossing a channel at right angles and a vessel is approaching that you wish to let pass in front of you, you can point your bow towards the stern of the approaching vessel and the helmsman will then know that you intend to pass behind him. It is also advisable for the group to be able to form a raft in case this is useful or necessary, e.g. to rescue a swimmer, in the event of rotor downwash from a rescue helicopter, etc.

- Paddling technique: The distance between the hands is important. There is usually a tendency to place them too close together. If this tendency is exaggerated and the hands are placed next to each other, it is clear that no force can be exerted. This is in contrast to placing the hands “too far” apart, which will force you to make a twisting movement with your upper body. This twisting movement is useful when paddling because it maximises the use of the lumbar muscles, thereby relieving the arm muscles. The lumbar muscles are also stronger than the arm muscles. If you want to learn how to paddle optimally, professional guidance will be necessary.

You can also relax the hand muscles slightly from the “upper hand” and only push there, so as not to constantly strain the hand muscles.

It is best to study and practise the different techniques required for a whole range of manoeuvres.

The paddle also serves as support in the event of unwanted tipping (see Safety on the water Part I). This support is usually taken next to the kayak (low support/high support) except in the case of waves coming from behind. In that case, it is useful to take support backwards next to the kayak because you are then in the upward water movement at the front of the wave. This is also the starting position for “surfing” on the front of the wave, where you first have to pick up speed yourself. When the wave is coming in sideways, and especially when it is breaking, you can lean towards the wave on the paddle, which provides high or low support in the front of the wave.

- Injuries: The most common injuries are shoulder and wrist injuries. Among other things, because the arm is extended with the paddle, the wrist or shoulder can be subjected to very high forces. It is therefore advisable to keep your arms below shoulder level at the beginning to get a feel for what you can handle. The surface area of the paddle blade and the angle between the paddle blades can also be important factors in terms of the strain on the wrist. It is essential to be careful and avoid damage

caused by overexertion. Recovery from an injury can take a long time. It is certainly useful to include injuries in rescue and self-rescue training exercises.

- Assisted rescue / Self-rescue: In addition to being useful, knowledge of rescue and self-rescue techniques also comes in handy when cooling off in the summer, for example. It is also advisable to test the various options and keep practising, as panic is a bad advisor. If it ever becomes necessary, everything will go smoothly.

An example is the experience of swimming in the sea. If, prior to capsizing, you still had some view of the coast and/or fellow kayakers, this is completely different as a swimmer after capsizing . With a few waves, it does not have to be really bad weather, the horizon of a swimmer on the open sea is very close. The coast is no longer visible and fellow kayakers have also disappeared. All in all, they don't stick out very high above the water, and neither do you as a swimmer. So suddenly there is nothing but waves all around, which is very strange and not very reassuring if you have never practised this before. Lonely and disoriented is therefore the first impression. If, for example, as a solo paddler, after a failed self rescue, you also get no response to a MAYDAY call via the radio, then the thought “what on earth is going on now” does cross your mind. It is also not usually practised to make a radio call with thick neoprene gloves on as a swimmer with the radio just above the water surface. At best, people are used to calling a coastal station from the beach with a radio. It is therefore advisable to check the radio display to ensure that it is actually transmitting when you press the PTT button. Transmitting without saying anything will also send the ATIS code so that receiving stations equipped with an ATIS decoder, such as most maritime stations, already know who the call is from (Automatic Transmitter Identification System). Even if the conversation is then unintelligible or incomplete, they already know that there may be a problem and who is calling. The ATIS code is stated on the transmission licence together with the call sign and must be entered by the licence holder on the transmission device in the settings. Naval ATIS code is only available in certain European countries (RAINWAT signatory nations).

In my experience, the insurance provided by the Sports Federation (Peddelsport Vlaanderen) covers all rescue costs without any problems. The rescue of persons is free of charge in Belgium, but any salvage of equipment will be charged.

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