BRION! CROCODILE RAFT UNSINKABLE: (Not like the Titanic)

This raft is good for 2 to 5 persons but the logs MUST measure at least 0.40m in diameter and from 3 to 4 meters long. Fig:1

1) Take 2 big logs and cut them with 2 sharp points at bow "V" cut 4 #meplats# "M" in the same perpendicular way as V

2) Couple or joined by 2 crossed bars "F" the logs being parallel and separated from one another at 1.50m from #axial to axial#

3) Split in two another log to get pieces "A" fig: 2 & "B" fig:1

4) Join "B" in "MM" at rear (stern) using 2 stakes " H H "

5) Using 2 forked branches "G" make in middle of "B" a #tollet# to use an oar steering.

6) Pierce 2 holes in crosswise at each end of "A" and use a saw to cut 2 notches(slot) "E E" fig: 2

7) Fix "A" on "M M" forward using 4 stakes in X to avoid any tear.

8) Pierce the vertical hole "Z" for the mast.

9) Nail the board "N" just under with a hole in its centre right under the hole of "Z" this will hold the mast

real fine.

10) Fix in the 2 stakes "U U"
11) Nail a plank platform "S S" fig: 3 on 2 poles "P P"

12) Nail and tie using #brelage# "L L" the poles "P" on half log C.

13) Pierce 2 holes "T" connecting to the spread of the stake U.

14) Join as seen of fig 5, the photo of fig 4 can show best.

15) Raise the mast in the hole "Z"

16) The sail will be a square tarp stretch on the mast by "K" using a #stretcher# "Y Q" moored to a stake "U".

17) Make the stakes "U" high enough so that you can fix 2 oars should the wind die down & you have to row the boat.

ADDED NOTES:

REMEMBER between each beam it's 5 feet wide and from "M" to the "V" end its 2 feet long and fairly sharp to cut water. The mast spar is 10 to 12 feet high and will not need brace or stays you could use a 20 foot spar or mast but then you would need braces made of rope or wires and a bigger sail thus lot more work for not that much more speed.

The 2 main logs with 10 inch diameter are good enough

(heavy). On a 12 feet mast you leave 1 foot clear at top and bottom to hitch the sail which is 10 feet high by 9 feet wide at the top and 11 feet at the bottom if you can, otherwise try 10 X 10.

Your sail is riveted or attached every 6 inches apart. You can use any strong material and even fibreglass material for garage. The rudder is about 1 1/2 feet in the water.

And you should make about 5 to 7 knots/hour. Depending of the wind of course. The length of the crocodile is 12 to 13 feet from bow to stern.

INDIAN RAFT:

To use only on small lake or flat calm waters, not across an ocean. You cut 3 dry log 15 feet long and about 9 inches in diameter.

Place them in a fan shape and throw across about 15 tall spruce branches to use as a platform then using a pole of about 12 feet you can push this raft to cross a small lake or to reach a beaver which you have shot and the floats away.

No need to tie anything down since your weight and the water pressure will hold everything together nicely it is called the Kinetic force.

CANOE:#GIRON#:

Bottom curve in the longitudinal sense. For the open canoe the #giron will be less pronounced (deep) # whereas the curve of the slalom canoe will be much pronounced and will

give the shape of a banana to the canoe. The canoe will be much more managing but its speed will be diminished lot.

USE OF KEEL:

Their use is to diminish the lateral (side) sweep when navigating with a side wind. Thus the canoe is more stable. This is why a canoe with 3 keels will be very practical if crossing great lakes or at sea shore where there is much wind or for fishing / hunting.

But the keel has also problems since it is much more difficult to move around, so if you are going down rivers & rapids or to do slalom or if there are few lakes the it is much preferable to use a canoe without keel.

Whereas if you do much lakes and few rivers then it's best with keel. Once can also do rivers & rapids with one keel canoe but you better reinforce the canoe with fibreglass and resin. These types of canoes have a false keel inside to reinforce the canoe but it is thus more heavy.

CANOE HEIGHT:

Meaning the difference between the bottom part of the canoe and the above height of the central bar. For a 16 foot canoe the height vary between 13 to 15 inches. If the canoe is high the advantage will be that the waves will get in less often by the sides but the canoe will feel more the influence of the wind and will have tendency to go adrift (leeway).

For your security the height MUST NOT be LESS than 12 inches because once your luggage and yourself in the canoe, you

will be near water level and water will get in with the least wave and wind plus you may have to bring extra gear or person who is not ready to swim yet.

Beside the fact that if the height is less than 12 inches our head will hit the bottom of the canoe while portaging and will force you to walk forward inclined thus a real pain in the neck.

POINT SHAPE:

The high elevated point even drawn back of the old Indian canoe permits very well to cut the waves and not to get water in from the point but also offer greater resistance to the wind.

LENGTH OF THE CANOE:

The 10-12-14 feet long canoe are too easy to capsize to consider. The smaller a canoe is the more easy to capsize. The ideal length for an expedition is 16 feet which makes an all around canoe. It has the primordial qualities of an expedition canoe, not too heavy in portage, can load up to 600 lbs man and luggage included.

Very comfortable since you don't have the feet jammed in under the benches as with the 12 or 14 feet. Safe since you can cross waves up to 3 to 4 feet no problems.

A canoe of more than 16 feet can be used if there are many men in the canoe, in that case the most often used is the C-6 or the war canoe, it has 22 feet long and can take 6 men and their luggage. Most often used to go down big rivers or big lakes. General rule of thumb to calculate each

foot adds 5 lbs to the weight and 70 lbs in its cargo pay load.

WATERPROOF LOCKER:

It is necessary to have them on fibre glass or Al. canoe because it is them that insures the floatability of the canoe. The wooden canoe with tarp does not need it, being made of wood.

#PLATBORDS RAILING?#:

It is important that there is #plat-bord# since they are the ones to solidify, strengthen the canoe frame, offering also an excellent holding to manipulate the canoe and stop the waves to come in over the #franc-board#.

They MUST be double meaning one inside and one outside the hull thus permitting to attach the seats and to give a good holding for the bars and also to maintain the balance while portaging by placing the hands inside the canoe #railing#.

#Plat bord# IN WOOD OR ALUMINIUM?:

In wood for the wooden canoe and in aluminium for the fibre glass canoe. The wooden one MUST be tough & hard non breakable, taken care every year, sanded and varnished to avoid splinters but they are hard to replace in expedition as to replace them as well.

Whether they are of wood or Aluminium. They MUST have 3/4 inches thick and the screws that hold them MUST be easy to remove which is not ALWAYS the case with the Aluminium #platbord#.

TYPE OF MATERIAL:

Tarp canoe is the most widely known, generally it doesn't have a keel but it is easy to install one. The fact that it does not have a keel makes it very handy to do slalom or to manoeuvre but it is unwise to go down rapids with it since the tarp can easily be ripped up.

Its advantage is that it is very quiet & is most often used for fishing & hunting.

Light enough around 65 to 70 lbs but after a long while in the water the tarp gets water logged and increases the weight of the canoe so that after a day of heavy rain or strong waves the canoe will weigh 95 to 100 lbs. Dry it in a shade because the sun will make the tarp to crack.

It does not have floaters since the wood insures its buoyancy and it will not sink even full of water. The seats are usually of knitted #nerves# as snowshoes they are comfortable and solid. Being high up they permit good foot space.

Its sides are usually high so that the water does not get in easily yet it offers a good resistance to wind. To keep it in good shape, sand and cover the tarp with a good marine paint and varnish the wood work as often as needed.

FIBREGLASS CANOE:

They are a mixture of the Algonquin and Montagnais canoe. Usually they have a keel but some models the 14 and 15 feet long have 3 with the advantages and disadvantages known above. Even with a keel they are fairly good canoe for

expeditions and rivers.

They weigh between 65 and 75 lbs for the 16 feet even up to 90 lbs with a with of approximately 34 inches & height of 13 inches at the level of the mid bar as seen above. They also have 2 waterproof boxes.

They usually have a little hole on top and this hole is not waterproof so you MUST check from time to time if the floater does not have water in it and to empty it if need be.

One can also make a small hole at the bottom of this box parallel to the canoe bottom and to let the water out using self blocking type of plug to fill the hole after usage.

There are many models so here are some points to check up; MAKE SURE that it is not too low, they MUST be at least 10 inches high to be comfortable and to allow enough space for the feet.

Check if the rivets are well in place and solid and if there are no danger to scratch your fingers if you get caught in them. The bars MUST be well coupled to the # plat bord# so as not to offer any play. The seats made of #leatheret# or styro-foam offer some problems.

The #leatheret# will easily crack and split under stress or cold, the foam will get your ass wet quick since it absorbs water. The seats MUST be solidly fixed to the canoe. Some models have the seats affixed to the side of the canoe and they break easily therefore don't take them or troubles along.

ALUMINUM CANOE:

Very popular in USA and Canada, load of space, solid and no upkeep. Fairly similar in weight to the fibreglass type. However it has the disadvantage to be very noisy for multitude of reasons.

Also it is a real thermometer, the canoe is very hot for the legs if the sun beams on it or very cold if the water is icy. Its seats are very uncomfortable & get too hot or too cold via weather.

MODIFICATIONS TO DO TO THE CANOE:

Since canoes are still not 100% one has to do some modifications to better them here are some.

One that will greatly help you in portage is to advance the rear bar so that you can hold it at arms length when doing portage offering also an excellent holding to maintain the balance of the canoe.photo to explain. Add a wooden bar handle of 3/4 to 1 inch diameter at the tips of the canoe to help when 2 are carrying it on short portage.

#CALE GENOUX#:

To ease the pain of the knees, place a piece of Neoprene #hard foam# of 3/4 to 1 inch thick and wide enough to be comfortable and that can be used by many people of different weight. Once your piece cut, glue it strongly to the bottom of the canoe using the glue: Pliobond of Goodyear. Or use a small rubber mat to help.

#CALLE CUISSE#:

This is used to maintain the legs in position and do avoid

slipping forward in rapids or lake with strong waves. Make one using a nylon or leather etc. belt of 2 inches wide and that MUST be moveable around.

To install it place yourself on your knees and fix the centre of the belt at the bottom of the canoe at the knee's height and fix the ends at 8 inches ahead of the bench using a good galvanised wire. Do not put it too high up on the thighs because you MUST be able to get out quickly of the canoe in case of capsizing

DIFFERENT TIE UPS:

Ties of all kinds for Kodak, maps, oars, etc. MUST untie quickly. Use 2 ropes of 15 feet one at the bow the other at stern MUST be tied to the holding transportation bar to fix the canoe while at rest also to haul it, to cross rapids or to help someone in distress. A rope of 30 to 50 feet with a float at one end using an empty Javel plastic can half full can become very useful to help someone in distress.

RAIN PROTECTION:

You can also place a piece of tarp of 5 X 7 feet on the luggage in case of rain or to put branches under the luggage to avoid them getting wet, or use the trick of stove grill at the bottom of the canoe which has many cooking uses.

ADVISES:
1) Check if your gears are in good order before taking off.
2) Don't stand up in a canoe.

3) Don't sit down on the end points.

4) Don't sit down in canoe when it is on the ground.
5) Don't overload your canoe.

6) Don't let your canoe on the beach edge where the wind & the waves can damage it by hitting it against rock.

7) Lift your canoe don't drag it on the ground.

8) While putting down your canoe MAKE SURE the ground is soft & that it won't lean on a rock or something sharp.

9) Getting in or out of canoe MUST be done slowly, No rush.

10) Usual position in canoe is on your knees, less chance to capsize, less tiring and more strength to oar along.

OARS AND MATERIAL:

Those made in one piece are made of maple, cedar or birch. The most solid is the maple one but also the heaviest. The laminated oars are made of spruce or hard wood, birch or #carier#.

There exist a way to make a special oar which is nearly indestructible but also very heavy, which consist once the oar is done to replace the water by polyester. Yet it can not be found on the market.

OAR CHOICE:

Standing up the oar MUST come the mouth height as a general rule of thumb but some prefer a longer oar or shorter, trial is best. Some oarsmen say that one should have the front man oar(bow) with an oar at mouth height and the stern man at

the forehead height.

The choice of the oar also depends of the size of the one who uses it of its length arm and its strength. As to the length of the paddling this comes with practice searching for the right rhythm which will give a maximum output for a normal effort.

When you buy an oar, examine it carefully since there are many points which you MUST check. A heavy oar will result in tiring uselessly the arms. Your total energy MUST be concentrated on the paddle strokes and not lost on holding the oar.

Don't forget that one gives about 450 paddle strokes per mile giving about 15 min. per mile, one stroke every 2 seconds so don't waste energy. However a paddle which would be too light will also be too fragile thus will break easily. So chose a medium weight according to your strength.

The age lines MUST be in the sense of the forces made while paddling and not in the opposite sense, so; MAKE SURE they are parallel to the force and not perpendicular.

THE FORM OF THE HANDLE:

Choose a handle that fits PERFECTLY to your hands. There is no general rule, try different ones to see which one fits best. Many however will prefer a T handle to do rapids because it offers a very good grip and T modified for long excursions.

The pear shape handle is rarely used by professionals because it is too small and offers little grip and the oar

has a tendency to roll in the hand while manoeuvring. The thickness of the handle, is also something one has to try to find his best. Personally I prefer a handle of 1 1/4" inch to the usual 1 inch.

It is only a question of impression but one get to feel what is just right for him. The handle MUST be round and straight, avoid as much as possible the rectangular handle. As for the oar it MUST be solid to permit a better traction and choose the width is function of its usage.

The Indians use to choose an oar of 4 to 5 inches using a very fast rhythm on very long travels, which would be very tiring with an oar that is 8 to 10 inches wide.

Most oars wider than 6 inches #pale are lamelelle#. They are strong enough but if you do much rapids you MUST cover over the tip of it with some polyester & also to reinforce the #pale# with 2 strips of fibreglass 2 inches wide.

To do this MAKE SURE to well sand down the #pale# before putting it, otherwise the polyester will not take hold. When you buy a #pale lameller# MAKE SURE that the tip is reinforced with a lattice of 1 inch placed in the width sense of the #pale# to insure a better strength.

Avoid oars that are 10 to 12 inches of #pale# since they force you to oar far away from the canoe and are very tiring.

UPKEEP:

In the spring sand the oar and varnish it with Varathane. In winter keep them in a damp place not dry, since the dryness

will make the #lamellage# to come off.

WAYS TO HOLD AN OAR:

The palm of one hand on the handle, the thumb facing the interior and the fingers toward the exterior. The other hand is placed at the height of the #collet neck# or 2 inches higher.

When you lay down an oar put the handle down and the #pale# upward so as not to break the cutting edge. Don't let the oar in the water or in the sun since the edge will blunt and the #pale# will split ends. Don't let it drag on the floor since one can walk over it.

HOW TO START CANOEING:

Don't try to learn alone or with less experience canoe users for you will not progress or hardly and will pick up bad habits which will become hard to let go.

So use a good teacher and there are usually many canoe schools around to benefit from. It is well worth it to take some lessons from an expert.

RAPIDS:

If you ever have to do rapids then you MUST take some basic technique to be able to easily direct a canoe in a current and to be able to stop quickly which is easy. As a measure of security you should have an experienced #canoeist# in order to do so.

HOW TO JUMP RAPIDS IN A SAFE WAY:

One MUST NEVER get in a rapid without knowing what kind it is nor where it is going to lead him.

First everyone MUST stop before upstream and get on shore then go and examine the rapid to determine its class & if one can go down through it.

One tries to find a possible path in checking the pass and the "V", the strength of the current, the height of the waves by looking the waves horizontally and also the places of the rocks and movement of the waters.

Once this study made one trace the path to take. Since there are many possible paths, one choose the best one available.

GROUP SAFETY:

Then you decide if the group can jump the rapid after having taken in consideration of the difficulties of the rapid, of its length, the age and experience of the teams, if they have life jacket, and the nearness of civilization, how much time you have left since sometimes portage is easier and safer.

If there are or not any luggage to carry or not since you can also carry the luggage and have the canoe go down the rapids using a rope to direct it at both ends, also take in view the type of canoe and finally the state of fatigue of the group.

After the exam, If the group can go down the rapid, the chief of file will go first as look out of reconnaissance and will stop downstream or in a calm zone and if the rapid

is long he will jump it by sections by each team. From his stopping point he will make the signs to the #2 canoe.

ROLE OF TEAMS:

In rapid it is the front oar man who directs and gives orders since he sees best the direction to follow and its the back stern oar men who takes care to keep the canoe in the sense of the current and will also follow the instructions of the front man but they also MUST help one another in those tasks.

Misunderstanding between #teamsters# is one of the cause of accident in canoe, so instead of getting bull headed do your work consciously, carefully and put trust and faith in your partner who also does his best to direct the canoe hopefully.

As other causes of accidents we find clowning in canoe and overloading the canoe, the usage of damaged material, also to have try to reach the other shore by swimming instead of staying safely clung to the canoe, also to have taken unnecessary risks.

Not to have taken in consideration the type and class of rapids, the bad knowledge of the technique of canoeing, carelessness, violent winds on lakes, loss of balance #hydrocution# exhaustion isolation so in keeping a constant carefulness it is relatively easy to avoid the major part of those accidents.

REMEMBER that in PORTAGE the one that carries the luggage goes first so that he can best check the terrain ahead.

INTERNATIONAL CLASSIFICATION OF RAPIDS:
1) Easy 2) A little experience.
3) More Dangerous for starters.

SIGNALS:

When going down rapids some signals are needed here are some: Standing to be seen the oarsman points his oar at : Noon = Yes; From left to right = No / 10 PM = Left; From 2 am = Right.

Oar going up and down held horizontally = Slow / Oar going waist high horizontally = Portage. Oar going down as if paddling = #Cordelle# (use of ropes).

MATERIAL TO HAVE AT HAND (#CORDELLE#):

2 ropes of 15 feet attached at the front and back of the canoe. A rope of 30 feet by team and one of 50 feet for the head chief and the #serre file# with a float attached to one end. Use a Javel plastic container 1/2 full of water with the lid on of course.

Choose a yellow plastic rope which is better seen polypropylene of 1/4 inch of the ropes of 30 feet and of 5/8 for the 50 feet. A good scoop made from a Javel bottle which you have remove the bottom and kept the lid and handle.

One will attach the scoop with a rope of 6 feet at the rear holding hand or seat. If you do little rapids nor grand lakes a simple cup will do.

To MAKE SURE you have 3 oars per canoe MAKING SURE that the extra oar can be used quickly. MAKE SURE that the luggage is

well tied down so as not to loose them if you capsize.

Yet they MUST be able to untie them quickly and easily. Wear boots so as not to hurt your feet when unloading.

Also a water suit if the canoeing is done under 50F. in spring to avoid hypothermia, fainting or hearth seizure caused by very cold water.

Also MUST have a life jacket capable to support your weight and to keep your head OFF the water EVEN when fainted. This is a MUST. Also bring along a repair kit (fibreglass, resins, scissors, #catalysor#, brush).

SOME ADVISES:

In canoe the best security is prudence, carefulness, so please no clowning Bozo, and do not take unnecessary risks, put on your life jacket before the rapids and specially respect the code of classification of the rapids.

Go ahead to see what to expect, scout the area well especially if you don't see the end or that it in a curve. In rapids be conscious of your possibilities and KNOW your limits.

REMEMBER that a portage has NEVER killed anyone but jumping rapids has killed many more experienced natives etc. A minute of prudence is worth months of reparation & damages.

CAPSIZE?:

Place yourself at the rear end of the canoe with your foot ahead and try to stop as much as possible and stay with the

canoe except if it puts your life in danger, try to stay calm.

SOME COUNSELS = PORTAGE:

To find a portage look at the most logic place, looking where the ground is the easiest of access. Portage being old manners there are certainly still some indications, traces and signs left, cut trees, shore cleaned up, marks on trees, pile of rocks well in sight.

Usually signs easy to find. However it is harder to find them in civilized area since all traces have disappeared.

If you have no indication via the portage on the map,look at the most likely spot and 9 times out of 10 you will find it near the foot of the rapid.

If you don't find it then go on the other side for if there was a portage at the preceding place there MUST be one for this one too.

Sometimes because of a curve the portage starts well before the rapid, the map should help you along. I have ALWAYS found the portage at the best place possible since the Indians and prospectors often use portage to go around and having a lot of luggage are not interested in carrying them uselessly around.

Attention especially for the long portage you will have interest in searching and finding the best portage route before reaching shore and landing rather than to try to save time by portaging at all cost where you will first land.

If you have many portages try to have everything in bags so

as not to loose infinite time in preparing each one of them.

CLOTHING:

So as to travel as light as much as possible, BRING ONLY THE STRICT MINIMUM.

And for a week end the only change needed is a pair of running shoes & a sweater beside your rain gears, and a pair of dry sock and thermal underwear long john which can be of many uses if you get cold or wet.

At night get your feet to dry by the fire and to install your shoes in a warm place for the night.

Wear clothing that dries easily like wool and do not get dirty. Jeans are not the best as wool is yet they die hard.

In canoe the running shoes are top best around. You can dry them out easily with hot sand from the beach, heated by the camp fire and you still can swim with them and they dry easily.

Avoid heavy boots since you can not get them wet without problems & they are a handicap in canoe.

Bring a cap or wide rim hat to beat insulation since sun on the water is really strong, sunglasses should be brought along and tied by a string.

BEFORE EXPEDITION:

Before undertaking an expedition which requires a lot of physical effort you MUST take a training, if you have a long

portage to do then do it in the morning when you are fresh and rested and that the weather is not too hot, don't wait till the afternoon.

DOUBLE YOUR PRUDENCE when wet weather (slippery) rocks and trees. Don't walk over something you can overstep.

Look where you step keep the back straight to avoid back ache, take and keep a walk rhythm & do not over-stress your limits. We are all Limited.

SECURITY:

RESCUE / RECUPERATION TECHNIQUE:

Capsizing is an incident which happens rarely, the rare exception is in the crossing of the Great Lakes or the choice of a bad pass in a rapid & no respect of classification, clowning and imprudence as usual & overloading are most common.

Canoeing is not a dangerous sport when done with prudence. One just has to put the chances on his side with a minimum in swimming to be able to swim 80 feet and to avoid clowning.

If one day you capsize, stay close to the canoe, don't try to reach the shore by swimming, stay calm, stay with canoe rear and don't leave it, unless deadly danger.

Staying with the canoe is easier to float, better seen than one swimmer and has the drying material which you will need to survive later. Stick to it.

PREPARATION FOR GOING OUT:

The don't of an outing largely depends to the attention brought to the preparation.

PRINCIPLE NOT TO FORGET: IMPORTANT:

When choosing the trip, take in consideration of the time allotted, experience and strength and taste of the team, costs, ways of access, the overall pleasing to the group.

In order to do this they all MUST pass the rivers in selections, lakes, accessible roads, either for an outing for a week end or more.

For an outing of a week end, limit to 15 to 20 miles trip according to the degree of difficulties points of access, rapids, portages according to the group and class.

If you are going to do a 100 miles trip which would take a week, keep one day as tampon, buffer between each week of travelling to make up for bad weather of other hazards.

For a team a trip of 15 miles per day is good and reasonable. Above that it becomes sportive and requires an experienced team well trained to maintain rhythm.

For one week, 100 miles is the maximum if you want to give yourself sometimes to swim, fish a little, klik klik a bit.

In choosing a group REMEMBER that the bigger is the slowest. So avoid the groups of more than 10 canoes.

It is also difficult to find place for sufficient camping

for them all, too much time lost in portage bad vibrations sets in, security is difficult in rapids.

The ideal is 5 to 6 canoes and a team going alone is taking unnecessary risks unless absolute necessity. Avoid to bring strangers or starters for more than a week end trip.

Before going out, many meetings are needed to take time to well explain the project, clearly explaining the conditions of the outing.

Such as cost, security, transport, known difficulties or possible obstacles, length of trip sections, type of expeditions etc. So that there will not be misunderstanding, deceptions, bad feelings.

MAKE SURE that you tell the team members to put themselves in good physical training shape so as to be able to follow the group avoiding to be too slow and to find the trip too hard.

You will then discuss of the material preparation, listing the gears, individuals and by teams or groups, trying to foresee the unknown, eventual necessities or emergencies to cover, water gear, hot clothes; "wool is best", repair kit for tent, canoe etc. And also the good state of the material and equipment taken.

INTERNAL AND EXTERNAL FACTS TO STUDY:

Many of these problems will and can be solved during meetings ahead. One MUST explain clearly the security code used on earth and water, conditions of the operations.

Spirit of the team in taking preventive measures ex; no radio after 11 PM, rest time between 11 and 7AM, no booze for the kids and lightly for adults so swearing and good proper behaviour will do nicely on all.

Experience has proven that oversleeping and canoeing don't mix together so rise and shine, up and at them boys. Fix the return date with precision and warn somebody of your future return date.

Fix all details of the trip, difficulties, length of trip sections, numbers hours of canoeing per day, interest, goal, organize carefully the preparation of the food, equipment in good order, and right for the type of trip.

Balance well the team according to the strength of the men, their experience, placing a learner with an experienced man.

Avoid the formation of too well strong team and place the teams according to their conception of canoe camping so a family with kids will have no fun with a team of youngster who want some ventures and vice versa.

Also avoid all anarchy problems since all expeditions of more than 4 people MUST have a leader who will have the final decision.

So explain well ahead what they MUST expect, also the weather, flies, bad weather, special road or terrain conditions are part of the canoe trip.

TASK SHARING:

Each one MUST have a specific function and is particularly

active in the overall help. No free loafers, no Bwana!
Ex. You have the chief of staff, the chief of rank and file, the #serre file#, the cartographer, the signal and communication specialist, the medic-man, the writer, responsible of the fire, the cook and the rotation.

REMEMBER that the Law in Canada stipulates that no forest CIE. No hunting or fishing camps owns the land but only accorded fishing and hunting licence and to cut wood, so you are free to walk on those lands to cross them anywhere anytime no matter what they say otherwise and call the FQCK if there are problems for that.

MEALS:

Don't bring any stoves since you will ALWAYS find enough wild forest to light your fire. Don't ever wash the exterior of the canteen rap them in a plastic bag instead to avoid getting all else dirty or have a special bag for them.

If you have much portage to do bring dry food or concentrated stuff such as pemmican and corn slop seen in food file like Sherpa tea or make your own.

Rice, dry sporting food type is real handy but costly. Granola mixtures with peanuts since peanuts are real energy booster second best after liver not counting Spirolina.

Bring also semoule, cheese, pancake, oat, lard, beans & molasses, margarine in plastic container or butter since it keeps well for a week or more in forest but away from the sun. Etc.

WHAT YOU NEED TO REMEMBER TO DO IN CANOE CAMPING:

How to read a map, how to orient oneself cook and travel light. That it is difficult to stop in a rapid. That the wind usually drops down at the end of the afternoon and starts back in the morning.

That one can sleep comfy under a canoe especially after having removed the 2 central bars & your canoe can shelter you from wind especially for your camp fire or as a wind breaker for your tent.

REMEMBER that a sunburn can be done in 1/2 hour after a moderate exposition to the sun so if you are not already spice tanned be extra careful, cover up if the sun is really hot or at the least sensation of burning.

INSULATION IS OFTEN DEADLY. The further away from civilization; the more prudent one has to be.

WHAT YOU HAVE TO AVOID:

To start learning alone on how to do canoeing or with only beginners as yourself. To bring to many gears, to calculate too long periods of canoeing.

To go down rapids that are stronger than the one you have experienced or to go down rapids without first going and scouting them ahead. To bring valuable gears such as camera etc. Use rather the old cheap ones or get good insurance.

To go more than a week end with a companion which you know only a little. To go to a strange land unknown to you without map & compass & to forget to let a responsible person check your return timetable should an accident

happen.

WHAT YOU HAVE TO BRING ALONG:

Many boxes waterproof for many uses, matches, bug repellent, rain gear, scoop, repair kits, map, compasses, (2 min), knife, small axe or machete, dry bags plastic garbage type, spare oar.

Pack sacks, strong rope to tie the canoe and a finer one for the luggage, a tarp nylon etc. to shelter the material and wood, plastic cushion for the knees etc. see personnel kit file for the other items.

Canoeing looks easy but it is very complex in doing and it needs practice on the field with the help of experts thus it needs a great amount of experience since difficulties met are very numerous.

There are books especially made on canoeing and they are hardly able to cover the subject within satisfaction.

And the reading will be only profitable if you have already taken some lessons so as to understand them completely.

Even if I write over 100 page that one MUST stand in the middle of the canoe in rapids only the experience will teach you how true this is after understanding the why's by going down some small rapids.

So the best way to discourage yourself is to try to learn alone or with beginners.

CANOEING:

Before shooting off, balance well your canoe freight, place the heavy stuff at the bottom of the canoe in the centre of it.

Place yourself at one end and your knee well in the centre of it, the body straight up and so does your partner.

The luggage well secured in the centre over some branches to avoid getting wet and REMEMBER that the water will gather at the back which is the duty of the rear anchor man to scoop it out. So cover well all your gears against rain or waves splashing.

ALWAYS TAKE THE WIND HEAD ON; and if the canoe is well balanced you can travel thousands of miles without incidents. Avoid sharp movements.

One MUST NEVER stand up in a canoe, the winds and the waves will make you make the wrong move and capsize or fall in the water, and if it does stick to the canoe and swim with it to the nearest shore.

Don't let the canoe on hard surface since the wind can uplift it and make it bounce on hard rock & break it or damage it seriously.

The best method is to plant 2 big forks and to put your canoe on it upside down wind and sun sheltered.

CANOEING ADD ON:

The front men paddle on one side the other on the other side and in the great waves give a paddle at each coming of the waves.

In the rapids the #appel# (call) consist in dipping the paddle far enough of the canoe the oar being parallel to the canoe and to pull toward you so as to move the canoe laterally.

#L'ecart# is done the opposite way, place your paddle near the canoe using the #plat bord# as a lever of a kind and send the paddle toward the exterior pushing thus the canoe in the opposite direction.

But these 2 movements are difficult to explain in a book and only the practice will with experts become efficient.

REMEMBER that many a rapid is not on your map due to flooding. So be careful and NEVER get in a rapid before stopping a shore and going to see what is happening farther down.

BASIC TECHNIQUE TO GET IN THE WATER, #EMBARQUEMENT, DRY TIME.#:

2 CANOEIST:

From the shore they take hold of the #platbord # each facing one another on each side and slide the canoe on its keel while protecting it from rocks.

The rear oar man will get in first while the other holds the canoe between its 2 legs perpendicularly to the shore, at 90 degree angle.

He will then come forward in the water, grabbing the #plat bords# while pushing as much as possible the centre of

gravity, then will kneel down in the canoe gently.

FROM A WHARF:

The canoe parallel to the wharf, the 2 oarsmen grab the canoe by the same #plat bord#.

Lifting up the height of the thighs and throw it off in the water; ALWAYS parallel to the wharf. The front oarsman gets in first in this case.

SOLO; WHARF OR BEACH:

For a loner, one places the canoe perpendicularly to the wharf and one slides it on its keel. One should get in place by holding on the 2 #plat bord# and to kneel in the centre of the canoe with wide spread legs.

In this position the body becomes the centre# pivot# and at the same time the #ecarts and appels # will be very easy.

There is also another method, the oarsmen places himself in his usual seat after having put down one or many rocks to stabilize the canoe as ballast.

DRY DOCKING:

Get the canoe out using the same methods and as for dead time have some wooden support in triangle which will placed the canoe as low as possible to the ground so that the wind will not have a game with it and project it in the air as a kite.

IN RIVERS TO KNOW HOW TO EMBARK OR DISEMBARK:

In general one place the canoe parallel to the shore, the bow facing downstream and this goes for all types of canoes.

Place the oar across the canoe so that there are 2 points to be leaning on; the deck or #platbord# and the shore:

1) The handle leans on the deck or #platbord# of the canoe at the tip of the #hiloire# if it is a decked canoe like a kayak.

2) The shore; the end of the oar is put flat on the shore. To maintain this holding position one stands on the shore as near as possible of the canoe facing downstream.

One hand takes hold of the handle near the #olive# and the forward part of the # hiloire#. The other hand will grab the handle very near the #pale# while leaning against it.

In those conditions the canoe is well held in place and can not go back nor forth nor get away from the shore nor tip up, it is the time to embark son. Go for it Rambo.

So REMEMBER as soon as the first foot is in the canoe to gently transport the weight of your body straight up on an even keel as a supple mast.

Getting in or out MUST be done slowly, carefully without rushes.

OARING: (Not Whoring)

For the left hand oarsman, take a hold on the oar at 2 inches, 5cm. over the #collet neck # with the left hand and

with the right hand he covers the olive with its 4 fingers &
the thumb under it. This position of the superior hand does not
change at any time, & the right hand man does the opposite.

#COUP DAVIRON# Attack:

Hold the handle of the oar #obliquely# forward in a #plan#
or view tending to vertical the #pale# perpendicularly to
the axial of the boat with the lower arm stretch out and
superior arm in half flexion with your #bust# slightly on
the opposite side so as to obtain an important push from the
shoulder and the superior arm in the forward phase of
propulsion.

PROPULSIVE PHASE OR PAST:

The passage in the water from front to back is obtained by a
pushing from the shoulder and a strong tensing from the
superior arm.

There is a traction of the inferior hand produce by a
rotation of the # bust# followed by an arm flexion.

At the end of the pass the superior arm is stretched out,
the efficiency of the propulsion stops at the level of the
seat or holding bar.

At the end of the pass the oar is #degager# on the side by
the thin edge of the blade #pale# through the simple
rotation of the shoulders. During all the time of its return
the #pale# stays in horizontally at the height of the top of
the keel.

Since the return is a time to recuperate it is done slowly

and done when the oar is in #obliquely# forward and a simple rotation of the handle will replace it in attack position.

STOPPING BACK UP:

Attack; put the handle of the oar obliquely backward #pale# perpendicularly to the canoe axial.

This position is made by a rotation of the shoulders toward the attack, lower arm 1/2 flexed in pushing position and upper arm stretched forward from your body, the nails of the superior hand directed toward the back stern of the canoe.

PHASE 2: #RETROPROPULSION#:

The pass in the water is done from front to back near the canoe in a view approaching the vertical. Push using the inferior arm. #Point# fix using the upper hand.

The pass is pursued far enough toward the front so as to permit #le degagement# which is done by a rotation of the oar, the nails of the superior hand toward heaven.

PHASE 3) DISENGAGEMENT & RETURN TO ATTACK:

The return is done out of the water and the #pale# at flat.

ACTIVE MANOEUVRES:

CALL IN DIRECT TRACTION:

The call; this movement displaces the canoe or one of its end on the side of the oar, it consists in drawing water toward the canoe.

ATTACK: Rotation of the #bust# on the side where you are boarded arms extended at maximum to attack the water as far as possible from the keel, the #pale# being parallel to the canoe axial.

ACTIVE PHASE:

Traction of the inferior arm perpendicularly to the axial of the canoe. The #pale# is brought near of #franc bord in front of the bust# of the oarsman.

RETURN TO ATTACK:

This return is done on the slide of the oar. The #pale# can be placed on the slicing part either open or close (rotation of the olive either by the right or the left). The inferior hand pushes backward toward the shoe and replaces the attacking position.

NOTES:

For the back oarsman the return is done by the opening angle of the #pale axial# of the canoe. For the front oarman the rerun is done by the closing of the angle #pale axial# of the canoe. The more vertical the oar the more efficient is the manoeuvre.

#APPEL EN GODILLLE#:

ATTACK: :#bust# slightly turned on the side of the manoeuvre. The handle of the oar at the body level and vertically. The #pale# is parallel to the axial of the canoe.

ACTIVE PHASE:

Opening of the angle displacing of the #pale# forward. Closing of the angle and displacement of the #pale# toward the back. Fix point from the superior hand.

NOTE:

The oar operates a movement of swinging motion very near the keel in a vertical #plan# and parallel to the canoe axial.

ACTIVE DEVIATION OR SEPARATION:

This manoeuvre displaces the canoe or one of its end toward the opposite side of the oar. Pushing water off from the canoe.

STARTING POSITION:

Chest slightly tuned toward the side of the manoeuvre. The handle of the oar is vertical and internally #oblique (pale slightly under the keel.) pale# parallel to the canoe axial. Handle leaning against the keel at the knee level. Arm superior stretched perpendicularly to the canoe axial. The inferior hand insures the contact of the handle against the canoe.

ACTIVE PHASE:

Traction from the superior arm without having the superior hand over passing the canoe axial. The oar is then externally #oblique# but the handle stays in direct contact with the keel.

RETURN TO ATTACK:

The oar MUST return to the initial first position by the #tranche#. Closing the angle of 90 degrees and stretching of the superior arm toward the shore.

NOTE: NEVER remove the handle from the canoe, It is its leaning point.

#REDRESSMENT#:

At the end of his propulsive motion the rear oarsman will execute 1/4 turn on its oar while flexing his superior wrist toward the exterior as an aiming point the oar should be painted on one side.

This same side will be the propulsion side and this one will be facing at the exterior at the moment when the compensation movement will be done by a light push from the inferior arm toward the exterior.

REMEMBER that the #pale# MUST stay in the water completely at the rear.

#INCIDENCE MANOEUVRE#: OPENING DEGREE OF THE OAR:

This manoeuvres are done by variation of the opening degree of this angle formed by the #pale# & the longitudinal axial of the canoe.

This manoeuvre has only an effect if the canoe has already gathered some initial speed or it is in a current. It is the olive hand (superior) that controls the #incidence# 3 types

of #incidence#.

A) Zero angle: which provokes no direction change and the # pale# is in parallel position to the canoe axial.

B) Open angle: it brings moving and displacement in the direction of the oar thus a call or thrust. The tip of the angleis directed or found toward the rear.

C) Closed angle: the tip of the angle is directed toward the front, there is a displacement in the opposite sense of the oar thus an #ecart or shove off.#

EXECUTION OF THE #INCIDENCE MANOEUVRES#.

A) CALL BY #INCIDENCE# :

According to the effect searched for, the #pale can be immersed# in a good number of positions (vertically, #backward oblique, interior oblique & exterior oblique#) depending of the angles and in different places to be used.

Here is an #incidence# call at the height of the oarsman. Body straight up fitting or wedding the canoe, you then plant or fix the oar vertically at the height of the canoe bar with an open angle of 45 degrees.

#ECART BY INCIDENCE#:

Oar vertically using a leaning point against the #francbord# at the knee level with no angle.

Execution: Close lightly the angle by controlling with the superior hand.

NOTE:

Avoid a too big closing of the angle. Do not place the oar in external #oblique# but rather in internal #oblique#.

While training in initiation a closing badly controlled can capsize the canoe and can be avoided by quickly letting go of the oar olive.

THE HOLDINGS:

1) IN PUSHING MOTION:

The position of the oar is perpendicular to the canoe axial and parallel to the water surface. The position of the wrists; above the handle and the olive.

The #bust# turned toward the side of the oar. One operates a dynamic push toward the bottom meaning the water surface.

2) IN SUSPENSION:

This position looks like the attacking position but the oar is much more in exterior oblique.

One suspends itself so to say to the olive and to the handle of the oar. The #pale# being leaning under the water as leverage.

The leaning in suspension can be done when the canoe is immobile by a movement #de godille# in surface. When the canoe advances one uses angles effects.

#ESQUIMAUTAGE#:

Now currently practised is done as so; taking a lean point on the water with the oar, the oarsmen can redress the canoe which has capsized this especially applies to kayaks and the methods are numerous.

In canoe the lateral manner seems to be the most efficient ways to do so. But one MUST be solidly anchored in the canoe and make body with the keel even when the canoe has the keel up in the air.

In order to tighten yourself solidly one can use a rope or belt fixed to the keel and under the bar, this belt will pass in front of the thigh at mid height between the knee and the #bassin or pelvic bone# use either a bar covered with rubber or use 2 blocks of Klegecel (very light material).

They are affixed to each knee on the #lateral (side)# of the keel. A #cale pied# permits the extension of the foot to block itself against the #cale genoux system.#

Once the canoe has capsized project the oar on the surface, having the #pale a plat# perpendicularly to the canoe axial. This starting position is very important. If the #pale# is not flat, it will go down without any leaning point

If it is not at the surface to start with then its position will become #oblique# thus a bad move at the end of the movement and will not permit to bring the canoe back to normal.

This technique should be trained first in a swimming pool

with a water goggles so as to well see the starting position and the execution of the gesture or act.

If the canoe is perpendicular to the current, the #esquimautage# is done downstream being much easier and in that case the up lifting of the body is done forward.

The strength of the current helps the canoe rotation and also the leaning of the oar is more forceful.

In a 2 place canoe, one of the team member MUST #se deborder#. Since the 2 oars MUST be in the same side to operate the #redressment.

This #debordement# is done under water very quickly. It is good to agree ahead that this change will ALWAYS be done by the front oarsman since he has a greater freedom of movement than his partner.

Being first ready the rear man will wait for the signal to start the movement.

With the help of this small #decalage# or off timing, the starting phase will be insured by the front man while the final phase will be completed by the rear man.

In order to apply this technique in rough waters, one MUST first having done it successfully many a time in a swimming pool.

This is no amateur trick so that the capsizing does not necessarily have to end by a swimming to the shore & the passage under water of an #esquimautage# can be seen as winter training.

STORM AND CANOES:

If you get caught in a storm on a lake or river and that the wind blows prevent you from moving, just let yourself carried by the current while putting the canoe in line with the wind, face it and try to direct the canoe without oaring till the nearest shore.

DON'T TRY TO FIGHT AGAINST THE WAVES, AND IF THE STORM GETS WORSE LAY DOWN IN THE CANOE AND DON'T WORRY.

Since the waves will carry you and soon your canoe will reach the shore. Don't get nervous have faith in the Providence and wait for help.

If you are many in the canoe, make it so that each one is well place in the bottom of the canoe & warn them to stay calm & not to move, immobile & specially that the companions MUST NOT lean on the sides of the canoe for the canoe would capsize being off balance.

Try to calm them, that they don't get discourage and start panicking, make them realize that there are no dangers as long as they stay quiet in their place and well at the bottom of the canoe and that the canoe will float if they keep their position and that soon a shore will be on sight.

Otherwise the nervousness the discouragement and panic will set in especially those who don't know how to swim and they will have the tendency to rise up or to lean.

So make them stop this at once and convince them that their salvation and rescue and life depend of their good conducts

by following your instructions till the storms ends. Give them faith this is very important for all your security.

BOAT RAPIDS FRENCH TECHNIQUE:

The basic technique applied in here give 3 classical manoeuvres: #Le bac front and back / Reprise of the current# / Stopping against current.

#BAC#:

To do the #bac# is to cross a current letting yourself adrift as little as possible. For the front #bac# you face the current.

EXECUTION: As much as possible take some speed. Orient the canoe toward the current following an angle as small as the current is strong. The stronger the current the smaller the angle.

The conduct of the #bac# is done by #manoeuvre d'incidence.# It is at times indispensable to place yourself in leaning position toward downstream, it may be more advisable to oar at other times.

The principle stays the same for the backward #bac# but more delicate in application.

DEFINITION: To grab the current is to engage in a vein of the river current when the canoe is at stop #en marge du currant#.

EXECUTION: As much as possible take some speed. Direct frankly the canoe in the current along a 45 degree angle or

more. Getting in the current place yourself in a leaning position toward downstream and start over in moving propulsion as soon as possible.

STOPPING AGAINST CURRENT:

Description: The canoe is grab by the currant you take advantage of a #contre currant# to stop.

EXECUTION:

Orient the canoe toward the shore you want to stop either by a chosen method #appel ou ecart# either by a unilateral propulsion.

Strongly propel (move) in the chosen direction so as to project the front of the canoe against the #contre currant or in the shelter spotted (#contre currant#).

As soon as the canoe pivot and does and half circle put yourself in leaning position #position d'appui# and don't let go of the shelter until the canoe is well stopped.

NOTE THE CHANGE DIRECTION IN RAPID:

You MUST not forget that to change direction in a rapid the canoe MUST be done quickly.

A good canoeist is someone who can judge rightly of the rapids and not take unnecessary risks, one who knows his limits and will accept them willingly. Safety is ALWAYS at best in survival.

TYPES OF CURRENT AND RAPIDS WATER FORMATION "V":

One of the most current character of a rapid. There can be one or many. One finds the " V " at the start of rapids.

THE GREATEST WATER QUANTITY FLOWS THROUGH " V " AND IT IS USUALLY THE SAFEST WAY TO DOWN A RAPID.

If there are many choose the biggest. You MUST be careful since at the end point, could be a rock. Usually there are many waves at the point of " V " if there are, then try to avoid them, they hide a rock most often.

#MEAGRE (maigres)#:

It is formed by a low water level from the river or by an important enlargement of the river. The water height is generally inferior to the depth of canoe #immersion# (floating level?).

#The meagre# forms a barrier on the width of the river or in part letting only a few inches of water which will make it difficult to pass then just look where there is enough water.

Once recognise the mergers by the smallest little waves which seem to dance #sur les banc de gallets# a shallow dive. The road to take would then be either where there are bigger wave or where the water is calm indicating deeper water.

DON'T HESITATE to put your feet in the water and to haul the canoe, pity your canoe please.

#MEANDERS#:

The river does this when its usual track goes wild without reason from its normal channel flow to then come back to its normal course after having made a wide curb.

These #meanders# are mostly found in low flat land where the levelling off is little pronounced or steep.

In such case the side of the stronger current is abrupt is constantly erode. The opposite side is in fine slope and a zone of #debris#, nick nack and wood is on the concave side of the river.

In canoe it is on the abrupt side that one MUST PASS for on the other side you hit Bozo bottom ouch!

However you MUST NOT PASS too close from the abrupt side for the current will corner #coincera, drosser?# smack & smash you against the side. You MUST try to be at the centre of the river.

The track on the photo #164 of the arrow with the pointed line shows the tracking of the strongest part of the current.

Note that the speed will be increase because the current will be concentrated on the 1/2 of the river.

AS LAST ADVICE; NEVER RISK YOURSELF DOWN AN ELBOW WITHOUT KNOWING WHAT IS ON THE OTHER SIDE.

WAVES:

Formed by the current and water levelling. Waves formed by a

weak or strong level. These waves are ordinarily a #crete droite# and vertical.

One has the impression that those waves are stationary and that by crossing them one stays in the same place. Unless they are real big they are not dangerous and easily crossed.

ROLLS: DANGEROUS TO AVOID! #164

The roll is a rotative motion of the water, (washing tub) the wave falls downstream.

It is provoked by an underwater obstacle, rock, wood, and by a hole at the back of the obstacle. The roll is often dangerous and to avoid. If impossible. Try Top Speed.

#RAPPEL#: VERY DANGEROUS TO AVOID = DEADLY!

It is a water movement on an important distance that comes back on itself. It is considered VERY DANGEROUS & UNCROSSABLE BY EXPERTS.

They are found at the base of falls # des seuils# and sometimes behind obstacles, log jams in the river.

#LE SEUIL#:

It is a small fall and it can be crossed if there is enough water & is not followed immediately by a # RAPPEL#. The start of a #seuil# is ordinarily made of a black "V" but it can extend on a part or the width of the river.

THE FALL: (Of the angel) = DEADLY!

Composed of break, split in the river bed of a different height, it can sometime be passed with a decked canoe, it would depend of its height, # du basin de recuperation et du rappel# which may follow. It is clear and evident that in an open canoe portage becomes a MUST.

MUSHROOM: (Soup?) VERY DANGEROUS:

The wave literally shoots up in the air. Thus producing a very rapid current where the water vein change direction because of an obstacle. VERY DANGEROUS, CAPSIZING INSURED.

The shock of the water on an obstacle creates a mixture of water and air that does not carry well a canoe.
#DROSSAGE#: TO AVOID

Sudden change of direction of the central vein of water provoked by an obstacle, rock or cliff.

TO AVOID BECAUSE DEADLY DANGEROUS. There is a risk to stay smashed, jammed against the rock in case of capsizing.

If you MUST cross near a #drossage orient guide# the canoe on the obstacle upstream #en aval#.

#MARMITE CAULDRON?#:

Type of #Rappel# turning on the horizontal instead of vertical. Taken in the centre it can be DIFFICULT to get out

AI: Small current or immobile water located at the back of a rock in the middle of rapid. Very GOOD to stop the canoe.

B: #REMOUS ET TOURBILLONS#:

Upward movement of a water mass in spiral made by 2 opposite current and deep water in the river. VERY DANGEROUS according to the importance of the river current and water volume since it sucks to the bottom.

In case of capsizing, Don't resist and swim to the top as soon as the coming down movement diminishes to be transformed in an upward move called #remous.#

C) CUSHION:

Small #drossage# upstream the rock. In case of capsizing this small mass of water ahead of the rock will permit you to slide on the side and to avoid being hurt.

But it is dangerous for the canoe where the canoe #cravatte# or folded around the rock by the water pressure.

CURRENT & COUNTER CURRENT:

The current A is the moving of the water up to downstream. The counter current B is moving the water down to upstream. This being caused by obstacles. The water goes back to the obstacle and comes to create a calm zone.

This calm zone is often used as a rest when coming down a long rapid. However to get to it you MUST cross a perturbed zone where the current change direction. In crossing this zone the canoe finds himself suddenly in between 2 opposite current, one that comes down and the other that comes up.

The canoe will then do a quick change of direction while

passing in this zone and if the oarsmen don't expect it, it will be the capsizing. Yet it can be done fairly well and easy.

#PLANIOL #:

Calm zone between rapids. We call #pleureur# the water sliding over a rock and not forming wave over this rock. This type of rock is hard to see because it is slightly under water level. If one is not very careful it is easy to hit one or more.

To know where they are, there is a creation of a small #tourbillon# after where the rock is hidden and #the water level seems to split# .

As you see a rapid has quite a character so the study of the map or on the sight is necessary to success. So is the need to have an expert on your firsts trips to show you along what to do and see to look out.

#BACS#:
#REPRISE DU COURRANT# STOP AGAINST CURRENT MAPS AND RAPIDS:

Maps are one of your first clues as to what to expect on terrain as well as rivers and rapids.

For instance a map showing the #relief# of the terrain with for ex: a #denivellation# of 100 feet for an average distance of 4 to 5 miles is a very good indication that there will be rapids in this area.

There exist also aerial photograph which will indicate the presence of rapids since with the help of a stereoscope one

can see the terrain in 3 dimension as one would see it from bird flight.

DIRECT OBSERVATION:

In 90% of the cases one can hear a rapid soon enough to have time to stop and then go & investigate unless the wind is in the same direction of the current and prevents you from hearing it.

For the 10% errors one has to master the technique of shore landing and to do so quickly.

HOW TO JUDGE A RAPID: (GUILTY?)

Once you have heard or found a rapid the first preoccupation MUST be to find a place to stop as soon as possible before being taken in the #tourbillions#.

As soon as a rapid is found the front oar man rises up in the canoe to locate some possible landing site and to also judge to which point one can advance safely.

It is important task for the front oarsman to have a sharp eye since the safety of the canoe depends of him. Thus he MUST know very well the technique of rapids and a strong knowledge to judge them well.

If one has to make a sudden URGENT stop the bow man make the front of the canoe to turn toward the proper side giving a known signal to the rest of the canoe team. Those will then come to help in turning the canoe around against current to safety.

Once the canoe safely at shore the team study the rapid on all its angle and will decide if it is safe to cross that rapid or portage it.

AN IMPORTANT THING TO REMEMBER; is not to let the fatigue be your guide, it is a very bad guide master.

Don't take the risk of jumping a rapid because you are tired and don't want to make a portage.

THE ESSENTIAL IS TO JUDGE WELL THE RAPID, ITS STRENGTH AND YOUR EXPERIENCE AND SHAPE. AN ERROR COULD COST LIFE.

REMEMBER that the international classification of a river going from one to six is also with some problems, since a rapid can be classified as #1 to start and then the end becomes a #4.

So BE CAREFUL especially if the classification is # 4, 5 or 6, for the last one (6); represents EXTREMELY DIFFICULT IF NOT IMPOSSIBLE most of the time because of jumps, dangerous rocks etc.

So the role of the bow man is extremely important, it is him who directs the canoe in the rapid and with constant vigilance to avoid ramming against a rock or tree.

The other of the team will synchronize on his movements and prearranged yelling signals or whistle burst will tell which direction the canoe MUST take.

The rear or stern man had the duty to #redresser# the canoe giving thus the full effect of the oaring from the bow man.

CANOE TRANSPORTATION METHOD:

The small canoe is carried by a man or 2 often the oars are placed inside the canoe being parallel to the canoe axial having the oar on the shoulder to help carry the canoe. Rough terrain may force you to carry the canoe at arms length as well.

In some instance when the river banks permit it one can also use the rope system to bring the canoe down while the team portage the luggage but this method MUST have been practised before.

In some instance only one rope is enough other you have to tie both end. There are even occasions where a man can be left in the middle of the canoe while the 2 ends are tied up, so as to help freeing the canoe in some difficulties.

This can be a very useful method especially with C6 type (6 places) canoe since they are very heavy up to 300 lbs to carry on some rough terrain.

Since a canoe can also fall in unknown jump it is thus safe and wise to tie the bow of the canoe with 2 of the team men tied at their waist.

NOTE OF RAPIDS:

In Quebec there exist a book know since 1975 as "Guide des rivers du Quebec" This document is first importance when choosing to do canoeing in this province. There maybe other books on the area where you live, it is good advice to check it out.

SAFETY ADVICE:

In many occasions the use and wear of safety hat adapted for canoeing has saved life so wear it please with life jacket.

THE TEAM:

The constitution of a team well balanced is of the first importance in preparing any expeditions, here is an idea:

CHIEF:

He has the responsibility general of all the expedition, it is up to him to take all URGENT decision even if in general the decisions are made by the team. It is up to him to see that each team member does his job. One ship = 1 skipper.

#CARTHOGRAPH#:

Will busy in gathering of all specialised document is so far as maps are concerned. He will also make a detailed study of the trip to do so as to know what to fight and expect.

Expert in using the compass, capable to orient using stars, with the watch and sun and moon etc. Expert in sextant use also.

NOTE: Maps should be plastified and each one has a copy since they are the near unique way to #orient# in strange country.

COOK: He will do the menu of each day, choosing the right food for the type of expedition and good knowledge of survival technique.

NOTE:

In the past old timers used salted lard and molasses to sustain themselves, it still is good today, with beans. REMEMBER fat is your most precious food in survival. The cook should have good knowledge of game & plant food using this book to help.

FIRST-AID:

In charge of preparing the needed medical kit to help in any accidents and if possible member of St. John Ambulance or any accredited #secourist# membership.

SECRETARY:

One in charge of the social contacts before trip, letters and permits to obtain or to give and writing of the log book journal of the expedition.

It is ALWAYS good to contact the ones that have done the trip before to get information, OFTEN VITAL.

RESPONSIBLE OF THE MATERIAL:

Seek the best adapted material for the expedition, check the good state of the material before and during the trip and knows how to repair half cut if need be.

Since it is sure that the canoe will need repairs one MUST bring the repair kit even 2 if need be should one get lost.

CHOICE OF CANOE:

The choice of the canoe type for an expedition MUST BE DONE VERY CAREFULLY since the canoe MUST be adapted to the trip to be done. The C 2 will be lighter in portage but if you MUST navigate on rough waters then a C 6 will be preferable.

Each night the canoe MUST be checked and repaired to be ready in the morning or as soon as an emergency arises of course.

OARS:

Since the oars are the motor of the canoe they MUST also be chosen carefully. Light and strong enough to do the job.

As a sound advice for oars to protect them, apply a thin layer of fibreglass on the tip they will be much more resistant.

We tried it over a 200 miles trip and we only broke one oar. It's a good precaution to bring a few spare oars.

OARS MUST ALWAYS BE TIED TO THE CANOE.

TENTS AND CANOE:

The best tents are the mountain climbers tents with outside frame, can be erected on any ground; light and of good quality and it is often thought that 2 tents of 2 places are better for 6 persons since they are warmer but smelly at times and snoring.

Oh Well. Don't forget your plastic, nylon tarp along to cover the material at night and the dry wood also.

LIFE-JACKET:

MUST be worn at all times by all. They MUST also protect the neck & MUST, or should have a safety hat adapted to canoeing & wear it.

MEDICAL TRACKING:

Before attempting a grand expedition everyone should get a medical test in order to avoid surprises along the way and to have the doctor help preparing the first-aid kit required.

TRAINING:

One does not get in shape in one day, the best 3 exercises are the swimming and walking with a full pack (maximum 35 lbs) and running.

And in order to better the effort have a partner to run to swim to develop competition, endurance & determination.

Even the group should train together as much as possible. Also the synchronisation of the oaring movements and the balance in the canoe MUST be done a few days before the start of the trip. Some dry runs are needed to iron the bugs, no one is perfect.

WEIGHT OF THE MATERIAL:

This MUST be done to avoid problems in portage. Often a man has to carry 2 packs so the grand rule remains that there MUST not be more backpack than there are persons.

STICK TO 35 LBS MAXIMUM.

CAMPING WHERE AND WHEN:

As much as possible in Canadian rivers camp on the west side so as to get the sunrise in the face and far enough from the shore so as to avoid the tide that could get you in trouble so install camp when the tide is high.

SOME EXERCISES TO MASTER THE CANOE:

BALANCE:

A) Stand up in canoe, the feet in the bottom of the canoe, then also on the #platbord#, alone or with team members.

B) 2 men jumping in the water and getting back in the canoe without capsizing.

C) With a bit of practice you can master the #renflouement# technique.

D) Take 2 canoe in parallel, the 4 oarsmen hold a pail and try to fill the other team canoe, exercise of balance etc.

E) Knight combat; 2 canoes cross one another as on battle field there are 2 men per canoe and the knight standing up in the centre holding a mop and will try to knock of the other knight the oarsmen can not use their oar to give blows.

F) Race with portage or speed oaring between 2 or 3 canoe team canoe working different formation and twist or change.

G) These games and exercises should be under surveillance of many vigils or safety guards in case of problems.

CANOE REPAIRS:

Your ability will be to repair from a scratch caused by a rock up to a broken canoe on a face on or sideswipe.

For all repairs you will need to do a #poncage# very large and very serious so as to give the material the possibility to hold together.

Place a layer of flat at the exterior and a layer of fine roving at the interior. Note that the solidity resides more in a perfect application than the thickness of tissues.

#PONCAGE#:

You can use many a tool to do this

1) A rotary sander but use the special disks used by the # carrelleurs#.
2) A wood #rape# or file for light metal.

3) Some sandpaper used only for the interior when you can not use other tools.

After this operation the worked part is taboo, forbidden, you will brush it carefully or better pass the vacuum

cleaner. Beware of hands or rag more or less clean.

SHOCKS SCRATCHES CUTS (EXTERIOR):

When your interior tarp has not been hit, work only the exterior.

1) #poncer (sand it?)#
2) Prepare some layers of tissues in growing size so that the superior layer will cover the previous one.

3) Prepare your resin with a slow drying time.

4) Apply the tissues this way; resin, #mat#,resin roving or resin cellophane for the interior.

USE OF CELLOPHANE:

Your sheet of cellophane will permit to #ebuller# your piece also you will be able to spread your resin using a rubber spatula.

USE OF #MAT#:

It is preferable to #dedoubler le mat and to apply 2 to 3 layers than to use it straight on as presented employer tel quel#.

PRECAUTION:

After having cut your pieces you MUST also #effranger" fray" # them so as not to be bothered by the thread which will come off from the sides and specially to facilitate the #accrochage.#

#BREAK OFF, CASSURE#:

In this case you MUST ALWAYS repair the interior and your piece will be applied in superposition so as not to #entamer# the mechanical structure holds of your canoe represented by the interior layer of tissues.

Do not hesitate to do a serious sanding and wide enough; even overflow from 1/2 to 1" on each side. To facilitate #l'accrochage (setting) apply one layer of mat on the sanded surface.#

HOLE: (Not Titanic)

For your hole start your repair at the interior after having insured your exterior form with a piece of cellophane or if need be by a piece of aluminium or #contre plaque (press wood)? When the prise# is done, operate on the exterior as seen above.

MOULD CONSTRUCTION:

It is the easiest and quickest construction to do.

1) Carefully prepare the canoe by plugging all the holes even the thinnest with Gellycoat.

2) Wax the boat.
3) Enduire the canoe de #demoulant#

4) Apply 1 coat of resin, 1 coat of #mat# and resin, then 1 layer of thick roving and #imbibe (wet)#, then a thin layer of roving #imbibe#, then a layer of #mat# and resin

then a layer of fine roving and #imbibe#

5) Take the mould off.

6) Reinforce the mould with #contre plaque# and some pine all around and over it.

WATERWAYS:

If a river is wide enough to be navigable it will be easier to float on it than to walk beside it.

The long-term survivor could experiment with making canoes burning out the centre of a tree trunk to make a dug-out or covering a frame of willow with birch bark or skins.

Or copying boats made from reeds like those built by the ancient Egyptians and Mesopotamian which are also found today on lake Titicaca in Peru.

All are difficult to make well enough to stand up to water travel and even among the peoples for whom making them is a traditional skill they are usually the work of specialists.

RAFTS:

More practical for the survivor will be to construct a raft, which will not capsize so readily if the structure is not perfect.

ALL BOATS AND RAFTS MUST BE SOUNDLY TESTED IN SAFE WATER NEAR THE CAMP BEFORE SETTING OUT ON A JOURNEY.

In jungle terrain especially you my find that the river

beside which you have camped, has been swelled by seasonal rains to make rafting a viable proposition.

Here, too, you may find ample timber, either bamboo (which is ideal) or uprooted trees which are sound and not rotted. If you have to cut timber choose leaning trees for they are the easiest to drop.

With dead falls the top of the trunk is usually sound enough to use for a raft.

You can use oil drums or other floating objects to support a raft and if there is no supply of strong timber a sheet of tarpaulin or other waterproof material can be used as a man carrying version of the coracle described later for floating equipment across a river.

NEVER TAKE CHANCES:

With a flimsy raft on any water. On mountain rivers there are often rapids which only a really tough structure will survive. On the wide lower reaches there will be a long way to swim to the bank if you have a raft break under you.

TRAVELLING BY RAFT:

Tie all equipment securely to the raft or to the safety line, MAKING SURE that nothing trails over the edges where it could snag in shallows.

EVERYONE ABOARD MUST have a bowline attached around the waist and secured to a safety line or to the raft.

BAMBOO RAFT:

A single layer will not support you unless it is very long, so go for a 2 layer model. Cut thick bamboo in 3m (10ft) lengths. Make holes through the canes near the ends and half way along.

Pass stakes through these holes to connect the canes. Lash each of the canes to each of the stakes with twine, rattan or other vines or cables. Make a second deck to fit on top of the first and lash the two together.

GRIPPER BAR RAFT:

This is the quickest raft to build. You need logs for the deck and four thick stakes with some pliability which are long enough to overlap the width of the deck. Place two of the stakes on the ground and lay the log over them. Place the other stakes on top.

Tie each pair of stakes firmly together on one side. Then with a helper standing on top to force the other ends together, tie these so that the logs are gripped between them. Notching the ends of these gripper bars will stop the ropes from slipping.

STEERING:

To steer the raft make a paddle rudder and mount it on an A frame near one end of the raft.

Secure the A frame with guy-lines to the corners of the raft and tie the rudder on to it so that it does not slip. The rudder can also be used as a sweep for propulsion.

You may need to notch the raft for the base of the A frame. The guy-lines could be tied to the cross pieces. Lifelines should be long enough to allow free movement, but not so long that they trail in the water.

In narrow swift flowing rivers with DANGEROUS RAPIDS and waterfalls; it is better not to tieyourself on.

If the raft gets out of control and is swept towards dangerous water; it is better to head for the bank.

In shallow water the best means of controlling a raft is like a punt, but preferably with two long poles-with one person poling at one front corner of the raft, and another at the diagonally opposite back corner. If the survival group is a large one, several rafts will be needed.

The fittest should be on the first raft, carrying no equipment or provisions. They can be lookouts and give early warning of hazards to be avoided. If they have to abandon their raft no kit will be lost.

Waterfalls and rapids can be heard some time before you reach them, and often are indicated by spray or mist rising in the air.

If uncertain about the safety of the stream ahead beach or moor the raft and carry out a reconnaissance on foot.

If you reach a difficult or dangerous stretch of water; unload the raft and take to the bank, carrying all the equipment downstream or the dangerous waters.

Having posted someone downstream where the river

becomes safe and manageable to recover the raft, release the raft and let it drift down through the difficult stretch. It will probably need repairing but at least you will be safe & have all your equipment.

REMEMBER:

ONLY RAFT BY DAY, NEVER IN THE DARK. At night secure the raft firmly - so that it will still be therein the morningand make temporary shelter on higher ground away from the river.

BOGS AND MARSHES:

If you cannot avoid crossing a marsh make your way by jumping from tuft to tuft of grass.

If you find yourself sinking into a bog "swim" with a breaststroke to firm ground-don't try to jump.

Spreading your body over the surface distributes your weight. Use the same technique in quicksand.

CROSSING RIVERS:

The headwaters of a river will be narrow & swift running. Although banks may be steep & rocky it will usually be possible to find a place to cross.

Where the water is shallow you may be able to wade-but to test ahead with a pole for hidden depths.

You may find rocks to provide stepping stones across or be able to place them for small streams.

Some members of a party may be able to leap across a narrow chasm or from boulder to boulder across the stream bed, but that is not much help if others cannot make it. A slip on a boulder is an easy way to sprain an ankle even to break a leg.

CAUTION:

The estuary of a river is wide with strong current and is subject to tides-which can influence some rivers many miles from their mouths.

AVOID CROSSING THERE! Unless equipped with a boat or raft, go back upstream to an easier crossing place.

On any wide stretch, and especially when near the sea, do not set off, even with boats or rafts immediately opposite the point you hope to reach, but consider how the current will affect your passage and make allowances.

STUDY THE WATER:

The surface movement of a stream or river can tell you a great deal about what is beneath.

The main flow of the current is usually evident from a chevron shape of smoother water around any rock or projection (A) the V widening downstream.

Waves that appear to stay in one position on the surface

(B) are usually evidence of a boulder on the bottom deflecting water upwards.

Closer to the surface an obstruction will create an eddy downstream of it where the surface water appears to run back against the main flow.

If a large boulder coincides with a steep drop in the level of the bottom (C) these eddies can produce a powerful backward pull downstream of the obstruction & pull swimmer in.

THEY ARE VERY DANGEROUS.

WARNING! ICE COLD WATER IS A KILLER!:

Do not attempt swimming or wading across a stream when the water is at very low temperatures, it could prove fatal. Make a raft of some kind.

Only wade if you can do it without getting more than your feet wet & dry them vigorously as soon as you reach the other bank.

WADING ACROSS:

Even quite wide rivers may be comparatively shallow and possible to wade across but NEVER underestimate any stretch of water.

Cut a stick to aid balance and cross facing towards the current and you will be more able to avoid being swept off your feet.

Roll trousers up, so that they offer less surface to the current, or if they are going to get wet anyway take

them off so that you have them dry on the other side.

Keep your boots on, they will give a better grip than bare feet. Undo the belt fastening of a back-pack so that you can slip it off easily if you get swept over.

But don't lose hold of it. It will almost certainly float and you can then use it to help right yourself.

Turn at a slight angle, your back towards the bank you want to reach, the current will move in that direction. Do not take strides but shuffle sideways, using the stick to test for depth and trying each foothold before using it.

CROSSING AS A GROUP:

If a group of people is wading across together, they should line up behind the strongest, who crosses as described above. The others each hold the one in front at the waist and move in step, offering less obstruction to the current.

Alternatively a group can link arms side-by-side and hold on to a pole or branch & moving forwards.

Only the side of the first person opposes the current & the group provides stability for all of them.

WARNING! WARNING! WARNING!:

Look out for submerged branches. You could get tangled in them and wrench a limb or loose balance. When carried along with the current you do not notice its strength but

if it forces you against an obstruction you can firmly held.

CROSSING WITH ROPES:

If a rope is available it can make wadding safer. But you need a loop of rope 3 times as long as the width of the stream and there MUST be at least 3 people in the party.

Two of them ALWAYS control the rope to keep it out of the water as much as possible and to haul the crosser to the bank if difficulties are encountered. The person crossing is secured to the loop, around the chest. The strongest person crosses first.

The other two are not tied on, they pay out the rope as it is needed and can stop the crosser being washed away When he reaches the bank # 1 unties himself and # 2 ties on. # 2 crosses controlled by the others. Any number of people can be sent across in this way.

When # 2 has reached the bank #3 ties on and crosses.# 1 takes most of the strain but # 2 is ready in case anything goes wrong.

RIVERS ARE DANGEROUS:

NEVER enter the water unless there are no other way of getting across and choose a crossing point carefully.

1) Avoid high banks that are difficult to climb out on.
2) Avoid obstructions in the water.
3) Current is likely to be fastest on the outside of bends and steep banks there may be undercut making landing impossible.

4) Look for an even section of river-bed. Shingle is the best surface for wading.

SWIMMING ACROSS:

If you can't swim don't try. Rely on others to get you across with the help of some sort of float.

Even the strongest swimmers should make use of flotation aids when crossing a river and for non-swimmer they will be ESSENTIAL.

They will reduce the expenditure of energy and help to keep clothes and kit dry. Do not swim with your clothes on.

Once wet they will give no protection from cold. Dry they are something warm to put on when you have crossed.

ALWAYS MAKE SURE you have found a place on the other side where you will be able to get out of the water. If there are no beaches you will need supports to haul yourself up on to the bank.

But avoid tangles of branches in the water where you might get trapped. Enter the water well upstream to allow for the distance that the current will carry you down as you cross.

Better to overestimate and be a little longer in the water then to pass your landing place.

Check the strength of the current by watching floating logs and flotsam and study the water surface for

hidden obstructions and eddies.

If you hit weed in the water adopt a crawl stroke to cut through it. Once a strong swimmer has cleared a passage others will be able to follow through in the channel made.

FLOTATION AIDS:

Fuel cans, plastic bottles, logs-anything that floats can be used. If you have a waterproof put your clothes & belongings inside, leaving plenty of air space.

Tie the neck and then bend it over and tie again and use it as a float. Hang on to it and use just your legs to propel yourself.

Without a bag, but with a waterproof sheet, pile twigs and straw into the centre to create air pockets and then pile your clothes & equipment on top before tying up the bundle securely.

DO NOT ATTEMPT TO SIT ON THE BUNDLE OR PLACE YOUR WEIGHT ON THEM.

With a group of people, split into fours. Each four should lash their bags together and use them as support for an injured member of the party or a non-swimmer.

If no waterproof is available make a small raft or a oracle to float your things on. Bundle your belongings and if heavy, make the raft 2 layered so that only the lower sinks into the water and your kit stays dry.

MAKING A CORACLE:

There is a real art to building a traditional coracle and confidence is require to use it.

Follow the method below, make a paddle & test your coracle in safe shallow water to see how it handles.

Before you begin, MAKE SURE you have a waterproof cover for it, tarpaulin, ground-sheet, poncho, or animal skins will do.

Fats and tree resins are good for waterproofing. Cut springy saplings 2m (6.5ft) long-hazel and willows are ideal.

Stick the ends of one in the ground to form an arch and then add others across it to form a dome at about 25cm (9in) intervals. Tie them together at the apex.

Tie a sapling around at ground level and another half-way up to keep the shape and pull the whole structure free from the ground. Trim off most of the saplings that project above the upper edge.

Cover the frame with polythene, tarpaulin, poncho or animal skins, sewn with twine or thonging around the upper edge.

Obviously do not pierce below the "waterline". To save heavy woodworking a paddle could be made from a sapling loop, tied to a pole and covered in waterproof material.

RIVER CROSSING:

One of the principal hazard in cross country travel is river crossing. If the walker is a swimmer the pack can be wrapped in a ground-sheet which has its corners and loose-folds tied together.

This will support the traveler who holds the pack in his hands and by kicking with his legs he can cross safely with his pack.

It is advisable to tie a short length of rope to the wrist so that if the pack slips from the hands it can be recovered.

It is inadvisable to try swimming a river with your walking boots. Take them off and place them in the pack in the ground-sheet.

If a party of 4 or more are crossing, tie 2 or 3 packs together after each has been put in its ground-sheet. One party stands by on the bank while the other party crosses.

ALWAYS place a layer of fern or grass or small brush beneath your pack before folding the ground sheet on it.

If your ground sheet leaks slightly, this will give your pack an inch or two clearances and keep it dry. t

With a frame rucksack, lay your frame uppermost, with a swag, place your swag roll and dilly bag side by side before folding the ground-sheet.

BOLSTER RAFTING:

Small bolsters made of ground sheets can be rolled up and

lashed together if there is a party traveling together.

This makes an excellent raft, stable and buoyant for ferrying the party along the river or to crossing the river.

TESTING FLOATABILITY ALWAYS:

BEFORE ANYTHING ONE MUST TEST THE FLOATABILITY OF THE TRUNK OR OF RAFT.

IT IS VERY IMPORTANT POINT TO CHECK, ESPECIALLY UNDER THE TROPICS since many trees don't float specially the Palm tree which does not float even when dry.

PUT IN TROPICRAFTING:

Raft stays one of the oldest way to travel on water and is the safest and most rapid way to cross a river or to travel in most places.

However it is a long tiring job even with the proper equipment to do so in survival conditions but if raft becomes indispensable go for it, this may be your most salutary decision & wisest move.

The Spruce wood of polar and subpolar regions makes the Best Raft although any dry wood will do as well as the bamboo from the Tropics. Each trunk going to built the raft MUST be first roll into the water to assure its floatability.

One can construct a raft without nail nor ropes when one has an ax and a knife. 3 men are quite comfortable on a 12 by 6 feet raft with some equipment.

NOTCHES CONSTRUCTION RAFT:

Construct the raft on 2 sleigh logs which are beveled so that you can slide them on the beach. One log is easy to handle but a full raft is a lot harder to move.

Level the 2 main logs with the ax so that the other logs forming the plat form will adjust themselves uniformly.

Near the ends of each cut a notch on the superior and inferior face, while MAKING SURE that those notches are NOT facing one another, the bottom of those notches MUST be wider than its opening.

To join together all raft logs, trust in every notch a 3 faces piece of wood which length will exceed by 30cm the width of the raft. Start on one side then end by the other.

To each end of the raft attach each one of the 2 three faces pieces of wood so as to consolidate the whole thing.

When the raft is put to float, those pieces will swell and will tighten the entire construction.

If those pieces don't tighten strongly enough, jam them with small thin piece of wood which will swell when wetting.

PRESSURE BAR RAFT:

Easier to built than above; and faster as well. Take 4 main logs align them over and under the platform logs (7 of them).

Make notches into the 4 main supporting logs so that the platform ones will fit snugly with them, you can also to make it tighter fit, ax notches to the platform log. (Not a necessity).

Once both side are well fitted just rope together the pressure bars logs which extend about 1 to 1 1/2 feet past the platform dig a notch in each opposite face which will be used to anchor your rope & act as pressure bar.

OTHER RAFT:

Using a tarp or 1/2 a tent or any other waterproof material, one can make an excellent raft which carpentry will be made of brushes insuring its floatability.

ICE RAFT:During winter in northern regions when the middle of a river does not ice up because of the strength of the current, one can cross this river by improvising a raft with an ice block using an ax.

If there is a split in the ice, one can detach a great surface using a pole. This improvised raft MUST measure 2 by 3 meters and at least 30cm in thickness. The pole is also used to push the ice raft in the wanted direction.

FORDING WITH A RAFT:

One can cross in a raft over a river which is deep cold and fast raging while using the perpendicularly movement which animates the surface waters in the river curbs.

This method is useful when there are many persons to cross

over but you MUST fill those following requirements.

The raft MUST be maintained to a certain angle in report to current direction.

The cable length starting from its attaching point MUST be equal to 7 to 8 times the width of the river.

The attach to raft cable MUST be adjustable so that it MUST be possible to change the angle of the raft in report to the current direction, so that it can return back to the starting point shore.

RAFTS:

3 long logs, STANDING wood, test float BEFORE! (Bundled plants, limbs OK!) Notch to fit or lash. Square raft will spin. Listen ahead for rapids.

RAFT AUTO PILOT:

Rock or pail trailing short rope from front center, keeps raft in main channel.

ROUND BOAT:

Stretch waterproof material over domed frame of Willow sticks.

INDIAN RAFTING:

With trappers it has been seen an astonishing one. An Indian having killed a beaver at 300 feet from the shore, had to go and get it while it still floated. It was fall

and the water was too icy for him.

He then cut 3 dry logs about 15 feet long and 9 inches in diameter and place them in a fan shape in the water, upon which he just threw about 15 big spruce branches across his 3 logs as a platform.

At about 1/3 of the way at back to 1/2 half depending of weight and amount or type of branches at times.

He then took a 12 foot pole and pushes his raft toward the open water to get his beaver safely and back while he threw a fishing net for added work. He came back some 15 minutes later with its beaver.

It may surprise you how while using no rope or tie whatsoever it could still remain together the branches and logs. But why any ties, since there is no need.

The Indian own weight on the floor mat of branches and the opposite pressure coming from underneath, (the one making the logs to float) is more than enough to retain all the raft together without any other support.

But try it only on calm water lake or slow river unless you really have to.

The reason 3 long logs can be used so satisfactorily for such a job is that it can be readily paddled or pole depending of the water long oar, sweep or some other rudder arrangement.

A shore square raft on the other hand has too much tendency to spin. You can decide to lash it with rope,

vine, roots, spikes or even by burning out the necessary openings.

NOTCHING LOG RAFT #2:

Lay the 3 logs in position near the water, assure their floatability before of course.

You will then need 2 substantial crosspieces across the top, one near each end. A couple of tough rugged poles will do.

Set these in places and mark on the logs beneath where each pole is to go. Then cut 6 notches so that each is narrow at the top widening as it goes deeper into the log.

When the 2 crossing pieces are finally driven through each series of 3 notches the fit should be snug. Once the raft has been allowed to soak, it will then be more firmly interlocked.

SOME RULES OF RAFTING:

You will be only prudent if you take every possible precaution when using such a raft particularly under the stress and uncertainty of emergency condition.

Keep listening and watching as far ahead as possible for some notable patches of bad water which often give NO Warning until a rapid is almost on you. For this reason it is good to scout ahead whenever this is at all feasible.

If you have a rope you may be able to line the raft through rapids while walking safely along or near the shore.

Otherwise you will probably do better to let the raft go with the idea of retrieving it later if that is possible.

You will have to provide as well as you can for the safety of any outfit you may have along in 2 ways:

Either by tying it to the raft or, packing it in as waterproof a bundle as you can manage with some provision, such as the inclusion of a chunk of light dry wood under so that it floats.

MAKE YOUR OWN AUTOMATIC PILOT:

One day you may find yourself on Brion or floating alone on such a raft or down a broad sluggish river like many in the North.

A rock or pail or any old container plastic or metal which is hung beneath the conveyance by a short line affixed to the front center of the latter will automatically tend to keep your carrier in a main channel.

Besides thus acting as a guide, this arrangement can also conserve a lot of energy spent needlessly in booooooring dreary hours of steering.

FINDING AN OUTLET:

To locate the outlet of a quiet bayou body of water is to float bannocks crumbs or bits of some other light substances and to observe which way they drift. (To the BAR maybe?)

WAVES WARNING:

In connection with water there is one special precaution that any one venturing along a rocky open sea coast MUST HEED.

That is to hold fast at the first feasible spot upon the approach of a BIG wave.

Deliberately choosing to get wet rather than taking the chance of running across uncertain footing and thus risking in many exposed area the Very Real PERIL of being INJURED and even to be swept away and drowned.

VISIBILITY:

Visibility is sometimes so deceptively restricted in dangerous terrain, that it is foolhardy to keep going. Seek shelter & Wait.

RAFTING PART 2 OR 3:

Construction wood MUST ALWAYS be dry & able to float. And that the density of wood being average 0.8%. In other word 100kg of wood well dry gathered as raft could only carry 20kg.

You MUST then add floaters such as wood barrel or metal or boosters (grass or fern and bush wrapped up in waterproof ground-sheet tent material and tied together with or without wood underneath, and some wood or fern or grass of some leakage).

PLASTIC FLOATERS:

Rubber mattress or tire tubes, or Javel plastic bottle

container type with CAP on, of course will act well as floaters and easy to lash to a log in single or double file all along will act as new space age survival 2001.

Also 4 to 6 to 8 put in pairs and under each underarm even in the crotch could be well used as life jacket of sea survivors.

Lot of deserted beaches, now have a lot of pollution ropes, & plastic containers of all kind for many purposes.

PLASTIC ROPE SUPER HOT FIRE:

Plastic rope found on most beaches give a strong and quick fire. Throw it in a fire going already and see the temperature rise fast.

RUBBER RAFTING:

Made of 5 cars or trucks air tube linked by a light frame stick of wood or aluminum or plastic tubes (5) and cover over by a light floor, (brush or water proof material in bundles). Use the floor mats as sails.

REED BAMBOO RAFTS:

The reed has about 1.5cm in diameter at the big end and 2 meter long. Cut them at the closest of its root and make tight "boot" rolls of about 50 to 60 to 80cm in circumference with strings or rope or root or fibrous bark etc. linking them at each end.

Make 2 frames with your walking stick or a pole of 20cm less than one of your tight "boot" roll in size and put it

together.

UBAS?:

Qu'es aco? Mah Radash? Is it fattening?

Here are the plans of the military secret of these primitive Karajas Indians of South America, oh well we learn from all.

If you camp near a river or near the sea, you will certainly find an old tree trunk yet big enough to carry your own weight.

To each end of the trunk attach a lattice across. To each end of the lattice fix a small log piece and tie a series of plastic containers This will make 4 floaters which will prevent the trunk to overturn and insure its stability. Safety caution comes first.

At the center and on each side of the trunk attach a small log which will be used as a foot rest. For the shape of this raft and speed beveled the ends of the logs.

Shape wise it looks like a fine square or rectangle crossed by a heavy log dead center underneath.

7TH WAVE = BIGGEST:

The 7th wave is the biggest so if you plan in launching your raft away from the reef or shore use that one to carry you in or out depending of the need at the time.