

## How to choose a Kayak Paddle – PART 2

In the last article we explored the differences in shaft designs and the qualities of the different materials on the market. This issue we are going to look at the parts that catch the water and how they should be set onto the shaft.

As we pull our paddle through the water eddies and vortexes are created both in the air and water. The trick is to create these where we want them, in order to produce resistance, but to keep them to a minimum everywhere else.

Through the history of kayaking there has been many developments intended to increase the efficiency of the blade. There is now a variety available with each having its own benefits.

So what is good for what?

### Blade shape

This can be split into four main areas.

**Flat blades** are great if you are just starting out. They are easier to control than blades with fancy curves so won't complicate things for you in the early stages of learning. During a forward stroke too much water builds up on the blades face rather than being directed off the sides. The result is "flutter". This is the side to side movement the blade can make during a stroke, causes energy to be wasted and encourages the boater to over grip the shaft.

**Curved and Dihedral** The idea of introducing a curve (When the blade is curved from end to end) is that it directs the water from the blade preventing it spilling off unevenly as with a blade that is flat. A dihedral blade has two areas of curve extending out from the centre to the two long edges of the blade. This creates a ridge down the middle of the blades face. This directs water off the blade cleanly and helps to reduce flutter.

At the catch phase (The instant the blade enters the water) of a stroke any splash created is a waste of energy. When each blade enters the water some air will be dragged down with it and this also reduces efficiency. Curved blades enter with the least disturbance and will catch the water efficiently. Too much curve and strokes where the blade needs to be sliced through the water are harder to master.

**Asymmetrical** During forward paddling the angle of the paddle means that more surface area of the lower half of a blade is in the water. This leads to unequal amounts of force over the blade and causes the shaft to try to twist. The twisting pressure encourages you to tighten your grip on the paddle. By removing part of the blade area from the lower section (i.e. making the blade asymmetrical) the surface areas are equalled and the twisting is reduced.

You will find other modifications to blades available on the market, for instance, widest at the tip gives maximum power from the moment the blade enters the water.

Narrow tipped blades allow technical strokes where too much power can be a hindrance. Dropping the blade deeper into the water increases the power as you pull through the stroke. These blades reduce the initial shock to your joints.

Cutting back the shoulder of the blade reduces the tendency for the paddle to hit the boat as can happen when doing dynamic free-style moves.

Symmetrical You won't have to worry if you end up holding these upside down as both blades are the same. A symmetrical blade usually has a strong dihedral to compensate for the unequal surface area when forward paddling. This type of blade will give powerful strokes so is useful when your limited to the number of strokes you can do, for example on steep technical rivers.

### Blade size

It's worth bearing in mind if you are still growing or are doing a lot of boating that each time the blade catches the water it puts enormous strain on the body. The greater the blade area the greater the strain will be.

Blade size can be likened to gears on a bike the greater the blades surface area the higher the gear. How the surface area is distributed will dictate its use as outlined earlier in Blade shape.

Most manufactures offer blades of various surface areas. As a rough guide it is suggested that it should be no greater than that of five of your own hands when laid flat with your fingers closed.

### Blade thickness

Thin blades allow the blade to cut through water and air more efficiently.

If you look closely you will find that some blades have very thin edges to aid in slicing but thicken to the centre to retain strength.

Be aware that a thick blade does not always mean a strong blade, as the material tends to dictate this more.

### Feather

(The amount in degrees to which the paddle blades are offset).

'Feathering' allows the blade passing through the air to slice cleanly, improving efficiency and also preventing the blade in the water from being displaced. Paddles with less than ninety degrees of feather are now readily available and have the advantage of reducing the amount your wrist has to rotate on each stroke but still cuts cleanly through the air. If you are used to using a ninety degree feathered paddle a reduction will feel strange at first but a few days out with it and you will probably wonder why you hadn't changed before.

A small amount of feather also allows both blades to brace when you take your boat into the vertical plain and helps when bracing on alternate sides in rapid succession.

## Weight

Heavy used to be a good sign of strength but with the introduction of modern materials this is not now always the case. Some people like the feel of a heavy paddle but don't forget that you are going to be lifting it continually from your waist to shoulders.

When holding a weighty paddle you have to grip it tightly and that puts strain on your tendons and is likely to increase the chance of overuse injuries as well as reducing the feedback to your muscles.

Light paddles can be blown around in high winds and pick up very little momentum as they travel through the air. This means you use up more energy having to maintain the momentum. In other words it's all a compromise.

## Strength

There are many ways in which this can be measured such as; impact resistance, wear resistance, crush strength, load capability, and UV resistance. All are important but it will depend on your intended use as to what is going to be priority to you.

A broken paddle is never a welcome occurrence and in some cases could be a little scary. As well as offering a wide variety of materials with different strength characteristics, manufactures use a few less obvious tricks. One of these is to laminate the blade on to the shaft and in affect eliminate the joint. Another way is to use more material in the places that have to absorb most force and use less where weight can be saved.

If you are unlucky enough to break off a piece of your blade then it's worth getting it repaired or replaced. The reason for this is purely one of safety. On a busy stretch of water it is all too easy to catch someone in the face causing them a nasty injury. Sounds picky I know, but sadly, it does happen.

## Flexibility

A stiff paddle transfers force into the stroke immediately. A flexible paddle loses a lot of the force, as some of the water you initially catch will be lost around the sides of the blades.

Some flex is needed to reduce injuries, as it will absorb some of the initial impact of the blade catching the water.

All paddles have some degree of flexibility, either along their whole length, in the blades or in the shaft. Generally speaking wood is the least flexible followed by composites then plastic and aluminium.

## Colour

As long as it matches your cag and boat who cares. Only kidding, but seriously, it is worth noting that darker colours can be difficult to see if you are going to use them for signalling especially on those overcast winter days. Should you loose hold of your paddle they are also hard to see in the water. If you have a dark coloured paddle, tape or stickers are a simple way of adding colour.

## Conclusion

Like me, not many of you will have the money to run out and buy half a dozen paddles to suit every occasion. Compromise must be sought. Obviously I don't know everything there is to know about kayak paddles but hopefully these articles have at least highlighted some ideas that will help you in your search.

Don't look for the best paddle in the world; look for the right paddle for you!

See you on the water.

Thanks to Brookbank, Werner, Ainsworth, Lendal, Gorilla and all those that gave me support in producing this article.

Article by Alan Pashley, Aspirant Inland L5 Coach

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