

Rowing Technique – Primer

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POWER, LENGTH, AND RATE

Three factors determine the speed of the boat. They are:

1. **POWER**- How **FAST** the boat travels each stroke
2. **LENGTH**- How **FAR** the boat travels each stroke
3. **RATE**- How **MANY** strokes are rowed.

If a crew rowed at maximum capacity in all three of these components at the same time, it is doubtful they could row 10 strokes before technique withered and boat speed faded. The number of strokes required to complete 2000 meters is from 200 to 250 and clearly, equilibrium of power, length and rate must be achieved. Rowing is basically a power endurance sport, but it requires a high level of skill. Choosing the "right" technique and then teaching it is a coaching skill and there are many differing opinions about which method is the best. Whatever the method preferred, power, length and rate are the basic ingredients.

RATE

Rate is the easiest to achieve. Keeping it at its optimum in a race is not the main problem. Length and power are the first to deteriorate when the pressure of the race reaches its peak.

LENGTH

The most efficient part of the stroke is when the blade is passing at 90 degrees to the boat. Only when it is at this angle is its force propelling the boat wholly in the correct direction. In theory an efficient length of the stroke is from 45 degrees at the catch to 135 degrees at the finish. In practice the body prevents the oar from reaching more than 125 degrees. To achieve 45 degrees at the catch, the reach must extend beyond this angle. A longer finish can be drawn in a sculling boat but it is inefficient to draw more than 130 degrees.

POWER

Maximal power is achieved by appropriate sequencing of the contributing muscles from strongest to weakest.

LEGS FIRST.....The quadriceps and gluteus

Then the BACK..... The lower back

Then the SHOULDERS and ARMS... The latissimus dorsi, trapezius, rhomboids, and biceps.

The STROKE

The boat is only as fast as the blades drive it. The power transferred through the blade to the boat is only as much as the legs supply. A good technique is based on the work of the legs to create most of the total power.

THE CATCH - "FIND the POST in the WATER"

The faster the blade enters the water the more positive will be the grip, the longer will be the stroke and the faster the boat will travel. The important points are:

1. Hands guide the blade into the water.
2. Legs apply the power
3. Trunk and arms link legs to blade

MIDDLE of the STROKE - "the most efficient part"

All the muscles are working through their middle range and the blade is at its most efficient point in the stroke. Make full use of this advantage by beginning the draw with the arms before midway. The arms must start to draw well before the legs reach the backstops.

THE FINISH - "send the boat away"

Retain pressure on the blade through to the finish by pressing toes on the footboard, by using the leverage of the trunk, and by keeping the arms working with the body. Although legs reach backstops before the arms and trunk have finished working, the toes should continue pressing hard to give support with the legs until the blade is extracted. The trunk should be moving towards the bow until the moment before the hands reach the body. (if the arm draw starts too late, this timing will be delayed.)

RHYTHM

The rowing stroke comprises fast movements and slow movements. The essence of good rhythm in the boat is the contrast between them. Done well, a good motion looks smooth, continuous, and unhurried, so it can be difficult to see that contrast. The FAST movements begin with the entry of the blade and continue through the stroke and the

movement of the hands away from the body after blade extraction (the finish). The slower movements begin when the hands pass over the knees and continue until the next stroke. The inertia created by the power of the stroke carries the hands down and away from the body when the seat is at the backstops. The body relaxes immediately as the blade leaves the water so there is no interference with this natural free-flowing movement. The seat moves SLOWLY forwards in contrast to its speed during the stroke. The rower prepares by gathering, ready to spring from the stretcher onto the next stroke. The movement of the seat must be faster during the stroke than it is during the recovery. The sooner it leaves the backstops after the finish, the more time it has to reach the front stops and the slower it can travel. The hands and then the body move lively away from the finish to allow the seat to start on its way forwards.

THE RECOVERY - "Let the boat run, rest, and prepare for the next stroke"

Hands, Body, Slide

1. Move the hands down and away over the knees
2. Pivot the body forward onto the feet
3. Move the seat away from the backstops
4. Move forward, rest the body and let the boat run underneath you.

PREPARE FOR THE STROKE

To achieve optimum position for the application of power and good forward length. Note the following points.

1. Head High- encourages good posture for body and spine
2. Chest against thighs- Rotation should be centered around the hip joint, not the upper or lower back.
3. Shins vertical- strong position for the quadriceps
4. Relaxed but alert- poised like a cat ready to spring

THE HAND POSITIONS

Sculling - The oar handles should be held in the fingers, not the palms. The hands should generally be at the tips of the oars to maximize inboard leverage, with the thumbs pressed against the handle nub to generate sufficient outward pressure against the oarlock. As Frank Cunningham said, "The handles should be grasped like one was holding a small bird: Firmly enough to hold on, but not so hard as to kill it." The grip of the fingers around the oar will automatically increase sufficiently when contact with the water is

made. The arms and hands should extend along a horizontal plane out well over the gunnels as the blade angle is increased in preparation for the grasping of the water. The entry of the blade into the water will be accomplished with a relaxation or slightly positive "flick" of the hands and arms while maintaining the back angle (not opening the back to achieve the catch).

Sweep - Hold the oar with the hands 4 to 6 inches apart (11 to 15 cm).

Turn the blade with the inside hand. Apply power with the outside hand.

RELAXATION

Contract only those muscles needed to perform a specific function. This is achieved by relaxation of the hands, arms and shoulders, the areas where tension will be most prevalent. The muscles of the upper body will be more effective if they enter into the catch in a relaxed condition. Muscles will contract instantly when a load is forced upon them.

BLADEWORK

The importance of bladework must be appreciated. Only the blades move the boat, therefore an important part of the technique is the skill with which the blade is controlled.

A good blade is described as:

1. A long stroke in the water. Minimum loss of reach forward. Quickly grips the water. Covered throughout the stroke.
2. Utilizes power. Grips the water with minimum loss of leg drive. Works in a horizontal plane. Covered throughout the stroke
3. Does not interfere with the run of the boat. Clean extraction. Carried forward clear of the water. Balances the boat.

ROWING STYLES

Rowing styles differ in where emphasis is placed. The emphasis, for example, may be the catch, the finish, or the rhythm. Body positions and movements will be influenced by this emphasis. The method I prefer is based on rhythm. The stroke is divided into two phases: 1) The **STROKE** or power phase, and 2) The **RECOVERY** or resting phase. The oarmen are trained to apply full power to each stroke and to rest during the recovery, which will help them apply power to 200 strokes or the number required to complete the race.

The ability to apply power is an essential physical requirement. Physical capacity is acquired by training, but the coordination of muscular contraction in the rowing stroke is the essence of good technique.