Ergometer Survival

How to Use the Ergometer as a Training and Teaching Tool

A demonstration by Curtis Jordan

1. Survival — the Machine and You

- Don't wear clothing that can get caught under the seat wheels.
- Stretch before you get on the machine, following a light warm-up.
- Decide how much resistance you want. If you open the vents, you increase the resistance on the recovery and the pull through. Closing them decreases resistance. The other change you can make is in the gear. The small gear provides heavier resistance, and the large gear creates lighter resistance.
- Ready the ergometer. Typically, when you get on an erg, you find the seat handle up against the cage. Before you put your feet in, pull the handle down into the handle brackets so that you can reach it comfortably. If you let go of the handle, it can hit the monitor. If you keep it against the wheel, or cage, when you're not rowing, you'll save the cage, protect the monitor and not damage the handle. Then set the heel board for your feet. You want to have your calves as perpendicular to the floor as possible at the catch position. Adjust the board up or down to allow for that.
- Keep the seat handle perpendicular to the wheel, and avoid turning it one way or the other. It's possible for a twisted chain to break.
- Do a technical warm-up — this helps you avoid any potential back injury. Warm up by doing just the arms and back. With the knees up a little to prevent the lower back from having too much stretch, just reach out with your arms and back, and knees slightly bent. When you come to the finish, and you're in a "lay back," or slightly beyond the perpendicular, bring your hands all the way back to your body.

2. Erging for Fitness

If you're using the ergometer primarily for fitness, the goal is to make certain you're using the proper muscle groups and avoiding injury.

Start from the finish position and go through three steps:

- 1 — arms (outstretched with the wrists past the knees).
- 2 — body (body forward, 10-15 degrees past the perpendicular toward the wheel — don't "hyper-extend").
- 3 — legs (come up).

3. The Ergometer and the Coach

In addition to being a great training machine, the ergometer is a great tool for teaching rowing technique. Although you're not going through exact motion of sweep rowing, the basic driving and recovery motions of the body are very similar to anything you do in a boat. Especially for a novice rower, and even for some top level collegiate rowers, the erg can be a good teacher because it demands repetitive motion like rowing and imparts a good sense of the concept of drive.

When coaching with the erg, use pause drills and then full strokes from there (see Figure 1) giving yourself time to instruct athletes and letting them have time to feel
whatever you're talking about before they repeat the action. You might be asking them to have good body position at the finish — a supported back, relaxed shoulders, and elbows to the side, bringing the oars all the way to the body. Check it each time the athletes pull.

When you're using the machine to coach technique, look for the angles that exist (see Figure 2). The coach can see those lines in each body that sits on the erg and teach the right motions and link-up of those lines.

The line concept is also helpful in teaching the drive. Using those stick-figure lines, the coach can teach a well-connected drive. From a catch position, when the athlete begins the drive and you see the seat move toward the bow, look for a corresponding and equal motion in the oar handle. That way you know that as athletes drive their legs and the angle between the thigh and calf opens, they are effectively connected to the oar handle.

Then, as the angle created by the calf and thigh dissipates, you see the angle between the chest and thigh taking over the drive. The angle between the chest and thigh becomes the prying angle, and you can see that as the legs finish, that angle should open. Through the whole drive, you're looking for a constant speed. There are two other helpful aspects of the machine from a coach's perspective. First, you can see the motion of the slide. For example, as athletes pull in, if they don't have a firm press with the legs and support with the lower back, they give up and the back collapses. Typically when the back collapses, the slide rolls in too much. If athletes don't have a good firm support with the lower back, as they pull in and finish the stroke, the slide will give up and roll back toward the stern. Watch the slide. If the slide isn't firm and still, you know the athlete doesn't have good support with the legs and upper body.

The following drills work on the drive connection: legs only, legs and body only, both alternated with full strokes.

Another advantage of the erg is that it has no front stops — a real positive because you can identify rowers who have no concept of where they should change directions. With no stops, they have to learn to use pressure in their feet and feel when it's time to change directions. A lot of young rowers, and even some experienced ones, will slide down the tracks until they can't go any further.

To work on body preparation and change of direction at the catch, use quarter and half slide drills, alternated with full slide strokes.

The ergometer also lets you watch the horizontal lines the athlete is creating (see Figure 5). Rowing is a horizontal sport. If the hands are moving up and down too much, if the body is moving up and down too much, you'll see it in the chain. If the chain starts moving and waving, you know the athlete is too.

4. Ergometer Motion — Stop Action and Tug of War

By simply using a screwdriver, the coach can immobilize the wheel at key points in the stroke (see Figure 3).

When the wheel is at a stop, place the screwdriver between fan blades and support, and allow the athlete to pull against a non-moving wheel. You're able to stop the action with the athlete, walk up and do a little hands-on coaching — put the athlete's body in the right position, manipulate the muscles the athlete will be using. You can really change what's happening and use this as a different communication with the athlete. You're using more than words.

First, stop the action at the very beginning of the leg drive. If you can see the athlete's hips moving before you see any tightness, or firmness, in the shoulder, you know he has a tendency to shoot the slide, and he is losing his attachment, or linkage, to the oar handle.

Next, stop the action where the angle at the legs is beginning to dissolve. The shoulders are beginning to approach perpendicular — not quite there but on their way, and you can check to see if there's good linkage between the legs, hips, back and handle.

Another teaching technique is playing tug of war by attaching a strap to the handle (see Figure 4). You can slowly control the athlete, offering more resistance than normal. If you want even greater resistance, attach the rope to a pulley.

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