

How to *Paddle* **FASTER**

TIPS FOR OPTIMAL TRAINING



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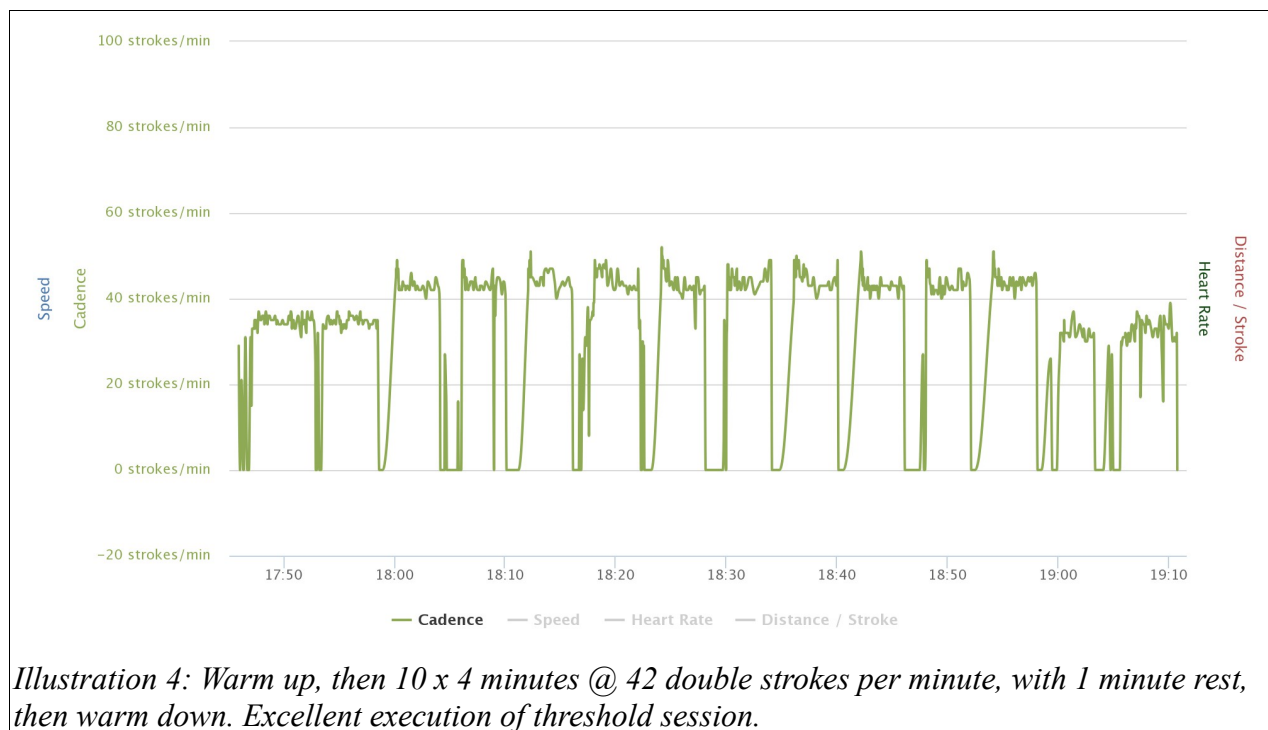


Illustration 1: New Zealand womens K4 training for the Rio Olympics

6 Threshold intensity, ventilatory threshold 2 (VT2)

Threshold training is about lactate in muscles. It's called threshold because at 'VT2' the blood flowing through the muscle can no longer clear the lactate being produced. Below this lactate threshold, muscle contractions are mostly aerobic using oxygen as the main fuel source and above this threshold the anaerobic energy system begins to come into play resulting in lactate build up and rapid muscle fatigue. Threshold training is also called VT2 training or intensity level 4.

All but the most explosive disciplines will benefit from threshold training. How do you know what intensity your lactate threshold is and how do you know when you are doing good lactate threshold training?

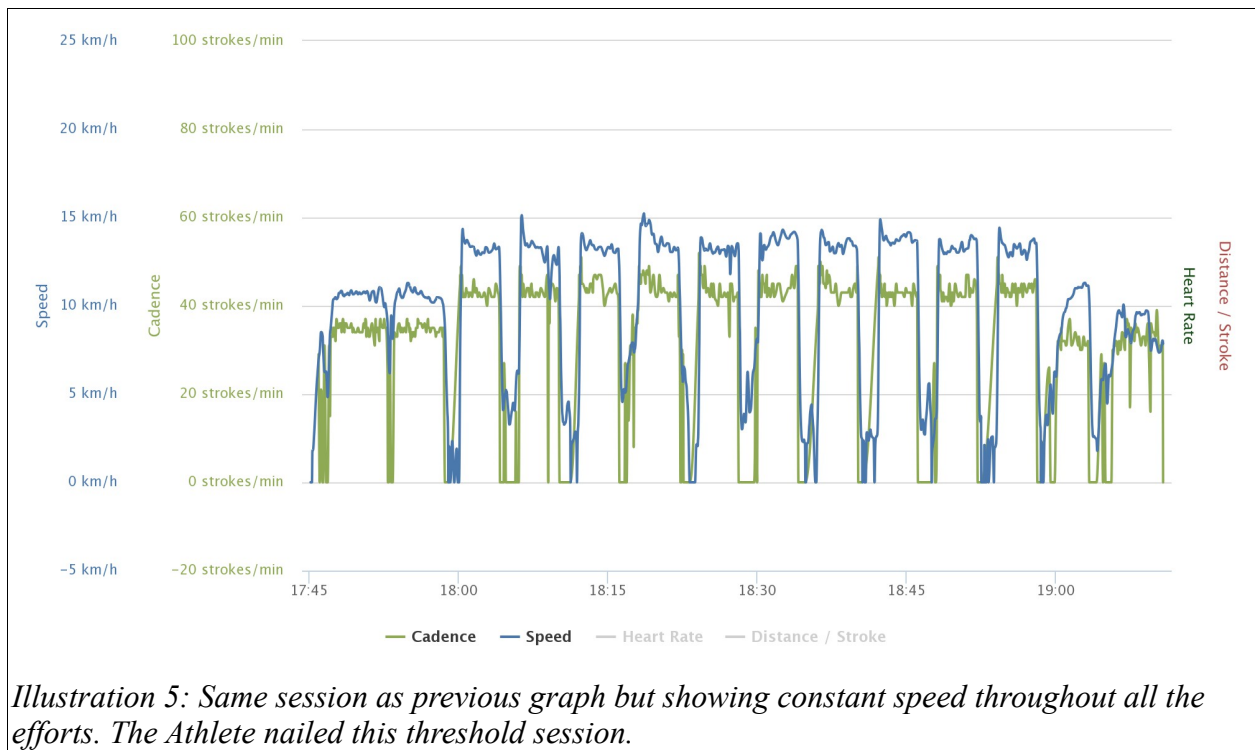


The ideal way to know your lactate threshold is to do lactate blood levels at different training intensities. This gives a lactate / velocity curve. Initially as exercise begins, ventilation (breathing), velocity (speed of the boat) and lactate (blood level) rise slowly until ventilatory threshold 1 (VT1) is reached. For training purposes any exercise below VT1 is fully aerobic. If activity becomes more intense lactate begins to build up in the blood until the point where lactate levels begin to rise very steeply, this point is called VT2 and any activity above VT2 is mostly anaerobic.

Measuring blood lactate is invasive , expensive and requires special training so is not available to most athletes. Stroke rate is proving to be a much cheaper and more accessible alternative.

A practical way to get an idea of your lactate threshold is to go hard (as hard as you can) for 40 minutes then take your average stroke rate for the last 20 minutes and your average heart rate for the last 20 minutes. These two metrics can be used as an approximation of your VT2 or lactate threshold level.

When doing threshold training you need to be at your VT2 stroke rate for 30 – 60 minutes. Elite athletes will be closer to the 60 minutes but if you are not able to sustain training at your VT2 stroke rate for 60 minutes you are better to start at 30 minutes and gradually build up. The moment your stroke rate drops below VT2 its contribution to a threshold adaption diminishes. You may still be training but you will not be producing a threshold adaption. Resting during threshold training will clear lactate which defeats the point of training at VT2 so keep any rest breaks short. Work to rest ratio should be no less than 4:1. A popular on water threshold session is 10 x 4 minutes with one minute rests. The rests just help with focus to keep each 4 minute effort at VT2. Knowing your stroke rate at VT2 and training to this stroke rate will mean you achieve the maximum threshold adaption for the minimum training time. With real time stroke rate feedback you have a measure of the quality of your training right in front of you at all times.



Good athletes will be able to hold a steady speed and steady stroke rate through all of the 10 x 4 minute efforts. The analytics graph will show constant speed efforts with no reduction from effort 1 to effort 10 and the cadence trace will be fixed at VT2 cadence with no decline during the 4 minute efforts and no change from effort 1 to effort 10. If that is what your threshold training sessions look like you are doing excellent threshold work.

Recovery time from a good threshold training session is 48hrs so only two or occasionally three in any one week. Recovery times for aerobic sessions are much faster so do aerobic and other easier training in between the threshold work.

[Expect the next chapter by email in 1 week!]

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