How to Paddle FASTER

TIPS FOR OPTIMAL TRAINING

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Table of Contents

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

9 Distance per stroke

I started this series of articles by stating that the only two things you can change to improve boat speed are stroke rate and distance per stroke. All of the earlier articles have focused on stroke rate because most of your initial speed gains are achieved by developing a range of paces (stroke rates) and using these paces to accurately target specific physiological adaptions, aerobic fitness, threshold tolerance, VO2max and anaerobic ability. There is a physiological limit to the number of muscle contractions you can make in a minute, so once you develop your ability to train at a range of cadences you will find that your VT1 stroke rate and your VT2 stroke rate will stay remarkably constant even as you continue to improve. If your stroke rate has not changed but your speed has improved then the gain has been achieved by an increase in distance per stroke.

The gains achieved through increased distance per stroke are small compared to gains you can achieve with increased stroke rate but distance per stroke is the stuff of gold medals and is what separates Olympic finalists.

Distance per stroke is about boat design, technique, efficiency, feel for the water, boat movement, boat run, as well as strength and fitness. All these variables can impact distance per stroke but if you are not measuring distance per stroke you will never know what is working and what is not.

Illustration 8: Normal loss of distance per stroke with increasing speed.

When you have stroke rate data and distance data you can easily measure distance per stroke. There is always variation between individual stroke distances so real time distance per stroke is of limited use. The real benefit comes from monitoring average distance per stroke over short distances and race splits, and monitoring loss of distance per stroke over a range of different cadences. Initially athletes tend to see a drop off in distance per stroke with fatigue and with increasing stroke rate and to a degree this is to be expected but if the loss of distance per stroke is greater than expected this indicates poor technique or poor fitness or both.
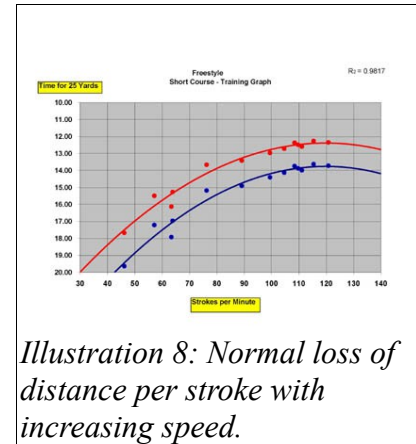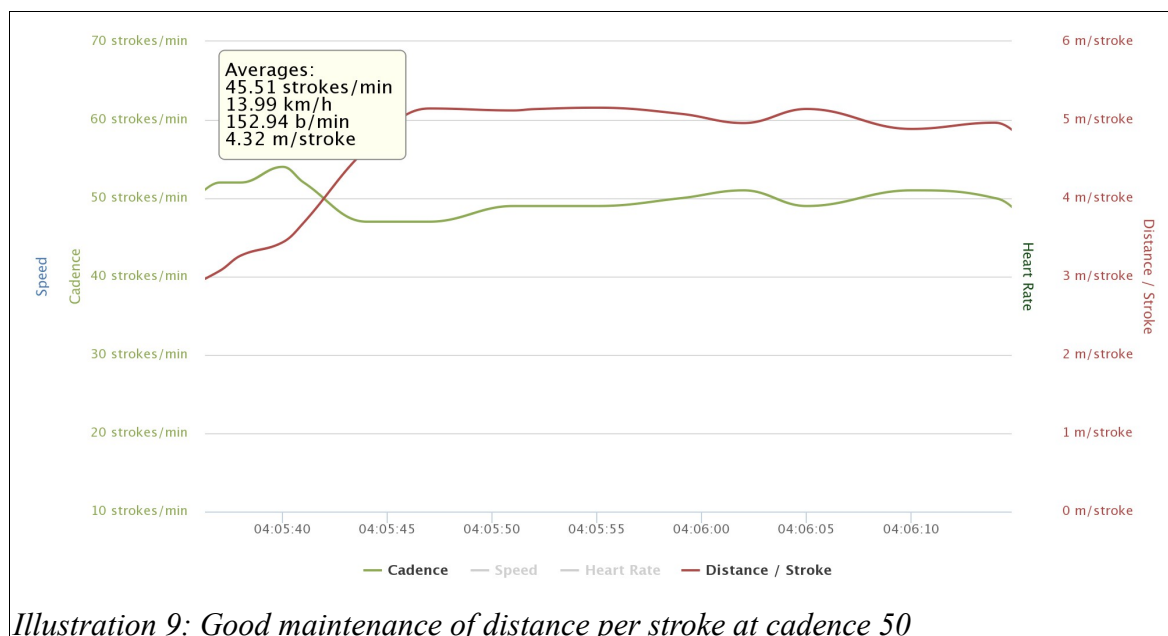

Illustration 9: Good maintenance of distance per stroke at cadence 50

Monitoring average distance per stroke is one of the best ways to check that your training is working. Real time stroke rate feedback allows you to train at a fixed cadence, and if conditions are similar this allows you to monitor and compare your distance per stroke data from one training session to the next.

In the next article I will discuss monitoring of training using stroke rate and distance per stroke and how to use these metrics to check that your training is producing the results you want.
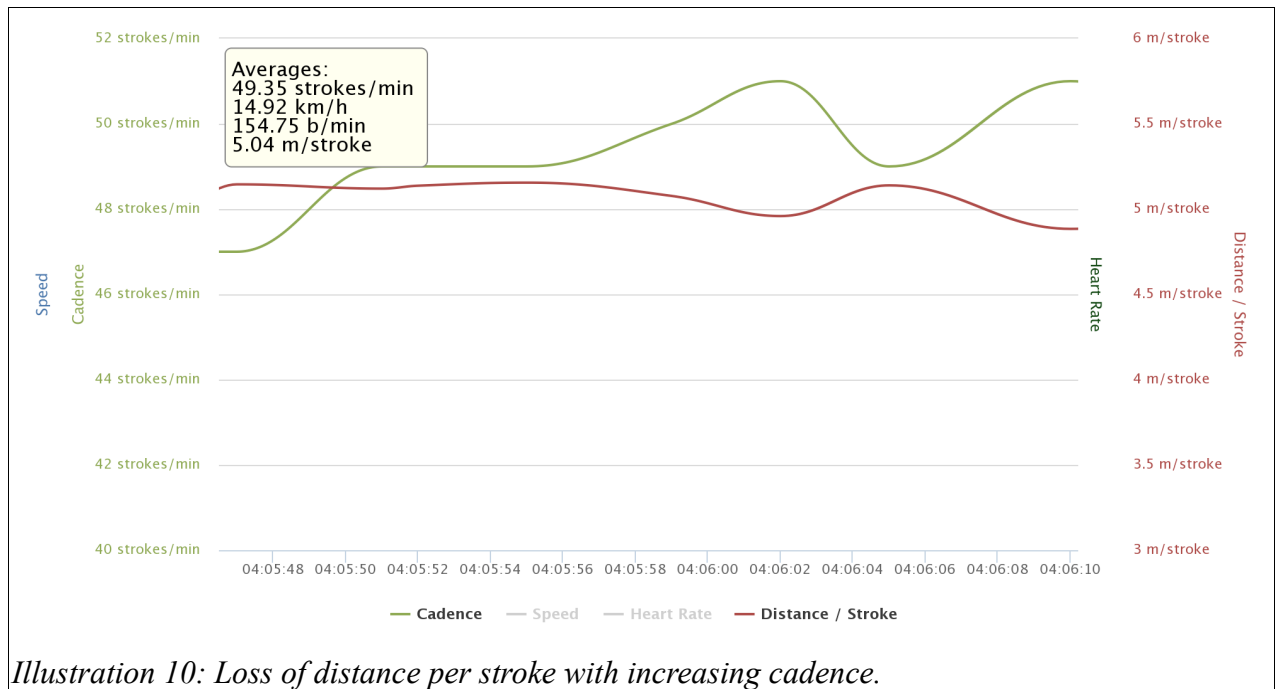

Illustration 10: Loss of distance per stroke with increasing cadence.

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

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