

Are You Fuel Efficient?

▣ Marie-Catherine Bruno, *BsCPT, Cped(C)*. Artwork by Rich Vail

A few months ago I was talking about the importance of good running technique. I mentioned the close relationship between poor running technique and chronic injuries, and also how much extra work it is to run with poor technique. I usually focus on the injury side of things and prevention, like your mother would, but I have decided this time to focus more on the performance side of things.

I know that for most of us in this world, integrating fitness training into our busy lives requires juggling work, kids, spouses, house chores, and many other important things. This is a task that demands quite a talent at planning and splitting yourself! So why not make the best of each training session you are able to squeeze in your crazy schedule and improve not only your fitness, but your speed and distance by simply making yourself a more efficient runner? I think that's a great idea!

Spring has sprung and most of us will have started running outside again. It is always a treat. And wouldn't running faster than last year be an even better treat? Wouldn't beating old-man-John-Smith this year be a sweeter treat? Let's see what can be done with just a little bit of work and attention.

Cleaning up your style

Running style is very personal, and for the same good technique, a lot of runners can look slightly different. What is important is to include the proper components in your style. Arms and legs flapping all over the place are highly inefficient. Think of your arms as a propulsion mechanism. Do you want to reach the sky, or would you prefer to get to the finish line?! Arms must be kept low (hands should be crossing the leg at the hip level). Any higher than the hips, you are more than likely projecting yourself upwards instead of forward.

Elbows and hands should be fairly parallel, both moving on a forward line, as opposed to elbows moving out and hands crossing the midline. Elbows moving out (and hands crossing the midline) bring a lot of rotation force to the upper body, another huge waste of precious energy and momentum, and of course a source for early back fatigue and tightness.

Keep your shoulders and face relaxed. There is no need to shrug the shoulders and grimace

or clench your teeth when you run, you are just wasting energy. Keep that energy for your engine!

Your legs, same as your arms, should be pointing and moving forward. Your knees should be moving up and down while keeping a straight trajectory. Your feet should follow the same forward trajectory, not circling around and flaring out. Any extra rotational movement (like running like a girl!) will make you work a lot harder for any given speed you are going at.

Cadence

Cyclists know it, race car drivers know it, track runners know it, but do orienteers know it too? It is all about how fast you turn the engine. The faster, the more power you can develop. In running terms, that means leg turnover. You must turn your legs quickly to become an efficient runner. This will at first put a little more strain on your heart and you will breathe faster and heavier for even an easy pace. But as you get used to it, you will notice that you can climb hills and run fast without feeling that your legs are going to fall off.

Your heart is a miraculous engine that can just go and go for hours; your legs can fatigue a lot faster than your heart. So by increasing the cadence of your running, yes, you will breathe a little harder at first, but you will adapt quickly enough and you will realize that you can run for much longer distances than you're used to, or simply run your routine loop faster than ever.

The ideal cadence? Between 85 and 90 strikes/minute per foot (so 170-180 strikes in total). Do a quick test on your next run: count how many times you strike the ground with your left foot in 6 seconds. Add a zero to that number, and that will give you your cadence per foot per minute. Aim at those numbers above for maximal efficiency.

Forward displacement

When you are running, you want to move forward; not sideways, not upwards, forward! So keep that in mind when you are on your daily (or weekly!) jog. Any movement you do should be aimed at pushing you forward. So again, arms, legs, torso... everything should point forward, and in your mind, you should visualize all these segments moving forward.

How to practice

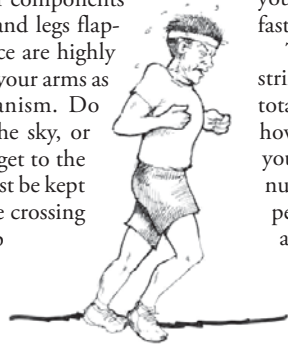
Treadmills are boring, I admit. But they can be of a great assistance

when it comes to working on your technique. Find a gym that has mirrors in front of the treadmills so you can observe yourself as you run. Running on a treadmill is slightly different than running outdoors and requires less hamstring work. To compensate for that, always bring the treadmill to 1 to 1.5% elevation. This will ensure that your hamstrings are firing appropriately and will also reduce the pounding on the body. Keep your sessions short but focused, 15 to 20 minutes, once a week, until you find that your technique is appropriate. Return to the treadmill after a prolonged running break or any injury.

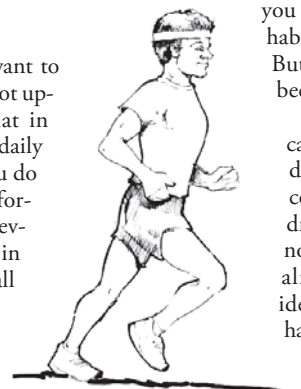
Style: Mirrors do not lie! Head should be straight and not tilted, shoulders relaxed and leveled, hands moving straight forward, elbows following the same trajectory (in fact, you should barely see your elbows – if you can see them, they are flaring out). Hands should be passing the leg low. Make sure you can check all of these components.

Cadence: Set the treadmill at an easy speed (4.5 – 5 mph). Run your usual cadence - calculate. Then speed the leg turnover up. Keeping the treadmill at a constant speed will ensure you that you are not running harder, but just quicker. Focus on how that feels for 4 minutes. It will take a while to adjust, and you will notice that you don't have to push nearly as hard to keep up to the speed of the treadmill. Let your mind wander again for a while, and recalculate your cadence. At first, you will revert back to your old habits when you stop focusing. But as you practice more, it will become automatic.

Try to remember how the cadence feels and take it outdoors. When you get more comfortable, you can try this drill at higher speeds. You will notice that you were probably already pretty close to the ideal cadence when running hard – your body already knew



This is one sad looking fellow!



This guy knows how to run! continued on next page



how to run well, you just had not noticed yet!!

Forward displacement: This is the easiest one to see on a treadmill. Look at yourself in the mirror. Find a point that you also see in the mirror, close to your shoulders or your head. Notice how much

up and down movement happens at the top of your head or at your shoulders. There should not be more than 1 ½ inch or so. If there is more, there is a good chance that you are projecting yourself to the sky! Do the same exercise but find a point this time closer to your waist or hips.

Make sure there is no lateral displacement at all – you should be steady.

It is amazing how much you can improve by just cleaning up these little details. Not bad when you don't have enough time to train as hard as Older-Fellow-John-Smith. Be patient and stay focused!

When to use a compass – and when not to ...

▣ Robin Shannonhouse, GAOC

Over the years I've taught orienteering to lots of folks, mostly beginners, but also to many orienteers who need extra help to improve their skills. It seems to me that many people need to develop better compass-use habits. For the most part, Orange course orienteers tend to overuse their compasses – while everyone else tends to neglect the compass.

Here are some hints on *when* to use that compass: Mainly, you should use the compass to orient the map to North. In fact, it wouldn't be wrong to say the *only* use for the compass is to orient the map. This is easiest if you hold the compass and map in the same hand. The most common mistake made by beginners, neglecting to orient their map, often causes them to run full tilt down the wrong trail.

But beginners aren't the only violators here. Your average advanced level doesn't use the compass to orient his/her map often enough either. Most Br-G-R-B orienteers read maps proficiently enough that they mostly tend to orient their map by matching it to the surrounding terrain. This is not bad, but it takes too long to do it accurately, so they orient their maps only roughly – which gets them off to the right general direction, but the wrong

precise direction. The longer they go on a rough direction, the easier it is to make parallel errors, the bane of every orienteer (and the delight of every course setter). A quick look at the compass saves "mucho" time later!

Most Orange course orienteers believe that their compass is an invisible lifeline to the next control. Teach 'em to take a bearing, and they ignore everything else. Getting them to rely more on reading contour lines and less on their compass bearings is a real challenge. It's very hard for them to understand that compass bearings are LESS accurate than contour reading, even though it's true.

So, when DO you use the compass?

1. Every time you look at the map, use the compass to orient it to North.
2. Whenever you leave a control, use the compass to orient the map.
3. Whenever you are at a change-of-direction landmark, use the compass to re-orient the map.
4. Whenever you are crossing a vague area, use the compass to get you from a landmark on this side to a landmark on that side.

An old term for taking a bearing is "shooting a bearing." I still remember being told long ago, "You can't shoot a bearing. They have already been shot to extinction by the Boy Scouts."

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