

Race tactics and support for the 24 hours race Stadtoldendorf

By Michael Irrgang, June 27, 2009

Now you are well trained, well rested and are looking forward to the start ahead, to demonstrate what you are capable to. Can you predict this capability? What pace do you plan to run during the first hours? How many kilometers will you collect in the last 4 hours? What will you drink? Eat? What to do if any problem comes up?

Although you know your fitness level and the weather report, despite having proactively packed lots of stuff to be prepared for all thinkable and unthinkable situations, it is impossible to predict how a 24 hours race will develop. Most people weigh this uncertainty very heavily and keep their own expectations low. Some are very confident, while others appear to feel outright frightened.

Of high interest are the remarks and reports of runners immediately after the race: too much, too little, eaten or drunk the wrong stuff; pace, taking breaks, changing clothes, shoes, all did somehow not fit together well – you always learn something new, you want to do everything differently the next time, but it is unlikely that everything will be optimal then: so every race has its own new surprises!

With this memo I would like to offer a few tips on how to best organize yourself and your crew, what to pay attention for in terms of eat/drink/clothes, how the supporters can contribute to a good outcome. The following tips should help to achieve the best performance possible! And here we have the first problem: most people don't want exactly that and are already satisfied with much less! Because they relax too early, when they have reached their goal mileage set too conservatively, or when the – perhaps unrealistic – goals appears to be out of reach.

The first part is about defining goals, strategies and tactics – maybe a little too long, as the best plans are always simple like: start slowly and hold on to that slow pace for 24 hours. Next I will cover the topics food, equipment, support, and crises. Then a somewhat too short paragraph on the immediate pre-race preparations, like applying sun screen, Vaseline, band-aids, etc. – but here everybody has already his own experiences or her own rituals.

Setting concrete goals

Really not so important is a concrete target definition like e.g.: I will run 200kms! If at all, you should set three different targets: an optimistic, a realistic, and a minimum target. Consider the course characteristics, weather, your current shape, etc.

A concrete, ambitious target invariably bears a certain likelihood that you will not achieve it. Irrespective of your performance level: any target in jeopardy is a source for irritation and de-motivation! Thus, all concrete targets (visions) about your performance – be it a certain mileage or rank – are dangerous.

Goals like “I want to be really good” are too general to support your race plan; it is preferable to define a custom-made race strategy instead plus tactical aspects to realize your plan.

Defining the race strategy

The term “strategy” has a Greek origin and means something like “the way towards the goal”. In our case, the goal is not quite clear, but the way towards it very much so!

Examples:

1. I will stay on the course actively for 24 hours.
2. I will try to run at constant pace.
3. Running is better than walking; walking is better than standing still; standing upright is better than sitting down.

Such a simple strategy almost automatically leads to the best performance possible for the race ahead.

You can cast your strategy also into few short sentences, further examples:

- I enjoy the race
- I will give my best
- I will run slowly, always

In crisis situations, you can use these short sentences as mantras. **Important:** only use positive phrases! I.e., “I will stay on course” instead of “I will not quit”, to avoid that negative terms like “quit” will take over your sub-conscience.

Don't use these race strategies:

1. *“I'll do 100km, beyond we will see”*

This one you hear quite often, and it is really the biggest mistake! This race is a run over time and not to cover a certain distance. It is not at all straightforward that you have accomplished your target already after 13 or 23 hours. If you have covered the 100km (or 200km) target, you will feel a certain satisfaction unfortunately impacting your ability to fight for more – you will be in a substantial motivation void.

Better: You divide the 24 hours into meaningful segments. E.g., for each hour you could plan a certain pace or distance covered. The most important aspect is to have a plan how many meters you want to cover in the last minutes.

2. *“When I am exhausted, I will take a break, or will have a 1 or 2 hours nap”*

With such a plan, there is that constant voice at the back of your mind pledging that exactly at this moment you are “totally exhausted” and need a break. On the other hand you may take a break too late, not being able to recover from your deep exhaustion. For these reasons, I don't like these “breaks as required”.

Better: You divide the race including breaks beforehand, e.g. start at 2 pm; 6 hours running, 15 min. break to eat/have a massage/change clothes, restart running at 8:15 pm for 6 hours; 15 min. brake, restart running at 2:30 am for 5 hours; 15 min. brake, restart running at 7:45 am for 3 hours; 15 min. brake, restart running at 11 am for 3 hours; stop at 2 pm.

The time until the next break is within view and the breaks are used in a meaningful way to eat something or change clothes. Number and duration of breaks are predetermined according to your capabilities, and planned together with your supporter. Before the start

you should also decide whether, when, and for how long you should take a nap – best of course not to take any!

3. *“I will run together with X”*

Of course, you will run side-by-side with a fellow runner frequently. To talk costs about 10 heart beat per minute, but the diversion is worth it. You can always run a few laps a bit faster or slower for that. Also, the slight variations in speed are beneficial on your body! However, don't do that “too fast” or “too slow” over several hours. By and large, everyone has to focus on his body and run her pace. That pace and break tactics of two runners really coincide for hours and hours is very unlikely.

Better: Select your allies case by case, think from lap to lap.

Defining the race tactics

This is the decisive factor whether you will cover 30 km more or less. I define race tactics as planning in advance your race pace, walking breaks, and full-stop breaks. A few thoughts on this:

1. Many runners cover in the first half of the race 2/3 of their final mileage, e.g. 100km in the first 12 hours and just 50 km in the second half. What is the reason? Would it not be possible to cover initially only 90 km and then 80 km in the second half? That would be 20 km more in total!
2. Your body is bound to undergo changes during the course of the race: the energy stores get depleted, power fades away, muscles tense. Your running style gets worse, your pace – using the same effort – gets slower.
3. The correct starting pace is what you can consistently run over a longer period of time, keeping your pulse rate at 70% of the maximum. Based on this, you may be able to start some calculations.
 - a. Your maximum distance possible is a projection of the starting pace times 23 hours. At a minimum, one hour is lost by breaks for nourishment, changing clothes, visits to the bathroom, etc. – even if you do not plan any deliberate breaks and want to run all the time!
 - b. Examples: Those who start with a 6:15 min/km pace cover 9.6 km per hour and 220 km in 23 hours. Even at 6:45 min/km, you cover 8.9 km per hour and more than 200 km in 23 hours. These projections of course almost never become a reality. Only few runners achieve even pacing for 23 hours.
 - c. If it is warm at the start of the race at e.g. 2 pm – and that is very likely, then you should factor in a slower pace by 15 sec/km, which amounts to half a kilometer per hour, and which you **cannot** compensate later on. Bottom line, 4 hours of warm temperatures only cost you about 2 km. If you however try to run your pre-planned pace anyway, this could be much more “costly” in the second half. Those who run by pulse rate may add about 10-15 beats on the 70% value under warm conditions.
 - d. It is very hard to predict the exact extent of a “continuously slowing down” pace. Some will slow down by about 1 min/km, others will not be able to continue running at all at a certain point and have to live with walking fast, whereas even others ride the adrenalin wave and may be able to keep the pace or even accelerate towards the end. To run all the time at more or less even pace would be the ideal. In principle, you always should

4. Some calculate their pace according to “target mileage/24 hours”; e.g. with a goal of 180 km that would call for a 8:00 min/km pace. If you start at that pace, you will not accomplish your goal. You have to run faster!
5. Depending on your fitness level, the “70% pace” may feel pretty fast. It is impossible for those runners not adequately prepared to hold this pace for 23 hours. Those who did not run several 100km or multiday units in the preparation phase will hardly be able to keep this pace for 20 hours. Nevertheless it is suggested to run at that pace but
 - a. Take a longer break every 3 or 4 hours, or even better
 - b. Plan to walk regularly

Alternatively, you may choose to start at a slower pace. Whether you will be able to keep running longer and actually cover more miles with this tactic is questionable, if your running economy does not feel optimal at that pace. Thus, it is best to run at a pace so slow that it still feels economical.

Walking is only half as fast as running, so you are losing a bit of mileage.

Nevertheless there are several reasons to schedule walking breaks:

- your body recovers a little bit and frees up resources for cooling and digesting
- other muscles get engaged; a tendency to cramps might be overcome
- your hands are free during walking, e.g. for spooning down food or changing clothes
- the race is divided into manageable segments. E.g., one could plan to walk every third lap immediately after the water/food station for 1 km, then to run for the next 5 km. Which would result in a positive mental effect, too: after 2 km of running you can look forward to your next walking break only 3 km away...
- actually, there are world class athletes, who start out with a walk-run rhythm from the very beginning, e.g. 4.5 km running followed by 0.5 km walking. It may raise some eyebrows if you start walking already after 30 minutes into the race, but the kilometers are counted at the end of the race and it is much more unpleasant to quit the race earlier.

You have to divide the 24 hours into manageable segments. There are two options for this:

1. Partition according to time

This is a pretty straightforward calculation. E.g., you could divide the race into 8 segments of 3 hours each. By phase, you would plan for pace, mileage, and other items like changing clothes, breaks, going to the bathroom, and other unforeseeable breaks.

2. Partition according to laps/mileage

One lap as a unit is probably too small, you cannot possibly build a race tactic on this, whereas units of e.g. 5 laps or about 10 km are much better. In my eyes, a duration of about one hour you can plan for, and also comprehend well.

All in all, I prefer to partition according to mileage: my partial goals will not be expressed as “in one hour I will cover 5 laps” but as “5 laps in one hour” for a pretty obvious reason. Focusing on time would allow me to reach my goal also by doing nothing – the hour will

be over at a certain time and let's just look how much I have covered. If I however plan my race in laps, then I will not cover a single centimeter while relaxing in the easy chair – I have to keep moving actively to attain my goal. A second, practical reason is that you can easily take your split time every 5 laps and be able to make an exact Plan/Is comparison.

Don't worry about the night hours. As long as your body does not fall below a certain effort level, it will not get really tired and you can run all the way through the night.

My impression is that the better runners require actually less planning. They can live with a pace or pulse rate as a plan, and experience tells us that too detailed plans can be somewhat disturbing. So please don't take my tips above as a prescription for a super-detailed planning, but more as a possibility how to reasonably segment your race.

Planning to eat and drink

Probably the favorite topic amongst runners. There are plenty of "secret formulas" and recommendations available in the world wide web. Too bad though that what is good for one runner may harm the next one! And basically, it is as simple as this: your body will burn between 10 000 and 15 000 kilocalories during the 24 hours, with a major portion out of the body fat reserves – provided you have trained accordingly! Depending on temperatures and other factors you need between 10 to 20 liters of fluids and respective minerals. Purely theoretically spoken, there is no real issue with consuming such amounts of "energy and water", especially if you take advantage of highly concentrated gels and special drinks. Even before such special drinks, bars and gels were available, many top performances of 250 km and more were run! Today, we are really better off in this respect, but the question remains whether you can squeeze out a "few more meters" by a good nutrition strategy or whether you can compensate inadequate training with a super-gel. Probably it may be even the case, as there are numerous scientific studies, individual reports, and a multitude of technical terms. I am on thin ice here since I am certainly not a nutritional expert and have my own opinion about "chemical food".

A few thoughts on this:

1. If the body needs to supply its muscles, there is not much excess blood to accommodate the demands of your system. Thus, in any case,
 - Don't eat more than necessary
 - Only eat food easily digested
 - Chew well or use carbohydrate-rich drinks instead
2. The Glycemic Index (Insulin Index) and your blood sugar level regulate very much how much energy is actually drawn from the fat reserves. It is best to avoid everything with a high GI (e.g., sweets), even though they provide a short-term kick!
3. If you already planned for breaks or walking laps, use those to "digest", i.e. eat first, then take a break
4. Eat and drink continuously; i.e. a piece of banana each lap rather than a whole banana every hour. Personally, I don't eat any big meals (rice, pasta, vegetables and the like) during the race, but each lap from the very beginning little pieces of energy bars, fruit, dried fruit, or salted pastry.
5. Substitution of minerals is accomplished best via special electrolyte drinks, tablets (like cramp blockers or salt tablets), still water, but broth, salted pastry or dried fruits (dates, figs) help here, too. Caution: under race conditions, an overdose may not be resorbed and could cause major gastrointestinal troubles...

6. To eat is more than “restoring energy”: you can motivate and reward yourself by eating, e.g. “have something really tasty every 10 laps”. To eat may be considered as another tool to kill time, according to the motto “a lap with your mouth stuffed is a short lap”.
7. Eating and drinking can help you to cope with crisis situations, e.g. drinking broth if you are freezing or drinking tea to calm down your stomach.
8. The correct selection and amounts of liquid and other food will be an important factor to avoid the frequently occurring gastrointestinal problems (diarrhoea).
9. An important principle is: no experiments during the race. E.g., those who did not try gels during training or preparatory long races should not start this during the 24 hour run. Keep in mind though that a 100K is over before the critical phase starts in the 24 hours! The conclusion “for the 100K I did not need to eat anything, thus I also don’t need food during the 24 hours” would be a huge error!
10. The likes and non-likes differ a lot. My secret weapon helping me: a cappuccino with milk and sugar! Maybe it is the combination of warmth, sugar, and caffeine, which helps me out during the night and morning against tiredness and weakness, maybe it is just the well-known feeling of one of my favorite drinks which I already enjoy routinely in my job life.
11. Many runners love to eat mashed potatoes, porridge, jacket potatoes, or white bread. The theme here is: carbohydrates, tasty, and easy on your stomach.

VERY IMPORTANT: Don’t touch medicine! No pain killers, blood dilutors, or other drugs. If anything, exceptions to this would be based on specific recommendation and monitoring of a physician. This principle is valid irrespective whether the drug is on the doping list of banned substances or not. Such drugs are prohibited for good reasons, e.g. they have a long-term harmful effect on your body. As every competitor can be picked for checking for doping substances, trying to cheat is a no-no anyway.

Changing clothes

How to dress should be straightforward, thus only a few specific remarks;

1. During the race, your feet will accumulate water, i.e. they will swell. So you have to wear shoes actually “too large” and have to check the shoelaces regularly, loosening them if necessary. Compression socks help to overcome this effect, so wearing a pair of those is highly recommended.
2. Temperatures will vary during the 24 hours by about 10 to 20 degrees Celsius. It could be very warm during the day and damn cold during the night, it may rain, too. Be prepared for all of this with a bag full of clothes options.
3. Always change your dress early enough – you really need to support your body with the thermoregulation.
4. A hat/cap which is kept soaked helps against warm conditions – but especially keeping your head cooled with water regularly. Most easily done with a sponge. External cooling is extremely important and should include the neck and your arms as well. Overheating of the body is a really big problem in my opinion, and a major cause for problems with your gastrointestinal and blood circulation systems. Apply sunscreen well in advance of the race start and re-apply the next day.
5. Warm clothes for cool conditions – but please change or add respective clothes in time. Also plan the respective layers ahead of time, so not to have to change into your woolen underwear as a final step. Too cool body temperatures are a

- problem largely underestimated, yet they may cost a lot of unnecessary energy. I once wore a windbreaker at 20 degrees Celsius because I simply felt cold.
6. Changing shoes? Sometimes orthopedic problems may be countered with a fresh pair of shoes. Here again please change before problems are there.
 7. Changing socks? Not really necessary except if they are wet. Which already can be caused by all the sweating. Changing in time may help to prevent blisters. Those who know they have blister problems should invest the time for changing socks.
 8. Attention during shoe/sock exchange breaks: the relaxation of the leg muscles may cause cramps. Thus keep your leg extended and get some help!

Supporters (Handlers)

Even though here and there excellent performances are delivered by unsupported runners, a supporter may help you in many ways. If you have brought no supporter, my recommendation is to go to somebody else's – to have somebody to talk, to assist, or just to have a secure place for your bag and drinks etc.

Ideally, a group of supporters will support a group of runners. This will trigger for sure the proper competitive mood! A group of supporters is more flexible to practice individual support as well as to cook, to shop, to analysis interim results, to go to the bathroom. To tell stories, etc. If a handler is supporting two runners all by himself, this will likely become stressful. The supporting itself is very entertaining. Most handlers keep on going all night long, and very often forget to eat, to drink or changing clothes themselves due to excitement and stress.

Very important: all support must be delivered within the official coaching zone. Outside of this marked stretch of the course any physical exchange of whatever or simply joining the runner may result in a yellow card or even total disqualification of the runner supported. There are runners who had been banned because a handkerchief was given to them outside the coaching zone!

Preparing and handing over meals/drinks: a drink has to be prepared, a broth cooked, a banana peeled. Whereas the official aid stations provide everything ready to grab with your hands including drinks in plastic containers, handlers may provide drinks in bottles or little plastic bowls with grapes. This saves time for the runner, who does not have to break his rhythm, and can spend more time on actual drinking and eating. In the hot hours a lap can feel very long. An adequate fluid supply which is only possible by more or less continuous drinking is mandatory. To carry three plastic containers during running a lap is not really possible, but a small bottle comes in handy.

A hint: handlers may not take back bottles outside the zone. It is however o.k. to place a box outside the zone where the runners can discard their empty bottles or bowls. And the handlers can and should empty that box from time to time.

Who is in the driver's seat if there are different opinions? Also here, some psychological detail! Optimally, the handler asks his runner each lap whether and what he would like to eat/drink. The answer should be very concrete. The runner should have the impression that he is the one making decisions. If he is not concrete and asks for "fruit", the handler should decide what exactly to hand over. It would not be good at all to go ahead now and prepare a full basket of options: melon, strawberries, banana, apples or maybe a piece of orange? The runner, after racing for x hours, is no longer able and willing to

decide. In the situation above, it might happen that he stops, circles above the choices and just takes something or nothing at all, and resumes running because he is unable to make a decision. In such a case the handler needs to decide. Potentially, the runner would not like to eat although it might be necessary. Here, the handler should help the runner again with the decision: "Take that, it will be good for you". Also the amount offered should be exactly what should be eaten or drunk then – nothing more or less! By choosing the amounts, the handler can effectively prevent "poor food" items. E.g., the runner asks for chocolate the next lap. The handler knows this is no good and offers in the next lap exactly one tiny piece. Not nice, eh?

Changing Clothes: Two important aspects here: one the one hand there it has to be decided when to change. Advantage handler: he notices earlier when it does get colder. When the runner feels cold, it may be already too late. The supporter should suggest to dress up, maybe to put on a windbreaker, etc. Which items will be changed, added, or reduced should be clear in advance. The handler also knows of course where to find those items in the bag. On the other hand, the handler should assist the runner during the change of clothes. Absolutely necessary for changing shoes or socks, for other items he may hand over or receive them within the zone – attention: not outside!

Monitoring the race via interim standings. A group of handlers usually can keep track of all the laps run. Individual supporters will have their difficulties. To check the official lap count, you may compare your lap counts with the interim standings. Be cautious communicating interim results to the runner. Info like "you are in 4th place in your age category" after 8 hours into the race may mislead the runner into an unwarranted change in race tactics, i.e. running faster than appropriate. A race is really decided only after 20 hours, when some are still running, others only walking, and some already having quitted. Thus, such data about current rank and comparison with others always bear a risk.

Checking and adapting tactics. The handler should know her runner very well, monitor her closely, maybe take the lap splits and compare with the plan. A good deal of experience and almost virtuosity are required in order to recommend running a bit faster or slower. Also, information about running form may be adequate and helpful, when the form is deteriorating. Similarly to the discussion about race tactics, always compare the pace versus the plan, never the distance covered! I.e., don't say "you are 3 km behind plan" but "you are running 10 sec slower than plan currently". The handler is able to influence the race pace only short-term – everything else is just of statistical value! However, sometimes appreciating the distance covered can be very motivating: great, you have almost done a marathon and are still looking relaxed!

Motivating and deflecting. Clearly the most important topic. There will be a time when the race appears dull and there is no fun anymore. Now the handler should use the complete coaching zone to team up with his runner and give him pep talk. Repeated pep talk, encouragement, and support. Interesting variations on that theme: take a quiz, i.e. which team was German football champion this year (employed by the "Dilledöppchen" supporter team); give a task along (count the lamp posts along the route). Or send off the runner onto the next lap with a mantra like I never give up to be repeated for the whole lap. Or work with "next lap is dedicated to grandma".

Tactical hint: when the runner gets really tired and wants to remain seated or at least stand around, this is the hour of the handler big time! Not to have something like a chair

available is the simplest response, but more effort is required to have the runner not stop at all in the first place. Here it is best to catch your runner at the beginning of the zone and walk with him, always providing pep talk. But please no “beating him back on the course”. The most successful teams employ a friendly and mutually respectful style. Phrases like “you must” are as inappropriate as yelling aggression – even if all parties are in a situation challenging their psychological limits and you should just let slide some remarks. Those achieving to remain cheerful will be successful. In the end, runners and handlers alike will have a much fonder memory of the event if say 2 km less were covered but the race was conducted in good spirits until the very end of it. The psychological skill of the handlers is the most important factor determining how fast the runner can escape from a crisis situation.

Injuries and DNFs. The runner will encounter real problems, like blisters, shoes exerting pressure, sunburn, circulation issues, runners may even trip and fall. Here the handler can give some help directly (blisters), get advice, or accompany the runner to the aid station, massage room or the doctor. If quitting the race is advised, the runner may not want to accept that – in this case, the handler has to push for the right thing to do.

Dealing with crisis situations

Sigi (Siegfried) Bullig added this topic for which I am very grateful – I somehow forgot about it but view it as extremely important, too. So here is Sigi verbatim:

What I miss is a clear advice that, irrespective how beautiful your tactics, well-laid out your plans, and optimized your training are, you will invariably run into a crisis (at least if you are a rookie with ambitious performance goals).

This crisis is the decisive moment in the race!

If you don't anticipate and accept it, you will loose your cool despite detailed plans and race segmentations. I am missing the statement that this will come no matter what. You don't have to wait for it being concerned all the time – that would be self-inhibiting – but you have to greet it cheerfully once it is there, and – simply carry on. Because – you cannot change it anyway!

All plans, tactics, etc. are useless if you don't know how to react in the moment of crisis. It might be desired now that I come up with a few recommendations. This I cannot do – and I don't want to. Why? Because each runner is different with regards to how the crisis is experienced and how to properly react. One thing is certain, however: if you start to question your plans and preparations in the moment of crisis you have already lost.

The crisis is inevitable!!!!

Earlier for some, later for others. Some perceive it as really hard, whereas others just notice that they cannot longer hold the pace up. But it is valid for all to carry on. Here, I especially like Michael's rewards concept. Do something really pleasant in such moments. Something elevating your mood and fostering your motivation. Does not matter, what exactly. A sip of beer, broth or tea, fresh and warm clothes for the night hours could be such rewards, or another pair of shoes, a kiss from your spouse/friend or something crazy – does not matter☺

After getting rewarded it is however important to immediately focus on the rest of the race, and here the handlers can be very critical. I am sure during the race there will be enough experienced handlers who will “adopt” a rookie and support her mentally. You only have to accept this help in your crisis situation, and everything will be fine.

As a race organizer and observer of several 6-days races, Sigi knows exactly what it means to overcome crisis situations successfully and describes this very straightforward. One of my favorite quotes is “The first 100km are a piece of cake – the race starts only thereafter”; i.e. only beyond this the crisis situations start to come up, crisis being a deviation from plan. By the same token, the runner who feels great and overpaces by 30 sec/km in the first two hours is already in a crisis und should be slowed down by his handlers! The boost of adrenalin immediately after the start causes the runner to lose control and will result in a catastrophe.

Most crises however come up much later and are due to injuries, gastrointestinal or circulatory system problems, or are of mental nature. Maybe some day I will generate a “runner’s emergency check list” which will contain answers to questions like “what should I do if xy happens”. It is helpful if you are prepared for a few standard what-ifs, and if experienced handlers are around who can give advice when in doubt. In any case, such situations call for handlers, because any physical crisis triggers a mental one: “I got a blister, I have to quit” are typical thoughts of a runner. The handler needs to remain calm and secure and tackle the situation in a positive way: “Sit down and rest for a while. I will inspect it”, and then treat the blister (pierce, disinfect, band-aid) and then try to get the runner moving again. It is recommended in such a case (after a medical box stop) to walk for 500m and then trying to get into running gear slowly. The later such a break occurs in the race, the harder it is to start running again and getting into race pace.

Remarks like these are really not being called for:

- Jeez, that looks horrible!
- Well, what now?
- Does it hurt like hell?

To restate the obvious: always encourage the athlete and motivate her – the race goes on and on. 24 hours are only 1 day and are over faster than you would think!

Final Remarks

Now, nothing ought to go wrong... Best wishes and good luck!

A fourth chapter “Recovery after a 24 hours race” will not be created for the time being. This topic will be addressed in DUV training camps and maybe added here later on. Recovery starts with the end-of-the-race signal and lasts about 3 weeks. There are many facets what to observe and how you can quickly get up to speed again during this period. One specific warning though: the trip home can be very dangerous for both handler and runner. It is advisable to spend another night at the race location, due to sudden cramps, concentration deficits and general tiredness. To take a day off from work after the race is also a wise move, since you need time to digest such a race physically and mentally.

Should you have any questions, suggestions etc. based on your experiences, I appreciate your feedback, e.g. via e-mail to Michael.irrgang@d-u-v.org.

Michael

