

# Planning Training

## Training or competition planning?

For an elite orienteer all training must build on previous analysis – of the sport and its requirements, capacity and past competitions – and also on the coming competition program. In the first chapter, under the heading “Strategic Thinking”, we pointed out that “the competition will dictate the content of the plan” and “every training session has relevance and meaning for the coming competition.”

We should start with our goals, develop a competition plan and then work on a training plan. This chapter presumes that you have carried out the first two steps. We now want to combine the different aspects of physiology, psychology, orienteering technique and other factors into a complete training program that suits the individual.

*Model for planning training and competition:*



## Vision and goals

Coach and athlete develop goals based on the athlete’s own dream or vision for their orienteering. These visions and goals help to release the energy needed to train more and create the inner motivation to become better.

## Planning competition and training

We should plan out training so that we are able to perform well in the competitions we have identified as important goals. These important races are the basis of a well thought out plan.

The competitions guide our training and not vice-versa. Consider first which competitions are important – the ones where you really want to succeed. These competitions require physical, mental and technical preparation. Examples of such competitions could be BOC, selection races or international races. At these important competitions you need to be prepared and focused on success. If you compete in a big race like this without appropriate preparation you are effectively saying that this is not an important competition for you.

“Unimportant” competitions can be planned into your schedule next. By unimportant we mean competitions that you regard as preparation for the bigger races. These competitions do not require any special preparation; they are in fact a part of your training.

The third step is to plan your training. Training needs to be planned on several different levels:

#### *Period plan*

Time of year - winter or summer, autumn or spring. Each period has a different type of training associated with it. In orienteering we talk about build-up, conversion, specific, competition and recovery periods.

#### *Week Plan*

Pulsed training between and within weeks. A week with seven days is perhaps too short to fit everything you want to train into. Why not make your week plan longer - 10 or 14 days?

#### *Training Session*

One or more sessions during the day, aerobic or anaerobic, central or local, general or specific, warm up and jog down, maintenance or developmental? There are many questions that must be answered before you can step out of the door.

### **Carrying out competition and training**

Of course, carrying out the actual session is the most important step in the model. With the help of your enthusiasm and motivation you are able to carry out what you have planned. During the actual session you try to find the right intensity and do things in the right way so that you are really training what you want to be good at. The clearer you are on what type of training you need to do, the more you think training is fun and the more stimulating your training environment is, the easier it is to train.

### **Analysis**

Competition results and testing (see Tests of Physical Capacity) can show if your plan and its execution have been successful. A training diary, competition analyses, comments and discussion with a coach are all good ways of getting feedback on success or making small changes in your future plans.

### **Evaluation**

Did you achieve all your goals this season so that you are 100 percent satisfied? The goals that you set can be both long term and short term. Winning BOC, getting into the WOC team or making the first team for Tiomila are all examples of result based goals. In comparison, running a time-trial loop 30 seconds faster, be a better forest runner especially uphill, spike 90 percent of all controls in important races or win “23-0” in the “match” against the course planner are performance goals. The difference between result and performance goals is that

you can achieve your performance goals under your own steam, whereas results goals are dependant on the competition. Even if you performed extremely well, there was perhaps someone who had a good day and performed even better. Performance goals are more important than results goals when evaluating training.

### **Individualised training**

The aim when planning your training is to develop a training program tailored for you as an individual based on the analysis you have done, and the future competitions where you want to succeed. It is very difficult for a coach to develop a training program for all the athletes he or she works with and it is also wrong to believe that he or she should do so. The job of the coach is to give the athlete advice that helps them to be their own coach. It is usually the case that the athlete knows what sort of training he or she should do, and even how it should be done, but a coach can help avoid unnecessary pitfalls. The coach can help supply the athlete with the tools and knowledge they need to plan their own training and succeed. When a coach asks, "Why, when, where, what, how are you going to train?", he or she inspires a much more valuable process of reflection in the athlete than if he or she had just said, "This is what you need to do!"

It is difficult to follow any plan 100 percent, so you must build some flexibility into your schedule. Illness and injury can crop up when you least expect it. "Think long term" is a theme running through the whole planning process that can be useful to remember. The general long-term plan is the most important aspect of your training. Detailed planning is more important within each individual session. Your weekly plan or two-week plan should contain all the aspects you want to train and how the sessions fit together. However, each period needs to have real training content.

### **Balanced training**

The weakest link in a chain determines its limit and breaking point. Orienteering training is no different. Brain and brawn must be in balance. You cannot just train aerobic fitness, run on paths the whole time, or jog round technical training. Every training period in the year has its own focus and during a whole a year all aspects must be trained and improved - basic fitness, running strength, mental skills, technique, speed and flow.

## **Training for development and maintenance over several years**

All competence and skill has to be developed before it can be maintained. General training comes before specialization, speed comes before endurance, technique comes before strength, and quality comes before quantity. As a junior all-round training, speed, technique and quality are the priorities. In practice this means the following for an orienteer:

### **All-round training**

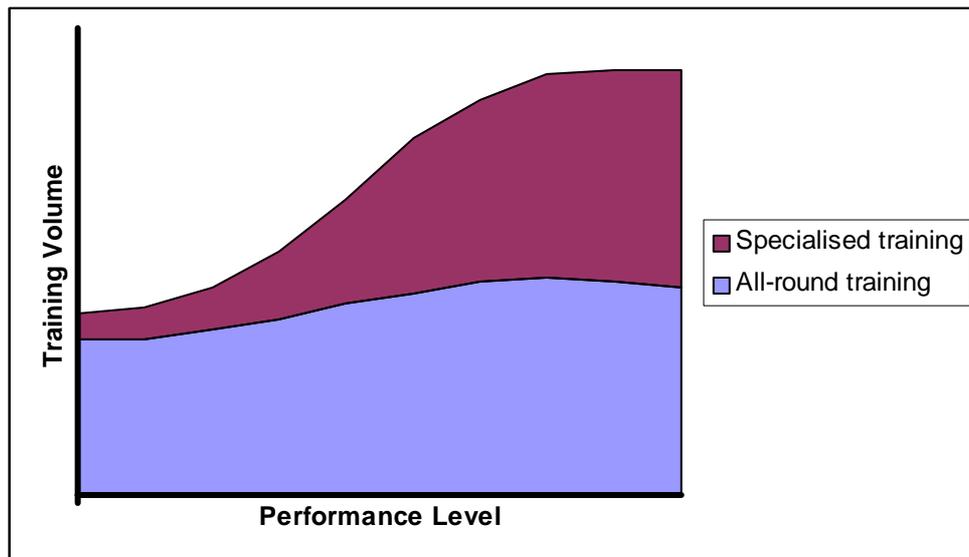
Take part in several sports, train shorter, faster sessions and interval training. Training should be fun, like a game, especially for younger juniors. Coordination develops from running in the forest, work on map and compass skills so that harder courses can be tackled. Every training session is a quality session.

As an older junior and young senior the athlete can begin to specialise in their training. Endurance, strength and to some extent quantity. For an orienteer this means:

## Specialised training

Become more and more focused on orienteering, spending less time on other sports, run longer and longer sessions and increase training load both in terms of volume and content.

This relationship between all-round training and specialised training is an idea that athlete and coach should discuss carefully. The diagram below shows how all-round training is developmental under the first part of a sports career and then later becomes a type of maintenance training. Specialised training has the opposite pattern. All-round training is also the single most important factor during the junior years for later success as a senior orienteer.



## Development and maintenance training in a training year

During winter and summer training should be similar in principal, whereas during spring and autumn when there are more competitions training should be identical. Types of training which develop fitness and technique during winter and summer are included as maintenance training in spring and autumn. Training that offers further development during spring and autumn is included as maintenance in winter and summer. The balance between different types of training during the year might look like this:

<i>Training method</i>	<i>Winter/summer</i>	<i>Spring/autumn</i>
Steady running, low intensity	➤	➔
Steady running, moderate intensity	➤	➔
Steady running, high intensity	➔	➤
Long intervals	➤	➔
Short intervals	➔	➤
Natural intervals	➔	➤
Fartlek	➔	➤
Hill sprints	➔	➤
Longer fast intervals	➔	➤
General strength	➤	➔
Specific strength	➔	➤
General flexibility	➤	➔
Specific strength	➔	➤
Orienteering technique	➔	➤
Mental training	➤	➔
➤	= training for development	
➔	= training for maintenance	

## Regular training throughout the whole year

It is unfortunately the case that all physical capacity must first be built up, then maintained. If you do not maintain existing fitness and strength they disappear relatively quickly. Aerobic capacity has a longer “survival period”, than both aerobic capacity and strength. It is therefore pointless to work hard at developing strength during the winter, and then not bother maintaining it during the competition periods. Remember also that giving the body time to adapt to regular training helps to prevent injuries and improves performance.

Orienteering technique and mental skills are totally different in this respect. If you have laid down the foundations for good technique, self-confidence and the right attitude then these qualities remain stored in your subconscious. Even if you have a long break from competitive orienteering it often only takes a few races to shake off your rustiness. It is important to remember that mental skills and your orienteering technical abilities are closely linked to each other and strengthen, or weaken, each other.

## **Increasing training**

If the training load is very small the effect can be negligible. On the other hand, injuries and overtraining can be the result of a training load that is too high. There is, for each individual and situation, an upper and a lower limit for training load and its effect. Both these limits move successively upwards with increased training.

Increased training load is a requirement if you want to continue improving your performance capability. Training load can of course be increased with small or large steps, but it is always wise to consider previous training and not increase too quickly or dramatically.

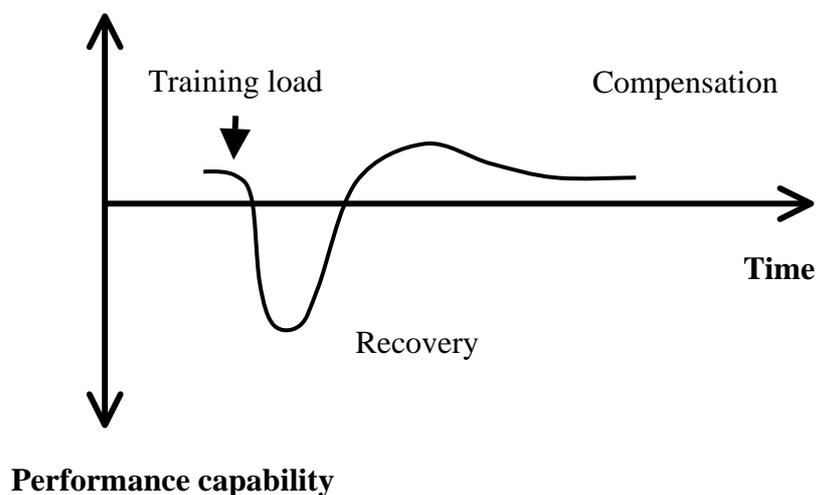
Many juniors dramatically increase their training, by 50-100 percent, in the later junior years as they become inspired by the chance to run at JWOC or make the national team. Girls especially often get problems with knee and hip injuries due to the suddenly increased training load.

The most important tool for planning a sensible increase in training load over several years is a training diary. The risk for injuries and overtraining is significant with increases in training of more than 25-30 percent per year for juniors, or 15-20 percent for seniors.

Training load or training volume during a given period is the result of the duration of sessions, intensity and the number of sessions carried out.

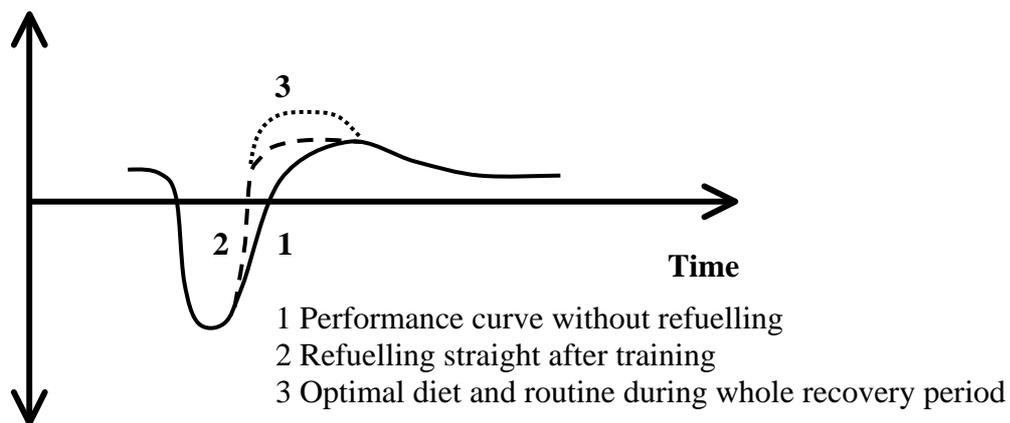
## **Training + recovery + food = training effect**

Recovery or rest and food are really the most important part of a training session. All physical training breaks the body down, whereas food and rest build the body up again. If the relationship between training and recovery is optimal, then the training will have a positive effect on the body. The body adapts to the increased training load. This process is called super-compensation:



The compensation phase can take different amounts of time, anything from a couple of days to a week, depending on the amount and type of training. The shortest recovery periods in your training are the rests between efforts in short interval training while the longest can be a whole week of easier training after a hard week.

Recovery starts immediately after training with a warm down jog and refuelling with fast carbohydrates and fluid – see Nutrition. Next comes a shower and a proper meal, such as lunch or dinner. These steps are essential if your body is to benefit from the training you have carried out. The routine you have directly after training and competition can dramatically affect recovery time.



### Performance capability

The table below shows how different types of training and intensity can affect recovery in the muscles active during training:

Type of training	Aerobic	Aerobic	Aerobic/ Anaerobic	Anaerobic	Strength
Intensity	Low (60-75 percent of max HR)	Moderate (75-85 percent of max HR)	High (85-95 percent of max HR)	Maximal (95-100 percent of max HR)	<i>Specific strength training</i>
Recovery level					
Minimal recovery	Immediate	approx. 1 hr	1-2 hr	approx. 2 hr	2-3 hr
Near full recovery	2-4 hr	6-12 hr	approx. 12 hr	12-36 hr	12-36 hr
Full recovery	6-36 hr	12-48 hr	24-72 hr	24-96 hr	24-96 hr

Full recovery means that the muscle groups which have been worked are 100% refuelled with glycogen, fluid balance is restored, protein structures are repaired, hormone and enzyme activity is normal and vitamin and mineral levels are correct. This process takes between 1-4 days depending on the type of training, how hard it was and how well trained the athlete is.

With near full recovery, 90-95 percent, performance capability is good again and a well-trained orienteer can train in this condition and derive benefit from the training. But after about a week, complete recovery should be allowed to take place, to minimise the risk for overuse and overtraining.

## Pulsed training volume and intensity

Physical training and recovery, rest, work together to give a good training effect. Training can vary from week to week, from day to day, or from session to session. A normal pattern is 1:3 – that is an easy week, moderate week, hard week, easy week again and so on. Another is a 1:2 pattern, with alternate easy and hard weeks.

During an easy week recovery is the most important aim, both physically and mentally. These weeks can include different sports to help recovery – see Cross Training. An easy week might contain more aerobic training and general strength training. A moderate week may contain more continuous fast running and some anaerobic training. A hard week should probably be mostly aerobic training, long aerobic sessions and long intervals, with little anaerobic training. In that example both the moderate and hard weeks are actually quite hard, but emphasise different types of training. The moderate week has more hard anaerobic training, while the hard week is mainly aerobic.

Easy and hard weeks during the basic training period might look like the plan below. The alternative sports could be altered depending on local conditions, for example mountain biking instead of skiing if you live somewhere without snow.

	Easy week		Hard week	
	<i>Session 1</i>	<i>Session 2</i>	<i>Session 1</i>	<i>Session 2</i>
<b>Monday</b>	Steady run, easy	Circuits	Steady run, easy	Circuits
<b>Tuesday</b>	Long intervals		Long intervals	General strength
<b>Wednesday</b>	MTB + swim, moderate		Ski + run + swim, moderate	
<b>Thursday</b>	Indoor intervals	General strength	Indoor intervals	General strength
<b>Friday</b>			MTB + swimming, low	
<b>Saturday</b>	Long run, moderate	Light strength – core stability	Long intervals	Ski, moderate
<b>Sunday</b>	Long ski, moderate		Long ski, mod	Ball game

## Differences between men and women

The cycles of our biological clock are of course, much more significant and noticeable for women than they are for men. This cycle is around 28 days for women. Many coaches working with women in other sports have begun to consider the effect of the menstrual cycle on training patterns. Some recommend hard training, long aerobic sessions, hard strength training and anaerobic training after menstruation. Between ovulation and menstruation training should be lighter with lower quantity, more aerobic interval training, and less anaerobic work. Research in this area is still in its infancy, but studies so far show that there is a link between training effect and the menstrual cycle.

## Listen to your body

Your training plan is a guide which helps you direct your training, but your form and how you feel on the day are the most important factors for how and when you train. One way of guiding your training is to let your own biological clock decide when you feel in good shape and train hard then. At other times you feel tired or heavy and easier training is more appropriate, letting your feeling and form guide the pace. Sometimes rest feels like a must and then you should definitely take a rest day, with a good conscience. Signals from your body

must always be allowed to decide the content of your training, not a written plan with theoretical calculations on how your training should develop. Listen to your body!

## **Periodisation**

How you divide the year up into different training periods depends partly on where you live, and partly what goals you have. Here is an example of a young senior who plans to compete in the British domestic season in the spring and early summer, then hopefully gain selection to a late international such as Euromeeeting.

### **A 6/11-19/11 Recovery period 1**

The season is over and new competition goals feel a long way off. Mind and body need a contrast to the previous weeks of racing and training. This recovery period allows rest after earlier training and races and creates new energy for the coming winter training. The body needs a chance to recharge its batteries: During this short period it is best to train in ways that you enjoy, or through other sports. Training volume should be considerably less, although keeping a little bit of quality training in your schedule will help you maintain earlier form. Training in itself should not be your main focus - these weeks are more about enjoying life and doing something different. It is also a time to reflect and evaluate the past year and to begin planning new goals for next year.

### **B 19/11-18/3 Basic training period 1**

Improve central capacity and local aerobic capacity. Cross training in other sports helps to maintain a higher training volume without overloading joints and muscles too much – mountain biking, running in water and swimming can all contribute to training. There is however a core of running, which includes intervals and longer runs, often in terrain. Strength is build up through general strength training, circuits and resistance running, such as hill running or bounding. Work at your core stability and general flexibility, if necessary working on specific strength or flexibility in problem areas. Do not just train long slow, sessions. Interval training, fartlek and perhaps a few fell or cross-country races help to vary training, maintain your speed and give a better training benefit than endless plodding. Orienteering technique training should not be forgotten either. Now is a good time to analyse strengths and weaknesses from previous races and work on the basics. Any competitions should be regarded as training and you should focus on doing things in the right way, not the final result. Improve your mental skills, work on your attitude and the psychological techniques that you can use later in stressful situations to improve concentration. Visualisation and goal setting help to create the energy needed to carry out the tough winter training in this period.

### **C 16/3-15/4 Conversion period**

Train in much the same way as during the basic period, but begin to focus your training more on the coming competitions. For example, gradually introduce more sessions in the forest and terrain relevant to coming races. More of your training percentage wise may be interval training and faster running. Technique sessions may be carried out at competition speed; you begin to put the separate techniques together and try to develop a good flow and rhythm in your orienteering. Early races such as UK Cup races provide good opportunities for practice. You may include more resistance running such as hill intervals in your training. You do less alternative training now – training volume is not so important and you are becoming better adapted to hard running training in the terrain.

### **D 16/4-31/5 Competition period 1**

Training volume reduces significantly and interval training, fartlek and pace running in the forest accounts for a significant part of training. This training mainly improves local capacity, both aerobic and anaerobic. Few long steady runs are needed - competitions in themselves may be quite long. Specific strength comes from running in the forest at competition speed, but a few sessions to maintain general strength is time well spent. Technique training between competitions is best carried out as short courses, control picking and similar. Its aim is to strengthen the right behaviour in the races and help you orienteer cleanly and confidently and high speed. Mental training is important in this period to prepare for coming races. Look out old maps of competition areas. There may be 1-2 competitions per weekend in this period, including important domestic races like the JK, British Champs and Scottish Champs. International races in this period include Tiomila.

### **E 1/6-15/6 Recovery period 2**

Shorter steady runs, and cross training such as mountain biking, general strength and other sports. No special focus on orienteering training. Evaluate the spring races. What went well? What can you do better? In what way and with whose help?

### **F 16/6-31/7 Basic training period 2**

Building up central capacity again - long runs in the fells or in the forest, mountain biking and running in the water or swimming again. Training also includes intervals and fartlek, general strength and flexibility work. Improve orienteering technique, going through competition analyses from spring races. Work on psychological skills again. Improve stress tolerance through fast orienteering intervals sessions, chasing start training and similar. Training camp with friends or team in a new environment – perhaps a camp abroad for an important future international competition.

### **G 1/8-15/8 Specific training period**

Training for a physical, technical and mental peak. Learning how to perform on a chosen occasion in this case a B-international in Sweden, after good performance at WOC selection races. Taper down training volume so that quality dominates – hill sprints, intervals, running at competition speed on technical courses. Time trial loop at full speed confirms good shape. Use competitions to develop the flow and rhythm in your orienteering you need for good performance.

### **H 16/8-30/9 Competition period 2**

Your first senior international race is getting closer. Study any maps of relevant terrain that you can find. Your training is very similar to the previous competition period and you continue working towards peak form around the competition days. Quantity is reduced and quality is predominant, with only occasional maintenance sessions for general strength. Try to train in more technical terrain to prepare you for the coming race. Short orienteering courses at race speed help to sharpen technique.

### **I 1/10-15/10 Recovery period 3**

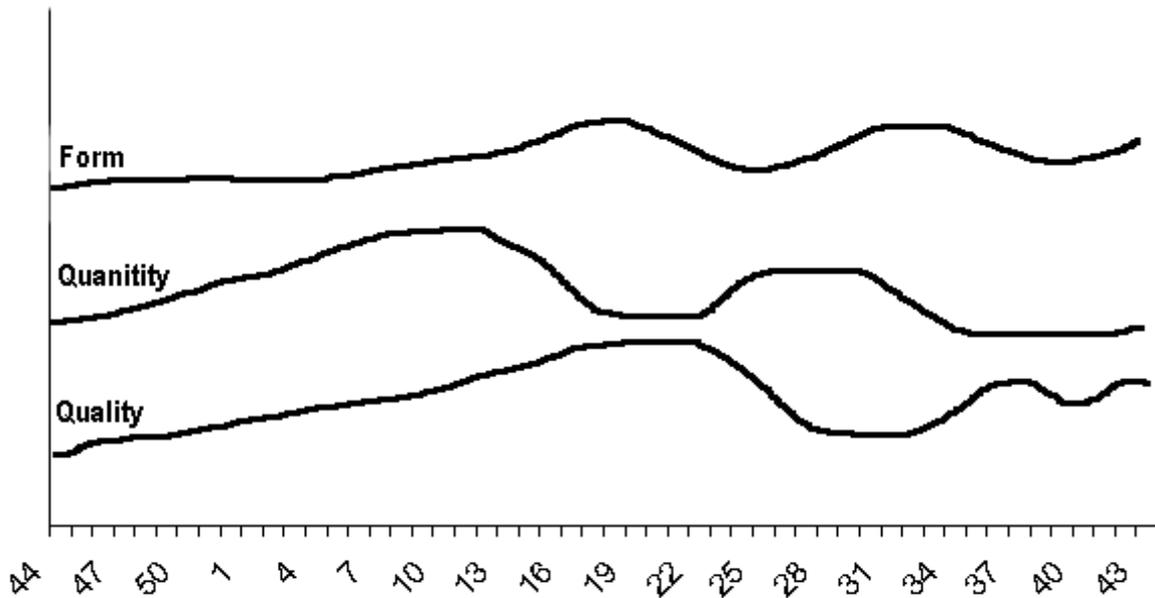
Last recovery period before Euromeeting. Recharging mental energies after summer racing, and resting for the last intensive sessions before Euromeeting. Shorter runs, mountain biking, and general strength training. A little break from orienteering technique – analyse instead what went well and what can be better after the summer races. How can you improve in your last races this year?

### **J 15/10-4/11 Competition period 3**

Training is now totally focused on Euromeeting. The race is in Switzerland where the World Champs will take place in two years. Quality training is predominant, and you therefore cut down on long runs. Everything is focused on increasing your speed in the forest and increasing local aerobic and anaerobic local capacity. Most training is short and intensive. Technique sessions are aimed at making you technique sharp: Short, fast courses and control picking at high speed.

## Sketch of a training year

The diagram below shows how training volume and intensity can vary during a year in relation to desired form:

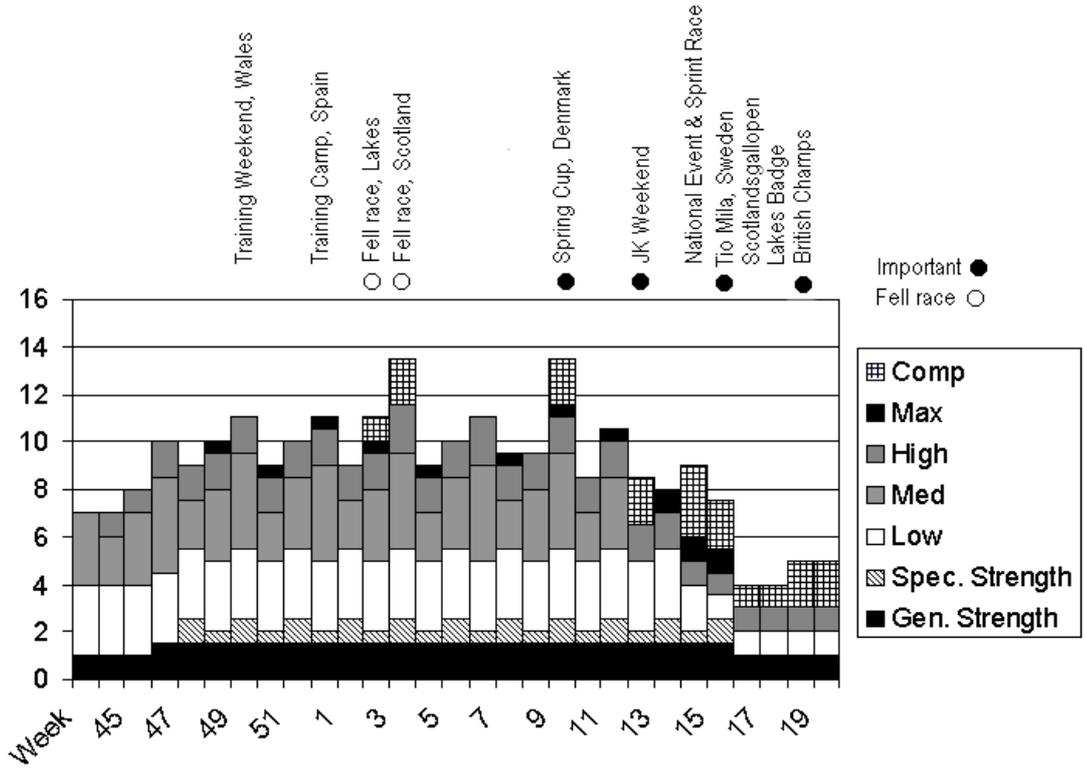


## Year planner

This competition and training plan is a suggestion for how part of your schedule for a year might look. The training plan is guided by the competitions where you want to get good results. In this case the athlete wants to have a good spring season and show selectors that she is a likely candidate for the national team. She plans to get selected for the Euromeeting in November, which takes place in the same country as the next World Champs.

**Races**

**Hours**



Training Weekend, Wales

Training Camp, Spain

○ Fell race, Lakes

○ Fell race, Scotland

● Spring Cup, Denmark

● JK Weekend

National Event & Sprint Race

● Tio Mila, Sweden

● Scotlandsgalopen

● Lakes Badge

● British Champs

● Important  
○ Fell race

■	Comp
■	Max
■	High
■	Med
□	Low
▨	Spec. Strength
■	Gen. Strength

## Week plan

A training diary is an essential tool for planning, carrying out and evaluating training. The following extract comes from a week in “Competition Period 2”, the week before the main race.

Day	Date	Intensity			Training Type	RPE	Specific Strength	General Strength	Total	O-tech	RPS-physical	RPS-technical	Comment
		Low	Mod	High									
M	24	45			Run	3.5		30	75				Jogging with Tobbe, core stability.
Tu	25	15		25	Interval	6.0			40		8.5	9.0	50 x 15-15 intervals in fast terrain.
W	26	45			Run	4.0							Steady running in forest.
Th	27			45	O-tech	5.6		15	60	45			Test course in relevant terrain. Strength.
F	28												Travelled to SM, cinema in evening.
Sa	29	15		65	O-race	6.0			80	65	9.0	9.0	Qualification, no problems. Felt great.
Su	30	15		90	O-race	6.0			115	90	9.0	9.5	Perfect run – really pleased! 3 <sup>rd</sup>
<b>Total</b>		135		225				45	360	200			

Felt good right from the beginning of the week. Really motivated for the weekend – harmony in other parts of life. Totally involved in the orienteering, concentrating on running a clean race.

Planned training	
75	Easy running, core stability.
45	Short intervals in terrain.
45	Easy running.
60	Fartlek with map, core stability.
	Rest
50	SM Qualifier
90	SM Classic

## Summary

We can summarise training planning in the following way:

- Competition goals determine training content
- Training should be
  - individualised
  - aimed at development or maintenance
  - regular
  - progressive
  - pulsed volume and intensity
  - planned
- Training effect is the sum of training, recovery and food.