

# Biathlon Training Log User Information

## General Info:

- By clicking on the text on the left most column in each period (for example **Slowfire Shots**) a box will appear with information about what the box represents and what values should be placed in the corresponding text boxes.
- The log is organized into 13 Periods (not months) with each period representing 4 weeks.
- A total of 2 workouts are available for each day (for example M1, M2; T1, T2; etc...). If you do more than two workouts in a given day a little creativity is needed (i.e. double up on one column).
- Values can be placed only in the light yellow boxes. This is to protect the equations that perform calculations automatically.
- When entering time, a colon (:) must be placed between hours and minutes (i.e. 30min is 0:30).
- The **ERROR** message: All training must be entered twice! Once under the intensity (and strength) section and once under the training-type section (i.e. skating, classic, running, etc.). Values in both sections must be equal otherwise a red ERROR message with show in a box below.
- Some of the types of training are recorded as number of sessions instead of time (for example Max strength, Impulse, ect.). For these, place a 1 in the box to record a workout.
- **Remember: There are many ways to use this training log. However, using consistent methods for entering your training information makes it easy to see trends and learn what training served you best in the past!**

## Important Information for Returning Users:

In order for the training log to display training changes from past seasons, you MUST enter your training information from previous seasons. This can be done on the “Yr. Totals” page. Near the bottom of the blue box on the left, you will notice an area of tan or light yellow boxes. Here, you can add your planned training for each period for the upcoming season as well as the physical training and shots from previous seasons. This is a great way to see how the training volume has changed over the last three years.

## Frequently Asked Questions:

*How do I enter a shooting combo workout?*

Let's consider a workout that included a 10mins of dryfire, a 20 shot zero, a 40 shot combo workout (low intensity), and 1 hour of skate roller-skiing. After finding the appropriate date, enter the 20 shot zero under “Slowfire Shots”, and 40 shots under “easy comb. shots”. Then move on to the physical training section. Enter the 1 hour of exercise as (1:00) under “Level 1” for example (Sometimes the 1 hour may be split up into different intensities, with the total achieving 1 hour. Finally, enter the 1 hour (again!) under the corresponding exercise form; in this case “skating.”

*How do I enter an interval workout?*

Workouts that include intensity require a little extra effort in terms of filling out the log. Let's consider a workout that took 1.5 hours (1:30) and included 6x5min intervals at level 4. First, enter the workout under the correct period, making sure to included the corresponding time in each intensity level and the exercise form (skating, running, cycling, etc.).

Once this is entered, move to the sheet titled “L3-L5.” This sheet is focused only on intensity! Find the corresponding period, enter the date, intensity level (it can be nice to color code the intensity level; L3, L4, L5), time at the intensity level (i.e. 6 x 5 mins = 0:30), exercise form (skating, classic, running, cycling, etc.), and method (6 x 5 min in this example). Next, after filling out some “comments,” move to the grading columns. Under the “physical” and “shooting” columns enter a grade for yourself for how you felt about the physical aspect and shooting aspect (if it included shooting). The scale is from 1 through 5 with 5 representing the highest score.

Then, if the workout included shooting, move over to the shooting columns. There are two areas, one for training and one for competition. Chose the appropriate area and enter the amount of hits for prone and standing, as well as the total shots taken. This will give you a hit percentage for prone, standing, and combined. Notice that there will be an average for each period as well as overall average for the season (at the bottom).

That’s all! Your done! This seems like a lot to do, but once your familiar it will go quite smoothly!

**Additional Information:**

**Shooting:**

- **Slowfire Shots:** Total shots fired without physical exercise (i.e. precision shooting). Shots fired during zeroing can also be placed here.
- **Easy Comb. Shots:** Total shots fired in easy combination or with low intensity exercise (i.e. running, rollerskiing, etc.)
- **Hard Comb. Shots:** Total shots fired in hard combination. A physical workload of Level 3 to Level 5 is the typical range for hard combination training (i.e. in the area of competition heart rate).
- **Competition Shots:** Total shots fired in time-trail or competition conditions.
- **Total Shots:** Total shots fired from all the above categories. Calculated automatically!

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- **Slowfire Time:** Total hours and minutes of shooting with live rounds for accuracy (i.e. not in combination with physical exercise). For example, zeroing and shooting tests etc.
  - **SCAT time:** Total hours and minutes of time spent working with the computerized shooting simulator SCAT.
  - **Dryfire Time:** Total hours and minutes of dryfiring.
  - **Tot. Slowfire/Dryfire Time:** The total time calculated from Slowfire+SCAT+Dryfire. This is the total amount of time spent on shooting training without physical exercise.
  - **Comb. (2min per serie):** This is an estimation of time spent in the range during a combination shooting workout/competition. Calculated as 2min per 5 round series.
  - **Total Shooting Time:** This is the total amount of time spent shooting. Calculated automatically.

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- **Visualization Training:** Hours and minutes spent on visualization training—mental training exercises to improve skiing, training, shooting, etc.
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## **Intensity/Strength:**

- **Level 1:** Hours and minutes spent in Level 1:  
**Intensity:** Typically defined as 40-65% VO<sub>2</sub>-max, 60-72 % of HRmax.  
Lactate between 0.8 – 1.5mM.  
**Effect of Training:**
  - increase aerobic enzyme activity
  - mitochondrial size and count
  - strengthening connective tissue
- **Level 2:** Hours and minutes spent in Level 2:  
**Intensity:** Typically defined as 65-80% of VO<sub>2</sub>max and 72.5-82.5 % of HRmax.  
Lactate between 1.5-2.5mM.  
**Effect of Training:**
  - increase aerobic enzyme activity
  - mitochondrial size and count
  - strengthening connective tissue
- **Level 3:** Hours and minutes spent in Level 3:  
**Intensity:** 80-87% of VO<sub>2</sub>max and 82.5-87.5% of HRmax.  
Lactate between 2,5-4,0 mM.  
**Time:** Typically between 0.5-1.5 hours (*0:30 to 1:30*).  
**Effect of Training:**
  - Lactate limitation
  - Exercise economy
  - Heart-beat volume
  - Increasing glycogen turnover
  - Mitochondrial size and number.
  - Aerobic enzyme activity.
- **Level 4:** Hours and minutes spent in Level 4:  
**Intensity:** Typically between 87-94% of VO<sub>2</sub>max and 87.5-92.5% of HRmax. Large variation, but lactate is typically defined as 4.0 to 6.0mM  
**Time:** Typically 0.40-0.60 hours (*20-50min*).  
**Effect of Training:**
  - Heart beat volume.
  - Lactate limitation.
  - increasing tolerance for medium to high lactate levels
  - Mitochondrial size and number.
  - Aerobic enzyme activity.
- **Level 5:** Hours and minutes spent in Level 5:  
**Intensity:** Typically between 94-100% of VO<sub>2</sub>max and 92-97% of HRmax. Large variation in lactate, but is typically defined as between 6.0 to 8.0mM.  
**Time:** Typically 0.20-0.30 hours (*15-30min*).  
**Effect of Training:**
  - Increasing heart beat volume.
  - Tolerance for high levels of lactate.
- **General Strength:** Hours and minutes of general strength. All types of strength done in a specific period of time (10-45min). Typically defined as strength done in a circuit.
- **Plyometrics/Spent:** Hours and minutes of plyometric training. This includes explosive exercises done with relatively few repetitions.
- **Max Strength:** Counted as number of sessions. Typically defined as high resistance strength done without a time limit and with a range of 1-6 repetitions per exercise.

• **Impulse:**

- Purpose:
1. Develop strength, speed and ski economy
  2. Recruitment of the muscle fiber IIX

Recommended--2-3 session a week. 8-12 per set \* 12-15 seconds (stop before building lactate acid)

Remember:

1. High/maximal power-speed
2. Active recovery at least 2 minutes between!
3. Variation in the terrain/resistance
4. Do the impulses with focus on correct technique

This is maximal strength for a skier!

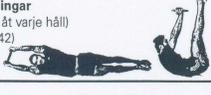
Record as number of session in the log (i.e. 1)

- **Muscle Action Quality (Maq):** A systematic and progressive model for development of functional flexibility, muscle-body control, balance, general strength and technique.

Record it as a number of session in the log and also record half the time in the log as aerobic training. (level 1)

Below is what the US Biathlon team uses as a guide for MAQ:

## Träningsprogram B – en översikt

<p>Uppvärmning</p> <p><b>Hopprep</b> cirka 5 minuter (sidan 100)</p>		<p><b>Aktiv rörlighet</b></p> <p>Gör var och en av de tre rörlighetsövningarna två gånger.</p>
<p><b>Komplex rörlighet</b></p> <p>10 repetitioner (sidan 102)</p>		
<p><b>Aktiv sidböjning med käpp</b></p> <p>10 repetitioner åt varje sida (sidan 132)</p>		<p><b>Stående rotationer med käpp</b></p> <p>10 repetitioner åt varje sida (sidan 134)</p>
<p><b>Övningar</b></p>		
<p><b>Komplexstyrkeövning med viktskiva</b></p> <p>1x3+3, 3+3, 3+3, 6 (sidan 136)</p>		
<p><b>Step up-utfallssteg på plint</b></p> <p>3x10 (5 per ben) (sidan 140)</p>		<p><b>Draken</b></p> <p>3x16 (8 per ben) (sidan 119)</p>
<p><b>Bålrullningar</b></p> <p>3x10 (5 åt varje håll) (sidan 142)</p>		<p><b>Chins</b></p> <p>3x10 (sidan 144)</p>
<p><b>Växlande push-up på plint</b></p> <p>3x10 (5 åt varje håll) (sidan 146)</p>		<p><b>Statiska stabiliseringsövningar</b></p> <p>1x30 sek arb/30 sek vila (sidan 128)</p>
		

- **TSSstrength:** Purpose: Endurance strength on skis/rollerskis. The goal is to work the specific and local muscles that you use in your skiing. It's good to do this workout as a combo. workout !  
  
20-30 sets \* 30 seconds—focus on a good technique and think about power, not quick tempo. Make sure that this workout does not turn into another intensity session.  
  
Use all tech V1, V2, V2 alt, Double pole, NP—but put the focus on 2 tech per session.  
  
Record it as a number of session in the strength part and also half the time in level 1 and 2.

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**Forms of Exercise:**

- **Skating:** All training done skating—both on snow and on rollerskis
- **Classic:** All training done classic—both on snow and on rollerskis
- **Skating without poles:** Skate skiing without poles—both on snow and on rollerskis
- **Double pole:** Includes both skating and classic double poling. Should be thought of as time spent double poling when one normally would be classic striding.
- **Running:** Time spent running.
- **Bounding:** Time spent ski bounding/walking—can be done with or without poles.
- **Cycling:** Time spent training on a bicycle—includes both stationary, road, and mountain biking.
- **Other:** Time spent on all other exercises not listed above. Strength training can be placed here. (Example: kayaking, canoeing, swimming, soccer, strength, etc.)

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- **Competition Time:** Effective time (hours and minuets) spent in competition and time-trials

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- **Rest Day:** Day spent without exercise or completely focused on recovery. Write in a 1 for a Rest Day.
  - **Sick Day:** Day spent without exercise or limited exercise due to illness. Write in a 1 for Sick Day.
  - **Morning Pulse:** Pulse (bpm) taken at rest, typically in the morning, or if you just go to the bathroom and back to bed. A graph of resting pulse is found in “Yr. Totals.”

- **Total Quality Recovery:** Abbreviated (TQR), this is a rating (6 lowest = no recovery to 20 highest = maximum recovery) of the overall perceived recovery before a workout. A graph (scatterplot) is found at the far right of each period.

**TQR scale**

6:	No recovery
7:	
8:	Extremely bad recovery
9:	Very bad recovery
10:	
11:	Bad recovery
12:	
13:	Recovery OK
14:	
15:	Good recovery
16:	
17:	Very good recovery
18:	
19:	Extremely good rec.
20:	Maximal rec.

- **Rating Perceived Exertion:** Abbreviated (RPE), this is a rating (6 lowest = extremely easy effort to 20 highest = maximal exertion) of overall effort (exertion) experienced during a workout. A graph (scatter plot) is found at the far right of each period.

**RPE scale**

6:	None
7:	
8:	Extremely easy
9:	Very easy
10:	
11:	Easy
12:	
13:	Little exertion
14:	
15:	Exertion
16:	
17:	Very much
18:	
19:	Extremely
20:	Maximal exertion

- **Comparison Rating:** Did you feel as you expected to? If so, we can say the workout was "normal." The comparison rating is a method to track the difference between the "normal feeling" and the actual feeling after each session. Scale of 1-7 (1=easier; 4=normal; 7=heavier).

**C-rating scale**

1:	Much easier than normal
2:	
3:	
4:	Normal workload
5:	
6:	
7:	Much heavier than normal

**Shooting Tests:**

**30 prone + 30 standing**

On 10 point target.

Time limit—1 minute per 5 shots, standing behind the lane to last shot.

Note your points. Prone + standing= total

600 Points possible. For ease of counting switch to a new paper target every ten shots.

**NSSF 3 (Norwegian (Ski) Shooting Test #3)**

Shooting test with 60 possible hits. Shooting is done on falling targets in an easy combination (i.e. running, rollerskiing, etc.). The test is 30 shots prone and 30 shots standing in the order P,S,P,S etc. Record the number of hits for each 5 shot series.

**20 x 1 (10 prone+ 10 standing)**

On paper biathlon target. 15 seconds penalty per miss.

Start, finish and turning point are 5 meters behind the firing line.

Range procedure with poles, straps must be on before next shot.

Change clip before every shot.

Note your points. Range time + penalty(15 sec/miss)= total

**4 x 5 (2 clips prone + 2 clips standing)**

On biathlon target, shot across.

10 seconds penalty per miss.

Start, finish and turning point are 5 meters behind the firing line.

Range procedure with poles, straps must be on before next clip.

Note your points. Range time + penalty(10 sec/miss)= total

**20 Prone + 20 Standing—Single shots**

Shooting test with 400 possible points. Shoot on a 10 ring (points) paper target. The shots are taken individually—single shots. This test can be done with or without time-pressure—note this! The test is 20 shots prone and 20 shots standing. Use 10 shots in each paper target for ease of counting.

**German Test**

This test is done on falling targets: P+P+S+S (20 shots). This test is for shooting speed and accuracy. Start 2 meters back from the mat--between each 5 shots return to this point before immediately starting the next 5 shot series. A second person is needed to reset the target after each 5 shot series.

Total Range time + penalty(15 sec/miss)= Total