

UNIVERSITY OF LJUBLJANA  
FACULTY OF SPORTS  
Kinesiology

## **TRAINING ANALYSE OF 10.000 METER RUNNER**

DIPLOMA THESIS

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I would like to thank to my family, which was always by my side and supporting me on my studies.

Especially I would like to offer my deepest gratitude doc. dr. Aleš Dolenc for his support and helping me as mentor on my diploma thesis and my reviewer prof. Dr. Anton Ušaj for his effort to make this thesis best of it.

**Keywords:** Athletics, 10.000 meter run, Gabriel Navarro Lucas, analysis, training, runner

## **TRAINING ANALYSE OF 10.000 METER RUNNER**

**Aljaž Babnik**

### **ABSTRACT**

Twenty-five laps of the track. It is a pure stamina event, where the endurance athletes are pushed to their maximum level of exhaustion.

Diploma thesis is an analysis of three months training with Gabriel Navarro Lucas, which was held in High Performance Centre CAR Madrid. Gabriel is a former European Champion U21 on 5.000 meter run, 10.000 meter run and European Champion U23 on 10.000 meter run.

Main objective is to describe how to train on the highest performance, what kind of training was performed and how the trainings were changing by the months.

We were analysing trainings of Gabriel for 92 days. We classified them in four particular parts of running training (Running distances, Short Intervals, Long Intervals, Hill-training). After that we divided them in five main types and made the calculations of quantity of metres (m) that Gabriel ran, time that he needed for each of his tasks and intensity (m/s) that Gabriel reached.

Diploma is written in a monograph form. It is based on data collection from domestic and foreign scientific literature. As well working in High Performance Centre Madrid and collaboration with professional athletes gave me a lot of knowledge and consequently helped a lot for my diploma thesis.

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## 1. INTRODUCTION

The 10,000 metres race is a long-distance track running event, which consist of 25 laps around a standard 400 metres track (Lawson, 1997). The event is a part of the athletics programme at the Olympic Games and the World Championships.

Official records are kept for outdoor 10,000 metres track events. The first world record holder was Jean Boun from France on 16.11.1911 with the time of 30:58.0. Current world record for men is held by Kenenisa Bekele of Ethiopia with time 26:17.53, posted at Brussels, Belgium on August 26, 2005. For women is held by Wang Junxia of China in 29:31.78 on September 8, 1993 (IAAF world records, 2014).

### 1.1. Training description

Trying to find the ideal formula to improve athletic performance for a particular individual is what keeps coaches and runners forever experimenting, calculating, assessing and guessing. There is no single universal answer, every single athlete has his own perfect formula (Temple, 1992).

Glycogen is the only fuel of significance in 10,000 meter run and most of the energy is obtained from its aerobic metabolism, we estimate 97% of it. Contribution from anaerobic metabolism is important and it makes huge difference between loosing and winning on the race (Duester, Leech, & Newsholme 1994).

Athlete muscle fibres are mostly slow twitch muscle fibres (type I). These muscle fibres contract slowly and generate low power output. They are associated with low to moderate intensity exercise, generate energy aerobically and are fatigue resistant. Type I muscle fibres are best suited for moderate-intensity, long-duration exercise. These fibres can be trained to the certain degree, because the relative composition of muscles is genetically determined (Kirkendall, 2007).

While training we struggle with different factors which could limit athletic performance:

- Cardiac output
- Oxygen transport to muscles
- Anaerobic thresholds
- Size of fuel stores
- Rate of fuel mobilization
- Capacity for ATP synthesis in muscles
- Muscle mass
- Rate of fuel uptake by muscles
- Rate of end-product removal
- Control of fuel utilization
- Conservation of blood glucose for brain
- Maintenance of body temperature (Duester, Leech, & Newsholme 1994).



Trainings on the highest level need to include some parameters of development, which should be emphasized during the training:

- Refining an accurate sense of pace
- Raising lactate/ventilatory thresholds
- Raising VO<sub>2</sub>max
- Honing an excellent speed capability for midrace surging and strong finish (Lawson, 1997)

According to our analyses with Gabriel, which were held for fourteen weeks, we will represent the trainings on three main types of running training. Which are the following:

- Running distances
- Short intervals
- Long intervals

## **1.2. Running Distances**

### **1.2.1. Warm up**

Distance from zero up to seven kilometres.

Warming up is the activity, which aims to raise temperature. The temperature significantly affects the properties of tissues, in mechanical as biologically sense.

Possible physiological effects:

- Increase of local blood flow
- Decrease of [LA] in blood and muscle
- Increase in conductivity of impulses along nerves
- Increase of metabolism in the muscle
- Rise of temperature in the muscle, which means increase of oxygen release from the blood (Ušaj 2012)

### **1.2.2. Distances**

Distance from seven, up to sixteen kilometres.

The most important biological basis for endurance runs are aerobic energy processes. Those are the only one capable of long-term reconstruction of current aerobic energy consumption. This capability is produced by oxygen and suitable fuels, such as: glycogen, glucose, free fatty acid and glycerol.

Possible effects of this training is:

- Building up the aerobic capacity
- Increasing of aerobic metabolism of fibres I and IIA
- Activity increase of the enzymes that catalyze the aerobic processes
- Qualitative change in fibre, increase of the fibre type IIA and decrease of type IIB proportion
- Increase of muscle size and number of mitochondria, which enables greater capacity for aerobic digestion of fuels
- Reduction in the levels of catecholamine (Adrenaline and Noradrenaline) in plasma (Ušaj, 2003)

### **1.3. Intervals**

Interval training is a physically highly effective method of improving oxygen debt tolerance, and is now used in one form or another by virtually all middle and long-distance runners (Temple, 1992).

#### **1.3.1. Short Intervals**

Aim to train this kind of training is to build up aerobic capacity. Involving to increase the number and the volume of mitochondria, an increase in the concentration of enzymes within the mitochondria, an increase of capillary density and a conversion of some fast-twitch glycolic fibres into fast-twitch oxidative (Duester, Leech, & Newsholme 1994).

Aerobic system occurs most rapidly and most effectively when muscles are close to their maximal aerobic capacity. That level of aerobic metabolism makes degree of anaerobic metabolism inevitable, lactate and protons are accumulated, influencing fatigue and it decreasing intensity. This is when the intervals come in, since the rest periods allow the lactate to be flushed out from the muscle. To improve that procedure, the rest periods are active, being on 50% of effort achieved during the interval. When process flush out is achieved, tiredness disappears and we can start with the next interval, what occurs that aerobic system is stressed entire session (Duester, Leech, & Newsholme 1994).

During interval trainings aerobic capacity of the muscle should increase dramatically, as evidenced by a decrease in the time taken to run a particular interval and the speed of recovery during the rest period (Duester, Leech, & Newsholme 1994).

#### **1.3.2. Long Intervals**

Goal is to improve three aspects of aerobic metabolism:

- Cardiac output
- Control of blood distribution

- Control of the rate glycogen mobilization in muscle (Duester, Leech, & Newsholme 1994).

Cardiac muscle is highly aerobic and responds to the stresses of long intervals in much the same way that skeletal muscle responds to short intervals. Within we increase the number of mitochondria, the amounts of enzymes within the mitochondria and the capillary density. Long interval training is increasing the amount of glycogen that can be stored in a muscle. Training benefit is to train the control of mechanism that is regulating the rate of glycogen breakdown according to the demand for ATP. If the breakdowns are too fast, a valuable resource is wasted. On the other side if the breakdown is too slow, performance is limited. Glycogen utilization must be optimized, the long intervals should be run as rapidly as possible, but without causing total exhaustion, so that we can finish all repetitions in one training session (Duester, Leech, & Newsholme 1994).

At the end of the hard training session little glycogen will be left in the active muscles. As we finish the exercise we need to ingest carbohydrates in the body. The same procedure is before the next training session (Duester, Leech, & Newsholme 1994).

#### **1.4. Hill-training**

Hill- training improves recruitment. The intensity of the exercise can be varied by hills of different gradients, duration is also important since some fibres will fatigue early and the others will be recruited and hence trained (Duester, Leech, & Newsholme 1994).

## **1.5. Objectives**

The aim of diploma thesis is the analysis of the three month training period of Gabriel Lucas Navarro, European Champion U21 on 5.000 meter run, 10.000 meter run and European Champion U23 on 10.000 meter run. Objective is to show and describe how Gabriel was training, what kind of training was performed and how the trainings were changing by months. With diploma thesis, I would like to show how to train on the highest performance training and hopefully that thesis could be in help to another athletes and coaches.

## 2. METHODOLOGY

The trainings were carried out in the months of November, December 2013 and January 2014. All data base was measured on training of Gabriel and it's documented for 92 days. Gabriel gave us fully allowance to represent his actual trainings, running events and database.

### 2.1. Gabriel Navarro Lucas

Table 1

<b>Birthdate</b>	<b>6.8.1992</b>
<b>Hight</b>	<b>162 cm</b>
<b>Weight</b>	<b>62,2 kg</b>
<b>Born</b>	<b>Cuenca</b>
<b>Nationality</b>	<b>Spanish</b>
<b>Club</b>	<b>Atletismo Motilla</b>
<b>Sport</b>	<b>Track, Long-distance runner</b>
<b>Events</b>	<b>5000 metres, 10000 metres</b>
<b>Personal best</b>	<b>5.000 metres (13:57,25), 10.000 metres (29:28,17)</b>

In table 1 is shown personal data of Gabriel Navarro Lucas.

### 2.2. Biography

Gabriel Navarro Lucas was born in Motilla del Palancar on 6.8.1992. He started with athletics when he was 16 years old, noticed by elementary teacher. First year of training were successful and promising, because Gabriel was second on Spanish national championship in Cross-Country running, Champion of Spain in 5.000 meters and second place in 3.000 meters. On the international level he was selected to compete in Doha Gymnasiade, where he finished fourth.

The next year (2010/2011) he achieved to be a champion of Spain on 10.000 meters and runner up in 5.000 meters. He also qualified for the Cross-Country running World Championship and the outdoor track Championship in Moncton (Canada), where he finished fourth.

In the third year of training (2011/2012), he went to train to Madrid, Residence Joaquin Blume and start working with Antonio Serrano. That year he succeeded to became Cross-Country running Champion of Spain, with that he qualified for the world Championship, where he finished 54th. In the same year he won the Championship of Spain in 5.000 meters and 10.000 meters, he qualified for the European Championship in Talin category under twenty years old. He won the gold in 10.000 metres and 5.000 metres.

Year 2012/2013 he continued training in Madrid with Antonio Serrano and got sponsored by Adidas. This year he finished the contract with Club Playas de Castellon and start new project by his hometown council Motilla del Palancar, where they founded new Club called Club Atletismo Motilla del Palancar. In this year he went to the European Championship U23 in Tampere, Finland, where he won the race on 10.000 meters and finished 11th on the race of 5.000 meters. It was very successful year, beside that he made his personal best result in Aviles, where his result was 29:28.17.

It was the year (2013/2014) where he changed the trainer. He started to collaborate again with his trainer from home Joaquin Rubio Navarro and with the trainer Bernardo Dominguez Lezcano, which he trained him in Madrid. The best result from this season was on the Cross Aranda de Duero (Burgos), where he was second with the time 29:20 and the first place from International Cross de Venta de Baños.

Gabriel had different trainings, which were held in High Performance Center CAR Madrid. Trainings of Gabriel were under control of Bernardo Dominguez Lezcano and supervised by Joaquin Rubio Navarro.

Gabriel trainings were classified by types:

- Fartlek
- Weight-trainings
- Short intervals
- Long intervals
- Short running distances
- Longer running distances
- Hill-trainings
- Coordination
- Flexibility training
- Proprioception

### **2.3. Trainings**

Our study analysed Gabriel 92 day trainings of running part. Data is analysed by four particular parts of running training:

- Running distances (warm up, distances)
- Short intervals
- Long intervals
- Hill-trainings

Analyse is represented by quantity of km that Gabriel ran and the intensity (m/s) that Gabriel reached.

## **2.4. Type of trainings**

Study was analyzed and it is represented by five types.

- Type A
- Type B
- Type C
- Type D
- Type E

### **2.4.1. Type A**

Includes all distances that were ran by Gabriel from one to seven kilometres.

Goals are:

- Increase of  $Vo_2$  in the first minute of physical strain
- Increase of local blood flow
- Decrease of [LA] in blood and muscle
- Increase of metabolism in the muscle (Ušaj, 2003)

### **2.4.2. Type B**

Includes all distances that were ran by Gabriel above seven kilometres.

Goals are:

- Building up the aerobic capacity
- Increasing of aerobic metabolism of fibres I and IIA
- Activity increase of the enzymes that catalyze the aerobic processes
- Qualitative change in fibre, increase of the fibre type IIA and decrease the proportion of type IIB
- Increase of muscle size and number of mitochondria, which enables greater capacity for aerobic digestion of fuels
- Reduction in the levels of catecholamine (Adrenaline and Noradrenaline) in plasma (Ušaj, 2003)

### **2.4.3. Type C**

Includes all interval trainings from hundred to four hundred meter mark, which were ran by Gabriel.

Goals are:

- Cardiac output
- Rate of glycogen mobilization in muscle

#### **2.4.4. Type D**

Includes all interval trainings above four hundred meter mark, which were ran by Gabriel.

Goals are:

- Number and the volume of mitochondria
- The concentration of enzymes within the mitochondria
- Increase of capillary density
- Conversion of some fast-twitch glycolic fibres into fast-twitch oxidative

#### **2.4.5. Type E (Hill-trainings)**

Goal is to improve:

- Strength endurance
- Improvement of lactate tolerance
- Develops maximum strength and speed
- Developing coordination



## 2.5. Data analysis

We were gathering the data for 92 days in High Performance Centre CAR Madrid. Gabriel trainings were mostly carried out in the morning and afternoon. In average Gabriel has two trainings per day and on the pick of the week three of them.

All data were personally written and calculated by me. For representing this data, Gabriel gave us fully allowance.

Represented data is divided in fourteen weeks and five types (A, B, C, D, E). We were measuring:

- Quantity of kilometres (m) that Gabriel ran
- Time (s) that he needed for each of his tasks
- Intensity (m/s) that Gabriel reached

We calculated the intensity for each week, for five different types. For getting this data, we multiply the time and the quantity of each type of training and we divided it with number of training per week for each type.

3. ANALYSIS

3.1. Training quantity by months

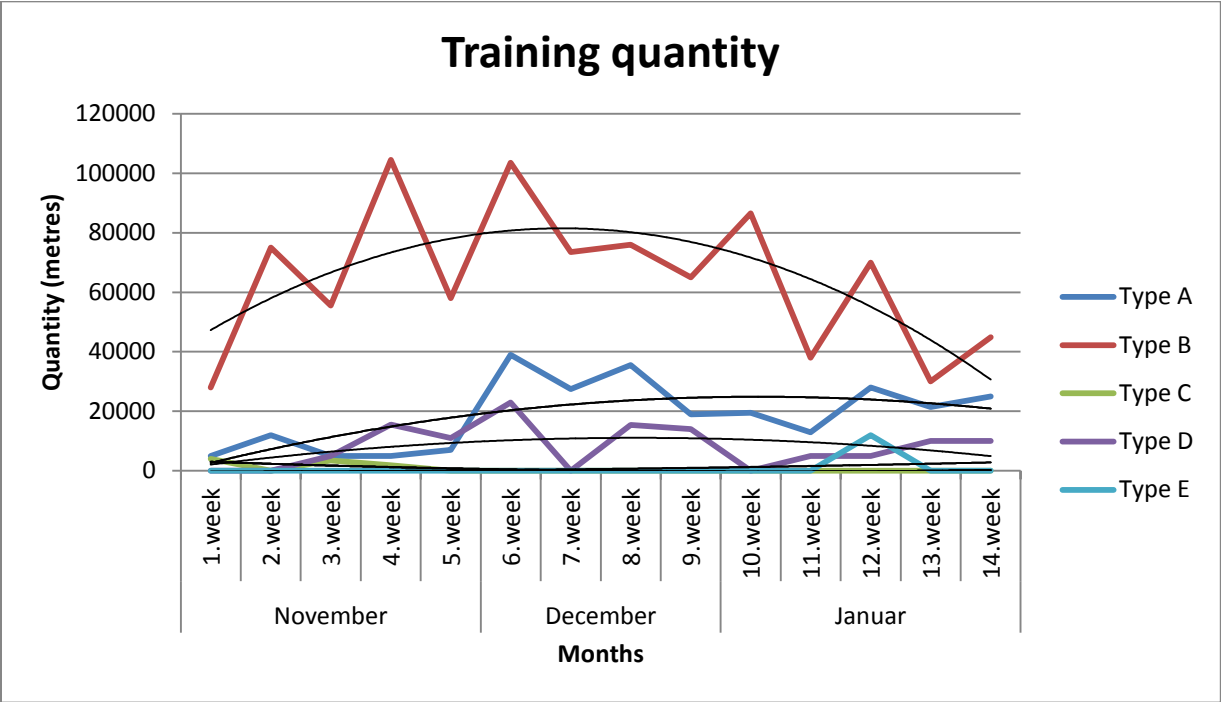


Figure 1. Quantity of trainings

Figure 1 we can see comparison of quantity (m) of training that Gabriel ran in three months.

The first most performed training was type B, because most of the trainings that Gabriel carried out were distances from seven to fourteen kilometres.

The second most performed training was type A, because it is collaborated with training type B. Type A were trainings which were carried out before type B, mostly runs from zero to seven kilometres, the purpose was to warm up the body and prepare for more complex training type B.

Third most performed training was type D, this are intervals which are longer than four hundred metres. On another side if we analyze the training C, which the intervals are below four hundred metres, were executed just at the beginning, in the month of November. The athlete was preparing himself, for later longer intervals, which the peak started on fourth week of analysis.

Fourth most performed training was type E and it started in twelve week and it was just performed in this week of our research.

In the month of November training type B was the most performed training, in the fourth week he reached the peak of the whole analyse. On the other hand type B was less executed as two other months, it was slowly building up. Training type D started to be performed in the second week and getting his second highest peak in the fourth week of training. Moreover the training type C was just performed in the month of November and it finished with it.

Month December showed increase of training type A and B. In comparison with month November training type D was increased too. So after all, Gabriel trained more in the month of December.

As we continue with month January, trainings were less executed in comparison with month of December, because of the athlete sickness. Comparing with other months, this month was the only where it was performed training type E.

Overall Gabriel training performed very well, except of the eleventh week, where he was sick for several days and after that he needed days to recuperate from the sickness. Gabriel trainings were controlled and managed by Bernardo Dominguez Lezcano very well, all trainings were specifically detailed.

The characteristics of cyclization were obtained by using fitting of data with polynomial curve of model:  $y=a+bx+cx^2$  (parabola), where y represents initial training volume, a, b and c were exertion coefficients and x was dates (weeks). This analyze showed that volume of Type B increased from 2<sup>nd</sup> to 6<sup>th</sup> week, when it showed the highest volumes. These volumes decreased at the end of observed period.

Type A and Type D have similar cyclization from 1<sup>th</sup> to 4<sup>th</sup> week. They haven't changed a lot. In the period from 5<sup>th</sup> week to the end of observed period training volume increased rapidly, the 6<sup>th</sup> and 8<sup>th</sup> week was the start of continuous decrease. The training volume reached his highest volumes in the period of 5<sup>th</sup> to 6<sup>th</sup> week, after that it's started to decrease continuously. This cyclization consists of 3 periods (mezocycles):

- 1-4 week, slowly increasing volume
- 5-6 week, highest volumes of training
- 7-14 week, slowly decreasing volume training

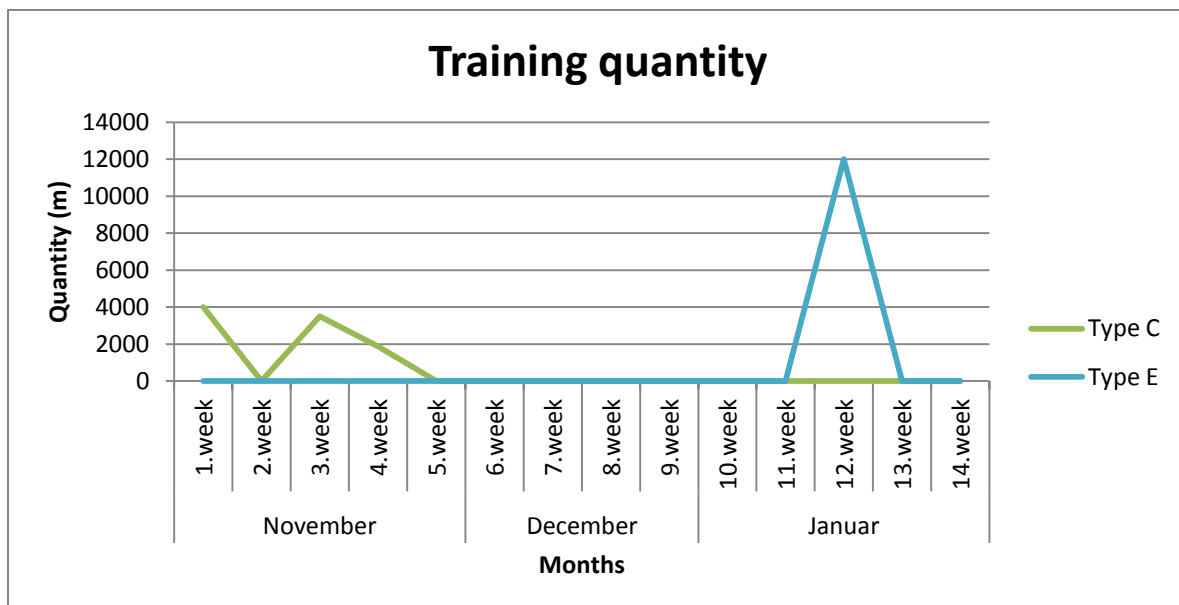


Figure 2. Quantity of trainings type C and E

Figure 2 represent quantity of training type C and E.

### 3.2. Intensity by months

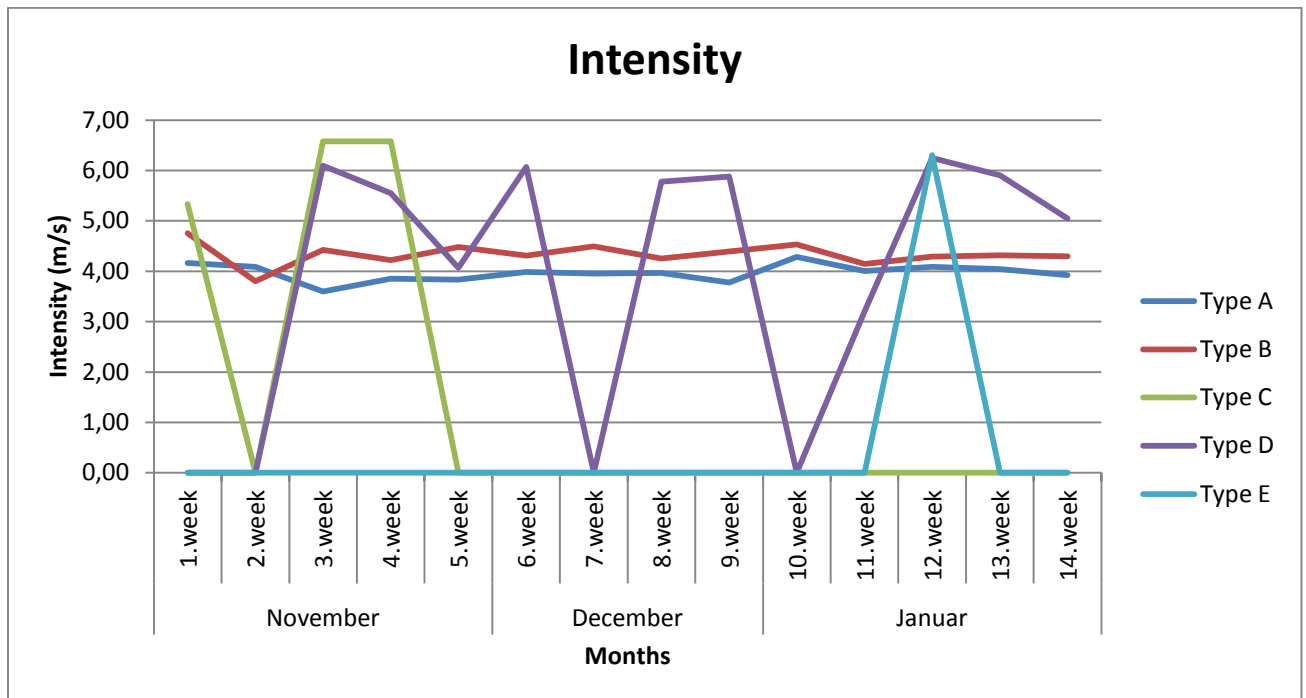


Figure 3. Intensity (m/s)

Figure 3 presents comparison of intensity (m/s) of training that Gabriel ran in three months.

Highest intensity training was performed by the type C, which is reasonable, because athlete was implementing the short interval trainings, which are done with high velocity and short distances.

Second highest intensity of training reached type D, which are long interval trainings. This kind of the training was most performed interval training by athlete. It was implemented in training by the whole analysis of the three months.

Third highest intensity reached type E (hill training), which athlete worked in the last month of the analysis. This type of training requires fully concentration, speed and strength. It is mixture of high velocity and slope.

Fourth highest intensity on training was performed by type B, which reached constant intensity by the weeks, which means that Gabriel was training structural his intensity on the runs from seven to fourteen kilometres, which were his most common and basic trainings.

The lowest intensity reached type A and it is conditioned by training type B. Type A is pre-run or with other words warm up for type A. Runs were performed from zero to seven kilometres.

If we compare the months of November, December and January, type A and B were executed with constant intensity through whole three months, except with a drop in second and eleventh week. Type C was just applied in month of November and later on was

removed from the training program of athlete. Long intervals or with other word type D has peaks and falls in training, what means that his interval training was scheduled by the weeks. Comparing type E to the three month analysis, this type was just performed in the last month with high intensity.

From 5<sup>th</sup> to 8<sup>th</sup> week type A and B had similar cyclization, the velocity was stable from 5 to 6 m/s. On the other side was different with Type D, which in 6<sup>th</sup> week had a peak of cyclization and after that in the 7<sup>th</sup> week margin drop. Type D in the 8<sup>th</sup> week had rise again to the similar peak that in 6<sup>th</sup> week. After all cyclization from 5<sup>th</sup> to 8<sup>th</sup> week had stable continuous volume of intensity of Type A and B. Type D had two peaks of intensity volume and one margin drop.

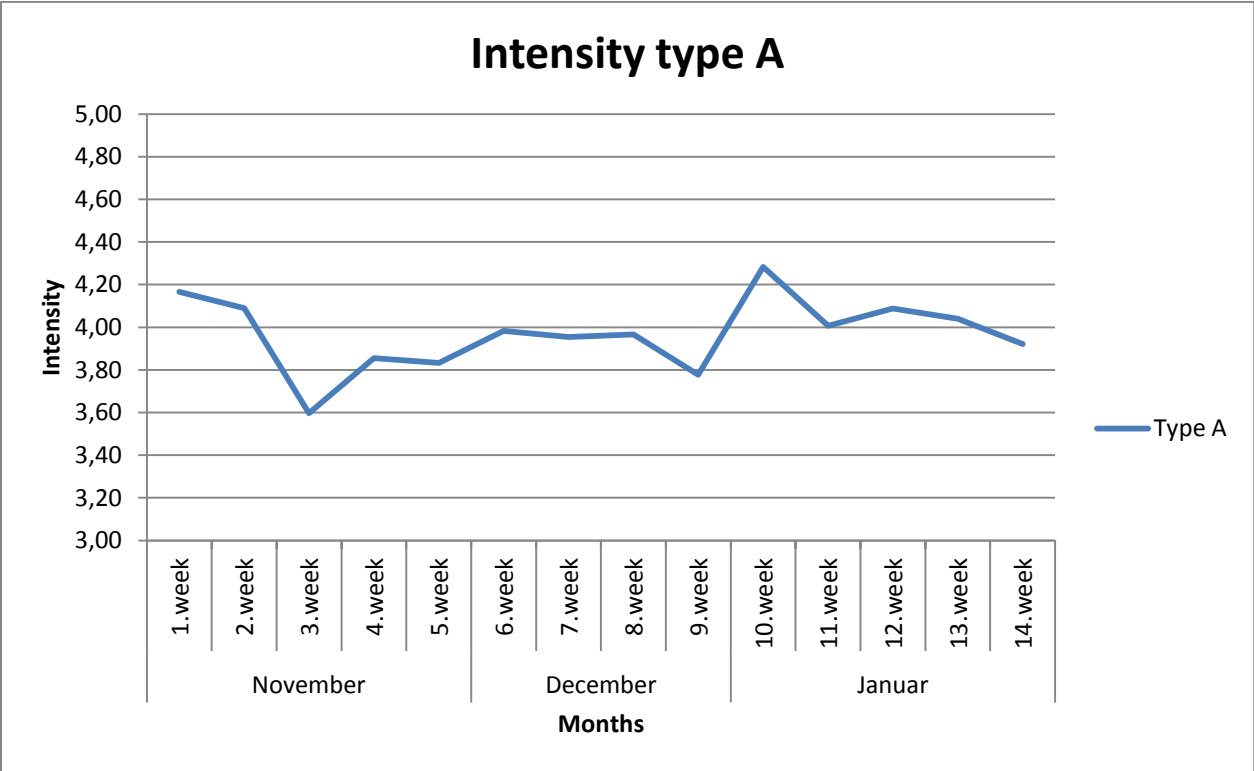
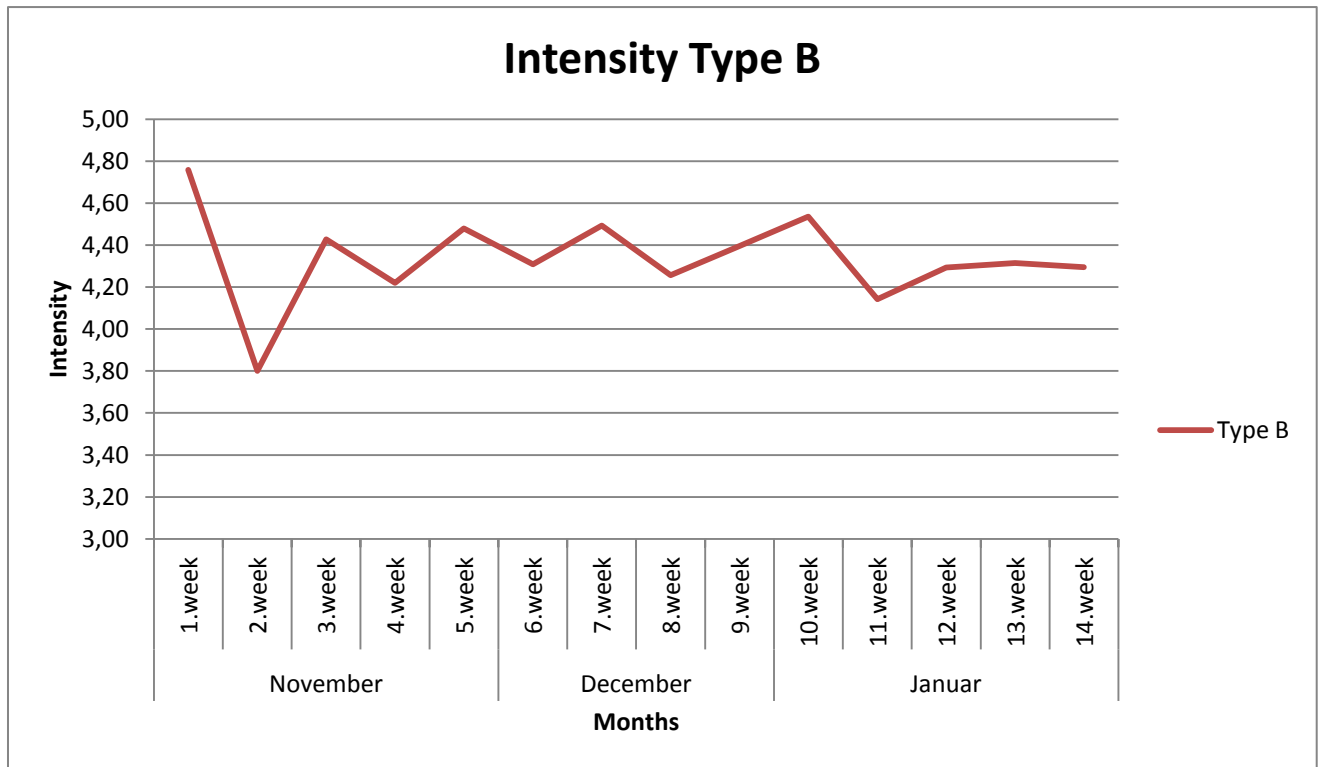


Figure 4. Intensity type A

Figure 4 represents intensity of type A in three month analysis.



**Figure 5. Intensity Type B**

Figure 5 presents the intensity type B in three month analysis.

#### 4. CONCLUSION

10,000 metre run is a long-distance running track event, which demands exceptional levels of aerobic endurance, stamina, hard work, discipline and psychological strength.

Gabriel Navarro Lucas is one of the top athletes in his category in Europe, which demands from him a lot of sacrifice and discipline in his life.

Diploma thesis is representing the data of ninety-two days of running trainings with Gabriel. Thesis is describing five types of training and it is calculated in fourteen weeks by quantity and intensity that Gabriel reached.

In first part we described four particular parts of running training (running distances, hill-training, short intervals, long intervals) that we examined. After that we divide them in five particular types (Warm up, Distances, Short intervals, Long intervals, Hill-training) and make the calculation of quantity (m) and intensity (m/s). Whole data was represented by four graphs, where we can see how the trainings were changing.

Health status was conditioned with mental preparation, which we could notice in our data, representing decrease in eleventh week.

Type B was the most performed training by quantity. We could see that this type was ascending till sixth week and after that had a drop of quantity that he reached per weeks. Highest peak of the three month analysis was in month of November and at the beginning of December. For the type A we could say that it was linking to the type B, except in the month of November, where was margin drop of this type according to the other two months.

Type A and B were executed with constant intensity through whole three months, except with a drop in second and eleventh week. Highest peaks of intensity were reached in the third, fourth and twelfth week as a consequence of short intervals and hill trainings.

Through all our analysis we had a large amount of training type B, for which has been know that it was performed with high volume of running distances (seven to fourteen kilometres). This kind of training was performed constantly and with lower intensity. Higher intensity training was just performed at the beginning of analysis, after that in the month of December was decreased and later continued with higher intensity at the end of the analysis.

Overall we can come to conclusion that from 1<sup>st</sup> to 4<sup>th</sup> week quantity and intensity of training type B was increasing, from this it can be seen that endurance is building up. Others types in that period were constant and not changing, except type C, which was just performed in that time. From 5<sup>th</sup> to 7<sup>th</sup> week, long interval training is increasing and it has high volume of intensity, which means that athlete performed type D on higher level. In the period from 9 to 14 week, observation gave us results that, there was decrease of training type B, but at the same time intensity didn't change from the last period. Other types of training had similar quantity, while intensity was slowly decreasing. We assume that decrease of training was consequence of upcoming competitions. This decrease of training increased athlete performance and provide him to perform in top shape.

## **5. POVZETEK**

### **Analiza tekača na 10.000 metrov**

#### **Aljaž Babnik**

##### **5.1. Izvleček**

Petindvajset krogov na atletski stezi. Vzdržljivostni dogodek, kjer so atleti soočeni z njihovo največjo stopnjo izčrpanosti.

Diplomsko delo je analiza treh mesecev z Gabrielom Navarrom Lucasom, kateri je bil izveden v centru za visoki razvoj športnikov Madrid. Gabriel je bivši evropski prvak U21 na 5.000 metrov, 10.000 metrov in evropski prvak U23 na 10.000 metrov.

Glavni cilj diplomskega dela je bil opisati, kako trenirati na visokem nivoju, ki ga je nudil center, kakšen trening je bil izveden in kako so se treningi spreminjali skozi obdobje treh mesecev.

Treninge Gabriela smo analizirali dvaindevetdeset dni. Klasificirali smo jih v štiri glavne enote tekalnega treninga (tek, kratki intervali, dolgi intervali in tek v klanec). Za tem smo jih porazdelili še v pet tipov treninga in naredili izračune za količino (m), ki jo je Gabriel pretekel in intenzivnost (m/s), ki jo je dosegal na treningih za vsak tip posebej.

Diplomsko delo je monografskega tipa, zato so bili vsi podatki zbrani iz domače in tuje strokovne literature. Delo v centru za visoki razvoj športnikov in sodelovanje z vrhunskimi športniki, mi je dalo veliko znanja in posledično bilo v veliko pomoč pri izdelavi diplomskega dela.



## **5.2. Uvod**

Tek na 10.000 metrov je najdaljša tekaška disciplina na atletski stezi, ki jo sestavlja 25 krogov na 400 metrski stezi (Lawson, 1997).

Svetovni rekord za moške ima Kenenisa Bekele, rojen 13.6.1982 iz Etiopije z časom 26:17.53, izmerjen v Bruslju 26. avgusta 2005. Ženska svetovna rekorderka je Kitajka Wang Junxia rojena 9.1.1973 z časom 29:31.78, ki je bil izmerjen v Pekingu 8. septembra 1993 (IAAF world records, 2014).

## **5.3. Cilji**

Cilj je prikazati, kako je Gabriel treniral, kakšen tip treninga je bil opravljen in kako so se treningi spreminjali skozi obdobje treh mesecev. Z diplomsko nalogo bi rad opisal, kako poteka trening na visokem nivoju in s tem v upanju, da bi lahko bila naloga v pomoč drugim atletom in trenerjem.

#### 5.4. Metode dela

Treningi so bili izpeljani v mesecu novembru, decembru 2013 in januarju 2014. Vsa baza podatkov je bila izmerjena na treningih Gabriela in je bila dokumentirana dvaindevetdeset dni. Gabriel nam je dal popolno dovoljenje za prikaz njegovih treningov, tekmovanj in potrebnih podatkov za izdelavo diplomske naloge.

#### Gabriel Navarro Lucas

Tabela 2

<b>Birthdate</b>	<b>6.8.1992</b>
<b>Hight</b>	<b>162 cm</b>
<b>Weight</b>	<b>62,2 kg</b>
<b>Born</b>	<b>Cuenca</b>
<b>Nationality</b>	<b>Spanish</b>
<b>Club</b>	<b>Atletismo Motilla</b>
<b>Sport</b>	<b>Track, Long-distance runner</b>
<b>Events</b>	<b>5000 metres, 10000 metres</b>
<b>Personal best</b>	<b>5.000 metres (13:57,25), 10.000 metres (29:28,17)</b>

Tabela 2 prikazuje osebne podatke Gabriela Navarra Lucasa.

Gabrielovi treningi so bili razvrščeni v naslednje tipe:

- Fartlek
- Trening z utežmi
- Kratki intervali
- Dolgi intervali
- Kratke tekalne razdalje
- Dolge tekalne razdalje
- Tek v klanec
- Koordinacija
- Trening fleksibilnosti
- Propriocepcija

Študija analizira dvaindevetdeset dni Gabrielovih treningov. Podatki so prikazani v obliki petih specifičnih delov tekalnega treninga:

- Tekalne razdalje
- Kratki intervali
- Dolgi intervali
- Tek v klanec

Analiza je strukturirana v štirinajst tednov in predstavlja količino (m), ki jo je Gabriel pretekel in intenzivnost (m/s), ki jo je dosegel med treningi.

### **5.5. Izračun podatkov**

Gabrielovi treningi so bili večinoma izvedeni zjutraj in zvečer. V povprečju je imel dva treninga na dan, vendar je tudi treniral do trikrat na dan.

Vsi podatki so bili osebno zabeleženi in izračunani z moje strani. Za prikaz podatkov nam je dal Gabriel popolno dovoljenje.

Zabeleženi podatki so razdeljeni v štirinajst tednov in pet tipov (A,B, C, D, E). Merilo smo:

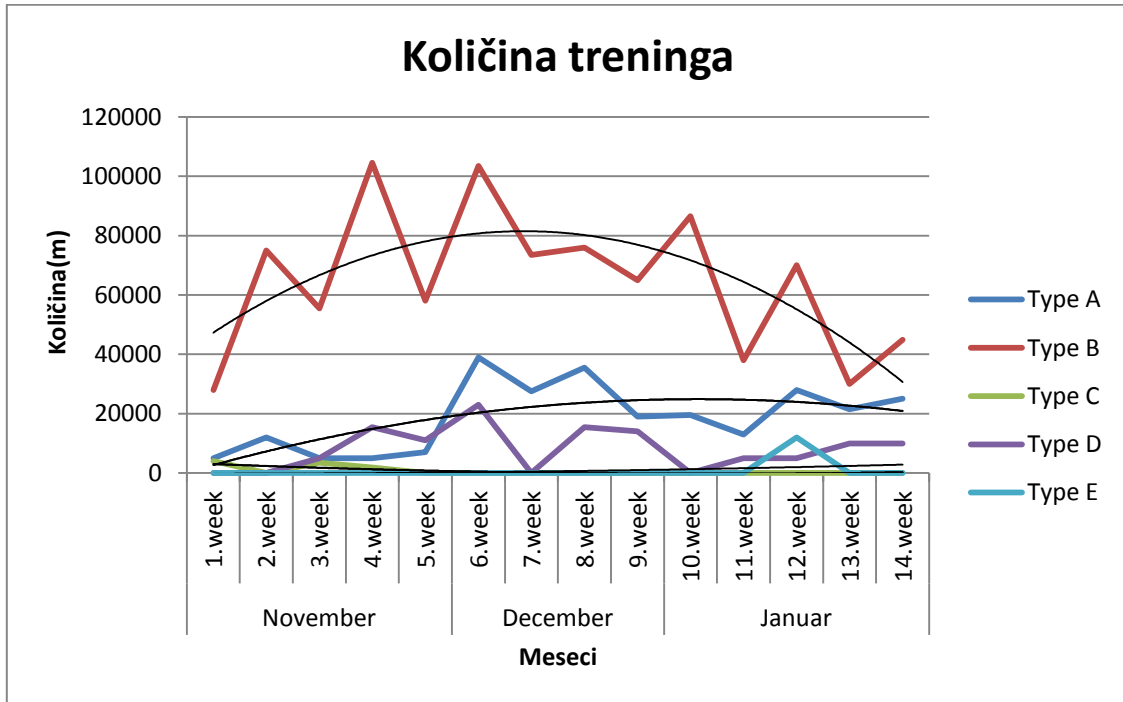
- Količino metrov (m), ki jih je pretekel
- Čas (s), ki ga je rabil za določeno nalogo
- Intenzivnost (m/s), ki jo je dosegel

Izračunali smo intenzivnost za vsak teden posebej, za pet različnih tipov. Za izračun teh podatkov smo pomnožili čas in količino za vsak tip posebej in jih delili z številom treningov na teden za vsak tip posebej.

## 5.6. Analiza

### Primerjava mesecev

#### Količina



Slika 6. Količina treninga

V sliki tri lahko vidimo primerjavo količine izraženo v metrih, ki jo je pretekel Gabriel v obdobju treh mesecev. Razberemo lahko, da poglobilni trening je bil tip B, kajti glavni sestavni del treninga so bile razdalje od sedmih do štirinajstih kilometrov.

Drugi poglobilni trening je bil tip A. To je trening, ki je bil zadolžen za ogrevanje pred tekom tipa B. To so bili teki od nič do sedem kilometrov in glavni namen je bil ogrevanje in pripravo za bolj kompleksen trening tipa B.

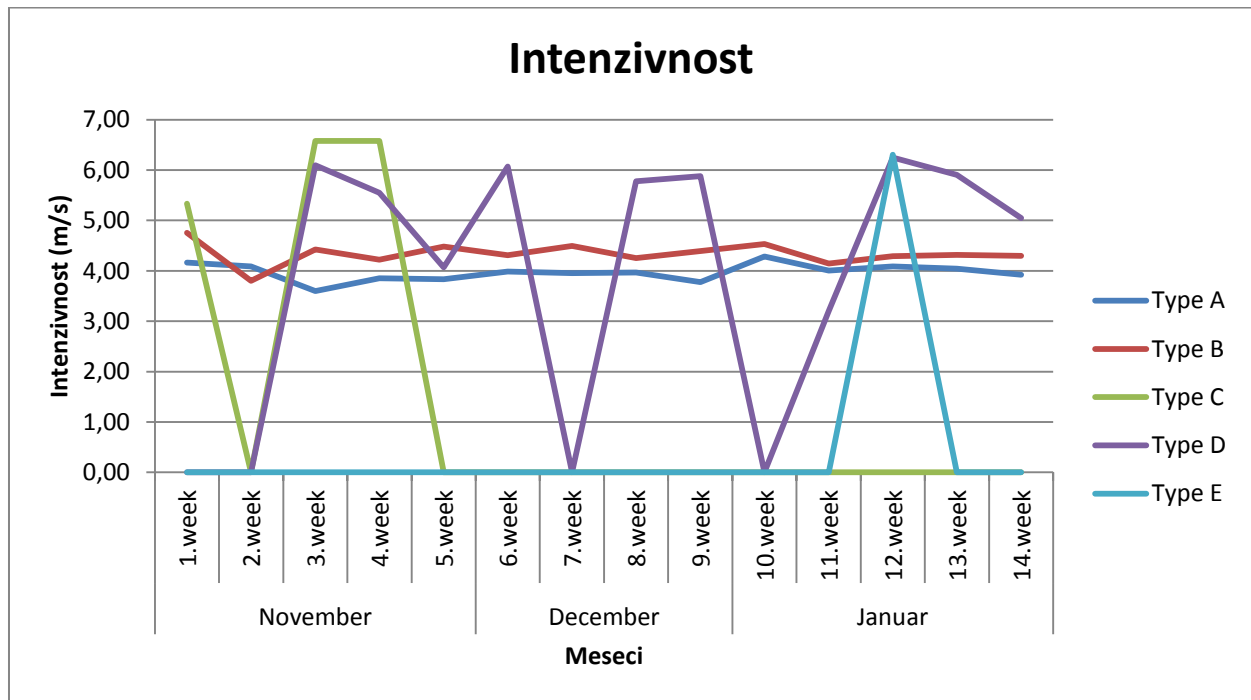
Naslednji poglobilni trening je bil tip D, to so bili dolgi intervali, ki so presegali štiristo metrov.

Pogojen s tipom D je bil tip C, ki predstavlja kratke intervale, kateri so bili le izvajani na začetku analize v mesecu novembru. S tipom C je Gabriel pripravil telo na večji napor, ki ga je čakal s dolgimi intervali, ki so se začeli v četrtem tednu analize.

Tek v klanec je bil prikazan kot tip E in se je začel v dvanajstem tednu in je bil opravljen samo v tem tednu naše raziskave.

Gabrielovi treningi so bili izvedeni zelo dobro, samo z izjemo enajstega tedna, ker je bil športnik bolan. S tem je rabil nekaj dni za počitek in za ponovno regeneracijo od bolezni. Treningi so bili pod nadzorom Bernarda Domingueza Lezcana zelo dobro izpeljani in dodelani.

## Intenzivnost



**Slika 7. Intenzivnost treninga**

V sliki 4 lahko razberemo primerjavo intenzivnosti (m/s) Gabrielovih treningov v obdobju treh mesecev.

Najvišja intenzivnost je bila dosežena s tipom C, kajti Gabriel je opravljal treninga kratki intervalov, kateri so izvajani z veliko hitrostjo in kratkimi razdaljami.

Druga najvišja intenzivnost je bila dosežena s tipom D. Dolgi intervali so bili najbolj izvajani treningi intervalov in so potekali vse tri mesece analize.

Tip E je predstavljen kot tek v klanec, katerega je atlet opravljal v zadnjem mesecu analize. Izvajan trening je bil zabeležen kot tretja največja intenzivnost atletovega treninga.

Četrto najvišjo intenzivnost je dosegel trening tipa B, kateri je imel konstantno intenzivnost preko tednov, kar pomeni, da so bili treningi strukturirani pravilno, kajti to je bil trening, ki je ga je najbolj izvajal.

Najnižjo intenzivnost je dosegel tip A in to je pogojeno s tipom B. To so bila predvsem ogrevanja, ki so bila izvajana pred treningom tipa B.

## 5.7. Sklep

Tek na 10,000 je tekaška disciplina, katera zahteva veliko aerobne vzdržljivosti, discipline, trdega dela in psihološke pripravljenosti.

Gabriel Navarro Lucas je eden najboljših atletov v svoji kategoriji v Evropi, kar zahteva od njega veliko mero žrtvovanja in discipline v njegovem življenju.

Diplomska naloga prikazuje podatke dvaindevetdeset dni Gabrielovih treningov. Naloga opisuje pet tipov treninga in izračune količine in intenzivnosti, ki jih je Gabriel dosegel.

V prvem delu smo opisali štiri poglobitve dele tekaškega treninga, ki ga je atlet izvajal. Nato smo te štiri glavne dele, razdelili v pet tipov in naredili izračun za količino in intenzivnost. Vsi podatki so bili prikazani v dveh grafih, kjer lahko zasledimo, kako so se treningi razlikovali v času štirinajstih tednov.

Gabrielova koncentracija in pripravljenost ni bila vedno na vrhuncu, posledica zdravstvenega stanja, ki tega ni dovoljevalo. Zdravstveni status je tudi pogojen s psihično pripravljenost, kaj smo lahko opazili v naši analizi kot padec količine in intenzivnosti.

Tip B je bil najbolj količinsko izvajan trening. Kot je razvidno iz podatkov, se je ta tip treninga povečeval do šestega tedna in zatem imel količinski padec. Največjo količino treninga je dosegel v mesecu novembru in na začetku decembra. Tip A se je povezal s tipom B, razen v mesecu Novembru, kjer je bil videti padec tipa A v primerjavi z ostalima dvema mesecema.

Tip A in B sta bila izvajana s konstantno intenzivnost vse tri mesece, razen padca v drugem in enajstem tednu. Največjo intenzivnost je bila dosežena v tretjem, četrtem in dvanajstem tednu, kot učinek kratkih intervalov in treningov v klanec.

Celotna analiza kaže, da je bil trening tipa B, najbolj izveden trening. Za ta tip je značilno, da se izvaja z veliko količino pretečenih kilometrov in z nižjo intenzivnostjo. Večjo intenzivnost treninga je le dosegel v začetku analize, potem se je pokazal padec v decembru in izvajanje le-tega v končnem delu analize.

Na koncu se lahko opredelimo, da količina in intenzivnost tipa B od prvega do četrtega tedna naraščala, s tem lahko razberemo, da se je vzdržljivost tekača povečevala. Drugi tipi treninga v tem obdobju so bili konstantni in nespremenljivi, razen tipa C, ki je bil izveden samo v tem obdobju. Od petega do sedmega tedna so se količinsko povečevali dolgi intervalni treningi in ohranjali visoko intenzivnost. V obdobju od devetega do štirinajstega tedna, se je zmanjšala količina treninga tipa B. Intenzivnost je ostala na enakem nivoju, kot v prejšnjem obdobju. Drugi tipi treninga so imeli podobno količino treninga, kot v prejšnjem obdobju, med tem, ko je intenzivnost rahlo padala. Predvidevamo, da je padec treninga, kot posledica tekmovalne sezone, ki jo je imel v nadaljevanju. To zniževanje je omogočilo pojav športne forme.

## 6. REFERENCES

- ARRS. (2015). Association of road racing statisticians. Retrieved from <http://more.arrs.net/runner/37608>
- Coe, P. in Martin, D. (1997). *Better training for distance runners* (112-351). Champaign: Human Kinetics
- Garcia, A. (2014). Entrevista a Gabriel Navarro Lucas, El Tigre, *Alejo Garcia*. Retrieved from <http://garcianaveira.blogspot.si/2014/07/entrevista-gabriel-navarro-lucas-el.html>
- IAAF. (2015). International Association of Athletics Federations. Retrieved from <http://www.iaaf.org/records/by-discipline/middlelong/10000-metres/outdoor/men>
- IAAF. (2015). International Association of Athletics Federations. Retrieved from <http://www.iaaf.org/records/by-discipline/middlelong/10000-metres/outdoor/women>
- Kirkendall, D. (2007). *The complete guide to soccer fitness and injury prevention*. North Carolina: The university of North Carolina
- Lawson, G. (1997). *World record breakers in track & field athletics* (112-115). Auckland: Human kinetics publishers
- Navarro, G., (2013). *Gabriel Navarro*. Retrieved from <http://gabrielnavarrolucas.com/>
- Newsholme, E., Leech, T., Duester G. (1994). *Keep on running* (p. 105-151). Chichester: John Wiley & Sons
- Noakes, T., (2002). *Lore of running*. Champaign: Human Kinetics
- RFEA. (2015). Real Federacion Española de Atletismo. Retrieved from [http://www.rfea.es/web/estadisticas/ficha\\_atleta.asp?cod\\_temporada=16&cod\\_persona=106859#.Vekj5\\_ntmko](http://www.rfea.es/web/estadisticas/ficha_atleta.asp?cod_temporada=16&cod_persona=106859#.Vekj5_ntmko)
- Strojnik, V., (2010). *Živčno mehanske osnove gibanj modul 2* (zapiski iz predavanj). Neobjavljeno delo. Fakulteta za šport, Univerza v Ljubljani, Ljubljana, Slovenija
- Temple, C. (1992). *Middle distance running* (p. 43-51). London: Mackays of Chatham PLC
- Ušaj, A. (2003). *Kratek pregled osnov športnega treniranja*. Ljubljana: Fakulteta za šport, Inštitut za šport.
- Ušaj, A. (2012). *Temelji športne vadbe*. Ljubljana: Fakulteta za šport, Inštitut za šport.

## 7. ATTACHMENTS

Priloga 1 Treningi Gabriel

Season 2013/2014 from August till end of December:

### **Starting of training:**

1 of august:

First week of august is start of working on different preparation techniques such as:

Cycling

Running

Swimming

Elliptical workout machine

This training was followed till the 9<sup>th</sup> of September, when we started with preparation period.

### **The trainings from 9-15 of September:**

#### **Monday:**

##### Morning session

Warm up

Flexibility

2km+10km+3km at heart rate 160/170 bits per minute

##### Afternoon session

2km warm up

50 minutes of elliptic workout en rhythm (5'+38'+7')

3km of releasing run

#### **Tuesday:**

##### Morning session

Warm up

Flexibility

2km+10km+3km at 160/170 bpm

Abdominals

Stretching

#### **Wednesday:**

##### Morning session

Warm up

Dynamical stretching

2km+10km+3km 160/170 bpm

Abdominals

Stretching



Afternoon session

Elliptical training 52min (5+40+7min)

3km relaxational run

Stretching

**Thursday**

Morning session

Warm up

Flexibility

3km+10km+3km 172bpm

Stretching

Afternoon session

Berni

**Friday**

Morning session

Warm up

3km+10km+3km 172bpm

Abdominals

Afternoon session

Elliptical training 50 min (5+38+7min)

3 km relaxational run

**Saturday**

Morning session

Warm up

Dynamical stretching

16km (3+10+3) 172 bpm

Afternoon session

2series x 10 repetitions x 350m time: 1,08 - 1,10 min

2000m (time: 6,45-6,55 min)

**Sunday**

Running 20km at 165-175 bpm

**The trainings from 16-22 of September:**

**Monday:**

Morning session

Warm up

Dynamical stretching

3km+10km+3km at heart rate 172 bits per minute

Abdominals

Afternoon session

Elliptical training 50min (6+40+9)

3km of realising run

**Tuesday:**

Morning session

Warm up

Flexibility

3km+10km+3km at 179bpm

Abdominals

Stretching

**Wednesday:**

Morning session

Warm up

Dynamical stretching

3km+10km+3km at 172 bpm

Abdominals

Stretching

Afternoon session

Elliptical training 55 min (6+40+9min)

3km relaxational run

Stretching

**Thursday**

Morning session

Warm up

Dynamical stretching

3km+10km+3km 172bpm

Abdominals

Stretching

Afternoon session

Berni

**Friday**

Morning session

Warm up

Flexibility

3km+10km+3km at 172bpm

Abdominals

Stretching

Afternoon session

Elliptical training 52 min (5+40+7min)

3 km relaxational run

### **Saturday**

Hill running

20 min warm up run 170bpm

Flexibility

4x 125m progressive run

7 repetitions of 400-500m run up the hill and 300-400 lower uphill

Uphill 180bpm and down the hill 150 bpm

### **Sunday**

Warm up

Flexibility

Abdominals

Running 22km 170bpm

Stretching

### **The trainings from 23-29 of September:**

#### **Monday:**

Medical examination

10km

Running technique

6x100m

#### **Tuesday:**

16 km (1km at 3,35min)

5km (1km at 3,24min)

#### **Wednesday:**

Resting day

#### **Thursday**

13km (1km at 3,35)

10km (3,30min, 152 bpm)

#### **Friday**

13km (7km at 3,14 + 6km at 3,30)

Running technique

**Saturday**

13km+14km= 27km (3,41min)

Abdominales

Workout for hamstring, biceps, triceps

**Sunday**

Warm up

Running 20km 170bpm

Stretching

**The trainings from 30-6 of October:****Monday:**Morning session

2km warming up (8,38 min)

6km (24,10min)

4km (7,41min and 7,33 min)

2km relaxational run

Afternoon session

3km

1x 300m 40s

1x500m 1,10min

2km

Stretching

Recuperation 10-12min

**Tuesday:**Morning session

2 km (9,39 min) + 8 km(29,04 min) + 1 km

Afternoon session

6 km (20min)

Workout

Running technique

2 km relaxing run

**Wednesday:**

Warm up 3 km

Flexibility

Running technique

3 progressive runs

5x 300 (45-46s) recuperation 1,40s

2 km (9-10 min)  
7x 200 (28s) recuperation 1,20s

#### **Thursday**

##### Morning session

Warm up 500m  
Workout  
Upper part  
Body  
Lower part  
7km (3,20min)  
2km (3,45min)  
10 minut walk in the sand

##### Afternoon session

Running 1 km  
6 km slow  
1km fast (2,51min)  
Workout

#### **Friday**

10km  
Abdominals  
Stretching

#### **Saturday**

Warm up  
Joint mobility  
4 progressive runs  
5km 15,06 min  
Relaxational run 15min  
Stretch

#### **Sunday**

Massage

#### **The trainings from 7-13 of October:**

##### **Monday:**

1km run  
Warm up  
Mobility for joints  
4 progressions  
2x500m+2x1000m+1x1.500m+1x2000m= 6500m  
90% of maximum possibilities

1.000m (2,46-2,48min)  
2.000m (5,34min)  
3km relaxation run  
Stretching

**Tuesday:**

Morning session

Warm up 1km  
6km (151bpm)  
Relaxational run 1km

Afternoon session

3 km  
Stretching  
Work out  
2 km relaxing run

**Wednesday:**

Morning session

1km warm up  
7km (3,5km=151 bpm + 3,5km=165bpm)  
3km 151 bpm

Afternoon session

3km warm up  
Abdominals  
Proprioception 35min  
Velocity training  
Stretch

**Thursday**

Morning session

1km warm up  
5,5km (160bpm)  
1,5km (151 bpm)

Afternoon session

Work out

**Friday**

Morning session

1km warm up  
7km 156 bpm  
2km 151 bpm

Afternoon session

3km warm up

Joint mobility

Stretching

2x 350 m Intensity 65-67s

2km 6,20min-6-25s

**Saturday**

Morning session

Warm up

Joint mobility

6km (151 bpm)

Relaxational run 1km

Stretch

Afternoon session

3km warm up

Stretch

4 progressions

Hill running

7 runs up the hill

Relaxational run 3km

Stretching 20-25min

**Sunday**

2 hours of bicycle

30 min of stretching

**The trainings from 14-20 of October:**

**Monday:**

Warm up 1km 4-5min

7km 28-30min

2km 10min

Dynamical stretching

Afternoon session

Warm up 2 km 151 bpm

Joint mobility

Stretching

4 progressions 100m

3x (250 slowly+250 progressive)

2x (50m sprint+ 100m slowly+ 75 sprint+ 150 slowly+ 100 sprint+ 200 slowly  
400m progressive+ 300m slowly+ 600m fast+ 400m slowly+ 800m fast+ 500 slowly  
2x (300 fast+ 200 slowly+ 400 fast+ 300 slowly+ 500 strong+ 300 slowly  
Relaxational run 3km  
Stretching

**Tuesday:**

Morning session

Run:

5 min 151 bpm

22 min 165 bpm

10 min 151 bpm

Stretching

Afternoon session

15km 160bpm

Flexibility

Running technique

20 min relaxational run

**Wednesday:**

Morning session

5 min 151 bpm

22 min 165 bpm

10 min 151 bpm

Stretching

Afternoon session

10min

Joint mobility

Dynamical stretching

Continuous running 35 min

**Thursday**

Morning session

5 min 151 bpm

22 min 165 bpm

10 min 151 bpm

Stretching

Afternoon session

15km warm up

Flexibility

Running technique

20 min relaxational run



## **Friday**

### Morning session

5 min 151 bpm

25 min 165 bpm

10 min 151 bpm

Stretching

### Afternoon session

2x7x350m (T:1,05 I: 25m)

## **Saturday**

Warm up 3km

Joint mobility

Dynamical stretching

4 progressions 100-130m

Series:

1x500m T: 1,20-1,25 min

1x1000m T: 2,50-3 min

1x 1500m T:4,23-4,38 min

1x 2000m T: 5,45-6 min

1x500m T: 1,15-1,20 min

## **Sunday**

1 hour of bicycle

30 min of stretching

### **The trainings from 21-27 of October:**

The trainings from 21-27 of October were not possible carried out, because of the athlete sickness.

### **The trainings from 28 of October to 3 of November:**

#### **Monday:**

15km sensational run

2km run at 151 bpm

Work out

Abdominals

Push-ups

Triceps part

**Tuesday:**

Morning session:

1km (4,30-5min)

6km (3,30-3,40)

2km (3,50-3,55)

Afternoon session:

15km 165 bpm

5km 151 bpm

Stretching

**Wednesday:**

Warm up 1km

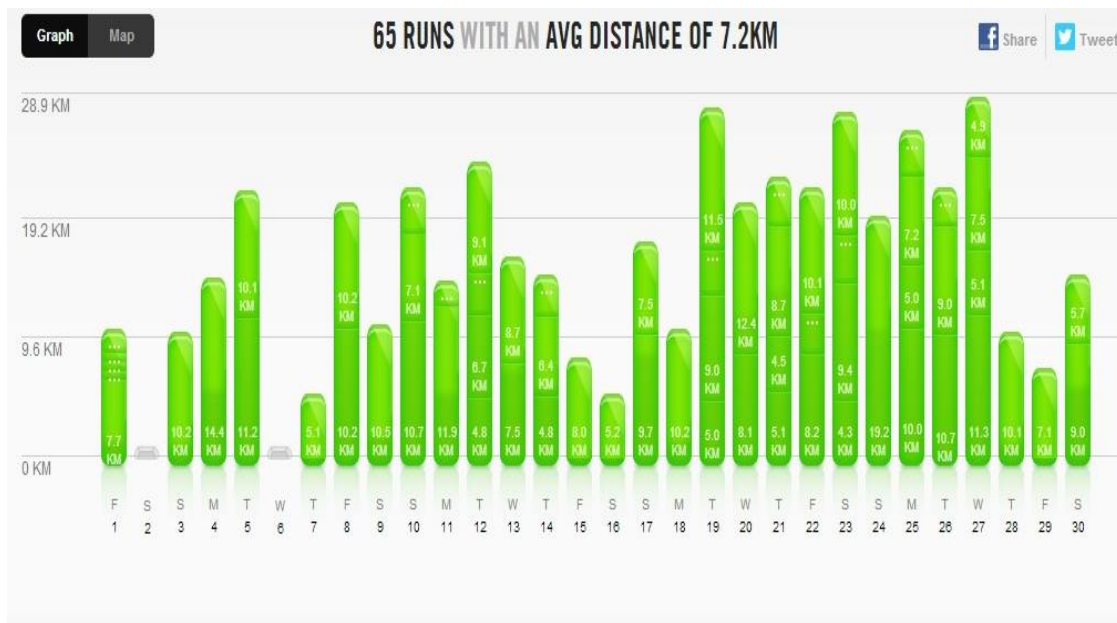
10km 151 bpm

**Thursday**

Warm up

8km+8km 165 bpm

**Month November**



Month November

Total distance: 437,94 km

Total time running: 31:13:42

Average pace: 3,57 min/km

Total Calories burned: 30,739 CAL

**Friday**

Morning session

Warm up 1km  
8 km (3,33min)

Afternoon session

Warm up 2km  
Flexibility  
4 progressions  
2x10x200m (above 159 bpm)  
Stretching

**Saturday**

Morning session

10km run  
Stretching

Afternoon session

5 km run  
Stretching  
20min run technique  
35 min elliptical training  
Stretch

**Sunday**

10km run:

Time: 36,26 min  
Average pace: 3,34/km  
Calories: 666 CAL  
Stretching

**The trainings from 4-10 of November:**

**Monday:**

Warm up 1km  
14 km run:  
Time: 53:05 min  
Average pace: 3,40/km  
Calories: 934 CAL  
8x100m max, recuperation 1,30min

**Tuesday:**

Morning session

Warm up 1km  
11 km run:  
Time: 42:29 min  
Average pace: 3,57/km

Calories: 732 CAL

Afternoon session

Warm up

10km run:

Time: 35:38 min

Average pace: 3,30/km

Calories: 664 CAL

Stretching

**Wednesday:**

Resting day

**Thursday**

Warm up

5km run

Work out (abdominals)

Stretching

**Friday**

Morning session

Warm up 1km

10km run:

Time: 34:54 min

Average pace: 3,25/km

Calories: 665 CAL

Afternoon session

Warm up 1km

10km run:

Time: 35:42 min

Average pace: 3,29/km

Calories: 669 CAL

Stretching

**Saturday**

10km run:

Time: 41:57 min

Average pace: 3,58/km

Calories: 690 CAL

Stretching

## **Sunday**

### Morning session

#### 10km run:

Time: 39,53 min

Average pace: 3,42/km

Calories: 702 CAL

Stretching

### Afternoon session

Warm up 1km run

7km run

Time: 29,04 min

Average pace: 4,04/km

Calories: 466 CAL

8x400m running up the hill (above 159 bpm)

## **The trainings from 11-17 of November:**

### **Monday:**

Warm up 1km

12 km run:

Time: 42:30 min

Average pace: 3,33/km

Calories: 780 CAL

### **Tuesday:**

#### Morning session

Warm up

2x5x500m

1.) 80,83 s 2.) 84,37s 3.) 84,31s 4.) 83,99 5.)84,17s 6.)84,00s 7.)82,05s 8.)82,67 9.)82,44s  
10.)78,67

#### Afternoon session

9km run:

Time: 35:51 min

Average pace: 3,55/km

Calories: 596 CAL

### **Wednesday:**

#### Morning session

7,5 km:

Time: 32:59 min

Average pace: 4,23/km

Calories: 491 CAL

Afternoon session

9km

Time: 34:04 min

Average pace: 3,54/km

Calories: 570 CAL

Abdominals

Work out for Quadriceps, Tibial, Gluteus, Aductors

Technique with the belt

5 progressions 100m

**Thursday**

Warm up 20min slow run

Workout with the running belt

Stretch 20min

3 progressions

2x7x250m

1<sup>st</sup> run: 38 s

2<sup>nd</sup> run: 39s

3<sup>rd</sup> and 4<sup>th</sup> run: 38s

5<sup>th</sup> and 6<sup>th</sup> run: 37s

7<sup>th</sup> run: 36s

**Friday**

8km run:

Time: 34:15 min

Average pace: 4,14/km

Calories: 527 CAL

Stretch 15min

Running technique 10- 15 min

2 progressions

**Saturday**

5km run:

Time: 23,10 min

Average pace: 4,25/km

Calories: 342 CAL

Stretching

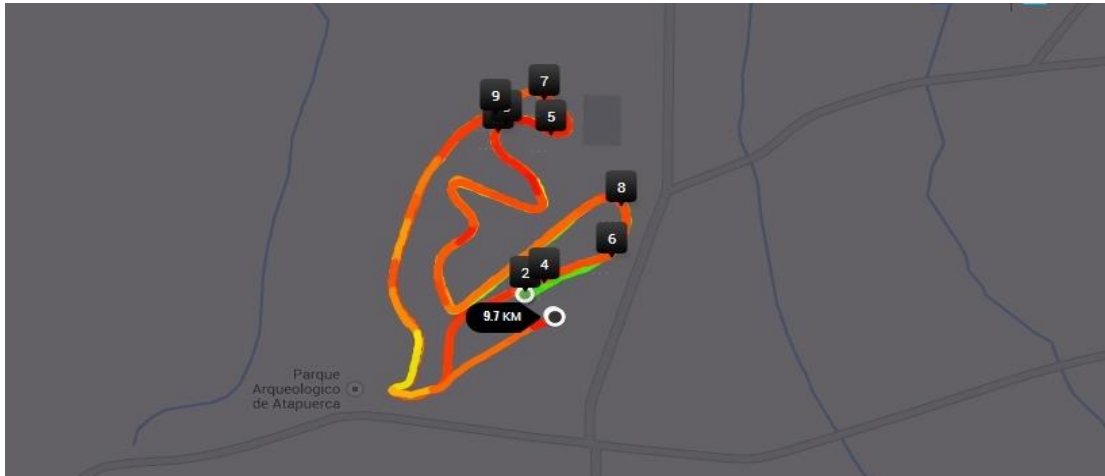
## Sunday

10km Cross Atapuerca (1<sup>st</sup> Competition)

34rd place overall:

Time: 29,51min

Average pace: 3,03/km



## The trainings from 18-24 of November:

### Monday:

Warm up 1km

10 km run:

Time: 41:56 min

Average pace: 4,04/km

Calories: 672 CAL

Abdominals

**Tuesday:**Morning session

Warm up

5x500m at 1,20min

16km 3,60/km

Afternoon session

11,5 km run:

Time: 45:42 min

Average pace: 3,57/km

Calories: 754 CAL

**Wednesday:**Morning session

8 km:

Time: 29:57 min

Average pace: 3:41/km

Calories: 531 CAL

Workout

4x100 max

Stretch

Afternoon session

12km

Time: 50:12 min

Average pace: 4,03/km

Calories: 809 CAL

350 abdominals

Stretch

**Thursday**Morning session

5,1 km:

Time: 21:37 min

Average pace: 4,13/km

Calories: 328 CAL



Afternoon session

Warm up

4x1250m

1<sup>st</sup>:3,34

2<sup>nd</sup>:3,35

3<sup>rd</sup>: 3,34

4<sup>th</sup>:3,32

5x375m

1<sup>st</sup>: 58s

2<sup>nd</sup>: 59s

3<sup>rd</sup>: 57s

4<sup>th</sup>: 57s

5<sup>th</sup>:55s

**Friday**

Morning session:

8km run:

Time: 29,35 min

Average pace: 3,36/km

Calories: 527 CAL

Technique with cardboard

Stretch 15min

Afternoon session:

10km

Time: 38,54 min

Average pace: 3,56/km

Calories: 654 CAL

**Saturday**

Morning session:

Warm up

Series:

2.000m 5,55min

2.000m 5,58min

2.000m 5,53min

2.000m 5,49min

Stretching

Afternoon session:

10km

Time: 42,18 min

Average pace: 4,41/km

Calories: 648 CAL

**Sunday**

19km

Time: 1h 11min

Average pace: 3,41/km

Calories: 1239 CAL

**The trainings from 25<sup>th</sup> of November till 1<sup>st</sup> of December:**

**Monday:**

Morning session

10km run

Time: 41:21 min

Average pace: 4,07/km

Calories: 644 CAL

Stretch

Afternoon session

Warm up

2x5x500m

Rhythm:

1.) 1,21min 2.) 1,22min 3.) 1,22min 4.)1,21min 5.) 1,20min 6.)1,21min 7.)1,20min 8.) 1,20min  
9.)1,20min 10.)1,16 min

**Tuesday:**

Morning session

Warm up

10km

Time:41,57 min

Average pace: 3,55/km

Calories: 689 CAL

Afternoon session

9 km run:

Time: 32:47 min

Average pace: 3,37/km

Calories: 582 CAL

Workout

Running technique

### Wednesday:

Warm up

Series

6x1000m

1.) 2,51min 2.) 2,48 min 3.) 2,47min 4.) 2,48min 5.)2,48 6.) 2,43min

### Thursday

Morning session

10 km:

Time: 43:00 min

Average pace: 4,14/km

Calories: 652 CAL

### Friday

Run before the Cross in Aranda de Duero

7km

Time: 30:26min

Average pace: 4,17/km

Calories: 456 CAL

200 abdominals

Stretch

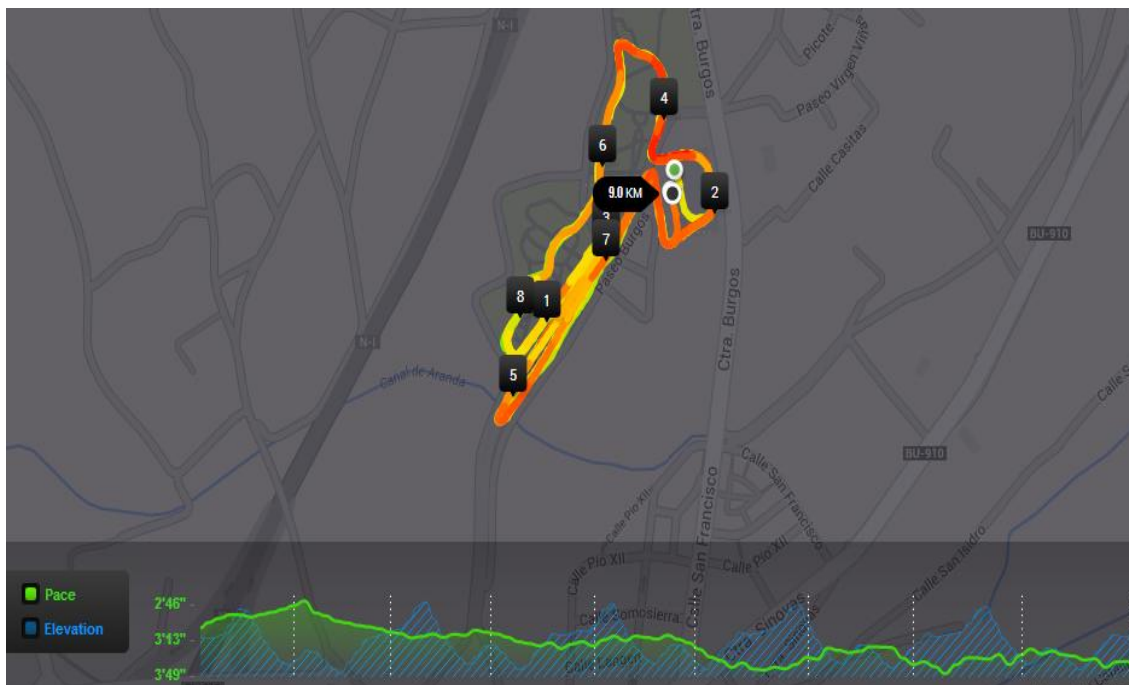
### Saturday

10km Cross Aranda de Duero (Burgos) (2<sup>nd</sup> Competition)

5<sup>th</sup> place overall:

Time: 29,20 min

Average pace: 3,15/km



## Sunday

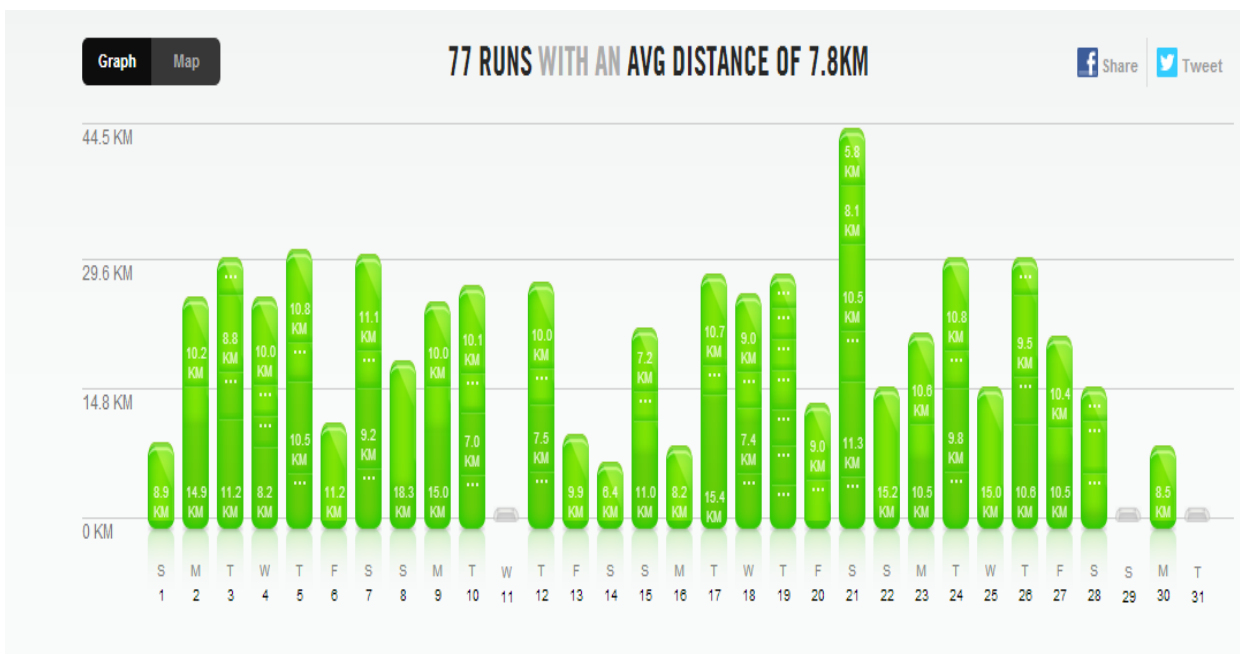
9km

Time: 34:15min

Average pace: 3,50/km

Calories: 575 CAL

## Month December



## Month December

Total distance: 600,60 km

Total time running: 40:25:21

Average pace: 4,02/km

Total Calories burned: 38,522 CAL

## The trainings from 2<sup>nd</sup> till 8<sup>th</sup> of December:

### Monday:

#### Morning session

14km run

Time: 55:49 min

Average pace: 3,44/km

Calories: 962 CAL

Flexibility  
Running technique  
8x100 progressive  
Stretch

Afternoon session

10km run  
Time: 38:50 min  
Average pace: 3,48/km  
Calories: 656 CAL  
Workout  
Stretch

**Tuesday:**

Morning session

Warm up  
11km  
Time:43,07 min  
Average pace: 3,50/km  
Calories: 723 CAL  
Flexibility  
Stability in the sand

Afternoon session

5 km run:  
Time: 20:00 min  
Average pace: 3,47/km  
Calories: 344 CAL  
6x750m (2min) 1,30min recuperation  
6x500m (1min) 1min recuperation  
4,5 km run  
Time: 19:52 min  
Average pace: 4,27/km  
Calories: 287 CAL

**Wednesday:**

Morning session

8 km run  
Time: 28:24 min  
Average pace: 3,27/km  
Calories: 527 CAL  
Work out 30 min  
3 km run  
Time: 17:00 min

Average pace: 4,48/km

Calories: 227 CAL

3 km run

Time: 11:53 min

Average pace: 3:34/km

Calories: 216 CAL

#### Afternoon session

10 km run

Time: 37:01 min

Average pace: 3:44/km

Calories: 646 CAL

8 uphill runs (above 159bpm)

Stretch

### **Thursday**

#### Morning session

5 km:

Time: 20:54 min

Average pace: 3,59/km

Calories: 336 CAL

10,5 km:

Time: 44:54 min

Average pace: 4,17/km

Calories: 674 CAL

4 km:

Time: 15:18 min

Average pace: 3,40/km

Calories: 268 CAL

#### Afternoon session

6km run

5x1000 2min recuperation between repetitions

5min recuperation

5x500m 2min recuperation between repetitions

Stretch

**Friday**

11km run

Time: 43:42 min

Average pace: 3,53/km

Calories: 722 CAL

Running technique

8x100m

Stretching

**Saturday**

5 km run

Time: 24:36 min

Average pace: 4,20/km

Calories: 364 CAL

4x2000m, pace 2,50/km, recuperation 3 min

4km run

Time: 15:18 min

Average pace: 3,33/km

Calories: 277 CAL

**Afternoon session**

11km slow run

Time: 43:56 min

Average pace: 3,57/km

Calories: 715 CAL

**Sunday:**

18km run

Time: 1h 6 min

Average pace: 3,38/km

Calories: 1,117 CAL

**The trainings from 9<sup>th</sup> till 15<sup>th</sup> of December:**

**Monday:**

Morning session

15km run

Time: 56:12 min

Average pace: 3,44/km

Calories: 966 CAL

Sand stretching

Afternoon session

10km run

Time: 37:23 min

Average pace: 3,43/km

Calories: 645 CAL

Workout

running technique with the 3kg belt

8x100m

Stretch

**Tuesday:**

Morning session

Warm up

5km

Time:21,49 min

Average pace: 4,18/km

Calories: 326 CAL

7km

Time:31,38 min

Average pace: 4,31/km

Calories: 449 CAL

Stretching

Afternoon session

10 km run:

Time: 39,41min

Average pace: 3,55/km

Calories: 650 CAL

Stretching



**Wednesday:**

Resting day

**Thursday**Morning session

5 km

Time: 21:57 min

Average pace: 4,10/km

Calories: 338 CAL

7,5 km:

Time: 30:09 min

Average pace: 4,01/km

Calories: 481 CAL

4 km:

Time: 16:18 min

Average pace: 3,57/km

Calories: 264 CAL

Afternoon session

10 km run:

Time: 39,14min

Average pace: 3,54/km

Calories: 645 CAL

Stretching

**Friday**

Warm up

10 km run

Time: 37,17 min

Average pace: 3,44/km

Calories: 642 CAL

Stretching

**Saturday**

Warm up

6,5 km run

Time: 26:13 min

Average pace: 4,02/km

Calories: 417 CAL

**Sunday:**

Carrera de Palencia

11km

Time: 33:50

Average pace: 3,04/km

Calories: 708 CAL

**The trainings from 16<sup>th</sup> till 22<sup>th</sup> of December:****Monday:**Morning session

8 km run

Time: 29,33 min

Average pace: 3,35/km

Calories: 529 CAL

**Tuesday:**Morning session

Warm up

15km

Time:59:04 min

Average pace: 3,56/km

Calories: 994 CAL

Afternoon session

Warm up

2x100, 2x400

10 km run:

Time: 37,41min

Average pace: 3,26/km

Calories: 693 CAL

Stretching

**Wednesday:**

5 km run:

Time: 22,40min

Average pace: 4,28/km

Calories: 326 CAL

6x500 6x400 recuperation 1,15 min

Average pace: 4,00/km

4km run:

Time: 16,05

Average pace: 4,00/km

Calories: 266 CAL

**Afternoon session**

9 km

Time: 36,32 min

Average pace: 4,03/km

Calories: 581 CAL

**Thursday****Morning session**

5 km

Time: 21:05 min

Average pace: 4,06/km

Calories: 330 CAL

5km

Time: 20:19 min

Average pace: 3,56/km

Calories: 331 CAL

**Afternoon session**

3 series of 8x500, 8x500,

8x500 (250m slow, 250m average pace 1,00/km)

Recuperation 3-4 min

4 km run

Time: 17,39 min

Average pace: 4,22/km

Calories: 260 CAL

## **Friday**

### Morning session

4,5 km run

Time: 18,57 min

Average pace: 4,12/km

Calories: 290 CAL

Stretching

### Afternoon session

9 km run

Time: 37,51 min

Average pace: 4,12/km

Calories: 587 CAL

## **Saturday**

### Morning session

4km run

Time: 17:28 min

Average pace: 4,22/km

Calories: 272 CAL

5x2000 recuperation 3min

Average pace 3,00/km

4km run

Time: 16:14 min

Average pace: 3,57/km

Calories: 281 CAL

### Afternoon session

10 km run

Time: 38,38 min

Average pace: 3,51/km

Calories: 676 CAL

## **Sunday:**

15 km run

Time: 1:00:06 min

Average pace: 4,00/km

Calories: 981 CAL

**The trainings from 23<sup>th</sup> till 31<sup>th</sup> of December:**

**Monday:**

Morning session

10 km run

Time: 37,29 min

Average pace: 3,44/km

Calories: 680 CAL

Afternoon session

10 km run

Time: 36,58 min

Average pace: 3,42/km

Calories: 682 CAL

**Tuesday:**

Morning session

5 km run

Time: 22,05 min

Average pace: 4,25/km

Calories: 337 CAL

8x1000m 2 min recuperation

Average pace 2,50 to 2,55/km

**Wednesday:**

Morning session

15 km

Time: 57:30 min

Average pace: 3,49/km

Calories: 969 CAL

**Thursday**

Morning session

10 km

Time: 40,13 min

Average pace: 3,48/km

Calories: 681 CAL

Afternoon session

5 km run

Time: 22,58 min

Average pace: 4,13/km

Calories: 349 CAL

6x2' recuperation 1,30min?

5min rest

8x1' recuperation 1 min?

4 km run

Time: 18,41 min

Average pace: 4,28/km

Calories: 268 CAL

**Friday**

Morning session

10 km run

Time: 37,36 min

Average pace: 3,39/km

Calories: 678 CAL

Stretching

Afternoon session

10 km run

Time: 37,16 min

Average pace: 3,38/km

Calories: 671 CAL

Abdominals

Running technique

**Saturday**

Afternoon session

5km run

Time: 20:48 min

Average pace: 4,10/km

Calories: 322 CAL

4x1500m recuperation 2min

Average pace 2,50/km

4km run

Time: 16:00 min

Average pace: 3,55/km

Calories: 265 CAL

**Sunday:**

Resting day

**Monday:**

Morning session

8 km run

Time: 30,56 min

Average pace: 3,52/km

Calories: 548 CAL

**Tuesday, 31.12.2013:**

**San Silvestre Run Madrid Nike international**

**9<sup>th</sup> place with result on 10km with 29:29 min**

**5km: 0:14:24**

**10km: 0:29:29**

**02:56: average pace**



## ANALYSIS

### Month November

Date	Number	Type	Training	Quantity (m)	Time (s)	Intensity (m/s)
1.11.2013	1	B	Run 8km	8000	1620	4,94
1.11.2013	2	C	Series (2x10x200)	4000	750	5,33
2.11.2013	3	B	Run 10km	10000	2100	4,76
2.11.2013	4	A	Run 5 km	5000	1200	4,17
3.11.2013	5	B	Run 10km	10000	2186	4,57
4.11.2013	6	B	Run 14km	14000	3815	3,67
5.11.2013	7	B	Run 11km	11000	2550	4,31
5.11.2013	8	B	Run 10km	10000	2138	4,68
6.11.2013	9	O	Resting day	0	0	0
7.11.2013	10	A	Run 5km	5000	1200	4,17
8.11.2013	12	B	Run 10km	10000	2093	4,78
8.11.2013	13	B	Run 10km	10000	2142	4,67
9.11.2013	14	B	Run 10km	10000	2510	3,98
10.11.2013	15	B	Run 10km	10000	2390	4,18
10.11.2013	16	A	Run 7km	7000	1744	4,01
11.11.2013	17	B	Run 12km	12000	2550	4,71
12.11.2013	18	D	Series 2x5x500m	5000	820	6,10
12.11.2013	19	B	Run 9km	9000	2151	4,18
13.11.2013	20	B	Run 7,5km	7500	1980	3,79
13.11.2013	21	B	Run 9km	9000	2044	4,40
14.11.2013	22	C	Series 2x7x250m	3500	532	6,58
15.11.2013	23	B	Run 8km	8000	2055	3,89
16.11.2013	24	A	Run 5km	5000	1390	3,60
17.11.2013	25	B	Competition	10000	1790	5,59
18.11.2013	26	B	Run 10km	10000	2510	3,98
19.11.2013	27	D	Series 5x500m	2500	400	6,25
19.11.2013	28	B	Run 16km	16000	3840	4,17
19.11.2013	29	B	Run 11,5	11500	2742	4,19
20.11.2013	30	B	Run 8km	8000	1797	4,45
20.11.2013	31	B	Run 12km	12000	3012	3,98
21.11.2013	32	A	Run 5km	5000	1297	3,86
21.11.2013	33	D	Series 4x1250	5000	1040	4,81
21.11.2013	34	C	Series 5x375	1875	285	6,58
22.11.2013	35	B	Run 8km	8000	1775	4,51
22.11.2013	36	B	Run 10km	10000	2330	4,29
23.11.2013	37	D	Series 4x2000m	8000	1432	5,59
23.11.2013	38	B	Run 10km	10000	2538	3,94
24.11.2013	39	B	Run 19km	19000	4260	4,46
25.11.2013	40	B	Run 10km	10000	2480	4,03
25.11.2013	41	D	Series 2x5x500m	5000	800	6,25
26.11.2013	42	B	Run 10km	10000	2310	4,33
26.11.2013	43	B	Run 9km	9000	1967	4,58
27.11.2013	44	D	Series 6x1000	6000	1008	5,95
28.11.2013	45	B	Run 10km	10000	2580	3,88
29.11.2013	46	A	Run 7km	7000	1826	3,83
30.11.2013	47	B	Run 10km	10000	1760	5,68



## Month December

Date	Number	Type	Training	Quantity (m)	Time (s)	Intensity (m/s)
1.12.2013	48	B	Run 9km	9000	2055	4,38
2.12.2013	49	B	Run 14km	14000	3350	4,18
2.12.2013	50	B	Run 10km	10000	2330	4,29
3.12.2013	51	B	Run 11km	11000	2587	4,25
3.12.2013	52	A	Run 5km	5000	1200	4,17
3.12.2013	53	D	Series 6x750m, 6x500m	7500	1300	5,77
3.12.2013	54	A	Run 5km	5000	1192	4,19
4.12.2013	55	B	Run 8km	8000	1700	4,71
4.12.2013	56	A	Run 2x3km	6000	1740	3,45
4.12.2013	57	B	Run 10km	10000	2221	4,50
5.12.2013	58	A	Run 5km	5000	1254	3,99
5.12.2013	59	B	Run 10,5km	10500	2730	3,85
5.12.2013	60	A	Run 4km	4000	918	4,36
5.12.2013	61	A	5km run	5000	1260	3,97
5.12.2013	62	D	Series 5x1000, 5x500	7500	1300	5,77
6.12.2013	63	B	Run 11km	11000	2616	4,20
7.12.2013	64	A	Run 5km	5000	1476	3,39
7.12.2013	65	D	Series 4x2000	8000	1200	6,67
7.12.2013	66	A	Run 4km	4000	918	4,36
7.12.2013	67	B	Run 11km	11000	2590	4,25
8.12.2013	68	B	Run 18km	18000	3960	4,55
9.12.2013	69	B	Run 15km	15000	3372	4,45
9.12.2013	70	B	Run 10km	10000	2243	4,46
10.12.2013	71	A	Run 5km	5000	1260	3,97
10.12.2013	72	A	Run 7km	7000	1890	3,70
10.12.2013	73	B	Run 10km	10000	2360	4,24
11.12.2013	74	0	Resting day	0	0	0
12.12.2013	75	A	Run 5km	5000	1300	3,85
12.12.2013	76	B	Run 7,5km	7500	1800	4,17
12.12.2013	77	A	Run 4km	4000	978	4,09
12.12.2013	78	B	Run 10km	10000	2350	4,26
13.12.2013	79	B	Run 10km	10000	2237	4,47
14.12.2013	80	A	Run 6,5km	6500	1560	4,17
15.12.2013	81	B	Competition 11km	11000	2030	5,42
16.12.2013	82	B	Run 8km	8000	1777	4,50
17.12.2013	83	B	Run 15km	15000	3540	4,24
17.12.2013	84	B	Run 10km	10000	2261	4,42
18.12.2013	85	A	5km run	5000	1360	3,68
18.12.2013	86	D	Series 6x500, 6x400	5400	900	6,00
18.12.2013	87	A	Run 4km	4000	960	4,17
18.12.2013	88	B	Run 9km	9000	2160	4,17
19.12.2013	89	A	Run 2x5km	10000	2370	4,22
—19.12.2013	90	A	Run 4km	4000	1060	3,77
20.12.2013	91	A	Run 4,5km	4500	1140	3,95
20.12.2013	92	B	Run 9km	9000	2275	3,96
21.12.2013	93	A	Run 4km	4000	1048	3,82
21.12.2013	94	D	Series 5x2000	10000	1800	5,56
21.12.2013	95	A	Run 4km	4000	960	4,17
21.12.2013	96	B	Run 10km	10000	2300	4,35
22.12.2013	97	B	Run 15km	15000	3606	4,16
23.12.2013	98	B	Run 10km	10000	2249	4,45
23.12.2013	99	B	Run 10km	10000	2210	4,52
24.12.2013	100	A	Run 5km	5000	1325	3,77
24.12.2013	101	D	Series 8x1000	8000	1360	5,88
25.12.2013	102	B	Run 15km	15000	3450	4,35
26.12.2013	103	B	Run 10km	10000	2413	4,14
26.12.2013	104	A	Run 5km	5000	1378	3,63

26.12.2013	105	A	Run 4km	4000	1080	3,70
27.12.2013	106	B	Run 10km	10000	2256	4,43
27.12.2013	107	B	Run 10km	10000	2236	4,47
28.12.2013	108	A	Run 5km	5000	1248	4,01
28.12.2013	109	D	4x1500	6000	1020	5,88
29.12.2013	110	0	Resting day	0	0	0
30.12.2013	111	B	Run 8km	8000	1856	4,31
31.12.2013	112	B	Competition 10km	10000	1769	5,65

## Month January

Date	Number	Type	Training	Quantity (m)	Time (s)	Intensity (m/s)
1.1.2014	113	B	Run 21km	21000	4980	4,22
2.1.2014	114	B	Run 15,5km	15500	3660	4,23
2.1.2014	115	A	Run 6,5km	6500	1740	3,74
3.1.2014	116	0	Resting day			
4.1.2014	117	A	Run 5km	5000	1500	3,33
4.1.2014	118	A	Run 4km	4000	780	5,13
4.1.2014	119	A	Run 4km	4000	810	4,94
4.1.2014	120	B	Run 10km	10000	2330	4,29
5.1.2014	121	B	Run 10km	10000	2160	4,63
5.1.2014	122	B	Run 12km	12000	2720	4,41
6.1.2014	123	A	Run 5km	5000	1368	3,65
6.1.2014	124	B	Run 10km	10000	2460	4,07
6.1.2014	125	A	Run 3km	3000	682	4,40
6.1.2014	126	B	Run 10km	10000	2500	4,00
7.1.2014	127	0	Sickness	0	0	0
8.1.2014	128	0	Sickness	0	0	0
9.1.2014	129	0	Sickness	0	0	0
10.1.2014	130	0	Sickness	0	0	0
11.1.2014	131	A	Run 5km	5000	1260	3,97
11.1.2014	132	B	Run 10km	10000	2310	4,33
12.1.2014	133	B	Run 8km	8000	1916	4,18
12.1.2014	134	D	Series 10x500	5000	1560	3,21
13.1.2014	135	B	Run 12km	12000	2732	4,39
13.1.2014	136	B	Run 8km	8000	1640	4,88
14.1.2014	137	A	Run 5km	5000	1397	3,58
14.1.2014	138	A	Uphill run 10x500	5000	800	6,25
14.1.2014	139	A	Run 4km	4000	987	4,05
14.1.2014	140	B	Run 10km	10000	2520	3,97
15.1.2014	141	B	Run 10km	10000	2050	4,88
15.1.2014	142	A	Run 5km	5000	1140	4,39
16.1.2014	143	A	Run 6km	6000	1468	4,09
16.1.2014	144	B	Uphill run 14x500	7000	1100	6,36
16.1.2014	145	A	Run 3km	3000	660	4,55
16.1.2014	146	B	Run 10km	10000	2470	4,05
17.1.2014	147	B	Run 10km	10000	2442	4,10
18.1.2014	148	A	Run 5km	5000	1290	3,88
18.1.2014	149	D	Series 10x500	5000	800	6,25
18.1.2014	150	B	Run 10km	10000	2638	3,79
19.1.2014	151	0	Resting day	0	0	0,00
20.1.2014	152	0	Resting day	0	0	0
21.1.2014	153	A	Run 5km	5000	1271	3,93
22.1.2014	154	B	Run 10km	10000	2400	4,17
22.1.2014	155	B	Run 9km	9000	2120	4,25
23.1.2014	156	A	Run 4,5km	4500	1063	4,23
23.1.2014	157	D	Series 10x500	5000	800	6,25
24.1.2014	158	B	Run 11km	11000	2427	4,53
25.1.2014	159	A	Run 7km	7000	1769	3,96
25.1.2014	160	A	Run 5km	5000	1238	4,04
25.1.2014	161	D	Series 3x1000, 4x500	5000	900	5,56
26.1.2014	162	0	Resting day	0	0	0,00
27.1.2014	163	0	Resting day	0	0	0
28.1.2014	164	A	Run 5km	5000	1250	4,00
28.1.2014	165	D	Series 10x500	5000	900	5,56
28.1.2014	166	A	Run 4km	4000	1010	3,96
28.1.2014	167	B	Run 10km	10000	2280	4,39
29.1.2014	168	B	Run 14,4km	14400	3266	4,41
29.1.2014	169	A	Run 7km	7000	1680	4,17

30.1.2014	170	B	Run 10,5km	10500	2500	4,20
31.1.2014	171	A	Run 4km	4000	1206	3,32
31.1.2014	172	D	Series 5x1000	5000	1100	4,55
31.1.2014	173	A	Run 5km	5000	1200	4,17
31.1.2014	174	B	Run 10km	10000	2390	4,18

Quantity (m)														
Month	November					December				Januar				
Week	1.week	2.week	3.week	4.week	5.week	6.week	7.week	8.week	9.week	10.week	11.week	12.week	13.week	14.week
Type A	5000	12000	5000	5000	7000	39000	27500	35500	19000	19500	13000	28000	21500	25000
Type B	28000	75000	55500	104500	58000	103500	73500	76000	65000	86500	38000	70000	30000	44900
Type C	4000	0	3500	1875	0	0	0	0	0	0	0	0	0	0
Type D	0	0	5000	15500	11000	23000	0	15400	14000	0	5000	5000	10000	10000
Type E	0	0	0	0	0	0	0	0	0	0	0	12000	0	0

Intensity (m/s)														
Month	November					December				Januar				
Week	1.week	2.week	3.week	4.week	5.week	6.week	7.week	8.week	9.week	10.week	11.week	12.week	13.week	14.week
Type A	4,17	4,09	3,60	3,86	3,83	3,98	3,95	3,97	3,78	4,28	4,01	4,09	4,04	3,92
Type B	4,76	3,80	4,43	4,22	4,48	4,31	4,49	4,26	4,39	4,54	4,14	4,29	4,31	4,29
Type C	5,33	0	6,58	6,58	0,00	0,00	0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Type D	0	0	6,10	5,55	4,07	6,07	0	5,78	5,88	0,00	3,21	6,25	5,90	5,05
Type E	0	0	0	0	0	0	0	0	0	0	0	6,31	0	0