

# Building / coaching k4

*Octavian Ispas*

## What we need?

WK4		MK4	
500M TIME	SPEED	500M TIME	SPEED
1.29	20,22	1.16	23.68
1.30	20	1.17	23,38
1.31	19.78	1.18	23.08
1.32	19.57	1.19	22.78
1.33	19.35	1.20	22,5

## Top speed

- MK<sub>4</sub> 27 kmh
- WK<sub>4</sub> 23kmh

## Target speed 250 m

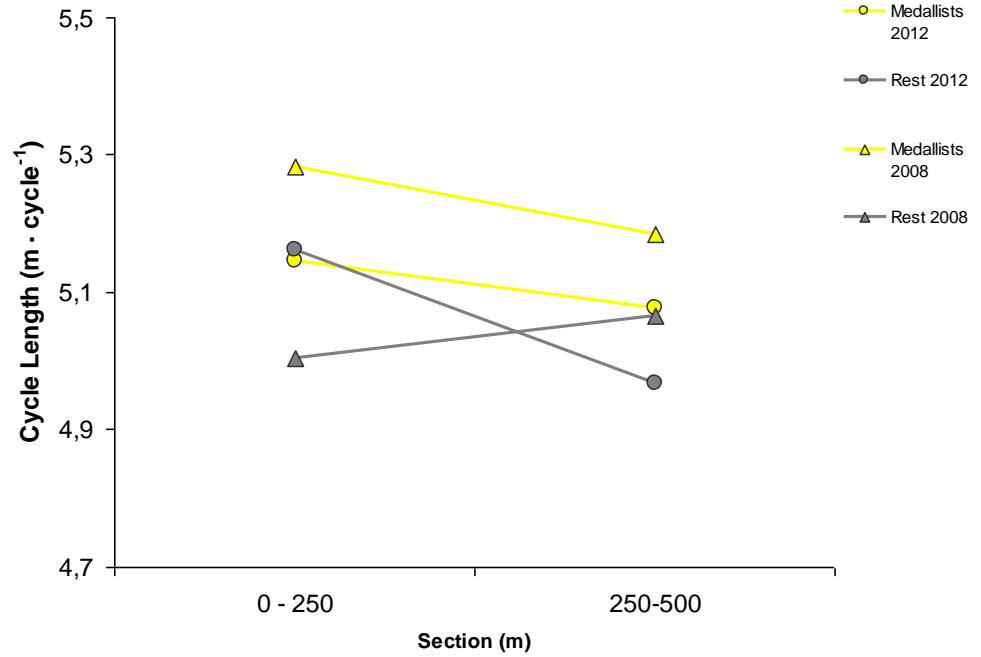
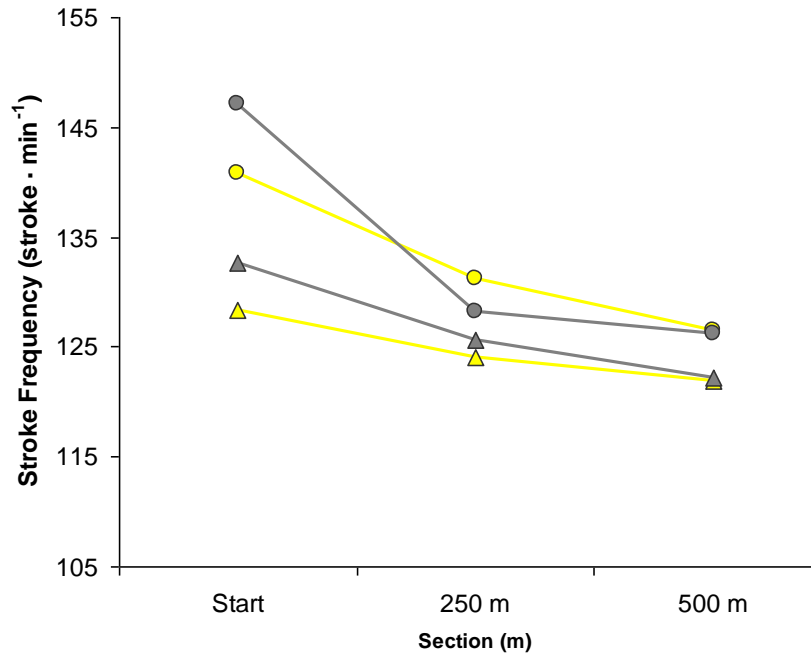
- MK<sub>4</sub> 24,5 kmh **stroke 135**
- WK<sub>4</sub> 21,5 kmh **stroke 125/130**

# Competition tactics

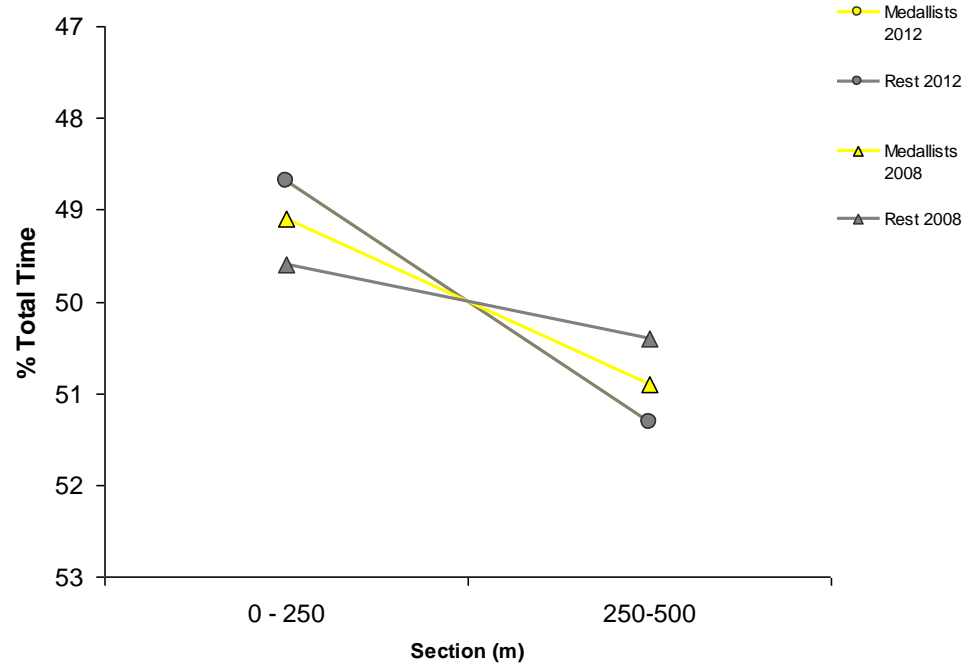
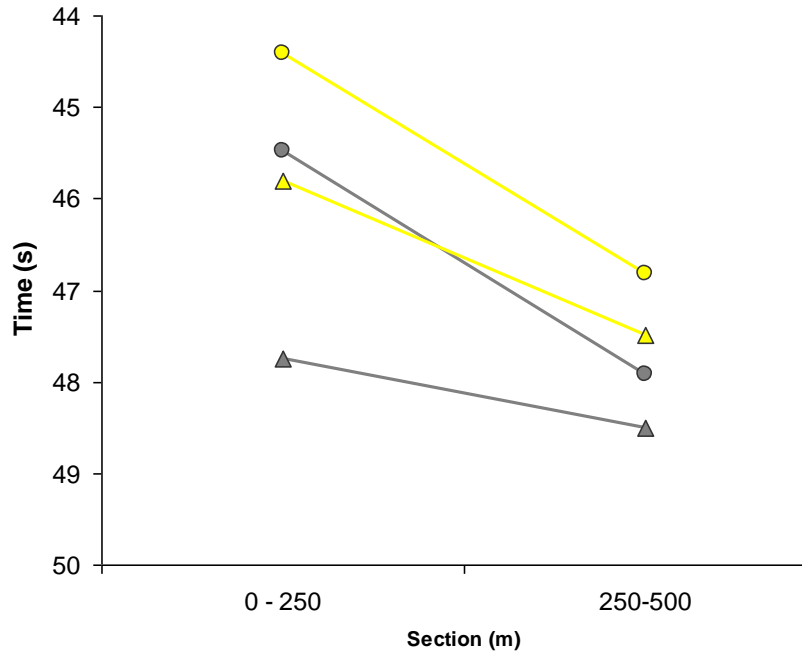
- **Maintaining speed /uniform race**
- Top speed and loss of speed
- Return to speed / up speed / negative race



# Results WK4 500 m



# Results WK4 500 m



# Building k4 main dictions

- Specific technique for k4
- Settling in the boat
- Building the pace / periodization



# Specific in technique for k4

Set in front calm

- Lock the blade with upper hand
- Weight on the blade
- Pull quik after catch not before
- Drive with trunk and connect the leg (press footrest)
- Padeling vertical /positive ungle
- Longe pull
- Fast exit
- Recovery in font before catch



For k4 and in general I do not agree with :

- Fast set up / aggressive down to the catch
- Hit the water
- Kick the footrest
- Overusing the footstrap /jump to forward
- Jump with hip in the seat for “ drive with the hip “
- End a effort before extract /exit the paddle
- Padeling early with negative ungle
- over forward rotation of the shoulder which leads to the change of angle and the coverage of the paddle

# Characteristics for positioning in the k4

Front	2 <sup>nd</sup> position	3 <sup>th</sup> position	4 <sup>th</sup> position
<ul style="list-style-type: none"> <li>❖ Very intelligent</li> <li>❖ Good pace</li> <li>❖ Very good lactate tolerance</li> <li>❖ Speed qualities</li> <li>❖ The sense of water</li> </ul>	<ul style="list-style-type: none"> <li>● Very intelligent</li> <li>● Assistant coach</li> <li>● Sense of water</li> <li>● Decide change the pace and help front</li> <li>● Catch little before front seat</li> <li>● Good power to push the boat</li> </ul>	<ul style="list-style-type: none"> <li>○ Stronger in the power</li> <li>○ Good ritm</li> </ul>	<ul style="list-style-type: none"> <li>▪ Very good technique</li> <li>▪ Strong catch</li> <li>▪ Quigly and long padeling simultan</li> <li>▪ Speed qualities</li> <li>▪ Excellent connection with the boat</li> </ul>

# Block periodization - Explanation

For several years I've been using a block periodization method to accomplish goals. Block periodization is an idea I've generalized from European weightlifting implementation and development of *Vladimir Issurin*

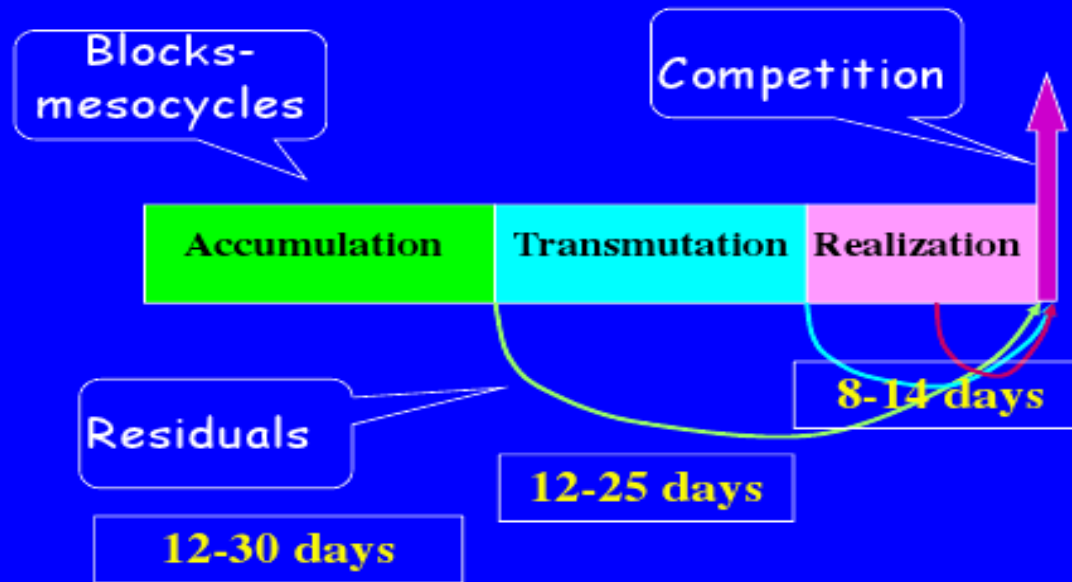


## Block parts divide :

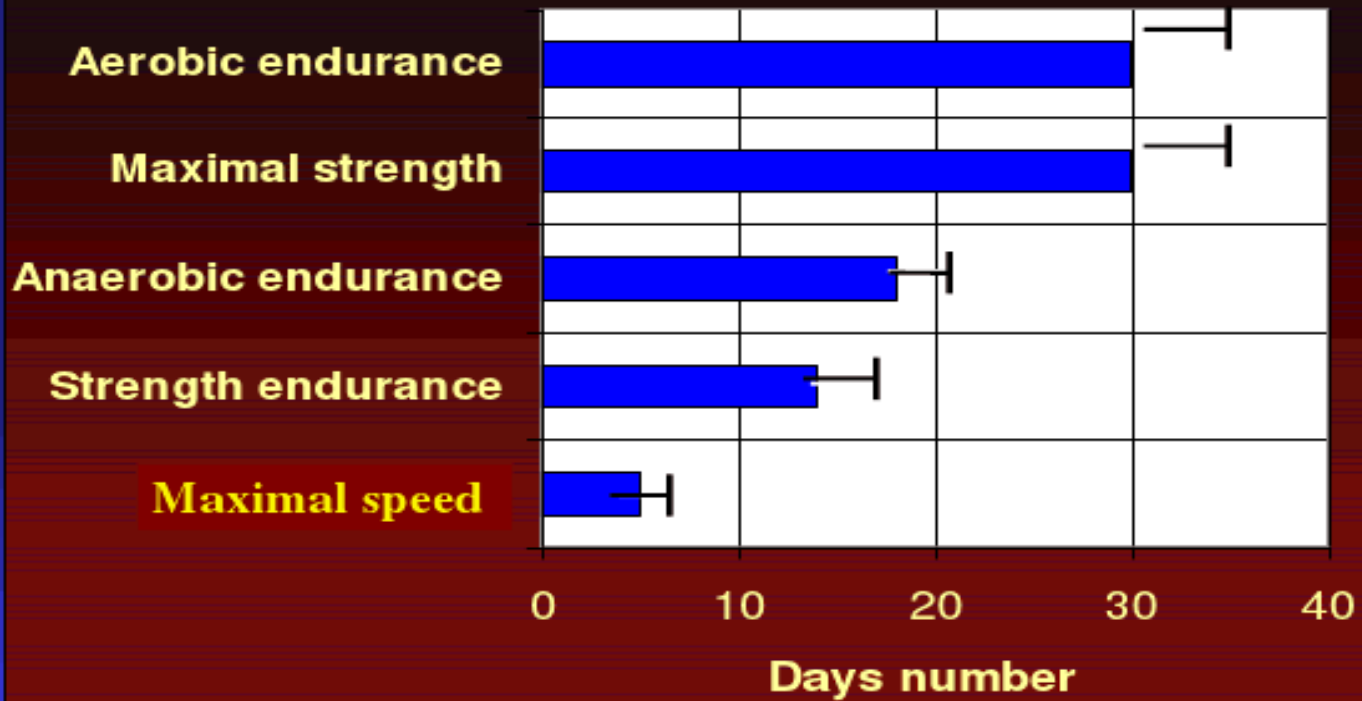
- **Accumulation:** basic motor/ technical abilities, aerobic endurance (necessary to combat stress hormones post competition).
- **Transmutation:** specific motor/ technical abilities, anaerobic endurance, specific endurance, technical well controlled work. Here the athlete will be fatigued, so the mesocycle must be short- **3 weeks is optimal.**
- **Realisation:** Tapering, **full restoration**. speed. This part should not be longer than 2 weeks.
- *Restoration:*  
This phase affords a planned recovery period to allow mental and physical recharging. Restoration phases often follow Transmutation cycles, but can be introduced at any time. Scheduled Restoration phases refresh focus, combat burnout, and prevent fatigue.

This would then be repeated throughout the year depending on the competition schedule.

# Superposition of Residual Training Effects – Timing



## Residual training effects







# ACUMULATION 1 aeobic pace

- GOALS:

1. Development - AEROBIC METABOLISM

- Core endurance
- Threshold

2. Development- Anaerobic metabolism

- Pack speed – maxim speed

3. Gym main goal - Strength :

- Hypertrophy 70%
- Power 80-95%

# AEROB METABOLISM –CORE ENDURANCE

- GENERAL ENDURANCE
- General improvements to aerobic system.
- Technique foundation
- ❖ Heart rate : 140
- ❖ Test distance :+10km
- ❖ Maxim training :60min
- ❖ Lactate 1-2 ml/l
- ❖ Stroke rate :
  - ❑ Kayak men's : 60+/- 5
  - ❑ Kayak women :60 +/- 5
  - ❑ Canoe :30

- Exercises :
  - 1x10km
  - 2-3 x30'/4'r
  - 3-5x 20'/4'r
  - 4x 15'/3'r
  - 1-2x8km/4'
  - 1-2 x 6km /4'



# AEROB METABOLISM-threshold

## SPECIFIC AEROBIC CONDITIONING

Higher intensity of aerobic  
improvement

Maximum blood flow and  
vascular system development

Heart rate : 160

Test distance :5km

Maxim training :15min

Lactate 4-6ml/l

Stroke rate :

- Kayak men's : 65/75
- Kayak women :65/75
- Canoe :40

## Exercises

1-2 x 4km /3'

2-8 x 2km /3'

2-3x(3x 1000m/1')10

10x5 '/2'

10-16x4'/2'

10-16x3'/1

1x

9'/1'+8'/1+7'/1'+6"/1+5'/1'+4'/1'+3'/1'+2  
'/1+1

6x 8'/2'

6x5'/1+8x4'/1+ 10x3/1'

# ACUMULATION 2 building pace

## GOALS:

1. Development - mixt metabolism
  - Core power
  - Sub race pace/ vo2 max
2. Threshold mantenece
  
3. Development- Anaerobic metabolism
  - maxim speed
  
3. Gym main goal - Strength :
  - Hypertrophy 70%
  - Power endurance 40/60%

# Mixed metabolism-under RACE PACE

- AEROBIC POWER
- VO<sub>2</sub>max high level – maxim consume of oxygen
- Increase lactate tolerance – anaerobic metabolism

- ❖ Heart rate : 180
- ❖ Test distance :2000
- ❖ Maxim training :8min
- ❖ Lactate 6-8ml/l
- ❖ Stroke rate :
  - ❑ Kayak men's : 100
  - ❑ Kayak women :80+ 5
  - ❑ Canoe :50 +/-5

- Exercises
  - 4-8x 1000m /3'
  - 3-6 x 1500/4'
  - 1-2 x (10x2'/1')4'
  - 4-6 x (3'/1'+1'/1'+3'/1'+1')/4'
  - 1-2 x 2000m maxim pace /5'
  - 2-3x(3x500m/1')7'
  - 1-2 x (  
4'/2'+4x1'/1'+4'/2'+4x45"/1'+4'/2'+4x3  
0"/1'+4x2'+4x15"/1'+4'



# Mixed metabolism-LONG SPRINT

- MAXIMUM O<sub>2</sub> DEBIT
- HIGH ACID LACTIC ACULULATION
- HIGH WORK RATE

- ❖ Heart rate : max
- ❖ Test distance :750-1000m
- ❖ Maxim training :4min
- ❖ Lactate +14ml/l
- ❖ Stroke rate :
  - ❑ Kayak men's : 115
  - ❑ Kayak women :100
  - ❑ Canoe :60

## • Exercises

- 2-3 X ( 1'/1'+1'/50"+1'/40"+1'/30"+1'/20"+1'/10"+1) 7'
- 3-4 X ( 15"/15"+30"/30"+45"/45"+1'/1'+45"/45"+30"/30"+15"/15")
- 2-4 X (100m+800m+100m) 5'
- 3-6 X ( 100m+300m+100m)5'
- 2-3 X1000m max
- 2-4 X 750m max
- 2-4X 600m max
- 2-4 X (4x 250m/2' )

# TRANSMUTATION : main pace

## GOAL:

### 1. Development - MIXED METABOLISM

- race pace
- Long sprint -lactic accumulation

### 2. Development- Anaerobic metabolism

- Short sprint- anaerobic power

### 3. Gym main goal - Strength :

- Power endurance 60%
- Dynamic strength 30%

# Mixed metabolism-MEAN SPRINT

- ANAEROB CAPACITY
- MAXIMUM O<sub>2</sub> DEBIT
- HIGH ACID LACTIC ACULULATION
- HIGH WORK RATE

- ❖ Heart rate : max
- ❖ Test distance :500m
- ❖ Maxim training : 90 ‘
- ❖ Lactate +16ml/l
- ❖ Stroke rate :
  - ❑ Kayak men's : 130-
  - ❑ Kayak women :120
  - ❑ Canoe :70

- Exercises
  - 4X (4X150m/2')5'
  - 6-8x 300m/5'
  - 4-5x350m/5'
  - 3-6x400m/5'
  - 2-3x(4x 250m/5') 10'
  - 6x200m/2'
  - 3-4X ( 10X 10"/10")6'
  - 2-4 x (10X20"/20")6'
  - 6-8 x1'/1 /5'
    - 6-8x 45"/75"
    - 6-8 x30/90"



# REALIZATION

## GOAL:

### 1. Taping

- Race model
- Short sprint
- Threshold and core endurance for keep the technique

### 2. Gym strength

- Power 80% maintenance

## Anaerobic metabolism-SHORT SPRINT

- ANAEROBIC POWER
- FULLY EXHAUSTED ANAEROBIC SUBSTANCE IN THE MUSCLE – ATP – CP

- ❖ Heart rate : max
- ❖ Test distance :200m
- ❖ Maxim training : 40 ‘
- ❖ Lactate +12ml/l
- ❖ Stroke rate :
  - ❑ Kayak men's : 160-
  - ❑ Kayak women :140
  - ❑ Canoe :80

- Exercises
  - 4X(3X100m/1’) 5’
  - 6X150m
  - 6-16 x100m/paddle back
  - 6-12 x125m /paddle back
  - 1-3 x200m maxim
  - 30x 12”/48” with rezistance
  - 4x50m stop start + 4x 150m runing
  - 4x75m stop start +4x 125 m running start

# Anaerobic metabolism-PEACK SPEED

- MAXIMUM SPEED LEVEL
- FATS AND POWERFUL BUT PHYSIOLOGICAL CONFORTABLE

- ❖ Heart rate : no
- ❖ Test distance :75m
- ❖ Maxim training : 15 ‘
- ❖ Lactate : no
- ❖ Stroke rate :
  - Kayak men's : +170-
  - Kayak women :+145
  - Canoe :+85

- Exercises
  - Short strats 5-12m
  - 10-30x 50m
  - 6-12x75m
  - Acceleration 0-25m
  - Running start 25m x 6-10
  - Running start 50m x 6-10



# RESTORATION

Active recovery use more exercises from core endurance zone .

# Bulding k4

## Accumulation 1

- Number of sessions 1-2 a week
- Technique and connection exercises 1/2/3 stroke and keep balace



# Bulding k4

## Acumulation 2

- Number of session maxim 3
- Short intervals with long recovery
- Focus in power speed with lower strock in k1

Typical session 4x 150m/ev 2 min individual count of the Catch stroke

- Using a lot of exercises in the one arm ; Power Hous Catch Force etc , usual around 120 repetition/one hand



# Building k4

## Transformation

- Number of session a week with maxim 4 when have 1 high lactate and 3 speed or technique
- Focus in speed per stroke 3 set 6x 20s/ 40 sec stroke 100/105 avg maxim speed 21.5 to 22kmh
- Heavy session in k1 with stroke/speed control
- Compensation /recovery sessions in k1

# Bulding k4

## Realization /taping

- Focus/practice starts with block start
- Repeating the transition phase from high stroke when the boat has reached maximum speed to stroke controlled and maintaining the speed of the boat
- Full recovery after repetition and active recovery after sessions



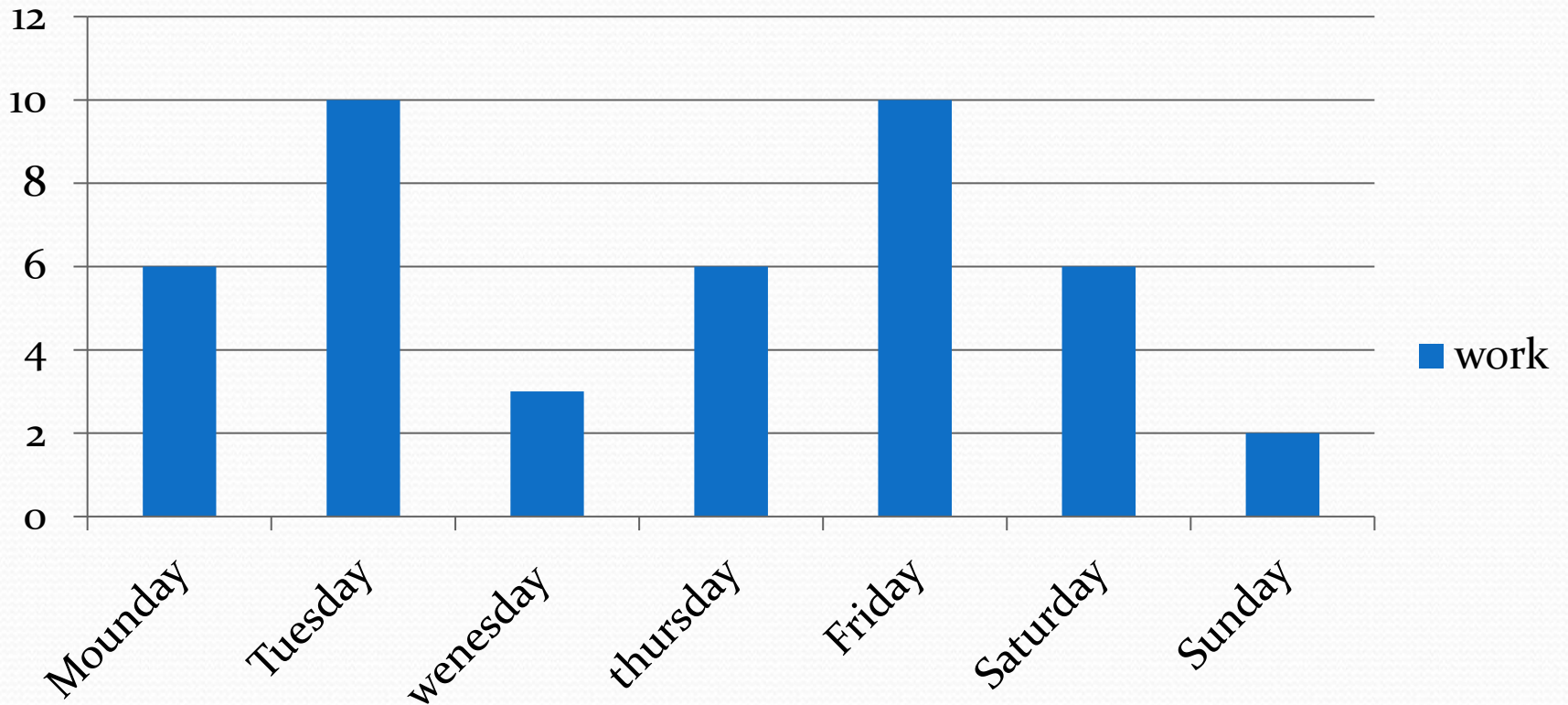
# Microcycle

- Microcycle is probably the most **important tool** in the planning of training.
- Microcycle is a group of **several training units**.



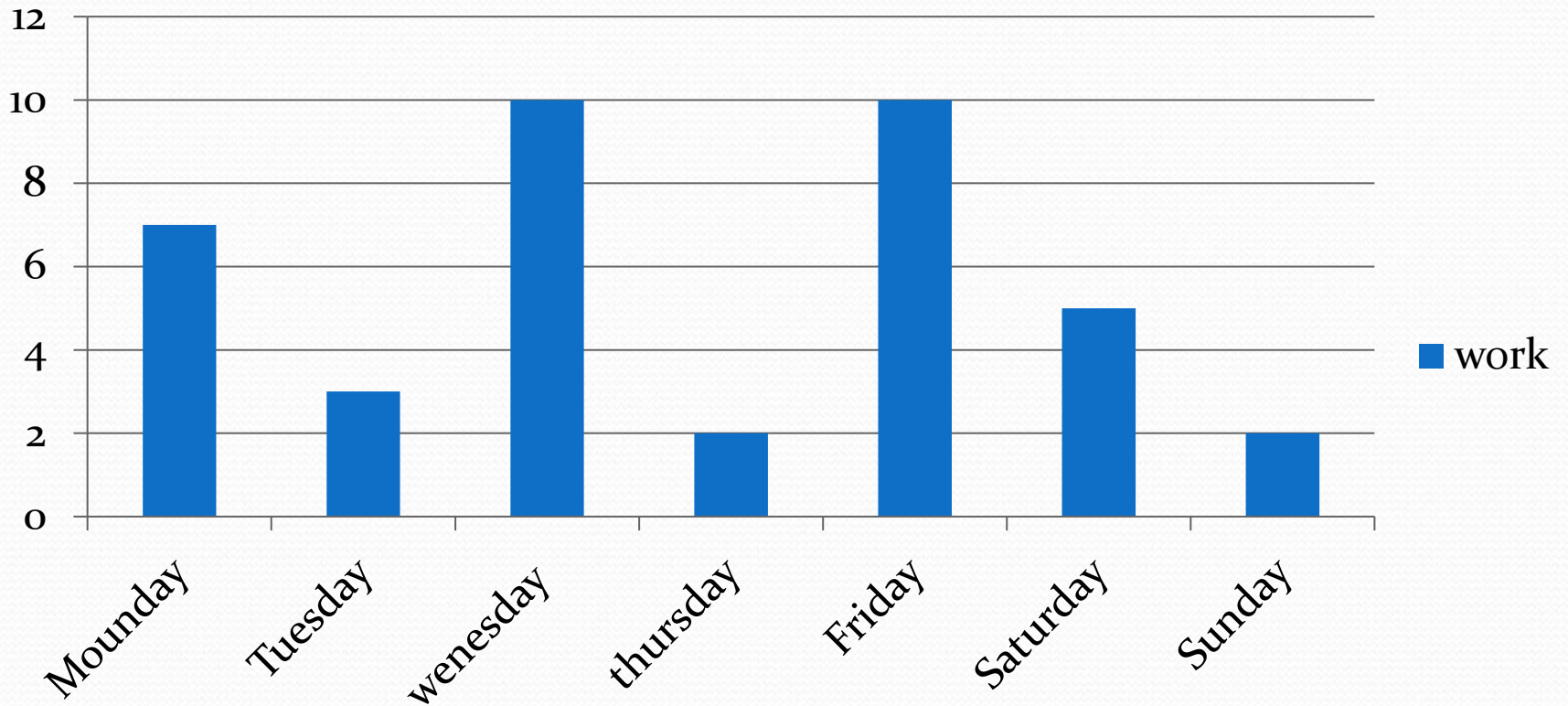
# Microcycle in the accumulation block

**work**



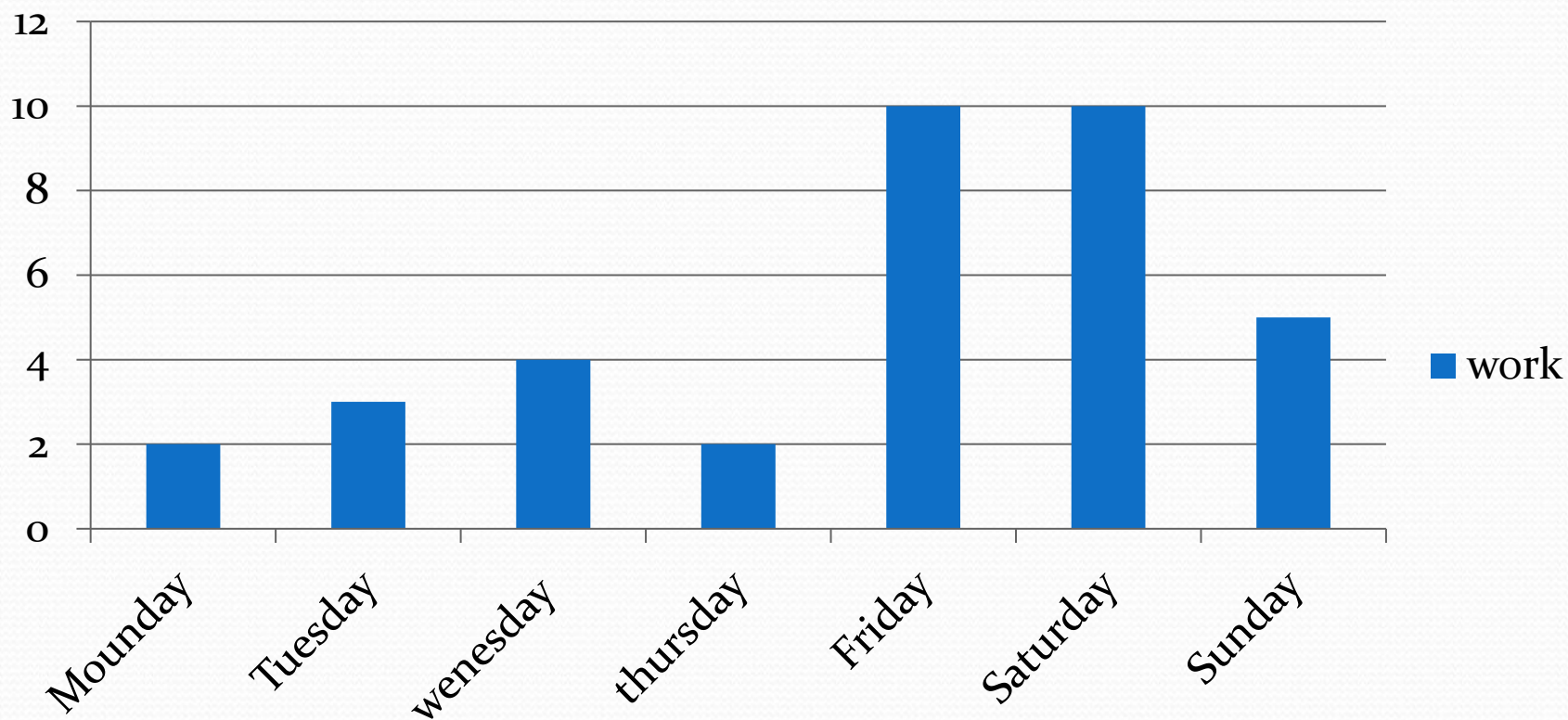
# Microcycle in the transformation block

**work**



## Microcycle in the taping block

**work**





# Questions?

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