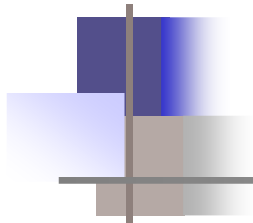


Steps of the Czech Rowing

- Beginning
- Training volume
- Limits
- Times
- Discussion





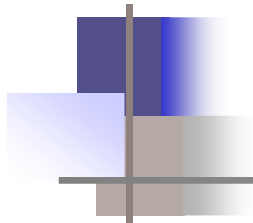
Crises of the Czech Rowing

1992 – 2000

- OG 1996 in Atlanta: 3 crews, M1x final (Vaclav Chalupa)
- OG 2000 in Sydney: 1 crew, M1x, he was ill (Vaclav Chalupa)

February, 2000  **HEAD COACH**





Crises of the Czech Rowing

February, 2000 → **HEAD COACH**

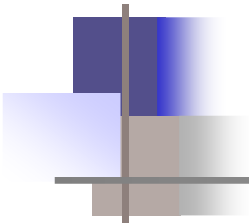
The first question was - who is responsible for what – area of responsibility

The New System (2001 / 2004 - 2008)



Board of the Czech Rowing Association, 23.2.2001

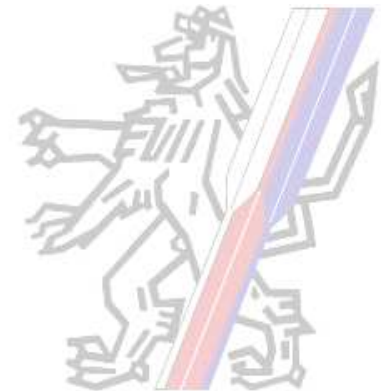




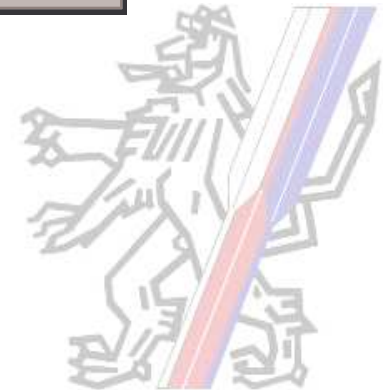
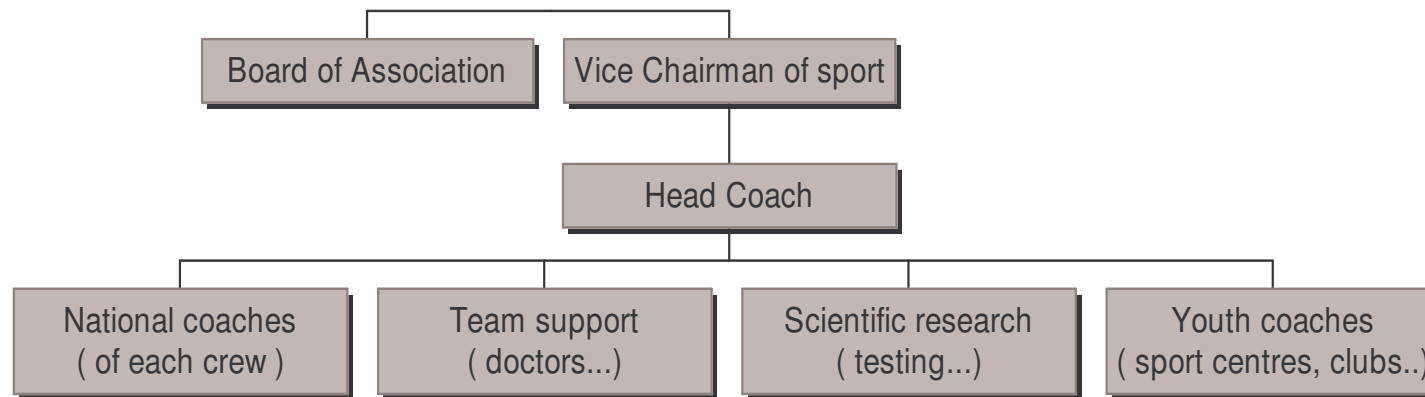
February 2001 - Turning point

Area of responsibility of the head coach

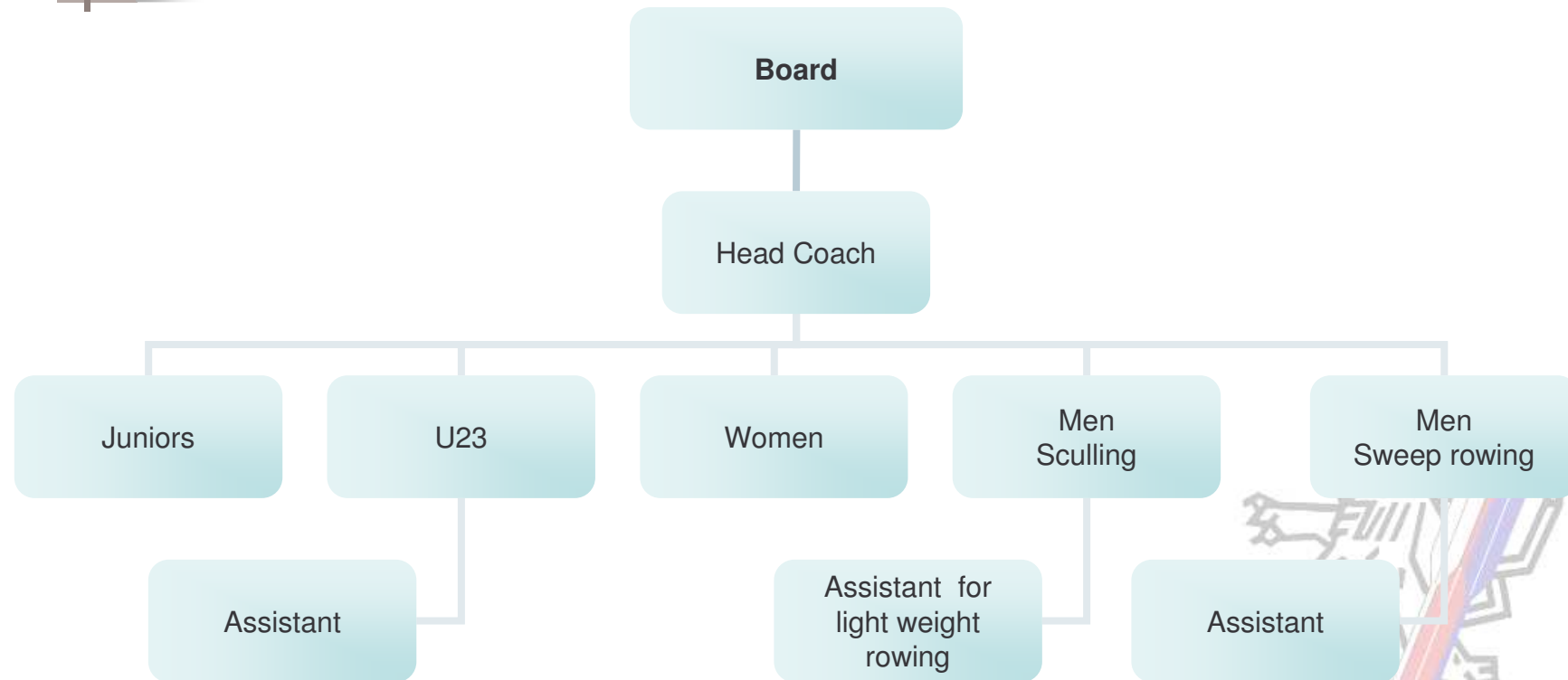
- programme of the national team
- programme of the junior team
- education of coaches
- nomination of crews
- set up the training volumes
- budget of the national team
- new information
- and many, many others
- budget for new material, boats...

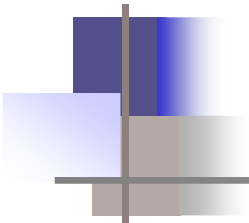


The first structure



The structure of the team of coaches

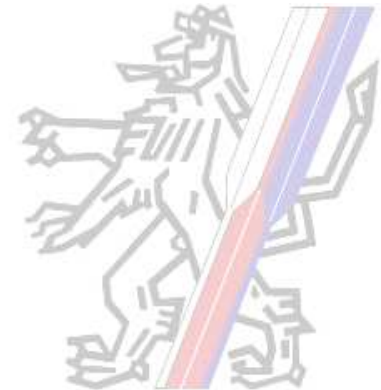


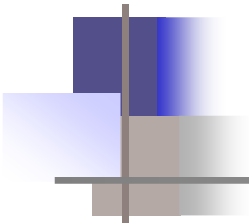


The first steps

What was necessary to do at the beginning:

- built up the new training programmes
 - change motivation for the training and racing
 - explain modern rowing technique
 - make out rules for testing
 - set up limits, find evaluation criteria...
-
- **We had to change everything!!!**

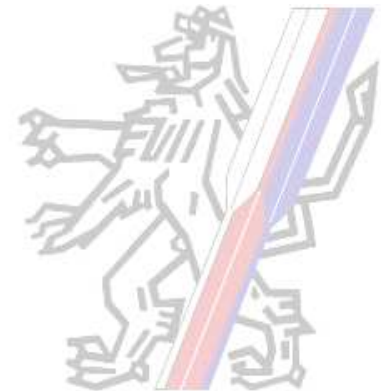


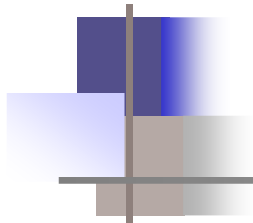


World Championships 2003

- M4x 2nd place
- M2x 3rd place
- M1x 4th place
- W1x 4th place
- M2- 9th place

5 crews qualified !!!





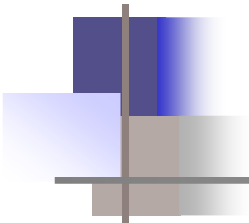
Olympic Games 2004

- M4x 2nd place
- M2x 5th place
- M1x 5th place
- W1x 4th place
- M2- 13th place
- LM2x 9th place
- M4- 8th place

Qualification in Lucerne 2004

- 2 crews were qualified

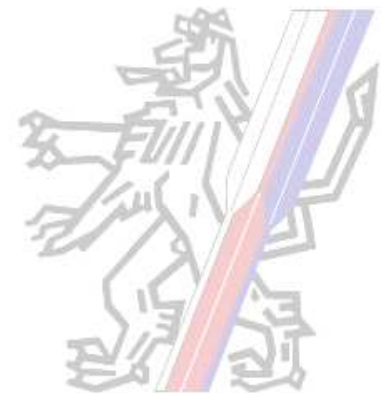


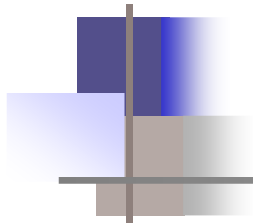


World Championships 2007

- M4x 5th place
- M4- 7th place
- M1x 2nd place
- W1x 4th place
- W2x 5th place

5 crews qualified





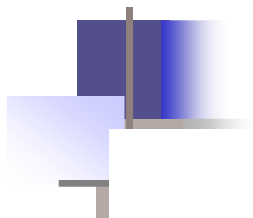
Olympic Games 2008

- M4x 10th place
- M2- 8th place
- M1x 2nd place
- W1x 5th place
- W2x 6th place
- M4- 5th place

Qualification in Poznań 2008

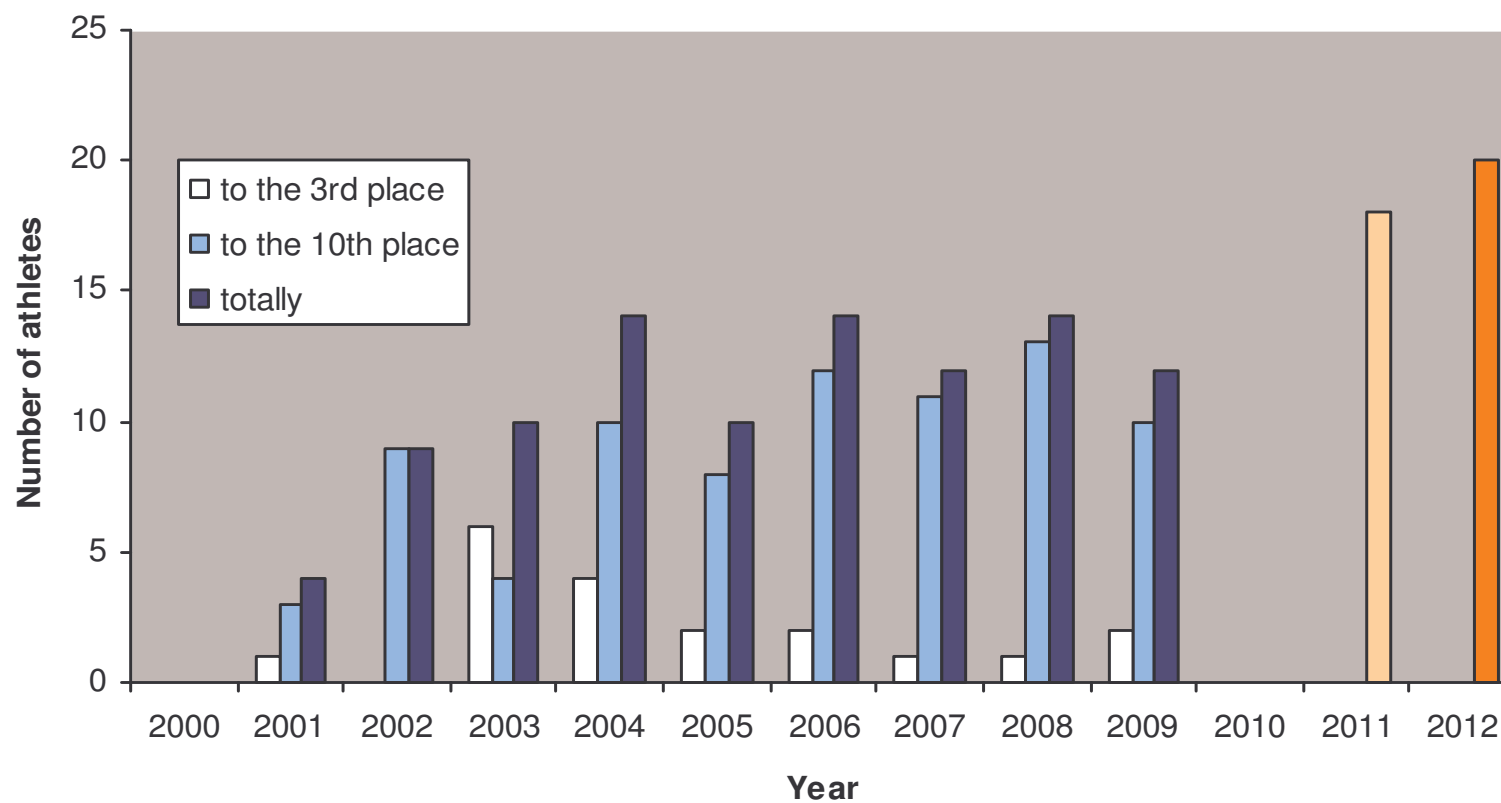
- 1 crew was qualified

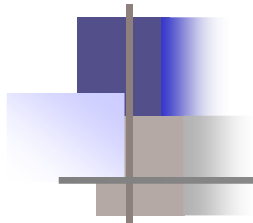




The position of Czech rowers WCH/OG 2000 - 2009

World Championships 2000 - 2009
(in Olympic events)





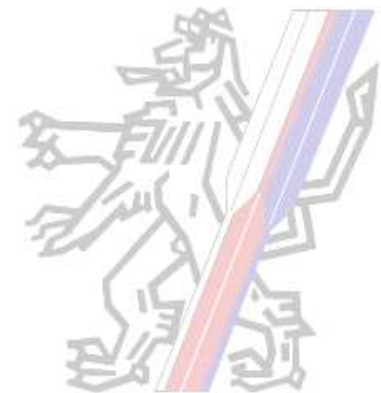
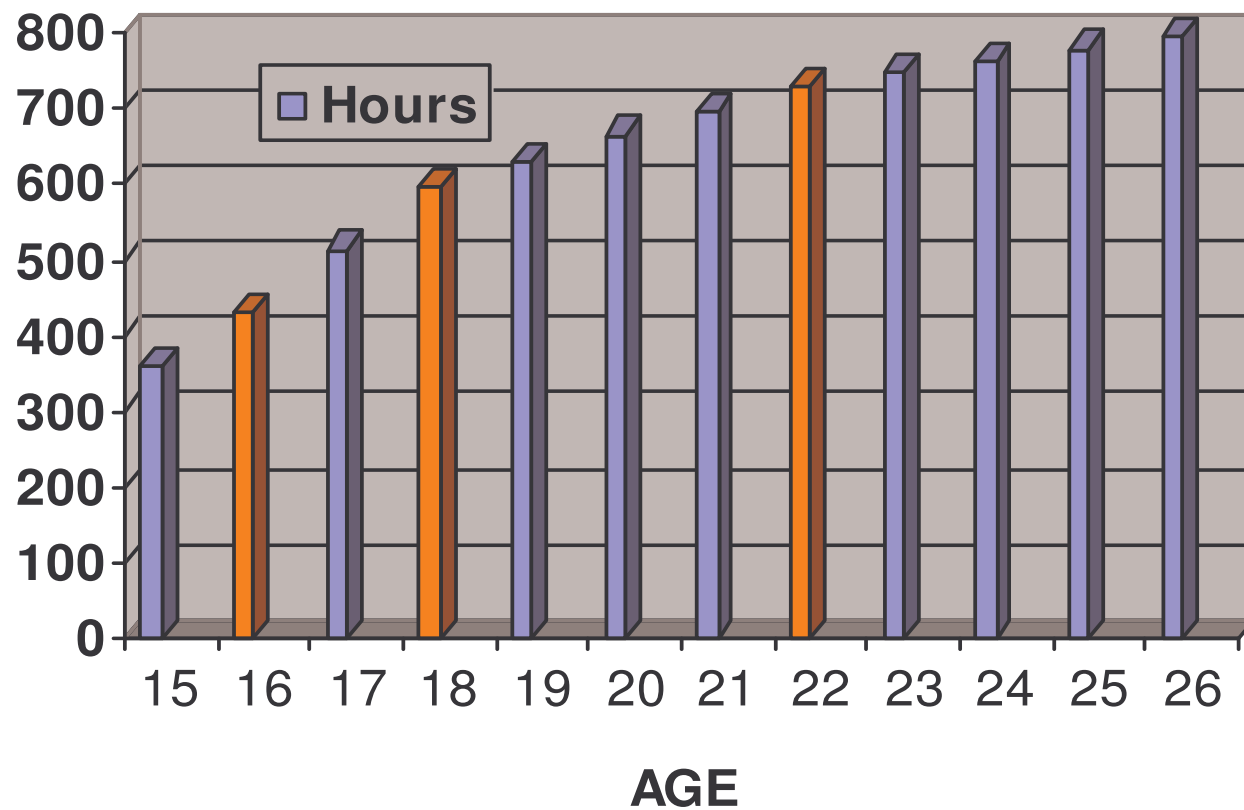
Steps of the Czech Rowing

Training volume

- JWB, JMB: 15 – 16 years
- JW, JM: 17 – 18 years
- BW, BM: 19 – 22 years
- W, M: 23 -
- Discussion



Hours of the training



Hours of the training

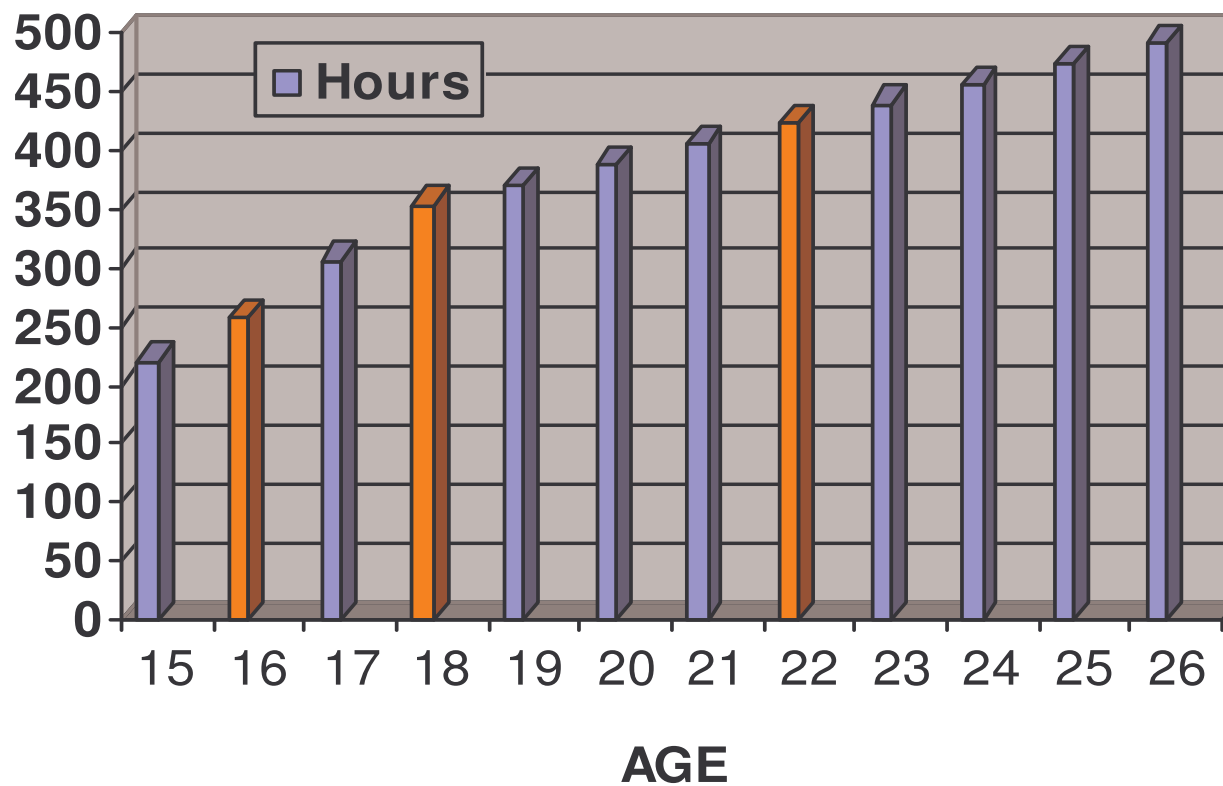
CZE	rowing		weight lifting	running	other training	totally
	min.	km.	min.	min	min.	hours

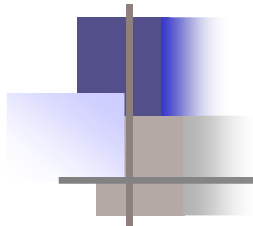
WJ, MJ	min	21220	4244	5280	5500	3840	597
	hours	353,7		88	91,7	64	

WB, MB	min	25400	5080	7512	7080	3840	731
	hours	423,3		125,2	118	64	

W, M	min	29500	5900	8400	5640	4200	796
	hours	492		140	94	70	

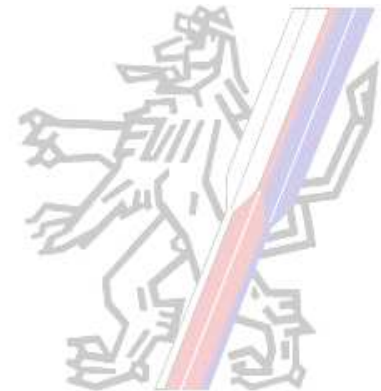
Hours of Rowing



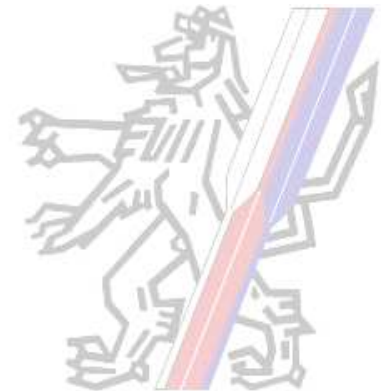
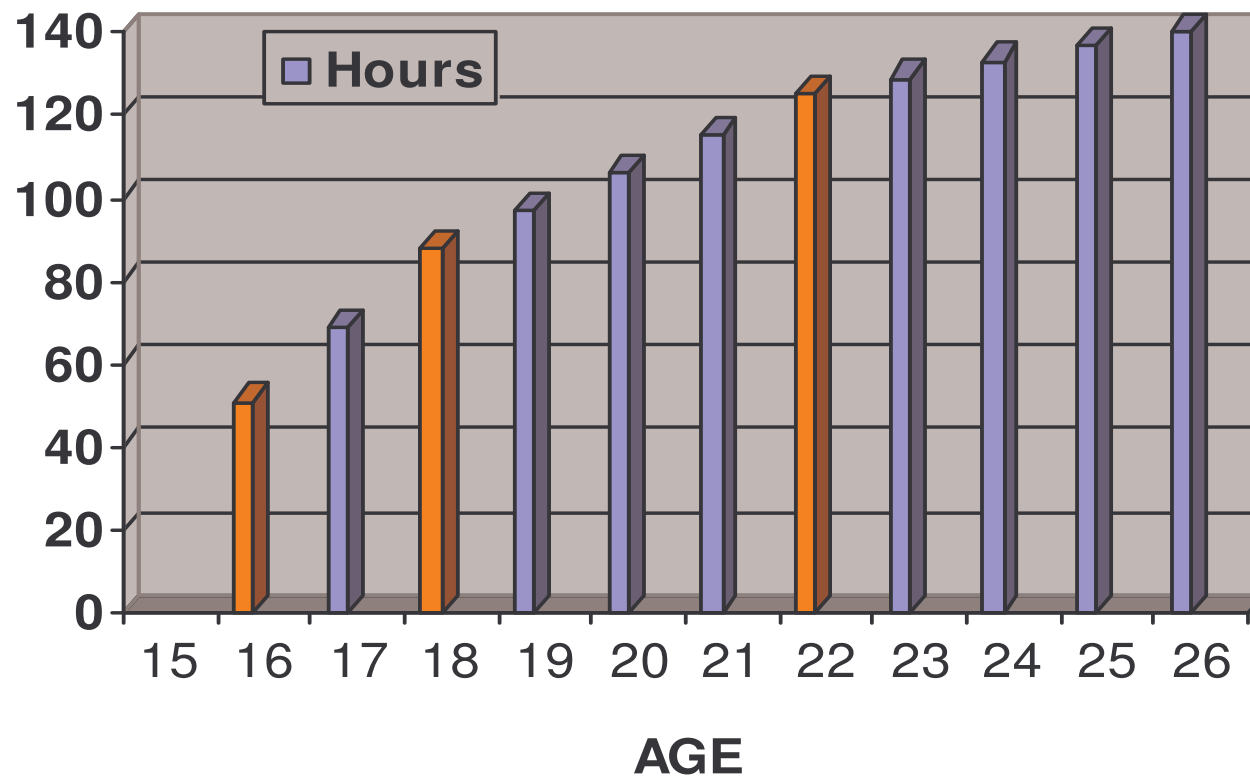


Hours of Rowing

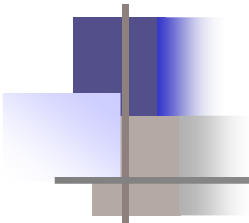
Age	Hours	Km
16	258	3 096
18	354	4 244
22	423	5 080
26	492	5 900



Hours of Weight Lifting

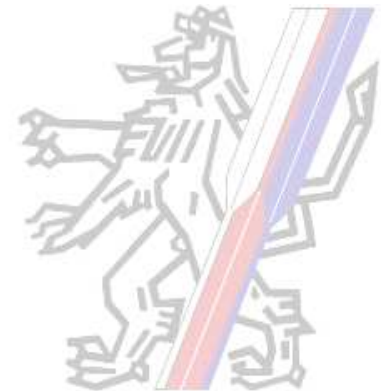


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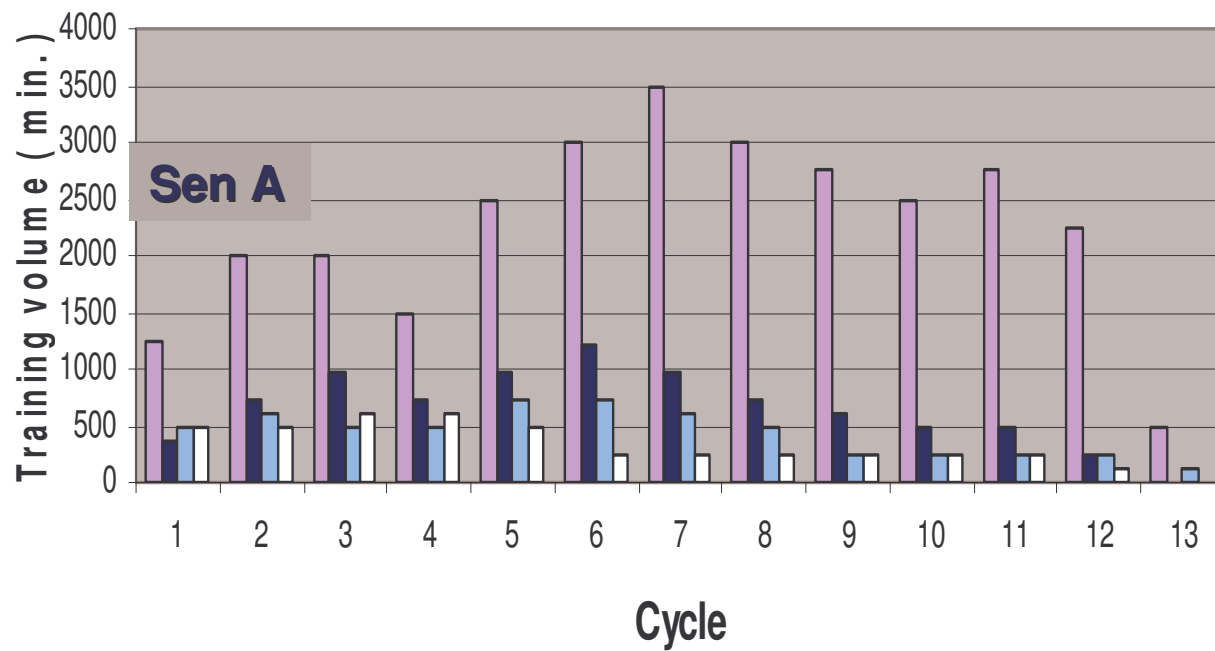


Hours of Weight Lifting

Age	Hours
16	51
18	88
22	125
26	140

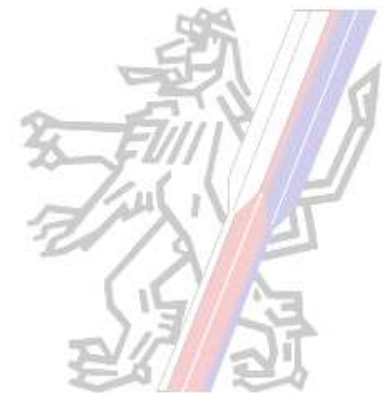


Training in one year



4 weeks cycles

October -
- September

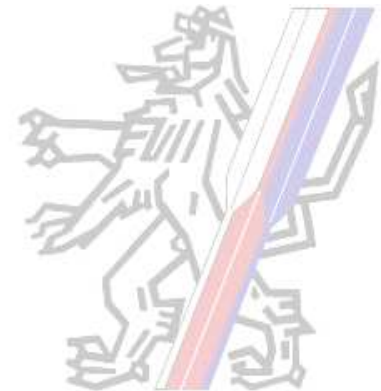
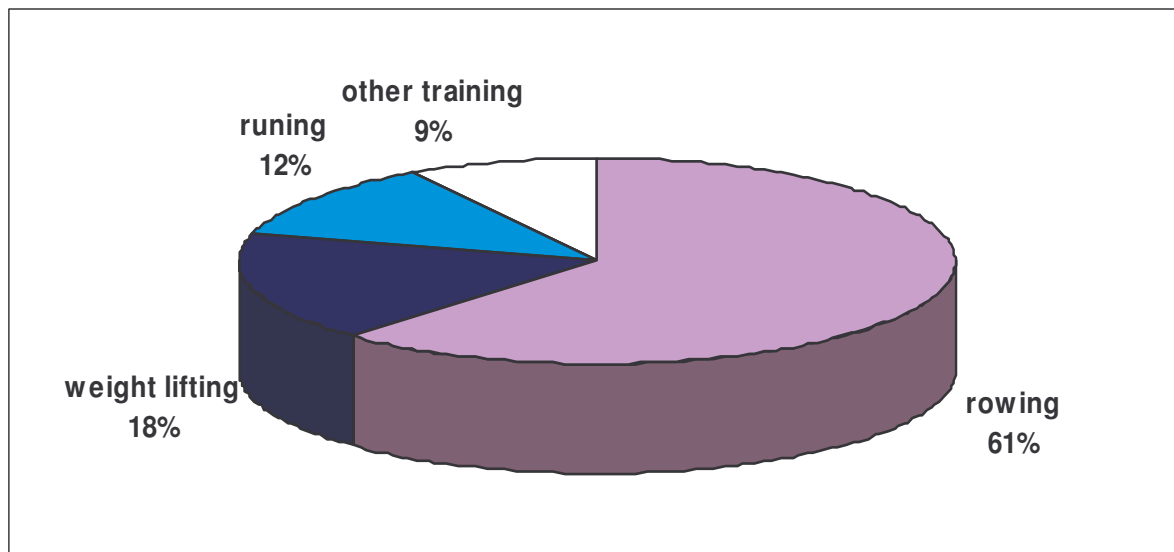


Rowing during year – W,M

Cycle	n	rowing	
		min.	km.
25.9.- 22.10.	1	1250	250
23.10.-19.11.	2	2000	400
20.11.-17.12.	3	2000	400
18.12.-14.1.	4	1500	300
15.1.-11.2.	5	2500	500
12.2.-11.3	6	3000	600
12.3.-8.4	7	3500	700
9.4.-6.5.	8	3000	600
7.5.-3.6.	9	2750	550
4.6.-1.7.	10	2500	500
2.7.-29.7.	11	2750	550
30.7.-26.8.	12	2250	450
27.8.- 23.9.	13	500	100
	totally	29500	5900
	hours	492	



Rowing during year – W,M

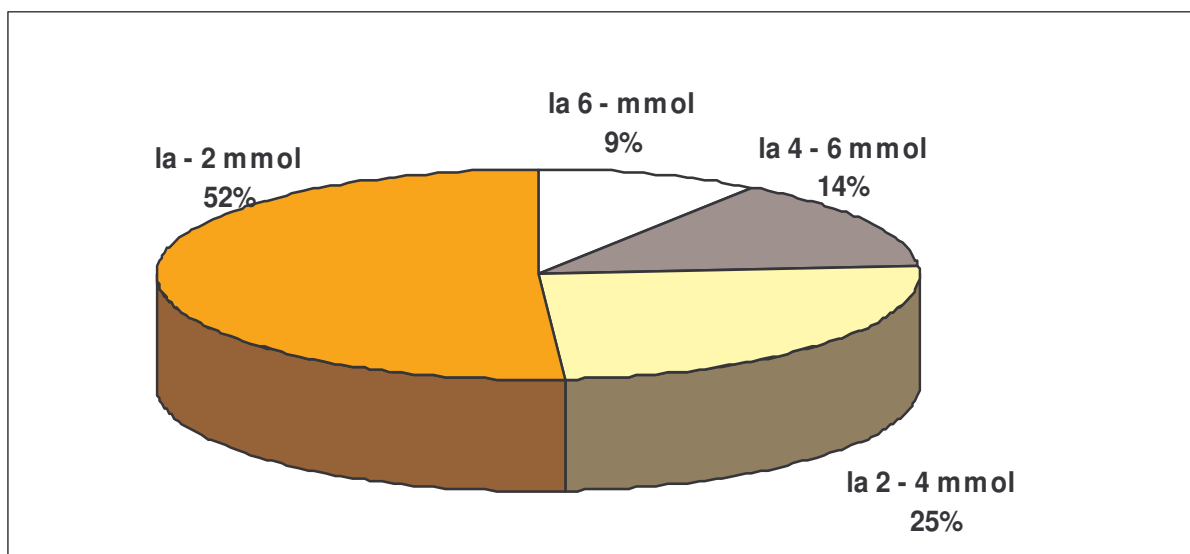


Intensity of Rowing – W,M

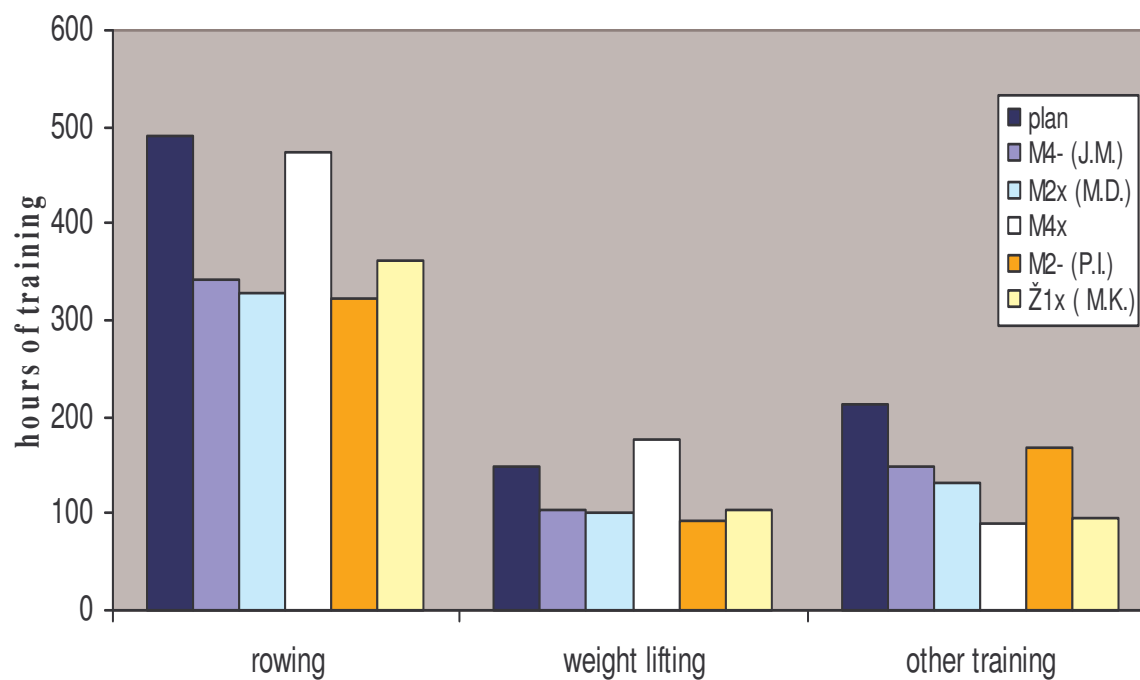
CZE	Rowing		la 6 - mmol	la 4- 6 mmol	la 2 - 4 mmol	la - 2 mmol
	min.	km.	min.	min.	min.	min.
1	1250	250	30	50	370	800
2	2000	400	100	160	540	1200
3	2000	400	100	160	540	1200
4	1500	300	80	150	370	900
5	2500	500	200	250	675	1375
6	3000	600	290	390	1020	1300
7	3500	700	320	600	1080	1500
8	3000	600	360	540	720	1380
9	2750	550	360	540	660	1190
10	2500	500	320	480	600	1100
11	2750	550	350	500	500	1400
12	2250	450	260	310	330	1350
13	500	100	45	35	40	380
totally	29500	5900	2815	4165	7445	15075
hours	492		47	69	124	251



Intensity of Rowing – W,M



Training volume 2004



M4x

Rowing 473 hrs

Weight lifting 177 hrs

Other training 91 hrs

Totally 741 hrs



Training volume 2009



WCHJ 2002
WCH U23 2006

Year after OG 2008

M4-

Rowing 425 hrs

Weight lifting 140 hrs

Other training 145 hrs

Totally 710 hrs



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Training volume 2009



Year after OG 2008

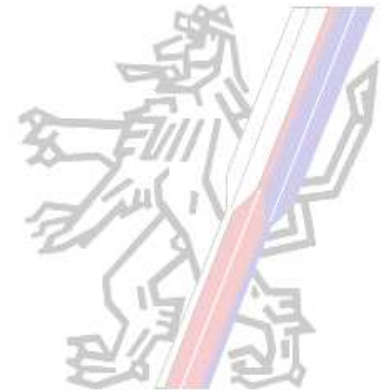
M2-

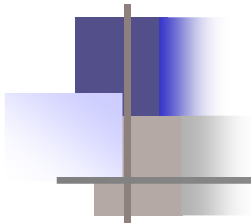
Rowing 425 hrs

Weight lifting 145 hrs

Other training 155 hrs

Totally 725 hrs



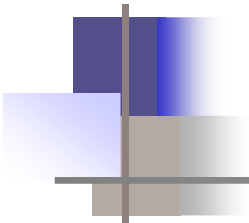


Steps of the Czech Rowing

Limits

- 2000 m
- 6000 m
- Power at the level of ANT
- Discussion

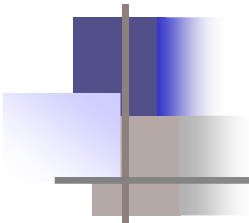




International level

Test		M	LM	W	LW	JM	JW
ergo C2	2000 m	5:55	6:12	6:42	7:10	6:15	7:00
	6000 m	19:20	20:00	21:50	22:40	20:10	22:30
Power at ANT (W)		380	340	280	240	330	230



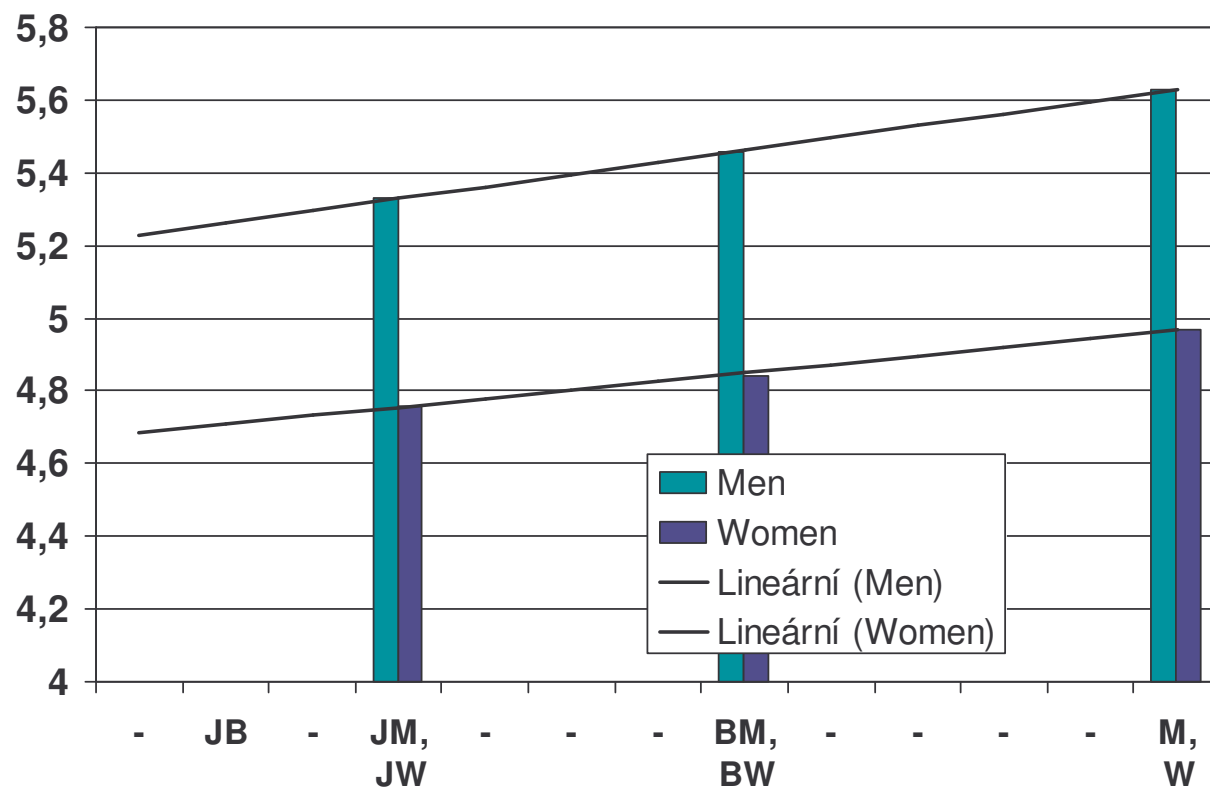


International level

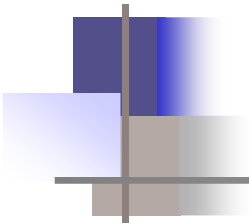
Test		M	BM	JM	W	BW	JW
ergo C2	2000 m	5:55	6:06	6:15	6:42	6:53	7:00
	6000 m	19:20		20:10	21:50		22:30
Power at ANT (W)		380	347	330	280	247	230



Speed (m/s) – ergo 2000 m



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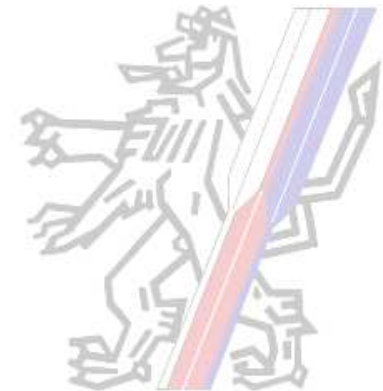
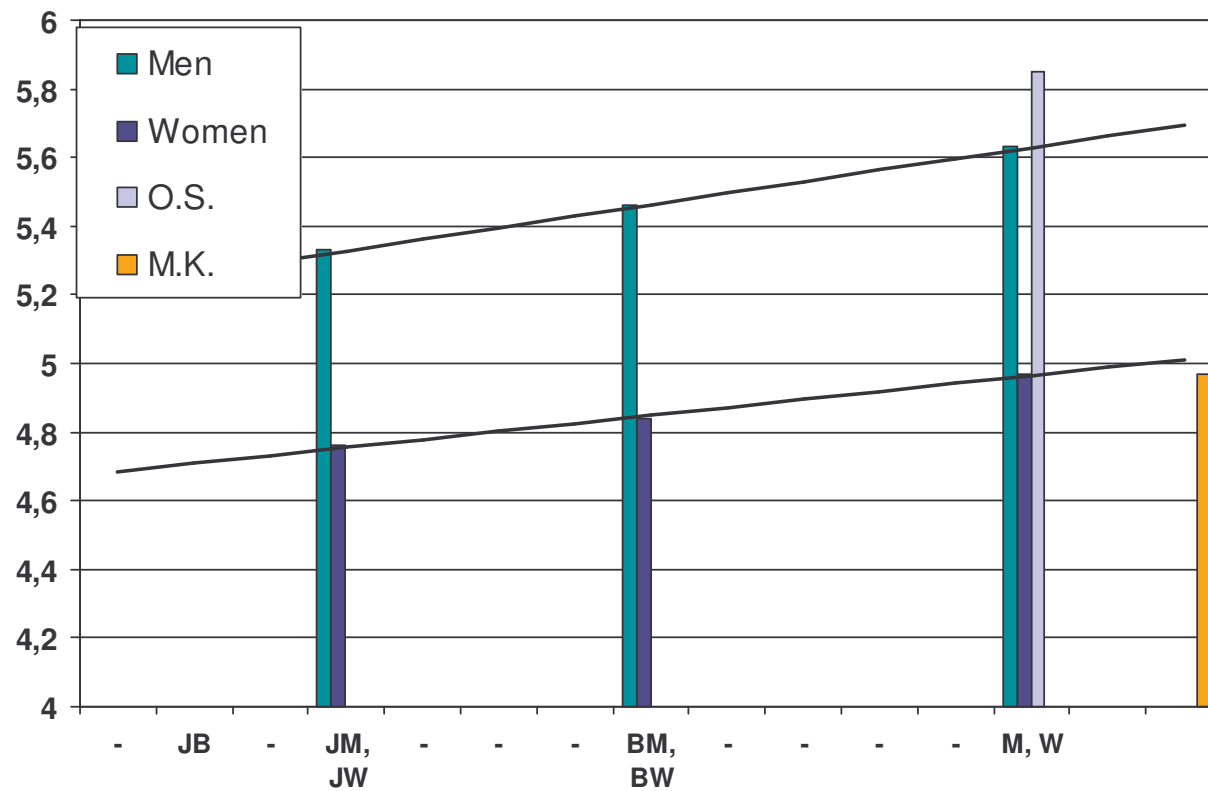


Ondrej Synek and Mirka Knapkova

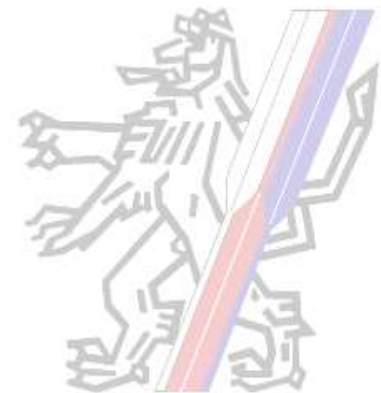
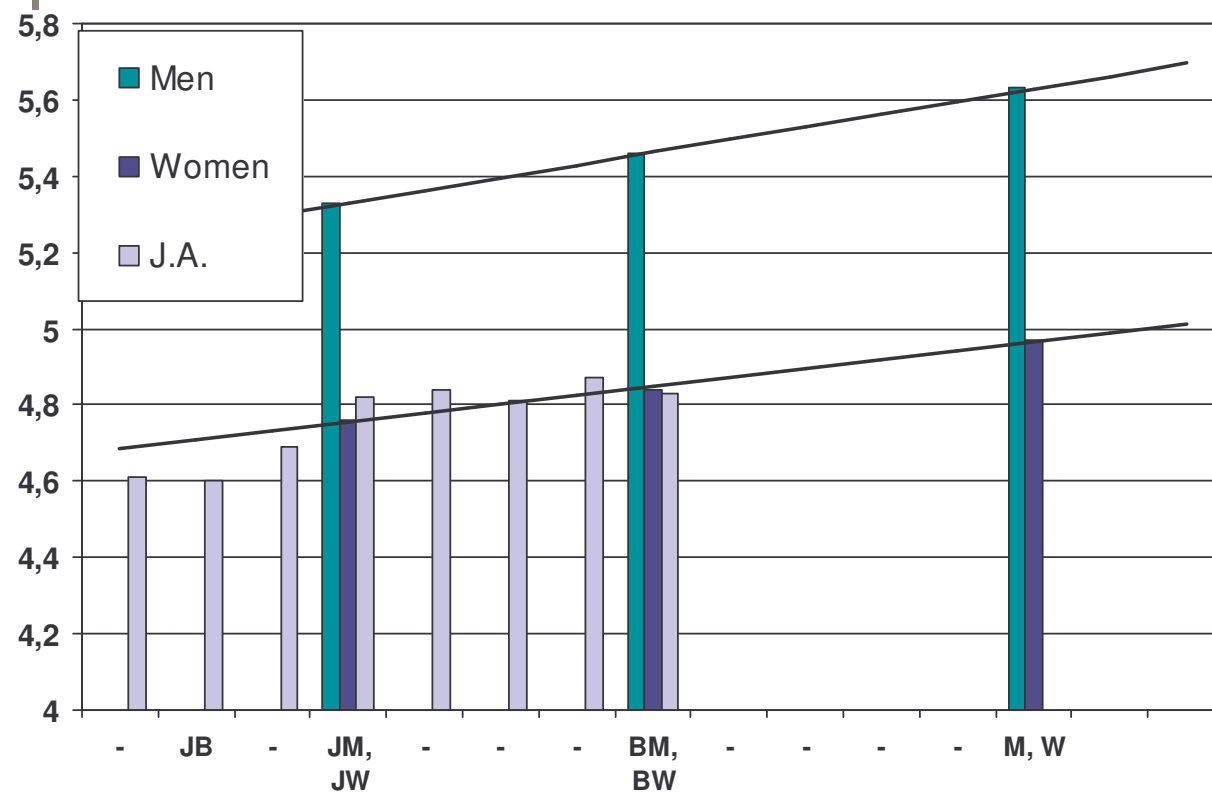
Test		M	O.S.	W	M.K.
ergo C2	2000 m	5:55	5:41,8	6:42	6:42,2
	6000 m	19:20	18:17,5	21:50	21:18,1
Power at ANT (W)		380	465,3	280	302,0

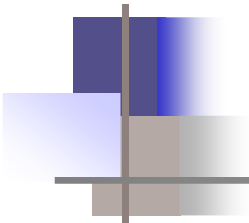


Speed (m/s) – ergo 2000 m



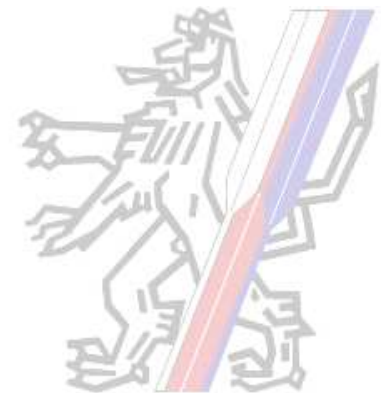
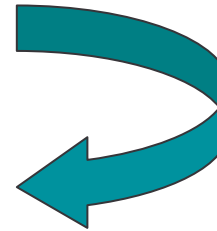
Speed (m/s) – ergo 2000 m



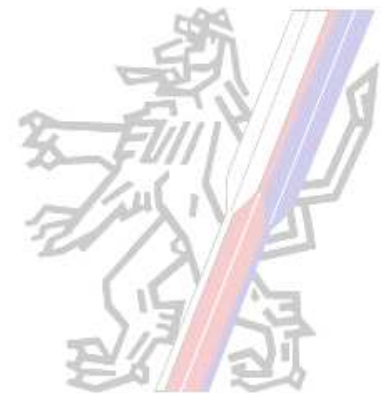
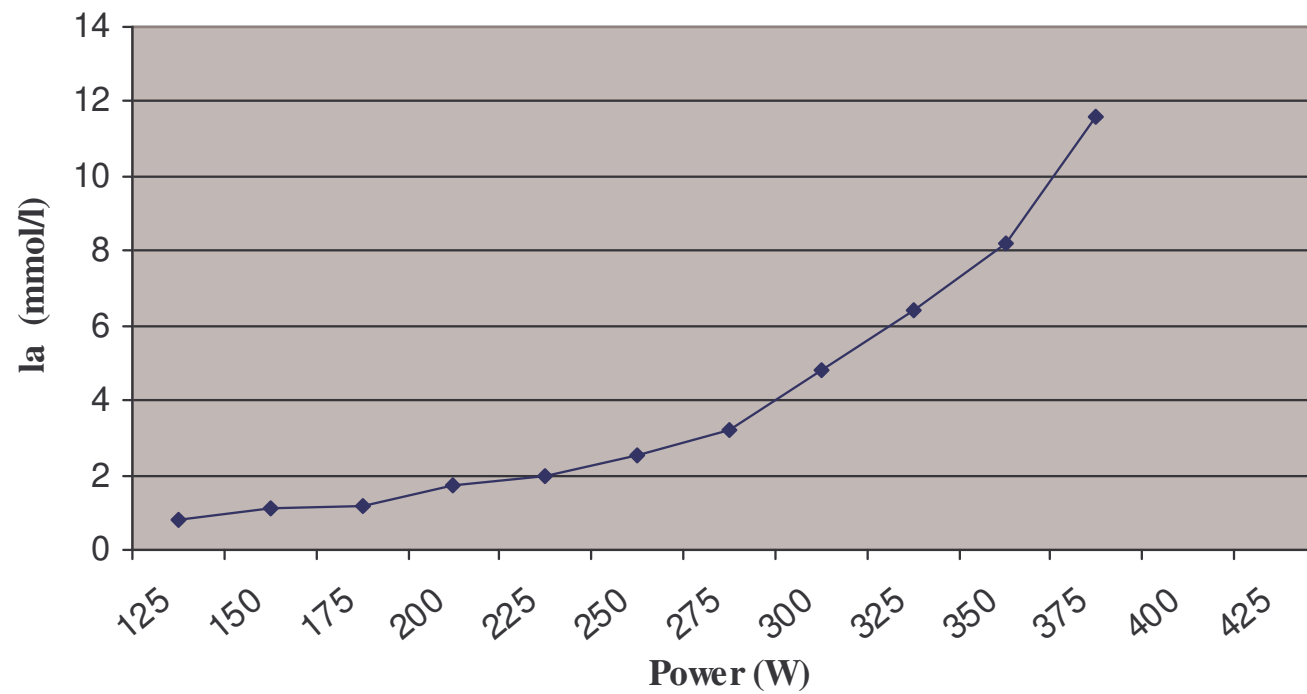


ANT test

- 5 x 5 minutes
- Rest 2 minutes
- Last distance with full power
- During each rest – blood sample
- The Curve of lactic acid

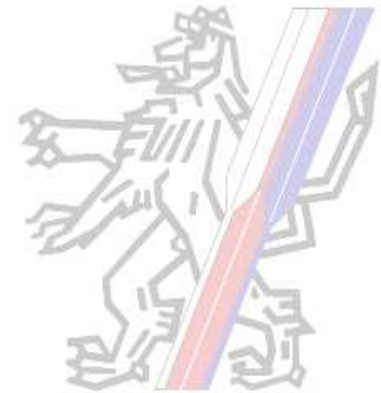
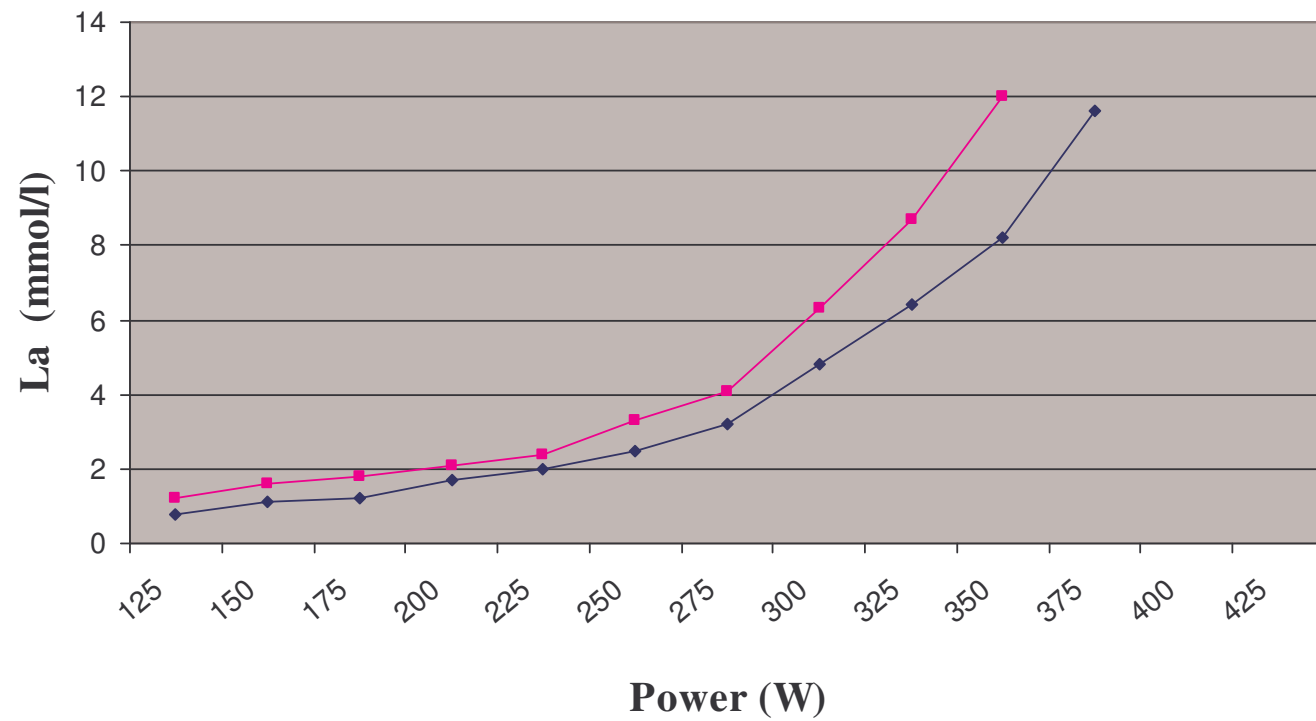


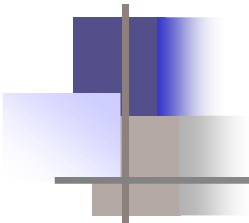
ANT test



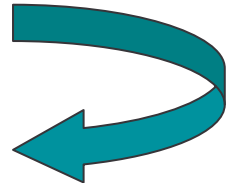
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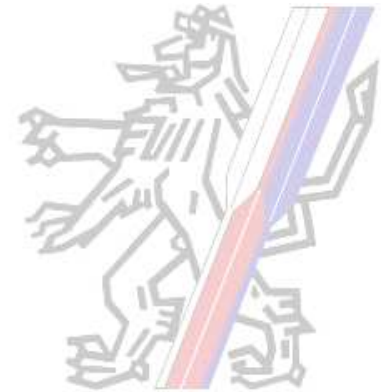
ANT test





ANT test

- Training program 2 days before the test, regime...
- Test every 2 months  efficiency of the training process
- 4 zones of the training intensity 
- la less than 2 mmol/l of blood
- la 2 – 4 mmol
- la 4 – 6 mmol
- la more than 6 mmol/l of blood



Mirka Knapkova

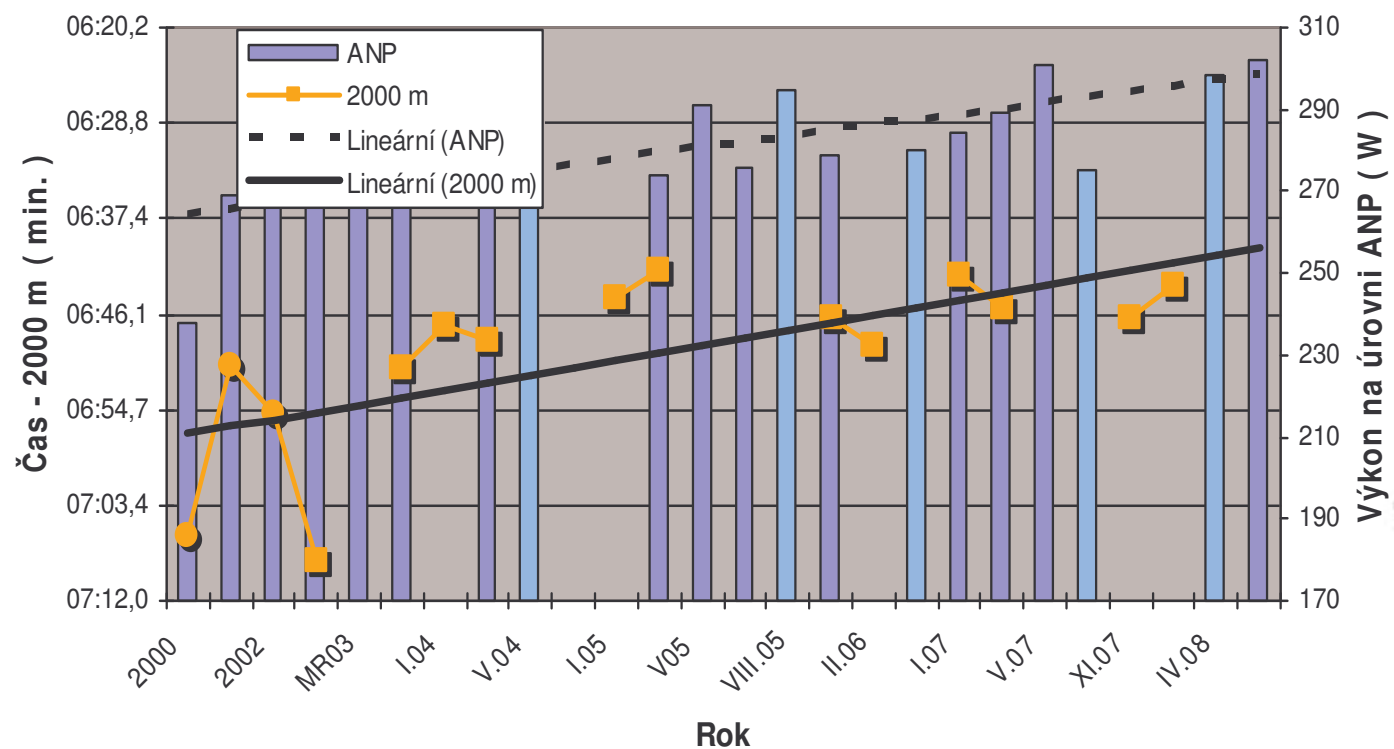


Born 1980
High 181 cm
Weight 69 kg

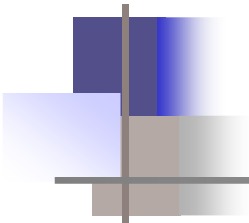


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Mirka Knapkova



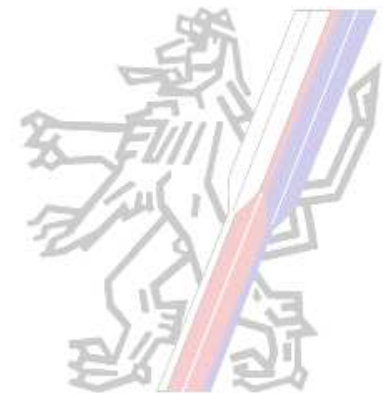
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Ondrej Synek

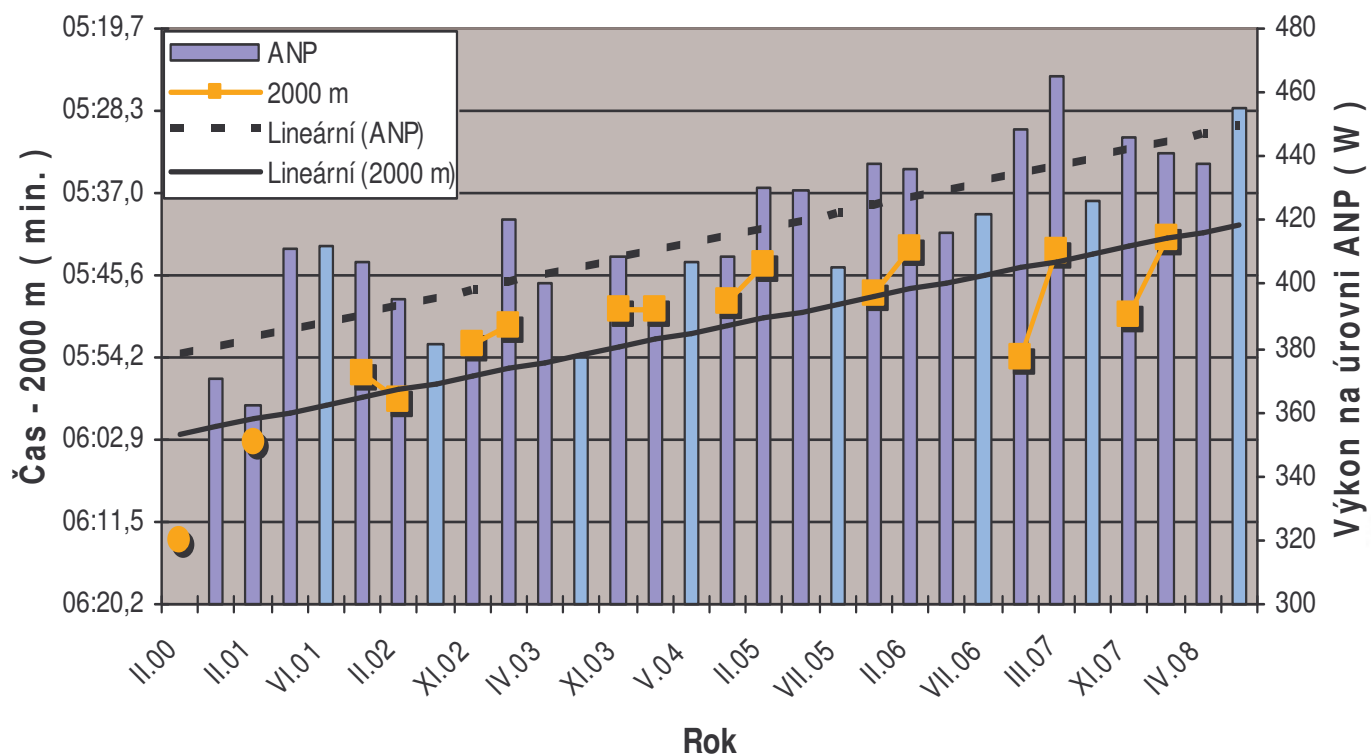


Born 1982
High 199 cm
Weight 100 kg



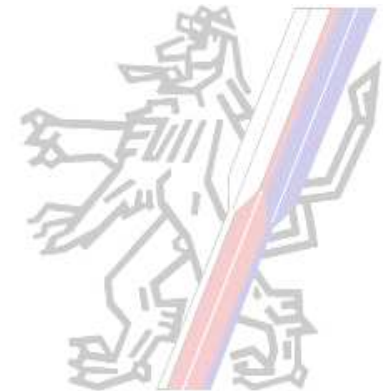
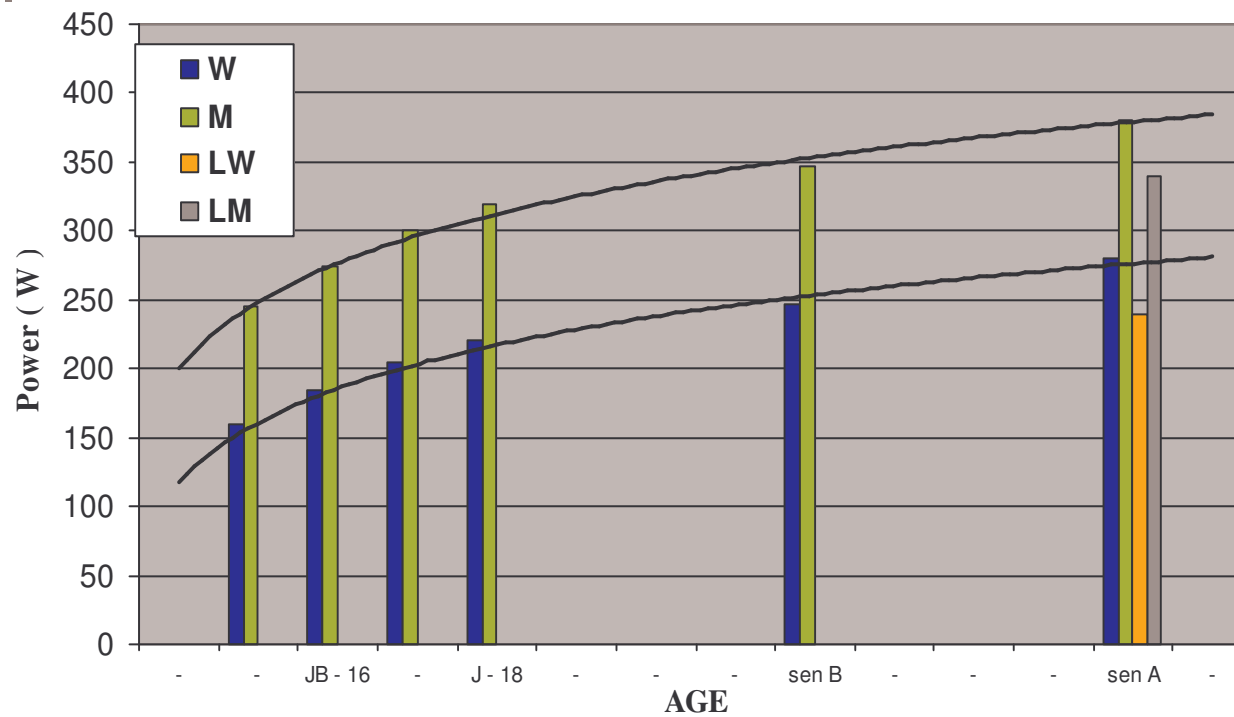
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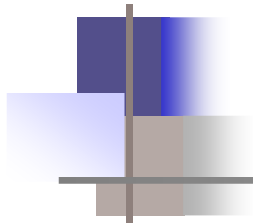
Ondrej Synek



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ANT – steps in Power





ANT – steps in Power

Level of the Power at the ANT (W)			
JW - 15	JW - 16	JW - 17	JW - 18
160	185	205	220
JM - 15	JM - 16	JM - 17	JM - 18
245	275	300	320



ANT – steps in Power – J.A.

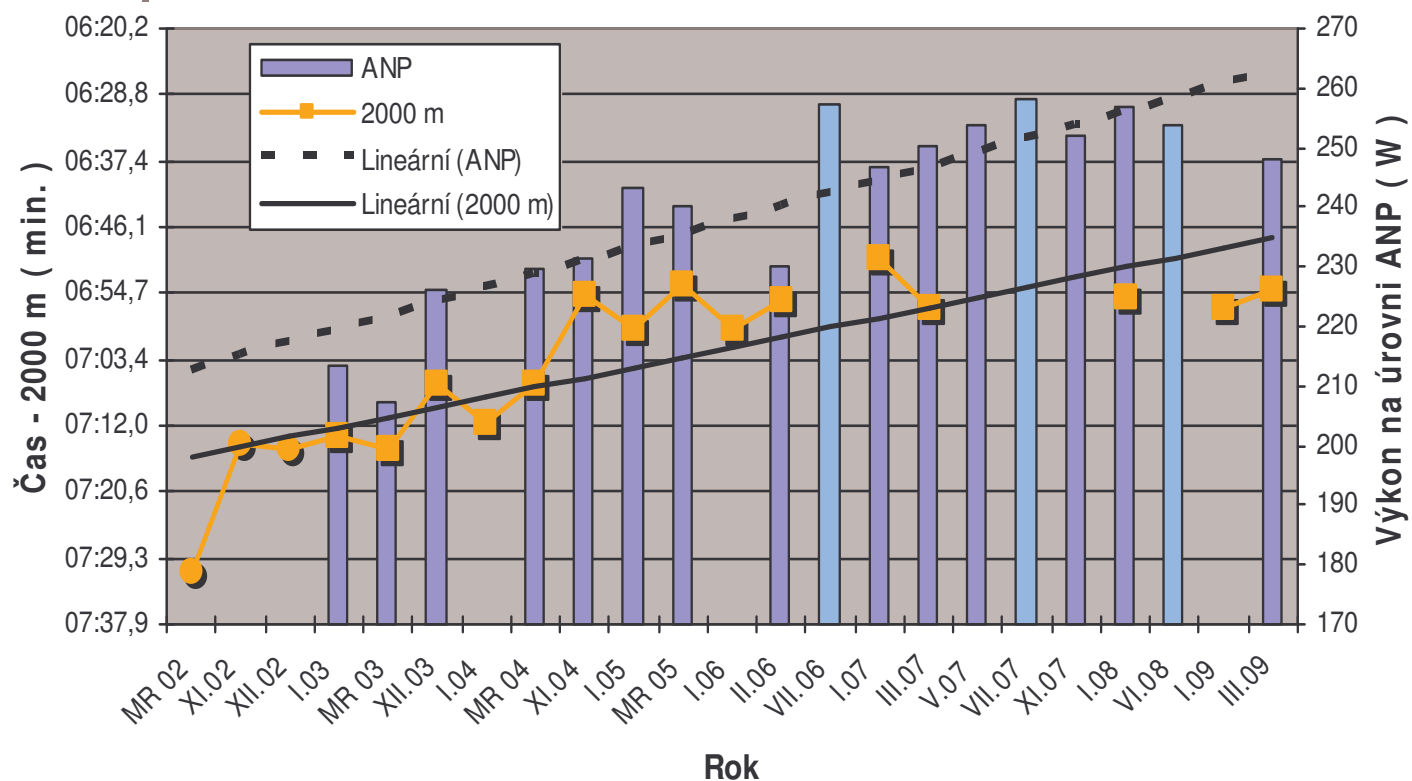


WCHJ 2004	Gold JW2x
WCHJ 2005	Gold JW2x
WCH U23 2006	Gold BW2x
WCH U23 2007	Gold BW2x
WCH U23 2008	Silver BW2x
WCH U23 2009	Gold BW1x

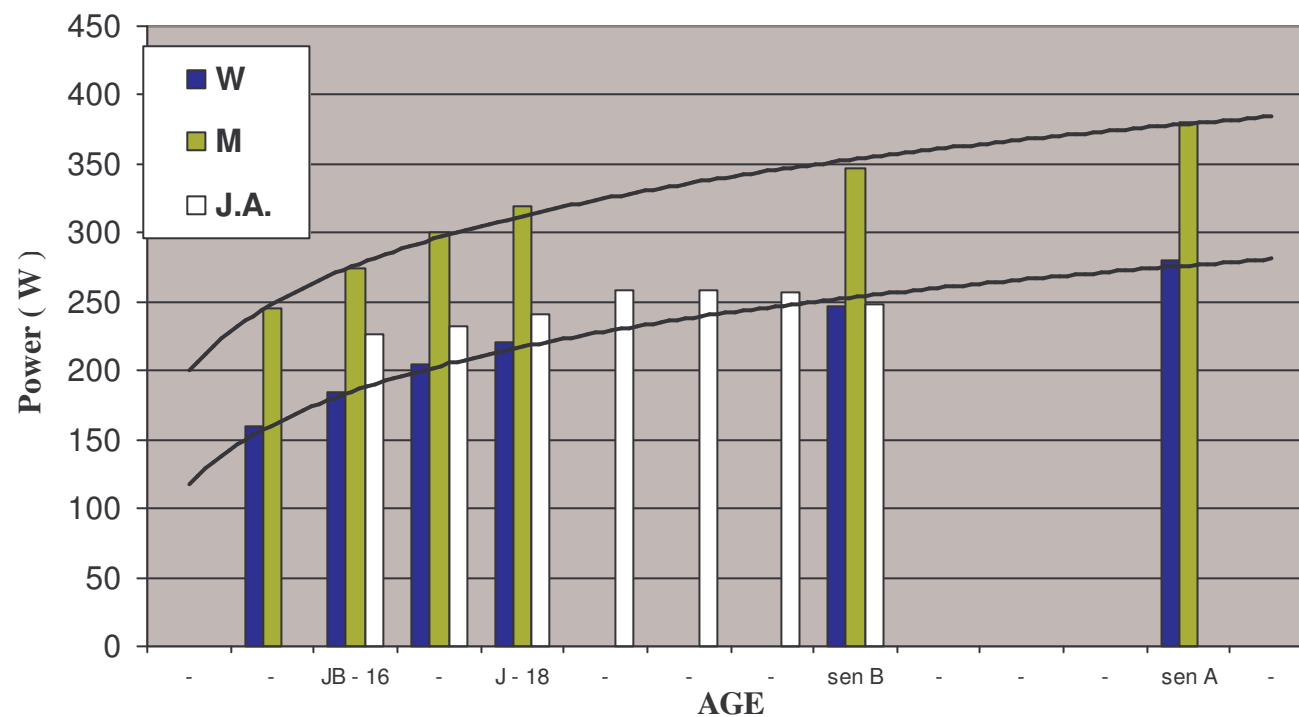


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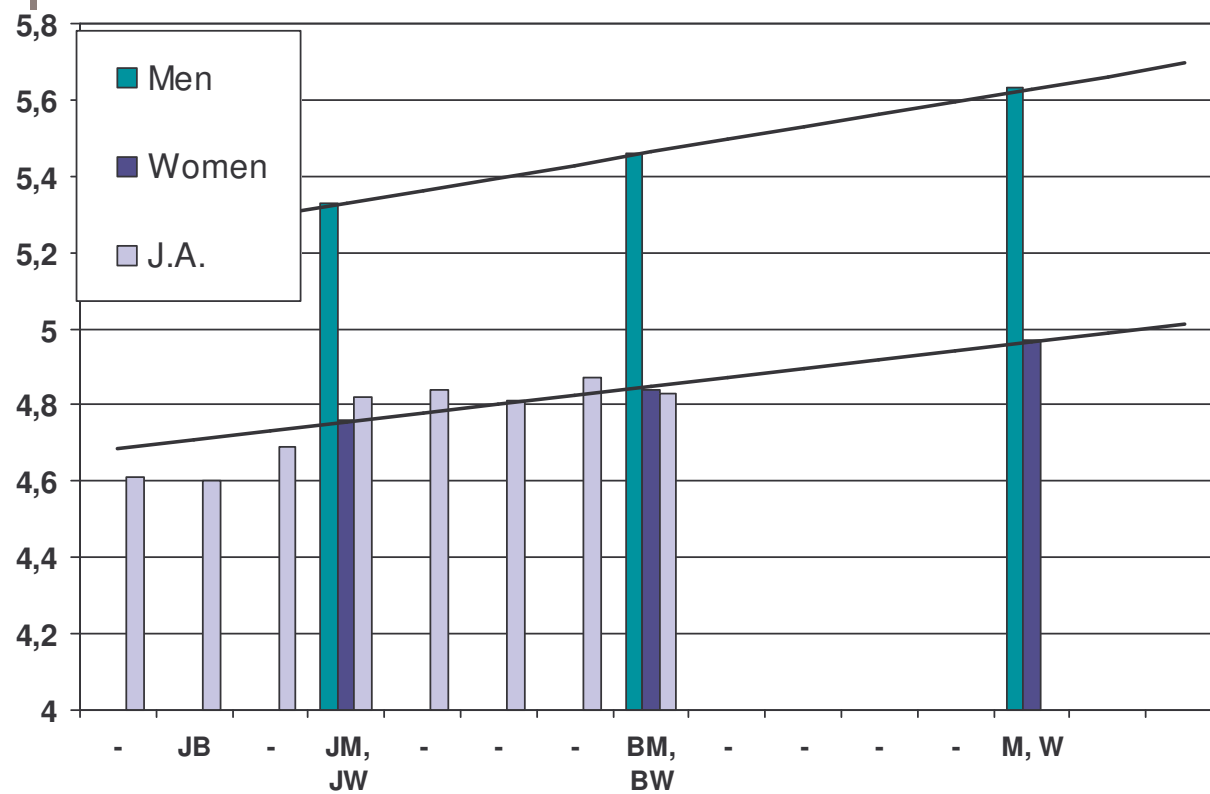
ANT – steps in Power – J.A.

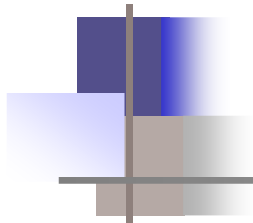


ANT – steps in Power – J.A.



Speed (m/s) – ergo 2000 m – J.A.





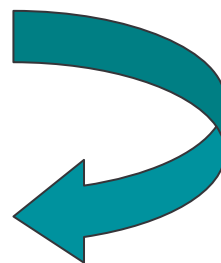
System of Youth Rowing

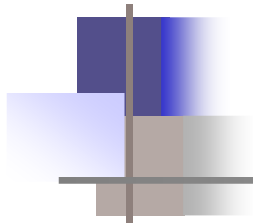
- Identification test 6000 m

November, December 250 athletes 25 clubs

- Limits ↔ Results

- Money



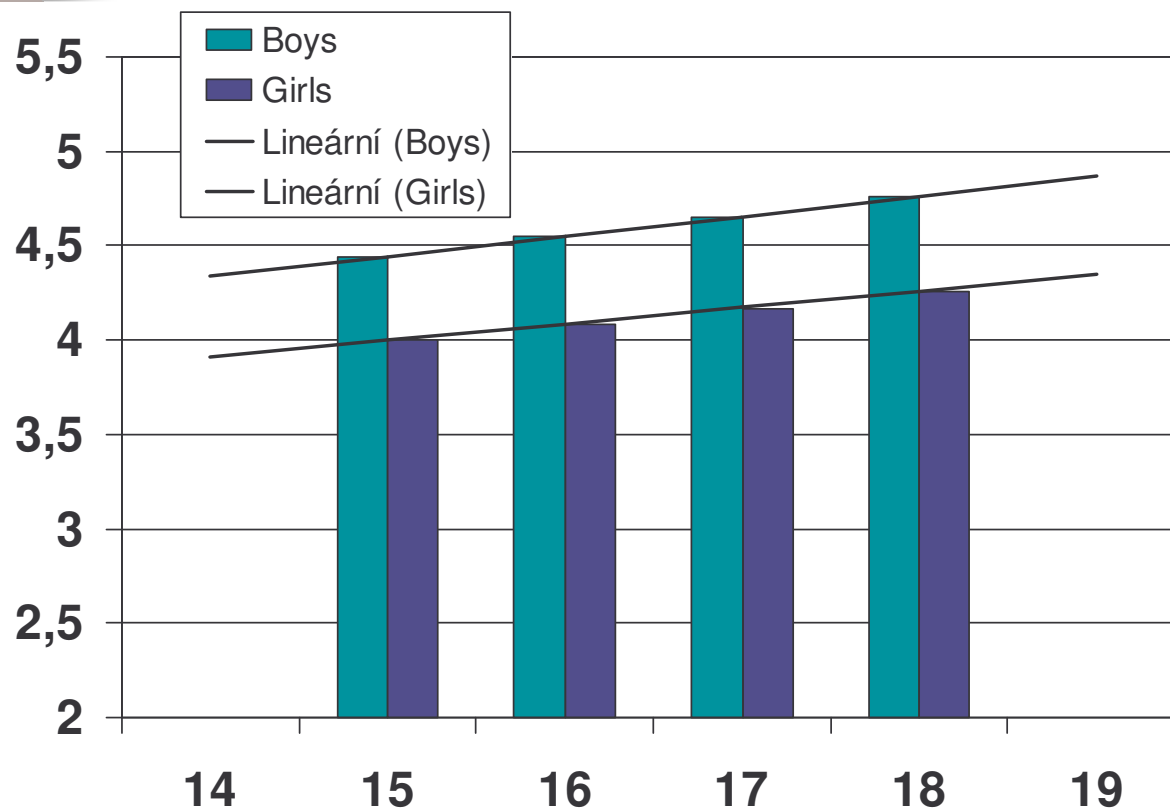


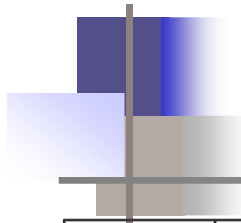
6k test 2000-2006 (2007 -)

JMB - 15	JMB - 16	JM - 17	JM - 18
22:30 21:35	22:00 21:35	21:30 21:10	21:00 20:45
JWB - 15	JWB - 16	JW - 17	JW - 18
25:00 24:10	24:30 24:10	24:00 23:50	23:30 23:30



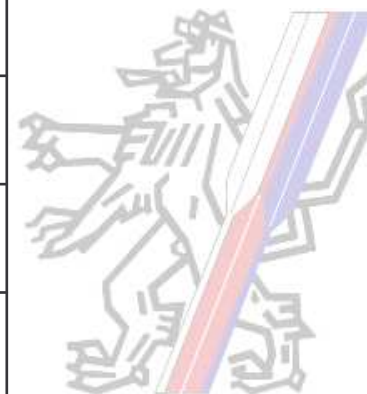
6k test 2000-2006

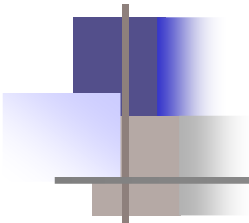




Results - 6k test – good times

Year	JM / 21: 00	JW / 24:00	JMB / 22:00	JWB / 25:00	Totally
2000	8	5	11	6	2000: 30
2001	19	8	8	9	2001: 44
2002	13	11	11	8	2002: 43
2003	6	8	14	11	2003: 39
2004	17	5	13	7	2004: 42
2005	10	7	10	10	2005: 37
2006	6	8	18	7	2006: 39





Steps of the Czech Rowing

Times in rowing competitions

- Table of times
- Comparison of times
- Discussion



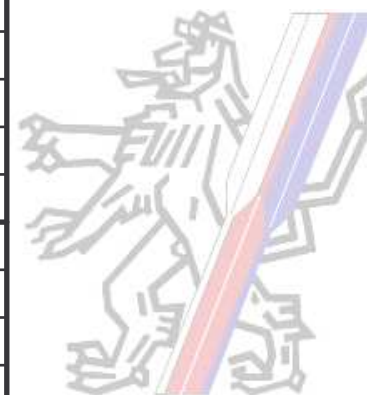
CZE table of times

Event	M	ML	BM	BML	JM	W	LW	BW	BWL	JW
2x	6:14	6:18	6:18	6:24	6:28	6:47	6:53	6:52	6:57	7:02
2-	6:21	6:28	6:25	6:31	6:35	6:58		7:03		7:13
1x	6:38	6:45	6:42	6:48	6:52	7:12	7:19	7:17	7:23	7:28
4-	5:51	5:57	5:55	6:00	6:04	6:26		6:30		6:40
4x	5:43	5:49	5:47	5:52	5:55	6:16	6:23	6:20	6:26	6:30
8+	5:30	5:36	5:34	5:38	5:42	6:02		6:06		6:15



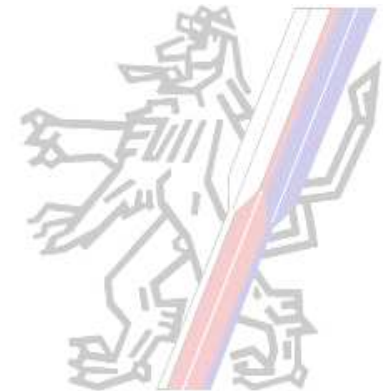
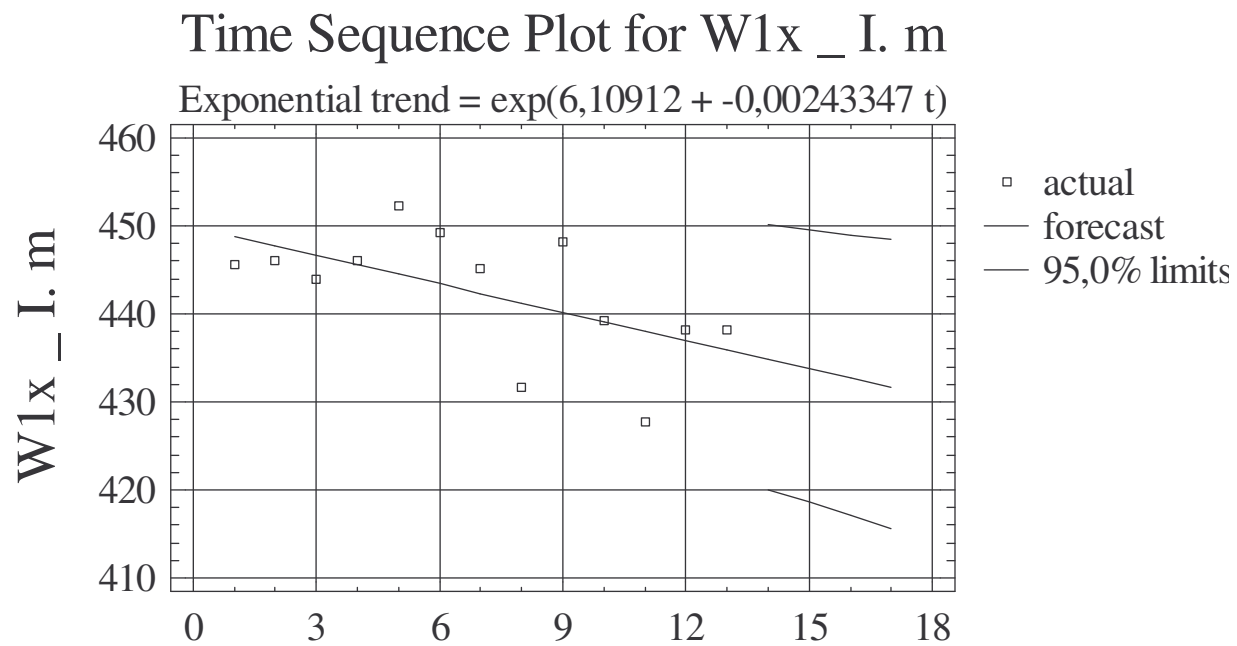
PC calculation – W1x

	Year	1st place	3rd place	5th place
1	1992	445,54	448,85	457,55
2	1993	446,00	448,14	451,54
3	1994	443,96	445,56	458,57
4	1995	4460	454,29	457,09
5	1996	452,21	457,20	465,08
6	1997	449,30	451,39	454,68
7	1998	445,09	450,99	457,29
8	1999	431,68	437,02	448,38
9	2000	448,14	448,99	457,88
10	2001	439,25	445,18	458,35
11	2002	427,71	432,07	444,69
12	2003	438,12	443,30	452,64
13	2004	438,12	443,10	451,66
14	2005	434,87	440,03	451,08
15	2006	433,81	439,10	450,52
16	2007	432,76	438,17	449,96
17	2008	431,71	437,25	449,40

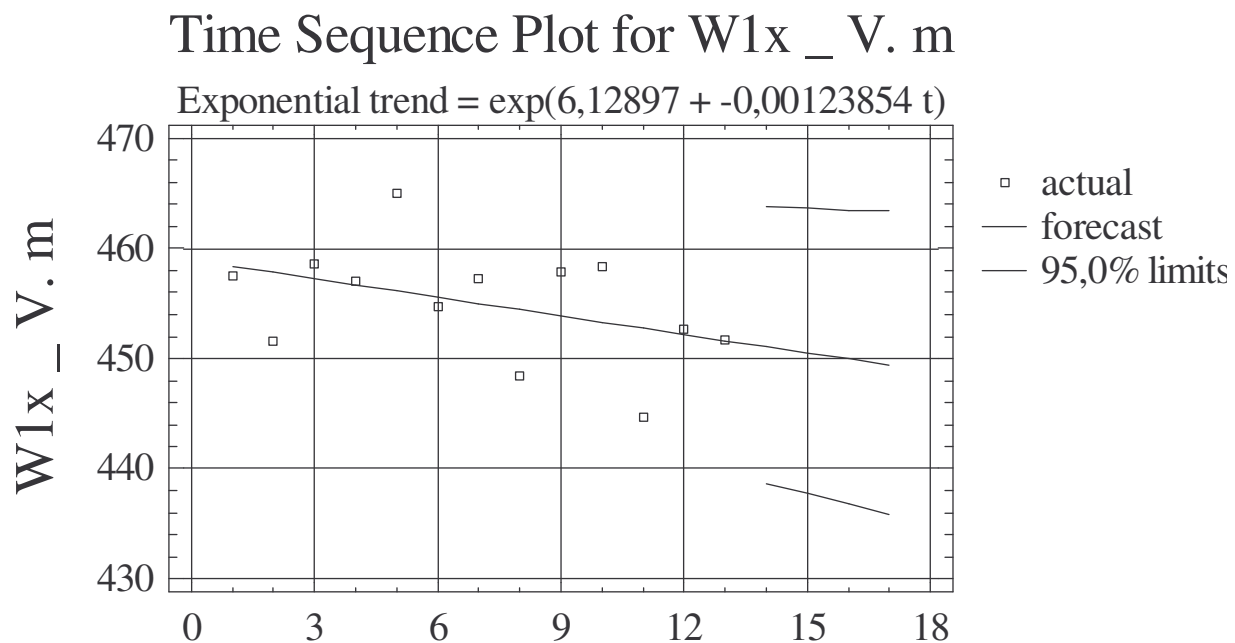


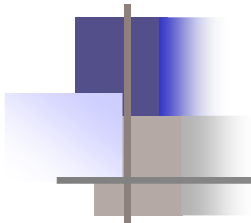
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PC calculation – W1x – 1st place



PC calculation – W1x – 5th place





Comparison

	M8+	M4x	M4-	LM4-	W8+	M2x	LM2x
Average times WCH, OG	5:38,6	5:51,6	5:54,4	6:02,5	6:17,6	6:14,3	6:23,0
World Records	5:19,9	5:37,7	5:41,3	5:45,6	5:56,6	6:04,0	6:10,8
Progn. AUS	5:19,0	5:33,0	5:41,0	5:45,0	5:53,0	6:00,0	6:06,0
Progn. Dr. P. Schwainitz	5:21,0	5:36,0	5:36,0	5:45,0	5:58,0	5:55,0	6:08,0
Progn. Dr. V. Kleshnev	5:24,2	5:36,2	5:38,7	5:46,0	5:57,9	6:03,0	6:03,4
Progn. CZE	5:30	5:43	5:51	5:57	6:02	6:14	6:18

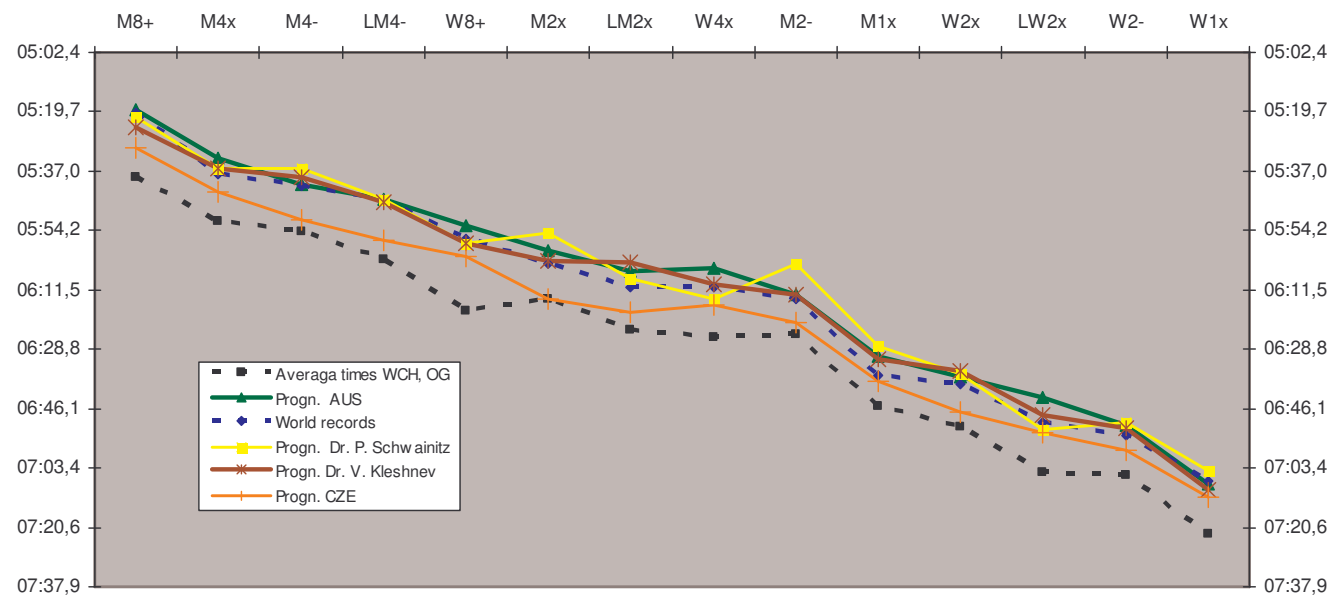


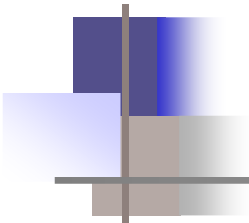
Comparison

	W4x	M2-	M1x	W2x	LW2x	W2-	W1x
Average times WCH, OG	6:25,1	6:24,6	6:45,2	6:51,2	7:04,5	7:05,3	7:22,5
World Records	6:10,8	6:14,3	6:36,3	6:38,8	6:49,9	6:53,8	7:07,0
Progn. AUS	6:05,0	6:13,0	6:31,0	6:37,0	6:43,0	6:51,0	7:08,0
Progn. Dr. P. Schwainitz	6:14,0	6:04,0	6:28,0	6:36,0	6:52,0	6:50,0	7:04,0
Progn. Dr. V. Kleshnev	6:10,1	6:13,1	6:31,8	6:35,2	6:47,8	6:51,7	7:09,6
Progn. CZE	6:16	6:21	6:38	6:47	6:53	6:58	7:12



Comparison





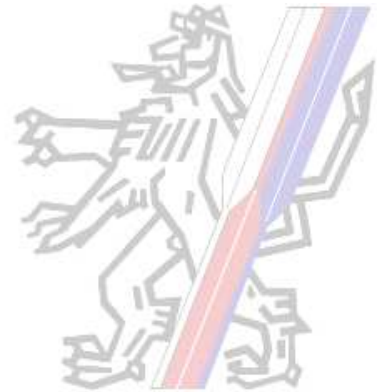
Evaluation of times

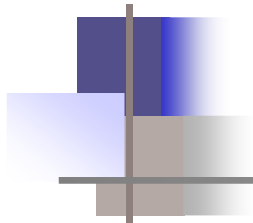
- Difference between the table time and real time in competition.

Example. National trials  crew which has the smallest difference between table time and real time has probably the best level

- Per cent proportion between the table speed and real speed of the boat during race (more accurate, weather...)

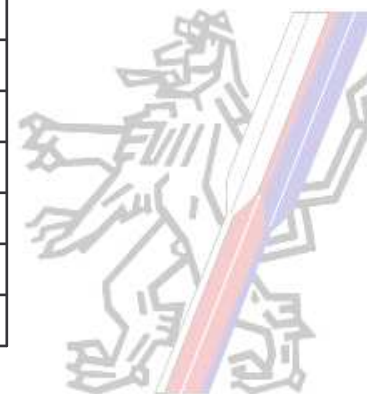
Example: It is possible to evaluate the performance during the Distance Race for 8 000 m.

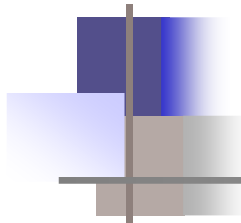




Evaluation of times 2000 m trials of the JB team

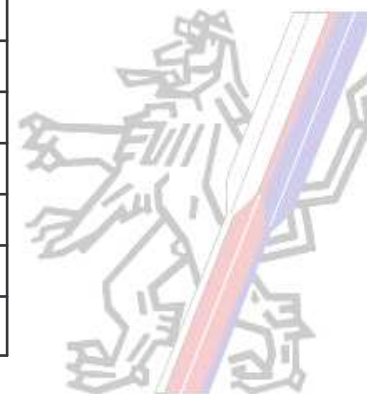
CREW	Event	Time	Speed	% of table speed	Order
Emr T. Mach J.	2- dci	6:02,65	4,14	81,69	1
Melichar P.	1x dci	6:18,31	3,97	81,69	2
Andrle J.	1x dci	6:21,08	3,94	81,09	3
Koloc J.	1x dci	6:25,79	3,89	80,10	4
Tetera J., Doležel L.	2- dci	6:11,26	4,04	79,79	5
Šimon M.	1x dci	6:29,31	3,85	79,36	6
Jacko T., Šlemar V.	2- dci	6:13,85	4,01	79,24	7
Juhaz G.	1x dci	6:32,27	3,82	78,76	8
Kopecká K.	1x dky	7:07,72	3,51	78,52	9
Pilc J.	1x dci	6:34,22	3,80	78,37	10
Příhodová K.	1x dky	7:14,29	3,45	77,35	11
Ondrejko D.	1x dci	6:40,07	3,75	77,24	12
Bořuta J., Vrabec J.	2- dci	6:24,32	3,90	77,09	13





Evaluation of times 8000 m trials of the sen A team

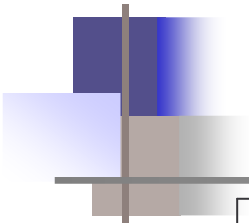
Order	Club	Crew	Time	Speed (m/s)	% of the table speed
1	VK Slavia Praha	M. Knapková	31:58,4	4,17	91,65
2	Slavia/Dukla	J. Litera, P. Mašek	28:48,3	4,63	90,43
3	Dukla Praha	V. Maleček	30:31,4	4,37	90,10
4	Dukla Praha	P. Imre, A. Michálek	28:56,5	4,61	90,04
5	Dukla Praha	O. Vetešník	30:42,7	4,34	89,48
6	Dukla Praha	M. Švrček	30:55,7	4,31	88,87
7	Švédsko	L. Karonen	30:34,1	4,36	88,26
8	VK Slavia Praha	J. Hanák	30:39,2	4,35	88,06
9	Švédsko	S. Karlsson	34:01,3	3,92	87,89
10	Dukla Praha	J. Kopáč, J. Vetešník	30:10,8	4,42	87,87
11	Dukla Praha	V. Chalupa	30:45,1	4,34	87,85
12	Dukla Praha	T. Karas	30:54,7	4,31	87,25
13	Dukla Praha	K. Neffe, J. Schindler	29:57,8	4,45	86,91



CZE table vs. Winners of the OG 08

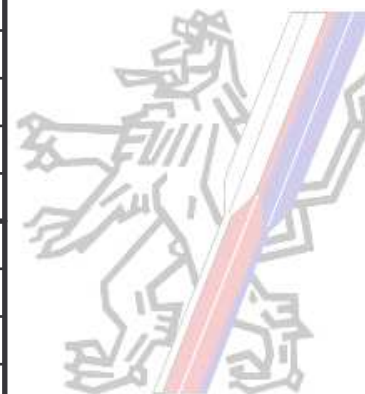
Event	Sat.	Event	Sun.
W1x	+10,34 s	LW2x	+1,74 s
M1x	+13,77 s	LM2x	-7,01 s
W2-	+22,60 s	LM4-	-9,24 s
M2-	+16,44 s	W4x	+0,06 s
W2x	+20,32 s	M4x	-1,67 s
M2x	+13,77 s	W8+	+3,34 s
M4-	+15,57 s	M8+	-6,11 s





New PC calculation – W1x?

	Year	1st place	3rd place	5th place
1	1992	445,54	448,85	457,55
2	1993	446,00	448,14	451,54
3	1994	443,96	445,56	458,57
4	1995	4460	454,29	457,09
5	1996	452,21	457,20	465,08
6	1997	449,30	451,39	454,68
7	1998	445,09	450,99	457,29
8	1999	431,68	437,02	448,38
9	2000	448,14	448,99	457,88
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14	2005	434,87	440,03	451,08
15	2006	433,81	439,10	450,52
16	2007	432,76	438,17	449,96
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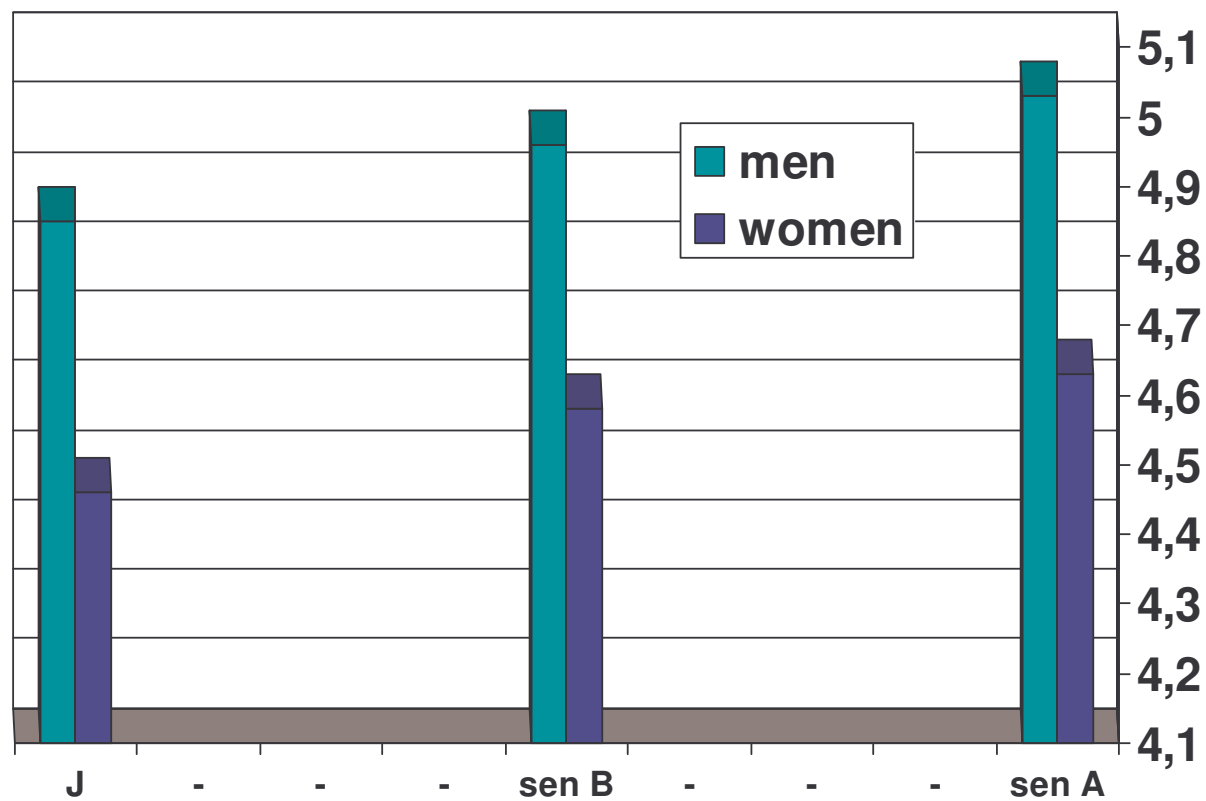
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CZE table of times

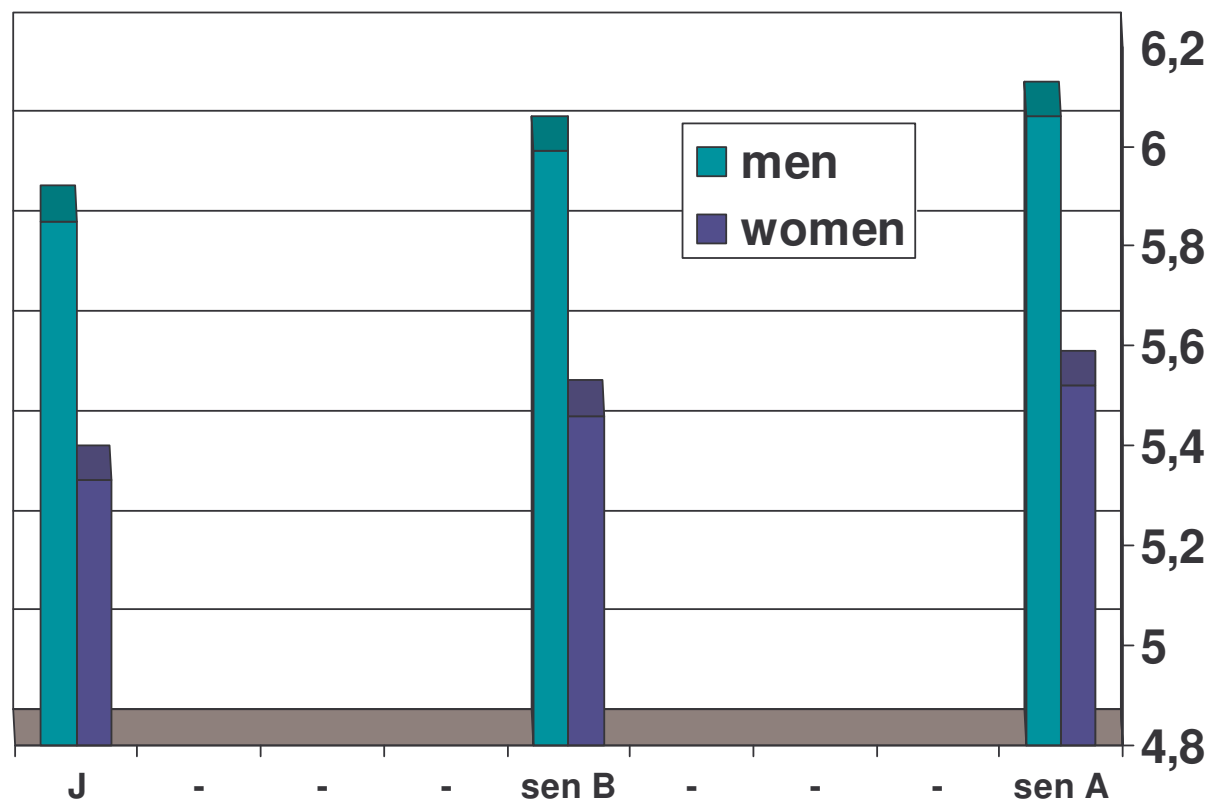
Event	M	ML	BM	BML	JM	W	LW	BW	BWL	JW
2x	6:14	6:18	6:18	6:24	6:28	6:47	6:53	6:52	6:57	7:02
2-	6:21	6:28	6:25	6:31	6:35	6:58		7:03		7:13
1x	6:38	6:45	6:42	6:48	6:52	7:12	7:19	7:17	7:23	7:28
4-	5:51	5:57	5:55	6:00	6:04	6:26		6:30		6:40
4x	5:43	5:49	5:47	5:52	5:55	6:16	6:23	6:20	6:26	6:30
8+	5:30	5:36	5:34	5:38	5:42	6:02		6:06		6:15



Steps in speed - 2000 m - 1x



Steps in speed - 2000 m – 8+



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