



# FISA Coaches Conference

*Mr Paul Thompson, Chief Coach – Women and Lightweights and Coach Women's Double*

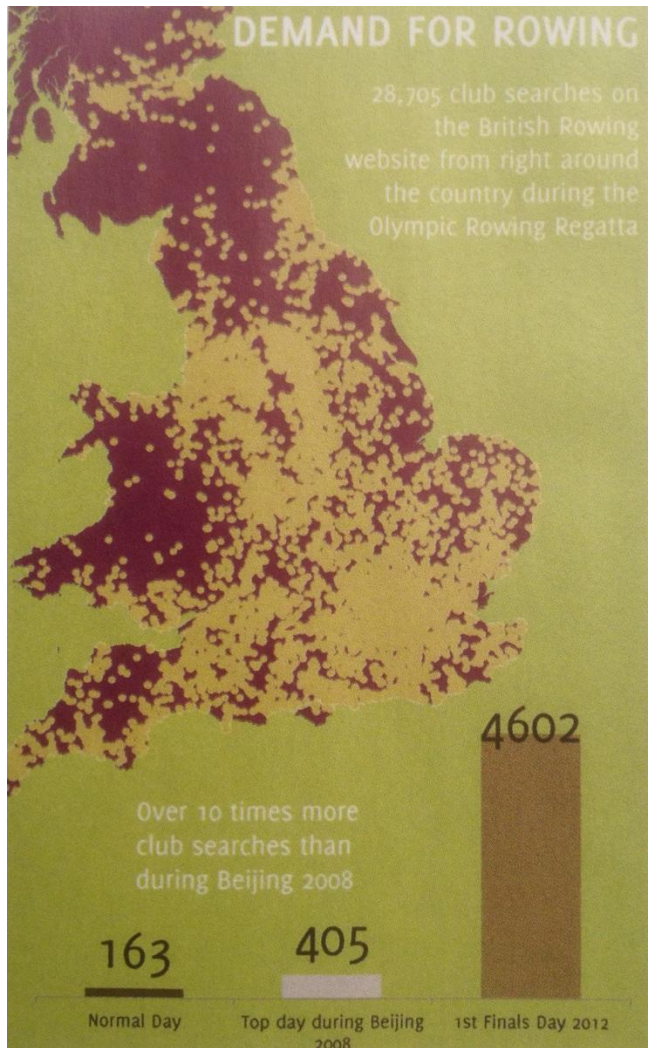
*Mr Robin Williams, Coach Women's Pair*

*Mr Paul Reedy, Coach Lightweight women's Double*

# 2012 Women and Lightweights Squad



## Impact and Legacy – British Rowing



- 32,000 people signed up for learn to row courses since the Olympics
- 1000 new applicants for Start a gateway to high performance
- Traditionally start applications attracts a male to female ratio of 4/1 after London the ratio moved to 3/2





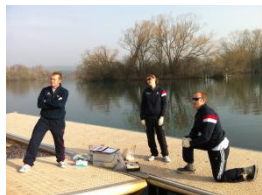
# GB Rowing Team Structure



# Women and Lightweights Coaches



# Faces behind the team

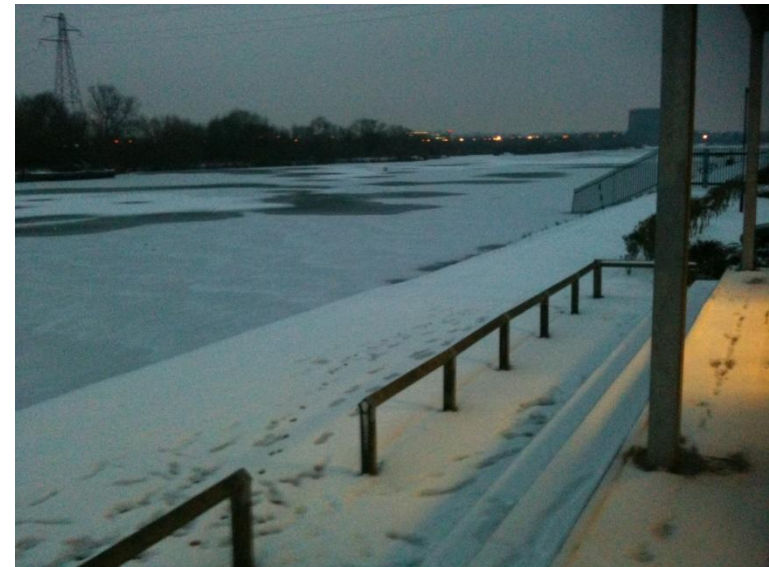


# GB Lightweight and Women Squad Progression 08 - 12

	W1x	W2x	W4x	W2-	W8+	LM2x	LM4-	LW2x	
2008	1	BUL	NZL	CHN	ROU	USA	GBR	DEN	NED
	2	USA	GER	GBR	CHN	NED	GRE	POL	FIN
	3	BLR	GBR	GER	BLR	ROU	DEN	CAN	CAN
	4	CHN	CHN	UKR	GER	CAN	ITA	FRA	GER
	5	CZE	USA	USA	NZL	GBR	CHN	GBR	CHN
	6	POL	CZE	AUS	GBR	AUS	CUB	NED	GRE
								11th	
2009	1	BLR	POL	UKR	USA	USA	NZL	GER	GRE
	2	GBR	GBR	USA	ROU	ROU	FRA	DEN	POL
	3	CZE	BUL	GER	NZL	NED	ITA	POL	GBR
	4	NZL	AUS	ITA	GER	GER	GER	FRA	GER
	5	CHN	CZE	GBR	AUS	GBR	CAN	ITA	AUS
	6	RUS	USA	RUS	GBR	CAN	GBR	NED	CAN
								13th	
2010	1	SWE	GBR	GBR	NZL	USA	GBR	GBR	CAN
	2	BLR	AUS	UKR	GBR	CAN	ITA	AUS	GER
	3	NZL	POL	GER	USA	ROU	NZL	CHN	GRE
	4	CZE	CZE	AUS	AUS	GBR	CAN	GER	AUS
	5	RUS	USA	USA	CAN	NED	CHN	NED	GBR
	6	SRB	GER	NZL	GER	CHN	POR	ITA	NZL
								9th	
2011	1	CZE	GBR	GER	NZL	USA	GBR	AUS	GRE
	2	BLR	AUS	USA	GBR	CAN	NZL	ITA	CAN
	3	NZL	NZL	NZL	AUS	GBR	ITA	GBR	GBR
	4	CHN	UKR	AUS	CHN	ROU	GER	CHN	USA
	5	SWE	POL	CHN	ROU	NED	DEN	DEN	AUS
	6	GER	CZE	UKR	RSA	CHN	CHN	SUI	NZL
								10th	
2012	1	CZE	GBR	UKR	GBR	USA	DEN	RSA	GBR
	2	DEN	AUS	GER	AUS	CAN	GBR	GBR	CHN
	3	AUS	POL	USA	NZL	NED	NZL	DEN	GRE
	4	NZL	CHN	AUS	USA	ROU	FRA	AUS	DEN
	5	BLR	NZL	CHN	ROU	GBR	POR	SUI	AUS
	6	CHN	USA	GBR	GER	AUS	GER	NED	GER



# Redgrave and Pinsett Rowing Lake













# Bisham Abbey National Sports Centre





## British rowing technique

# The perfect stroke

This is the second in a series of three articles, which will look at good rowing, sculling and ergometer technique. The high performances coaches – including Jürgen Grobler, Marty Aitken, Paul Thompson and Pete Sheppard – have got together to define British rowing technique, which has been endorsed and adopted by the coaching development officers and incorporated into the coaching award scheme and national junior rowing programme. The 'perfect stroke' is shown in the series of photographs published here.

Good technique is about producing maximum power for minimum effort

Moving the boat as far as possible each stroke in the most efficient way or, on the ergometer, producing the fastest split or highest wattage possible in the most efficient way.

Coaches need to understand that in order to move a boat or ergometer well, several concepts about technique need to be understood.

Differences in size, strength and ability mean that different athletes achieve maximum efficiency in slightly different ways. Coaches need to be able to spot where changes in techniques can be made to maximise efficiency.

### Link together kinetic chain

Most of the concepts that contribute to efficient technique can be summed up in one or more of the pictures. However, the concept of 'link together kinetic chain' applies to the whole stroke. The rowing stroke requires constant movement and application of power or controlled recovery to be effective. The whole of the body is engaged in the activity and therefore each part of the body chain needs to transfer the power. Hence posture and trunk stability are key to rowing efficiently.

## Sculling technique

The left hand should remain in front and slightly above the right hand. Keep this relationship during the drive phase and the recovery.

The hands should move into and out from the body at the same speed. As the rating comes up, so all the movements speed up to keep the same stroke ratio.

Photographs: Marty Aitken

## Catch



- Shins vertical. No gap between thighs and body
- Lower back set at catch
- Body in pre-stretched position



- Hands rise where they reach to



- Lock up the face of the blade in the water

## Drive phase

- Legs accelerate through the stroke

- Hang/suspend body weight on the handle. The connection is low down in the body, not in the shoulders



- Engage and push
- Legs and then body

- Back opening when the handle is in front of the knees

- Legs, upper body, shoulders and arms all contribute to the power

## Drive phase



- Legs, upper body, shoulders and arms all contribute to the power

## Extraction



- Brush T-shirt with the thumbs
- Release the pressure on the handle just before the small circle around the finish
- Blades square as long as possible
- Hands down and away

## Recovery phase



- Pelvis moving from backstops

## Recovery phase

- Good organisation of body movement
- Weight transferred early onto the feet

- Smooth movement forward
- Hands body and slide



- Rock over to a comfortable and strong posture



- All body swing by half way up the slide



- Prepare early by squaring as the blades pass the knees
- Body pre-stretched and ready for the catch on the last part of the slide



## British rowing technique

# The perfect stroke

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This will enable you to move the boat as far as possible each stroke in the most efficient way or, on the ergometer, producing the fastest split or highest wattage possible in the most efficient way.

Coaches need to understand that in order to move a boat or ergometer well, several concepts about technique must be understood. Differences in size, strength and ability mean that different athletes achieve maximum efficiency in slightly different ways. Coaches need to be able to spot where changes in technique can be made to maximise efficiency.

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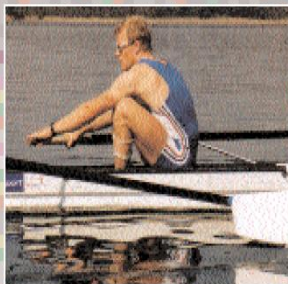
### Rowing technique

The hands should be no more than two hand-widths apart on the handle. Outside hand on the end of the blade controls the blade height, the inside hand controls the square and feathering. Rotation is around the rigger with the outside shoulder, enabling the body to follow the arc of the blade handle

Photographs: John West

## Catch

- ☐ Outside hand raises the handle and locks the blade in the water



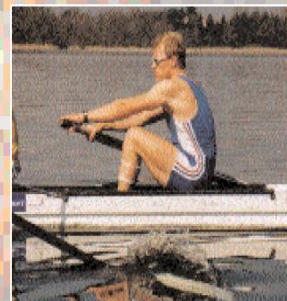
- ☐ Shins vertical. No gap between thighs and body
- ☐ Lower back set at catch
- ☐ Body in pre-stretched position



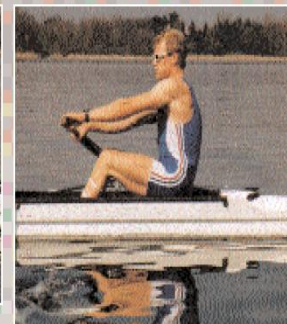
- ☐ Hands rise where they reach to
- ☐ Blade in at furthest point forward
- ☐ Lock up the face of the blade in the water

## Drive phase

- ☐ Legs accelerate through the stroke



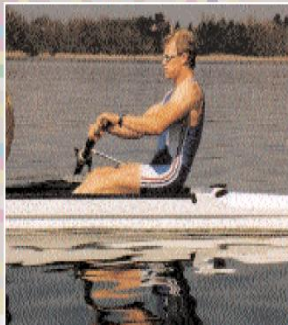
- ☐ Blade locked into the water
- ☐ Engage and push
- ☐ Legs and then body



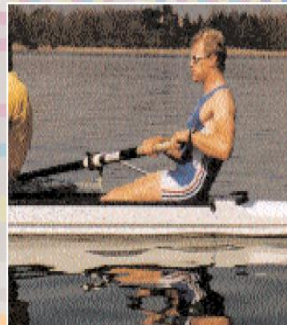
- ☐ Back opening when the handle is in front of the knees

## Drive phase

- ☐ Hang/suspend body weight on the handle. The connection is low down in the body, not in the shoulders

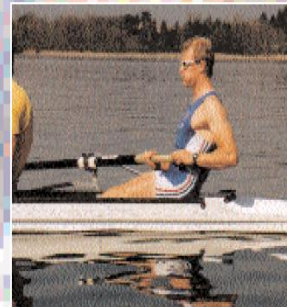


- ☐ Legs, upper body, shoulders and arms all contribute to the power

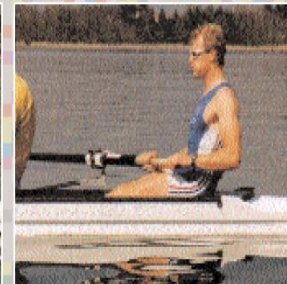


- ☐ Weight still hanging on the blade

## Extraction



- ☐ Outside hand controls the blade movement at the extraction
- ☐ Brush the T-shirt with the outside hand



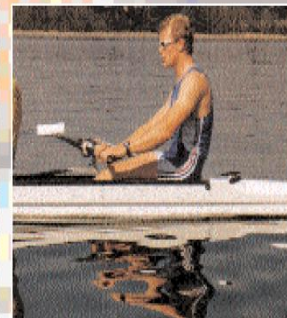
- ☐ Release the pressure on the handle just before the small circle around the finish
- ☐ Blades square as long as possible
- ☐ Hands down and away

## Recovery phase

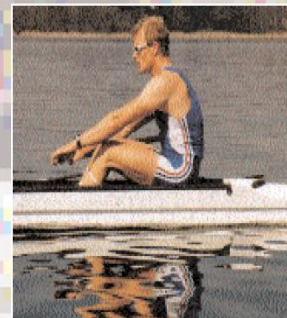
- ☐ Good organisation of body movement
- ☐ Smooth movement forward
- ☐ Weight transferred early onto the feet
- ☐ Hands body and slide



- ☐ Hands lead the recovery

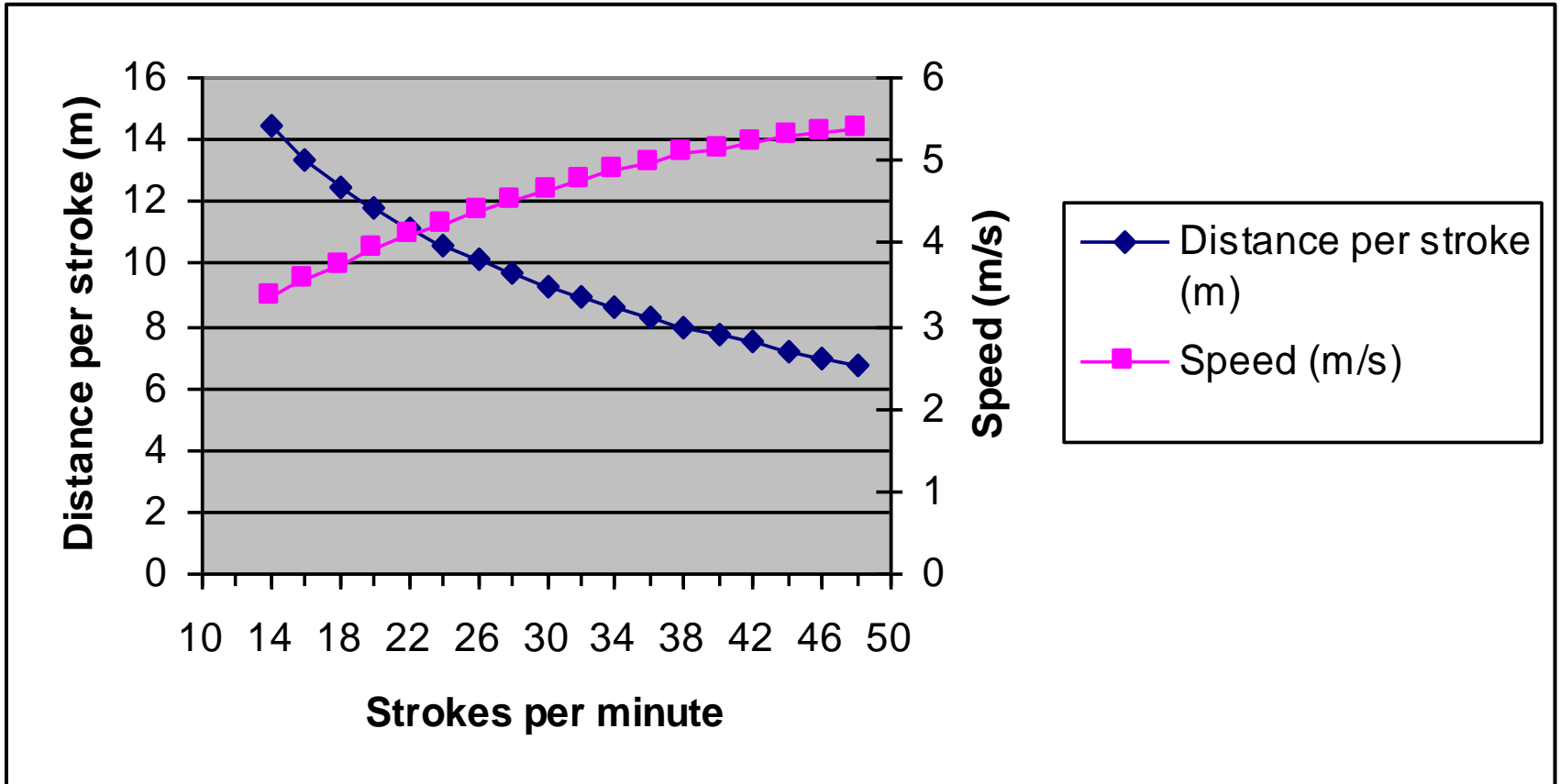


- ☐ The pelvis rocks over from backstops into a comfortable and strong position



- ☐ Prepare early by squaring as the blades pass the knees
- ☐ Body pre-stretched and ready for the catch on the last part of the slide
- ☐ Outside shoulder around the rigger

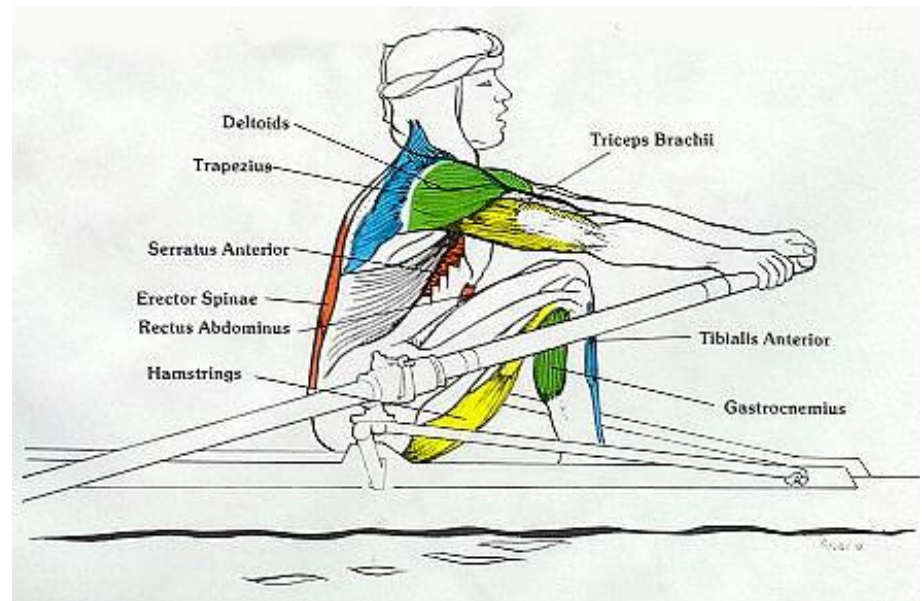
# Distance per stroke





# Technical and Physical Development

- Flexibility – Hamstrings /Hip Flexors/Lats
- Glutes/Quads
- Lower Abs
- Trunk
- Shoulder complex



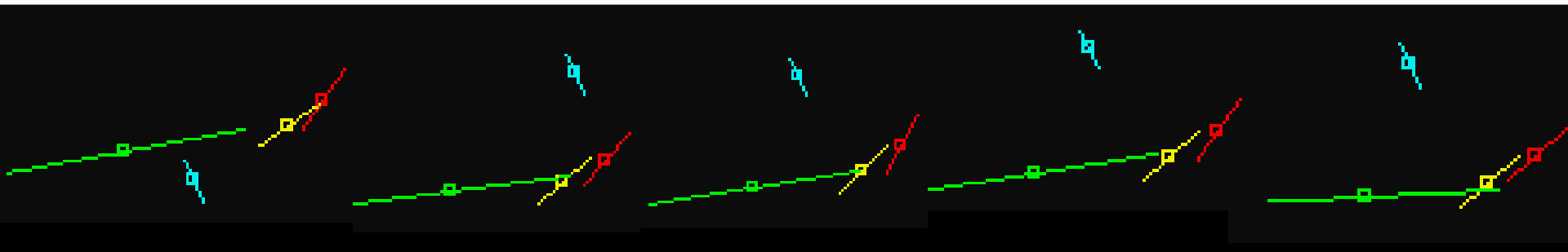
# Lumbo Pelvic Position - Basic Posture

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MRI Reproduced by Kind permission Dr Alison McGregor, Imperial College

# Ergometer Analysis

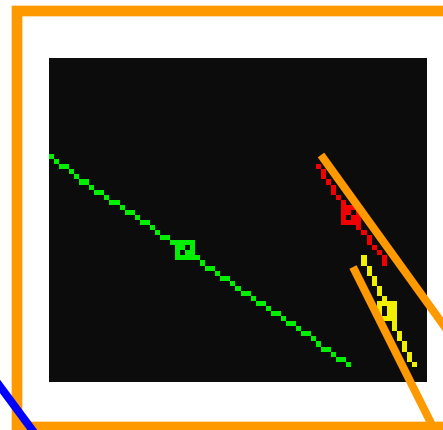
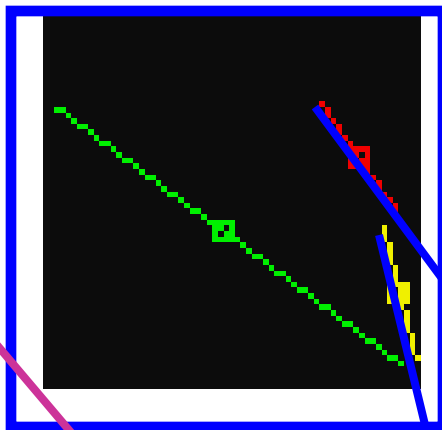
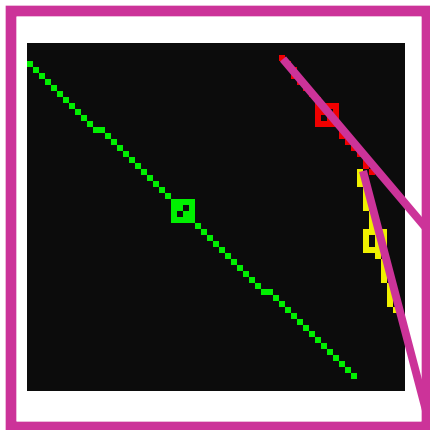




Season 1

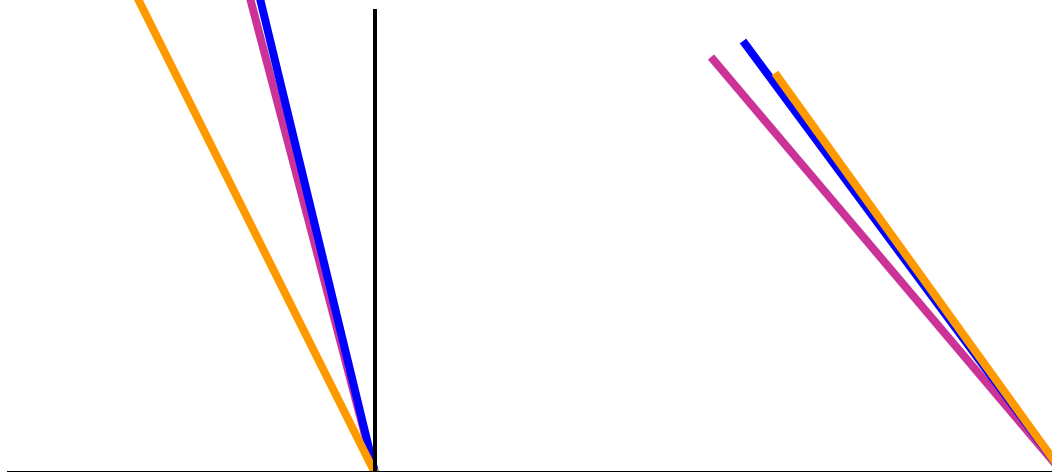
Season 2

Season 3

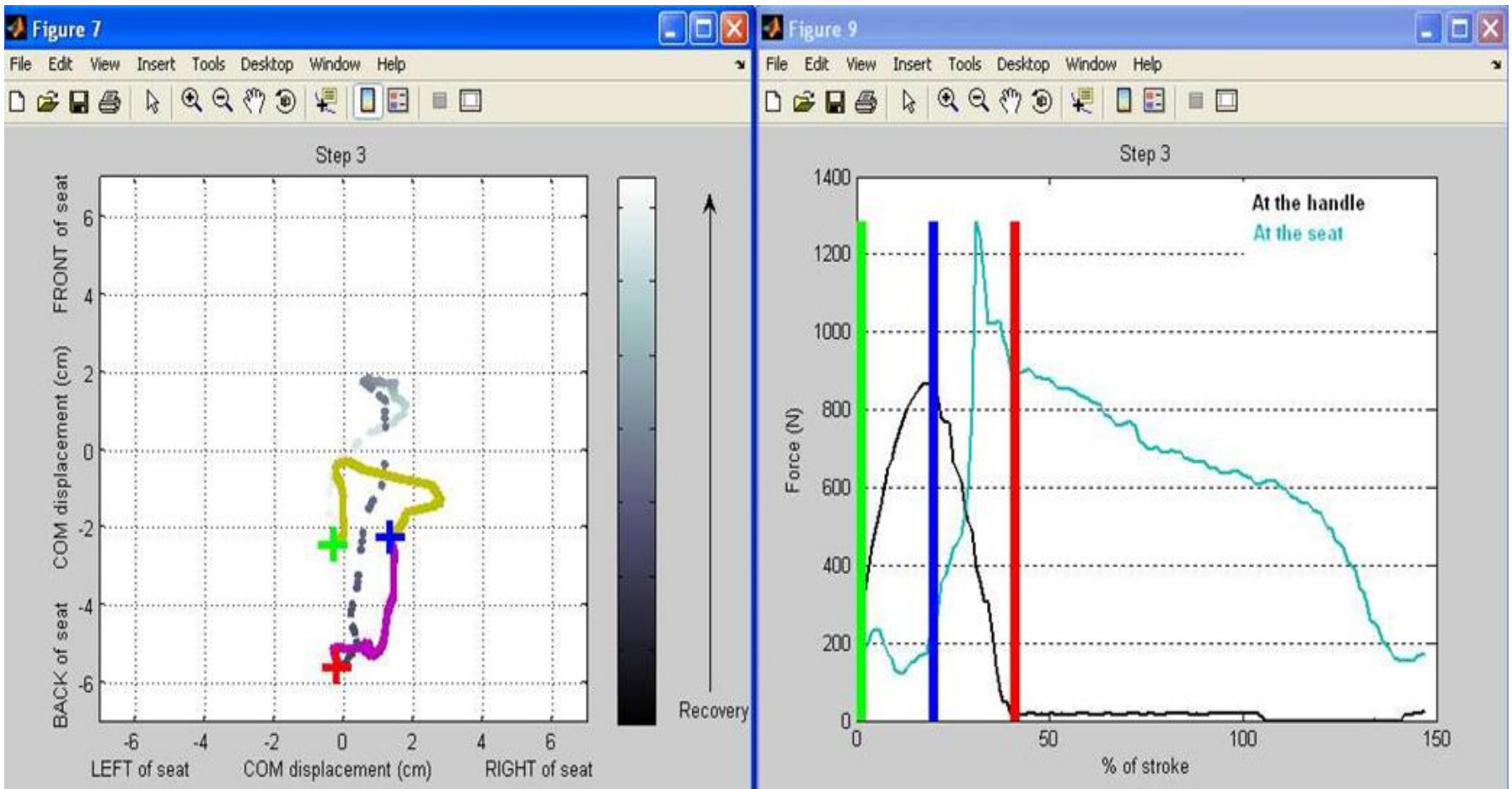


PELVIS

LUMBAR



# Quality of suspension

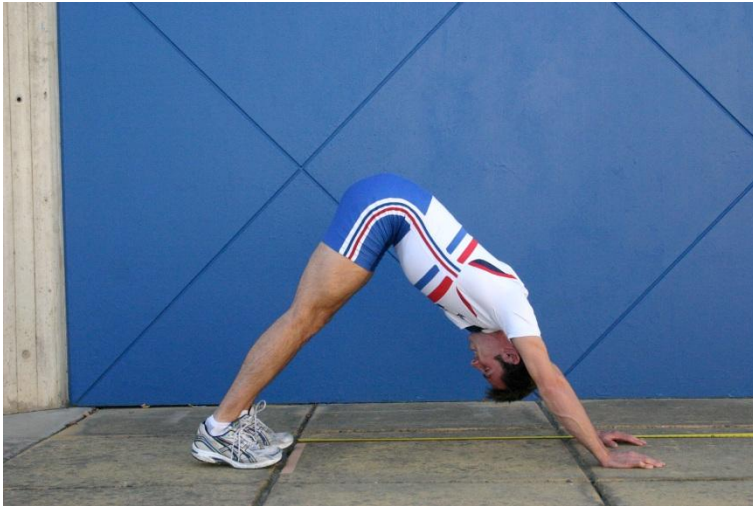




# DPS



# Functional Flexibility





# Specific Exercises



# Strength and Conditioning



	<b>% of Back Squat</b>
<b>Back Squat</b>	<b>100%</b>
Power Clean	75-80%
Front Squat	85-90%
Deadlift	110-115%
RDL	100%
Good morning	65-70%
Step Up	70% +
Split Squat	80% +
Bench Pull	65-70%
Bench Press	65-70%
Seated Row	65-70%
Single Arm Row	25-30%
Bentover Row	50-55%
Dumbbell Bench Press	25-30%
Chin Ups (BW + load)	75-80%



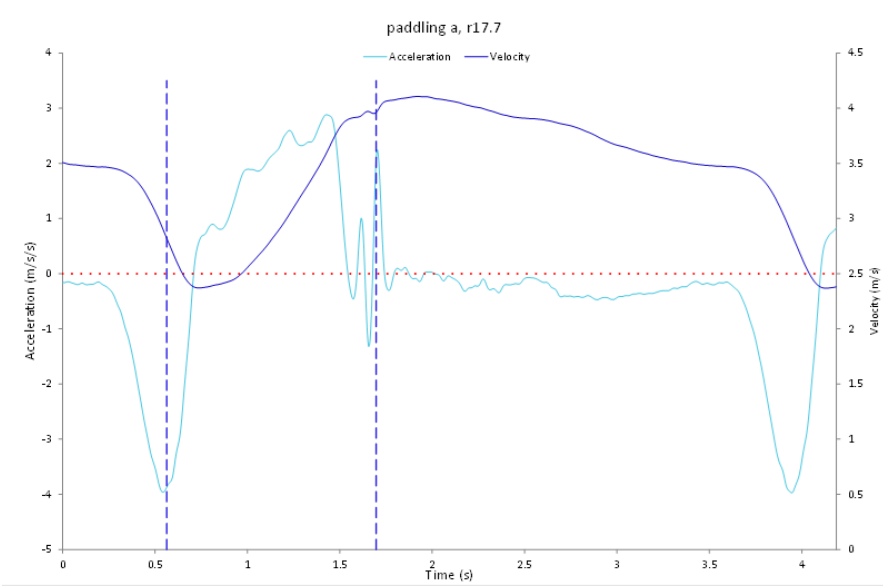
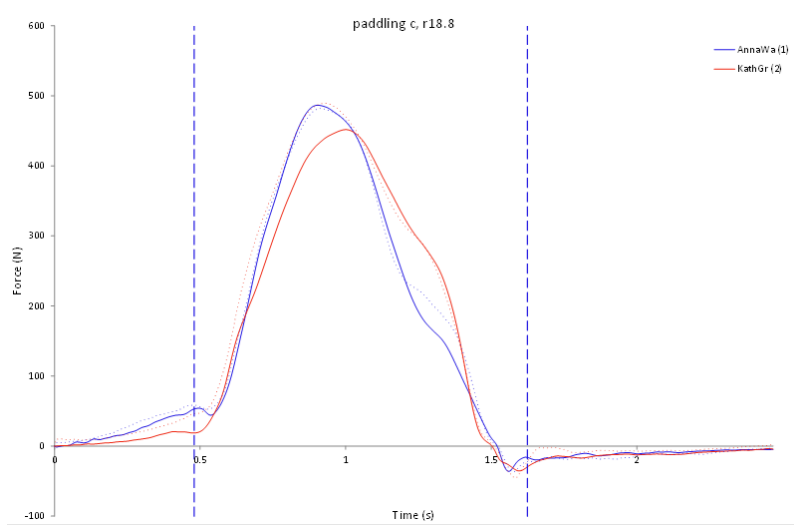
Interaction with the boat still a key consideration and focus



# Technique Analysis

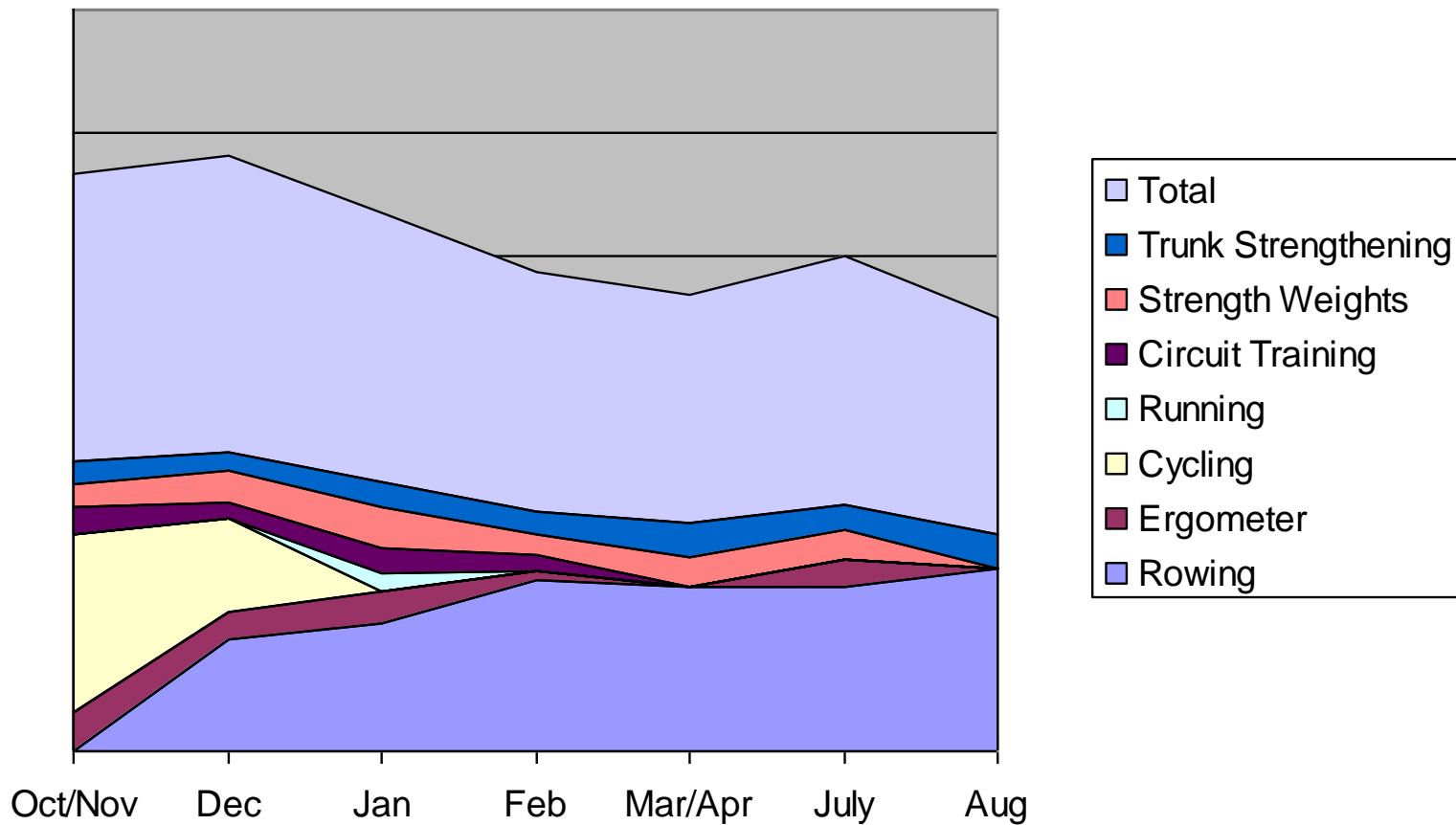
- Video
- On water biomech analysis
- Peach







## Training Modalities Throughout Year



# Training Definitions and Zones

Zone	Stroke Rate Per Minute	% Of Gold Standard Time	% Of Maximum Heart Rate	Approx. Lactate (Mmol)	Physiological Zone Definition
Utilisation 3 (U3)	<18	< 70%	65-75%	>1	Below the onset of blood lactate accumulation
Utilisation 2 (U2)	17-18	70 - 76%	65-75%	>2	Below the onset of blood lactate accumulation
Utilisation 1 (U1)	19-23	77 - 82%	70-80%	2-4	Above the onset of blood lactate accumulation but below the onset of metabolic acidosis
Anaerobic Threshold (AT)	24-28	85-88%	82-86%	~ 4	Just below the onset of metabolic acidosis
Transport (TPT)	28-36	88-100%	87-95%	4-8	Above the onset of metabolic acidosis
Anaerobic (AN)	36+	100%+	Max		Maximum effort

# Programme variations

- Women
- Men
- Lightweight

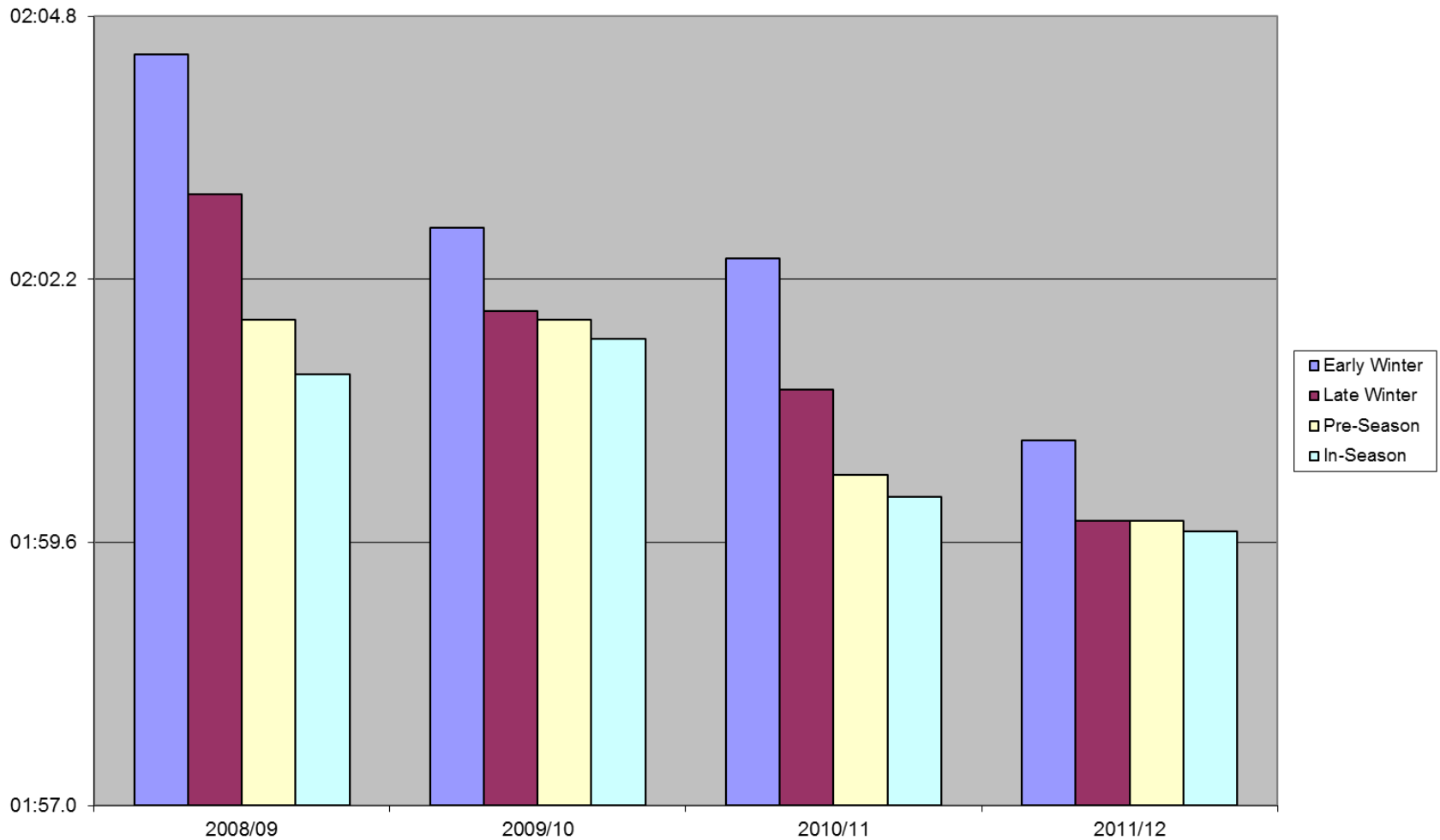




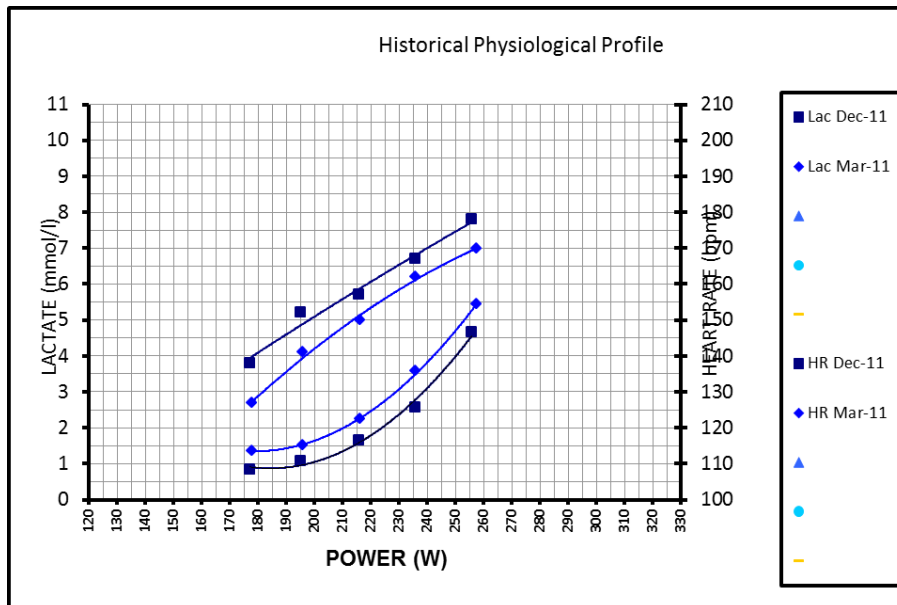
# Aerobic Training



# Aerobic Development over the Olympiad - HW



# Testing and monitoring





# Olympics London 2012

## GBR W2x





# Anna Watkins

Date of Birth: 13/2/1983

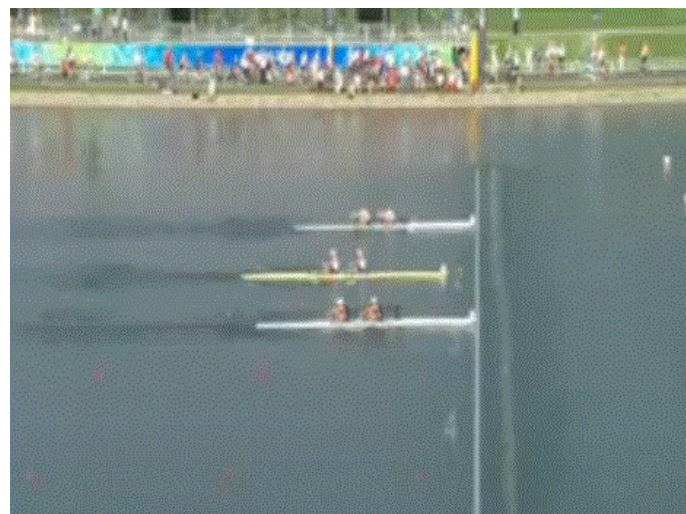
Height: 183cm

Weight: 79kg

Student: Phd (Mathematics)

Started Rowing: Newham College, Cambridge

Competitive Record Highlights		
2004	Under 23 W4-	Gold
2005	Under 23 W2-	Bronze
2005	W8+	5th
2006	W2x	4th
2007	W2x	Bronze
2008	W2x	Bronze
2009	W2x	Silver
2010	W2x	Gold
2011	W2x	Gold
2012	W2x	Gold





# Katherine Grainger MBE

Date of Birth: 12/11/75

Height: 182cm

Weight: 79kg

Student: PhD (Law – Homicide)

Started Rowing: Edinburgh University,  
Scotland

Competitive Record Highlights		
1997	Under 23 W2-	Gold
1997	W8+	Bronze
1999	W4x	7th
2000	W4x	Silver
2001	W2-	5th
2001	W8+	6th
2002	W4x	5th
2003	W2-	Gold
2004	W2-	Silver
2005	W4x	Gold
2006	W4x	Gold
2007	W4x	Gold
2008	W4x	Silver
2009	W1x	Silver
2010	W2x	Gold
2011	W2x	Gold
2012	W2x	Gold







# 2009



- Selection
- W1x
  - Toughness
  - Confidence
- W2x
  - Coming of age
  - Communication

# 2010



- Philosophy
- Shared picture of success
- Selection
- Doubling up
- Technical Benchmarking
  - Length
  - Rhythm
  - Efficiency and pacing



# 2011



- Quality questions – how fast is fast?
- Spring trials
- 41 days
- Problem Solving
- What's important
- The Bled Test



# 2012



- Each and every day
- Leadership
- Responsibility
- Individual standard
- Delivery under pressure





# Olympics London 2012

## GBR W2-







# Heather Stanning

Date of Birth: 26/01/85

Height: 181cm

Weight: 71kg

Occupation: Army Officer

Started Rowing: Bath University

GB Start programme

Competitive Career Highlights		
2006	joined 'Start' (talent programme)	
2007	Under 23W2-	<b>GOLD</b>
2008	European 8+	7th
2009	(Army)	
2010	W2-	Silver
2011	W2-	Silver
2012	W2-	<b>GOLD</b>





# Helen Glover

Date of Birth: 17/06/86

Height: 179cm

Weight: 69kg

Occupation: PE Teacher

Started Rowing: GB Start Programme (Bath)

Competitive Career Highlights		
2008	Joined 'Sporting Giants' programme	
2009		
2010	W2-	Silver
2011	W2-	Silver
2012	W2-	<b>GOLD</b>



# History of an Olympic cycle...

**2008...**

**Helen:**  
started rowing...

**Heather:**  
GB European W8+  
7th



**2009...**

**Helen:**  
Still learning...

**Heather:**  
Working in Army!



# History of an Olympic cycle

## 2010...

Crew formed April  
5<sup>th</sup> in GB April Trial

World Cup 1) 9<sup>th</sup>

World Cup 2) 5<sup>th</sup>

World Cup 3) **Medic**

World Championship

KARAPIRO – SILVER



### Strengths

- Leg drive
- Trunk movement
- Base pace
- Endurance
- Strength
- Attitude
- Speed of learning



### Weaknesses

- Slow first 100m
- Low rate (r.32)
- Tactically inflexible
- Technical mistakes
- Challenged by conditions (wind/rough water)
- Lack race experience





# History of an Olympic cycle

## 2011...

1<sup>st</sup> in GB April Trial

World Cup 1) 1<sup>st</sup>

Amsterdam 1<sup>st</sup>

World Cup 3) 1<sup>st</sup>

World Championship

BLED – SILVER



## Strengths



- Fast Start
- Strong first 1000m
- Technically more competent
- Race pace better (r.33-34)
- Better understanding
- Very consistent
- Mentally tough

## Weaknesses



- Base pace still low (r.33-34) v NZL r.38
- Vulnerabilities in race profile (2<sup>nd</sup> 1000m)
- Lost Gold on sprint finish (0.08") in Bled

# History of an Olympic cycle

## 2012...

1<sup>st</sup> in GB April Trial

World Cup 1) 1<sup>st</sup>

World Cup 2) 1<sup>st</sup>

World Cup 3) 1<sup>st</sup>

Olympic Games

LONDON – GOLD

## Strengths



- **Fast Start, Middle, & Finish**
- **1,1,1,1 target profile**
- **Technically good**
- **Physically strong**
- **Tactically flexible**
- **Mentally strong & experienced**

## Threats



- **Home Olympics**
- **No GB Gold previously in Women's team**
- **First A- Final**
- **Favourites**
- **Manage pressure**



# Athlete background & qualities

- Athletics background – both fast runners & competitive individuals.
- Home towns far apart  
(Cornwall & north Scotland)
- Late to rowing – both started at University
- Both identified through GB talent ID programme



# Athlete profiles

- Mid size athletes: 68-72kg
- Mid height: 179 – 181cm
- Mid range ergometers
- Good power / kg ratio
- Athletic build
- Hard working
- Good trainers
- Competitive





# Athlete Profiles

- Trusting
- Open minded
- “Radiators” !!
- Receptive
- High priority on Technique





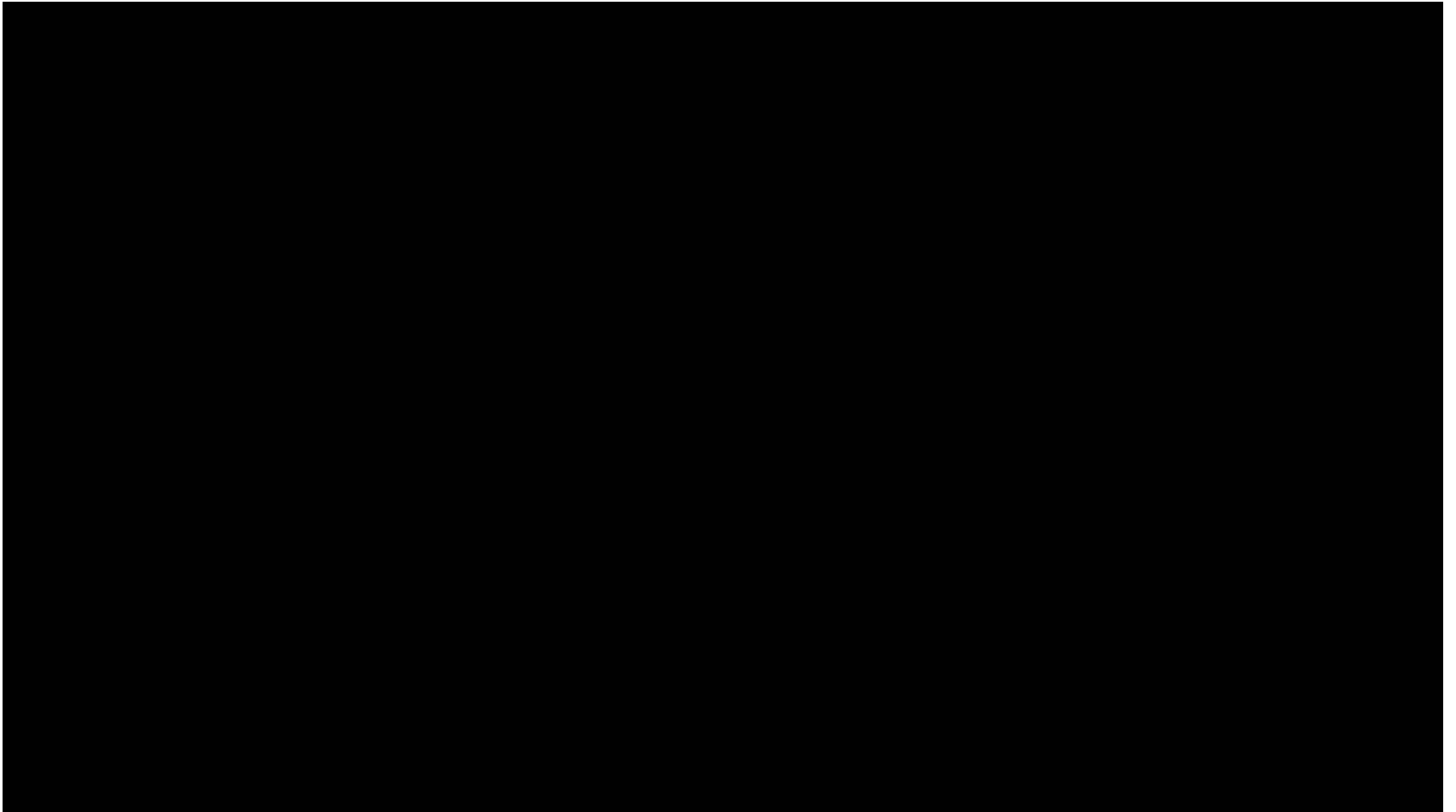


SAMSUNG GBR

SIEMENS

EMPACHER

# W2- Technical Drills



# Olympics London 2012

## GBR LW2x





# Training the Individual



# Sophie Hosking

Competitive Record Highlights		
2006	U23 LW 1x	Silver
2006	LW 4x	Bronze
2007	LW 4x	Silver
2008	LW 4x	4th
2009	LW 2x	Bronze
2010	LW 2x	5th
2011	LW 2x	Bronze
2012	LW 2x	Gold

Date of Birth: 25/1/1986

Height: 166cm

Weight: 57-61kg

University degree in Chemistry and Physics

Started rowing at Kingston Grammar  
School

# Developing a Competitive Crew

- GBR Recent History - 3<sup>rd</sup> 2002; 5<sup>th</sup> 2006
- 1x – competitive group 4-8 athletes
- No shared technical model for the 2x
- 2x /4x no shared vision
- 09 -11 Developing Performance Intelligence
- 2012 Performance when it matters

# Performance When it Matters

Season Record				
Year	WC 1	WC2	WC3	WC
2009	4th	Gold	Gold	Bronze
2010	Silver	Gold	Silver	5th
2011	Gold		Silver	Bronze
2012	Silver	5th	4th	Gold

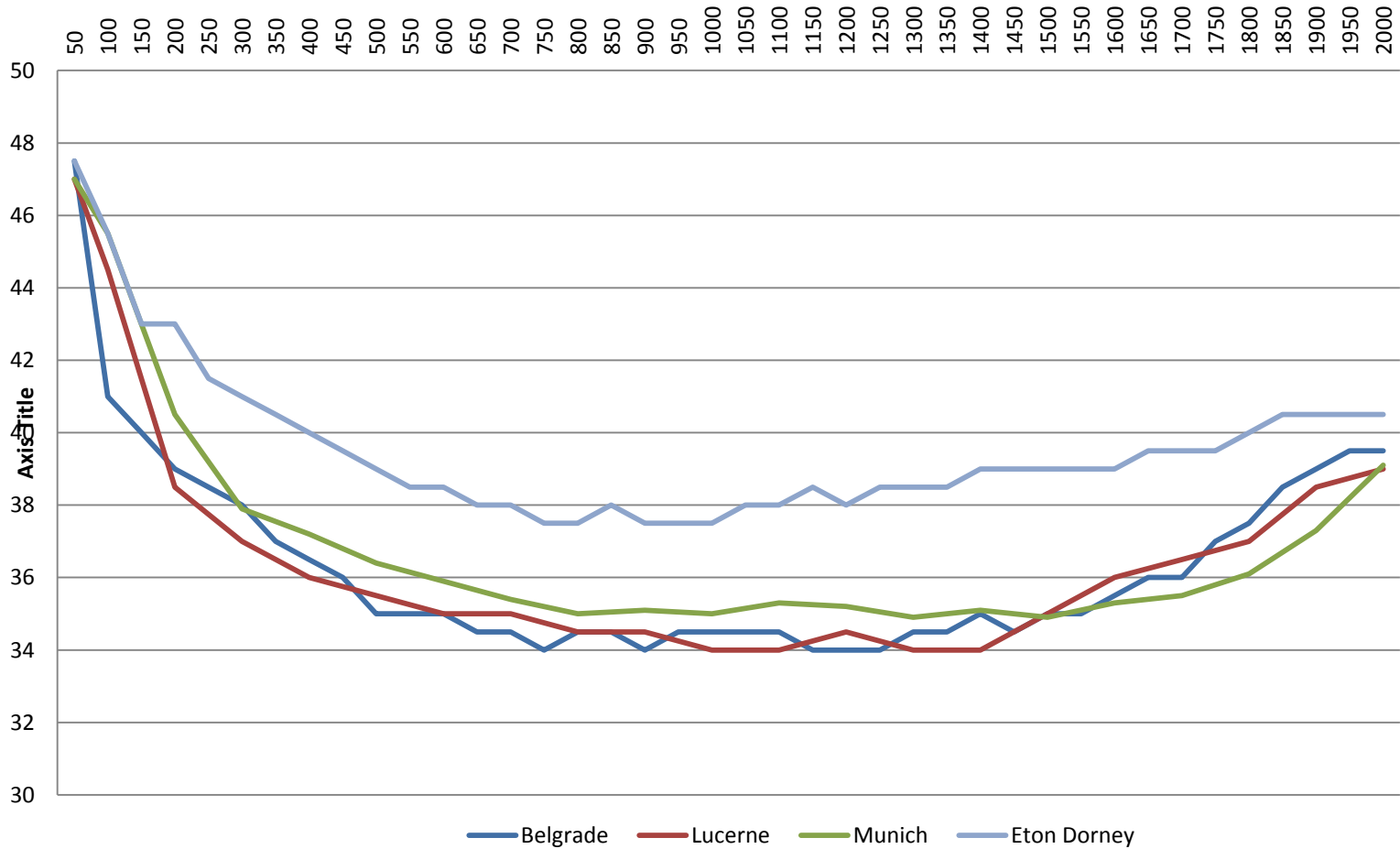


# Pacing Olympic Final LW2x

Sorted by Fastest First 500			Sorted by Fastest First 1000				
		0 - 500		1st	2nd		0-1000
	GRE	1:45.89	GRE	1:45.89	1:49.88		3:35.77
	CHN	1:46.56	<b>GBR</b>	<b>1:46.81</b>	<b>1:49.26</b>		<b>3:36.07</b>
	<b>GBR</b>	<b>1:46.81</b>	CHN	1:46.56	1:50.17		3:36.73
	GER	1:47.10	DEN	1:47.59	1:50.05		3:37.64
	DEN	1:47.59	GER	1:47.10	1:50.83		3:37.93
	AUS	1:47.91	AUS	1:47.91	1:50.33		3:38.24

Sorted by Fastest Middle 1000				Sorted by Fastest Final 1000				Sorted by Fastest Final 500	
	2nd	3rd	500-1500		3rd	4th	1000-2000		4th
<b>GBR</b>	<b>1:49.26</b>	<b>1:46.84</b>	<b>3:36.10</b>	<b>GBR</b>	<b>1:46.84</b>	<b>1:46.39</b>	<b>3:33.23</b>	<b>GBR</b>	<b>1:46.39</b>
CHN	1:50.17	1:47.88	3:38.05	CHN	1:47.88	1:47.32	3:35.20	GRE	1:47.15
DEN	1:50.05	1:48.85	3:38.90	GRE	1:49.17	1:47.15	3:36.32	CHN	1:47.32
GRE	1:49.88	1:49.17	3:39.05	DEN	1:48.85	1:49.04	3:37.89	DEN	1:49.04
AUS	1:50.33	1:51.11	3:41.44	AUS	1:51.11	1:51.33	3:42.44	AUS	1:51.33
GER	1:50.83	1:51.72	3:42.55	GER	1:51.72	1:52.88	3:44.60	GER	1:52.88

# Race Rate Profile 2012 LW2x





# FISA Coaches Conference

## Thank-you

*Mr Paul Thompson, Chief Coach – Women and Lightweights and Coach Women's Double*

*Mr Robin Williams, Coach Women's Pair*

*Mr Paul Reedy, Coach Lightweight women's Double*