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Beijing, CHN

Building Junior Team in Different Systems

JINING WU
Rowing Coach

The slide features a dark blue header with a photograph of rowers in a boat. Below the header is a large light blue area with the title and speaker information. The bottom of the slide has a decorative wavy pattern.



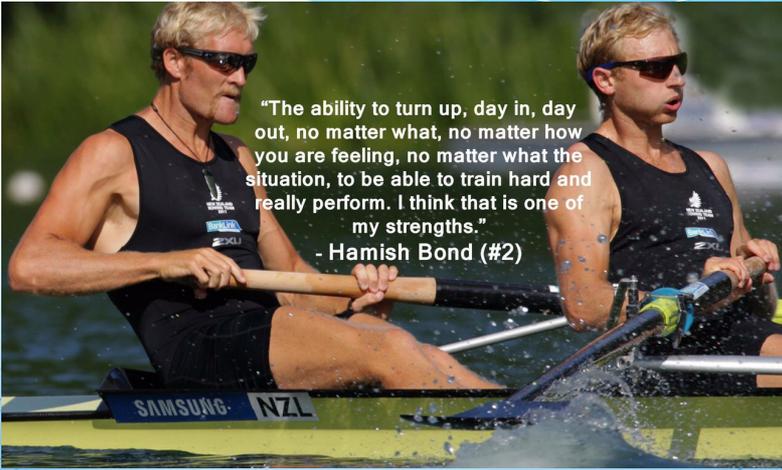
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Background

- * 1990, Started Coaching Rowing Team of GuangDong Province in China;
- * 2003-2009, Coached China National Rowing Team for 2008 Beijing Olympic Games;
- * 2010-2012, Coached Canada National Team for 2012 London Olympic Games
- * 2013 to now, Coaching in HongKong Rowing Team
- * 2015, ARF Competitive Rowing Committee Member.

The slide features a dark blue header with a photograph of rowers in a boat. Below the header is a large light blue area with the title and a bulleted list of coaching experience. The bottom of the slide has a decorative wavy pattern.

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"The ability to turn up, day in, day out, no matter what, no matter how you are feeling, no matter what the situation, to be able to train hard and really perform. I think that is one of my strengths."
- Hamish Bond (#2)

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Rowing Is Hard Work

- * I had spent 30 years in the sport of Rowing as athlete and Coach. I had achieved the High Performance Coach diploma at Canada National Coaching Institute in 2001.
- * I had worked in difference training systems in Canada and China.
- * I had leaded Olympic Teams of different countries competed the 2008 and 2012.



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- * I had worked with junior and elite level athletes in Canada and China.
- * I consider myself very fortunate to coach these athletes.
- * My coaching experience provided me with a number of skills that has helped me in my Coaching, organization, and communication.
- * A number of my athletes from the Canadian and Chinese Rowing Team had achieved success.



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Following the philosophy of hard working made me able to work with and coach athletes from different systems for the 2008 Olympic Games and 2012 Olympic Games:

- * **2006 World Rowing Championship / 2007, 2008 World Cup**
Lightweight Men Four- Gold Medals Athletes:
TianJun, ZhangLIN, WuChongkui, HuangZhongming
- * **2010-2011 World Rowing Championships**
Lightweight Women Double Gold and Silver Medals Athletes:
Lindsay Jennerich, Patricia Obee, Tracy Cameron





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Training Systems for Junior Athletes in Canada

In Canada there are two Systems:

1. Club and School System
2. National System Talent Identification & Development System – Row to Podium



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Now the National System is leading the way in Canada

Let's look...



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Competitions for Junior Athletes in CANADA

- * Annual City/Province High School Championships
- * Club Regatta
- * National High School Regatta
- * World Rowing Junior championships
- * Youth Olympic Games



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Training Systems for Junior Athletes in China

- * City Rowing Team or Sports School
- * Province Rowing Team
- * Junior National Team
- * National Team



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Competition for Junior Athletes in China

- * City Championships
- * Province Games and Annual Championships
- * Youth Games and Annual Championships
- * Asia Junior Championships
- * World Junior Championships and Youth Olympic Games
- * World Rowing Championships



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Biggest Difference between Canada and China Junior Athletes

- * Full-time school and part-time training in most Western countries
- * Full-time training and part-time school in China



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Athlete Development Details

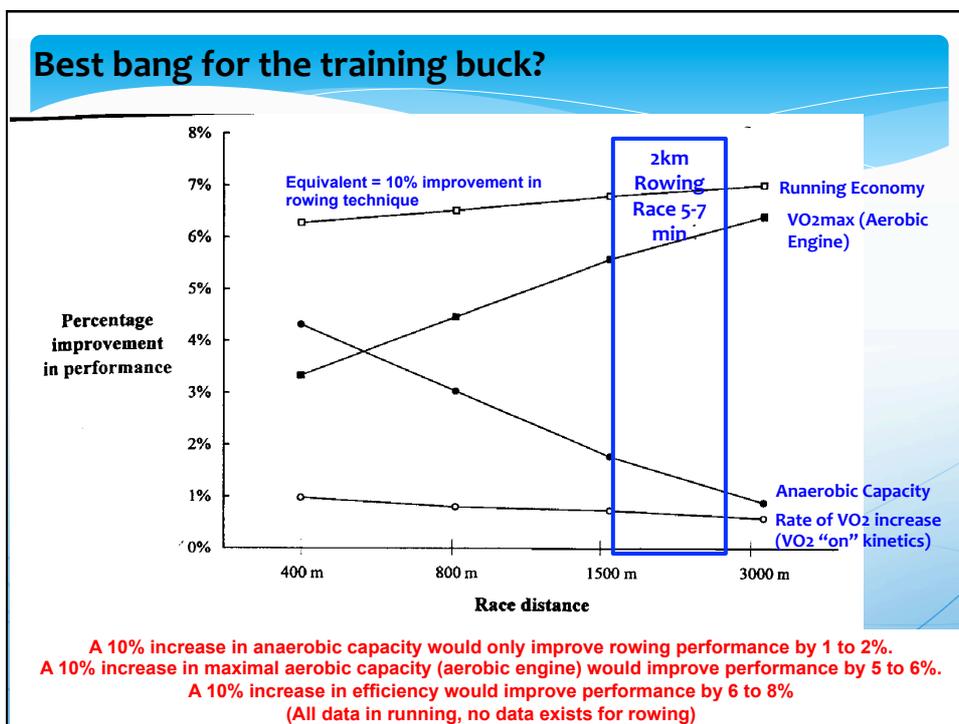
1. Begin with athletes who possess no movement pattern as a base - teach basic movement from zero
2. Anthropometric & engine qualities
3. Need to establish psychological attributes, especially love of rowing
4. Value rare talents!



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Ideas of building the best Junior Team:

- (1) To be good athlete, must to be strong first.



Power vs. technique in the need for speed?

- All the men's 100-meter freestyle finalist in the 92 Olympics averaged a power output **16% LOWER** than everyone else in the field who **FAILED** to make finals. This is due to optimizing technique & stroke efficiency simply don't **NEED** as much power to swim fast.

A drowning man generates a lot of power!

RANK	FINAL A	TIME
1.	Alexander Popov (EUN)	49.02
2.	Gustavo Borges (BRA)	49.43
3.	Stéphan Caron (FRA)	49.50
4.	Jon Olsen (USA)	49.51
5.	Matt Biondi (USA)	49.53
6.	Tommy Werner (SWE)	49.63
7.	Christian Tröger (GER)	49.84
8.	Gennadiy Prigoda (EUN)	50.25

RANK	FINAL B	TIME
9.	Ricardo Busquets (PUR)	49.92
10.	Raimundas Mažuolis (LTU)	50.13
11.	Christophe Kalfayan (FRA)	50.49
12.	Nils Rudolph (GER)	50.62
13.	John Steel (NZL)	50.69
14.	Chris Fydler (AUS)	50.78
15.	Roberto Gleria (ITA)	50.81
16.	Andrew Baildon (AUS)	50.93

Rick Sharp and Jane Cappaert of the International Center for Aquatic Research



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EARLY Physical Training

- * Skill training is on the water and on the erg
- * Physical training is not rowing specific
- * Core training + strength
- * Flexibility on and off the boat
- * Conditioning – without rowing



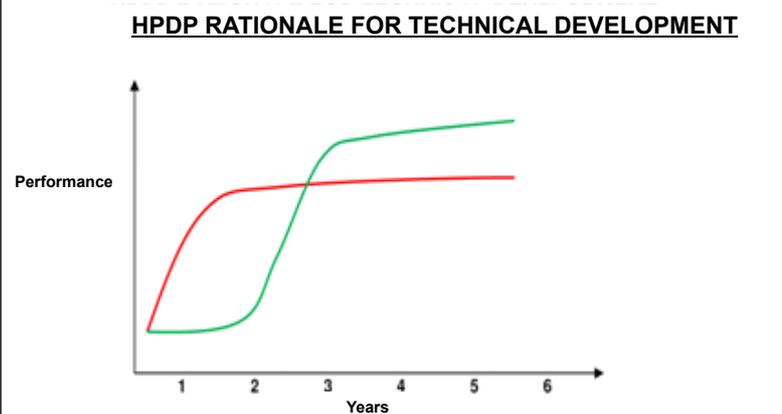
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(2) For Long team purpose, the junior athletes being interested or not is very important at early period.

EARLY LEARNING AFFECTS LATER PERFORMANCE



HPDP RATIONALE FOR TECHNICAL DEVELOPMENT



Performance

Years

Performance resulting from traditional Development (red) compared to extensive early skill development (green) in two highly talented T1D athletes.



2012 Rowing Australia Coaches Conference



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(3) Rowing is a sport of team working





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(4) Rowing Technique
Improving economy / efficiency (technique)

A slide from the 2015 World Rowing Youth Coaches Conference. The slide features a blue background with a white wave-like graphic at the top. Below the banner is a large white area with the text "(4) Rowing Technique" in bold black font, and "Improving economy / efficiency (technique)" in blue font below it.

3 ways to improve technique / economy / efficiency:

- #1) Teach, Practice, Teach, Practice (repeat & repeat for many years).
- #2) Mega Volume.
- #3) Being born with the 'right' "wiring", flexibility / dimensions.

Method #1 is a high percentage strategy, but requires excellent coaching ability.

Method #2 requires a lot of athletes.

Method #3 requires the right parents



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STRATEGY FOR TECHNIQUE

= moving the boat a long way between strokes

1. Row a long stroke
2. Accelerate the BOAT (pressure – to finish)
3. Let the boat glide (rhythm= control forward)
4. Strong body posture (core, lumbar spine, pelvic rotation)

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DEVELOPMENT SEQUENCES

- * Balance *before* technique
- * Sculling *before* sweep
- * Power *before* endurance
- * Automate *before* extensive training
- * Automate *before* fatigue training
- * Posture *before* loading
- * Core *before* loading
- * Flexibility *before* loading

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Balance before Technique

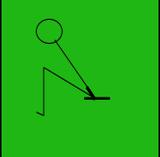


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Posture Assessment

POSTURE ASSESSMENT RATING

CATCH POSITION:

SCORE:	1	2	3	4	5
Lumbar spine/core strength:	Excellent lumbar/core strength position	Slight curve of lumbar spine	Some curve of lumbar spine	Obvious curve of lumbar spine	Pronounced curve of lumbar spine
Image					
Pelvic Rotation	45 degrees forward	22.5 Degrees forward	Vertical	22.5 degrees back	45 degrees back
Comment	EXCELLENT: good length and strong position with little risk of long term injury.	OK	Danger of lumbar intervertebral disc injury (lower back).	VERY DANGEROUS: Likely to have lower back injury. Not a strong position.	EXTREMELY DANGEROUS: Very likely to have lower back injury. Very weak position.

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PATHWAY OF NON-ROWER TO HIGH PERFORMANCE

- * Athletes are blank canvas (no faults, no skills)
- * Prioritize Skills!
- * Errorless learning and rapid development
- * New athletes can achieve a high level quickly
- * Enthusiastic concentrated coaching
- * Excellent coach development opportunities
- * Ability to exceed perceived limits
- * Keep” Technique limited” training in a zone where no faults are practiced



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ROLE OF THE COACH

- * Intense coaching (1:1 ideal)
- * Continuous feedback
- * Coach demands change from every feedback comment (improvement mentality)
- * Eliminate technical limit on later performance

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QUALITY CONTROL

1. Skill drills and assessment of progress
2. Monthly monitoring of all performances to compare with international projections
3. Camp assessments
4. Senior Team athlete history (courtesy Ed McNeely)
5. Nine stages of development... See next page

The 9 Stages of Athlete Development

STAGES	REFERENCE SHEET	CONTENT	OBJECTIVE	WHEN TO PROGRESS	APPROX NUMBER OF SESSIONS AT THIS STAGE - extend if objective not achieved!	Confidence Skills	Stroke Efficiency Skills	Stroke Mechanics Skills	Technique Skills	Stroke Rate Skills	Stroke Power Skills	Can you identify...	Can you demonstrate...	Can you explain...
1	SAFETY, CONFIDENCE AND BALANCE SKILLS	Sheet 1 + capsize	Skills in sheet 1 and swim tests of 50m and under boat	Establish all safety requirements and confidence about awareness of the blades controlling boat balance as never let go of the handles	Sculler can complete all tests including swim tests and capsize drill	2 to 3	YES	YES				YES	YES	YES
2	ADVANCED CONFIDENCE AND BALANCE SKILLS	Sheet 1	Sheet 1 skills with more relaxation and aggression	Understanding of control of the boat with relaxation or absence of tension. Can achieve this automatically without thought	Sculler is relaxed with smooth automated movements (can talk while executing drills)	2	YES	YES				YES	YES	YES
3	TEST BALANCE SKILLS	Sheet 2	Test sculling skills in Sheet II with timed conditions	Constant practice with incentives (improve own score) to establish automated skill of boat control	Achieve level 3 on sculling skills in all (except minimum strokes)	3 to 6	YES	YES				YES	YES	YES
4	LIMITED SCULLING	Sheets 2 & 3	Test Sculling skills from sheet 2 and add basic technique drill of Roll Ups from sheet 3 (to stage 1) and minimum strokes	1. Automate boat control. 2. Row with long flat draw 3. Huge back turn, small front turn 4. Row with massive boat acceleration	Achieve level 4 skills and level 2 in minimum strokes. Technique goal of flat draw and big back turn with small front turn	10 to 15	YES	YES	Stage 1-7	Stage 1-7		YES	YES	YES
5	MOVEMENT SKILLS	Sheets 2 & 3 and posture assessment	Test Sculling Skills, full list of roll ups	1. CATCH Direct and continuous. 2. SLIDE control forward, not slip at catch. 3. BODY POSITIONS- rock hips over control to 45 degree at catch. 4. DRIVE patience with effective leg drive, wait for boat before then drive!	1. Achieve level 4 or 5 skills and has not improved significantly for 5 sessions. 2. Can regularly demonstrate the four technique objectives in roll up conditions.	10 to 15	YES	YES	Stage 1-7	Stage 1-7		YES	YES	YES
6	FREE SINGLE SCULLING	Sheets 2 & 3	Test Sculling Skills, full list of roll ups 0% to 100%, continuous rowing	Ensures the FOUR technique objectives are perfectly reproduced in stable conditions of roll up then transferred to less stable environment of continuous rowing. ADD boat acceleration with 10 strokes of 100% followed by 5 strokes light in continuous rowing	Progress only when athletes can hold perfect technique of the FOUR technique objectives of stage 5 over 2km rowing.	10 to 40	YES	YES	Stage 1-7	Stage 1-7		YES	YES	YES
7	LONG SINGLE SCULLING	Sheet 4 - training program and boat speed goals (under construction)	1. Build up to 10-20km rowing at T2, R16-2 with perfect repetition of all technique points. 2. All towing done at high pressure with boat acceleration.	1. Automate technique over long periods where the athlete is under some fatigue. 2. Develop excellent and effective rhythm with good boat speed (aim for T2 boat speeds)	Only move to racing and crew boats when athlete has automated, fatigue-proven, perfect technique		YES	YES	Stage 1-7	Stage 1-7		YES	YES	YES
8	LIMITED RACING + CREW BOAT ROWING	Sheet 4 - training program and boat speed goals (under construction)	Extend athlete environment with different boats and some controlled racing	Objectives of crew work and limited racing are always achievement of technique and boat movement under pressure. NEVER the position of the bow ball relative to other crews!!	Only when automated technique and boat speed has been achieved under race pressure and fatigue. Ensure control of crew members is restricted to high quality rowers (more experienced than target athletes).	min of 10 but continue until objective achieved.	YES	YES	Stage 1-7	Stage 1-7		YES	YES	YES
9	2KM RACING	nil	Build towards a very confident athlete who enjoys racing	Every race has a strong goal orientation that is internally assessed (not related to position of opposition but could be related to tactical performance against opposition).	Ready for Gold Medal assault	unlimited	YES	YES	Stage 1-7	Stage 1-7		YES	YES	YES

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NINE STAGES OF DEVELOPMENT – irrespective of age

- * Complete each stage before progressing to the next
- * Set goals at each stage
- * Technical goals irrespective of stage

TRAINING ZONE		BLOOD LACTATE (mmol/L)	STROKE RATE	% GOLD TIME	Total Work Distance (km)	SAMPLE SESSION	Aerobic Adaptations						Anaerobic Adaptations			
Category	OTHER NAMES						Increased use of fatty acids as a fuel source	Increased blood volume	Increased aerobic enzyme activity	Improved muscle capillarisation	Improved ability to use lactate as a fuel	Increased maximum cardiac output	Increased maximum ventilatory capacity	Increased maximal rate of glycogen use	Improved muscle and blood buffering capacity	Race specific neuro-muscular adaptations
Cat 1	OverSpeed Anaerobic Capacity Training	> 10.0	36 - 42	>95	< 500m	4-8 reps of 250m or 2-4 reps of 500m or 1-2 reps of 1000m			*	**	**	***	****	****	****	****
Cat 2	Race Speed Oxygen Transport Training	41865	32 - 38	88 - 98	1500m - 4000m	3-6 reps of 3-5' duration		*	**	***	****	****	****	****	****	***
Cat 3	Short Endurance Anaerobic Threshold Training	3 to 6	24 - 30	82 - 88	5 to 15	2-4 reps of 8-10' duration OR 45-90 min of 40'/20' R28-30	*	**	***	***	****	***	***	***	***	**
Cat 4	Middle Endurance Oxygen Utilisation Training	2 to 4	20 - 24	77 - 82	6 to 18	2-3 reps of 20-30' duration or 4-8 reps of 8-10' duration	**	***	****	***	***	***	**	**	**	**
Cat 5	Long Endurance Basic Oxygen Utilisation Training	-3	18 - 22	70 - 78	15 - 25	70-120' Continuous Steady State	***	****	****	****	**	**	**	*	*	*
Cat 6	Recovery Long Endurance Recovery / Fuel Utilisation Training	< 2.0	16 - 20	< 70	> 20	>120' Continuous Steady State	****	****	****	****	**	**	*	*	*	*

PÉRIODISATION									
Phases	Preparation Period 1								
	Preparation Period 2								
	Preparation Period 3								
	Pre Competition								
	Competition Period								
Volume	5-7 on water or erg sessions / week (~9-13 hours), 2-3 cross training sessions / week (~4-6 hours), 2-4 S+C sessions / week (~2-4 hours)= 15-23hrs per week								
	50 weeks / year								
Training (hours / week)									
Category	NAME	OTHER NAMES	Month Phase	Oct - Jan Prep 1	Feb - Mar Prep 2	Apr Prep 3	May - Jul Pre Comp	Aug Comp	Sept Trans
C1	Overspeed	Anaerobic Capacity Training				1	1	1	
C2	Race Speed	Oxygen Transport Training		1	1	1 - 2	2	1 - 2	
C3	Short Endurance	Anaerobic Threshold Training		1	2	2	4	3	1
C4	Middle Endurance	Oxygen Utilisation Training		3	3	5	3	4	2
C5	Long Endurance	Basic Oxygen Utilisation Training		5	5	4	3	4	3
C6	Recovery / Long Endurance	Recovery / Fuel Utilisation Training		6	6	5	4	5	7
Regatta				1			1	1	
Strength + Conditioning				2 to 4	2 to 4	2 to 3	1 to 3	1 to 3	3
Hours per week				18 to 20	19 to 22	20 to 23	19 to 23	19 to 22	15

Functional Training Complex

ING ZONE	Description	Functional Physiological Description	RATE	TECHNICAL GOALS	TACTICAL GOALS	PSYCHOLOGICAL GOALS:
C1	Overspeed	Anaerobic Capacity Training	36 - 42+	Hold effective technique and rhythm for short periods at speeds higher than race speed	Practice efficient increase in speed simulating <u>last 50 strokes of the race</u>	Sprint Performance under pre controlling your own (overspe environment with relaxed moti
C2	Race Speed	Oxygen Transport Training	32 - 38	Hold efficient race speed for 750 1000m with faultless posture, rhythm, length and pressure.	Find the mid race speed required to win and then practice making it more efficient	RACE Performance under pre controlling your own (racespe environment with physical rela: and determined motivatio
C3	Short Endurance	Anaerobic Threshold Training	25-30	In the area of lactate production for moderate periods hold <u>efficient technique</u> .	Find the speed just below race speed and hold for longer than race time. Practice clearing lactate with efficient mid race pacing.	Mental Resistance to fatigue Repeated exposure to lactate ar to hold intensity and speed with repeat= attacking the opposit mid race
C4	Middle Endurance	Oxygen Utilisation Training	20-24	High to moderate duration (2-6km repeats) <u>hold posture, rhythm, length and pressure</u>		Mental Toughness: Learning 1 tougher than all opposition aggressively refusing to let boa: slow down at any stage of lc continuous rows. This is physica mentally difficult but create dominance of the middle 100 racing by holding speed while c fade
C5	Long Endurance	Basic Oxygen Utilisation Training	18-22	High duration (15-20km) <u>hold posture, rhythm, length and pressure</u>	Simulated assertive racing by maintaining prescribed training speed for designated distances (<u>simulated middle 1000m of race</u>)	
C6	Recovery/Long Endurance	Recovery / Fuel Utilisation Training	16-22	Hold <u>posture and efficiency</u> for extremely long periods (20-30 km) under pressure of fatigue		



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Summary

Ideas of building the Best Junior Team:

- * Identify- you are strong people first;
- * Interesting
- * Team working
- * Technique



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Thank you !