

Why Do You Train?

Americans making their mark in international canoe/kayak racing

By Dan Henderson, Head Coach, Cascade Canoe & Kayak Racing Team

Who should read this?

The purpose of this paper is to try to help young American Sprint canoe/kayak athletes understand the reality of international racing at a young enough age where they can effectively prepare – to understand reality. And for them to be inspired to effectively pursue goals at the world level. The target audience are paddlers 13 to 16 years old, their parents, coaches, club leadership, and the national federation (American Canoe Association). I'm writing this because I believe we as a country can be a strong canoe/kayak sprint nation. My only agenda is to help stakeholders learn, prepare, and be successful at the highest levels. It's also my hope that this will stimulate a conversation between athletes, parents, coaches, clubs, and the ACA to improve American international performance. I hope this helps you.

If you aspire to compete at the world level, and you get there, one way or another you're going to learn what it means to be competitive. You can learn it here and now while we're having a discussion. If you're young enough (under 16 years old) and need to make changes, you probably have time. Or you can learn it at Junior Worlds when it's too late and you're out in the heats. If you're ready to get realistic about achieving your goals on the international podium, read on.

Training is about changing your mind, body, and spirit. To be a great athlete you must put together a lot of pieces to support your performance.

Who you are today is not the champion you can be ... yet

- Mind
 - First and foremost you must believe you are capable
 - Have the ability to focus and sustain your training and racing efforts
 - Have the ability to learn and transform yourself
- Body
 - Have the ability to paddle very fast over the distance of a race
 - Develop precise technique, great strength, and great endurance
- Spirit
 - You must have a competitive spirit
 - You must have the heart of a champion
 - You must have the tenacity to race at your capacity, which is often greater than you think!

If you aspire to be World Champion – The you that's you today is not a world champion, you must become something different.

What are your goals?

- At what level do you want to compete?
 - Regional – racing in your area with other clubs in your region
 - National – adds US National Championships
 - International – adds US Team Trials and international regattas if you qualify
 - 15, 16, and 17 year olds – Olympic Hopes Regatta
 - Under 18 year olds – Junior World and Pan American Championships
 - Under 23 year olds – U23 World Championships

- Senior over 17 year olds (as young as 15 are allowed) – World Cups, World and Pan American Championships, Pan American and Olympic Games
- How fast do you need to go to compete at that level?
- What training do you need to have a chance to compete at that level?

You must learn the answers to these questions.

Suppose you want to compete at the world level, what do you mean by that?

- Going to Olympic Hopes Regatta and out in the heats?
- Making Semis and then done?
- Happy with making A Final?
- Top of the podium?

Suppose it's the podium

- How fast do you need to go?
- How fast at different ages?
- What do your fellow competitors look like?

Here they are:

2018 Junior World Champions



JENSEN, Sophia
Canada
2018 K1 W 200 & 500
Junior World Champion



NEKRASOV, Nikita
Russia
2018 C1 M 200
Junior World Champion



PATAPENKA, Dzianis
Belarus
2018 K1 W 1000
Junior World Champion



GAZSÓ, Alida Dóra
Hungary
2018 K1 W 200
Junior World Champion



RENDEŠS, Eszter
Hungary
2018 K1 W 500
Junior World &
YOG Champion



REI, Maria
Portugal
2018 K1 W 1000
Junior World Champion



GRABOWSKI, Bartosz
Poland
2018 K1 M 200
Junior World Champion



KÓS, Benedek Tibor
Hungary
2018 K1 M 500 & 1000
Junior World Champion

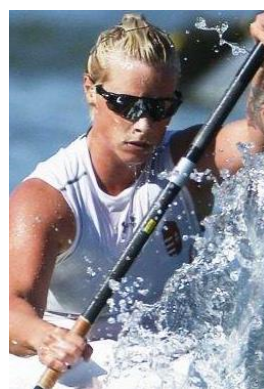
And the 2018 Senior World Champions



CARRINGTON, Lisa
New Zealand
2018 K1 W 200
World Champion



KOZAK, Danuta
Hungary
2018 K1 W 500
World Champion



BODONYI, Dóra
Hungary
2018 K1 W 1000
World Champion



GARROTENZL, Carlos
Spain
2018 K1 M 200
World Champion



DOSTAL, Josef
Czech Republic
2018 K1 M 500
World Champion



PIMENTA, Fernando
Portugal
2018 K1 M 1000
World Champion



Artsem KOZYR
Belarus
2018 C1 M 200
World Champion



Sebastian BRENDEL
Germany
2018 C1 M 500 & 1000
World Champion



Laurence VINCENT-LAPOINTE
Canada
2018 K1 W 200
World Champion



Kseniia KURACH
Russia
2018 K1 W 500
World Champion

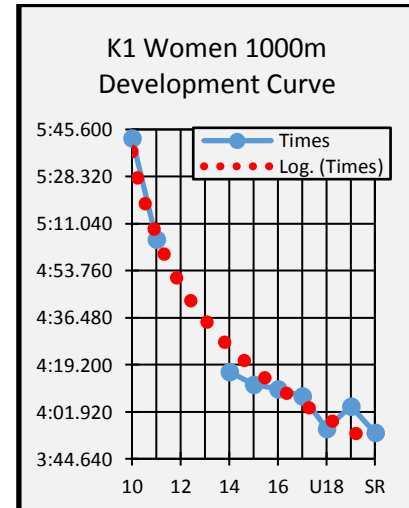
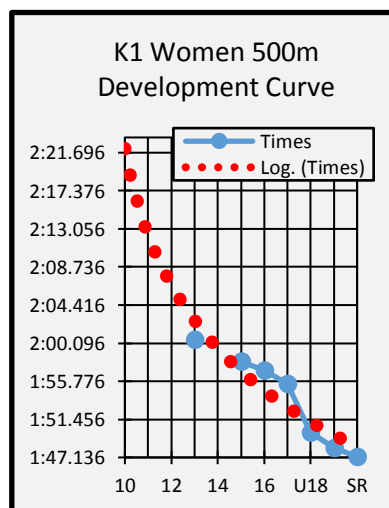
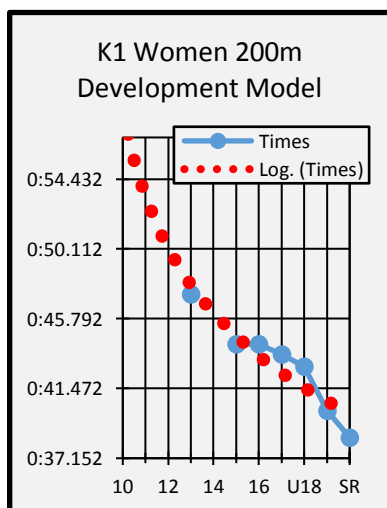
If it's the podium, you'll need to be faster than athletes like these.

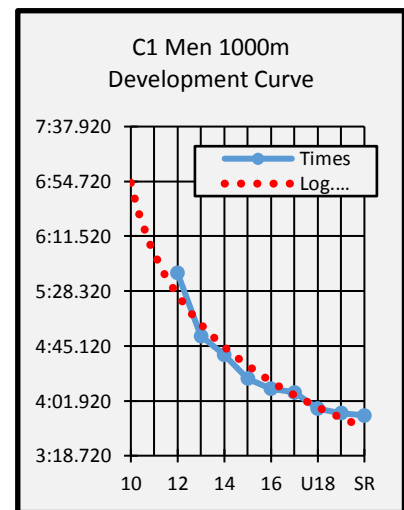
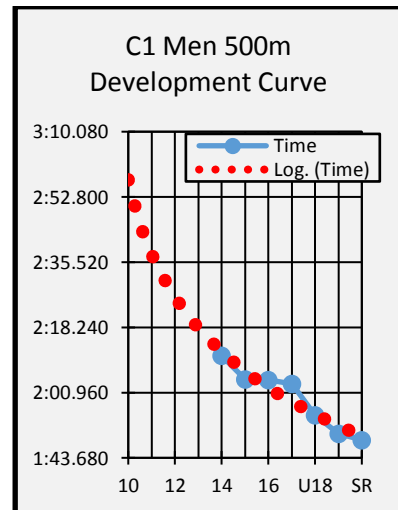
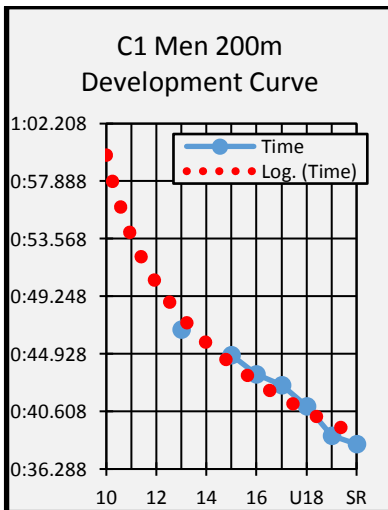
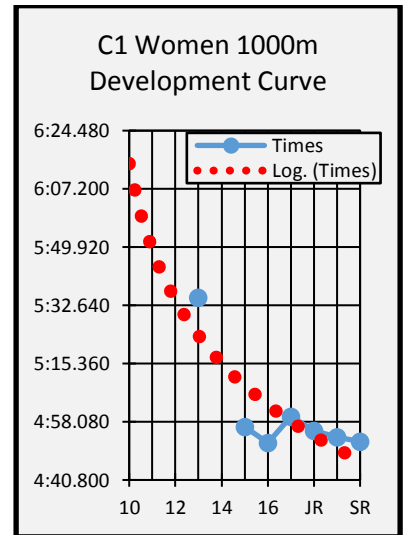
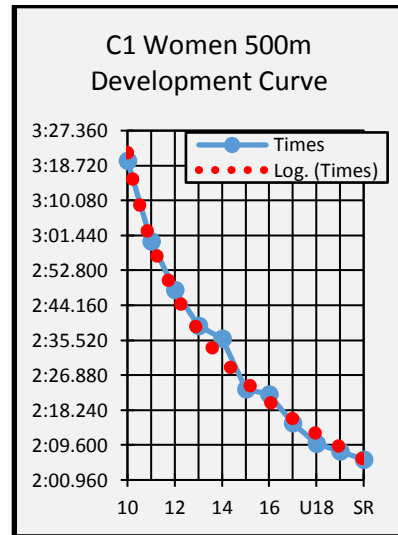
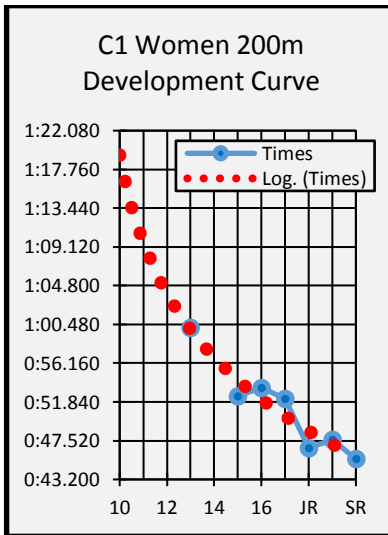
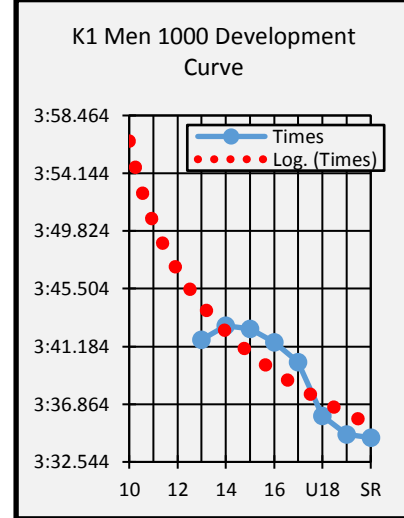
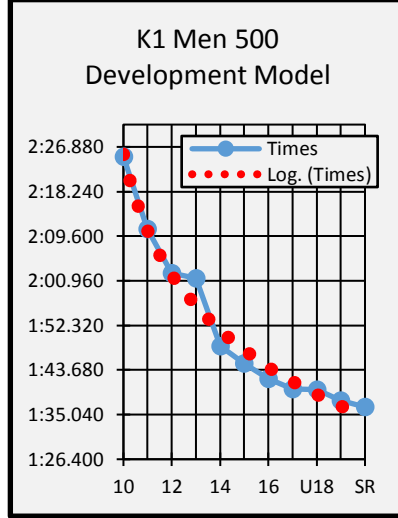
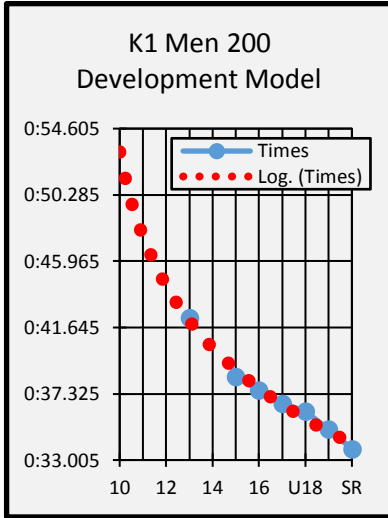
So, how fast do you need to go at the age you are now?

To be on track to be competitive as a Senior, how fast do you need to go at different ages? Getting fast enough takes several years and that process needs to start when you're between 10 and 13 years old, and the earlier during this period the better. It's not something many people can start when they're 18 years old or older, there's just too much to develop, your competitors from other countries are already going really fast, and the gap to catch up gets greater and greater each year.

Most champions start between the ages of 10 and 13, and commit to high level goals at age 14

I've put together a set of spreadsheets that includes results from hundreds of Age Group, Junior, U23, and Senior results. For younger age groups, I've used the results from the Budapest and Country Championships in Hungary. There are so many paddlers in Hungary they have one National Championships for the Budapest clubs (mine had 600 kids), and another for the rest of the county. For older age groups, Olympic Hopes Regatta, and World Championships (Junior, U23, Senior) times were included. I did make some minor adjustments based on obvious bad weather conditions. From that I've run a logarithmic regression to create a set of development curves that describe world championship level speeds at different ages. Here they are. The blue lines are the actual times, while the red dots are the regressions.





Pretty fast times aren't they!

Now that you have an idea of the times you need to achieve, you, your parents, coach, and club leaders should sit down and have a discussion about what preparation it takes to achieve those speeds. How much and what kind of training, how you get race experience, meet equipment needs, meet social needs, etc. Who will get the kids to training sessions, conduct all those workouts, and get athletes to races, etc.

How to use your development curve to track your progress

Now that you have a development curve model to follow, you can plot your times each year next to the curve. Then draw your curve by connecting the dots.

- If you're **on the development curve**, you're as good as the best in the world and you're good to go. Keep up the great work and try to get below (faster than) the curve!
- If your curve is **above but approaching** the development curve (slower but steeper slope), that's a really good track. Keep in mind that everyone develops at a different rate and matures at a unique timeline. So if you're above the curve and approaching it, keep up the good work and keep the slope of your curve on an intersect course with the development curve. Keep at it and you'll intersect eventually.
- If your curve is **trending away** from the development curve (slower with a flatter slope), that's of concern, and you need to get with your parents, coach, and club leaders and decide how to increase your rate of development. If your curve is moving away from the development curve for more than a year or two, it will be very difficult to ever get on track.
- The last scenario is that **your curve parallels the development curve** (slower with the same slope). This is the most common curve for the Seniors on Team USA. It means you're improving, but at the same rate as the best in the world, so you're not closing the gap. It means your percentage off the winners is consistent, but your rank is probably falling off year after year. That's because as you get closer to the top level, there are more and more athletes who are closing the gap between the top racers who are on the curve and you. To make a change, you, your parents, coach, and club leaders need to figure out how to accelerate your rate of development.

Your Curve

- On the curve
- Above but approaching
- Trending away
- Parallel

One last note on the development curve – it's not static. As a trend, every year times improve a little bit. So targeting a certain speed many years out is not recommended, because when you get to that age, that targeted time will be too slow.

At what age do you need to decide to pursue world-level goals?

In most of the top countries, Hungary for example, young paddlers spend a lot of time learning to paddle, developing paddling aerobic endurance and technique, and learning to love to race and train, until they're about 14 years old. The pre-teen and early teen years are the best time in a person's life to learn complex motor skills – like paddling technique. It's also one of the best times to develop general aerobic endurance. This is in line with the Long-Term Athlete Development Model adopted by the American Canoe Association, and is added to the Level 1 Coach Course in 2019.

**Adopt high-level goals
in your mid-teens**

Sometime between 14 and 16 the top athletes decided to pursue high level goals, and if you're headed in that direction, you should too. And the earlier during this period you make your decision, the greater the likelihood you will achieve success. During the mid-teenage years, your body can develop endurance, strength, body mass, and power faster than any other time in your life – you just can't lose those years. Make the most of those raging hormones!

Make the decision to pursue high-level goals, and prepare to achieve them, to put yourself into the best position possible to be successful between 14 and 16 years old. The younger you can make this decision during this period, the greater your likelihood of success as an adult. Choosing to not make a decision is the same as choosing to not pursue high-level goals.

Tips for you, your family, coach, and club to accelerate your development.

How can American canoe/kayak athletes become more competitive with the best in the world? Here's a few things to consider that you can change for yourself, starting today.

- **Training should always be age targeted.** That means that at different ages, there are different things to focus on. And there's a dramatic increase in training volume between the ages of 14 and 18. We have paddlers who are very competitive at ages 14 to 15. Many USA 15 year olds are pretty competitive during their first year at the Olympic Hopes Regatta. But then as they get older, they continue to train like 15 year olds when they're 16 and 17 and 18. And each year they fall behind the top paddlers in the world farther and farther. See the Long-Term Athlete Development presentation in the ACA Level 1 Coaching Education Program for more on this.
- **Learn to focus.** At younger ages, up to 13 or 14, one of child's major tasks is to try as many different things as possible and see what fits. He then tends to gravitate towards what he does better. If a child is to excel at anything, as a she gets older, she must narrow her focus on fewer and fewer things.

Many Americans do so many different things into their teens that they don't have the opportunity to become great at anything. We play in the orchestra, are the captain of our school chess club, we play other sports, we do well in school, we get a job, we date, we're very involved in family and community, and a million other things.

All these things are great, but becoming great at anything, including a great canoe/kayak athlete, takes time – a lot of it. A 16 year old can expect to spend pretty close to 30 hours a week, 49 weeks a year training and racing. That's what the top athletes in the world are doing and is the ICF training standard for that age. So, to make that time available for training and racing, other things have to give. And it's up to athletes and parents to figure that out. Not narrowing to this level of focus is the same as choosing not to pursue high level goals, no matter what is stated. What counts is what you do, not what you say you're going to do.

- **Don't settle for good enough.** Some Americans have gone to an Olympic Hopes Regatta at the age of 15 and raced really well. They come home satisfied with their results and tell themselves that's good enough and they'll just keep training at the same level for next year, in spite of messages from coaches urging increased preparation. But the rest of the world is stepping up their preparation during that time and the next year the Americans fall farther behind, and not many have caught back up.
- **Find your passion for racing and training at a young age.** At some point those who love the sport and/or the Olympics, find a way to continue to race and train. The dilemma is that at the older age they decide (often 19 or 20 years old), they're so far behind that there's a broad gap to cross, because the slope of their curve has headed away from the development curve for so long. Then they need to find a way to accelerate they're development to at least get their curve headed towards the development curve. And that's tough. What usually happens is that they bring their training level up to that of their age norm, and they see their slope headed towards the development curve, but on a trajectory that would intersect beyond their sport retirement age. This is similar to a parallel trajectory.
Find a way to accelerate your rate of development to at least head towards the development curve, ideally starting at 14 or 15 years old, but no later than 16.
- **Be competitive as a Junior and then stick to it in college and beyond.** When athletes realize that they have fallen a long way behind they make one of two decisions. The most common is that they

go to college and quit paddling. They don't necessarily quit because they're unsupported or do not have the training opportunity they had at their club while in college. It's just that they're so far behind, they decide it's time to move on to something else where they feel they can be more successful.

I contend that if an athlete is in the top 15 in the world as a Junior, he feels pretty successful in canoe/kayak and will find a way to continue training and racing while in college, no matter what their college situation is.

The really interesting and rewarding action in our sport is as a Senior in World Cups, Pan American Championships and Games, Senior World Championships and Olympic Games. Get on the curve early and stay on it through high school, college and beyond! And if you're a dedicated and gifted athlete, perhaps you'll even define the curve!

- **Advocate** at your club and the American Canoe Association for the support Americans need to compete at the highest levels. Clubs who aspire to help their athletes reach an international level must offer levels of training at appropriate ages based on ACA/ICF guidelines that give their athletes the opportunity to be successful. This is a function of club leadership and the adults who must equip themselves and commit their time, resources, and energy to make this happen. If you're a sport leader and are reading this, think about how our organizations and systems could better support develop top canoe/kayak sprint athletes.

Dan's Magnificent 7 – athlete attributes that make a canoe or kayak go really fast

Discipline	Attribute	Science
1. Technique	the motion we use when we paddle to get the most out of our efforts	biomechanics and neuromechanics
2. Strength	the ability to move force through our bodies to propel the canoe or kayak forward.	strength and conditioning
3. Movement speed	the ability to move our bodies quickly to generate more force	Exercise physiology and strength and conditioning
4. Fitness	the ability to sustain racing speed throughout the entire race, resistance to fatigue	Exercise physiology
5. Mental toughness and competitive spirit	the ability to endure the pain of racing and training, to sustain the effort in spite of all the messages your body is sending you. The desire to line up at the starting line with fellow competitors and think, "OK, let's go!"	Sports psychology
6. Equipment	racing and training in good quality equipment that is properly cared for and well maintained. Only at the top level does the latest, hottest, coolest equipment make a difference. At the age group level, having good equipment that allows a paddler to race well is what's most important. Americans go crazy on latest, hottest, trendiest equipment and often do not place enough focus on just doing the work.	
7. Support Structure	Parents, coach, club, and the ACA are all critical in ensuring the athletes who desire to race with the best in the world have the opportunity to prepare at a level that gives them their best chance for success. People need a social support structure, friends and teammates, as well as social activities	Sport psychology

So, why are you training?

To accelerate your rate of development.

All healthy kids get faster as they get older. They get bigger, heavier, stronger, and have better endurance just by growing from a child to an adult. As they spend more and more time in the boat, they develop their stability and technique. They will improve, even without much training. Sadly, they may even be

competitive in the USA. But at some point, those who are training really hard move ahead, and the Americans who do not train to accelerate their development fall behind.

In large part Americans are rarely competitive with the best in the world because they are not provided the opportunity to prepare – to effectively train 30+ hours each week, to get to workouts, to travel to races, to have boats when needed, to arrive at regattas early enough to acclimatize, or to have their most familiar support at regattas. This is a failure of adult leadership and it's costing even those Americans who work as hard as the rest of the world a chance to race at their best.

How much should I train for my current age?

Below is the ICF Training Guidelines, right out of the ICF Level 1 Coaching Course. This is the program that the American Canoe Association has chosen to adopt as our national coaching program and standard. So, as an organization, these are the training levels we have agreed need to be followed if the target is high-level goals and the podium. All ACA/ICF Level 1 Certified Coaches and above have seen this and it's in their course materials.

International Canoe Federation Training Guidelines													
Age	Workout Frequency				Paddling Distance			Workout Time					
as of Jan. 1	Train WK/YR	Paddle WO/WK	Weight WO/WK	Run WO/WK	Paddle AV WO	Paddle KM/YR	Paddle CUM KM	Paddle HRS/WK	Paddle HRS/YR	Paddle CUM HRS	Weight HRS/YR	Run HRS/YR	Train HRS/WK
10	31	3	0	1	8	1000	1,000	7.5	233	233	0	30	
11	31	3	0	1	13.4	1,250	2,250	7.5	233	465	0	35	8.5
12	39	4	0	1.5	9.6	1,500	3,750	10.0	390	855	0	58.5	11.5
13	49	5	0	1.75	10.2	2,500	6,250	12.5	613	1,468	0	85.75	14.25
14	49	6	2	2	10.2	3,000	9,250	15.0	735	2,203	98	98	19
15	49	7	3	2	10.2	3,500	12,750	17.5	858	3,060	196	98	22.5
16	49	8	5	4	10.2	4,000	16,750	20.0	980	4,040	245	196	29
17	49	9	5	4	10.2	4,500	21,250	22.5	1,103	5,143	245	196	31.5
18	49	10	5	4	9.7	4,750	26,000	25.0	1,225	6,368	245	196	35.25
19	49	11	5	4	9.3	5,000	31,000	27.5	1,348	7,715	245	196	37.75
20	49	11	5	4	9.7	5,250	36,250	27.5	1,348	9,063	245	196	37.75
21	49	11	5	4	10.2	5,500	41,750	27.5	1,348	10,410	245	196	37.75
22	49	11	5	4	10.7	5,750	47,500	27.5	1,348	11,758	245	196	37.75
23	49	11	5	4	11.1	6,000	53,500	27.5	1,348	13,105	245	196	37.75
24	49	11	5	4	11.1	6,000	59,500	27.5	1,348	14,453	245	196	37.75
25	49	11	5	4	11.1	6,000	65,500	27.5	1,348	15,800	245	196	37.75
26	49	11	5	4	11.1	6,000	71,500	27.5	1,348	17,148	245	196	37.75
27	49	11	5	4	11.1	6,000	77,500	27.5	1,348	18,495	245	196	37.75
28	49	11	5	4	11.1	6,000	83,500	27.5	1,348	19,843	245	196	37.75
29	49	11	5	4	11.1	6,000	89,500	27.5	1,348	21,190	245	196	37.75
30	49	11	5	4	11.1	6,000	95,500	27.5	1,348	22,538	245	196	37.75

Abbreviations: WK-Week, YR – year, WO – Workout, AV- Average, KM – Kilometers, CUM – Cumulative, HRS – Hours

Do you know why some numbers are red? Those are the equivalent of one lap of the equator! It's a big lap! Pretty cool!

Set Goals

When you set goals there are two primary effects:

1. Creates the opportunity to achieve success
2. Adds the risk of failure

Both are important to understand training effectiveness and effort. Risk and the possibility of failure must be part of the scenario. We must embrace risk, celebrate success, work to understand the lessons we can learn from failure, and use all of that to accelerate development to be on track.

Goals should be based on training and racing attendance, and effort during workouts and races. They should also be time based and referenced to the development curves. Measure everything possible to track improvement.

Have a plan to put yourself into the very best position possible to achieve your goals. Goals can be based on a Quadrennial, Year, Training Block, Training Cycle, Week, Day, and Workout. Every moment counts, every stroke counts, and every breath counts. Live in the moment and get the most you can out of every moment. And LOVE IT ALL!

[So back to my original question:](#)

You train to accelerate your rate of development.

When you accelerate your rate of development, you put yourself into a position to have the greatest possibility of achieving high-level goals.

At my very core, I believe that Americans are capable of training and racing at a level where they find the top of the podium at the World Championships and Olympic Games. I believe that American adult leadership, in clubs and the ACA, are capable of providing the opportunities necessary for American youth to be champions, see the Stars and Stripes raised, and hear the Star Spangled Banner played to honor the efforts of American athletes and those who provided support. We can do this – let's get going!

Notes: Special thanks to Susan Starbird at Rivertown Racers for her input and edits.

This paper is based on a PowerPoint presentation that I'm available to present.

Hope this helps. DH

Who is Dan Henderson?

My background is as a past member of the US Team, 4 time bronze medalist in C2 at the Pan American Championships, trained and raced in Hungary for 4 seasons, 29 years coaching, past US Team Leader and Coach at the World Championships and Olympic Hopes Regattas, co-author of the International Canoe Federation (ICF – the World and Olympic governing body for canoe/kayak racing) Level 1 Coaching Manual 1st Edition, graduate-level course work in exercise science including kinesiology, biomechanics, neuromechanics, exercise physiology, and exercise prescription, graduate teaching assistant in Kinesiology as well as Strength and Conditioning, Adjunct Professor of Administration of Physical Activity Programs, and a US Air Force veteran. I also presented at the 2008 ICF Coach Conference on my biomechanics research in kayak technique, the second and last American to ever present at that level. I'm Head Coach at Cascade Canoe & Kayak Racing Team in Bothell, Washington. My passion is sharing sprint canoe/kayak racing and helping American athletes become more powerful people.