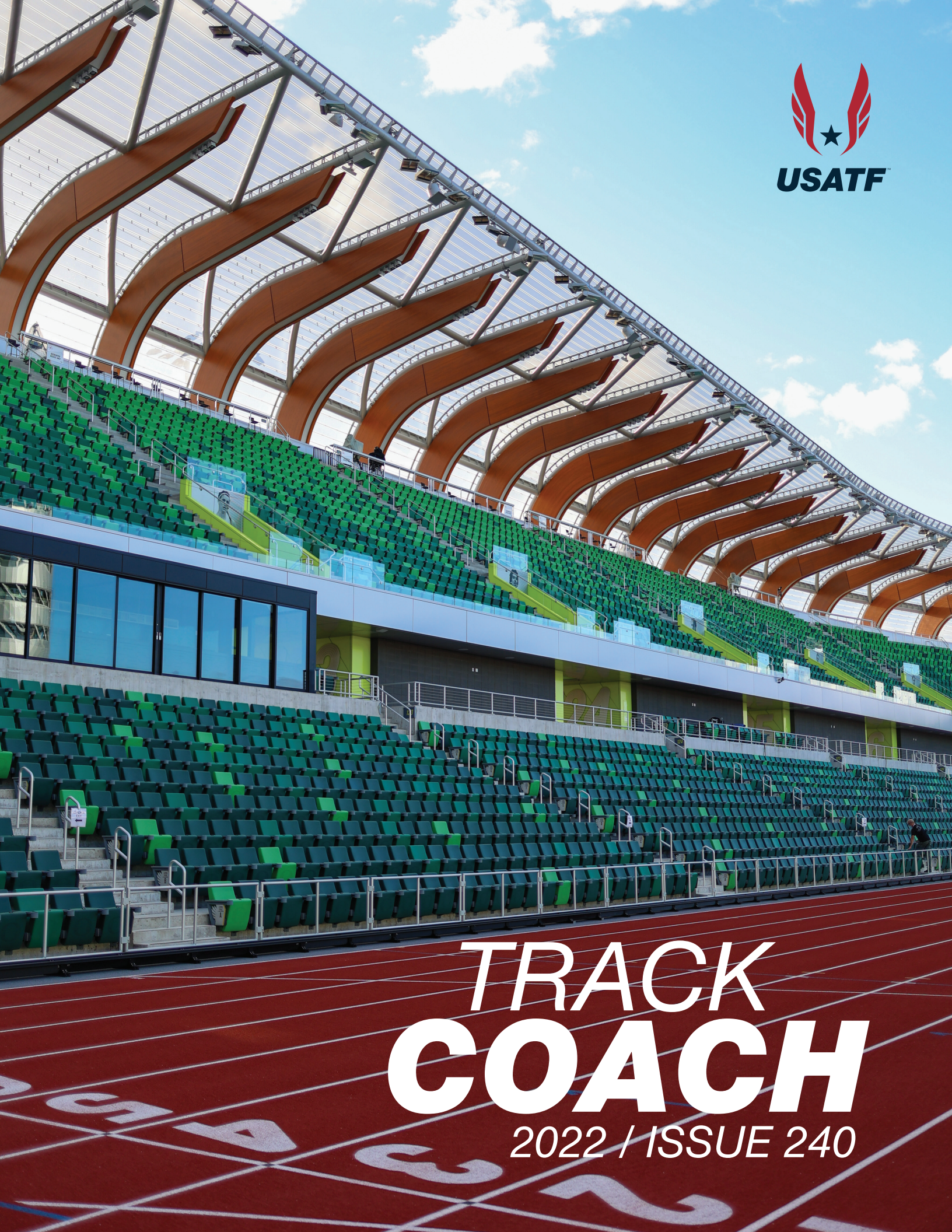

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TRACK COACH

2022 / ISSUE 240

TRACK COACH

Summer 2022 — 240

The official technical publication of USA Track & Field

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TRACK COACH

FORMERLY TRACK TECHNIQUE

240 — SUMMER 2022

The official technical publication of USA Track & Field

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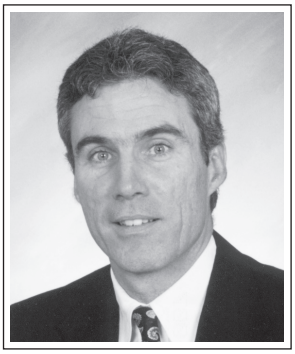
FROM THE EDITOR

RUSS EBBETS



PIONEERS

When Phil Knight wrote *Shoe Dog* a few years ago there was a line he repeated several times – "The cowards never started and the weak died along the way. That leaves us, ladies and gentlemen. Us." Admittedly a little rough but it encapsulates his feelings as to the tone and tenor of the people who followed Marcus Whitman, survived the Oregon Trail and settled America's Great Northwest.

Pioneers, of course, are the first people to do something, often risking life and limb to achieve what they achieve. Those who follow have a road map of sorts that gives them signposts, intermediate goals and confidence which can at the same time offer direction, incremental motivation and peace of mind.

The 1950's were a time of great worldwide accomplishment with the conquering of physical, psychological and even physiological challenges. The month of May 1954 must have left the masses wondering, "What's next? The moon??" after Roger Bannister's 4-minute mile (May 6th) and Edmund Hillary and Tenzing Norgay's summiting of Mt. Everest (May 29th). The impossible was achieved twice in a little more than three weeks and the men were still alive to talk about it.

Coaching theory in track & field evolved rapidly in the 1950's, and 60's. Hans Selye's *The Stress of Life* was published in 1953 and was soon followed by the Soviet application of modulated stress and the application of the scientific method to sport. Sport science moved ahead at full speed; the limits of human capabilities were continually being tested.

Austrian Franz Stampft knew there was a better way and his interval training ideas led the way to Bannister's mile breakthrough in 1954. Other pioneers emerged Down Under, with Arthur Lydiard and his New Zealand stable (Snell, Halberg, et al.) and of course the iconoclast Percy Cerutty whose Stotan philosophy titillated the track world and produced the magnificent Herb Elliott. Let's not forget another pioneer of the time: Mihóly Iglói, who first developed Hungarian record breakers Iharos, Rózsavölgyi and Tábori, and later coached American runners like Jim Beatty to new heights.

Pioneers blaze trails that set examples for future generations. They are willing to take great risks to make things happen. There may be disappointments and setbacks but there

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EDITORIAL COLUMN

Continued from page 7654

is also valiant effort and persistence, the confidence that one has tested one's limits and has not been found wanting. This willingness to push boundaries provides something remarkable for everyone to admire, whether you are a coach, a competitor, or just another shoe dog.

An in-depth interview in these pages with Canadian running icon Bruce Kidd, the product of another pioneering program—Fred Foot's East York Track Club, tells how his running career evolved. Also in this issue is Part I of a roundtable on the high jump. The panel of experts are coaches who have had success on personal and professional levels. The high jump is an event that has languished somewhat in the U.S. in recent years; perhaps the words of wisdom in the roundtable will help get us back on track.

On another note, I'd like to mention the passing of coach Oscar Jensen. In his 60-plus years coaching the sport, Oscar was a constant force in New York state track & field. A national HS coach of the year, he made his Syracuse-area teams and athletes constant threats for league, sectional and NYS titles. A devoted family man, Oscar was a mentor to many and friend to all. He will be sorely missed.

HIGH JUMP ROUNDTABLE PART I

COORDINATED BY RUSS EBBETS

This is Part I of a wide-ranging discussion of high jump technique, training and related issues.

The panel: PS—**Paul Souza** was the head coach at Wheaton College, 1995-2011. His women's team won eight national championships. A Level 1 and 2 USATF certified coach, Souza has served as the national vertical jumps chair for men's development. He still holds Penn State's indoor HJ record at 7'4 ½".

RN—Retired high jumper **Rick Noji** finished 8th at the 1991 World Championships. His personal best in the high jump is 2.31m (7'7"), achieved in 1992.

DS—**Dwight Stones** needs no introduction to track fans. He is a three-time world record holder in the high jump and won two bronze medals at the Olympic Games. Since retirement, he has been a lead announcer and color commentator on television, and still coaches young athletes.

MC—**Marissa Chew** is currently an assistant coach at TCU; she has also coached at IUPUI and Wabash. She is a Level 3 certified coach in the jumps.

DK—**Dave Kerin** coached at Middlebury College for 14 years. He still serves as the head of Men's National Team Development. He is a Level 3 coach and a USATF master official.

TECHNIQUE

We'll start with the approach. How many steps do you recommend? Why that number? How fast is the approach and do you teach a gradual acceleration to the takeoff or to simply achieve an approach velocity by the fifth step?

PS — I recommend 6 steps for beginners and 8-10 steps for more advanced high jumpers. The less steps you run, the less things can go wrong. Therefore, for someone beginning the event, 6 steps will cut down on mistakes and allow the jumper to establish a rhythm and tempo that will allow him/her to experience success.

RN — 10 steps… I break the approach into two stages…run-up (straight – 5 steps), sets the jumper up for the curve/momentum phase (last five steps). For me 5 & 5 was easier for timing, rhythm and speed… How fast is the approach depends on the athlete. If a high school athlete can run a 10.7 100 meter time, he may only run at 50 to 60% of top speed in the approach. An athlete must find his own "maximum usable speed" (MUS). MUS is influenced by the strength of an athlete's plant leg; the knee or other parts of the leg cannot buckle under the strain of the takeoff. I used, and teach a gradual acceleration takeoff. I feel this helps the athlete to get into a rhythm. The curve is the most critical part of the approach.

DS — For high schoolers I recommend a 6-step approach and no

more than 8 steps. Speed kills for new jumpers because they must learn the harmony between upper and lower body movements from the penultimate step to the plant step and excess speed makes it difficult, if not impossible, to learn these skills with speed in the equation. Here's my analogy on this, think of a gallon of liquid orange juice. Let's call the water in the orange juice "speed." We remove the "speed" from the equation in order to create concentrated orange juice that we can freeze and ship. The freezing and shipping is the learning of the individual components of the approach through takeoff. Once we find a speed where the jumper can perform those elements harmoniously, we slowly, deliberately, incrementally reintroduce the water/speed back into the equation until the jumper can perform them harmoniously. We focus on the jumper's comfort with that speed and always try to increase by 5% at a time so we can obviously see if they're capable of progressing to more velocity. Every field event is a gradual build-up of speed from the start to the end of the effort.

MC — I recommend 8-10 steps for the HJ approach; as training age grows and competency occurs, increasing the number of steps is considered. With the understanding that the first 3 steps are going to be "powerful/drive phase" there are 1-2 steps for transition and then into the turn and takeoff. With 8-10 steps, that is easily seen and mapped step-by-step. I don't teach one versus the other for gradual acceleration or achieving a desirable velocity; I watch what the athlete does naturally and how the force gets produced and advise from there. With that said, they are not interchangeable.

DK — Optimally, no less than 10. Coach Lane has JuVaughn at 12 currently. 3- and 4-step curves create excessive torque detrimental to max performance and health. "How fast" is relative to competition level with velocity developed primarily, prior to curve initiation. Well executed 5-step curves will see nonlinear acceleration (angular momentum). If not creating centripetal force to aid bar rotation, why run a curve?

STANDING STARTS = LESS INCONSISTENCY. STYLISTIC COMPONENTS DON'T CONTRIBUTE TO JUMP BUT OFTEN DETRACT.

With the approach start – do you allow the athlete to make their own decision with a run, skip or jog to get going?

MC — I do allow for the athlete's preference after a certain point of understanding and consistency. When there is an understanding of force production and consistency of displacement, then we can graduate to a dynamic start. With that dynamic start, there has to be consistency, so that is rehearsed as well.

PS — I prefer a static start because it promotes consistency. However, a jog or run-in is good for building momentum as long as the jumper is consistent from the outset.

RN — No. I start all athletes from a standing position. I need to understand the strengths, weaknesses, and the cadence of how an athlete runs first, before I introduce a run, skip, or jog approach. If the athlete already is using a run, skip or jog approach, I will evaluate and discuss with the athlete the benefit of the type of approach start the athlete is using. The cadence of a jog or bounding approach may give the athlete the feeling of a powerful approach/momentum to jump, but the technique may create too much speed in the approach, causing the athlete not enough time to get set in the proper takeoff position.

DS — How the approach starts is very individual. I have no opinion/input with the athlete other than his being in the turn and/or transitioning to the turn with 5 steps remaining in the approach. I prefer a run-in type approach to a stationary one.

DK — Standing starts = less inconsistency. Stylistic components don't contribute to jump but often detract. Do elite long jumpers take say 3 bounding strides at their run's start? And a high jumper only has the first few steps prior to curve initiation to generate near 80% of velocity at plant. Anything other than acceleration mechanics overcoming inertia is "theatre performance" not athletic performance. Neural activation/pre-attempt potentiation can be done just prior to taking a stance at the start of the approach.

Could you define what are speed and power jumpers? Do you promote one over the other? Or do you coach the "style" of the individual athlete?

DK — Throw a ball at the plant's location. Speed and angle of the throw, then resulting bounce, reflect force application and return. Specifically, the plant leg functions like a PV pole, employing muscle contraction to resist flexion at the knee. It's not a piston/pushing,

Father of the Flop, Dick Fosbury

knee flexion/extension effort. Flight parabola is a byproduct. When you see where they land in the pit, you know how they entered the plant and then executed the takeoff. "Style" is almost always a bad word!

DS — I always believed that a "power" jumper was an equal utilization of strength and speed as I thought that was the actual definition of power. Therefore, I always considered myself a power jumper as that's how I trained. Looking back, I guess I would have been considered a "speed" jumper and what I considered to be a "strength" jumper (Wszola, Dakov, Ukhov, etc,) is now considered a "power" jumper. Sotomayor, to me, is the ultimate "power" jumper as he approached at about 8m/sec. and was incredibly strong. I consider the body type and abilities in other events to determine what type of jumper I have.

PS — An athlete's speed and strength levels will determine the type of jumper they are in terms of 'speed' or 'power.' Speed jumpers tend to have a quicker takeoff step while a power jumper will tend to have a slightly longer takeoff step. I teach penultimate and takoff the same and allow the athlete's speed and strength attributes to determine how they execute it.

RN — Speed jumpers are usually quick/carry a lot of speed in their approach, fast to take off from the ground. Power jumpers usually are slower in their approach and spend more time over the plant foot, creating force into the ground. However, there are jumpers, and have been jumpers, who I feel fall into both categories; quick run-up and create tremendous force into the ground by spending time over their plant foot. During my jumping days Hollis Conway, Charles Austin, Tony Barton, Brian Brown and Troy Kemp fall into this category. I consider former athletes such as Brian Stanton, Dwight Stones and Javier Sotomayor as power jumpers… I coach to the style of the individual athlete…. but of course in my heart, I love the speed jumpers!

Words cue actions. Are there any cues you routinely use that you feel work particularly well (I'm thinking here of plant foot placement, hips, arm action, eye focus, etc.)

DS — "Plant Target" (foot placement at plant), "Back Corner" (direction of flight), "Fall Into The Turn" (starting the transition from straight to turn), "Sweep & Pull" (action of arms from penultimate step to plant).

MC — Cues that I find most effective are "push to position"—pushing the penultimate step through to block the quad at takeoff aiding the transition from horizontal to vertical. "Let the sciences do the work"—being in control of the body, posture and positions…not negating any natural movements that science will take care of.

DK — "Push, Push, Push" and "Big Swinging Arms" at start. "Tall by 4" fully upright before curve initiation. Don't cue "Push" from the 3rd step on. Pushing in-curve leads to poor biomechanics. Rather, "Feel the Friction" or "Grip" matches with centripetal-inward lean generation and angular momentum in-curve. Contrary to many 'parallel to bar' plants observed, long axis of the foot should reflect attack angle at plant. More important than focal point is letting it go to avoid obstructing back-to-bar rotation.

RN — I concentrated on rhythm, foot placement, knee position and eye focus. Rhythm sets up the whole timing of the approach; good rhythm allowed me to hit my turn mark, run a nice curve, without stepping out of the curve on the second to last step, and allowed me time to hit a correct lead knee jump position at takeoff. My eye focus was on the first third of the bar. I always struggled to look further down the bar. I felt looking down the bar caused me to spend more time over the bar, which I did not prefer.

I always felt my arm action was pretty good. I started my track career as a sprinter; 100m, 4x100 relay, 200m (high school senior year) then the jumps; long jump and triple jump. High jump was the last jump I tried in high school. Stride pattern, arm action working in unison, hip position was taught when I was a sprinter. I feel all jumpers could benefit from a sprint workout, at least two times per week. More if the athlete can handle it and has time to work on their HJ technique and sprinting.

PS — To me, the approach is everything in the high jump. If you do things properly on the ground you are more than likely to do things right in the air. I cue the beginning of the approach with **"PUSH, PUSH, PUSH!!"** To me the first three steps set the tone for the approach. If the jumper pushes out properly they are more likely to establish a good rhythm and tempo for the approach. I also use **"Inside Out"** as the jumper runs the turn.

This means the inside foot or the foot closest to the standard should be across the body at the outside shoulder throughout the turn. If the turn is run correctly, "foot placement" at takeoff will take care of itself. I don't believe in forcing things. Radical movements produce radical results.

Approach speed – I've read that a manageable approach speed is similar to a fast 400m pace as opposed to a sprint – any other recommendations?

RN — Who knows nowadays!! To me the 400m seems like a sprint! I always work with the athlete to find, what I call, his maximum usable speed (MUS). MUS varies from athlete to athlete. I find drills that allow the jumper to get in the correct position at takeoff are key. Box jumping, bounding/plyometric drills are helpful. I played with different speed variations by running my full approach on a football field (yes, not always possible nowadays). I used the goal post as the high jump bar. The goal was to see how high on the goal post bar I could touch. This gave me instant feedback; too fast and I blew by my takeoff position and could barely touch the bar. Similar, if I was too slow. When I found a good speed, it felt like my head could hit the bottom of the goal post.

MC — Great analogy!

DS — I use the running of the 400 a lot to describe the arm utilization and body position for a high jumper. It works well with an athlete who runs the 400m but not so well with those who haven't.

PS — As far as approach speed is concerned, as long as the jumper is slower at the beginning and faster at the end while maintaining control, he should be successful. I liken it to a plane that is about to takeoff. I'll ask the jumper, "Which plane do you want to be on? The one that goes faster, Faster, FASTER TAKEOFF or the one that goes faster, faster, slower takeoff? The answer is obvious.

DK — Higher jumps require higher velocities. Shorter jumpers even more so to overcome lower center of mass and shorter lever (leg). Dr. James Becker and I found 80% of velocity at plant comes from the early/straight run. Remainder comes from in-curve so twisting at step groundings and/or hops onto penultimate are limiting factors as well as injury sources. Three 2.40m jumpers we analyzed in 2015, averaged speed into plant equivalent to a 12.5 second 100m time. Note: The U.S. has had only two 2.40 jumpers, since 1991.

At takeoff, which arm action do you recommend? A double-arm block action or the sail technique using the inside arm to lead over the bar?

MC — I recommend going with whichever disrupts the rhythm of the jump/takeoff least. I've seen equal amounts of success with both. I have also seen CHAOS when a coach tries to implement one versus the other.

RN — I used the sail technique. Although I believe it depends on the jumper. Some jumpers can use the double-arm action without disrupting the cadence of their approach. The double-arm action creates more upward momentum and downward force. I tried many times over the years to incorporate a double-arm action but was never successful. I was such a speed jumper that the double-arm technique was too disruptive to approach/takeoff.

PS — I think different arm actions work for different jumpers. And while I prefer a double=arm action, if it causes the jumper to slow down that is not optimal for successful jumping. As long as the jumper maintains speed and proper body position through the turn and takeoff, the arm action that best achieves this is the right one for that particular jumper.

DK — Double-arming usually detracts from posture and forces into plant. Stay in arm drive opposite legs. At plant, inside arm drives vertically and opposing arm races to catch up. When they sense lack of centripetal, jumpers throw arms towards the pit for rotation. This is due to flawed curve runs and poor curve initiation. Optimal jumps create both vertical height…and bar rotation. "Using the inside arm to lead over the bar" sees that arm move forward in a toe touch. This occurs on top of bar resulting in premature sitting out.

AND WHILE I PREFER A DOUBLE-ARM ACTION, IF IT CAUSES THE JUMPER TO SLOW DOWN THAT IS NOT OPTIMAL FOR SUCCESSFUL JUMPING.

DS — I teach a double-arm block. I give them the options of teaching them the way I did it, which is difficult since I took my arms from my old straddle days, full double-arm from start to finish, though that eventually restricts speed, or the Derek Drouin method which is faster but tends to have the jumper come out of the turn at the exact wrong time. I think there's value to the leading arm over the crossbar but I could never perfect it so I abandoned it early.

Typically accomplished high jumpers have a statuesque posture. Is that a point of emphasis in training or do you feel it develops more due to the "up, up, up" mentality and reality an accomplished high jumper develops?

DS — I really teach the idea of almost always being in a "vertical posture" throughout the approach. I'm okay with the first couple of steps being more forward because that's how most of us get going anyway but I insist they be vertical as they start the transition to the turn. After all, the last two steps, the upper body is retrograde from vertical so we can't be forward prior to that!

MC — I believe that the posture is a product of the emphasis in training. The demand to create forces to be utilized in a small window of execution demands for the body to be rigid to optimize the science.

PS — It is not a coincidence that the majority of successful high jumpers are either tall or have long legs. This means their center of gravity is higher. The higher your hips are at takeoff, the higher the result. So yes, I think "statuesque posture" is a positive and should be emphasized.

RN — For me, it was an emphasis in training from the beginning. My high school coach Don Bundy introduced me to box jumping, plyometrics and short approaches. These drills taught me the importance of good posture at takeoff. This really set the foundation thoughout my career.

TRAINING

What type of weight training do you use? What about upper body development v. lower body development? As far as squatting, do you use more eccentric or concentric-type actions?

PS — Weight training is dependent on the jumper's age and stage of development. Young jumpers should not be moving weights if they are not strong enough to manipulate their own body weight. For young jumpers starting out, I would recommend a steady diet of body weight exercises (push-ups, pull-ups, dips, etc…) before considering lifting weights. Once in the weight room, jumpers should

be doing more explosive lifting than general strength lifting. Lifts such as cleans, push press and jump squats should highlight a high jumper's weight lifting program.

MC — We utilize powerlifting, body-building exercises, and auxiliary exercises. We approach the exercises for development per the demands of the event group. There has to be focus on the upper body as it plays a role in the transfer of forces specific to the HJ. There isn't a move to the eccentric vs concentric actions; we train both since they are needed for the jump.

DS — I believe in the "bread & butter" lifts that I learned in the 1970s. Cleans, jerks, and squats. I believe the "jerk" is the most relatable lift for high jumpers because the speed of getting the bar from your shoulders to "rack", in harmony with the quick, simultaneous movement of the feet, should be done at the exact speed as the time from the penultimate step to the plant placement. That's what I was always striving to do. When I lifted my PR weight for a "jerk" of 110kg., it wasn't "at speed", so I focused on jerks up to 105kg. which I was able to accomplish "at speed". It's the same with squats from my perspective. I did mostly "back squats" and I went to a depth that was twice the depth as I jumped from. We referred to it as a squat. The focus was a bit more deliberate eccentric movement and a very quick concentric movement. Though I could lift over 200kg at that depth, I couldn't move it at the right speed so I maxed at 185kg. as that turned out to be the right weight for what I was trying to accomplish. I consider upper body lifts to be support lifts for the Big 3. For joint stability and injury prevention, I believe a jumper must be balanced and do the work that develops the smaller muscles around the large joints. I don't want my kids getting hurt on my watch because they overemphasize squats over the other exercises.

DK — I like Dr. Mike Young's suggestion that an eccentric contraction may be the result of a failed Isometric one. Not inconsistent with my description of plant leg being pole vault pole-like. Any running jump is a deflection off the ground. Horizontal velocity and path of the center of mass, brought to the plant is key. Then, strength to enable the conversion of that velocity into vertical velocity with the path of the COM being a parabola (the result of all that preceded takeoff).

RN — I learned the importance of weight training in college. Coach Shannon at the University of Washington was primarily a throws coach. Needless to say, he loved the weights. I remember the first weightlifting session with Coach Shannon. It was a killer! I think I weighed a buck 18 (118lbs!)! After the session I could hardly lift my arms! I had a heck of a time driving home. Overtime I learned weigh training was the foundation work for the whole season. I used to spend a fair amount of time in the weight room for what I was trying to accomplish. Before competition season (Sept-Dec) I started with circuit training; light weights with higher reps and increased the weight over a month. Then I moved way from circuit training. I then entered into a heavy weightlifting phase — to lower reps and higher weight. The closer it came to indoor season I would back off the heavy lifting and went back to circuit training. Depending on my competition schedule for the year I would repeat the weight cycle either two times or three times per year. One weightlifting exercise I did consistently was cleans; heavy off season, and lower quick during season. Great exercise when time and schedule was tight. I did cleans all year. Great explosive exercise… Core strength was key from the beginning and throughout my career. Over time I learned the importance of upper body strength (Thanks Coach Shannon). I think my personal best in the bench press was 215 lbs., while I weighed 135lbs. However, I still spent more time on my lower body… When it came to squatting, I used more of a concentric action; controlled down (1/4 to 1/3; never a full squat) and exploded up. Most of my lifting was concentric. I worked on explosion.

How much upper body lifting do you do? When is enough, enough?

RN — I only started lifting upper body when I was in college. I did more lower body lifting than upper body. I don't know if know when enough is enough, except that darn first workout with Coach Shannon!! Now, that was enough, enough, enough. 37 years later that workout still haunts me!!

MC — We sprinkle in upper body exercises or exercises that hit that area indirectly. So it will get some love about two times a week within those training sessions. Enough is enough when the athlete is functionally strong enough to execute and utilize the forces produced. As well as, they cannot be "too big" so that the musculature is now in the way of movement.

DK — Does a jump benefit from overhead work? For me this isn't

much different than the reality that you can hold your breath and jump so what role does aerobic training play? I have long believed that the catch in a clean is not critical to the greater mission. There are athletes who can pull weights from the floor that they probably shouldn't be catching let alone overhead pressing. Any non-essential addition to upper body mass is of concern.

DS — Lat pulls, tricep presses, curls, flys, etc. are those exercises that support the upper body movements in the actual execution of the technique as well as preparing the body to be better at cleans, jerks, and squats.

With plyometrics – what age do you recommend a jumper begin? And with what type of actions? Are the plyos done double- or single-leg support? How should the quality or quantity be measured? – through the speed of the drill series or do you focus on the number of ground contacts on a training day?

DS — Plyos probably shouldn't be done before high school age. Let's face it, plyos are reflexive weightlifting and I'm not crazy about jumpers under the age of 16 doing serious weight room weightlifting. I believe learning how to triple jump bound is the best way to be introduced to plyometrics. I stress the importance of the arm component in any type of plyo/bounding drill as I'm a huge arm guy. It made my career and my utilization of arms was one of my strengths when I was a straddle jumper. I focus on the amount of ground contacts and I'm strict about not exceeding a certain number whether it be hurdle hops, TJ bounds, box jumps, etc. This must be monitored especially with the younger athletes.

PS — Once again, plyometrics depend upon a jumper's age and stage of development.

Although, exercises such as jumping rope and hopscotch can be used with young jumpers at an earlier age. The most important thing about plyometrics is that they should be periodized from simpler, less strenuous exercises to complex, more intense exercises. This will minimize injuries and increase the chances for success. If a jumper cannot perform a simple plyometric exercise, such as ankle pops or line hops, then they have no business jumping up and down off of boxes.

RN — It depends on the athlete's body development and whether one can handle the stress of plyometrics. With that said, I believe some level of plyometrics should be introduced in high school. Plyometrics is a foundational drill. One that will benefit an athlete throughout his/her career… Bounding, skipping, box jumping, step-ups, squat lunge, etc. … I believe in both double and single….Quality?... This depends on the athlete. Some athletes may be able to do a set of 12, and some may only be able to handle 5. I prefer quality over quantity.

MC — I believe that athletes can start doing plyos whenever they begin being active. The movements don't have to be specific to an exercise; they can be playing hop-scotch, leap frog, or "Jump the River". A lot of the childhood games we play are simplistic examples of plyos, so why not exploit the games, have fun and develop functional strength simultaneously. In the sport of track & field, there is A LOT of single-support action, so that has to be trained as well. The amplitude and altitude of said jumps need to be adjusted for appropriateness to the athlete's training age and ability. With plyos it is always quality over quantity for me, once there is a breakdown in posture or execution, we are done and moving on. I have a target or limit of contacts to be made in a day (which is a part of an overall number considered for the week). There definitely is a limit but not a minimum at the same time.

DK — Plyometrics begin long before a coach becomes involved. Running and playground games are plyometric by nature. Double-leg contacts are less specific than singles. Remember, sprinting is plyometric. Charting contacts is good. Better is visual monitoring, watching for quality and similarly, decline in quality. Plyos done to fatigue are contrary to the mission. I'd rather have an athlete who's 100% healthy and 80% trained than one that's 80% healthy and 100% trained.

Do you feel that the number of ground contacts must continually increase over the course of a season (or a career)? And if not how do you determine when a number has been reached that encourages results without the risk of injury or overtraining?

MC — I feel that the number of contacts doesn't have to increase if the intensity of the jumps does. I listen to the athlete, while making observations as to when do they start to have a rhythm in the jump? When do they lose that rhythm? There is a point that we do have to toe the line in training to see where the line stands but it should be a calculated risk.

DS — As an athlete becomes more proficient at plyometrics and stronger in the weight room, their number of ground contacts can be increased as there isn't as much abuse to the joints going on when they become better at the technique. It took me awhile to get back into plyo volume early in my training period so I was very aware and focused on my bounding technique becoming better so I wasn't doing something that was likely to injure me.

RN — No, this was season dependent. Early season: during foundation building for the season, I would concentrate on number of ground contacts. During season I would concentrate on speed and quality… This depends on good communication between coach and athlete. I always prefer quality over quantity.

How do your training recommendations differ for a combined events high jumper? Any injury prevention suggestions?

DS — Since multi-eventers can only spend so much time on each event, I definitely feel that the KISS (Keep It Simple Stupid) method be incorporated as part of their technique training. Six steps is plenty for a multi-eventer as it controls the speed component a lot and focuses the athlete on performing the actual elements of the technique while minimizing the amount of jumps they take in a competition prior to having to run the 400m or 200m later the same day.

MC — The level of mastery is lower for a CE high jumper. The drills will cover a larger spectrum until it needs to be narrowed. We may not spend as much time drilling versus jumping with the CE so that the reps get taken versus waiting for the mastery piece of drilling.

Dwight Stones, the approach (1981).

RN — I say it would depend on the schedule of training on the other events; it must be synergetic with the other events. If push comes to shove, the athlete, at minimum should concentrate on their approach work; good rhythm, feeling comfortable and confident in their approach will produce positive results for the athlete.

RN — All areas can benefit from a good stretching routine, strength building, warm up and cool down regiment, tension band workout, massages and yoga. Proper run-

ning and jumping technique and form will also help minimize injury.

PS — For injury prevention, I recommend early season barefoot walks and running on grass or beach sand to strengthen the arches of the feet and the lower legs. This will cut down on shin splints and stress fractures. Also, a comprehensive joint mobility sequence as part of the jumper's warm-up along with active stretching.

THE KNEE AND PATELLAR TENDONITIS

MC — lower leg strengthening, stability exercises, sand work, VMO strengthening

DS — Don't go lower than parallel with the upper thigh when squatting. Minimize ground contacts with plyometrics until the athlete becomes more proficient. Learn proper running technique so your mechanics don't have you striking your foot with most of your body behind that foot.

DK — Misalignment of joints is easily identified. In video of injuries, excessive torque is found. Both these moments occur on same leg, extreme torque two steps before, misalignment over the same leg tenths of a second later at plant. The athlete always gets past the extreme torque moment then blows up at plant. But no one looks back at the nature of the next to last grounding of the plant foot/leg. I first noticed this in 2005 and it's become prevalent since. Similarly concerning is where some jumpers are now grounding their penultimate parallel to the crossbar.

FOOT PROBLEMS

DS — Ankle/foot/Achilles tendon stretching was always the first thing I did. If your feet aren't right, you better be prepared to have training downtime. Get a referral to a good podiatrist, chiropractor, and acupuncturist.

MC — proprioception work (walks, hops, balance beam work), barefoot activities

HYPERFLEXION OF THE NECK

MC — Head rotations (up and down, right to left), ear to shoulders…all to increase/maintain mobility in the neck & shoulders.

DS — Again, stretching and strengthening are the key here. Again, get a good sports medicine chiropractor.

HEEL PROTECTION

RN — Proper drill technique, proper shoes for the event, good body awareness drills.

DS — I never ran anything at speed in flats. Sprint/interval shoes are designed to get you onto your toes and that alleviates heel problems before they begin.

MC — Stay in flats for as much training as possible.

Do you use much circuit training for pre-season or in-season conditioning or both? What number of stations do you use? What exercises?

DS — I'm much more of a circuit trainer now than I ever was as an active athlete. I took my time in the weight room more for safety than anything else as I usually trained alone. I think circuit training has merit and my formula is 2-3 upper body exercises to a lower body exercise. I time and count everything because I'm OCD but I also want to be able to compare one workout to another and be able to know when it's time to increase weight. If I just wait until I feel like it, there's no consistency and no genuine ability to compare. Most people at a gym just go when they've completely recovered. When I'm waiting for a piece of equipment and trying to maintain a certain pulse level, that drives me crazy and forces me out of my routine and over to a different exercise. I literally time EVERYTHING!!!! I have a bad attitude at a gym!

SPRINT/INTERVAL SHOES ARE DESIGNED TO GET YOU ONTO YOUR TOES AND THAT ALLEVIATES HEEL PROBLEMS BEFORE THEY BEGIN.

RN — I used some form of circuit training all year round. September — lower weights higher reps. November to mid-December – lower reps higher weights. December-January—lower weights moderate rep count. Really depended on my competition schedule. Mid to end of career, Coach Ken Matsuda (former USC assistant coach) had us working out in the pool at least three times per week with leg and arm resistant equipment. Workouts were low impact to the joints. He also had us working out with resistant bands (whole body). The bands were great to travel with. It

allowed us to work out in our rooms by simple connecting the bands to closed door… What number of stations do you use? September—10 stations + 60 crunches at the end of workout. What exercises? I found a bunch of workouts from post college years. I modified workouts depending on how my body was responding to the workouts.

PS — Early season, I used to use circuit training on what we deemed our general days, incorporating lots of body weight drills and core exercises.

MC — Circuit training is a must for us in the pre-season training sessions, and present in the in-season maintenance/recovery sessions. Whether it is station work or rotating through exercises, there are generally eight exercises and they will vary from lunges, a variation of hops, push-ups, single-leg balances or movements, movements across different planes, etc.

What is your off-season fitness plan? Would it be different for high school and college? Is it different for men and women?

MC — For HJ, my off-season plan is to stay mobile and do different activities/movements than jumping "high". It would vary according to the athlete, training age, and level of engagement over the break—that is where the variation would be rather than dependent on HS or College. It doesn't necessarily vary for gender.

DS — I start my jumpers on technique training the first Saturday in November as we have meets starting in early January. They're now going back to school in mid-August so I tell them to train three days/week starting in September. (a lifting day, a day off, a sprint/interval day, a day off, and a plyo day). I add a day/week in October. One week do an additional lifting workout, the next week, do an additional sprint/interval workout. I want them training five days/week by November. It doesn't matter boys to girls for me as I work, almost exclusively with high school jumpers.

CIRCUIT TRAINING IS A MUST FOR US IN THE PRE-SEASON TRAINING SESSIONS, AND PRESENT IN THE IN-SEASON MAINTENANCE/ RECOVERY SESSIONS.

RN — During college – it was mostly weights, bounding and plyometrics, some mileage, sprint work. After college — mileage work – 1-3 miles, maybe 5 if body felt good; bounding and plyometrics – worked on quantity; teardown. Heavy in the weight room 2-3 x per week. Would it be different for high school and college? Absolutely! More of everything in college. The high school season is so condensed you don't have an opportunity to put in much of a base foundation, unless you are a multi-sport athlete in high school. Is it different for men and women? I don't think so. Vicky Borsheim, UW women's high jumper and elite athlete, and I had both were coached by Ken Shannon. As far as I can remember we pretty much had the same fitness plan.

PS — In the off-season, I want my jumpers to maintain an acceptable level of fitness. Bike riding, swimming, yoga/pilates, etc… will take the place of running and jumping and any other weight-bearing exercises to allow bodies to recover from the work of the previous season.

Plateauing— how do you get an athlete to break through a plateau?

RN — In September Coach Shannon and I would sit down and map-out my competition schedule for the year. We would target key meets such as the Pac10 championships, NCAA's, U.S. Nationals, Europe schedule, etc. From there we would backfill in running workouts (sprint or endurance), weightlifting schedules (heavy, light, explosive), and technique days (full approach workouts, box jumps, 2-5 step approaches, etc.). During season I cut down on bounding and plyometric workouts.

Depending on the athlete, I pretty much stay with the above philosophy.

DK — "A high tide raises all ships". When average performance goes up, one can expect a new PR to follow. Yes, there are adrenal moments, but the logic still applies. On adrenaline, it's important to remember the managing of elation upon a PR. The adrenaline passes and now they are staring at an even higher bar… If you can command it, the adrenal moment can bridge to the next bar. If not, consider not attempting the following bar.

DS — My Interactive Coaching Program (ICP) is designed to periodize training and have jumpers peaking when they choose to do so. I don't have much trouble with "plateauing."

How many ground contacts do you routinely do in practice? And

does this vary on your "jump" days during the week or is it a situation that you go for a set number per week? Could you compare how this would be different between high school and college, men and women.

DS — I'm only concerned with ground contacts when it comes to plyometrics. I have my jumpers do 20 run-bys three days/week as part of their warm-up. That's 60 approach simulations/week without jumping once. I'm huge on repetition. You know the saying isn't "Practice Makes Perfect." The saying is "Practice Makes Permanent…..Only Perfect Practice Makes Perfect." I teach my jumpers to execute as close to perfect as they're capable and then they become their own judge of what's perfect for them.

RN — I'm not sure I understand this question. However, on specific jump days I concentrated on 8-12 good, quick ground contacts. It varied depending on jump days, and the time of season. Closer to big meets I would only shoot for 8-12 good quality contacts. In high school the number of contacts was less. As I got stronger, I could handle more quantity of contacts.

DK — A sprint coach growing in popularity these days says: "Don't burn the Steak…"

JEFF JOHNSON

Former American record holder Louise Ritter.

How many jumping days do you do in a week?

MC — Generally two and a comp day; with the second jump day being negotiable.

DS — I don't advocate more than two days/week jumping during the non-competitive season and once/week when the kids are in season. It's too much jumping otherwise.

RN — Two in training, three including meets

PS — I move from two to one jumping day a week during the season. To me it is important for the jumpers to stay hungry during the competitive season. I will substitute a day of drills for jumping so that when the weekend arrives, my jumpers are chomping at the bit. It is important not to burn out jumpers with too many jump days especially before the more important competitions.

End of Part I

TYPE D PERSONALITY AND INJURY IN COLLEGIATE TRACK ATHLETES

Negative affectivity in an individual involves the frequent experience of negative emotions (fear, guilt, anger, etc.) and poor self-concept. The Type D personality described by Denollet is one that exhibits negative affectivity and social inhibition/introversion. This piece discusses the possible connection between Type D personality and the risk of injury to athletes.

BY RAY LAPINSKI, ASST. COACH, CENTRAL CONNECTICUT STATE UNIVERSITY

In this article, I will attempt to summarize the findings of a study done by Annmarie Tuxbury, an honors student at Bryant University (2016). Tuxbury, herself a nationally ranked distance runner, examined Type D personality as a factor for injury risk in athletes across all three NCAA divisions. In the study, a four-part survey was sent out with 145 athletes (70 female/75 male) responding. Part one was made up of questions about injury history and training level. Part two consisted of a survey to assess negative affectivity and social inhibition. Part three was the Perceived Stress Scale (PSS). The final portion was the Athletic Coping Skills Inventory (ACSI))

PERSONALITY TYPES

Many are familiar with the work of Friedman and Rosenman (1976) who developed the Type A and B personality theory after studying 3000 men aged 35-59 over a nine year period. They determined that Type A, the competitive, hostile, time-centered subjects, were more likely to suffer coronary heart disease due to stress, than the Type B. The Type B were considered easy-going, relaxed and patient. Current theory suggests that Type A-B personality is a “normally distributed continuum” with relatively few people being strongly driven and competitive (A) or totally laid back (B) (Riggio 2012).

In 1987, Lydia Temoshok identified a third personality type that she called Type C that she linked with the incidence of cancer. It is similar

to Type A; however, the Type C personality tends to suppress emotions, particularly negative ones such as anger. They tend to avoid conflict and display "pathological niceness."

The Type D personality type was identified by John Denollet in 1996. It includes two primary traits: negative affectivity (NA) and social inhibition (SI) (Pederson, et al., 2004). Those with NA tend to exhibit anxiety, insecurity, depression, and self-pity. In addition, they are found to be overtly emotional. SI is related to introversion and these individuals tend to be reserved, quiet and shy. Schiffer (2005) found Type D personality to be associated with coronary heart disease, depression, and impaired quality of life.

In 1962 The Myers-Briggs Type Indicator (MBTI) was published. Originally designed to determine which jobs suit various personalities. The MBTI identified 16 personality types based on the following pairs of determiners:

Introverted vs, Extroverted (I vs. E)
Sensing vs. Intuition (S vs. N)
Thinking vs. Feeling (T vs. F)
Judging vs. Perceiving (J vs. P)

Using the MBTI, those individuals classified as ISFP, or ISTP would most closely fit the characteristics of a Type D personality.

STUDY FINDINGS

Tuxbury recognized that there are both internal and external factors that can lead to injury. External factors would include, environment, competition surface, equipment, and trauma. Internal factors include both psychological and physiological variables. Andersen and Williams (1988), found the key psychological factor related to sport injury occurrence is the stress response. They stated that stress response is influenced by three major factors: personality, history of stressors, and coping resources.

The work of Zafra, et al. (2015) focused on the period before injury. They found the primary cause of stress related injury to be increased muscle tension and attention deficit.


MIKE SCOTT

Nideffer (1985) developed a psychological training program for elite athletes. While not specifically mentioning personality types, he does stress the point that individuals respond differently to levels of arousal and that the events in track & field each require different levels of attention, focus and concentration.

It is well established that both eustress and distress cause an increase in blood pressure, heart rate, and the secretion of epinephrine and norepinephrine in to the bloodstream. There is also a release of corticosteroids including cortisol.

In a Swiss study (Verner, et al. 2010) of elite female endurance athletes vs. female non-athletes, they found cortisol levels reach their peak approximately 20-30 minutes after exposure to the stress of a standardized intelligence test. This elevated cortisol secretion is a biological indicator of experienced stress. The athletes in the study showed much lower cortisol levels than the non-athletes. Therefore it is reasonable to assume that athletes show lower cortisol levels during threatening or challenging situations compared to non-athletes. This difference was attributed to effective coping mechanisms developed through athletics.

Through Tuxbury's research, she concluded that Type D Personality proved to be a significant predictor of athletic injury. However, when the components of Type D Personality were broken down, negative affectivity significantly predicted athletic injury while social inhibition did not. She also found that coping with adversity, coach ability, concentration, confidence, goal setting, peaking under pressure, and freedom from worry all had a relationship to negative affectivity

implying that the lower the coping skills an athlete has, the higher the negative affectivity will be.

Interestingly, gender, year in school, collegiate division, scholarship, hours spent in training, and ageintroduced to track & field were not significant indicators of negative affectivity.

IMPLICATIONS

Tuxbury concluded that identifying the relationship between Type D Personality and athletic injury in collegiate track athletes can be useful to coaches in reducing the risk of injury. By putting in place methods to reduce negative affectivity, we can, in turn, reduce injury risk. These methods should include effective, proven coping mechanisms and, if deemed necessary, work with a qualified health care professional. This information would also prove invaluable to the athlete as it addresses athletic-related stressors and athlete-related coping mechanisms that can be strengthened to decrease athletic injury risk.

In The Sports Psychology Roundtable in Track Coach #197 (2011) Dr. Kevin Williams points to the coach and athlete developing SMART (Specific, Measurable, Acceptable, Realistic, and Time-based) goals as a means of improving mental focus. In the same roundtable, Dr. Ralph Vernacchia, who has always emphasized that individuals learn and perform in different manners, refers to his 5 C's of high performance sport:

- Confidence—the ability to believe in ourselves and trust our talent and preparation.Remember: competence breeds confidence.
- Composure—we can't always control what happens to us, but we can control our response.
- Concentration—the ability to perform with a clear focus. To be in the moment, while dealing with distractions inherent in performance settings.
- Commitment—the ability to invest time, energy and emotion in pursuit of a goal.
- Character—the quality of an athlete's foundational beliefs, values and ethical decision-making ability will determine the quality of one's performances, particularly under adverse conditions.

A necessary piece of the coaches tool box should be an athlete self-evaluation to see how they rank themselves in the six dimensions of health:

- Physical—including the athlete's level of fitness, quality of diet, monitoring drug and alcohol use, and evaluating sleep patterns and recovery.
- Social—what interactions does the athlete have between himself and others?
- Intellectual—is the athlete expanding his knowledge, being creative, open minded and curious?
- Emotional—is the athlete mindful? Is he capable of understanding, accepting and expressing how he feels? Have you developed a positive self-image?
- Spiritual—has the athlete developed a sense of purpose? What can one do to make the world a better place? What is your purpose in life?
- Environmental—is the athlete respectful of the surrounding environment? Is he aware of how environment can affect not only performance in training and competition, but overall quality of life?

Optimal performance in sport, and life in general, can only be achieved when the individual attempts to attain the highest score possible in each of these areas. It is up to the coach to guide the athlete towards that goal. It is in the best interests of both coach and athlete to be aware of the principles of individuality, including personality differences and optimal levels of arousal. In addition, it is imperative that athlete and coach work with health care professionals to insure that the athlete who needs the help is getting the best possible advice and care.

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BRUCE KIDD THEN AND NOW

TC editor Russ Ebbets has a wide-ranging conversation with former Canadian distance ace Bruce Kidd. The discussion includes Bruce's early development, Coach Fred Foot and the East York Track Club, the running successes and failures, and sport today.

BY RUSS EBBETS

As a 19-year-old you were Athlete of the Year in Canada. When did the penny drop that your running career would not be an ever-widening spiral of success? Did that realization put extra pressure on you to "accomplish more?"

While I always thought that I would get stronger and faster, I never felt that track would go on forever. In the amateur environment in which I trained and competed it was taken for granted that one's athletic career would probably end with university graduation. That meant that I only had a few years to accomplish my goals in track.

You were pretty much a cultural icon at 19 years old. How did you manage to continue to evolve as opposed to resting on your laurels or worse, going off the rails? I am sure the amateur nature of the sport had something to do with this but there had to also be some decision-making on your part.

I had teammates who kept me grounded. After my breakthrough year in 1961, I lost my very first race in 1962. Jim Snider gave me a novel entitled *Yesterday's Hero*. Fred Foot (no "e") was a master at perspective. After a breakthrough race or prestigious award, he would give me a day or two to relish it, then remind me that the other major runners in the world were training hard, achieving great performances, and I had to get back to work. "That Zimny in Poland," he would say ….

The Olympic super stars that immediately preceded you in the longer distances were Vladimir Kuts and Emil Zatopek. What were your expectations or the team chatter in your late teen years in this regard?

Fred brought back stories of Kuts from the 1956 Olympics, where he was the Canadian coach, and my father, who covered the 1952 Olympics for the Canadian Broadcasting Corporation, regaled me with stories of Zatopek. Some members of the East York Track Club subscribed to international magazines, like *Athletics Weekly, Track & Field News,* and *Leichathletik*. So, I had some idea of the international standard. But among the media and the sports-loving public in late 1950s Toronto, international track could have been on Mars. Very few people knew how fast people were running internationally.

You mention in your memoir (*A Runner's Journey*) meeting both Gerry Lindgren and Jim Ryun at

Bruce Tulloh (GB) and Bruce Kidd tangle in a race in Britain in the 60s.

the Cow Palace where you counseled them on their burgeoning abilities. Do you remember what you talked about?

People had told them that the huge mileage and tough workouts they were doing would ruin their health. They knew that I had done the same. So they sought me out to ask what I thought. I reassured them that if they felt good and recovered properly from hard workouts, they should stay the course.

The family life of an athlete is formative in countless ways. They say that the first task of an Olympian is to choose one's parents carefully. It seems you made an extremely wise choice here. What was unique or notable about the home environment your parents created that was expansive in nature, encouraging and supportive?

My parents encouraged my siblings and me to follow whatever paths we wanted and gave us the confidence and emotional support to do so. My father once told a reporter that he didn't care what it was that I became interested in, as long it fully engaged me, was healthy and made a social contribution. Both of my parents sought to make a difference in their professional and community projects, so that was a powerful example.

In your opinion, specifically and in general, what role do parents play in an athlete's life?

Today it's much different than it was in the 1950s and 1960s, when athletes like me relied primarily or entirely upon public institutions. Given the systematic immiseration of public institutions over the last 40 years, today's parents must be much more proactive in finding and financing opportunities in sports, culture, and education, mediating/problem-solving when their children encounter challenges, and providing emotional and strategic support. The best ones constitute incredible resources. But overall, the requirement for significant parental support exacerbates the widening inequalities in sports opportunity in Canada and the United States. Poor and single-parented kids rarely make it to the top in the Olympic sports these days. Most national team members are drawn from the upper middle classes, with two highly educated parents.

One's immediate physical environment also plays a critical role in development. Ten years ago, I gave a seminar in Toronto and stayed at a friend's house in the Beaches. As we walked the shoreline of Lake Ontario I felt an overwhelming sense that this was Shangri-La for a runner not realizing that this was your old stomping grounds. What role did growing up in this area of Toronto play for you?

The Beach in the 1950s was a wonderful place to learn sports, especially for boys. It was safe, you could run for miles along the lake, there were excellent facilities, inspiring local championship teams, professional and Olympic athletes,

and widespread encouragement. Everyone you met talked supportively about sports.

I noticed in the documentary *Runner* that you were a forefoot striker. Did you run your 10k's and longer on your toes? Even when you trained for longer distance runs and the marathon?

I ran with a forefoot strike at all distances up until 1965, when a post-Tokyo reconstruction of both ankles led me to run with a heel strike. The doctors who operated on me were convinced that the forefoot strike had contributed to the injuries.

The Runner clip also showed you running barefoot for either a warm-up or warm-down. How much of that type of running did you do? Did you quantify this with miles or minutes or yards? Was this encouraged by Coach Foot?

No, I just ran barefoot after races when my feet were blistered or burning, and I could cool off on the grass. I never trained barefoot.

Your arm action was unique with the hands pronated (palms down) that gave the appearance of doing the swimming stroke of the "dog paddle." How or why did that come about?

That developed when I started training with the East York Track Club and all the workouts were short sprints. To minimize tying up, I would throw down my arms to relax my upper body and it stuck, even as I moved up to longer distances. After that, I tried to smooth out my arm action, but I never was completely successful. To this day, I wish we had spent more time on that.

In the years 1959 to 1964 what was your weekly mileage? How did it vary throughout the year?

I didn't keep an exact diary, but we said about 100 miles, divided between an early morning jog, intervals in the evening Monday to Friday, races on Saturday and a long easy run on Sunday. In the spring, summer, and early fall, we ran on a track. We trained on grassy hills in the late fall and early spring, and indoors December to March.

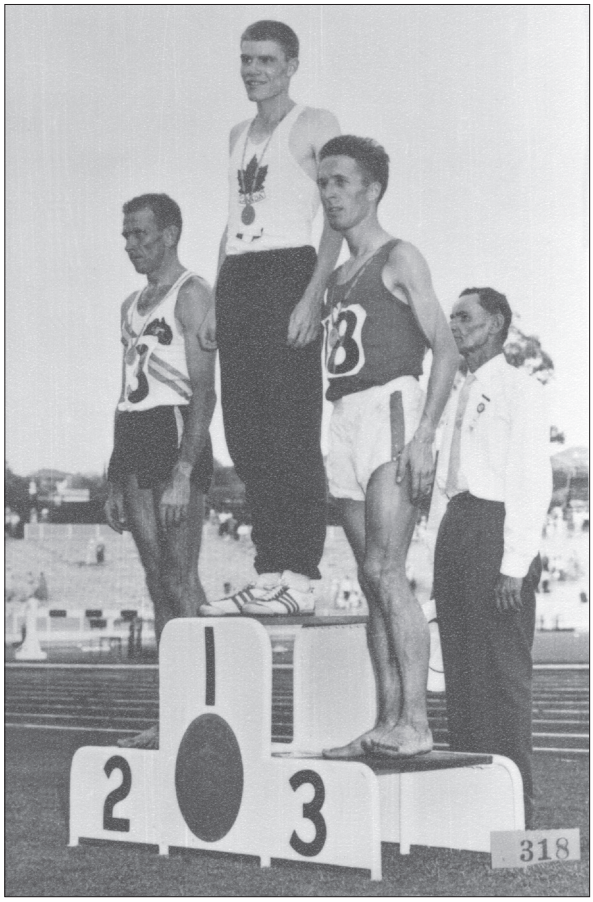
In the late 1950's and early 60's Percy Cerutty and Arthur Lydiard's influence on running training was in its ascendency. How familiar were you, at that time, with their methods, philosophies, and techniques?

I met both, but never developed a conversation. They just wanted to tell me what to do. As a result, I only knew of their methods from reading the newspapers, which wasn't a very reliable source.

You had contact with Lydiard's and Cerutty's athletes – Murray Halberg and Bill Baillie (Lydiard), Albie Thomas and Dave Stephens (Cerutty); was there much discussion of training? Did you have much contact with Herb Elliott or Peter Snell?

While I talked to Halberg and Baillie quite a bit in those years, it was mostly about racing tactics. I never talked to Thomas or Snell about training. I never met Stephens or Elliott.

There is a famous incident where Lydiard supposedly watched you grind out 60 second after 60 second 400's in preparation for the Commonwealth Games 10k where he felt you ran yourself into exhaustion. Several questions 1) did this happen? 2) were you



Perth 1962. Bruce Kidd on the victory stand after his Commonwealth Games gold medal in the 6-mile race.

aware Lydiard was there and were you trying to impress him? 3) did you regret doing that workout in hindsight?

That was in Tokyo prior to the 10K. I can't remember if I knew Lydiard was there. It was a beautiful day, one of the few warm, sunny days, and although I was only supposed to run a few 400s, I felt so great I just kept going and I did about 20. Fred, who only arrived in Tokyo the following day, was furious. I've always regretted it

Regarding overtraining and overracing, you mentioned several times in your book that you raced as many as 48 times in a year, and one would assume that included multiple 5k's, 10k's or longer distances. Do you remember how many 5 or 10k's were in that 48 races?

Of the 48 races I ran in 1962, 23 were three miles or longer, including one 15 miler on the road, and several longer cross country races.

Mihály Iglói was a coach who had remarkable success in the late 50's and early 60's (Sándor Iharos, István Rózsavölgyi, László Tábori, Bob Schul and Jim Beatty) that set upwards of 50 world records. Did you have any contact with him? He was famous for his "book" in which he kept meticulous records and projected performances of his athletes – did you ever see the book or was that "top secret?"

I ran against all those men and met Iglói many times. I've always regretted that I never managed a real discussion with him. I found him shy and correct in his answers. He never seemed to warm up or relax. Of course, it could have been me putting him off—I was young and probably to him very forward. Fred seemed to have a good relationship with him, as did former teammates Jim Snider and Orville Atkins who ran with him later. I never understood the thinking behind his workouts—those endless straightaways—but I'm sure I could have learned from him. I never saw his 'book'.

What about Franz Stampfl? Were his training methods a frequent topic of discussion with the East York Track Club? Especially after his success with Bannister and his later successes in Australia?

We knew his name and I briefly met him but we knew very little about his methods.

What was the environment of the East York Track Club (EYTC)? How did that change as you matured from a 15-year-old to a Commonwealth Games Champion?

It was very stimulating—everyone talked track, supported each other and enjoyed being there. For the most part, it was an adult club, so everyone chose to be there. Fred was a respected, even loved coach. It was already accomplished, with athletes representing Canada internationally, breaking records and winning championships, so it effused confidence. I think the only significant change that occurred after I arrived was that the focus gradually switched from the sprints to the middle and longer distances.

Who were some of your athletic heroes when you were growing up?

I looked up to many of the local men in the Beach who played sports, like Mr. Godfrey, one of my friends' fathers who played semi-pro softball at Kew Gardens and Pete Bennett, who played Canadian football for the professional Argos, both of whom lived across the street. I also admired the pros I saw in person and on television, like hockey player Ted Kennedy of the Toronto Maple Leafs and Jean Beliveau of the Montreal Canadiens and baseball player Sam Jethroe of the Toronto Maple Leafs (triple A). I don't remember one I looked up to above all, there were so many.

Would you say the EYTC was a nurturing environment initially or were you ignored? As you became the 17-year-old sensation did that generate petty jealousies, or did it encourage the rest of the team to greater things?

It was tremendously nurturing. The older runners, especially Jim Snider, Bryan Emery and Stan Worsfold, looked out for me right from the beginning. I don't think there were very many jealousies. Once I started receiving race invitations, Fred promoted Bill Crothers, and when meets invited both of us, Fred would insist upon a relay team, so we brought our teammates along.

Bruce, you excelled at all phases of running winning the USA National XC Meet at Van Cortlandt, running undefeated on the boards at Madison Square Garden and your successes in outdoor track. Did you prefer one discipline over the others? How difficult was it for you to "always" be ready to race?

I think two miles indoors was my favourite distance, but outdoors, it was three miles or 5,000. Our philosophy was to be ready to race every day, and Fred would often

surprise us with time trials, so we got used to running hard at a moment's notice.

It seems that your 2-mile race Boston AA victory was your breakthrough race. What was your lasting memory of that experience?

I've distilled that race through films, clippings, and stories ever since, but I do have an unfiltered memory of my gut fear when Pete McArdle tried to close the gap over the last two laps of the race. I thought I could hear him breathing down my neck. It was such a relief to reach the tape.

In many respects your early indoor career was contested during the heyday of indoor track and field in the US – iconic venues, big crowds, small board tracks and smoky arenas. What did you like most (or least) about those times and events?

I loved the close-in, circus-like atmosphere of indoor track, with formally dressed officials, the organist giving every runner a signature tune (and in longer races, playing the leader's tune to the tempo of the race), the jostling around tight corners, and the camaraderie it encouraged among athletes. What I hated was the smoke, beer and food smells. I was sick after every indoor race I ran.

Bill Crothers (OG silver medalist to Peter Snell, Tokyo, 1964) was a superstar in his own right but his success came after yours. What role did he play in your development?

Bill and I trained differently, ran different distances, and had different personalities and strengths. But we became good teammates, respected and learned from each other.

Were Lorne Michaels (Saturday Night Live fame), W.H. Auden (the poet) and Dick Gregory (the comedian) celebrities who briefly came into your life or did you get to know them more on a personal level?

I got to know Lorne well in the late 1960s and early 1970s because we were married to first cousins and we all spent a lot of time together. We've stayed in touch ever since. I never met Auden, although he turned an interview Don Owen did with me into the commentary for the film, *Runner*. While I only met Gregory a few times, we spent a memorable evening together once in Toronto when he outlined his ideas about an Olympic boycott to protest racism in sports

You mentioned that Fred Foot did not have a track background. Where did he get his coaching direction from? Was he an advocate of Cerutty, Lydiard, Stampfl or Iglói or somebody else? There were few books in the late 50's and 60's – do you remember anything that he frequently referenced?

No, Fred ran sprints and 800 metres during the 1930s for the Toronto Achilles. In fact, he was so good that the Toronto police gave him a civilian job so that he could race for the Toronto police in the big intercity meets that were held in those years. He worked for the police for more than 40 years, eventually becoming their budget chief. After WW2, Fred and several Achilles teammates formed the East York Track Club and Fred became the coach. He was entirely self-taught by observation and trial and errors. I don't think he read any books about coaching.

Did Coach Foot have any go-to words of wisdom that have stayed with you throughout your life?

Fred's confidence that if you worked hard at something you could always do it well and his lifelong commitment to volunteer service have always stayed with me. One of his favourite sayings was "keep it short", which literally meant "don't overstride" and metaphorically I've always taken to mean "be true to yourself".

Was the attempted Commonwealth triple of 1962 in Perth deemed a possibility due to Zatopek's triple in Helsinki? Whose idea was the Commonwealth triple (5000, 10K and marathon)? If it was yours, did anyone try to talk you out of it?

It was my idea, in emulation of Zatopek. Also, I wasn't sure I would have another chance. Fred and several others (even Murray Halberg) tried to talk me out of it, but I was so full of myself, I rejected their efforts. It was a naïve idea—I had never run a marathon, knew nothing about the nutritional and hydration requirements, etc., and had been primarily doing speed work while in Perth. If I really wanted to triple, I should have run the mile. Along with that Tokyo workout, it's one of the few decisions I wish I had again.

Some highly motivated athletes use a poor performance as motivation to redouble their efforts, frequently driving them deeper and deeper into an overtrained state. Do you feel that was a

problem for you?

That was probably the case during the summer of 1964. Every time I ran a mediocre race, I would step up the mileage. In addition to my two workouts a day, I had a demanding summer job working as a reporter for the Toronto Star, because I rejected the advice from Fred and teammates to take the summer off. I was always tired. It wasn't a great time.

The weight of great expectations. This is one of the things about sport I think many "regular" people cannot identify with. One of the things I observed at Villanova firsthand was the level of expectations the Irish athletes were bridled with. The stress of their internal drive and pressure to succeed was compounded by the ever present external pressures (family, friends, coaches, press, national expectations, etc.) which for the Irish were further compounded by the measure of their "success" being Ron Delany, 1956 Olympic gold medalist in the 1500. At what point in your life did you start to feel this? And what pressures do you feel you left behind for the succeeding generations of Canadian runners? (It's worth mentioning that your 5k junior world record remained a Canadian junior record for 54 years).

I certainly felt these pressures. As I won more races internationally, they increased significantly. Boston was a big turning point, because after that people thought I was always running for "Canada". Because very few people in Canada knew anything about the world list, it was expected that I would always win. In Tokyo, I was overwhelmed with telegrams from people I never knew. To the extent I "froze" in Tokyo, it was because as I lined up at the start of the 10K, I was numb from the weight of those expectations.

EVERY TIME I RAN A MEDIOCRE RACE, I WOULD STEP UP THE MILEAGE AND I WAS ALWAYS TIRED. IT WASN'T A GREAT TIME.

But I should also say that I came to accept these pressures as responsibilities—to represent Canada and Canadian sport well. As I outline in my memoir, *A Runner's Journey*, it took some time to learn how to do this, with more than a few mistakes along the way, but eventually I came to turn that pressure into a position of influence and use it to argue for progressive change in sports.

The Tokyo 1964 10,000m – In the postscript of my 2001 interview (*Track Coach* #158) with Billy Mills Track & Field News detailed the race participants that included 10 current or former world record holders, Olympic medalists, Pan American or Commonwealth Champions. One could make the argument this was the finest collection of talent an Olympic 10,000 ever had. For you it has to rank among your greatest disappointments. In retrospect, what do you feel went wrong? If you had it to do over again, what would have been done differently?

As I've said in my memoir, I regret I did that hard workout so close to the race—that left me physically flat. But most of all, I wish I had entered the race in a completely different frame of mind. Instead of thinking that any result less than winning was a failure, I wish I had welcomed the opportunity of racing against so many fine runners and said to myself something like: "This is where you have always wanted to be. You're in great shape. Enjoy the race and show them what you can do!"

As a writer your style has remarkable clarity, flow, and readability. Do you attribute that skill to your early newspaper background? Who are/were some of you favorite authors?

Thank you for your kind words. I have always enjoyed writing (although it can be excruciatingly hard). When I worked on the student newspaper as an undergraduate at the University of Toronto, and in summer and part-time jobs I had for radio station CFRB and the Toronto Star, we often talked about what it took to write well, so that helped. My favourite writer in those years was A.J. Liebling of *The New Yorker*, both for his wide-ranging interests and his easy style. I also sought to emulate one of my teachers, the political economist C.B. Macpherson, who wrote about complex political theory in an extremely straightforward and cogent style.

Charlie Francis had an answer for every question and an opinion on everything else. When I interviewed him in 2002 (Track Coach #161) the question that stopped him was how did he get his sprint corps, once their ability made them consistent Olympic level finalists, to believe they could actually win? He said that was one of his greatest challenges. Do you see this as an example of the "second city mentality" of Canada due to the cultural sprawl the US has had over time?

The "second city mentality" has certainly been a burden in the Olympic sports in Canada, and many of us have tried very hard to change that. Today, there is a confident spirit in many sports, like women's soccer, swimming, ice hockey, curling, rowing, and specific track events like the decathlon.

Much of your career preceded the professionalism of the sport apparent today. While you've never been one to stifle progress are there any things you miss about the "good old days?"

Bill Crothers, David Bailey, Abby Hoffman and other teammates from the 1960s often share the regret that Olympic sport now requires a full-time commitment, making it very difficult for top athletes to simultaneously develop a rewarding career, let alone enrich themselves culturally and intellectually through the international travel they do.

Throughout your post-competitive career you have been a national force promoting social equity, educational opportunity, support for sport all the while proving to be a tireless crusader to your political rivals. Who have been some of the formative figures that set you on this path and gave you inspiration to continue?

My parents always supported me in this, even when the media was howling, or people said I had to choose between sport and politics. I could look to exemplars within track, too. The British 10K runner Martin Hyman was an early inspiration because Martin trained and raced hard and was active in the anti-nuclear movement. Dick Gregory, Mal Whitfield, and Harry Edwards fought racism in sports in the United States. Ted Haydon, who coached me in the University of Chicago Track Club, was an influential mentor, because he not only believed you could do both sport and politics, but helped you schedule your workouts and races to make it possible.

BUT IF I LOOK BACK, I'VE SEEN SIGNIFICANT, PROGRESSIVE CHANGE IN THE TWO INSTITUTIONS TO WHICH I'VE DEVOTED MYSELF—THE UNIVERSITY AND SPORT AND I'VE BEEN ABLE TO CONTRIBUTE TO IT. THAT'S VERY ENCOURAGING.

I heard recently on American public radio a spot on Greenpeace dealing with the burnout their activists suffer as the "good fight" can become a Sisyphean task with the minor victories not enough to sustain one's motivation in the face of challenges that seemingly present with a constantly "vanishing horizon." How have you been able to maintain your motivation for the social changes you've advocated despite the political realities of society, economic interests, egos and human being's natural resistance to change? How have you escaped the frustration, the self-doubts and private cynicisms that often accompany those who speak "truth to power?"

It's been hard at times. I can't remember how many times I've sung Leonard Cohen's line—"they've sentenced us to 20 years "of boredom for trying to change the system from within"—to myself. But if I look back, I've seen significant, progressive change in the two institutions to which I've devoted myself—the university and sport and I've been able to contribute to it. That's very encouraging. My metaphor is the track race when you're completely boxed coming off the turn yet somehow it opens up and you have a clear path to the tape. As one of my teachers in first-year university (and Rhodes scholar track athlete) H.I. Macdonald used to say, "You never know unless you try." I've also been lucky to work in or near athletic facilities most of my life, so when I got really depressed after a frustrating day, I would go up to the field house or down to the pool and just sit in the gallery. Seeing the joy of people training and coaching was usually enough to calm me down and push me to continue the fight.

What do you see as the two or three greatest challenges humankind will face in the next 25 years?

Global warming, increasing inequality and escalating xenophobia.

What role do you hope sport will play in helping to mitigate these challenges?

These are all difficult challenges for sport, because despite good intentions and soaring rhetoric in documents like the Olympic Charter, we're still part of the problem. We still travel to participate in and enjoy competition with little thought to the carbon costs, or how they could be reduced in step with humanity's requirements. In countries like Canada and the U.S., COVID has further exacerbated the frightening inequalities in access and opportunity. And

as the debate on the boycott of the Beijing Winter Olympics and Paralympics illustrates, the ideal of international, intercultural dialogue in sports as a way of reducing world tensions has little relevance for many people.

There are not easy solutions for any of these challenges. I think it's urgently necessary for sports people—leaders, athletes, coaches, and journalists alike—to reject the preoccupation with "sport for sport's sake" and spend time every day to inform ourselves about the environmental and social consequences of what we do, forge links with community organizations who worry about these issues and discuss what we can do. It means that we have to make sports governance much more democratic and athlete-inclusive. We don't have much time. It may well be that governments will have to intervene with emergency powers, the way some have done during the pandemic, before sports and others can act. I hope that's not the case.

I know that sports can help. Many athletes and sports organizations played an extremely constructive role in the early days of COVID—communicating public health messages and setting an example, helping people keep active safely as a way of staying resilient, and making facilities available for medical services, emergency shelters, food distribution, and so on. We must realize that we can never return to the pre-pandemic "normal". We're must fight for the future of the planet and our humanity.

CONFUSION VS. HABITUATION

BY JASON R. KARP, MBA, PHD

Excerpted from Jason Karp's new book, *Running Periodization: Training Theories to Run Faster.*

Legend has it that the ancient Greek wrestler Milo of Croton trained by carrying a newborn calf on his shoulders every day until it grew into an adult bull. This training enabled Milo to become one of the strongest men around and win six Olympic titles. While Milo probably didn't articulate to the curious onlookers that carrying a growing bull on his shoulders around town was an example of progressive overload, this training theory became the basis for developing muscle strength.

Because a calf grows slowly into a bull, it wasn't every day that Milo lifted a heavier animal than the day before. The training stress didn't drastically change from day to day or even week to week. Milo's muscles had time to adapt to the animal's current weight, slowly progressing to heavier and heavier weights as the animal aged.

Many years later, in 1950, Hungarian endocrinologist Dr. Hans Selye discovered that laboratory animals exposed to various stressors, like drugs, cold, or surgery, and individuals with various chronic illnesses, like tuberculosis and cancer, display a common set of symptoms and pattern of responses. From his observation of the stress response pattern, Selye developed the General Adaptation Syndrome, which represents the chronologic development of the response to stressors when their actions are prolonged.

Selye discovered that giving a rodent a small dose (one-quarter) of an alarming/toxic stressor (e.g., drugs, cold, exercise) prior to a full, alarming dose of the same stressor protected the rodent from the alarming/toxic dose. Applied to a runner's training, introducing a small dose of a specific type of workout is beneficial for adaptation before introducing a larger dose. Selye also discovered that an organism appears to possess a finite amount of "adaptation energy," with adaptation to a specific stimulus decreasing resistance to other stimuli. As Selye described, "…anything to which adaptation is possible eventually results in exhaustion, that is, the loss of power to resist."

Using different types of workouts (e.g., aerobic, anaerobic, intervals, strength, power, etc.), training introduces a variety of unique stressors. How your athlete's body reacts and adapts to those

stressors determines the amount of work that he or she can tolerate, how much he or she can adapt to other types of workouts at the same time, and, pure talent notwithstanding, how much he or she can progress. Following a training stress, the athlete's body adapts and physiologically over(super)-compensates, so that when the same stress is encountered again, it doesn't cause the same degree of physiological disruption. In short, the athlete's body adapts to be able to handle the stress. Following the adaptation, he or she can do more physical work. The aim of training is to introduce training stimuli in such a fashion that greater and greater levels of adaptation are achieved while avoiding exhaustion (and, ultimately, until your athletes' genetic potential is reached, if so desired). A fundamental understanding of stress and adaptation is imperative to fully understand how and when to prescribe different amounts and intensities of training.

After repeated or prolonged presentation of a specific stimulus, your athletes become habituated to it, and their bodies decrease their response to that stimulus. Confusion, on the other hand, keeps their bodies guessing by constantly varying the stimuli.

Variation is an important concept in training. It's important to manipulate training parameters, such as intensity and volume during the training process. Variation of training, which is the cornerstone of modern training theory, alters the expression of genes that results in greater adaptation. However, if you vary the training too much that your athletes' adaptation energy is too widely distributed across many fitness targets, their ability to adapt diminishes and they can stunt their progress.

Conversely, focusing on a single aspect of fitness at a time with repeated training stressors can induce rapid improvement in that single target, but if your athletes prolong such a concentrated focus, that can result in unremitting monotony, staleness, and overhabituation. Doing the same training repeatedly can blunt expression of key molecules involved in endurance adaptations, which can result in stagnation.

While "confusing" your athletes' bodies can be useful to avoid plateaus in fitness and performance, variation in training must be scheduled, organized, and carefully controlled—enough to avoid monotony and overhabituation, but not too much to avoid inadequate adaptation.

Variation to cause confusion must be balanced with mastery of the skill. On one hand, you must vary your athletes' training often enough to adapt and improve fitness, while, on the other hand, they must repeat the same training a number of times to master the volume and intensity (or to master the skill of a specific type of workout) so they can progress with their training, having each workload build on what came before.

THE CONFUSION-HABITUATION BALANCE

And therein lies the secret behind the stunning success of smart training.

That secret is the Confusion-Habituation Balance.

It is in the Confusion-Habituation Balance that makes every smart training plan work.

It is in the Confusion-Habituation Balance that every successful runner builds his or her future.

Too much confusion or too much habituation won't work.

Confusion and habituation must be balanced.

But, the Confusion-Habituation Balance is not a perfectly balanced see-saw.

The Confusion-Habituation Balance should be slightly unbalanced in favor of habituation.

IT'S IMPORTANT TO MANIPULATE TRAINING PARAMETERS, SUCH AS INTENSITY AND VOLUME DURING THE TRAINING PROCESS.

That's because habituation, a learning process that leads to mastery of a skill or workload, is a more effective training method than confusion, as long as the same stimulus is not repeated for too long that the physiological response begins to decrease.

Habituation leads to mastery. But only if the skill or workload is practiced. Over and over and over again. Like practicing the piano or practicing a golf swing. Over and over and over again.

Although the act of running is more physiologically-based than skill-based, mastering a given workload is a skill that is learned through physiological adaptation.

Give your athletes enough time to absorb and adapt to the training

before changing it. For example, 40 miles per week should become a normal experience for your athletes' bodies before increasing to 50 miles per week. Change the stimulus just as habituation occurs so that they continue to increase their response.

Like Milo of Croton, most runners would benefit from changing the training stimulus every four to six weeks (if your athletes run nearly every day; longer if they run a few days per week).

For example, if focusing on running volume, rather than increase mileage from 30 to 40 to 50 to 60 miles per week each week, use a pattern like 30-30-30-20-40-40-40-30-50-50-50-35-60-60-60 miles per week. After a few weeks at a higher volume, reduce the volume for a week so your athletes can recover and absorb the previous few weeks' training, and then increase the volume again. Although they may still run at the same pace at the higher volume, the increased workload serves as confusion and necessitates a physiological response, at least up until they reach their genetically-determined response ceiling.

SUSTAINED VOLUME

Once your athletes reach a higher level of mileage, have them stay there for as long as they can. Sustained volume over time, rather than a short period of higher volume, is what makes them better runners, both physiologically and biomechanically. Physiologically, sustained higher volume leads to habituation and mastery of the training workload. The adaptations achieved—mitochondrial density, capillarization, running economy—stick with your athletes and become part of them. Biomechanically, sustained higher volume also leads to habituation and mastery of the skill. It optimizes movement patterns, which results in a more efficient application of muscle force and greater propulsive forces, and causes changes to running mechanics that can reduce the risk of injury. It takes years of sustained higher volume for its benefits to be fully realized. Of course, endurance training is more than just about habituating to higher and higher doses of volume. Endurance training is also about intensity and volume of intensity.

Your athletes need to habituate to those variables, too.

Once they have reached the volume you plan for them to reach in your current training plan, change the intensity.

But, don't change it too much. Change it just enough.

Then, have them habituate to it by repeating it for a few weeks. Over and over again.

Then, change it again.

That's the secret of the Confusion-Habituation Balance.

By balancing habituation with confusion, your athletes will become more skilled, accomplished runners. Their progress will be more consistent, and perhaps they'll even be able to challenge Milo of Croton to a wrestling match.

Few coaches are able to combine the knowledge of the science of human physiology with the art of coaching that Jason Karp brings to the table. He is a practicing coach, exercise physiologist, author of 12 books and more than 400 articles, speaker, and educator. He is the 2011 IDEA Personal Trainer of the Year and two-time recipient of the President's Council on Sports, Fitness & Nutrition Community Leadership award. His REVO$_2$LUTION RUNNING™ certification has been obtained by coaches and fitness professionals in 25 countries. Follow him @drjasonkarp on social media and learn more about his women's specialty run-coaching company, Kyniska Running at kyniskarunning.com.

USATF COACHING EDUCATION

USATF CALENDAR OF SCHOOLS

https://www.usatf.org/programs/coaches/calendar-of-schools

July 8-10	Level 1 - Zoom #2022-27 (Pacific Time)
July 16-17	Cross Country Specialist Course - Zoom #2022-2 (Eastern Time)
July 19-22	Level 2 – Butler University, IN
July 23-24	Level 1 – North Central College, Naperville, IL
July 23-24	Level 1 – Sacramento State University, Sacramento, CA
Aug 6-7	Level 1 – South County High School, Lorton, VA
Aug 12-15	Level 1 – Zoom #2022-32 (Central Time)
Sept 30 - Oct 2	Level 1 – Community College of Philadelphia, Philadelphia, PA
Oct 2 - Nov 12	Level 2 – Weekend Program
Oct 8-9	Level 1 – Alhambra High School, Phoenix, AZ

**Additional dates for Zoom Level 1 Schools coming to the USATF Calendar of Schools soon.*

USATF

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SPOTLIGHTING THE NEWEST CLASS OF USATF LEVEL 1 INSTRUCTORS

USATF is excited to announce the newest cohort for the USATF Instructor Training Course. The hybrid course presents a bridge between adult learning best practices and the Level 1 curriculum. The 16 members selected will converge in Indianapolis, IN on July 18th and then be a mentee at a 2022 Level 1 School to complete their certificate requirements.

Parker Daniells (Rocklin, California/USATF Pacific) is an Associate Professor of Kinesiology and Distance Coach at William Jessup University. He received his master's degree in Exercise Science and Ph.D. in Performance Psychology. While head coach, his men's team won the California Pacific Conference in '11, '12 and '13 and he was awarded Men's Conference Coach of the Year for the three consecutive years. Daniells holds USATF Level 2 for both Endurance and Sprints / Hurdles / Relays and is CISSN certified.

Sean Denard (Los Angeles, California/USATF Southern California) is an Assistant Throws Coach at UCLA. Denard has coached numerous discus Olympic qualifiers including Sam Mattis, Alex Rose, Reggie Jagers III, and Rachel Dincoff. He has coached six NCAA champions and over 50 NCAA first team All-Americans. He holds a master's degree in higher education and is currently working towards his second master's degree in Transformative Coaching and Leadership. Denard holds USATF Level 2 certificates in Throws, Jumps and Sprints / Hurdles / Relays.

Monique Henderson, OLY (Huntington Beach, California/USATF Southern California) is a tenured Health and Kinesiology Professor at Golden West College (GWC) and holds a master's degree in Kinesiology. Henderson is also the Head Coach for the Men's and Women's Cross Country and Track and Field programs at GWC. As an athlete, Henderson competed at three Olympic games, earned two gold medals as part of the 4X400m, and is the former collegiate and national high school record holder in the 400m. She holds USATF Level 2 certificates for both Endurance and Sprints.

Arthur "Iggy" Ignaczak (Stanford, California/USATF Pacific) coaches jumps, pole vault, and the combined events at Stanford University. In his first Outdoor season at Stanford in 2020 he coached Keyshawn King to the Olympic Trials and Allie Jones earned All-American honors. In 2013, he earned his master's degree in education with a focus in leadership. Ignaczak holds USATF Level 3 certificates in Jumps and Combined Events and an World Athletics Level V certificate in Jumps.

Felisha Johnson, OLY (Anderson Indiana/USATF Indiana) is in her fifth season as an Assistant Track and Field Coach at Anderson University. She is a 2016 Olympian, 9-time All-American and 2-time NCAA champion in the women's weight throw. Johnson is still competing in the women's shot put as a USATF Tier 1 Athlete. She holds her USATF Level 2 certificate in Throws.

Brian McNeiece (Narragansett, Rhode Island/USATF New England) is the Head High School Girl's Cross Country Coach and Boy's Track and Field Hurdle Coach at North Kingston High School. In 2021, McNeiece was awarded RITCA Cross Country Coach of the Year and was the 2013 RRCA Ultra Marathon National Champion. McNeiece holds USATF Level 3 and World Athletics Level V certificates in Endurance and Sprints / Hurdles / Relays.

Martin Palavicini (Fresno, California/USATF Central California) has been coaching for over 42 years, currently as a middle and high school coach at Clovis West High School and as a private elite high school and open athlete coach. In addition, Palavicini has taken on the role as Head USATF Coach for numerous international competitions. Currently, he coaches heptathlete Jestena Mattson and decathlete Chris Helwick. He holds a master's degree in Kinesiology and Ph.D. in Exercise and Sport Science. Palavicini holds his USATF Level 3 certificate in the Combined Events and is a World Athletics Level V Jumps and Combined Events Elite Coach. He is also a NSCA Certified Strength and Conditioning Specialist.

Billy Poole-Harris (Annandale-on-Hudson, New York/USATF New York) has 17 years of coaching experience and is currently the Men's Head Cross Country and Track and Field Coach at Bard College. While coaching at Indiana State University and Northern Illinois University he led numerous athletes to top 10 conference indoor and outdoor championship finishes. During his time as Head Coach for Whitney M. Young high school he oversaw the development of 29 individual state qualifiers and 14 relay time qualifiers. Poole-Harris holds USATF Level 3 and World Athletics Level V certificates in Endurance.

Hugh Reid (Brooklyn, New York/USATF New York) is currently the Head Cross Country and Track and Field coach at Lehman College where he has led the men's and women's teams to indoor and outdoor CUNYAC championship wins. This past year Reid was named CUNYAC Men's Coach of the Year for both the indoor and outdoor season, an honor he has now received 20 times throughout his career. Reid also founded the Musketeers Track club where he's overseen athletes compete at numerous prestigious competitions including the Junior Olympics and Olympics. He represented Barbados as a sprinter and was an eight-time Barbados National Champion. Reid is USTFCCCA Strength and Conditioning Certified and holds USATF Level 3 and World Athletics Level V certificates in the Combined-Events, Jumps, and Sprints / Hurdles / Relays certificates.

Sterling Roberts (Ypsilanti, Michigan/USATF Michigan) is an Associate Head Track and Field Coach at Eastern Michigan University where he coaches hurdles and horizontal jumps. He coached Summer 2021 Olympians Donald Scott and Tori Franklin as well as Sallah-Mohammed who became a Dutch National Champion. Among his accomplishments, he was named the NCAA Great Lakes Regional Assistant Coach of the Year in 2014 and 3-time Mid-American Conference Assistant Coach of the Year. He holds USATF Level 2 certificates in the Jumps, Throws, and Sprint / Hurdles / Relays.

Thomas Schwartz (Broomfield, Colorado/USATF Snake River) has coached for over 30 years and currently runs his own private coaching practice, Tinman Elite. He has coached multiple National Champions includ-

ing Drew Hunter and Brogan Austin and three USATF club cross country champion teams. Schwartz holds both a master's degree and Ph.D. in Exercise Science. Schwartz is the co-author of the book "Build Your Running Body" and holds USATF Level 3 and World Athletics Level V certificates in Endurance and Youth.

Charlotte Sneed (Bethel Island, California/USATF Pacific) owns and coaches her own cross country and USATF track club, the Contra Costa Cheetahs, which serves youth, open, and master athletes. Previously, Sneed was the Head Coach at Heritage High School and sprint, relays, and jumps coach at Freedom High School. In 2019 she was selected to receive the Milton Hershey Award for her volunteer contributions to youth track. Sneed holds USATF Level 2 certificates in Jumps and Youth.

Cortney Stafford (Stroudsburg, Pennsylvania/USATF Mid Atlantic) has coached collegiately for seven years and is currently the Women's Heads Coach at East Stroudsburg University. During the 2022 season she oversaw three first-team regional team qualifiers, the PSAC Women's Indoor Rookie/Field Event Athlete of the Year, and four school records. Stafford competed as a jumper for Cal Poly and her Big West Conference triple jump record still stands today. She has her master's degree in Sports Management and holds her USATF Level 3 and World Athletics Level V certificates in the Jumps and Combined Events. Stafford is also USTFCCCA Strength and Conditioning certified.

Sol Stephens (Owensboro, Kentucky/USATF Kentucky) has 22 years of experience coaching and is the Head Women and Men's Cross Country and Track and Field Coach at Kentucky Wesleyan College. During the 2021 season, his women's team was ranked Academic All-American for the first time in the university's history. While at Anderson University, Stephens coached four NCAA All-Americans, 19 HCAC conference champions, and 89 HCAC all-conference individuals. Stephens holds USATF Level 3 and World Athletics Level V certificates in the Jumps.

Claude Toukene, OLY (Suffolk, Virginia/USATF Virginia) works as the Head Men and Women's Track and Field Coach at Bryant and Stratton College. Claude has coached 15 All-American's and has received the Mid-Atlantic Coach Award three times. While coaching at Western Branch High School his track and field team won 27 state titles, 22 national titles, and seven national records. He competed for Cameroon in the 1996 and 2000 Olympic games and four IAAF World Championships. Currently, Toukene is finishing his Ph.D. in Health and Human Performance. He holds USATF Level 2 certificates in Jumps, Throws, and Sprint / Hurdles / Relays.

John Turek (Plano, Texas/USATF Southwestern) is the Head Cross Country and Track and Field Coach at St. Mark's School of Texas where he has coached for 28 years. Turek has served as the Women's Head Coach for numerous international competitions including the Thorpe Cup and Pan American Cup. He holds a master's degree in Physical Education with an emphasis in Biomechanics and Motor Skills Acquisition. Turek holds USATF Level 3 and World Athletics Level V certificates in the Combined Events.

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