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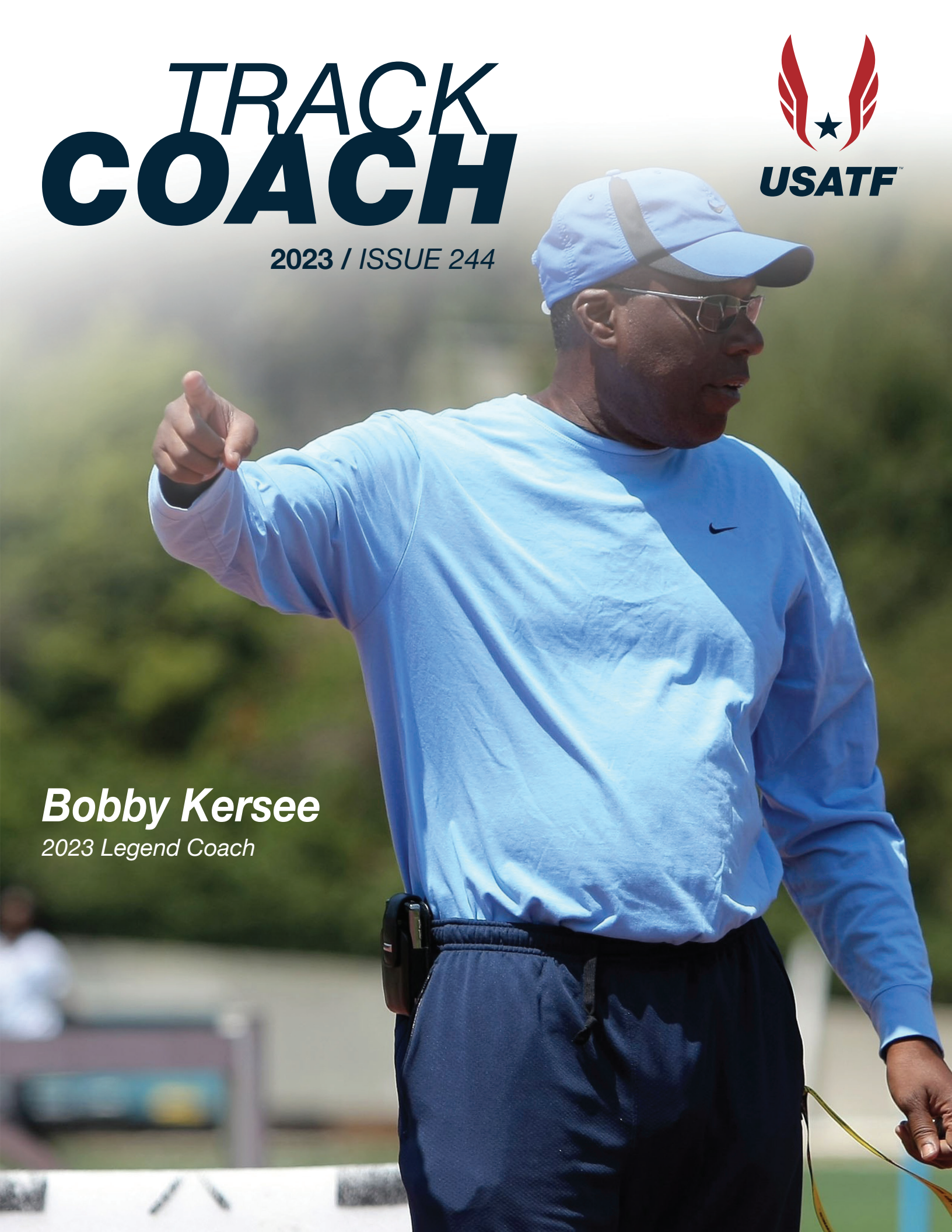

Bobby Kersee

2023 Legend Coach

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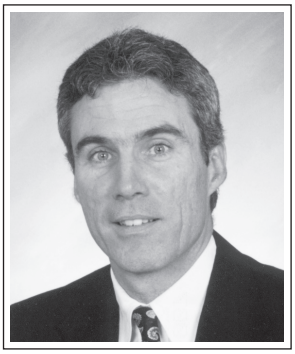
FROM THE EDITOR

RUSS EBBETS

THE AMERICAN METHOD



The triple jump was the inaugural event at the 1896 Olympics. James Connolly of the USA stepped, stepped and jumped into Olympic history with a 45-foot "triple" jump to win the silver medal given to the first place winner. It wasn't until 1912 with the formation of the IAAF that the event was standardized to the hop, step and jump used today.

There is no consensus as to the exact origins of the triple jump. Ancient Greeks contested a three-jump event at the original Olympics but it was believed to be a hop-hop-hop all done from the same leg. The Roman Legions trained with hopping exercises that were used to improve footwork preparing them for the hand-to-hand combat battles of the day.

Different countries contested multiple jump events at folk festivals over the last few centuries. Some scholars believe the modern triple jump is actually an outgrowth of the children's game of hopscotch that may, in part, explain why the standing high jump, long jump and triple jump events were contested in the inaugural Modern Olympic programs.

The early triple jump successes of Americans at the first three Olympiads was not a harbinger of great things to come. The U.S. team won more triple jump first place medals in those first three Olympiads than they would win triple jump medals, of any kind, over the next 80 years.

In 1983, a triple jump lecture, The Problems of the Triple Jump, was given by Leonid Shcherbakov at the Institute of Sport and Physical Culture in Moscow, I was in attendance through a tour arranged by Concordia University, Montreal. Shcherbakov stood before us expressionless as the translator introduced him and detailed his career accomplishments. Shcherbakov was a two-time Olympian, 1952 silver medalist (losing to legendary Brazilian jumper Adhemar da Silva), a former world record holder in the event, four-time European champion, and by 1983 a Soviet coach.

The teaching ability of former athletes can be a mixed bag. Some can detail the nuances of sport with observations and insights that offer a peek behind the curtain of athletic genius. And sometimes the genius of athletic ability, the intuitive instincts of physical gifts only translates to a muddled presentation of this and that, with no rhyme or reason. Fortunately, for this class, we got the athletic genius.

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EDITORIAL COLUMN

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Shcherbakov's presentation was simple, straightforward and matter of fact. His statements were concise, and their translation came out as almost poetic. His grasp of the event was immediately evident as he systematically deconstructed "the problems" with discussions of talent identification, essential fundamentals, technical execution, developmental benchmarks and flaw corrections. His examples were clearly presented and unified his presentation. Throughout this presentation he frequently referenced "The American Method."

My brother was an accomplished triple jumper in high school. With six years of coaching under my belt I had more than a rudimentary understanding of the event. Nonetheless the fact that there was an "American Method" was news to me. The triple jump was one of those events the U.S. has had minimal success since the early Olympiads, and now, oddly, we had a "method?"

My curiosity finally got the better of me. I turned to the coach next to me and asked, "What is the American Method?" He had no clue. I waited for a pause, raised my hand and forced myself to ask, "the stupid question."

Shcherbakov had a monosyllabic mastery of English. As the translator began to translate my question Shcherbakov waved her off, signaling that he understood what I was asking. He raised his hands in front of him, roughly shoulder width apart and said, "The American method – *with the short step*," and burst out laughing. The translator laughed, the class laughed and even though the joke was on me, I laughed too. Two points for Shcherbakov.

About 12 months later Al Joyner mastered "the short step" and helped to redefine the American Method. Over the next 40 years the American men have been an ever-present, if not dominant force in the event with an extensive list of medalists at the World Championships and Olympic Games. Roughly 40% of the top 25 all-time men's marks are now from Americans. Live and learn.

Shcherbakov taught and coached throughout his post-athletic career in the Soviet Union, Algeria and Cuba. He is credited with helping Cuba's Pedro Perez break Viktor Saneyev's triple jump world record in 1971.

In this issue will be a Triple Jump Roundtable with some of the coaches who have contributed greatly to the success the U.S. has enjoyed over the last few decades, further refining the "American Method."

THE "AMERICAN METHOD" TRIPLE JUMP ROUNDTABLE

COORDINATED BY RUSS EBBETS

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

ROUNDTABLE PARTICIPANTS

ER—Ed Roskiewicz, formerly coach at Princeton, now Associate Director of the Brown University Sports Foundation. School triple Jump record holder at Penn State.

BS—Boo Schexnayder—Assistant Coach, Louisiana State University, U.S. Olympic coach.

NS—Nadir Simohamed—Jumps Coach, University at Albany. Former Algerian national team junior athlete.

IC—Iliyan Chamov, Jumps Coach, University of Missouri. 5-time NAIA champion.

IN THE BEGINNING

What type of testing do you use to determine which leg initiates the triple jump?

BS — When teaching them from scratch I like to use the coordinated leg in the first two takeoffs and the strong leg last. I like the coordinated leg being first when things are moving faster, and using the stronger (but clumsy) leg last after velocities have decreased. Typically, the strong leg is the one they prefer to jump from when jumping for height, so a quick "go off of one leg and touch the rim" test will suffice. That being said, I seldom switch the takeoff leg of an accomplished jumper.

IC — I use single-leg bounding through the season a lot. After we go through good season of general prep we always do testing afterward. More specifically I use five hops single leg, the leg with the bigger distance is the dominant leg for the hop phase.

NS — A standing triple jump and repetitive combo jumping drills will give you an indication on what leg a novice jumper will use to hop with. Usually, the most coordinated or dominant leg will be used naturally.

ER — Generally this process is simple trial and error. I've used tests like asking them to jump up to try and touch a basketball net to see what leg they normally jump off. I also have them try triple jumping each way. You will quickly find the right solution.

What are the first three skills you'd want to have a novice master before you start to add more skills?

IC — I am looking at running mechanics. Proper execution of the sprint drills is a must for me.

Proper high knee mechanics is one of the mandatory basics I am trying to establish. Basic skips are another fundamental skill I believe every jumper must possess. Finally proper warm-up and cool-down. The best athletes are the available athletes. The available athletes are the healthy athletes.

NS — Postural integrity and proper running mechanics first through sprint drill fundamentals. Jumping skills-wise, will start with hops and bounds at moderate intensities and with minimal displacement. Always looking for good posture and alignment before moving on to additional and more complex drills.

ER – a) Hopping off of two legs, landing on a single leg, hopping off of that leg onto the other leg and then hopping onto a two-foot landing. The athlete should stop in place after each hop.

b) The above without stopping after each hop (more dynamic).

c) Stand on one leg, hop and land on the other leg, hop and land on two feet.

BS — The basic bounding skills… ground contact patterns, swinging movements, and posture. Once competence is developed there you can start to introduce the single-leg takeoff from the board. Introducing it prematurely results in a lot of frustration for everyone.

Have you ever used screening tools like the Y-balance to identify potential leg/knee problems or for a "return to play" assessment?

ER — I use a progression of activities (easy to hard) to determine whether an athlete should return to play. I also have a series of tests (timed 30m sprint, standing long jump, three consecutive double leg hops, overhead shot put toss) to evaluate fitness and aptitude for the triple jump and other events.

SHORT STEP ALWAYS RESULTS FROM ANTERIOR PELVIC TILT DURING THAT PHASE, NO EXCEPTIONS.

IC — I am using visual analysis through the daily practices and drills. If I notice biomechanical abnormalities, I'm trying to continue that examination with various drills and exercises. I do not use specific screening tools. I believe athletes show more signs of weakness or biomechanical imbalances when they do not know what is being observed and analyzed. For return to play assessment, I am using rehab protocols that I am designing myself based on the athlete's need and severity of injury. I am lucky I studied physical therapy and sports medicine so that is part of what I do on daily basis. My advice for most of the coaches without a medical background is very careful observation and knowing how their athletes operate on good and bad days.

BS — No, I feel that if you are introducing sound, age and level-appropriate training and technical exercises, any "corrective" stuff needed is already built into the program. In my program I assume everyone has a problem and proceed accordingly until I'm confident they are structurally sound. This doesn't mean we don't train hard in the early stages of training, but exercise choices are smart ones.

NS — Tests of the sort are performed by our medical staff in their assessment on whether an athlete can return to activity or not.

The "short step" may be the most common fault for the novice. How do you correct that fault from a physical and mental standpoint?

NS — The "short step" common error is usually traced back to a faulty or high angled hop phase. One of the corrective measures that I use is to fragment the Hop-Step-Jump sequence and work in smaller units and effective transitions. In other words, I would initially isolate the hop phase and teach the athletes to run through the takeoff by simply pushing off the board while seeking a low angle entry point. I would have athletes hop into the pit and focus on distance rather than height while maintaining good posture. Then eventually progress to the hop-step transition with a short approach, by hoping onto ground and stepping into the pit. Once the results are satisfactory, I would then progress to a full triple jump.

BS — Short step always results from anterior pelvic tilt during that phase, no exceptions. However, why the anterior tilt happened could have a number of causes in the run, takeoff, and/or hop phase. Basically, this points to a backtracking philosophy using cause-effect logic. The reason it's so hard to fix the second phase is because the actual problem is never there, where it appears. Addressing the physical problem with a logical coaching approach fixes anything mental.

ER — The "short step" is a function of strength (or lack thereof) and coordination.

I like this progression to move forward with both:

- Hopping off two legs, landing on a single leg, hopping off that leg onto the other leg and then hopping onto a two-foot landing. Athletes should stop in place after each hop.
- The above without stopping after each hop (more dynamic).
- Stand on one leg, hop and land on the other leg, hop and land on two feet. (stop in place after each hop)
- Stand on one leg, hop and land on the other leg, hop and land on two feet. (Dynamic. Don't stop in place after each hop)
- Triple jump with one-step approach "run"
- Triple jump with two-step approach "run"
- Triple jump with three-step approach "run" etc. etc.
- Note: The idea would be to master the technique at very low intensity and then add intensity.

IC — Step phase mechanical errors are most of the time, if not all the time, mistakes made earlier in the jump or the approach. Backtracking is the first direction I take with correcting the step phase. I am observing how the athlete performed the hop phase or the transition between hop and step phase. Also, I go even more retrospective in the jump such as board transition and mechanics before the board. With the philosophy of the domino effect step phase is a result of what is happening earlier in the jump. From a mental standpoint, if the athlete is instructed countless times on the proper technique through the phases and is applying the effort to execute it that creates the confidence that they need to perform well.

Do you recommend teaching the "pawing action" of the landings of the hop and step?

BS — I really don't. Even though the technique of the event gives that appearance, most of the pawing action results from continued cyclic movement and gravity acting on the leg. If you look at good triple jumpers you see the quad tensed just before ground contact, not the hamstring, indicating it is more of a "get ready for impact" strategy going on than an actual pawing action. Pawing short-circuits the isometric and eccentric phases of ground contact and moves directly into the concentric phase…not how human bodies are designed to operate. I spend far more time talking about bouncing than pawing, asking them to use the leg like a spring, not a hammer. This technique is also far more natural and less likely to produce injury.

IC — Personally, I try to stay away from that instruction or the term "pawing." If that is instructed beginners are trying to pull the ground under themself and they don't consider that the body is in motion, horizontal velocity. With the horizontal velocity moving forward and pawing motion definitely creates over-rotation, or even worse, an extremely dangerous position for the ankles, knees, and the heel. My instructions for proper ground connections comes with keeping the foot dorsiflexed in front of you. This way the body in motion will land on top of the foot and create the effect of "pawing" the ground. Also the dorsiflexed foot creates stretch reflexes in the Achilles, calves and even hamstrings necessary to create elastic forces from the ground without asking for pawing.

NS — Teaching the foot to actively strike the ground through various and repetitive skipping, running, and bounding exercises. Initially, this should be done at reduced speed with emphasis on a vertical impulse to promote proper posture and a good understanding of these exercises before increasing amplitude and intensity.

ER — This is a pretty advanced action/technique. I have seen world class athletes do it incorrectly. Some athletes will pick it up naturally. I would wait to talk about it until the athlete is very comfortable with basic triple jump technique. Below are some ideas:

- Make the athlete aware of the "pawing" action and explain why it will help. Show them a film so they can see it.
- Ask them to try it during the basic drills (hops, bounds etc.)
- Ask them to try it while performing low intensity triple jumps.

How do you differentiate the long and triple jumps to a novice? What are the skills you see as unique to the different disciplines?

IC — I describe the long jump more as a vertical event compared to the triple jump as a horizontal event. I believe a long jumper needs to possess a sprinter's quality. Definitely speed is a more important quality the long jumper needs to possess compared to triple jump For the triple jump, space awareness and biomechanical coordination are the

biggest qualities I look for. Most of the athletes with general athletic abilities can develop enough speed and strength for triple jumping if they have enough technical biomechanical qualities. This will allow them to be a relatively successful triple jumper. Stiff, nonflexible and uncoordinated athletes will most likely never be triple jumpers, no matter how fast and strong they are.

NS — Although speed is important for both I would prioritize the sense of rhythm and controlled speed needed for the TJ. Greater sense of balance and coordination.

I would emphasize the difference at takeoff point where the angle must be lower in the triple jump to have effective subsequent phases, typically 11 to 14 degrees in the TJ versus 18 to 22 in the LJ. In other words, no lowering of the center of mass in the TJ on the penultimate step as you typically would in the LJ and where "running through" the board is critical. Emphasizing the ability to hop, bound and various combinations to develop a sense of rhythm in the novice triple jumper is crucial. A long jumper would typically be much faster and would have a better ability to transfer horizontal speed into vertical while a triple jumper will show a better ability to bound, a great sense of rhythm and superior elastic strength and power.

ER — Outside of the obvious, I talk about the triple jump takeoff action as a push off the board while the long jump is more of a pulling and than pushing action.

In the triple jump initial takeoff, the athlete's takeoff foot should be under the athlete's center of gravity. In the long jump the takeoff foot placement is slightly in front of the COG.

FOTO CHAI-VON DER LAAGE

Jonathan Edwards (GBR), current world record holder, 2000 Olympic champion.

BS — The biggest differences of course are the lack of significant lowering/preparation on the penultimate step and greater horizontal displacement in the triple jump. In short, the takeoffs are very different, which is why I don't mind (and sometimes encourage with novices) that they long and triple jump off different legs. If you're going to use the same leg you had better know what you're doing in each event.

How do you create a group mentality for your jumpers with their own goals and objectives?

NS — I usually work on having athletes of similar skill levels train together whenever possible and push each other daily. It is important to create a competitive atmosphere during training sessions and have them challenge and support each other physically and mentally to reach higher levels of performance. Additionally, team building activities outside of the training environment would help in developing a sense of unity and togetherness needed in performing successfully as a group.

ER — I'm not sure if this answers the question but I talk about the following in our first team meeting:

Be a champion teammate — Track & field is both an individual and a team sport. When you improve as an individual, it will make our team stronger while also achieving your individual goals. I urge you to inspire your teammates through encouragement and by your own effort. You can make a positive difference on everyone's team experience and our individual and team success!

BS — I think young people going through something tough and challenging together makes them bond as a group. It gets them helping each other pulling through tough spots. If you are training hard that really takes care of itself.

IC — Simply lining up expectations during the recruiting process and talking about the expectations through the season(s). If expectations are clear then athletes fall in line and have goals to work for. Trying to keep team expectations the same for everyone no matter of their level of performance brings the group to the same mentality and performance desire. Personal objectives are very individually based. Some of them are trying to make a national team, some are trying to learn more about the event or others are simply how they can win a medal at the world stage. No matter what are the personal goals, our expectations as a group have to stay same through the entire process.

TECHNIQUE

Regarding the TJ approach, traditionally it is taught that the more controlled approach helps make the landing of the hop more manageable, but Johnathan Edwards has been noted for his full-on attack of the board. I realize your answer would hinge on the physical qualities of the individual jumper, but is this a quality that may change over the course of a season (as the athlete gets stronger) or something that is ideally planned for as a career progresses?

ER — In short, the better the triple jump athlete, the more speed they will be able to handle. It is a function of strength and how proficient they are technically.

BS — I'm teaching "all out", within the context of good mechanics and with an appropriate step number for an athlete's stage of development. I think that efficiency in the hop landing is more a matter of takeoff technique than control, in fact it's harder to triple jump well when being conservative. Good triple jumping requires a risk-taking mentality. Great jumpers seldom have six great jumps in a meet… this tells you they are taking chances, going for it, and if it doesn't go well, forget it and go hard again next time.

IC — I agree. Approach must be individually designed for the athletes. I always ask my athletes to use the full potential of their speed qualities in the approach. The way I manage that is creating different approach lengths for different athletes. Also, if the athletes are not able to handle too much horizontal velocity through the board I keep them on shorter approaches and still ask them to run as fast as they can through the board. Length of the approach dictates the speed they can develop. This way the athlete creates the habit always to run and jump as fast as he/she can. Through the season or through the career if athletes increase horizontal velocity and strength we are most likely to increase the length of the approach.

CONTROLLED RUN-UPS ARE ESSENTIAL TO PROMOTE GOOD POSTURE AND PROPER ALIGNMENT.

NS — Controlled run-ups are essential to promote good posture and proper alignment. However, to be successful in this event speed will also be a determining factor and will help reduce the hop angle at takeoff. Sprint qualities are developed throughout the year and once the athlete gets stronger and has better control then speed (or length of the approach) can gradually be increased and will become an important contributing factor to successful jumping. This is ideally planned long term as a jumper progresses through the years.

Regarding the individual phase landings – do you encourage an active, "pawing" landing for all three jumps or do you use more of a heel-ball-toe foot placement to convert horizontal forces to more vertical forces, especially for the jump phase? Or do you teach some combination?

BS — As I said earlier, I really don't advocate overly active landings, but heel to toe, rolling contacts are a must to amortize impact forces correctly and stay injury free. You want to distribute forces over a large area, the entire sole of the foot. Contacts through all the phases are similar.

IC — As I mentioned earlier, I am not using the "pawing" motion as instruction. Dorsiflexed foot before the contacts creates enough stretch reflex force, great ground reaction, and stiffness. For the jump I always look if athletes' center of mass, hips, are on top of the foot, or slightly behind. If hips are behind the foot for jump phase there will be limitations.

NS — A combination of the two should be considered. "Pawing" is essential but utilizing the entire surface of the foot (heel-ball-toe) would also be critical for greater power production.

ER — Active, "pawing" landing/takeoff for all three jumps with the thought that each jump should have a higher trajectory than the previous jump.

What is the arm action you recommend? Are there any teaching cues you use? What body landmarks do you use to define the range of motion for the arms as they swing through the different jump phases?

HORST MULLER

Viktor Saneyev (USSR), three-time Olympic gold medalist and former world record holder.

IC — For me, women absolutely must jump with single-arm motion if they want to maximize their jump. For the men I see the benefits of both. Why the difference? A women's anatomical structure is different than a man's. A woman's pelvis is wider and their center of mass is lower compared to the man. In addition, a women's knee angle is different because of the pelvis width. With (a larger) Q-angle women do not develop as strong vastus medialis (quadriceps) that can help with the support during the phases. With single-arm motion women help themselves to stay taller and more open through the phases. Single-arm technique preserves speed through the phases and doesn't allow them to rely too much on quadriceps strength. Men can get away with double arm motion and spend a little longer time on the ground by compensat-

ing that with strength and higher anatomical center of mass through the connections.

I stay away from the specific degrees of range of motion. This is because every athlete has a different anatomical structure, flexibility, and elasticity. I look to how the arms correspond to the total biomechanical chain during the jump. More like synchronicity compared to range of motion.

NS — It depends on the athlete's level of coordination and comfort in adopting either the Soviet (double) or Polish technique (single). I would experiment with my jumpers to see which technique suits them best and have mostly used the double-arm action for power jumpers. Female jumpers would typically benefit greatly from a single-arm action but have experimented with a couple of them to adopt the double or a hybrid form of arm action which has shown great results.

To your second question, I would look at the range of the leg swing and the thigh level of the free leg that should be kept parallel to the ground and driving forward prior to extending the foot in front of the knee before ground contact. Hip flexibility and elasticity are critical to create great separation and optimal range. So, I would pay great attention to the center of mass and how the hips swing through each phase for optimal stability and balance.

ER — I try to improve on whatever the athlete does naturally. Basically, the athlete should "drive" the arm or arms (along with the opposite knee) forward in conjunction with each takeoff.

BS — I try to perfect what I perceive to be their natural arm style and not mandate any. Single-arm styles preserve speed better and offer less discoordination. Double-arm styles produce better forces. That's your tradeoff. Single-arm early in the event and double arm later makes sense. Single-arm, over-the-top styles are the cool thing now and there are a lot of reasons to support it, but I see a lot of kids who don't have the flight time to finish it and get no arm action into the second phase as a result. One thing I won't tolerate is a double-arm takeoff from the board with an early (2-3 steps out) arm prep or gathering… too much deceleration and lowering, and by action-reaction bringing the arms back places the feet in front. Regardless of what you do, big ranges of motion at the shoulder are a must, I talk about long arms and feeling stretches in the pecs a lot.

What landing technique do you prefer at jump conclusion?

NS — It would depend on whether the Soviet (double-arm action) or Polish technique (single-arm) is adopted. If the single-arm technique is adopted, then a simple sailing final phase can be efficient. However, for power jumpers who adopt the double-arm action, a hang technique on the jump phase would be ideal. A hitch kick on the last phase has also been successful (see Teddy Tamgho/Hugues Zango) which is worth experimenting for triple jumpers who are comfortable with the hitch.

ER — Extend legs to the point where you will dig heels into the dirt first and then either sit in the hole your feet make or fall to the side beyond the point of where you initially break ground.

BS — A standard upright torso, collapsing type landing. Turning to one side is easier on the knees, but if you do it prematurely the lower body turns in reaction and you drop a foot (a la Walter Davis's famous probable 60-foot jump in the 2004 OT). In triple jump, frankly, there are so many things that happen that you often don't really execute a landing, you just survive it.

IC — It's strictly based on the type of athlete and their abilities. How flexible are they, how much speed they carry through the last phase, are they single or double-arm jumpers (women or men). Adapting the landing technique to the athlete is important compared to trying to adapt the athlete to a specific way of landing. I have a female athlete with extremely long legs compared to her torso. That shifts the center of mass tremendously. She is very strong in the core, not much we can do in that area, so I had to adapt the position in the air to work for her body type.

What do you coach your athletes to visually focus on as they go through the different phases of the triple jump? And does this focus change from the hop to the jump in that the jump dictates more elevation and a possible "head-up" position?

ER — All athletic actions should be done with a narrow — external focus. Meaning, you should not be focusing internally (thinking or feeling) while you are performing the activity. Nor should you be focusing on anything externally except the task at hand. With regards to the triple jump, I think you should

be looking out to where you want to take off or land on each jump. Therefore, coaches (and parents) should not be yelling encouragement to the athlete while they are in the process of jumping. You will just be distracting them from the task. This goes for all activities.

BS — I am a big believer in visual override… if you focus too hard on seeing something, you lose the ability to feel the body and its movements. So to me, head position (posture) and what you are looking at are two different things. If they are really feeling things well, it's just a blank stare.

IC — I am trying to teach my athletes to look at the triple jump as a single event. The three different phases and feelings are different in the three phases, but we always talk about the jump as single unit. Based on that, the goal is not to change tactics through the phases but feel as one.

In specific situations we are using small cues for technical elements, but the cues are established through the practices and the athlete's individual needs. If an athlete has a great jump phase, we will never talk about it because no need of corrections. I simply let them do what is already working well.

NS — With the triple jump being such an intricate event, there is a need to fragment each portion of the triple and work on them independently. Have the athlete initially focus on the importance of running through the takeoff, swinging the free leg away from the center of mass with a relative negative shin angle. The focus will shift to a great range through the hop phase with a powerful and active foot action upon contact. The transition from the hop to the step becomes critical, while keeping the body aligned, as well as arm action, relaxation, and patience during this phase. Finally, stay aggressive upon ground contact and constantly focus on proper alignment throughout each phase.

TRAINING

How do you navigate a critique from being critical? What do you do so the athlete sees your "help" as positive feedback and avoid creating a feeling in them of, "Here comes the coach, again."

BS — The truth is not good or evil, it's simply the truth. Truth has no bias. Shame on the athlete who doesn't want to hear the truth. But I do think there are many coaches who don't get the difference between technique (the things you must do) and style (things that can be done differently and still be successful) and as a result, overcomplicate things for the athlete. Are you communicating clearly and concisely to the athlete, or talking to make yourself feel better?

IC — Positive coaching is a fundamental of our philosophy here at Mizzou. We don't critique athletes, we simply navigate mistakes through positive language. Positive reinforcement and showing athletes it's OK to make mistakes as a normal natural process.

NS — I have always welcomed athletes who ask questions and are students of their event. As a coach, I'll make sure that I'm concise and clear in getting my point across and how and why a specific exercise is performed. Back it up with scientific evidence and have the athlete understand and 'feel' what we are trying to accomplish for optimal results.

Positive feedback along with critical analysis will eventually lead to trust which is critical for successful coaching.

ER — Find something positive to say first and then talk about something they can correct.

What are your feelings with jump boxes? Jumping on to or from? Or both? How high are the boxes, how do you quantify the efforts? With ground contacts or time of efforts?

IC — I use boxes continuously through the preparation phase. I believe boxes are a great tool to create more airtime, different angle displacements/takeoffs, or different gravitational loadings during contact phases. We use the boxes for both purposes—jumping on to and from. It depend on what is the theme of the session. Some sessions we alternate both at the same time. We use different height boxes from 2 inches to 12-inch boxes for triple jump sessions. For bounding practices, we use up to 2 feet high boxes. Once again, the heights are based on the athlete's abilities and the desired technical goal for the session.

NS — Both, on and off boxes for eccentric, isometric, and concentric contractions. I use boxes quite extensively throughout the season. Volume and intensities will vary based on the athlete strength, size, and experience. Although, I quantify the efforts, I will however look at the quality of the work rather than quantity and would modify the workload when necessary.

ER — Using jump boxes is a fairly advanced form of training. The athlete must have a good level of strength to benefit from this type of training, otherwise the coach will be setting the athlete up for failure and injury. With this in mind I would start with double-leg hops on and off the box or boxes rather than single-leg hops.

The purpose of box training is to expose the body to forces that are similar to or more than the forces they will be exposed to in the event they are training for. You must jump down from a box to expose yourself to significant forces.

I don't see much benefit to simply jumping up onto a box but if the activity can inspire the athlete to perform an intense effort, then I guess something good will come from that effort.

Start easy with maybe as few as ten total impacts or landings/takeoffs. The landing/takeoff should be performed dynamically with a heel/toe landing/takeoff.

Slowly build up and work toward single-leg jumps. Better to do too few than too many.

BS — I do just a little horizontal bounding on and off of very low (4") boxes to sharpen timing with certain athletes. They are quantified by contact number, and are the same volumes I'd do without the boxes. I also use high boxes in depth jump workouts, typically once a week in specific prep. Falling and rebounding, again quantified by contacts… very few, with high intensities (after preparation, of course). If the box height is below an athlete's vertical jump capability, the box height isn't producing any special stress they couldn't get elsewhere, but when the box height exceeds vertical jump capability, you've put them in an intense situation they can't escape. My starting height for boxes is usually vertical jump height (actual, not fantasy) minus 6 inches. A big depth jump session for me is 30 contacts with only 10 being off of the highest box in the course.

Do you use eccentric squats to prep the legs at any point in the season or is your eccentric training done with depth jumps?

NS — I use eccentric squats in various ways before progressing and introducing more demanding exercises such as depth jumps. I would also vary height and load levels while considering depth jumps based on the different skill and strength levels.

BS — I do some standard squatting in the preseason with athletes I don't feel have achieved the levels of strength needed for high level performance. Once you can do 2.1-2.2 times bodyweight on a legit, subparallel deep squat that's enough though. I don't do any slow eccentrics, but I do a lot of lightly loaded jumps in the weight room and a variety of plyometrics, including depth jumps.

ER — I don't use eccentric training outside of depth jumps.

IC — I look more on the eccentric squat as a rehab tool versus a training preparation exercise. Mostly the eccentric loads we do are through depth jumps and drop jumps.

What alternate activities do you allow or encourage? In season and out of season.

ER — Any activity that helps to improve general fitness.

BS — In season, nothing really. Outside of training times, anything that isn't aerobic based is OK. I don't want to assassinate fast twitch fibers. I really like the mild eccentrics and acyclic movements of racquet sports. Unlike basketball, in tennis there is a net that keeps your opponent in the other side, and you can't sprain an ankle by stepping on an opponent's foot.

ANY HIGH SCHOOL ATHLETE SHOULD BE ABLE TO USE BOX JUMPS PLYOMETRICS AND DEPTH JUMP AS LONG AS CONDUCTED PROPERLY AND SAFELY.

IC — We play a lot of sand volleyball in the fall. We spend the first six weeks only on sand. Another alternative I recommend often is swimming. The cardiovascular system works a little differently during swimming and the load on the joints is minimum. We use swimming as rehab as well as recovery sessions. I do not recommend contact sports such as soccer, football, even basketball.

NS — In-season, speed, speed-endurance, circuit training, light to heavy and heavy to light complex/contrast work. Cross training in the off-season.

Should the training age of an athlete be considered when recommending the use of the depth jumps, box jumping and plyometrics?

BS — I think depth jumps have gotten a bad rap. I use them with nearly everyone I work with (keep in mind I don't coach youth). The key to keeping them safe is individualizing the height of the boxes involved, and I have formulas I use to choose box height based on an athlete's vertical jump capabilities. Bringing out a single set of boxes for all the athletes in a group is nuts. As far as plyos in general, you see 5 year-olds jumping rope and playing hopscotch… those are plyos! It's not about age, but choosing age-appropriate activities.

IC — Any high school athlete should be able to use box jumps plyometrics and depth jump as long as conducted properly and safely. Prior to high school age, athletes should be educated on proper technique of plyometrics and box jumps; the only consideration I recommend is the volume prior to high school. For youth, plyometrics should be more an educational tool rather than a preparation tool.

NS — Depth jumps are very demanding and highly intense, so I would not recommend them unless a proper base is established first. Athletes can start at a young age with rudimentary forms of plyometric exercises and would have to progress gradually through it (i.e.: on the ground at low, moderate, then high intensities). After periods of adaptation, elements of complexity can eventually be added with the use of various box heights reserved for stronger and more experienced athletes.

ER — Over 18 years of age except with rare athletes. I think of plyometrics as exercise with an apparatus but that thought might not align with the exact definition. Much can be accomplished with plyometric type exercises (jump rope, jumping, hopping and bounding) with no apparatus. Med ball training can be helpful.

Regarding women athletes — how much attention do you pay to a female's Q-angle (quadriceps angle)? Does this change your approach to training (lifting and running activities)? Does the presence of a larger Q-angle alter your technique suggestions such as landing with a wider base of support?

IC — This is one of the most important factors why I differentiate the practices for the males and female triple jumpers. Q-angle difference for males and females is a result of the wider pelvic structure in females. As a result of the femur angle the vastus medialis is less developed compared to male athletes. I do not recommend wider landing or wider stand during lifts but recommend exercises that develop the vastus medialis better for females. One major difference I keep in the weight room is the front squat. With female triple jumpers we use more front squats compared to back squats for the males. Because of the Q-angle and the lower center of mass I strongly recommend a female's technique in the triple jump to be executed with single-arm motion. This prevents a lot of additional loadings on the quadriceps and keeps center of mass higher through the ground contacts.

NS — Due to the anatomical and physiological differences between male and female triple jumpers, adjustment to their training regimen in terms of volume and intensities must be considered.

BS — I really don't, I keep it as simple as possible and teach the same technical models to both genders in the triple jump and training exercises. Maybe I should. If I had someone with a special history, I would consider it.

In your experience is there a jump in the competition sequence you usually expect your athlete to produce their best effort? Is that something you coach for or do you encourage the athlete to find what works for them and promote that?

JUMP ONE SHOULD NEVER BE BAD; YOU'VE PRACTICED FOR IT ALL WEEK.

NS — This will vary based on the type of athlete and competitor they are. Some can produce an excellent result from the start and send an early message to their competitors while others would take a more conservative approach (safe jump first) and then progress through the rounds and rise to the challenge. Although I would like to see athletes finish their entire series, there are instances where not all six jumps are needed. I would encourage perseverance and rising to the level of the competition that they are facing but will err on the side of caution if there are apparent physical or technical issues.

BS — Jump one should never be bad; you've practiced for it all week, have your meet plan in mind, are excited to compete, and have no baggage or distractions yet. Often small rhythmic things smooth out after the first trial and Jump two is the best. I try to then

reset and position them to hit a big one late in the competition, since everyone else is likely to come hard in Round six. But of course, things happen, and you adapt your strategies.

ER — My hope is that the athlete will be well conditioned and prepared to a point where they are just as likely to get their best effort on their last attempt as they are on their first attempt. That being said, it is always beneficial to accomplish a good attempt early in the competition.

IC — Every single jump in the competition is a 100% effort and expected to be the best jump

Classically the TJ has been taught as an even, roughly one-second beat pattern. What drills or techniques do you suggest to instill that pattern within the athlete?

BS — I know there are a lot of grid-based teaching strategies and such, but I just really look at run-takeoff-hop phase mechanical perfection as the key to the correct rhythms. The vertical qualities needed in the last two takeoffs are typically undervalued and understated. We think "out-up-up" when addressing trajectories and that's a big part of achieving the beat pattern you want.

NS — Repetitive bounding drills, rhythm work progressions through various combination of hops and steps would help instill that pattern in them. Use of cones, hurdles, and boxes of various sizes would also help develop a sense of rhythm while adding an element of complexity.

IC — We are concentrating on the rhythm through all exercises. When we do triple jump from a short approach the proper distribution of timing is a must. Also, I require the athletes to keep a good pattern during single-leg exercises or regular bounding. In addition, when we work with boxes the distance of the boxes dictate the rhythm to some capacity.

ER — I'm not familiar with the one-second beat pattern but I understand the idea. Putting tape or small comes on the runway at specific distances and asking the athletes to perform the triple jump according to those distances might be one way to reinforce this.

Lower core stability (the pelvic area) is critical to minimize lateral movement when the athlete is posting on one leg as they transition from one phase to the next. What are three drills or exercises you recommend to prepare this area for the demands of the event?

NS — Pelvic tilts variations, planks variations, and toe/ankle bounces (double, single, and multi-directional).

ER — Planks, leg raises, wall sits

IC — I believe in the holistic approach of development. The biomechanical chain does not work in separate compartments, but rather all together. I prefer to develop specific areas through total body exercises or movements. This way I am avoiding imbalance problems in the long term. Some of my preferred exercises are box step-ups, or hip thrusts over boxes over different heights; lunge jumps are another one we use a lot with different resistances; kangaroo jumps, holding light dumbbells or medicine ball with arms forward. Kangaroo jumps with hands forward shifts center of mass and activates pelvic area for stability. This design also can be used with skips or gentle single-leg hops.

BS — While I, like everyone, do core training, I'm not sure that there is an exercise that really subjects the lower core... or any part of the core… to the level of demand triple jumping does. This is why it's so important to be progressive and eventually achieve competition level intensities in the plyometric and weight program (including single-leg work). Specific high level core fitness is really addressed there, not in situps and crunches. There are many exercises that address the muscles involved, but few that mimic the violence.

What are some things you discuss in the post-competition evaluation? I am thinking of technique critiques but also consistency of hitting the board, best 2-jumps or 3-jumps series. Do you have a grid or set eval you use that would be given to the athlete for their records or is your evaluation just a discussion?

ER — I typically have a quick discussion after the competition, plan activities for future training and talk in practice about my reasons for the programming I have planned for the athlete. The evaluation process is a work in progress.

IC — We do just a discussion. First thing we start is what went well. We always concentrate on the positives. After analyzing what went well through the competi-

tion, we talk about what could be better. This way of addressing is constructive without negative talk. Each detail we talk about is different based on the athlete, or how the performance was. One must remember that sometimes there are uncontrollable things like weather, an official's delay, national anthems, award ceremonies, delay in call rooms. These are situations we must be ready for, but never use as an excuse.

BS — At the end of the competition there is often a recency bias, looking at how things ended; I try to point out how mistakes, successes, or decisions early in the competition produce trends and consequences in the competition. Other than that, the things that need review are usually obvious.

NS — My evaluation is initially a discussion on flaws in their technique with advice and corrections on how to reach a good level of consistency. I also, do have charts and data-driven evidence of their progress based on test and results throughout the seasons.

Do you recommend athletes keep a training diary? If so, what type of information do you feel they should record?

IC — Absolutely. Every athlete should have daily diary. The more information inside is better. Starting from what the plan was for the day, what exactly was conducted. Wind, rain, temperature, how does the athlete feel before, during and after the session. What rehab is conducted after the practice and what is the prehab if any. How many hours did the athlete sleep the previous night, etc. The more information that is inside the diary, the better analysis that can be done afterword, if needed.

BS — I think it's a good idea but don't mandate it. Some don't want to expend the mental energy and would rather look forward than backwards. It's critical for me though, I'm always writing notes on top of old workouts.

NS — I would encourage athletes to keep a diary especially during breaks and when the coach is absent. Recording their times during speed or speed endurance work. Distances of their jumps and various tests that may be administered throughout the season. Intensities and volumes in the weight room are also important for athletes to record so they can appreciate the progress they are making over time.

ER — If I feel that the athlete has the appetite to keep a training log I encourage them to keep one but it may take some time for the athlete to develop that level of interest/enthusiasm.

At your end-of-season exit interviews what are some things you discuss in the season's recap? I realize any off-season recommendations would be different for each athlete but are there general areas that you focus on?

BS — For me, these are usually athlete driven and highly individualized. I just try to be sure that the athlete's perceptions and reactions to the past year's events are reasonable and accurate. Most athletes are prone to a recency bias, so I guard against that. I try to honestly self-evaluate in advance, that's important. If there is a disagreement, and I feel the route the athlete wants is faulty, I do point that out and sometimes tough decisions are made.

IC — This is not much different from what we do post competition. We look what went well during the season and how we can make other areas even better. We always discuss the total progress and development in long terms.

NS — Season recaps are important to highlight their progress and what has been accomplished throughout the season. Pointing out some of the areas that can be improved and would need to be addressed during the off-season and beyond.

Continued encouragements and staying focused for the upcoming year by setting short term and long-term goals. Allowing some downtime but also stressing on the importance of continued development during the off-season as this period tends to be lengthy.

ER — I talk about improvement and accomplishments and give recommendations on how they can get better.

Part 2 continued next issue.

THE PROBLEMS OF THE TRIPLE JUMP

LECTURE NOTES FROM LEONID SHCHERBAKOV 1983

LECTURE GIVEN AT THE INSTITUTE OF SPORT AND PHYSICAL CULTURE, MOSCOW, USSR.

Introduction

The triple jump with an approach is an event where great horizontal speed, dynamic loads on the ground and flying phases are seen. Forces can reach 1000kg or more on the legs. The higher the level of mastery the tougher the technique. The triple jump consists of an approach and three takeoffs. Our lecturer was Leonid Shcherbakov, two-time Olympian.

Technical Aspects

The initial position – The approach is begun with the hands on the knees and a relaxed running start is begun. The length of the approach is between 30-45 meters. Top speed is achieved at the first takeoff.

The approach – There are three parts in an approach – an increase in speed, stabilization of pace and frequency with acceleration in it and the attacking phase where speeds of 10-10.5 meters/second are attained.

The jumps – The last three strides before the takeoff are most important. The last five meters is what the coach should watch. A highly desirable 40-45m time is 4.8 seconds. The time needed for the last three strides is 0.4 seconds.

On the first jump the body is bent a little backwards. The foot lands from the heel. The takeoff foot is a little ahead (one foot) of the plumbline of the body for the landing of the hop. The angle of the plumbline is 2 feet for the step takeoff. The angle of the plumbline is 2.5 feet for the jump take-off. You lose three meters with the landing of the hop but you gain two meters with the takeoff and end up one down. Horizontal speed is lost in the support phases.

- The length of the last three strides of the approach should all be the same.
- The hips lead the action.
- At the top of the hop you change the legs.
- Arm action is the same as the running action.
- Greatest loads are at the end of the hop.
- The second takeoff is done in the form of a stride.

Strength Preparation (elite athletes)

- Squats with 170kg/375 lbs.
- ½ squats with 240kg/529 lbs.
- Platform step-ups with 100kg/220 lbs.

Practical Applications – Teaching the Triple Jump

Task 1

Create an image of what you are going to teach by using visual aids.

Task 2

Have the athlete do the activity from a stand to see strengths and weaknesses.

Task 3

Teaching the hop technique, imitation exercises are performed in a circle first with standing jumps and then into the pit.

Task 4

Hops with a jump into the pit
Hops with landing on two feet
Different jumps on one leg
Hops from 10-35 meters

Task 5

To teach the technique of the step

Use 3-5 steps for approach into the pit

Then use high hurdle step for 100m with attention paid to amplitude and length of steps

Height-Weight Comparison of Olympians

	Shchevbakov (USSR)	Sehmidt (Poland)	Saneyev (USR)
Height	178cm/5'10"	184cm/6' ½"	190cm/6'2¾"
Weight	73kg/161 lbs.	78kg/172 lbs.	80kg/176 lbs.
100m	11.1	10.4	10.4
Long Jump	7.35m/24'1 3/8"	7.96m/26' 1 3/8"	8.4m/27'6 ¾"

Oliveria (Munich, Moscow OBM) of Brazil could standing long jump 3.60m/11'9", standing triple jump 11.20m/36'8" and touch a basketball rim with his elbow.

If your step is too short it is because your hop is too long.

Model Characteristics

Height	2m	**10 meter approach w/5 jumps**	25m
Weight	85kg	**TJ approach of ___ step(s)**	
100m	10.0	**1**	12.5m
Standing LJ	3.70m	**3**	14.50m
Standing TJ	11.30m	**5**	15.50m
Standing 4 jump	14.80m	**7**	16.20m
Standing 5 Jump	18.30m	**10**	16.80m
Standing 8 Jump	30.0m		
Standing 10 Jump	38.0m		

Task 6

Attention is paid to the leg in the third takeoff

Different long jumps up to competitive speed

Steeplechase and high jumps from takeoff leg.

Task 7

Use different speeds up to competitive speed for jumps.

There are several directions the training can take:

- Build up strength through jumps or special exercises
- Use varying paces
- Use varying hops
- Use mixed variations (big hop/small step, small hop/big step).

Running with attention paid to the development of speed qualities

Develop running speed, jumping ability, running technique and power

Combine the acquired knowledge with the triple jump

Methodologies may be divided or used as a whole.

Practicum for the Triple Jump

- Demonstrator had done 16.90m (55'5.5")
- 350 sessions/year
- 30 competitions/year
- Use long jump preparations

In standing long jump arms do not go higher than shoulders

Use swinging leg jumps from the right and left

Practice a sweeping arm action

For coordination – jump backwards, 180°/360° spins.

Drills for the Hop

- Take three steps then hop, hop on the same leg
- Hop and jump, attention is paid

to the hop
- Practice active landing – paw at the ground, Americans land flat-footed
- Don't hurry the phases of the flight
- 5R's to the pit or 5L's to the pit
- RLRLR or LRLRL to the pit
- Amplitude of the stride is large with a powerful takeoff
- Practice the hop and step from boxes
- Hops and skips with weights
- Squat steps for amplitude
- High knee exercises for ankles (top athletes use up to 50kg for this exercise)
- Step-up with weights
- Platform jump-ups

Stage Controls Tests for the Long Jump

- 40m for time – this is the length of the run-up
- Long jump with 8-10 strides – this tests jumping ability
- A five-step jump with a six-step approach to test jump endurance – use only with the push-off leg, 23.4-24.5m is a good distance
- Depth jumps like the triple jump
- 150m tests speed endurance
- Jump reach
- Squat with bar
- Thrusts – clean and jerk or snatch – use only one time in a training session, the squat is the most simple.

A COLLEGIATE HURDLE COACHES ROUNDTABLE TRAINING DISCUSSION

Coach Mike Thorson orchestrates a coaches roundtable discussion concerning the training of 100 and 110m Hurdlers

COORDINATED BY MIKE THORSON, FORMER DIRECTOR OF TRACK & FIELD/ CROSS COUNTRY AT THE UNIVERSITY OF MARY IN BISMARCK, ND

INTRODUCTION

Many coaches will attest to attending clinics where the speakers talked in what most would term generalities. In other words, they talked a lot, but it was very inconsequential. Not a lot of content. They told numerous stories and a lot of jokes. Some bad and some good. Kind of like the speakers. Some good. And some not so good. The excellent speakers always sent you home with some gems you could immediately apply in your program. Most of the training ideas and concepts that I used throughout my career I borrowed from other coaches. Vern Gambetta, who was the first director of the USATF coaching education program and one of the three founders of that program, always says coaches are either imitators or innovators. I would like to think I was both. We certainly imitated many coaches. But we would like to think we were innovative in that we took their concepts and devised our own unique training programs that fit our athletes in our own particular environment. We will freely admit that much of our training came from listening and talking to coaches at various clinics all over the United States. Some of our most effective learning in particular came from coaches' roundtable type discussions and sessions, either listening or participating. We found the exchange of ideas, concepts and opinions very informational and oftentimes very enlightening. Often entertaining as well. It was certainly immensely helpful to a young coach who was always seeking better ways to train athletes. One thing I have found about training: The more I have learned about training, the more I learned I didn't know/ Mike Thorson.

The objective of this article is to provide a perspective on what coaches across a number of vari-

ous levels (NCAA Division I, II and NAIA) can offer on assorted topics concerning 100 and 110m hurdle training. It is always interesting to obtain a perspective on how other coaches train hurdlers and what methodology and concepts have led them to their successes. This article is a written version of a coach's roundtable. Nine leading collegiate coaches from across the country were asked the same five questions pertaining to a number of topics concerning the training of sprint hurdlers. First, a brief look at the panelists:

Chris Parno, Minnesota-Mankato (MN). The many times Central Region and NSIC Conference Assistant Coach of the year is in his 10th season at the Division II Minnesota school. He is the associate head coach and has coached six national champions, 113 conference titlists and 115 All-Americans. One of his athletes, Myles Hunter, holds the Division II 60m hurdle record at 7.53. Coach Parno has done a number of training articles and videos and teaches USATF Level I certification courses. He was the 2020-21 NCAA Division II National Assistant Coach of the Year.

Reece Vega, North Dakota State University (ND). A former NSIC Conference and Central Region Assistant Coach of the Year, Vega is in his second year at his alma mater, NDSU, after three highly successful years at the University of Mary in Bismarck, ND. Vega had 21 All-Americans and 14 conference champions in his short tenure at Mary. Vega is a former head coach at College of Saint Rose in Albany, NY, and at Graceland University in Lamoni, Iowa.

Ernie Clark, San Jose State (CA). A first year assistant coach at the California school, Clark was an extremely successful coach at Ashland in Ohio where he was associate head coach. Clark coached six Olympic Trials qualifiers while at Ashland where he had been since 2015. He has coached two athletes who were ranked in the top 10 in the world. He is a four-time National Assistant Coach of the Year. Clark's prior Division I coaching experience came at Indiana 2014-15.

Luke Mahoney, Hastings College (NE). Mahoney is in his fifth season as the men's and women's hurdle coach at the NAIA school in Nebraska. He has coached two All-Americans, 12 conference champions and two athletes who were runners-up in the national championships. Mahoney was a remarkably successful high school hurdle coach at Lincoln Southwest in Nebraska prior to arriving at Hastings.

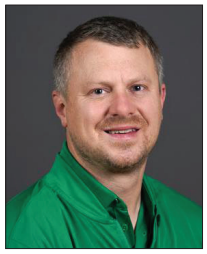
Kip Janvrin, Central Missouri (Mo). The former Olympian is in his 25th year as co-head coach at Central Missouri. He has spent 32 years at the Missouri school and has coached 25 different athletes to 44 national championships. The coaching tandem of Janvrin and co-head coach Kirk Pedersen has guided Central Missouri to 16 men's indoor MIAA conference titles, 5 women's championships, 13 men's outdoor, and 3 women's outdoor conference crowns. Janvrin was one of the top decathletes in the world at one time and competed in the 2000 Sydney Olympics.

Curtis Taylor, Oregon The Associate Head Coach for the Ducks, Taylor joined the Oregon staff in 2014 after a very successful stint at Laney College in California. He has guided Ducks to six individual NCAA titles, 14 individual PAC 12 conference championships and 49 All-American awards. Taylor, who was the NCAA Division I National Assistant Coach of the Year in 2017, guided Jenna Prandini, the 2015 Bowerman winner.


Raynaldo Radlin


Chris Parno

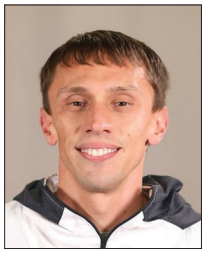

Ernie Clark


Jim Vahrenkamp


Curtis Taylor


Jamie Cook


Kip Janvrin


Reece Vega


Eric Henenberger

Eric Hanenberger, South Dakota State University (SD). The Associate Head Coach at SDSU since 2015, Hanenberger was the head coach at Division II St. Cloud for three years prior to moving to the Jackrabbit program and having an immediate impact. Hanenberger's athletes have had a hand in 14 new school records—10 individual and four relays. He has also coached at North Dakota State University and Northern Iowa.

James Vahrenkamp, University of North Dakota (ND). The new head coach at the University of North Dakota moved to the Fighting Hawks program from Queens University (NC) where he was a 14-time NCAA Southeast Regional Coach of the Year. In his nine years at Queens, Vahrenkamp produced 21 conference team championships, 61 All-Americans and five national champions.

Jamie Cook, Navy. The director of track & field/cross country at Navy, Cook has guided the Midshipman to 10 Patriot League conference championships in his first four years at the helm. He has been awarded the same number of conference Coach of the Year honors. Cook, who was at Penn and Oregon prior to taking over at Navy, also coaches Olympian Devon Allen.

Question 1—If you could pick only one thing that assists your hurdler's performance, what would it be?

Jamie Cook — Focus on being a better, more aggressive athlete. I want to work with the most competitive people who aren't afraid to fail.

Luke Mahoney — I would say it's an attacking mindset. If an athlete is tentative with the hurdles, they won't put themselves in a position to be successful. They will ultimately break and jump instead of hurdling.

Curtis Taylor — Speed and in particular, stride frequency.

Kip Janvrin — Speed development.

Ernie Clark — Block Starts and the feeling of acceleration all the way through the first three hurdles.

Reece Vega — Sprinting biomechanics.

Eric Hanenberger- I think the best thing that assists the hurdler besides going over hurdling is improved spring technique.

Jim Vahrenkamp — Maximum velocity skills or qualities. Personally, the postures, rhythms and limb velocities in maximum velocity work transfers to what we are working on in the hurdles.

Chris Parno — Managing the start. Specifically talking about the step pattern used to move the athlete from the blocks to the takeoff to the first hurdle. I believe the entire race is set up for success or failure (of the desired goal for that race) based on the body position of the athlete at the first hurdle takeoff, as well as the distance from the hurdle. Many of the technical issues we see in

hurdling can be fixed or minimized by proper takeoff location. These defined takeoff locations set up proper stretch reflexes allowing for quality hip projection into the hurdle. Personally, I always have tape down on the track at the 4th step check mark and at the proper takeoff location. These marks give me a path of diagnosis if problems arise with maintaining velocity, or technique in and off hurdles.

THE ENTIRE RACE IS SET UP FOR SUCCESS OR FAILURE (OF THE DESIRED GOAL FOR THAT RACE) BASED ON THE BODY POSITION OF THE ATHLETE AT THE FIRST HURDLE TAKEOFF.

Question 2—What do you emphasize more in your training program, speed and power or hurdle rhythm?

Jamie Cook — Tough answer. Speed *and* power probably, with an emphasis on proper takeoff distance.

Luke Mahoney — It's a combination of the two. However, we are always stressing speed, to go along with the attacking mindset as stated above. Speed is a hurdler's best friend!

Curtis Taylor — Equal and appropriate doses of both. You need speed and power to develop appropriate hurdle rhythm.

Kip Janvrin — Both, and both must be present.

Ernie Clark — I hate the word rhythm as it tends to create a plateau in how the athlete feels. I want them to constantly feel like they are pushing to faster speeds in the flight of hurdles. I like to push the speed at all times in drills, in sets, and in races. So that, by default, makes me emphasize speed *and* power.

Reece Vega — Speed *and* power. I believe the more you are able to develop a hurdler's speed, the faster they will be in the hurdles.

Eric Hanenberger — Men's hurdles – 1. Hurdle race rhythm. 2. Sprint speed (improved spring technique first and foremost). Women's hurdles – 1. Sprint speed (improved spring technique first and foremost). 2. Hurdle race rhythm.

Jim Vahrenkamp — I am not sure that I emphasize one or the other more. I try to train all of these qualities concurrently or in a conjugate sense. There are of course small variances during the natural progression of a season in regard to the performance requirements at any given time. Suffice to say that all of the qualities are being trained at the same time.

Chris Parno — Both…the physiological and biomotor characteristics of a sprinter and hurdler are not all that different. We can never underestimate the need for speed and a robust neuromuscular system, specifically in the women's 100-meter hurdle race. The lower hurdle heights allow for less deviation from sprint technique, thus increasing the emphasis of flatland velocities. Hurdlers embody the five biomotor abilities (speed, strength, endurance, coordination, flexibility) and these athletes must be trained and proficient in all facets. In the men's hurdles, there is an emphasis on rhythmic abilities, as these athletes must manage higher attack angles for the higher hurdle height (higher rise of the center of mass). In either population, I would always bank on athletes who can reach higher overall velocities and coordinate intense movements more efficiently. To lower hurdle times in either race, the goal will usually always be to elicit quicker rhythms/higher frequencies, vs working to open the stride lengths maximally.

Question 3—How important or unimportant are drills in your training program?

Jamie Cook — Drills are important from a kinesthetic and flexibility standpoint. Also, teaching proper rhythm, alignment, and posture.

Luke Mahoney — They are absolutely vital to our training. We always drill prior to hurdling. The drills vary based on where we are at in our training and what we are emphasizing or trying to correct. It's important to get the drill work down so we can build muscle memory. We want to get to a point where we are racing and not thinking!

Curtis Taylor — Drills are important with respect to emphasizing proper technique, but must be integrated into the final model. Drills unto themselves are not helpful to the final product.

Kip Janvrin — Very little.

Ernie Clark — Drills are VERY important in my training, as I use them as tools to break down movements and create the habits in movements I'm looking for.

Reece Vega — I believe hurdle drills are important when it comes

to warming up. Also, for beginning hurdlers I think it helps reinforce a lot of patterns we are looking for. When it comes to helping a hurdler hurdle faster and developing, I believe that just doing drills will not accommodate this.

DRILLS ARE IMPORTANT FROM A KINESTHETIC AND FLEXIBILITY STANDPOINT.

Eric Hanenberger — I'm not a "driller"…get really good at maybe two drills and then we hurdle.

Jim Vahrenkamp — Personally, I do very little in the way of drill work. I work more whole-part than the opposite direction. That means that in the occasion where I am trying to provide some type of context for the full movement, I might break things down. We try to spend the greatest amount of our time at relatively maximal velocities where limb movements are specific and where touchdown times introduce the rhythmic qualities that we want to train.

Chris Parno — I feel like we are drilling an athlete anytime we aren't performing full hurdle segments at 100% intensities. Anytime we break down the whole movement to specific parts, we are drilling. I feel like there has been a lot of controversy on the importance of drilling in hurdling…to which my response would be, where else do we learn, diagnose and fix problems? Don't get me wrong, proper takeoffs at high speeds in full hurdling must be rehearsed and ultimately fix many problems. On the other side of that, through drills, we spend time building and rate coding technical motor patterns, rhythm qualities, projection, etc. Let's take the standard three-step drill. Closer spacings allow the athlete to feel more vertical impulse allowing for technical motor pattern training. Lengthen the space between the hurdles in the same drill and you're working at higher velocities, allowing for increased hip projections and focus on takeoff and touchdown positions. I feel drilling is important early in the training season, but drilling never negates the importance of full hurdling. We may spend 30-45 minutes early season drilling and understanding motor patterns before full hurdle reps. 8-10 weeks out from our end goal, the hurdle warm-ups may resemble sprint day warm-ups with just a few "check in" type drills (1/3 step rhythm drills), before getting into the main full hurdle session.

Question 4—What role does strength training play in your in-season training program during the competitive season?

Jamie Cook — Strength training plays a role. The emphasis changes based on the athlete.

Luke Mahoney — Next to the classroom, the weight room is the most important room. From becoming stronger and more explosive to preventing injuries, the weight room allows us to achieve the goals we are after on the track. Drills and workouts can take you far, but without strength training, we won't reach our maximum potential.

Curtis Taylor — A very large and vital part.

Kip Janvrin — Very little.

Ernie Clark — Strength training is simple for me, DO IT! It makes our athletes stronger (which makes them more durable), more explosive (more powerful with speed), and can also increase core strength and flexibility if utilized properly. In-season, we still work on progress, but must taper down for championship season.

Reece Vega — During the season I believe that strength training plays a part. I don't believe it's the biggest part, but it does have a part. Just as recovery, sleep, nutrition, all play a part in success, so does strength training.

Eric Hanenberger – Strength training is a much higher component in the off-season (3x per week 60-75 minutes per session). Goal = peak strength/peak power. In-season is much more supplemental (2x per week 20-45 minutes per session). Goal = peak bar speed/peak repeated power.

Jim Vahrenkamp — Strength training complements what we do on the track. One of the most eye-opening conversations that I had revolved around the purpose of squatting in a sprint program. A mentor of mine mentioned that having a big squat provides the structural stability necessary to produce high quality performances on the track. In single support, the forces that the body is forced to manage are huge because of the limb velocities at impact. Squatting prepares us to maintain posture through these impact moments, which allows us to conserve horizontal velocity by minimizing breaking postures.

Chris Parno — In-season, our strength program is supportive in nature and shouldn't take away from the high quality (less quantity) work on the track. We keep in mind that strength is displayed in many forms; absolute, general, specific, reactive, elastic, etc. Hurdling is a reactive strength activity with repeated plyometric contacts on and off hurdles at higher velocities. Our goal in-season is racing and maintaining the strength we've built throughout the Fall. Strength training is always important but shouldn't overtake the efforts on the track. We can't think only of the weight room when encompassing strength work into our programs.

Question 5—How would you respond to the statement by noted authority in sport biomechanics, Dr. Ralph Mann, when he says, "Hurdling is not sprinting."

Jamie Cook — The goal is to be as efficient as possible when hurdling. Hurdling is an extension of your run/sprint (created from the first 7/8 steps). I still want the most powerful and dynamic athlete possible when starting out.

Luke Mahoney — I couldn't disagree with the statement more from the racing mindset. Hurdlers are sprinters first and foremost.

Curtis Taylor — I think there's some truth in that statement from a coaching conceptual standpoint. Both cannot be coached the same because of the fixed hurdle distances.

Kip Janvrin — Show me a good hurdler that cannot sprint.

Ernie Clark — I believe the movements all the way to the last step are in fact sprint/drive steps BUT, hurdling and the three steps in between at the elite level is certainly NOT a sprint. It is in fact much more complicated in dealing with the hurdles and the confined spaces in between each barrier. It is certainly not comparable by technical aspects, BUT I think it *is* in terms of the start, acceleration, fast contact times, etc. in terms of training and effort.

Reece Vega — I would both agree and disagree. Yes, hurdling is not technically a sprint because hurdles are in the way. But, all the best hurdlers are fast, which makes sprinting a key ingredient in hurdling.

Eric Hanenberger — It mimics a sprint race. There is a lot of sprinting between the barriers.

Jim Vahrenkamp — The demands of the hurdle events are unique in the athletics universe. Sprinting qualities are required, but not the hallmark of the event. In the same way that sprinting occurs during the long jump, the actual sprint portion is not the focus. So too here, the barriers and their negotiation become the focus. The application of sprint qualities makes it necessary to train those qualities while remembering not to forgo the

important rhythmic qualities necessary for success in the event.

Chris Parno — I agree with the statement. We may be at 100% intensities while hurdling and it's easy to cue "sprint faster," but by nature hurdling is more of a rhythmic activity. To increase velocity in sprinting we are managing the equation of speed, among many other things. The equation of speed being stride length x stride frequency = velocity. To increase speed in sprinting, we look to manipulate the speed equation by either increasing or decreasing stride length/stride frequency to get a higher overall velocity (knowing they are inversely proportionate). In hurdling to decrease your time, more often than not, it will be strictly a frequency increase. Hurdlers are coordinating the defined stride pattern with high frequencies to decrease race times! We can't take steps out of the hurdle races (outside of the start), so it's crucial we cover these stride patterns quicker with increased frequency and rhythm.

SUMMARY

There are certainly a lot of commonalities among the responses and answers to the various topics. There are also some glaring differences. Our goal was to demonstrate that there are a number of different philosophies and methods on how to train 100- and 110-meter hurdlers. Everyone understands that there are different approaches to training, and they can all be successful. Every coach has to find his/her "true north." They have to find the training program that is the correct formula and that is sustainable for them. Some training plans are better than others. Some are tailored to meet the demands of different athletes in different environments. Very few are what we would term wrong. One of our little nuggets to young coaches is this: "There really isn't a wrong way, but perhaps a better way." Our hope for this roundtable is this: Hurdle coaches can gain some insight into what can work from other coaches, with a perspective of what they can successfully make work for them in their program with their athletes.

THE MENSTRUAL CYCLE AND RUNNING TRAINING

BY JASON R. KARP & NATALIE DAU

Adapted from the book *Run Like a Woman* by Jason R. Karp & Natalie Dau

Although the attention on women's running seems to be a relatively recent thing, women have been running since the time of ancient Greece. Possibly the first female runner of note was Atalanta, the swift-footed Greek huntress and devoted human follower of the goddess Artemis, who would marry only a suitor who could beat her in a foot race and kill any man who failed to outrun her. It wasn't until Atalanta was distracted by the apples her suitor Hippomenes rolled onto the racecourse that she lost a race and got married.

Certainly, Atalanta was not aware of her menstrual cycle and its effects on her running back then.

Thousands of years later, we know a lot more about women's physiology, yet research has found that most female athletes don't consider their menstrual cycle when planning their training, even though they acknowledge it affects their performance.

The menstrual cycle, which occurs monthly from a woman's first period (called menarche; age 11 to 14) until menopause (age 45 to 55), is the cycle of hormonal changes from the beginning of one menstrual period to the beginning of the next. It is perhaps the second most important biological rhythm, after our 24-hour circadian rhythms.

When we talk about the menstrual cycle, which is an oddly underdiscussed subject given its essentiality to procreation, what is of greatest interest to runners is the cycle's fluctuations in estrogen and progesterone, which cause fertilization of an egg and growth of a fetus that will become your son or daughter. Because of the large fluctuations in these two hormones, the phases of the menstrual cycle significantly affect the female runner's physiology. Variables such as oxygen consumption, body temperature, lung function, hydration, muscle glycogen storage, fat and carbohydrate metabolism, and exercise performance are all affected by the menstrual cycle.

The menstrual cycle is divided into two phases: follicular phase and luteal phase. The first few days of the follicular phase is menstruation (the "period"), when the endometrium (the lining of the uterus) sloughs off, causing you to bleed, which happens because of the rapid drop in estrogen and progesterone when no egg is implanted and you don't get pregnant. During your period, estrogen and progesterone are at their lowest levels of the menstrual cycle.

FOLLICULAR PHASE

The follicular phase begins with menstruation and typically lasts 14 days, but it can last anywhere from 11 to 21 days. Following the period, which typically lasts three to five days, estrogen rises, peaking around day 14, right before ovulation, when it is ten times higher than it was at the beginning of the phase. While estrogen is on the rise throughout the follicular phase, progesterone remains low.

LUTEAL PHASE

The luteal phase begins with ovulation and is usually 14 days. If no conception occurs within 24 hours of ovulation, estrogen decreases rapidly and rises again to a smaller peak in the middle of the phase (end of week 3/beginning of week 4). While progesterone is low for the entire follicular phase, now it's progesterone's time to shine, rising immediately after ovulation. The increase in progesterone, which, at its peak in the middle of the luteal phase, is 25 times the level it was during the follicular phase, causes body temperature to increase to prepare for the fertilization of an egg. If fertilization doesn't occur, both estrogen and progesterone levels decrease abruptly in the second half of the luteal phase. The rapid drop in progesterone causes water retention, leading to a feeling of being bloated. The phase ends with the start of the period, and the cycle starts all over again.

Although the menstrual cycle is complicated, an easy way to think of it is that the first half—the follicular phase—begins with the period and is dominated by estrogen; the second half—the luteal phase—begins with ovulation and is dominated by progesterone (although estrogen is also elevated in the middle of the luteal phase).

THE RAPID DROP IN PROGESTERONE CAUSES WATER RETENTION, LEADING TO A FEELING OF BEING BLOATED.

Menstrual cycle-based variations in your running performance may largely be a consequence of changes to your metabolism stimulated by the fluctuations in estrogen. Estrogen alters carbohydrate, fat, and protein metabolism. Females rely more on fat compared to males when exercising at the same absolute and relative intensities. Relying more on fat when running means you rely less on carbohydrates (muscle glycogen and blood glucose), thus delaying glycogen depletion and hypoglycemia (low blood sugar) and postponing fatigue. Progesterone also affects running performance, namely through its influence on body temperature, breathing, and protein breakdown.

In a perfect physiological environment, the menstrual cycle occurs every month and is always the same duration. But that doesn't always happen, especially among many girls and women who train with high volumes and high intensities and have a low percentage of body fat. Research has shown that female runners experience fewer cycles per year and have greater variability in number of cycles per year, compared to sedentary women.

What happens if your menstrual cycle is irregular or you don't have a period at all (called amenorrhea)? Perhaps the biggest training-related issue with an irregular menstrual cycle or amenorrhea is the drop in estrogen and the consequential vulnerability to bones. Estrogen, which facilitates the absorption of calcium into bones, is the most important determinant of bone density in women. Any condition that reduces estrogen (e.g., disruption to the menstrual cycle) negatively affects bones. Indeed, estrogen deficiency caused by amenorrhea is the most significant risk factor for osteoporosis in physically active women.

MENSTRUAL CYCLE-BASED TRAINING

The physiology of the menstrual cycle, with its undulating rhythms of hormones, is all very interesting, even poetic, and understanding it enables you to affect specific outcomes from your athletic endeavors. But what you do with all that information and how you apply it to your training is what matters.

To optimize your training and run like a woman, your plan should be fluid, working with, rather than

against or neglecting, your physiology. The rhythm of your training should match the rhythm of your menstrual cycle. Your training must always be open to change, moving workouts around based on the menstrual cycle's hormonal fluctuations and on how you feel.

Given the variability in individual menstrual cycle experiences among women, training around the menstrual cycle is not an exact science. To simplify the complexity, there are three times during your menstrual cycle when your hormone levels can particularly affect your training, based on their physiological effects:

1. Menstruation/early-follicular phase, when both estrogen and progesterone are low (week 1),
2. Late-follicular phase, when estrogen is high and progesterone is low (week 2), and
3. Mid-luteal phase, when both estrogen and progesterone are high (end of week 3/beginning of week 4).

In general, endurance exercise performance is stronger during the estrogen-dominant follicular phase and weaker during the progesterone-dominant luteal phase. The follicular phase is even associated with better pain tolerance. However, if the secondary peak in estrogen in the middle of the luteal phase is high enough that it counteracts the negative consequences of progesterone, endurance performance can also be strong during the mid-luteal phase.

With this simple, general system—follicular phase stronger and luteal phase weaker—you can optimally plan your training, always remembering to balance how you feel with the science.

Increase your endurance training volume during the follicular phase (especially week 2), when estrogen is high. Refrain from increasing (or slightly reduce) weekly volume during your period and at times of the month when estrogen is low—early- and late-luteal phase (early in week 3 and late in week 4). Avoid challenging workouts during your period, especially if you don't feel well or if you have menstrual cramps.

The intensity of training can also be planned according to the menstrual cycle. For example, if you have a 28-day cycle starting on Monday, and your period occurs on days 1 to 3 (Monday to Wednesday), plan the hard workout, like a long threshold run or intervals, in the second half of the week to avoid your period. If your period is only two to three days, you can do two workouts that week, scheduling them either on Thursday and Saturday, Friday and Sunday, or Thursday and Sunday.

AVOID CHALLENGING WORKOUTS DURING YOUR PERIOD, ESPECIALLY IF YOU DON'T FEEL WELL OR IF YOU HAVE MENSTRUAL CRAMPS.

You can also use a block periodization training model, in which you congregate the training stress with two to three hard workouts during the estrogen-high week 2 of the menstrual cycle, and do only one hard workout the week of your period and the other two weeks. This block periodization approach also works well if your period lasts more than four or five days.

The menstrual cycle exerts its greatest training-related influence on aerobic endurance. However, the menstrual cycle doesn't affect anaerobic capacity and power. Therefore, no specific times of the month are better or worse suited for speedwork (anaerobic capacity and anaerobic power workouts).

When all the pieces of the training program are put together correctly and align with what you need to run faster, the entire training program should function like one fully integrated, beautifully designed system. That system should reflect who you are.

The 25-week 5K/10K training program included here is divided into two phases: general preparation (12 weeks; 3 training cycles of 4 weeks each) and specific preparation (13 weeks; 3 training cycles of 4 weeks each, plus one taper week). The general preparation phase emphasizes aerobic capacity and acidosis (lactate) threshold. The specific preparation phase emphasizes aerobic power (VO_2max) and anaerobic capacity.

To make the training program easy to follow, it assumes a four-week (28-day) menstrual cycle, segregated into weeks to correspond to the specific weeks of the menstrual cycle. Week 1 of the training coincides with week 2 of the menstrual cycle, so begin the training program 7 days after the start of your period. Week 1 of the menstrual cycle, which starts with day 1 of your period, functions as a recovery week that completes

Phase 1: General Preparation (12 weeks)	
Training Cycle 1: Aerobic Capacity (4 weeks)	
Week 1 (Menstrual Cycle Week 2) 85% peak mileage	3 Easy Runs 3 Long Runs
Week 2 (Menstrual Cycle Week 3) 85% peak mileage	5 Easy Runs 1 Long Run
Week 3 (Menstrual Cycle Week 4) 75% peak mileage	5 Easy Runs 1 Long Run
Week 4 (recovery) (Menstrual Cycle Week 1) 55% peak mileage	5 Easy Runs 1 Long Run
Training Cycle 2: Aerobic Capacity/Acidosis Threshold (AT) (4 weeks)	
Week 5 (Menstrual Cycle Week 2) 90% peak mileage	2 Easy Runs 1 Long Run 3 AT Workouts
Week 6 (Menstrual Cycle Week 3) 90% peak mileage	4 Easy Runs 1 Long Run 1 AT Workout
Week 7 (Menstrual Cycle Week 4) 85% peak mileage	4 Easy Runs 1 Long Run 1 AT Workout
Week 8 (recovery) (Menstrual Cycle Week 1) 60% peak mileage	4 Easy Runs 1 Long Run 1 AT Workout
Training Cycle 3: Aerobic Capacity/Acidosis Threshold (AT) (4 weeks)	
Week 9 (Menstrual Cycle Week 2) 100% peak mileage	2 Easy Runs 1 Long Run 3 AT Workouts
Week 10 (Menstrual Cycle Week 3) 100% peak mileage	4 Easy Runs 1 Long Run 1 AT Workout
Week 11 (Menstrual Cycle Week 4) 90% peak mileage	4 Easy Runs 1 Long Run 1 AT Workout
Week 12 (recovery) (Menstrual Cycle Week 1) 65% peak mileage	4 Easy Runs 1 Long Run 1 AT Workout
Phase 2: Specific Preparation (13 weeks)	
Training Cycle 4: Aerobic Power (VO_2max) (4 weeks)	
Week 13 (Menstrual Cycle Week 2) 90% peak mileage	2 Easy Runs 1 Long Run 3 VO_2max Workouts
Week 14 (Menstrual Cycle Week 3) 90% peak mileage	4 Easy Runs 1 Long Run 1 VO_2max Workout
Week 15 (Menstrual Cycle Week 4) 75% peak mileage	4 Easy Runs 1 Long Run 1 VO_2max Workout

each training cycle.

As such, the training cycles are planned in the order of weeks 2, 3, 4, and 1 of your menstrual cycle, with 6 days of running planned per week. During estrogen-dominant week 2 of the menstrual cycle (which is the first week of each training cycle), the training load increases in a concentrated block, with several challenging workouts, to take advantage of estrogen's power. The other three weeks include one hard workout each week. The training program culminates with your target race at the end of week 2 of the menstrual cycle, when estrogen is at its peak.

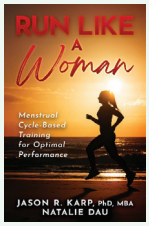
If your menstrual cycle doesn't occur in a neat, four-week, 28-day package, or if your cycle duration changes throughout the year, adjust the training week duration, as needed. For example, if your menstrual cycle is 25 days, the follicular phase will be 11-13 days (a training "week" of 5-6 days and a training "week" of 6-7 days) and the luteal phase will be 12-14 days (two training "weeks" of 6-7 days each). If your menstrual cycle is 32 days, the follicular phase will be 18-20 days (two training "weeks" of 9-10 days each) and the luteal phase will be 12-14 days (two training "weeks" of 6-7 days each). (The luteal phase is almost always 14 days, but can range from 12-14 days.)

Before starting the training program, spend time logging your menstrual cycle, with the start of your period as day 1, so you can find your own individual phase duration and pattern.

Each training cycle gives a recommendation for the percentage of

Week 16 (recovery) (Menstrual Cycle Week 1) 60% peak mileage	4 Easy Runs 1 Long Run 1 VO_2max Workout
Training Cycle 5: Aerobic Power (VO_2max) (4 weeks)	
Week 17 (Menstrual Cycle Week 2) 90% peak mileage	2 Easy Runs 1 Long Run 3 VO_2max Workouts
Week 18 (Menstrual Cycle Week 3) 90% peak mileage	4 Easy Runs 1 Long Run 1 VO_2max Workout
Week 19 (Menstrual Cycle Week 4) 75% peak mileage	4 Easy Runs 1 Long Run 1 VO_2max Workout
Week 20 (recovery) (Menstrual Cycle Week 1) 60% peak mileage	4 Easy Runs 1 Long Run 1 VO_2max Workout
Training Cycle 6: Anaerobic Capacity (AC) (5 weeks)	
Week 21 (Menstrual Cycle Week 2) 100% peak mileage	2 Easy Runs 1 Long Run 3 AC Workouts
Week 22 (Menstrual Cycle Week 3) 100% peak mileage	4 Easy Runs 1 Long Run 1 AC Workout
Week 23 (Menstrual Cycle Week 4) 100% peak mileage	4 Easy Runs 1 Long Run 1 AC Workout
Week 24 (Menstrual Cycle Week 1) 90% peak mileage	4 Easy Runs 1 Long Run 1 AC Workout
Week 25 (recovery) (Menstrual Cycle Week 2) 45% peak mileage	4 Easy Runs 1 AC Workout 5K/10K Race

peak mileage. Decide what your peak mileage will be for the 100% peak mileage weeks, and then follow the percentage recommendation for each cycle. For example, if you plan to run 80 kilometers per week as your peak weekly mileage, start the training program at 85% of that, which equals 68 kilometers for Training Cycle 1.



Dr. Jason Karp is an award-winning coach, exercise physiologist, author, and founder and CEO of the audio coaching app, KASI (runkasi.com). Natalie Dau is an ultraendurance athlete, social media influencer, and founder and CEO of the lifestyle company, Keeping It Real and the Rockstar Fit App. Their book, *Run Like a Woman* is available on Amazon.

USATF COACHING EDUCATION

USATF CALENDAR OF SCHOOLS

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

July 7-9	*Level 1 – Zoom #2023-27 (Eastern Time)*
July 14-15	*Cross Country Specialist Course – Zoom #2023-28 (Eastern Time)*
July 17-19	*Level 1 – Zoom #2023-29 (Eastern Time)*
July 18-22	*Level 2 – Ft. Worth, TX*
July 28-30	*Level 1 – Zoom #2023-30 (Eastern Time)*
August 11-13	*Level 1 – Zoom #2023-32 (Central Time)*
August 18-21	*Level 1 – Zoom #2023-33 (Eastern Time)*
August 25-27	*Level 1 – Zoom #2023-34 (Eastern Time)*
September 15-17	*Level 1 – Zoom #2023-37 (Eastern Time)*
October 20-22	*Level 1 – Zoom #2023-42 (Pacific Time)*
October 27-29	*Level 1 – Zoom #2023-43 (Central Time)*
November 10-12	*Level 1 – Zoom #2023-45 (Eastern Time)*
November 17-19	*Level 1 – Zoom #2023-46 (Eastern Time)*
November 24-26	*Level 1 – Zoom #2023-47 (Pacific Time)*
December 1-3	*Level 1 – Zoom #2023-48 (Eastern Time)*
December 8-10	*Level 1 – Zoom #2023-49 (Central Time)*
December 15-18	*Level 1 – Zoom #2023-50 (Eastern Time)*
December 27-29	*Level 1 – Zoom #2023-52 (Pacific Time)*

BOBBY KERSEE TO RECEIVE 2023 USATF LEGEND COACH AWARD

Bobby Kersee, a three-time Nike Coach of the Year honoree and mentor to some of the top track and field athletes in U.S. history, was announced today as the 2023 USATF Legend Coach. Kersee, a member of the USTFCCCA Hall of Fame, will be honored at the Toyota USATF Outdoor Championships.

Known as one of the best track and field technical coaches in the modern era, Kersee's knowledge of the sport is second to none. For decades he has aided his athletes in unlocking their potential at the collegiate and professional level.

Kersee helped lead Team USATF to glory as the women's sprints and hurdles coach at the 2005 IAAF World Championships in Helsinki, guiding U.S. athletes to gold in the 100m, 200m and 100m hurdles as the team won 25 medals. Kersee was an assistant coach on the women's staff for the 1996 Olympic Games in Atlanta and at the 1991 World Championships in Tokyo. He was an assistant coach for the sprints at the 1987 Pan American Games and coached the sprinters for the 1985 U.S. Olympic Festival West team. In 2022 he was named USOPC Olympic Coach of the year.

Kersee played a significant role in the most decorated American Olympic track and field athlete of all time in Allyson Felix, along with heptathlon world record holder Jackie Joyner-Kersee's success. His consistency rivals none, bringing his athletes at least one gold medal in 10 consecutive Summer Olympics. Guiding his athletes to more than 50 Olympic and World Championship medals over the years, Kersee continues to keep his presence in the sport.

Currently he leads "Formula Kersee", which includes Olympic gold medalists Sydney McLaughlin-Levrone, Athing Mu, and Morolake Akinosun.

A collegiate coach for more than 30 years, Kersee was an assistant at Cal State Northridge after serving as a student assistant at his alma mater, Long Beach State. At Northridge he helped the women's team to consecutive AIAW national titles in 1978-79. He then went on to an assistant role at UCLA before becoming the women's head coach. As head coach from 1984-1993, Kersee led the Bruins to five conference titles with many of his sprinters earning NCAA honors. His nine-year tenure at UCLA earned him the Pac-12 Coach of the Century award in 2016.

Off the track, Kersee is the president of the Board of Directors of the Jackie Joyner-Kersee Boys and Girls Club. Based in East St. Louis, Illinois, the foundation provides families with athletic and academic lessons, and resources to improve their quality of life.

The USATF Legend Coach Award is in its ninth year and is selected by the USATF Coaches Advisory Committee. The inaugural award was presented to Hall of Fame Tigerbelle Coach Ed Temple in 2014, followed by Dr. Joe Vigil (2015), Tom Tellez (2016), Clyde Hart (2017), Brooks Johnson (2018), Bob Larsen (2019), Bill Dellinger (2021), and George Williams (2022).

LIMITED SEATS REMAINING IN USATF CROSS COUNTRY SPECIALIST COURSE, JULY 14-15, 2023

USATF Coaching Education presents a 12-hour (ZOOM) course specific to the discipline of cross country. Learn periodization training for the cross country season, adapted from USATF Legend Coach, Dr. Joe Vigil, in addition to team building strategies and long term athlete development for the endurance runner.

Coaches of all experience levels are eligible to attend the course. Each coach who completes the course and achieves a passing score on the exam will be awarded a USATF Cross Country Specialist certificate.

Don't miss lead instructors, Thom Hunt and Scott Christensen, along with special guest Brian Zuleger, sport psychologist and CMPC, as he presents a lecture on Mental Skills and Strength and the opportunity to engage with Team USATF coaches from the 2023 World Cross Country Championships in an exclusive panel.

Course registration is capped at 100 participants.

https://usatf.sport80.com/public/wizard/e/144492/home

USATF INTERNATIONAL TEAM SELECTION AND PROCESSING INFORMATION

The 2023 Toyota USATF Outdoor Championships on July 6 – 9 in Eugene, Oregon will serve as the selection event for various 2023 National Team competitions. Following the conclusion of their event, athletes eligible for selection to a 2023 National Team will be instructed by a member of the USATF National Team staff to attend Team Processing.

Team Processing information can be found at:

https://www.usatf.org/events/2023/2023-toyota-usatf-outdoor-championships/athlete-information#Team%20Processing%20Information

2023 NATIONAL TEAM COMPETITIONS

- 2023 NACAC U23 Championships, July 21 – 23 in San Jose, Costa Rica
- 2023 Thorpe Cup, August 12 – 13 in Marburg, Germany
- 2023 World Athletics Championships, August 19 – 27 in Budapest, Hungary

*With the exception of the Marathon and 35km Race Walk, which will be selected via separate Selection Events.

Note: Marathon and 35km Race Walk athletes will be required to complete Team Processing at the 2023 USATF Outdoor Championships. USATF will work directly with these athletes to coordinate their travel to Eugene to participate in Team Processing.

- 2023 World Athletics Road Running Championships, September 30 – October 1 in Riga, Latvia
  (Assessing interest only for 5km and Mile events; processing virtually at a later date)

- 2023 Pan Am Games, October 22, 29 – November 4 in Santiago, Chile
  (Assessing interest only; processing virtually at a later date)

Additionally, the 2023 USATF U20 Outdoor Championships will serve as the selection event for the following team:

- 2023 Pan Am U20 Championships, August 4 – 6 in Mayaguez, Puerto Rico

Please review the full selection procedures at:

https://www.usatf.org/programs/elite-athletes/team-usatf/athlete-selection-procedures

IMPORTANT: PASSPORT REQUIREMENT!
Athletes must have and present at Team Processing a current passport good for at least six (6) months after the return date from the National Team event.

All athletes are required to complete Team Processing in order to be eligible for selection to a 2023 USATF National Team. Athletes who fail to complete Team Processing will forfeit their rank for selection to a 2023 National Team.

SAVE 20% ON ONLINE USATF CAMPUS COURSES THROUGH SEPTEMBER 4, 2023

For a limited time, save 20% on USATF Campus courses. Use promo code TRACKCOACH23 through September 4, 2023, to take advantage of this offer.

USATF Campus offers over ten specialized sports science courses curated by Dr. Christine Brooks, Level 2 Sports Science Coordinator and 2022 USOPC Coach Educator the Year. Each course is self-paced, packed with 3-4 hours of video lectures, resources, quizzes, and includes a USATF certificate of completion. All courses in the catalog are open to both USATF members and non-members.

Courses on USATF Campus are accepted for Level 1 Recertification for current certificate holders.
Learn more at: USATFCampus.myabsorb.com

**Offer not valid on USATF Level 1, 2, 3 Schools, USATF Cross Country Specialist Course, or USATF Campus course bundles.*

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