

H E I G H T S

LONE ILY

LYLE KNUDSON: RUNNING'S FORGOTTEN COACH BY DEVON O'NEIL / PHOTOGRAPHY BY TIM HANCOCK

The tall blond man sits by the window in his favorite breakfast place, hunched over a plate of poached eggs at 9,100 feet in the Rocky Mountains. It is 10 degrees outside and even colder with the stinging wind. Not a great morning for running. But, as with most days, decent enough to talk about it. Talking about running, after all, helps the tall blond man feel in touch.

Once upon a time, he was current and relevant, a coach everyone in the running world knew well. He coached seven Olympians, two before he turned 30. Launched the women's track and field program at the University of Colorado. Was named Southeastern Conference Coach of the Year at Florida. Served as head coach of the women's Pan American team when the Pan Am Games still mattered. Perhaps most notably, he introduced a training model so deep and complex that even now, decades later, almost nobody understands it. If it didn't produce such miraculous results, it would've vanished years ago, just like the tall blond man who invented it.

Those who remember this man still say he should have been an Olympic coach — *the* Olympic coach. No question. He was a genius, the best America had, and that was back when America still carried clout on the international stage — before long slow distance training ruined a generation of talent. The tall blond man shakes his head at LSD training. Teach people to run slow? When the goal is to run fast? Makes no sense.

Even here, next to the window with frost on the glass, having been ostracized from the U.S. development ship he used to help steer, the tall blond man still believes he can fix America's troubles. He sighs.

"The major factor of failure," he says, "is just the lack of quality training." The solution? "Train specific to the demands of the event. That's it. It just makes common sense. But you never hear anybody talking about it."

Call around the country and ask about Lyle Knudson, and you'd think you were calling around the basketball world vetting Bobby Knight. Some revere him, bemoaning his absence; others never could stand him in the first place. This much they agree on: If he had not been so unabashedly honest, Knudson could have become a coaching legend.

As it was, "Lyle pissed off everybody in track and field," one former Olympian said.

As he hovers over his eggs in Frisco, Colo., where he lives, Knudson — a 67-year-old high school math and computer teacher and part-time ski instructor — is as anonymous as the janitor who sweeps the floor. And believe it or not, that is just fine with him. He never could bring himself

to "sell ice to the Eskimos," anyway; being in the spotlight only brought criticism. He will let others decide what might have been.

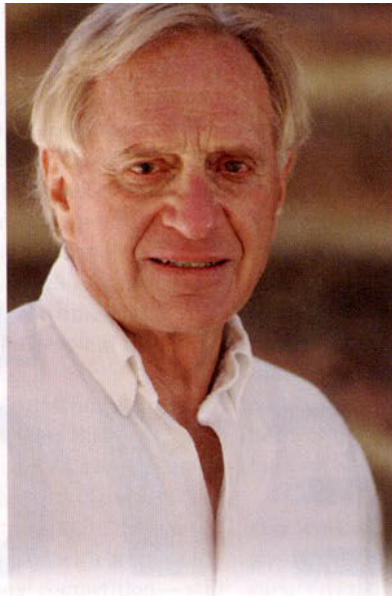
/// He was supposed to drive a tractor. That's what destiny means when you grow up poor on a farm in southwestern Iowa, when neither side of your family has ever sniffed the halls of a four-year college. But Lyle had talent. He could throw a baseball 90 mph and was a versatile enough student athlete that he earned a partial scholarship to Northern Iowa. He ran middle-distance and distance events there but, by his own admission, was nothing special. "I probably should've been a decathlete," he says now. "I was just decent at everything."

Upon his graduation, Knudson took a job coaching high school track. His motivation to coach, he says, stemmed from his own failure to capitalize on his athletic talent. As such, he holds his runners to high standards when it comes to effort.

"I tell them, if they run a workout as hard as they can, they should have trouble walking up stairs afterward," Knudson says. "They should fully extend."

Marilyn Weiss, a former athletic administrator who hired Knudson at both Utah State and Florida, says, "He'll push all his athletes to the limit and then if he sees they don't want to go any further, that's fine. He's got other things to do. But Lyle's not going to coddle *anybody*. If you were supposed to be on time for a trip but you didn't show up, Lyle would leave you."

/// His formula began to take shape in 1978. Knudson, a doctoral student with four Olympians already on his coaching résumé, was taking a class called Physiological Kinesiology, probing the depths of the human body. He was fascinated by the way the Europeans improved performance in world-class athletes by studying structural and enzymatic proteins in their muscle fibers; it seemed vastly superior to the American way of putting the general population on treadmills and measuring gas exchange, like VO2 max. He had seen Oregon coach Bill Bowerman succeed by alternating hard days with easy days, which maximized muscle recovery. And he knew all about the failures of LSD training, subscribing instead to speed-intensive workouts. Most fundamentally, Knudson believed in training young athletes in multiple events before allowing them to specialize — a strategy he picked up from the Russians, who, he points out, "had 5 million kids competing in the pentathlon in any given year. It stuck in my mind."



Knudson took four years to combine all the different elements into a functional training model. When it was finally ready, in 1982, he had just taken a job as the head women's coach at Florida, after stints at Colorado, Colorado State, and Utah State. He arrived in Gainesville to find a program with no direction. It didn't matter. Where others sought polish he sought lungs on legs — raw meat. He recruited runners nobody else wanted, then taught them his new program. In two years the Gators cracked the nation's top 10. No-name runners were winning SEC titles, chopping 3 minutes off their high school 5K times.

Then came the politics, forever the bane of Knudson's coaching existence. Knudson says he rebuffed a booster's attempt to control his program amid some shady dealings within the athletic department in 1987, and was let go soon after. He returned home to Colorado, took a job

the camps for the intensity of the experience," Heinonen says. "His feeling was, these are elite kids. They ought to be able to handle it."

The talent spoke for itself. Jackie Joyner attended the first camp as a high school sophomore, and Knudson, who kept tabs on all the alumni, estimates 70 to 75 percent of the U.S. Olympians from the 1984 Los Angeles Games to the 2004 Athens Games participated in the camps.

In 2005, however, Brooks Johnson, then the chairman of the U.S. Olympic Committee-funded High Performance Division within USATF, decided to focus more finances on preparing a team for Beijing. Knudson says Johnson — a longtime rival with a volatile personality, who Knudson maintains used his power to block opportunities for Knudson (a claim Johnson denies) — eliminated the junior elite camps even though no one else wanted them to end. Johnson says he simply proposed a new system

as a biomechanics professor at the University of Denver, and focused on his other job: running the U.S. junior elite camps. He would never coach again in college.

/// The primary goal of the USATF junior elite camps, which Knudson directed from 1978–2005, was always the same: to produce Olympic athletes. "He stood in front of high school superstars and told them state championships when you're 17 years old don't mean anything," recalls former clinician Tom Heinonen, a three-time national coach of the year at Oregon. "There's a bigger picture. He was all about what you're achieving at your physical peak."

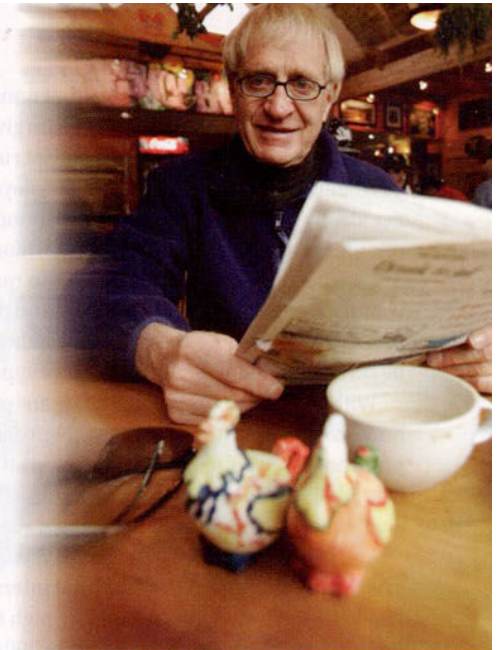
The nation's best 10 to 15 teenage athletes in each event were invited to the junior elite camps. "You are our next Olympians," Knudson would tell them. "You are the best we have." Then, dressed in tiny shorts that barely made it halfway down his thigh, he would unleash a weeklong avalanche of lecture sessions, lab sessions and sample workouts. Days began at dawn and often lasted deep into the night.

"One thing Lyle said year after year was we want these kids to remember

for the camps and Knudson, not wanting to operate under different conditions, left on his own accord.

Either way, after 27 years instructing a majority of U.S. track and field Olympians, Knudson suddenly found himself locked out.

/// Tradition holds that to be appointed an Olympic coach, one first must establish an ability to cultivate Olympic talent. Knudson was 29 when he began coaching an Estes Park, Colo., high school prodigy named Wendy Koenig. A jumper by specialty but also a gifted all-around athlete who believed she could do anything, Koenig qualified for the 1972 Olympic 800-meter team at 17. A year and a half later she and Knudson married. (They later divorced and have three grown children, one training to be a nuclear engineer, one who just graduated from law school, and a third doing medical research at CSU.) Koenig, the second American woman to break 2 minutes in the 800, also qualified for the 1976 Montreal Games, where she joined Jane Frederick, a dominant heptathlete and pentathlete who made her first Olympic team under Knudson in 1972 and would go on to qualify for three Olympics.



In the late '70s, his star still rising, Knudson was asked to be an assistant on the 1980 Olympic team. "But they wanted more diversity on that staff, so they asked me if I'd take the head coach position on the Pan American team," says Knudson. "And I did."

Knudson, who coached on 11 different international teams, admits he's always had a problem pandering for coveted coaching roles, despite recognizing the importance of doing so. "I could never sell out for titles," he says. In this case, he wouldn't have to: He was never offered another Olympic position.

John Rembao, a longtime friend and disciple of Knudson's and the former head cross country coach at Texas and Southern Methodist, believes Knudson's exclusion was unjust. "I think he should've been an Olympic coach," Rembao says, a point echoed by others interviewed for

Rembao, who five years ago awarded a girl a full scholarship on Knudson's recommendation alone, without ever seeing her run. Countless high school coaches either picked up the program at the USATF junior elite camps or ordered one of Knudson's instructional videos (he sells about 10 to 15 per year). Even Tony Wells, the Colorado Flyers club coach and one of the premier sprint-hurdle gurus in America, has used Knudson's training model for more than two decades.

The program usually works in two-week cycles, though it may be changed to a week when competitions mandate. Everything is based on a "training distance," or TD — 1600m for the purposes of this explanation. The athlete alternates three easy days with three hard ones, finishing with a Sunday run that is much shorter (about 30 minutes) than a comparable program. On hard days, Knudson's runners begin (and end) with

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this story. "But he made the people in power angry, and that came back to haunt him."

Knudson used to call his system "modified interval training," but now he thinks that sounds too old. He prefers the terms "speed-, speed endurance-, and specific endurance-based training." Over the years it has become known as a strictly speed-based, low-mileage program, but that's not entirely accurate. Neither does Knudson dispute every high-mileage model. He advocates instead for rationally conceived training as demanded by the event and supported by research; his model for elite marathoners, for instance, still calls for 90–95 miles per week.

Current Florida men's and women's head coach Mike Holloway nicely sums up its reputation: "I've never talked to anybody who feels like it makes sense. My comment to them is always, it might not make sense, but it gets results."

Holloway, who served as a graduate assistant under Knudson at Florida, has used Knudson's training model throughout his career, winning six high school state titles and two runner-up NCAA indoor trophies. So has

12 minutes of easy running. Then they will do a sequence of what he calls "dynamic leadups," 20–30 minutes of sprint-related exercises increasing in both speed and range of motion. Next comes the meat. During a two-week cycle, there are six hard days, each designated by a different pace and volume. The paces include an "over over distance" (5,000m), "under under distance" (400m), "over distance" (3,000m), "under distance" (800m), and the TD. The final hard day will be run at a pace determined by Knudson based on where he feels the athlete needs the most work.

He uses a predetermined multiplier to get the volume of each hard day. So on the "under under distance" day, for instance, the runner will run about 1200m at a 400m pace. The key is to understand that they never run based on distance; they run based on time. So if it takes the runner about 60 seconds to run 400 meters, Knudson assigns a certain number of reps that last a certain duration apiece to reach the prescribed volume. The reps can be uniform across a workout (running 24 reps for a time that equates to about 50 meters per rep, with 1-minute recoveries) or they can vary (start short and progress to longer reps, with increasing recovery times). Either way, the volume and pace remain the same. On days when

the predetermined pace is slower, the runner runs greater volumes, and vice versa. "The instruction that they are given," Knudson says, "is to run the entire workout as fast as you can. Not run every rep as fast as you can, but the entire workout." For the six easy days in a two-week cycle, the runner ideally trains alone, completing 6 minutes of easy running, then 12 minutes at an anaerobic threshold, then 6 more easy minutes.

Knudson never allows his athletes to run on a track — and for those training at altitude, he often has them run downhill to simulate sea-level speed. He never times them. "Stop watches are for people at the meets," he says, an opinion his athletes always appreciate.

"With Lyle's program, you don't have any psychological limits on exactly how fast you can run," says Kris Ihle Helledy, a former Nike-sponsored pro who trained under Knudson in the late '90s. "I had a season under Lyle where I either set personals or was within seconds of personals for eight months straight. I would even set them in training."

And yet the majority of college coaches — charged with bridging the crucial gap between high school and international competition — still employ the pyramid model, building high mileage with less speed. This has always driven Knudson crazy. In 2004, at one of the last national meetings he attended — a pre-Olympic gathering of athletes, coaches, and scientists — Knudson couldn't hold his tongue any longer. "I got fed up when they were talking about speed training for the last lap. And I stood up in the back of the room and said, 'Hey, the problem isn't the last lap. The problem is maximizing pace throughout the race.'"

Asked to consider the potential state of American distance running if everyone used Knudson's training program, Rembao, now an assistant at California-Berkeley, answers without hesitation. "I definitely think we'd be better off than we are now," he says. "The problem is, we'd need everyone to understand it as well as Lyle does."

As much as Knudson is viewed as a running Einstein, his persona has always won him equal respect with the athletes he coached. He embraces their strengths but accepts their flaws. He reminds them to "have fun" before races. "He never put any pressure on me," says Whitney Anderson, a former high school All-American from Colorado. "I never felt special when I was training with him." Wendy Koenig, his ex-wife, says: "One of the things Lyle does is he lets you dream. He lets you try things that other coaches would say are impossible."

Knudson does something else you rarely see. He coaches professional runners, Olympic runners, for free. Always has. Why? "If I had to relive my life, recognizing that I've had to struggle financially at times, I would be a better money manager," he says over breakfast. "But I think I'm just too idealistic about life. I can't sell myself out for money or ego."

He turns back to his eggs. Sometimes he yearns to coach again at the elite level, to share a common goal with a hungry athlete. "I wouldn't pursue athletes or a coaching situation, but if someone pursued me," he says, "I'd talk." And if that doesn't happen? Fine. "At the end of the day, I think it's all about how a person feels about themselves. And I feel good about what I've done."

About six to 10 years ago (he can't recall when exactly), Knudson received a plaque in the mail. It had his name on it, designating him the recipient of the Joseph Robichaux Award, the highest honor given by USA Track and Field for devotion to women's athletics. It was an award some felt was long overdue, but as he soon learned, he was not actually a recipient. Knudson's best guess is that someone at USATF sent the plaque as a gesture, a thought that makes him smile.

"I hung it up on my wall for a while, but then I took it down," he says.

"I don't have any awards on my wall." **RT**

THE CASE OF THE DISAPPEARING TALENT

When Whitney Anderson began working out with Lyle Knudson in Breckenridge, Colo., in early 2004, she was a skinny transplant from Alaska whose only prior training had been jogging on a bush-plane airstrip. By the time she



went off to Duke on a full scholarship two years later, she had taken fourth at the Foot Locker National Championship cross country meet and was among the top recruits in America. She followed that up by winning ACC Freshman of the Year honors as the only non-senior on the No. 1-ranked Blue Devils' starting seven. People began whispering her name as a possible Olympian.

The only problem with Anderson's unfathomable ascent was the twinge in her hamstring. With Knudson, she had run 35 to 37 miles a week at fast paces. At Duke she was running 55 miles a week, much of it slower than she was used

to, and repeating a number of drills that bothered her knees. When she did do speed work, the intervals were run under intense scrutiny, timed to the hundredth of a second.

It didn't take long for Anderson's body to break down. The slight hamstring tear turned into a sharp, chronic pain and destroyed her stride. Feeling constant pressure from coach Kevin Jermyn to continue running and thereby honor her scholarship, Anderson grew clinically depressed. Within a year she had given up running and become the team manager. When even that grew to be too emotionally draining, Anderson voluntarily ceded her scholarship and began raising money to pay the \$40,000-a-year tuition on her own.

Anderson's stunning plummet is hardly unheard of in women's college running, a trend Knudson has been lamenting for decades. "The girls, it's an epidemic," he says. "We're just ruining all this great talent."

Tom Heinonen, an eight-time Pac-10 coach of the year at Oregon who retired in 2003, grew so wary of the tendency for high school stars to wilt in college that he began tracking every Foot Locker National Championship competitor and recording what they did as collegians. Their success rate, he says, was "abysmal — nowhere near

what an uninformed observer would expect."

Knudson has long maintained the problem exists because college coaches, lacking the knowledge needed to design effective training programs, travel in packs and make ego-driven decisions with regard to mileage.

"In high school, the coaches tend to be more individualistic. It's not as much of a social thing," Knudson says. "In college, the coaches go to meets and sit around and talk: 'Well, how many miles do your kids run?' And if the other guy's kids are running 70 miles, then your kids have to run 75."

Anderson confirms this mentality: "Even when I was doing well my freshman year, my coach told me I could do better if I was doing more miles."

Many argue the problem runs deeper than ill-conceived training. Regardless, the issue itself illuminates a point Heinonen constantly took into account during his 27 years at Oregon.

"Girls," he says, "will do what you tell them to do. The only thing is, you better be right." **RT**



Go to runningtimes.com/may09 to see an expanded version of this story addressing more possible reasons for collegiate failure among female athletes.