

The above sequence shows the jump turn, quick feet, and tremendous horizontal force on the discus.

My Commentaries on Ralph Maughan's Classic 1963 Discus Article

"Sheer strength, although it helps, is relatively unimportant . . . Glenn Passey . . . using the same form as Jay . . . proves that form is all-important in the discus. Here is the form we use for the discus at Utah State-it is championship form."

Strength. Here is the one word that perhaps causes the most problems for throwers. What is strength? What kind of strength? What should be done? The answer involves a simple question: who wins the gold in the discus? The one who throws the furthest.

The reported strength levels of many throwers are better than the lifts of members of their respective national team members in Olympic and Power lifting. Yet, before winning the silver medal at the World Championships, John Powell claims to have only have snatched 220 and cleaned 286 for singles that year. For another extreme, Glenn Passey always claimed to have not lifted weights. (Yet, he mentioned having done the Olympic Lifts (Press, Snatch and Clean and Jerk during the 1960's) during the winter months.) Trying to understand these examples is compounded by the reported strength levels of Fernholm, Wilkins, or Bugar. What is necessary for the high school thrower?

Although one can be successful using any strength system, we have found competitive Olympic Lifting to be, by far, the best training for a thrower. If a coach has no experience in the lifts, I suggest asking a local Olympic lifter or former lifter to help your throwers for a few sessions. (Contact the national office for local representatives.) For the high school athlete, I recommend a few points:

- Teach the athletes to snatch and clean using the "frog stance." This stance, popular in the 1960's and used by Japanese and American lifters (such as Dube, Bednarski, Karchut, and many others), involves beginning the lifts with the heels together with the toes pointing out. With an arched back (or flexed "lats"), this will keep most athletes from lifting's greatest sin: straightening the legs and trying to lift the weight over head with the lower back only.
- Have the athletes do "overhead" or "snatch" squats to warm up. With a wide grip, hold the bar at arm's length overhead and squat up and down. This exercise promotes flexibility, a strong lower back, and balance (as well as strong thighs). It also seems to carry over to the discus ring as it teaches the body to work as one unit.
- We found that throwers can be successful in lifting competitions by doing the full squat snatch, but only "power" cleaning the clean and jerk. For many reasons, most throwers can clean much more than they can jerk. Paul Northway's success in high school reflected his ability to squat snatch 226 as a sophomore. He power cleaned 264 twice at this same meet and lost the jerks backwards. His 182' 10" throw as a sophomore reflected a few months of Olympic weight lifting competitions.

We use the following levels as basic goals for high school lifting:

	Snatch	Clean and Jerk	Anything else?
9th	95 pounds	135 pounds	
10th	115 pounds	175 pounds	
11th	135 pounds	200 pounds	
12th	155 pounds	225 pounds	

Certainly, one would encourage athletes to go well beyond these levels.

Coach Maughan's recommends the following lifts: push jerk, power clean, bench press, curl and quarter squat. Be sure to include sprints, hill, and stadium step work as part of the regime. Coach Maughan was convinced that the key lifts were the push jerk and the quarter squat which strengthen the athlete in the most important positions for throwing. (As a side note: the Quarter Squat was also Bruce Lee's favorite lift.) In addition, the key to connecting strength training to discus distance reflects using a multi-year approach, or "Little and often, over the long haul."

Initial Stance and Preliminary Swings: The thrower must begin with his back to the direction of the throw. Some throwers are coached to swing the left foot into position after standing sideways to the direction of the throw. I believe that this causes too hurried a start and an improper placing of the left foot at the back of the ring.

This style seems to be lost to the "dust bin of history." It is still possible to find some variety at the back of the ring, most notably in the women's event. In general, variations are usually seen in the swing; see, for example, Deliz, Powell, Wilkins, or Reidel.

The thrower's feet are spread shoulder width."

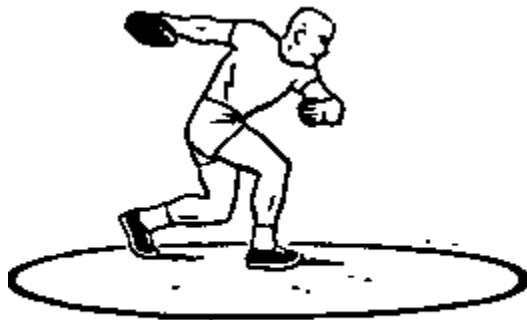


Figure 1

There are some variations of the distance between the feet, but, in truth, there is not much to be said one way or the other. Feet that are extremely close are just not effective. Stephen Fernholm experimented with an extremely wide base for a number of years, but always felt it was impossible, as a left handed thrower, for him to get "around" his right leg.

The question that needs to be raised is simple: where do the feet line up in regards to the throwing direction? For years, most throwers simply straddled the mid-line, then Silvester put his left foot on it to increase the degrees of the throw. Schmidt's point is simple on this: "You move the discus a few centimeters further, but it is hard to make a stable technique . . . I had been throwing like this, but I couldn't get all my power into the discus." East German throwers followed the Finnish lead of the 1970's by putting their right foot on the mid-line. Many reasons have been discussed for why they do this and some argue that this gives a longer pull for a non-reverse thrower. It is not the secret to a long throw, only a variation.

Again, a simple quote from Ralph Maughan may be the key here: "If your brains were in your feet, you would throw a lot farther." The beginning of the throw is not a place to deliver all the forces of discus throw. As the opening line of Frank Herbert's book, *Dune*, states: "A beginning is the time for taking the most delicate care that the balances are correct." Any extreme, be it stance, swing, or speed, may actually prevent the summation of forces that combine to provide a truly fine throw.

"The right foot is against the back of the ring and the left about 2 or 3 inches from the ring."

The reason for this is simple: it prevents fouling at the beginning of the throw. It is possible to be called for a heel touch as the left foot pivots. When rotational shot putting first emerged, many officials, especially those critical of the method, watched closely for this foul.

Some young throwers continue to stagger this foot farther and farther back to simplify the first pivot. This well suits the novices needs, however, this should not encouraged beyond the first year of throwing. For a young thrower, this little modification can work wonders; unfortunately, the thrower soon begins to look like an ice skater doing aerial toe loops. Remember: the longer stagger is only a short term solution.

Weight should be equally distributed. Preliminary swings should be easy and few in number.

One sure sign of the novice is a high number of preliminary swings. At a high school track meet, I once saw an athlete take eight swings for a standing throw. Silvester used three, Passy four, and Powell one. Truly, one is enough. Beginners often have an explosive, looping warmup swing that generates more forces than the throw itself. This should be avoided.

One key, and an excellent cue for videotape study, involves the position of the discus once the throw begins. I argue for a "spanking" position: the right hand and discus should be able to spank the right cheek of the buttocks throughout the throw until the actual delivery. Too often, the violent preliminary swings do not allow the athlete to keep the discus in this position and the discus leads the athlete.

They (the preliminary swings) serve three purposes: 1.) to loosen up waist and shoulder; 2.) to relax the thrower; and 3.) to prepare him mentally for the throw.

The area of mental training has expanded and contracted several times since the 1960's. Many bookstores offer subliminal tapes, books and often videotapes on improving sports performance. Do they work? Wolfgang Schmidt was asked: "Do you use any mental training techniques?" His answer: "No!"

The program we use is Bud Winter's "Relax and Win." To simplify: the athlete must understand that a relaxed performance is a better performance; one must train to become a relaxed performer; under the most intense conditions, the relaxed performer will perform better; and, generally, superlative performance comes when the athlete just lets it happen.

The arena is no place to try a new technique. Discus throwing should be an ingrained reaction by meet time. The preliminary swings should simply set up the flow. Silvester said that the best way to throw is to have "the upper body relaxed and the lower body should know where to go."

Some mental techniques do work. Keeping a journal, one's own personal history, helps, as does learning to relax. Learning to relax and learning to sleep on road trips, long waits, during distance events can aid the discus thrower. Some goal setting is valuable in helping the athlete get through short term failures.

An aspect of Winter's system that is often ignored is "and Win." Discus throwers need to focus on winning perhaps more than any other track and field event because of the nature of . . . "nature." Of the 360 possible degrees that the wind can approach the discus throw, 270 degrees are truly bad conditions. Water of any kind ruins performance, too. When Paul Northway threw his 214' 9 1/2" as a senior, Track and Field News wrote "in verry windy conditions." When he threw 170's during snowstorms with tail winds, no one added a comment on the conditions, nor feet to the performance. Winning is the focus of discus competition, not personal records. P.R.'s can occur simply because of conditions in the discus, unlike any other event or sport. "Relax and Win" continues to be the best advice for discus throwers.

"The Body Turn: When the thrower feels that he is ready to spin, he should bring the discus as far back as he can, without losing balance. This will bring the left heel high off the circle surface, and weight over the flexed right knee and leg (Figure 1). The body should be erect, but twisted at the waist."

What we see is Myron's "Discobolus." My Western Civilization professor remarked that this pose shows the dynamic about "what is about to happen." This is the most common photograph of discus throwers, too. This twist, according to Silvester, "feels good," to the artist, it "looks good." Certainly, this is the signature piece of discus throwing, unique among sports. No other athletic movement states its name more clearly.

At the John Powell Camps, he stresses the term "stretch" for this position. Keeping the chest tall with a tight lower back holds the upper and lower body together. This is the position learned in the Overhead Squat. Add a "twist," moving the discus into the spanking position, and the athlete is ready to begin the throw.

"Stretch-Twist" is part of the language we have been using the past few years to enable coach and athlete to communicate in person or on the telephone without confusion.

Stretch: Basic body position of holding the chest up with the lower back tight.

Twist: The discus is moved (or held) in the spanking position.

One: At the beginning of the throw, the position when the right foot comes off the ground.

Two: The position in the throw when the left foot comes off the ground from the back of the ring.

Three: The throwing position when right and left foot are grounded at the front of the circle.

The value of this system is found when coach and athlete (or athlete to athlete) want to talk about throwing. Saying "when you are moving through "two," keep your arm back" is much clearer than what is usually heard in discus conversations. Coaching simplifies when one can yell, "short two" and it means something.

He then begins his spin by first assuming a slight sitting position and then transferring his weight from the right foot to the ball of the left foot (Figure 2). NOTE: It is important that all the weight is transferred to the left foot and that the left heel does not touch the circle. All the driving is done from the ball and toes of the right foot. Remember, the body is turned with the legs, not the discus.

Anthony Washington, TAC Champ and Olympian, told me a simple approach to improving this whole movement. This "sit" at the beginning of the throw is the single key or "secret" to high level performance. Washington recommends a "Butt-sink" to the left after achieving the high point of the preliminary swing. Sink or sit to the left after the swing. To further slow the entry, Washington then focuses on splitting or spreading the knees apart to achieve the wide leg action.

A similar approach is recommended by Wolfgang Schmidt. "I try to keep my body weight very low as I go over my left leg, but this is difficult and requires great power in the legs." (This quote comes from Simon Nathan's review of a Schmidt workshop in the May 1990 issue of *The Thrower*.) Stefan Fernholm advised thinking about having a 100 pound discus in this position to allow the thrower to sink on the turning leg. Fernholm's swings were faster than this sink, therefore, it was easy to see the forces building during Stefan's throws.

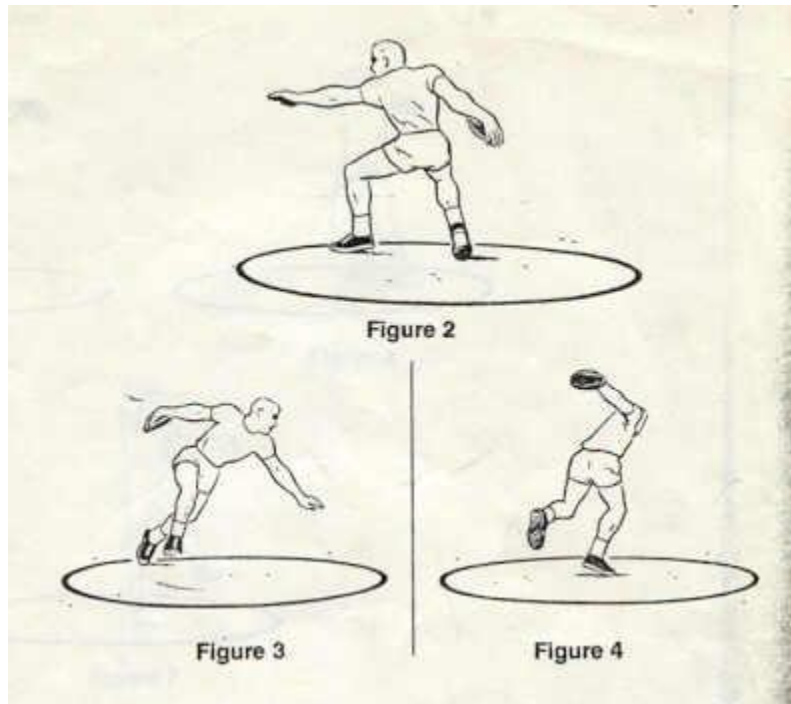
Silvester's career exploded when he discovered another way of achieving this position. Doug Robinson writes:

"Silvester . . . was so good that rivals were studying films and photos of his technique. What was he doing? Silvester added to the intrigue. He talked openly of a secret technique, which he owed to his old college coach, Maughan, but he wasn't saying what it was.

Only a year earlier Silvester had been abysmal. In the fall of 1967 . . . he threw a meager 178 feet in a pre-Olympic meet in Mexico City. In the off-season he spent hours studying film, trying to find the flaw in his technique, and experimenting regularly at the Utah State track. But nothing worked. One afternoon, Maughan, who was putting his runners through a track workout, studied Silvester while he threw. After watching for a time, he approached the ring.

"Jay, you're not getting over weight over you left leg," he told him. . . . In essence, Maughan was telling Silvester his mechanics were wrong. Frustrated and upset with his throwing, Silvester politely dismissed the advice, independent as always. And still the form wouldn't come. The next day Silvester returned to the track and struggled again. Then he recalled Maughan's advice. He tried it, and, like magic, it made a dramatic difference. "At 30 years old, to discover a significant technical key was very unlikely," he recalls, "But my entire body tingled when I let go of the discus Every cell in my body was cheering, 'That's how you do it.' " (Trials and Triumphs:

Mormons in the Olympic Games, Lee Benson and Doug Robinson, Deseret Book Company, 1992, Pp. 111-112)



Go left before you go across the ring.

A simple way to teach getting the weight on the left leg is to simply pick up the right foot; the bodyweight must be on the left leg if the right foot is off the ground. Although this is obvious, many careers have been ruined by overrotation at the start! Pick up the right foot early.

"The thrower then swings his slightly flexed right leg around in a wide sweeping motion, being sure to keep his right knee and foot out and away from the left leg (Figure 3).

This position, the high and wide right leg, became the signature position of L. Jay Silvester in his long career. The track argued its pros and cons for a decade. German and British authors held it in disdain, J.K. Doherty's first "Omnibook" underscored L. Jay's inconsistencies, and only recently have the British begun to see the advantages of the wide leg over their "swing-kick." (See, for example, Mike Winch's article "A New Look at Discus Throwing," in "The Throws." Winch is right about British discus throwing being in the doldrums.) American throwers, for the most part, saw the possibilities, ignored the bad press and dominated the world rankings.

Mac Wilkins explained this concept simply during his gold medal year of 1976, stating: ". . . in the turn, his leg swings wide and away from the body and then snaps in close, as with Silvester" ("How They Train," Track Technique, 1976, page 2075). During more recent clinics, Wilkins ignores this point entirely, focusing more on alignment of left foot, knee and arm at the back of

the ring. Either way, Wilkin's qualifying throw at the 1976 Olympics, with the wide, "wild" leg is still considered the best throw of all time by many, including Schmidt.

Wolfgang Schmidt learned this position through a drill taught him by his coach, his father. "My father taught me this when I was young. He put a mark on the ground and I had to move my foot over the mark."

The height of the foot at this position is also crucial. In truth, the best way to achieve the optimum is to simply focus on leading with the inside of the right thigh for a while. Even practicing this in a pool of water helps; it is impossible to lead with the inside of the thigh and not keep the legs wide. (This position was referred to by Maughan as the "bare back rider" stance.) Leading in this manner also makes it impossible to keep the right foot from being too low. The foot is rising up to the Ten o'clock position (Six o'clock is the direction of the throw), but it must be kept under control and not kicked nor jerked to the center of the ring. The inner thigh and inner calf should catch a lot of air and be dragging, not knifing, across the ring. This should not be a hurried or rushed movement. In this position, wider is faster.

The height of the right foot will vary from thrower to thrower. Passey's foot went up to 24" while Silvester's tended to be lower. A good drill to teach this position is for the coach to sit at the ten o'clock position with an open hand about two feet off the ground. Have the athlete do full throws after trying to "slap" the heel/instep against the palm of the coach's hand.

The right foot should be held in a toe "up and out" position. Do not make the right foot aerodynamic; the instep should "catch air" and hold the ankle in place.

We teach an early lift off of the right foot. One may either "skate" the right foot off the ring, or, as we teach, simply pick the foot up to one to two feet. This will transfer all weight to the left leg. I teach this simple concept: do want all your weight on your left leg? Pick up your right foot! Silvester describes this motion as "up" and the sweep of the right leg as "Up-around-down."

"He actually leads with the right foot, rather than the knee as in the run-over type of turn. As soon as the right foot has swung to about the 10 o'clock position, the thrower throws it down and inward forcefully to the center of the ring and snaps off the ball of the left foot (Figures 3 and 4).

DOWN AND IN: If the right foot is thrown out across the circle, the thrower will jump around rather than turning with a smooth skip or snap. Throwing the right foot down and in eliminates this jumping action which hampers the acceleration fo the first turn."

This concept ties in well with the problem of overextending (straightening) the left leg at the back of the ring. Some throwers are taught to leap across the ring or jump over the back half of the ring. Although this can be a helpful, short term solution to many problems, this must be

considered an error if the discus "races" ahead of the hip, a common by-product of "leaping." Although difficult to perceive, throwers often leave the left foot "pinned" to the back of the ring allowing all the rotational forces to be cut off and the discus gets ahead of the thrower.

The right foot cannot be grounded until the left foot has come off the ground. (It may be possible, but it is not a very athletic looking throw.) Simple gravity comes into play here: one cannot have both feet in the air very long. Left foot up-right foot down. Do not make the left foot push too important, focusing on the right side can help here.

Focus on the right foot, or Jim Noon's "unit pivot," also hold the athlete from leading with the left ear, shoulder or arm. This right foot action allows the extra time for the forces to build up over the left foot; Stefan Fernholm argued that the right foot should be noticeably outside the discus ring throughout the entire rotating phase of the left foot. (This would mean out of the back of the circle and the outside the left side of the rim-a true "bare back" riders position.)

The smooth skip or snap looks like a simple motion; when done correctly the athlete, according to University of Washington alumni John Price, looks like "a walk in the park." Bugar's World Cup winning throw seems so unstrained, so simple, yet the discus leaps from his hand. Bugar's left leg truly never straightens-not even in the release! (Look for yourself!)

Kevin McGill wrote about an observation he had noticed with Glenn Passey a few years ago. Passey's right foot landed without any "pre-turning in the air." Rotational shotputters have discovered that "grinding" right foot keeps the torque and always a pure "lifting" finish. I now teach throwers to land the right foot in the middle with the toes pointing to seven o'clock (six o'clock is the direction of the throw). If the athlete went left or around the left leg at the start, this landing gives a longer finish.

"This will snap him around and propel him across the ring. The left foot is picked up sharply and is brought past, and relatively close, to the right leg."

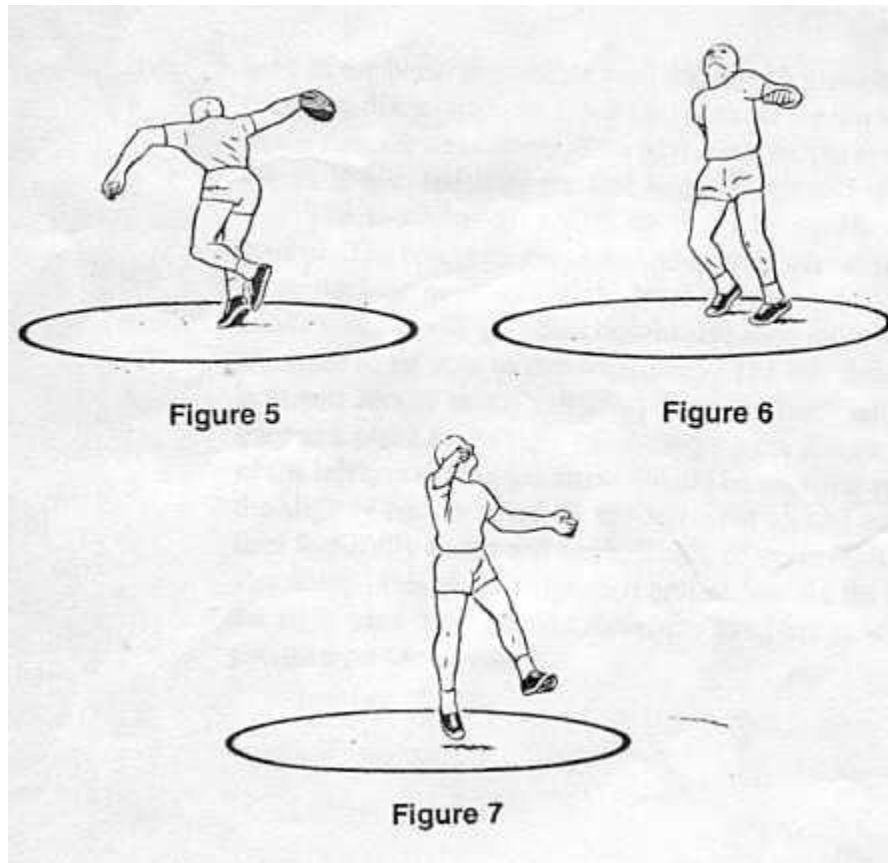
The left leg action at the back of the circle is often neglected. The former East German school recommended a "quick drive off the ankle joint without straightening the knee." Although there have been variations of the straight leg out of the back of the ring, often this leads to overrotation by the upper body and the athlete getting "stuck" in the middle of the ring. The thrower who jumps too high across the ring may find this to be caused by a reaction to a locked out left leg.

This left leg should come across the ring bent. Silvester explains this: "a bent leg moves faster than a straight leg-like in sprinting." Ralph Maughan's basic point about this is "you can't throw until the left leg is down." To deal with this, he emphasizes: "Move your feet fast."

Jim Noon, father of 76'2" high school putter, Brent, explains: "This can only be accomplished by both feet being off the ground simultaneously and employing a strong hip unit switch The hips should not rise appreciably." Noon's "hip unit switch" and Maughan's "snap him around" are basically the same idea. Be wary of leaping across the ring and leaving the right hip trailing the

discus. Silvester said: "you have to go around and around that left leg; the hip action is around the left leg-lead with the right foot."

In other words, if the right hip makes it to the center of the ring with the discus trailing, the left leg and foot will make it, too. The body is one piece, isn't it?



"It is snapped down 2 or 3 feet from the right foot (Figure 5).

With the boom of rotational shot putting, which seemed to peak in the late 1980's then reemerge as nearly the standard in the late 1990's, the question of throwing stance reappeared in discus throwing. Some coaches, notably Kevin McGill of Columbia and Ralph Maughan of Utah State, began looking at a narrower base for discus throwing. Mac Wilkins, however, in his clinics, pointed to a wider stance giving the thrower more time to pull on this discus.

In the rotational shot, the putter focuses on a nearly vertical thrust at this point. Godina, in the 1996 Olympic Trials, had a foot space of less than a foot, maybe only six inches, yet threw almost 70 feet. Years ago, at the Diablo Valley Relays, Brian Oldfield pulled Eric Seubert, Skyline College shot putter aside, and told him: "Jump shot it straight up through a hole in the clouds." The "Explosion Drill" advocated by Silvester, first turn is a little jump and second turn is a huge jump, or the "Double leg drive" of Maughan are similar to Oldfield's concept.

The problem with throwing stance is that it must be narrow enough to "catch" the discus early, yet wide enough to allow the hips and shoulders to pull the discus around. Another simple point relates to physical build: what may be "wide" to one is narrow to another. And before one becomes too analytical about stance, observe one thrower's stances over a few sessions. Rarely does a thrower show the same stance twice in a workout, much less in the heat of competition. In any case, the key word is "snapped;" do not let the left leg drift into position. One cannot throw until the left foot is down.

Do not let the right ankle "cave in" upon landing, work on this with multiple turns on smooth surfaces like basketball floors or supermarket tile floors. In the ring, multiple "no-reverse" throws can help the athlete learn to keep the balance point over the right foot. Having a quick left foot is key to a great throw, but not at the expense of fouling out of the front of the ring. Keep the weight over the right foot.

"Two turns: The thrower should think of the spin and throw as two turns-the second being much faster than the first. You want continued acceleration from where the right foot is thrown down and in where the discus is released."

The first time I met John Powell, he explained the key to throwing as this: "Big circle-little circle." The first turn is slow and wide, the second turn is fast and quick. This concept certainly would lead to continued acceleration.

How slow should the first turn be? It is better to err on the side of being too slow rather than too fast. Many high school throwers start faster than Olympic champions. Too fast is often followed by slowing or stopping leading to the discus catching up and passing the butt. Speed kills at the back of the ring.

"The throwing position: The thrower has now completed his turn and lands in the throwing position. Just as the left foot touches the surface of the circle, the thrower must start the throw with a terrific surge of power in the right leg. The left leg also lifts with all available power. This comes a fraction of a second after the right. What you have practically is a double leg drive, with the thrower generating as much power as he can (Figure 6)."

There are other schools of thought on this aspect of the throw. For years, the British advocated the "active right hip" in this position. Schmidt focuses on the right foot: "To get to the correct power position you must work the right foot harder, always turning the right foot as soon as it lands." Silvester disagrees stating: "No. The right foot becomes a pivot."

For years, it was taught that force could only be applied while the athlete is on the ground. What

throwers found is that a 2K disc does not counteract the forces of the athlete lifting with "as much power as he can." In addition, getting off the ground allows a higher angle of release.

Your author...a proud student of Coach Ralph Maughan: Dan John getting ready to toss 190 feet 6 inches for the AGGIES in 1979