

Starting Strength

Strength Training for Throwers

by
Bill Starr

It was not mere chance that Myron, the famous Greek sculptor, chose the discus thrower as the model for his remarkable bronze statue. The Greeks considered the discus thrower the greatest of athletes. And it was on a bronze discus, which Aristotle saw in the Temple of Hera, that the traditional laws governing the festival at Olympia were inscribed. Spinning through the 8' 2½" ring like a whirling dervish before propelling 4 pounds, 6 ounces of hardwood and steel was believed to be the epitome of athletic grace and power.

The shot put belongs in that same category. The athlete must apply tremendous force with speed and a great deal of coordination in order to be successful in the event. And talk about controlling power: how about the hammer throw, where the athlete has to deal with 16 pounds of metal that does not care to be airborne? Yet to me, the most aesthetic of all of the throwing events is the javelin, where even smaller athletes can compete on a par with behemoths. The sleek rhythm and dramatic fluidity of the javelin thrower exemplifies athleticism in its highest form.

The various throwing events are designed so that competitors have to blend a number of athletic attributes: speed, coordination, timing, control, explosiveness, and, of course strength. However, merely being brutally strong without the other attributes being fine-tuned is not enough to move to the top of the heap in any throwing event. If this were the case, the top powerlifters and those competing in the strongman contests would be able to step in the throwing ring and easily defeat their weaker opponents. This, of course, does not happen because throwing the discus, shot, hammer, or javelin require very involved physical skills that must be practiced diligently in order to learn them, and much more time to master them.

Another sport that matches the requirements for success of the throwing events is Olympic weightlifting. A champion Olympic lifter must have many of the same athletic attributes as throwers: foot speed, timing, coordination, explosiveness, as well as great strength. What a lifter is trying to do in the snatch and clean and jerk is throw the loaded barbell over his head. In many respects it's also a throwing event, and it's no accident that some of the very best throwers in our country were also excellent Olympic lifters. Gary Gubner was national champion in both sports, as well as Ken Paterra and Bruce Wilhelm, who performed the same feat.

But the greatest double champion in my book is Al Feuerbach. In a sport dominated by huge specimens, he set a world record in the shot with a 71'7" throw weighing only 245 pounds. That broke Randy Matson's mark, which most figured would never be contested. Matson is the only man to ever win the National Outdoor Track and Field title in the shot put and the Senior National Olympic Championship in the same year. Even more amazing is the fact that he did this on the same day. After

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winning the shot title at San Jose in the afternoon, he packed his bag, drove to San Francisco and won the Olympic title that night, snatching 341 $\frac{3}{4}$ and clean and jerking 418 $\frac{3}{4}$ in the 242-lb division. (I always believed he would have made a much better Conan than Arnold. Arnold certainly was more muscular, but he wasn't an athlete anywhere in the class with Feuerbach, who possessed amazing strength, balance, coordination, and grace.)

Then there is Ken Patera, number one on my list of strongest Americans. Even over Paul Anderson? By a long shot. Forget the exhibition lifts where weights aren't weighed and there are no judges. Compare what Anderson did on the lifting platform during his competitive career with Patera. No contest. Ken will forever hold the record for the overhead press with 507 since that lift is no longer contested. I was working with him at the '70 Worlds in Columbus. He push pressed 525 in a training session, and I truly believe he would have been the first man to clean and jerk 500 pounds had he not snapped his ankle doing a clean for the press.

Before he began devoting all his training to the Olympic lifts, he had been one of the top shot putters in the country. The same goes for Wilhelm, and for a while I trained with both of them at the Downtown Y in Los Angeles. At one session, they got in a hot verbal exchange about who was the better shot putter. To settle the matter, they entered the SunKist Open being held the following weekend. Ken beat Bruce, much to the delight of the other lifters, because we would never have heard the end of it if Bruce had come out on top. They both won medals, however, which is really my point. Neither had practiced throwing the shot for a very long time. What they did was utilize their athleticism and strength to excel in the event.

It's not difficult to see where I'm heading with this: strength was the basis for their success in throwing the shot. And not just brute strength, but controlled strength utilized with well conditioned athletic attributes. The legendary hammer thrower, Harold Connolly, was another athlete who built his program around strength. Born with a crippled left arm, he overcame the handicap to set seven world records and won the gold medal at the Melbourne Olympics in 1956. I trained with Harold at the Muscle Beach Gym in Santa Monica in the early seventies when he was 42 years old. He was still handling some big numbers in the gym even though he wasn't training nearly as hard as in his competitive years. I spotted him when he squatted 600 for five reps, and watched him do clean grip high pulls with 400.

Of course, any article about exceptional throwers has to include the remarkable Al Oerter. While a sophomore at the University of Kansas, he won his first gold medal in the discus in 1956 with a throw of 184' 10 $\frac{1}{2}$ " an Olympic record, thereby defeating the odds-on favorite and world record holder Fortune Gordien. Then he went on to capture three more golds in '60, '64, and '68. At the '68 Games in Mexico City, he overcame torn cartilage in his rib cage and set another Olympic record of 200' 1 $\frac{1}{2}$ ".

I met him several times, but never had the opportunity to train with him. Yet I did read articles about him and know for a fact that he worked hard in the weight room and gave strength training a great deal of the credit for his success in the sport.

Throwers were some of the very first competitive athletes, other than Olympic weightlifters, to make strength a prime consideration in their overall training. In the fifties and early sixties when sports coaches were constantly telling their athletes to stay away from any form of weight training, throwers were doing just the opposite. Parry O'Brien, Bill Neider, Dallas Long, and Randy Matson were extremely strong, and they ruled the sport. The only rivals the American throwers had were fellow countrymen. O'Brien went undefeated for nine consecutive years, a truly amazing feat in any

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sport. Randy Matson, the 6'7" thrower from Texas A&M, set a world record in 1967 with a 71' 5 ½" effort, which would still be worth a medal of some color on the international scene today. He also threw the discus 213' and attributed his prowess to his strength training.

Naturally, I am aware that in order to achieve a high level of proficiency in any of the throwing events, the athletes have to spend a great deal of time practicing the necessary technique in the various sports. Yet this is true for any sport, and the fact remains that strength is still the underlying factor when it comes to excelling in any physical activity.

The best example of this would be Terry Albritton. He trained with me for three years at the University of Hawaii. After he had been doing the basic program for a year, I urged him to try the Olympic lifts because I believe they're the very best exercises for any thrower to do along with heavy squats, good mornings, inclines, etc. He tried cleaning and snatching but just didn't have the balls to get under the heavy poundages, so I gave up on that idea. What he did like to do was power clean and he was also fairly strong on the power snatch. He was the strongest athlete on the power clean in the gym, and the UH Gym in the early seventies was a rather unique place because three of the top six heavyweight powerlifters in the world trained there: Gus Rethwich, Wayne Bovier, and John Phillip. So Terry was quite strong in one high-skill exercise.

Well, you might be thinking, he must have had exceptional technique because he was able to break Al Feuerbach's world record in 1976 with a throw of 77'8 ½". Makes sense, but it wasn't true. The same year that he broke the record, he attended a clinic at the University of Illinois, along with the top dozen shot putters in the country. Those conducting the clinic tested the athletes on a long list of attributes and analyzed every facet of their technique. In terms of form, Terry came in dead last. So how could someone who lacked the necessary skills to throw a shot properly end up setting a world record? The only answer is strength.

The first step to take in any strength program is to establish a solid foundation. This is obviously true for a beginner, but equally as necessary for the veteran who is either starting back on a strength routine or who might want to elevate his emphasis on strength. Only after a firm strength base is achieved will the athlete be able to move on to the advanced and more involved exercises. I start all my athletes with just three primary exercises. Three movements that will hit the three major muscle groups: shoulder girdle, back, and hips/legs. For most I use the Big Three – bench press, back squat and power clean – but for throwers I substitute the incline bench press for the flat bench. The reason is simple: the motion on the incline more closely resembles the motion made when throwing. These three work nicely to hit the core groups and build a solid base. From there, other exercises can be added which will serve to enhance and develop a host of athletic attributes that can be utilized directly in the throwing events.

The suggested exercises are perfect for throwers since they hit those specific muscle groups that enable them to propel weighted objects greater distances. The full squat – and it must be full – strengthens the hips and legs along with the back. The incline presses build functional strength in the high chest, deltoids, triceps, and forearms, providing that final thrust of power. The power clean is extremely valuable to any athlete because once form is perfected and a decent amount of weight is being used, many attributes become enhanced: foot speed, coordination, balance, timing, and focus. When an athlete becomes a competent power cleaner, he is able to utilize those improved skills in all other athletic endeavors. That was the exercise that really helped Terry Albritton.

The main points to keep in mind on the back squat are to go very low, stay extremely tight

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throughout the movement, and not rebound off the bottom. How low? As low as you can go without having your hips curl back, under your body. Your lower back needs to stay flat from start to finish. Start out with five sets of five reps and use the heavy/light/medium concept. Basically, what this means is that you always follow a heavy session with a less demanding one and the third workout of the week will be somewhere in between the heavy and light days.

The incline bench press is an exercise that all throwers used when I was competing in Olympic lifting, and they could move some weight. The steeper the incline the better, since that high angle will be closer to the actual act of throwing. However, I have my athletes use a lower angle every so often since I think slight changes are beneficial. Those who have only done flat benches often have difficulty getting the technique right on the incline. The two exercises are similar, but not at all alike when it comes to performance. In the flat bench, the bar touches the chest, right about where the breastbone ends. But try this on the incline and the bar will most likely slip off your chest. When inclining, the bar must be lowered to that point where your collarbones meet your breastbone, high up on your chest. This feels awkward to most and some do not have the flexibility to set the bar properly, but that is where it must be. If you need to stretch out your shoulders to improve your range of motion in your arms and shoulders, do so. Otherwise, you're never going to be able to handle much weight in the incline.

One reason I really like the incline press is that it's a pure exercise. By that I mean that it's almost impossible to cheat on it. Although I have witnessed a few inventive individuals somehow manage to bridge their hips high off the incline bench to coax the weight through a sticking point, they were exceptions. Should you feel the tendency to try and bridge, don't – it's counterproductive. Rebounding the bar off the chest, which is common in bench pressing, just doesn't work on the incline. The wayward bar will invariably run forward and when it does, there's no way to bring it back to the proper line and complete the lift.

I always insist that the athletes use a spotter when inclining. It's risky doing them alone, because in most cases the uprights are slightly behind the lifter and he is unable to see them clearly. More than one lifter has gotten a rush when he missed one or both uprights while trying to replace the bar in the rack. Also, when the weights get heavy, it's very difficult to remove the bar from the racks. Better to have someone assist you and stand by to help you replace the bar onto the supports. Make sure you're on the same page as your spotter. Give him a distinct signal as to when to assist you in taking the bar off the rack and make absolutely certain he has control of the bar at the finish before you let go of it.

The basic rule of gripping a weight to press it in any manner is that your forearms should be vertical. And never use a false grip when inclining. Lock your thumbs securely around the bar. They will help you control the moving bar better and even allow you to pull it back in line should it try to run forward, which it most surely will eventually. Experiment with a few different grips to find one that fits your shoulder width and allows you to set the bar high on your chest.

Instead of merely sitting on an incline bench, squeeze down tightly into it and push your feet down into the floor. Make sure every muscle in your body is very tight, then grip the bar and signal to your spotter to help you remove the bar from the uprights. Take a deep breath and pause just a brief moment to be certain that it's fixed properly over your head. Now lower it slowly, fully under control until it touches your high chest at the point I indicated. Pause a heartbeat before pressing the bar upward. This will help you to avoid the temptation of trying to rebound the bar, and makes you utilize those groups responsible for the start to a much greater extent. If you learn to pause from the

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very beginning, you'll be a big step ahead. Until you feel comfortable doing inclines, don't rush the start. Drive the bar straight upward smoothly. The key to moving heavy poundages in this exercise is learning how to coordinate the middle with the start. The two need to flow together in one continuous motion. Think drive, then middle, and the finish will take care of itself. Lock the bar and take another breath. Do all your breathing at the top. If you exhale or inhale during the execution of the exercise you lose power, because when you breathe your diaphragm has to relax and this diminishes your strength base. It only takes a few seconds to do an incline press so there's really no fear of running out of air or experiencing the valsalva maneuver.

Another big difference between inclining and pressing on a flat bench is that your elbows must stay turned out during the inclines. On the flat bench they tuck in close to the body, but this will result in the bar running out front or too far back when done on the incline. Also, the line of flight on a flat bench is not straight up; rather, it hooks a bit backward at the finish. The line on the incline, however, is perfectly straight up and down. Try to drive the bar close to your face, almost hitting your chin. Since you're firmly planted on the bench, you can concentrate on perfecting your form on this exercise and most do so rather quickly.

While learning the technique, do five sets of five. Later on, you will change the sets and reps each time you incline, but the five times five works best in the beginning. And be sure to adhere to the heavy/light/medium concept.

The power clean is my exercise of choice for every aspiring athlete, and doubly so for throwers. Once you have learned the proper form for this lift, it's much easier to pick up the technique for a host of other useful pulling movements, such as power snatches, snatch and clean high-pulls, full cleans, full snatches, shrugs, and deadlifts. It's an excellent lift for beginners since it brings into play so many of the muscles and attachments that are involved in the act of throwing: all the groups which make up the hips and legs, the three segments of the back, the shoulder girdle, and those in the arms.

While the power clean is regarded as a high-skill exercise, it is not difficult to learn how to do it properly. Basically, you're trying to lift a weight from the floor and place it on your shoulders. Many coaches attempt to make the movement complicated and end up doing just that. When I see an athlete struggling with his form, usually by breaking down the different facets of the lift, I have him stop and start over. I tell him to assume a good starting position and when he does, I say, "Now bring it up to your shoulders." He does just that without any problem.

To find your ideal foot placement for the power clean, step up to the bar so that your shins are touching it, and then shut your eyes and pretend that you're going to do a standing broad jump. That's your strongest thrusting position. The best grip for most is to extend the thumbs so that they barely touch the smooth center on an Olympic bar. This will vary somewhat if the athlete has extra wide shoulders or very narrow ones. Flatten your back and set your hips. They can be set rather high, even as much as parallel to the floor, if you're able to hold that position as the bar comes off the floor. If your hips climb up faster than the bar, then you need to set them lower. Keep in mind that on any pulling movement the bar has to move upward at the exact same rate as your hips.

Tighten every muscle in your body from your feet to your neck. Now, instead of thinking about pulling the bar off the floor, imagine that you're pushing your feet down through the floor. This will cause the bar to rise upward in a smooth fashion. When you attempt to rush the bar off the floor, it causes your back to round and your arms to bend. You don't want this. The start is critical to the rest of the movement, so it has to be done perfectly.

Once the bar reaches mid-thigh, drive your hips forward and at the same time contract your

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traps. The arms must remain straight until you bring your traps into the mix. The sequence is traps then arms, not vice versa. When you do activate your arms, they must be driven up and out, not up and back. Climb up on your toes to give an extra punch to the finish, then rack the weight across your shoulders. Do not let the bar bang against your collarbones. This is painful and if done repeatedly can damage those bones. Elevate your entire shoulder girdle and your frontal deltoids will provide a cushion of muscle on which to fix the bar.

One of the most common mistakes beginners make is to lean back when they rack the weight. This you don't want to do since it stresses the lower back. A slight forward lean is ok, but ideally you should rack the bar with a straight torso.

Lower the bar in two stages – to your waist, then on to the floor. Never let it crash to the floor. This will invariably cause your lower or middle back to round, and a rounded back can lead to an injury whether it happens while lifting a weight or lowering it.

Reset and check your foot positioning, grip, hip placement, and that your frontal deltoids are slightly in front of the bar, then do the next rep. Again, five sets of five are best when learning how to do this lift. And be sure to incorporate the heavy/light/medium concept.

In that regard, here's a simple way to find the numbers for any exercise on those three days. Rather than bothering with percentages, do this. The amount of weight used on the third set on your heavy day will be the top-end weight for your light day, and what you used on your fourth set will be the final poundage on your medium day. An example: on his heavy day, Jim did the following sequence on his power cleans: 135, 175, 195, 215, and 225 for five reps. On his light day, his jumps would look like this: 135, 155, 175, 195, and 195. His medium day would be: 135, 155, 175, 195 and 215. As the numbers on the heavy day improve, so will those on the other two days. Eventually, the heavy, light, and medium days will be determined by the exercises in that day's routine, but this works nicely in the beginning stage.

After a few weeks of fully concentrating on mastering the form on the back squat, incline, and power cleans, you can add in a few auxiliary exercises. One per day is enough. As you build a stronger foundation, more work for the smaller groups can be added into the program, but initially less is better than more. The ones I use for throwers are standing dumbbell presses, straight-arm pullovers, and hammer curls, two sets of twenty after the primary work is completed. Since the throwing events involve the midsection to a very high degree, it's beneficial to do something for those groups from the onset of the strength program. Crunches or sits ups for the upper abs and leg raises for the lower. Back hyperextensions or reverse hyperextensions work well for the lumbar. One movement for the lower back and abs as warm-ups and another for each area at the end of the session is a good way to get this useful work in. Then one more for those groups which are responsible for turning the trunk from side to side, the transverse abdominis. All of the throwing events include a violent twisting of the trunk, and strengthening these small but extremely useful muscles will greatly enhance the throwing motion.

They're rather easy to hit. Two simple exercises will get the job done. Hold a light bar or broomstick behind your head and commence to twist from side to side. High reps are the order of the day. No less than 200, and twice that amount is even better. Or hold an Olympic bar at arm's length and twist from side to side until you feel those muscles doing the work get tired. High reps again, and either or both of these exercises can be done outside the weight room, at night while watching Leno or Seinfeld.

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If you're interested in become a thrower, this is a good program to use to build a firm foundation of strength. While you're adding functional strength, you should be spending as much time as possible practicing the throws, whatever specialty you choose. Continue to hone your technique on your throwing and on the various strength exercises and you will become more and more proficient in your sport. In future segments, I will inform you about how to move to the intermediate and advanced levels of strength training as it relates to the shot, discus, hammer, and javelin. In the meantime, train hard and practice, practice, practice.

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