

Strength Training for the Hammer Throw

Explosive Power, Functional Strength, Event Flexibility

By Todd “Ironman” Taylor

Introduction

The goal of this article is to share some concepts and ideas about acquiring and maintaining strength for the hammer throw event. My present day cyberspace name of “Ironman” is actually an old college fraternity house nickname from back when athletes rarely saw the inside of a weight room. At best, one might be using some old Universal gym machines and doing free weight squats “back in the day”. Strength sport athletes did little lifting and only then in the off-season. I got the name because I loved to climb to the little weight room on the 3rd floor of a big old brick field house built in the 1800’s and throw the iron around. I owe a great deal of my success in athletics over the years to weightlifting in a classic old gym starting as a 5-foot 102 lb. 13 yr. old who wanted to play high school football. By my senior year, having gained 20 lb. a year, I was introduced to the Olympic lifts.

I have always loved the lifting part of training or conditioning. However, I can also readily admit that strength training and especially the free weight lifting part of it is only one piece of learning to become a proficient hammer thrower, i.e., one who can throw far using good technique. While there are some good resistance training exercises that benefit all of the throws, I will focus specifically on what exercises and lifts are most beneficial for the hammer event. The multi-event thrower will then have to look at things that might be incorporated into or emphasized in his/her current program. A limiting factor will be access to and quality of facilities and equipment, your training workload capacity, and time constraints. I will also address incorporation of strength training into periodized training programs and what the priorities should be during the major phases of training.

Strength Attributes of the Hammer Throw

In a past article on hammer throw technique in *Long & Strong Thrower’s Journal*, I addressed the strength attributes involved in throwing the hammer. Certainly, general overall strength is beneficial when you are trying to put a heavy object and your body in synchronous rotation. Lower body (legs) and core stability (lower back, abs, obliques, hip flexors), often referred to in strength sports as the body’s “power zone”, is more important than upper body strength in the modern throwing technique. Strength in the hammer is needed for counterbalancing the outward pulling force generated by the hammer and to get into and hold the key positions during the throw. So, one would also want to be strong in the shoulder girdle and back as well as having strong stabilizer muscles for all the continuous tension (against the ball) and balancing involved in a hammer throw. A great finish in a hammer throw releases the energy built up in the turns through an explosive upward lifting of the legs, hips, back, and arms in a smooth, controlled, forceful movement. Finally, good flexibility and range of motion throughout the throw is very important—one of those paradoxes of hammer throwing...flexibly strong.

Thus, we have just said that in throwing the hammer, the thrower must have “strength” that addresses base or overall strength, core stability, explosive power, flexibility and range of motion used in the event. For purposes of this article, I will not address core stability, flexibility, and agility exercises since the available literature and Internet resources are pretty good for these areas.

Olympic-Style Lifting for Power Development

The foundational lifts/exercises for the hammer throw involve the Olympic lifts and their variants (power and hang cleans and snatches and pulls) for one reason—these are explosive multi-joint movements engaging muscles, tendons, and connective tissue that generate high power output. Olympic lifting movements help train and condition the body for developing maximum torso kinetic energy through a full-range of coordinated and continuous movements in the hammer throw. Throwing is about “slow to fast” movements and powerful acceleration that pushes the limits of the “force-velocity curve”, i.e., huge acceleration in a very short time frame. “Power” is expressed as $\text{Force} \times \text{Distance} \div \text{Time}$; thus, explosive power is often referred to as “speed-strength” because your choices to become more powerful are to be quicker or have more “limit” strength. Velocity (speed) is the *y-axis* and Force (strength) is the *x-axis* for the force-velocity curve. The training effects of Olympic lifts and their variants increase both speed/quickness and strength, thereby “pushing” the force velocity curve and the ability to generate maximum power on demand.

Yeah, I know I am preaching to the choir here, but those who would take the straight bodybuilding or powerlifting path to building strength in the hammer need to know that the greatest transfer to the athletic movements in the hammer (and all of the throwing events) comes from the Olympic lifts and their variants. Here is a practical illustration of the force-velocity curve (power output) at work. Patrick O’Shea in *Quantum Strength & Power Training* compared the actual power in wattage (distance moved and amount of time to lift the weight divided by body weight) for two former world record holders in the deadlift (Doyle Kenady) and clean movement of a clean & jerk (Alex Pisarenko). Kenady took 2 seconds to pull 405 kg .40m generating 5.67 watts for his 140 kg bodyweight. Weighing about 40 lb. less, Pisarenko pulled his 265 kg clean to a height of .90m generating 21.64 watts—4 times the amount of power!

“Why is that?”, you ask. Good question and some important concepts to grasp so you can see the correlation between what some call the “quick” lifts and throwing in general—and definitely the hammer. First, in the clean and the snatch, if done correctly, you initiate the movement of the bar by generating a downward force or push into the ground with your feet. Second, the really powerful Olympic-style lifters are able to pull for a longer distance & time before they get under the bar. The best throwers can generate force for the longest path before release. Third, the great amount of force generated with a heavy weight is what creates the greatest stimulation and development of the fast-twitch fibers—the type of muscle you need for explosive throwing movements. Finally, that explosive throwing movement occurs because of not only the power generated but through a “summation of forces”; in both the Olympic lift

and the throw, the bar/implement is increasingly accelerated with each successive movement.

Developing Strength along the Pathways of Motion

Now having set the stage for throwing all this iron around in the gym, we need to be as balanced in our strength training approach as we are in the ring with the hammer. The foundational pulling movements, however, are essentially along one plane of motion (vertical) while the actual throwing motions in track & field are multi-directional and rotational as well in the hammer. So, it is equally, if not more important, for the thrower to do twisting and turning movements with resistance (tubing, bars, med ball, plates, dumbbells, pud, etc.) along the pathways of motion actually used in the hammer. For the multi-event athlete, then, these exercises will be the greatest addition to their core-lifting program if he/she wants to add something event-specific for the hammer. This is not unlike the core training of javelin throwers who do more med ball, knockenball, tubing, and assistance lifts than other throwers. For the record, the 2003 NCAA D-II men's hammer champion and 3rd, 5th, & 9th place women's finishers were from Western Oregon University where the women do only this type of resistance training and it is the mainstay of the men's.

A Warning to Muscle Heads

I also want to emphasize a point I made in my earlier article. One can certainly achieve a measure of success "muscling" the hammer and weight (its indoor version), however, this can create bad habits that interfere with proper technique to throw far and maximize your potential. Generally, strength gains should parallel improvements in technique and training plans should favor drills, agility, explosiveness and throwing during the competitive season. Create a goal to develop more base strength or power or address specific weaknesses in muscles or the kinetic chain in the off-season. But all things being equal, technique rules in the hammer. Short-term gains in distance from strength gains may eventually be comprised in poor technique, usually expressed as being a "strength thrower".

Melissa Price's 2003 USATF National Championship in the hammer (70.34m) was labeled by her coach, Mark Colligan, "That's a 275 lb. clean!" That's real world validation of the correlation between Olympic-style lifting and power output. But one also needs to note that this is an elite thrower with very good technique who specifically set out to integrate increased strength and power levels into her overall periodized training plan.

Unfortunately, some throwers also have to be reminded that throwing hammers for a training session is a form of strength training in itself that is the most applicable strength training that can be done. Variable weight training with heavier hammers in the pre-season can help develop specific strength for the hammer throw. When planning weight room workouts, please remember not to over train yourself by forgetting that throwing sessions are strength training as well.

The training session imposes increased resistance or progressive stress overload on the body and the body responds to the stress with the SAID principle—specific adaptation to imposed demands. Huge workload volumes and a bazillion sets do not build strength, rather they fry your central nervous system and get you over-trained. The growth in muscles and your strength gains come while the body is recovering from the workout. If you are wiped out from a ton of lifting, drills, and throwing, then you are pedaling backward not making gains.

Something to think about right up front, then, is what components of your training should be put on the back burner for awhile if you are not feeling fresh and strong for either ongoing training or competition? If you are a thrower, you should always throw—less volume or less intensity and/or more drills and fewer throws. The exercises that develop functional strength along the pathways of motion (tubing, bars, med ball, plates, dumbbells, pud, etc.) have the closest correlation to the actual throwing motion. So, the things to drop are those that the Ironman and many others just hate to do—back off the heavy lifting in the weight room. Backing off can mean training sessions/days, volume (sets), intensity (weight), or speed (quick lifts with less weight).

So, regardless of your “training age”, listen to your body to keep from getting over-trained or signs you might need to back off—the “haze” or “fog” that comes over you, zapped energy level, waning enthusiasm, etc. Be dedicated; not dumb! Be committed; not comatose!!

Core Lifts—Strength & Power Development

Keeping in mind that most throwers are multi-event throwers, I will prioritize the lifts for those that want to emphasize the hammer in their overall training. Keep in mind, I have never been or coached a 65m or above thrower, but I will give you my rationale for prioritization.

1. Power Snatch
2. Front Squats
3. Rack Romanian DeadLifts
4. High Pulls/Power Cleans
5. Bent Barbell Rows

Power Snatch The power snatch is the one lift that most closely mimics the power generated in the hammer throw at time of release. As the hammer comes down between your legs you are lifting straight up with the hips, legs, back, chest and arms—pretty much a snatch!! The one difference is that your hands are closer together holding the handle, thus, I like to use a grip width on the Olympic bar that is just outside my knees. Really push into floor at the start of the snatch and have your weight back on your heels. In the power snatch you get under the bar but with a much longer pull upward than into the squat “catch” position. I like to think in terms of throwing the bar up and getting under it to keep myself from throwing behind my head and off balance. One more thing....I like the athleticism of the split-leg snatch. Think about it...in the hammer you step to the ball with the right leg/foot to “catch” the hammer as the ball is

approaching it's high point in the orbit and most powerful outward pull on you. So, I split-leg snatch with the right foot out front.

Relax the Traps! Speed kills in the hammer, but radius rules!!! At the same speed, 2-3 inches of additional radius can add significant distance to the throw, if you understand the physics of centrifugal force at work in the hammer throw. Tight trapezius muscles and shoulder girdle during the throw will greatly shorten the radius. Thus, in the pulling motion of the snatch (and clean too), I let the traps relax and concentrate on the pulling motion being a continuation (or summation) of the force generated getting the weight off the floor. I also do the whole movement under control. So, *when you are doing your Olympic and other lifts you should mimic various aspects of the hammer throw.*

Front Squats If you are doing Olympic lifts, you are working the hips, thighs, and hamstrings. Squats just give you more emphasis in those areas. Some throwers just mix in front with back squats for variety or think that they work different muscle groups. However, the hammer thrower should be keeping his/her hips behind the heels and not piking (bending at the waist). The front squat keeps you in a more upright position like throwing a hammer than does the back squat. If you stop and think about it, hammer throw release is about a three-quarter squat movement. But during the hammer throw you are reacting to the increasingly outward pulling force of the ball as you counter the hammer. Thus, I think it's a good idea to do some heavier squats in the one-half to three-quarter position, but also do some full range of motion front squats to strengthen the hips and stabilizer muscles for the varying angles you get into countering the ball through 3 or 4 turns. Again, thinking about mimicking the hammer throw, with the weight racked in front, you have to think about resisting falling forward just like resisting the outward pull of the hammer by countering with the hips behind the heels.

Rack Romanian DeadLifts Okay...what the heck are these? Throwers need to make sure they don't have a muscle imbalance between the quadriceps and hamstrings. Romanian deadlifts, done correctly provide great hamstring and lower back development. Generally these are performed by moving from a "hang" position with an Olympic bar to just below the knees by sitting your butt/hips behind your heels with your head and chin up, i.e., an erect posture; then, you stand up with the weight. My variation on this is to use a heavier weight in the power rack with the weight starting point just above the knees. Take a comfortable clean grip just outside your knees. Keeping the weight way back on the heels, stand up with the bar without shrugging the shoulders and let the bar essentially "roll-up" your thighs to your waist. There is a pulling motion up the thighs but is primarily a hip/leg action. A barbell plate under the heels or Olympic lifting shoes will enable you sit back better.

High Pulls/Power Cleans The two exercises are coupled together because you can decide what works best for you. The main benefit is the heavy pulling movement, so I prefer the Tibor Gecesk method of not "racking" the pull onto the shoulders (the clean) until the last rep of the set or not even racking it. I am an old guy without great wrist flexibility, so I still find that I get the benefit of handling heavier weight than a snatch. The power clean "catch" of the weight is more of a three-quarter squat and erect like

throwing the hammer than the true “rock bottom” deep squat catch of an Olympic lifter. Nothing wrong with the Olympic clean; it’s just not necessary.

Bent Barbell Rows This is one of my favorite exercises along with “close grip lat pulldown’s” on a machine. Technically, these rows would be called an “assistance lift” like the pulldown’s on a machine, but I count “core” lifts as the one’s where I am focusing on strength and power with only a few reps (5 or less). The true bent barbell row position is almost like a “good morning” bent with your back parallel to the floor with bent knees, except you row/pull a bar toward you. I like to take the lower back out of this and work on the pulling motion while putting my butt/hips behind the heels. The only difference between this bent barbell row I am describing and the Rack Romanian DeadLift above is that the bar is pulled into the waist from that bent position (you don’t stand up). Or, another way to describe it is a barbell row from the Romanian deadlift position.

Core Lift Progressions—Positions and Sets/Reps

I will not take the time to discuss periodized training and lifting programs but generally you will move from general conditioning, general preparation, specific preparation, and competition (in-season) program. As one progresses toward the season, a starting point with the core lifts for “strength” cycles (off-season) would be 5 sets of 5 reps with the Olympic variant lifts being performed from the floor. A “strength and power” cycle(s) moves the reps down to the 3-rep range for 2-3 sets. Generating peak power production occurs in the 1-2 rep sets with 3 to 5 minutes rest in between sets so your energy stores are fully replenished. Olympic lifters will tend to work a lot at this latter level, but throwers only “work up” to heavy volume and intensity for a cycle or two at most and during the season can maintain strength levels at 85% 1RM for 3-5 reps in 2-3 sets.

For variety and to work explosiveness, I like to see a progression over the entire pre-season and competitive season in the snatch, pull/clean done from the floor, boxes (below & just above knees), and hang positions. During the season, a good option for keeping up strength levels and being explosive is alternating what some would call “strength” and “speed” weeks. In the strength week, do your core lifts in that strength maintenance range of 2-3 progressive overload sets of 3-5 reps (85% 1RM). During the speed week, take a 50-60% 1RM weight and do those core lifts in “Bulgarian sets”. Angel Spassov got these from the Bulgarian Olympic lifters who would do as many reps as they could within 20-second sets. For the snatches, cleans, pulls—do them from the hang position. I really like the explosiveness in the Bulgarian’s with a “hip” snatch—starting with the bar at hips. In the early part of the season, most throwers lift and throw “through the meets” and then peak for one or two special meets (conference, region, etc.). The Bulgarian sets in a speed week are great for the “bigger meet” competitions during the season, i.e., you will keep some strength up but still be fresh for the meet.

More on Speed and Explosiveness

Because of the influence of football coaches and strength training in high schools and health clubs, American throwers associate “strength” with a big bench press and huge

back squat. But many roads lead to Rome as the saying goes. Squat and deadlift movements may be fine for foundational or base strength, but if you think about the throwing events-especially the hammer-your feet are neither staying in one place and exerting force vertically in a single plane nor do they have your bodyweight equally distributed throughout the throw. As you move from double to single support, catch the hammer at the top of the orbit, and move again through double support, you are doing a lot of single leg and hip movements. Getting into the season, then, more explosive movements that use each leg would include: jump squats, step-ups, and one-leg presses.

Jump Squats Perhaps one of the most enduring impressions of hammer throw WR holder Yuri Sedykh in his training is the file footage of him doing jump squats with dumbbells. Done correctly this is more of a plyometric-type exercise where minimal time is spent gathering yourself upon contact with the ground; the emphasis is on the upward explosiveness. Using lifting straps, you can use some serious weight with just the dumbbells. Another way is with an Olympic barbell from a one-half or three-quarter back squat position. Regardless of free weight choice, correct posture with the chest and head up are important to mimic the position of the hammer throw.

Step-Ups The Russians are also famous among powerlifting and weightlifting devotees for the “Russian Squat Routine” which is designed to be inserted three times a week into a six-week cycle of periodized training to improve squat strength (+5% 1RM). Yet, Angel Spassov noted that former Russian great hammer thrower and coach, Anatoly Bondarchuk, concluded through research that high step-ups were much more beneficial than the heavy back squat. First, at the bottom of the squat, a load twice what is being lifted is placed on the lower back (as in greater injury potential); two, you never assume the back squat position in throwing or sports; and, third, the step-up generates more “power” in the thigh and hip.

Similar to the jump squat, you can do these with a barbell on the back or holding dumbbells. Ideally, the hammer thrower would want to keep a 90-degree angle of the leg (thigh parallel to floor) at step-up to the platform or box. You simply step up to the platform with one leg while pushing off with the toe of the other foot; as you step up, feel the thigh and hip engaging. For example, step up with the right, then the left and step back down with the left, followed by the right. Keep your good hammer posture with the head and shoulders over the hips and get a nice rhythm going. I visualize myself stepping to the ball with the upward moving leg. One can do all the reps on one leg and switch or simply alternate legs during the set. The Bulgarian weightlifting team replaced the squat as a core lift with heavy step-ups progressing from 5-6 reps to 3-rep progressive overload sets. Not only did they recognize greater muscle fiber recruitment and muscularity, the resulting world records led them to replace the squat in their training with the heavy step-up.

One-Leg Press Think about the catch of the hammer: the left leg is collapsing with the hips behind the heel like a piston absorbing the outward pull of the ball, as the right leg touches down and applies centripetal force into the ground to begin acceleration of the

ball from the top of the orbit down to through the back of the circle into the next turn. Boy what a mouthful....but the legs are working both together and independently in that transition from double to single and back to double support. The single or one-leg press can help develop that strength as well as the small stabilizer muscles involved in balancing. While holding onto a power rack, you can do one-leg squats at bodyweight or with a sandbag on the shoulders. Machine one-leg presses are easier to perform. Concentrate on the pushing motion in an explosive fashion; if you can't do it explosively then reduce the weight. Stay in the 6-8 rep range. I like the one-leg press with the machine because you should be pushing into the ground with the right forefoot (and setting your hips behind the heels) when you catch the hammer coming out of single support.

The Rationale Strength training guru, Ken Sprague, (owner of the original Venice Beach, CA Gold's Gym), weighed in on this subject in a recent post on *The Ring* throwers discussion forum. He supported all three of these exercises as superior for "power-building for a ground-based movement." He stated that the real issue for strength training in the throws is finding "how to best train the body to increase acceleration." He then gave a twofold answer: "1) maximally train each joint angle involved in the technical movement, so that maximal force can be applied at each joint angle, and, 2) train to meet the enormous bilateral forces the body encounters in the technical movement." So, in addition to summation of forces involved in the throws, especially in the hammer throw, you want to think in terms of the direction and angle of those forces for the generator of those forces—your legs from the ground up.

Sprinting and Jumping Now, if you have the time, go ahead and work in plyometrics (hops, bounds, jumps, etc.) and sprint or hill work for explosive legs. But, the above exercises could be all that most throwers need during a competitive season when you should be doing a lot of throwing. Learn to do a few things well and don't get yourself burned out and over-trained. I tend to see those exercises as more pre-season and conditioning work for the time-constrained thrower. The Bulgarians found that the step-ups produced leg muscularity similar to those athletes who did a lot of sprinting and jumping in their training.

Hammer-Specific Exercises

Didn't think we'd ever get here, did you? This is the section that most throwers already doing lots of weight training will have jumped to while skimming through the preceding material. [Hey....go back and read it...can't hurt you!] When I say hammer-specific exercises, I am referring to exercises that have the greatest carry-over in terms of utilizing the functional muscular pathways and range of motion used in the hammer throw. As I stated at the beginning of the article, these would be the exercises to "add" for training specificity and the last exercises to drop next to throwing if you are getting over-trained. Conversely, do these exercises in your peaking weeks for competitions or for the day before and day of competition for stimulation.

Plate Twists and Swings

Twist-to-180 The absolute number one best exercise will be the plate twist around to 180 degrees behind you in a dynamic, fluid motion. (Do not treat this as a rigid core-trunk building exercise although it is great for the obliques.) You grasp an Olympic barbell plate with both hands and turn to your right side (looking directly at the plate) with the trunk while pivoting only on the left foot; let the plate swing down in front of you (counterbalancing with the hips as it passes in front); then turn to the left side while pivoting only the right foot and let the plate “run long” like the hammer to 180° behind you (see 180°). Do this for 6-8 reps (3 reps to each side) and feel the rhythm to each side; several sets.

Stop and think about what is going on here: 1) You are developing range of motion and flexibility, 2) your shoulders and head are aligned with the plate/hammer, 3) your hips are countering the outward pull of the weight, 4) your pivoting right foot/leg creates a ground-up force, 5) you feel the plate/hammer pull you into the turning motion, and, 6) you mentally ingrain the feeling of letting the hammer run to its high point in the orbit. For variety, I step outside to the patio and throw the plate in a release at the end of the last rep to the left side. Anticipating the release and correctly lifting everything up as it comes by the front of your legs and throwing out into the sector, you should see the plate spin flat—up and out like a flying saucer.

Pendulum Swing Finish In the plate twist-to-180, we did everything in the throw except step to the ball in single support and get into double support for accelerating the hammer (if we do split-leg snatches and step-ups we mimic stepping to the ball). Done correctly, the finish or release of the hammer is not a violent, jerking, radius-shortening movement at the end of the throw. In the words of Lance Deal, “it’s just another throw of the ball out to 180°.” In the pendulum finish with a barbell plate, grasp it with both hands and place directly over your head as you pivot to the right side. Your arms should be straight upward, the plate overhead and parallel to the ground. Then from this starting position, using ground up forces, pivot with both feet/legs to the left as you swing the plate down through 0° in front of you and get into the same position on the left side. To mimic the release, you need to anticipate the plate coming through the bottom of the pendulum and lifting with the legs and arms upwards as you pivot to the left and the arms swing overhead. Then continue back and forth. Same as the plate twist-to-180°, do multiple sets of 6-8 reps. Don’t muscle this exercise and just use the upper body; you want to feel the ground-up force being generated and the rhythm.

Plate Wind The winds in the hammer throw should ideally involve a full-range of motion with the shoulders and not just the arms moving around the head. Take a barbell plate with both hands and begin doing winds with a full shoulder motion—be able to turn to 180° behind you with the leading elbow. Do 6-8 reps on each side for multiple sets. The emphasis here is feeling a full range of motion and rhythm. Feel the gravity drop of the plate/hammer from the top on down through 0° between your legs in front of you. This rhythm is key to setting up the turns and the throw—you should feel this rhythm during your hammer winds.

During the off-season when starting all over with general conditioning circuit training before I get back into any kind of hypertrophy or strength and power weight training, I do these plate exercises along with at least weekend throwing to keep the neuromuscular pathways well-grooved. For a young athlete, the plate exercises and med ball throws are a good starting point for developing functional strength as their technique improves over time through drills and throws.

Pud Throws

The “pud” is a hunk of iron with a handle that is used for partial throwing movements of the hammer throw. You can find Lance Deal’s nicely manufactured pud’s through the major track & field suppliers. The pud can be thrown overhead or frontward for general core strength development; concentrate on the hip pop or snap just like in a snatch to generate the momentum. Grasp with two hands, good three-quarter squat position, swing the weight behind your knees and waist or chest high, then swing it back down and throw it. I will generally do these with a 35-lb. pud for 10 throws each (forward and overhead); this basically just duplicates a snatch movement. Sometimes I’ll even throw a 45-lb. Olympic plate from this position; or even heavy boulders during my general physical preparation (GPP) training period in the pre-season. However, the most hammer-specific of the pud throws is the “sling”—gripping the pud handle in the left hand, cradle it in the right hand over your right shoulder, and let the pud sling down through 0° between your legs, lift with the legs and hips as you pivot & release out over the left shoulder. This is a great mimic of the left side action at the finish of the throw. Make sure it is a rhythmic “backhand” with the pud and not a leaning with the left side or pulling motion with the left arm (bad habits). For the slings, I would go for 10 throws to each side; always work both sides to maintain balance in your throwing muscles. Don’t forget to let the feet pivot, and again, generate force from the ground up as you pivot.

Bar Twists

This is probably the single most recognized exercise for increasing rotational strength. An Olympic bar (and weights as necessary) is placed on the shoulders with the arms resting on the bar. Slowly pivot to each side and try to see 180° behind you. This is one of the best exercises to understand “ground-up” generation of forces for throwing the hammer. Forget that conditioning or beginning weightlifting class where you may have first learned this exercise by simply turning your obliques or shoulders. Press your right foot into the ground and feel the force work upward through the knee, thigh, hips, obliques and shoulder girdle as the bar makes a nice long turning path around to your left; then repeat to the other side. Don’t keep your bodyweight centered; instead, try to feel the generation of force with the ground-up shifting of weight from side-to-side; head up and moving with your shoulders. Do 10 reps each side for multiple sets.

Med Ball Throws

Well, it certainly doesn’t take any strength to throw a med ball, but you won’t find a better implement for grooving those neuromuscular pathways for throwing events. For the hammer throw, the traditional med ball can be thrown two-handed from the opposite hip or shoulder like the pud sling throw. The med balls with handles (“power ball” and other names) can also be used. You can also do a one-turn throw from the sling and

finish into a wall. Obviously, these things don't weigh a lot, so you focus on the correct movements and positions. Try lying with your hips on a Swiss ball, rotating to the side with outstretched arms, catching a med ball thrown by a partner, rotating 180° on the med ball to the other side, and then rotate back throwing the ball to your partner. Here's a hint....you do that with just your arms and you will throw yourself off the Swiss ball...use the trunk/obliques to both balance yourself and do the rotating with your arms along for the ride.

The Core Blaster

I just had to make a plug for one of my favorite exercises, although this one is pretty close to the snatch. I "stole" this one from a Tibor Gecesk clinic and handouts—his favorite exercise. I had a blacksmith fiend of mine make me (and a few special friends) a device to swing a stack of barbell plates--a plate on the bottom welded to an 18" upright pipe (Olympic bar diameter) which has a hole drilled near the top for a removable rod. The rod serves as a handle for swinging the weights and is removed to slide plates on & off. The movement is like doing a repetitive forward pud throw as you grip the perpendicular rod at the top, get into that good three-quarter squat position, and start swinging the "core blaster" chest high and then down behind the knees. Keep the weight back on the heels and really use the hips to pop forward and generate the force from the ground up. You can also simulate this exercise with a dumbbell or Olympic plate.

Summary

I hope you are not tired of hearing the expression "ground-up" generation of force, because once you grasp it and train it, you will learn to throw the hammer much more efficiently and effortlessly. You will develop the right kind of "strength" and "power" and not just be an upper body dominant "strength thrower". The really successful elite throwers have a relaxed or "loose upper body" that is moving around this tremendous amount of force generated by the lower body while letting the ball be the "engine" around them (another Lance Dealism). Your lifting choices should be predicated upon movements that will improve your throwing. Use controlled, directed movements in your lifting and throwing. Be aware of balance, rhythm and timing in your lifting and throwing. Incorporate plate swings and twists for additional work or specialization. Be a thrower first and then a lifter. Don't let your strength development quantum leap your technique improvement.

Remember, this has come direct to your living room from the "*Ironman*" who L-O-V-E-S to lift! Lift intelligently and purposely to improve your hammer throwing and develop body awareness of movements in lifting and exercises that mimic positions and aspects of the throw.