

---

# THE CrossFit JOURNAL

---

## Improving the Full Snatch

Bill Starr explains how you can use special drills and movements to fine-tune your snatch and break your PR.

By Bill Starr

November 2010

---



All images Staff/CrossFit Journal unless otherwise noted

Performing a full squat snatch precisely is certainly one of the most satisfying experiences in all of strength training. When everything hits just right, the bar seems to have a mind all its own and floats overhead smoothly, allowing plenty of time for the athlete to move under it and lock it out effortlessly as it falls right into the proper slot.

---

1 of 10

The full snatch is the ultimate high-skill movement. It requires a large dose of several athletic attributes—coordination, timing, balance, foot speed and concentration—in order to be successful with a maximum attempt. Full snatches are a great exercise for athletes in every sport imaginable. As the athlete becomes more adept in doing full snatches, the skills needed to do the lift correctly and with demanding poundages are instantly converted to every sport under the sun.

An often-overlooked reason for including a high-skill exercise into every athlete's routine is the fact that it requires extreme mental focus and the nervous system is stimulated to a greater extent than when a less-dynamic exercise is done. In addition, breaking through number barriers to achieve a bigger lift requires a high degree of determination—a trait that is essential to anyone wanting to excel in any sports endeavor.

### Reviewing Basic Technique

This article is based upon the assumption that you followed the advice I presented in [Learning How to Do Full Snatches](#) in January 2010 and are now able to do full squat snatches using at least adequate form. Full snatches can also be done using the split style, but for the sake of simplicity I will stick with the squat style in this piece.

Having done full snatches for a few months, you should be ready for some ideas on how to move the lift to a higher level. But before I get into that, I want to do a brief review on some of the important points of the lift. If you can do an overhead squat and a power snatch, you can do a full squat snatch. However, in order to do either of these movements correctly, you must have sufficient flexibility in your shoulder girdle. Otherwise you will not be able to fix the bar in the proper position overhead to let you go into a deep squat and stay in control of the bar.



*The full squat snatch demands technique, power, strength, speed and agility. It is one of the ultimate athletic movements.*

This means you must spend time stretching out your shoulders. If they become tight, form will be adversely affected. Stretching your shoulders should be done every day, even on days when you're not planning on snatching. More is better than less. Obviously, you should stretch them out well before a session, but further stretching, in between attempts and at night while watching TV, is also extremely beneficial. One of the keys to becoming proficient in this lift is maintaining a flexible shoulder girdle.

Keeping your shoulders loose is best done with a stick. I've used broomsticks, handles from mops, and thick dowels from a hardware or lumber store, but my favorite is bamboo. The springiness of the super-strong grass aids in the process very nicely. Chances are, a patch of it is growing close by where you live. I've found it in California, Texas and Hawaii, and I walk by a tall stand of bamboo on my daily constitutionals here in Maryland. Most serious Olympic lifters carry a stick with them in their gym bags. They not only use it to stretch out their shoulders, but they also do a lot of shadow lifting in the gym and at home. This is an excellent low-energy way to improve technique on the full snatch. When someone is able to do a picture-perfect squat snatch with a stick while his eyes are closed, he's on his way to mastering the form on the lift.

---

**When someone is able to do a picture-perfect squat snatch with a stick while his eyes are closed, he's on his way to mastering the form on the lift.**

---

The deep bottom position has to be solid, and this can only be achieved if your hips and shoulders are loose enough for you to assume that posture. Your torso must be perfectly erect, and the bar should be fixed right up over the back of your head. If you're still not comfortable in that bottom position, lock a light bar or a stick overhead, and sit into a deep squat. Now rock back and forth and side to side while keeping your elbows locked. Do this often throughout the day and the needed flexibility will soon be achieved.

To recap the form points for the squat snatch: the bar has to be pulled from the floor with straight arms, and they should not bend until the traps have been activated. The bar must be pulled high with a pop at the top. The elbows must turn up and out, not up and back. At the finish of the pull, you should be high on your toes with the bar tucked in close to your body. When the bar jumps at the top, drive under it instantly, and instead of catching the bar think of stretching it and exerting pressure up against it. Your feet must hit at exactly the same time and land in the exact same spot every time. Once the bar is locked firmly in place, look up slightly and stand up, still keeping pressure on the bar.

Obviously, this entails a lot of practice, but if you're serious about mastering this lift, drilling on the small form points is not a chore. In fact, it's fun. In order to snatch heavy weights, you must have the following: a strong pull with a dynamic finish, blinding foot speed to get under the bar, and a solid bottom position in the squat.



***The first pull requires straight arms. Early bending usually results in a missed lift.***





*According to Bill Starr, doing power cleans can help improve your pull off the floor in a snatch.*

### Pulling and Shrugging to Beat Weaknesses

While learning how to power snatch is a prerequisite to doing full snatches, power cleans actually help build more pulling strength for the lift. The length of pull for a power clean is the same as how high a snatch is pulled—or should be pulled. And because much more weight can be handled in the power clean than in the power snatch, the power clean serves as an overloading exercise. You can do power snatches to warm up for the full movements, but also do some power cleans in the weekly routine to increase your pulling strength.

The next step up the ladder in terms of pulling strength is high pulls, done with a snatch grip. Use straps on these, even though you may not need them in the beginning. Eventually you will, so get used to them. I've mentioned in previous articles that I believe the best straps can be made from seatbelts. Cut them out of a back seat of an old car and throw them in a washer a dozen cycles or until they're nice and soft. I made a pair of these when I started at Johns Hopkins, and they were used by hundreds and hundreds of student athletes, plus myself, for 11 years. And they're still in good shape.

Snatch-grip high pulls are no more than a deadlift followed by a shrug. Simple enough, yet high pulls are very difficult to master. It's the transition that causes problems. The bar has to move from the deadlift phase to the shrug in a smooth fashion. With light weights, all goes well, but when the weights get demanding, the bar starts to hitch and jerk through the middle. When this happens, lower the weight and practice the move until you're doing it right. High pulls will not benefit you at all if your form is sloppy, so make sure you have the technique down pat before loading up the bar with a lot of weight.

Eventually, you must use heavy weight, because the high pull is an overloading exercise. You're slowly training the muscles and attachments responsible for pulling a loaded barbell as high as possible while using a wide grip, the same one you use for the full snatch. Other than hitching the weight through the middle, the biggest flaw most make is bringing their upper bodies down to meet the rising bar. The exercise starts looking more like a bent-over row than a high pull. At the conclusion of a high pull, the athlete should be in the same position as he is when he finishes a power snatch, power clean, or full snatch or clean: high on his toes with the body very erect, elbows up and out, and bar snug to the body.

A gimmick I use to help the athlete gain more height with the high pulls as well as help him pull through the middle stage more fluidly is holding out a stick. See, sticks come in handy in lots of ways. Hold the stick a few inches higher than where the bar is being pulled. This gives the athlete a tangible target to shoot for. If he taps the stick, I raise it a bit more. I've had lifters who really believed they were pulling with everything they had in them pull the bar another six inches when I made them chase the stick.

---

**It's more beneficial to use 50 lb. over your snatch for 3 good high pulls than it is to use 75 or 100 more than you snatch for 3 ugly reps.**

---

Put the high pulls in behind a full-snatch workout or after a heavy power-clean workout. Start with 3 sets of 3 and gradually add in more sets when you feel you can handle the load. Your goal should be to use at least 50 more pounds in the high pull than you can snatch. Some I have trained have been able to use 100 more pounds, and this is good. Always keep in mind, though, that form takes precedence over numbers. It's more beneficial to use 50 lb. over your snatch for 3 good high pulls than it is to use 75 or 100 more than you snatch for 3 ugly reps. Have a fellow lifter hold the stick out to encourage you to put a bit more charge in the final move at the top.

High pulls will also help reveal a weak area. When the snatch pull is overloaded, the weakest part of the pull shows up. It may be in your hips, legs and lower back and displays itself by your hips climbing up faster than the bar is moving. Or if your middle back is relatively weak, you will not be able to hold the correct position as the bar moves through that portion of the lift. If your traps are not up to the task, there will be no explosion at the finish. All of this is valuable data. You have to know where the weaker areas are before you can go about correcting any deficiencies.



*Doing high pulls will help you really jolt the bar upward when you get on the platform for a competition.*



***Once you're under the bar, it's important to receive it actively. Push up against it and pull the bar apart.***

If it turns out your start is the problem, start doing some deadlifts—but not like they're normally done. Instead of using 45-lb. plates or 22-lb. bumper plates, use metal 25-pounders. This lower starting position forces the athlete to fix his hips much lower and makes a whole new group of muscles and attachments go to work to break the bar off the floor. Do 5 sets of 5 on these and concentrate on locking your hips tightly and not allowing them to move upward faster than the bar. Just because you're starting with 25-pounders doesn't mean you're not going to overload, because you are. Keep adding more 25-lb. plates and in four jumps you're suddenly dealing with 295. These are by no means easy, but they definitely get the job done. At the snatch workout following the low deadlifts, the starting position will be a great deal more solid.

In order to really put a jolt into the top end of the pull, you need strong traps, and the best way to strengthen that group is by doing heavy shrugs. Rarely have I come across a power rack with uprights wide enough to allow an athlete to do wide-grip shrugs inside it. This means you will need to do them outside the rack. These I refer to as "Hawaiian-style shrugs" because for the first two years when I coached at the University of Hawaii, we didn't have a power rack and the bar had to be taken off two small pins on the back of a squat rack when we wanted to do clean or snatch shrugs.





*The traps play an important role in Oly lifting, and training them with shrugs can help put a few more pounds on your lifts.*

Hawaiian-style shrugs are much more difficult than those done inside the rack because it forces the athlete to supply all the balance and control. However, I believe these are better for Olympic lifters and others who do snatches and cleans. The athlete has to pay much closer attention to his line of pull. Should he pull too far backward or forward, the bar will crash to the floor like a guillotine. So while he's improving strength in his upper and middle back, he's also learning how to pull really heavy poundage in the proper line.

Straps are essential for shrugging, and it's important to pull every rep just as high as possible. This holds true for high pulls as well. Beginning with 135, pull for all you're worth. Which means the first few sets might climb up over your head. That's what you want to do. This sets the pattern for the heavier weights. And in order to really sting the traps and make them grow, the sequence of the pull has to be precise. Start the shrug from mid-thigh. Guide the bar upward in a tight line, then punch your hips forward and contract your traps. Only after that is done will you bend your elbows.

I realize a number of coaches teach their athletes to shrug with the arms locked. This never made much sense to me. If a lifter bends his elbows while pulling a heavy snatch or clean, doesn't it seem reasonable to do the same on an exercise designed to make the movement stronger? It does to me, and when the arms get in the mix, the bar travels much higher. Higher means more muscle and attachment involvement, which in turn translates to greater strength.

Do 5 sets of 5 on the shrugs and go to absolute limit every time you do them. If your traps aren't sore the following morning, you didn't use enough weight. You must brutalize your traps to make them considerably stronger. Teasing is a waste of time for serious strength athletes.

If you go balls-to-the-wall, shrugging once a week is sufficient. Alternate between clean and snatch shrugs and move the numbers up every week. Your traps can never be too strong, and once they start to improve, the top end of the snatch will be much more solid.

### More Training Tricks

Here's another way to make the very top-most part of the snatch pull stronger, and it's a killer. This, too, can be done outside the rack. Place the bar on pins right at a height where your breastbone ends, just under your pecs. Strap onto the bar and squeeze it up off the pins and hold it off them for an eight to twelve count. Be warned: you're not going to be able to use very much weight on these. Typically, 100 lb. will need full-out exertion. You should be up on your toes, just as you are at the conclusion of the snatch pull, with the bar tucked in against your body and your elbows up and out. The first thing to go on these will be your shoulders. They are seldom strong enough in the beginning to let you hold the final position for the count. Do 1 set of these after a snatch workout or right in behind high pulls or shrugs and I guarantee your traps will report in the next day. Sore traps are a good thing, so attack them.

This idea is not so much for making the pull stronger, but rather to help you get the feel of fully extending. The biggest mistake lifters make in the snatch—and this includes advanced athletes as well as rank beginners—is they do not completely finish their pulls. They're usually anxious to get moving under the bar and end up cutting their pulls, some a great deal, some just a bit. But even if it's just a bit, a short pull can result in a failure on a max attempt.

Another exercise is one I call "throws" because that's what you'll be doing with the bar: throwing it just as high as you possibly can. Obviously, these can't be done in every gym. You need a high ceiling and bumper plates. Having an old bar or one that is already bent is a good idea as well. However, I have had my athletes do these with standard metal plates outside on a lawn or strip of grass, and that works just as well.



*Once you put everything together with a beautiful pull, the bar will seem to jump overhead almost effortlessly.*



Understandably, the first few times an athlete tries these, he's a bit wary, and for good reason: he's hurling a loaded barbell straight up over his head. An element of fear is involved, and that's what ends up making him learn how to pull completely through. Once he gets the idea that he's trying to throw the bar upward, he does fine, because when he does all the mechanics correctly, the bar soars way above his head and there's no risk of it hitting him on the way down. All he has to do is step back or forward.

---

**Sore traps are  
a good thing,  
so attack them.**

---

The first time I ever had someone do these was at the '68 Olympics in Mexico City. I was coaching our heavyweight, Ernie Pickett, and he wasn't completing his snatch pulls. I figured if some bars got dinged it wasn't going to matter because all the lifters were dumping their snatches, cleans and jerks at the end of a set. Ernie was tentative with 132, but I kept reminding him of the correct pulling sequence and to follow through with his pull all the way till it left his hands up over his head.

Well, he did get the idea and started giving some heavier weights a ride. With 220 he was eventually throwing the weight a good 6 feet over his head, and the crash when it landed soon had every foreign lifter and coach stopping what they were doing and watching Ernie put on a show. As we were leaving the training hall, we heard a series of loud crashes and laughed. The foreign lifters were giving throws a try. These don't need to be done on a regular basis but are useful when an athlete starts cutting his top pull.

Building a strong bottom position is also a necessity as the weights start climbing up in the full snatch. Overhead squats get the job done for a while, but when the athlete improves to where he's handling big numbers he's often snatching more than he's using in the overhead squat. This is because he has to power snatch a weight before squatting it. In order to overload this movement, you're going to need assistance. With one training partner on each side of the bar, grip the bar, give them a signal so they're both pulling at the same time, and have them help

you bring the bar up over your head to a locked-arms position. Take a moment to get the bar fully under control, then do 3-5 deep squats. When you finish the set, have your training mates assist you in bringing the bar back to the floor.

Once you do these a few times and figure out what's going on, run the numbers up. I've had some athletes who were able to overhead squat a hundred more pounds for reps than what they were snatching. This gave them a huge amount of confidence in their deep bottom position. They knew that if they could put the bar in the slot, they would always be able to recover easily. This is a great advantage psychologically, particularly during a competition.



***Of course, snatching is also mental. Tenacity and aggression can take you a long way in Olympic lifting.***

This final exercise, the drop snatch, is another one that will build self-assurance in your deep squat in the snatch. Drop snatches also help your foot speed and foot and body placement when going into the bottom of the snatch. But equally as important, drop snatches teach the lifter how to stay extremely tight so he can control the descending bar.

Pierre St. John, the Canadian light heavyweight, was the first person I ever heard of who did these. His father was his coach and inserted drop snatches into his routine to help make his bottom position more solid. And they certainly did just that. I saw him compete at the Eastern States in Schenectady, N.Y., in 1966 and was impressed with his rock-solid snatch. He made a silky-smooth 295. He was, to use a familiar phrase, poetry in motion.

He contended that drop snatches were responsible for his excellent snatching ability and that he had done 352 in training. They became a part of my program for as long as I competed, and I eventually handled 365 in split style.

Be forewarned: these take balls once the weights move past what you're snatching. Fix the bar behind your neck as if you are about to squat it. Your body has to be very erect, with your feet placed no wider than shoulder width. Your elbows need to be tucked in close to your body, and every muscle from your feet to your traps has to be rigidly tight. Drive the bar upward and instantly dive into the bottom of a snatch. As soon as you hit the platform, extend up into the falling bar and stretch it outward forcefully.

With the lighter warm-up weights, you only need to nudge the bar off your back, but when the weights start to get heavy, you have to provide a powerful punch. For these to be successful, your feet have to hit in the exact same place as they did when you do a full snatch, and they have to move fast. If you move too slowly, the bar will beat you down and come crashing to the floor. Drop snatches are great for helping you learn how to stay extremely tight from the punch off the back to locking out the bar at the bottom. They also force you to maintain an erect posture throughout. Should you lean, either backward or forward, during the driving-off-the-back phase, the bar will shoot out of the proper line, and that attempt will be lost. If you're leaning at all at the bottom, you can kiss that attempt goodbye as well.

These can be done for triples for the warm-up sets, but when the weights move past your best snatch, only do singles. They require a huge amount of concentration and a fair amount of courage, but they bring results right away.

### Break Your PR—And Compete

Try some of these exercises if you're having trouble getting your snatch out of a rut. Even if you decide not to do some of them, keep them in mind. They might come in handy somewhere down the road.

And once again, I encourage you to enter an Olympic-weightlifting contest, regardless of whether you believe you're ready or not. The competitive atmosphere at a meet cannot be duplicated at a training session because there are so many new variables to consider, but once you learn the many facets of competing, your lifts will take off. Contests also provide you with the motivation to improve, so that you can overtake those just ahead of you. That will make you work much harder to be ready for the next show.



Courtesy of Jody Forster

### About the Author

*Bill Starr coached at the 1968 Olympics in Mexico City, the 1970 Olympic Weightlifting World Championship in Columbus, Ohio, and the 1975 World Powerlifting Championships in Birmingham, England. He was selected as head coach of the 1969 team that competed in the Tournament of Americas in Mayaguez, Puerto Rico, where the United States won the team title, making him the first active lifter to be head coach of an international Olympic weightlifting team. Starr is the author of the book **The Strongest Shall Survive: Strength Training for Football and Defying Gravity**, which can be found at [The Aasgaard Company Bookstore](http://TheAasgaardCompanyBookstore.com).*