
THE

CrossFit JOURNAL

Learning How to Do Full Snatches

Bill Starr breaks down one of the most difficult athletic movements you'll ever perform. Put the pieces together to master the world's fastest lift.

By Bill Starr

January 2010



Staff/CrossFit Journal

The full snatch is one of the most complicated movements in all of sports. An athlete has to pull a weight upward with force and speed, then completely reverse his mental keys to explode downward under the still-moving bar. His foot placement, body positioning and lockout have to be precise when he hits the bottom or the bar will crash to the floor.

The snatch is the ultimate in athleticism, and the pole vault is the only other movement that's comparable in terms of concentration and difficulty. In that event, the athlete has to run at full speed and then direct that speed vertically. In the snatch, the conversion is from moving upward bearing a heavy load to moving downward—a more severe shift. To be able to perform a snatch with a maximum poundage is a feat of strength without peer.

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Snatch Your Way to Sporting Success

By definition, a snatch is an exercise where the bar is pulled from the floor to a locked-arms position in one continuous move. The bar does not stop on the way up, and there is no pressing out at the finish. The power snatch is one form of the lift, but the full snatch is used to handle much more weight. In the full snatch, the bar is pulled just high enough to allow the athlete to squat under it and lock it out. If the athlete is quick enough, he need only pull the bar chest high before slipping under it for a successful lift. The split style can also be used, but for the sake of simplicity, I will only focus on the squat style because that is the one used by 99 percent of the athletes who do snatches.

Learning how to do a full snatch benefits not only strength but many other athletic attributes, such as flexibility, coordination, foot speed, balance, timing, determination and mental acuity.

The snatch is one of the two contested lifts in the sport of Olympic weightlifting (the clean and jerk is the other), so competitive weightlifters do lots and lots of snatching out of necessity. Yet full snatches have value for all athletes because they involve so many of the larger muscle groups in a dynamic fashion. In fact, every muscle in the body is activated during the execution of a full snatch, including smaller groups such as the biceps and calves.

The snatch is a high-skill movement, so every rep requires absolute concentration on the part of the athlete, which means the nervous system receives much more stimulation than when a static exercise is done. Whenever an athlete masters the technique in the full snatch, he has learned to trigger the necessary form cues instantly, and this skill is transferred to all his other athletic endeavors.



Back angle during the set-up and pull off the floor will be determined by an athlete's proportions. The key is to maintain a constant back angle from the floor until the bar is above the knees.

In other words, learning how to do a full snatch benefits not only strength but many other athletic attributes, such as flexibility, coordination, foot speed, balance, timing, determination and mental acuity. A wide range of athletes benefit from doing full snatches, from tennis and basketball players to competitors in all contact sports. Perhaps throwers in track events such as the shot put, hammer, discus and javelin see the most benefits. Performing full snatches teaches them to propel objects much longer and with a more powerful snap at the very end, and the enhanced foot speed, coordination, balance and timing they develop from snatching help, too.

Flexibility and Grip

Before learning how to do full snatches, an athlete needs to be able to do two other exercises: overhead squats and power snatches. I'll start with the power snatch. Even if someone isn't interested in moving on to full snatches, this is an excellent exercise for building back strength in a rather unique fashion. Power snatches involve the lats to a greater degree because the snatch utilizes the widest grip of any pulling exercise. Back when physique contestants regularly competed in Olympic contests in order to gain athletic points, they did lots of power snatches, which was a legal form of the lift. As a result, they ended up with amazing lat development. The lift also has a very positive effect on the traps and shoulders. This is due to the fact that the bar is pulled so much higher than in any other exercise, bringing into play the wide portion of the traps and the rear deltoids in an entirely different manner.

The first step in preparation for power snatches is making sure your shoulders are flexible enough to lock the bar out overhead correctly. Flexibility will also be needed for overhead squats, so time must be spent improving it. Of course, some already possess sufficient shoulder flexibility, especially young people. Females, too, have no problem with tight shoulders. However, those who are older or have been enamored with the bench press generally find they lack the range of motion needed in their shoulders to properly lock out a snatch.

These issues can be rectified unless there is a reason for the tightness, such as an old shoulder or elbow injury. Simply take a stick or towel, hold it overhead with your arms locked and rotate it back and forth until you feel your shoulders loosen a bit. Then bring your grip a bit closer and do it some more. Most Olympic lifters carry a length of clothesline in their gym bags and spend a great deal of time keeping their shoulders very flexible. Some, like Dr.



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Grip width is dependent on several factors. Large athletes with good grip strength may find success with the hands near the collars, while a narrower grip puts less strain on the wrists and is usually best for smaller athletes.

John Gourgott, could hold a length of clothesline over his head with his arms perfectly vertical and rotate it down to his lower back.

Obviously, the more you work on making your shoulders more flexible, the better, so stretch them before you train, in between sets while you train and at night while watching TV. You want to be able to hold the bar with a wide grip directly over your head. If you drew a line up from the back of your skull, that's where the bar would be held. Once you're able to achieve that much flexibility in your shoulders, you're ready to power snatch.

The immediate question arises: how wide should the grip be? This depends on several factors, such as height, body weight and degree of flexibility in your shoulders. Those with very wide upper bodies often have to grip the bar at the extreme ends of the Olympic bar, but most do not have to go that wide. On Olympic bars, there's a score on each side six inches in from the collars. Wrap your ring fingers around that score. If, after doing a few reps, you find that isn't quite right, make the necessary adjustments. Sometimes, a slight half-inch shift makes a world of difference.



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Once the bar is above mid-thigh, Bill Starr says you should drive your hips forward and aggressively shrug your shoulders before initiating the arm bend.

Next, learn how to hook-grip the bar. While you can use straps for power snatches, you shouldn't with full snatches. Straps alter the line of pull ever so slightly, and if you miss a full snatch back over your head, you do not want to be strapped to the bar. The hook grip is simple: just bring your thumbs under the bar and lock them down tightly with your middle and index fingers. Those with chubby fingers can only manage to get their index fingers over their thumbs, but that's better than nothing.

You might be thinking, "Doesn't the hook grip hurt?" Yes it does, but only until you get used to it, and here's a tip Olympic lifters use to reduce the pressure on their thumbs: they wrap a 1/2-inch strip of trainer's tape around the thumb at the joint closest to the palm. Just wrap the tape around two times, because more will cause the tape to bunch up, which makes matters worse. If you start using the hook grip from the very beginning when you're training with light weight, you'll quickly get accustomed to it, and in no time you won't notice it at all.

The First and Second Pulls

Now you're ready to do power snatches. Step up to the bar with your shins touching it. To find your ideal foot placement for this or any other pulling exercise, do this: shut your eyes and set your feet as if you were about to do a standing broad jump. That's your most powerful stance for pulling a weight off the floor.

Hook-grip the bar, flatten your back and lower your hips. How low? Again, this starting position is determined by body type to a large degree. Taller athletes can benefit from setting their hips rather high, even high enough to put the back parallel to the floor. However, this only works if the athlete can maintain that position as the bar moves off the floor. Should his hips elevate during that initial pulling motion, he needs to lower them a bit. Placing the hips slightly below a line parallel to the floor works best for most, but some experimentation may be in order to find the one that suits you.

Your entire back must stay extremely tight throughout the power snatch. The most effective way to ensure that it starts and finishes tight is to lock your shoulder blades together and keep them that way during the movement. Look straight ahead. Make sure the bar is snug against your shins and your frontal deltoids are a bit out in front of the bar.

Instead of thinking about rushing the bar off the floor, try this: get set, tighten all the muscles in your body from your toes to your neck, then imagine you're pushing your feet down into the floor and squeeze the bar upward with your arms straight and your back extremely flat.

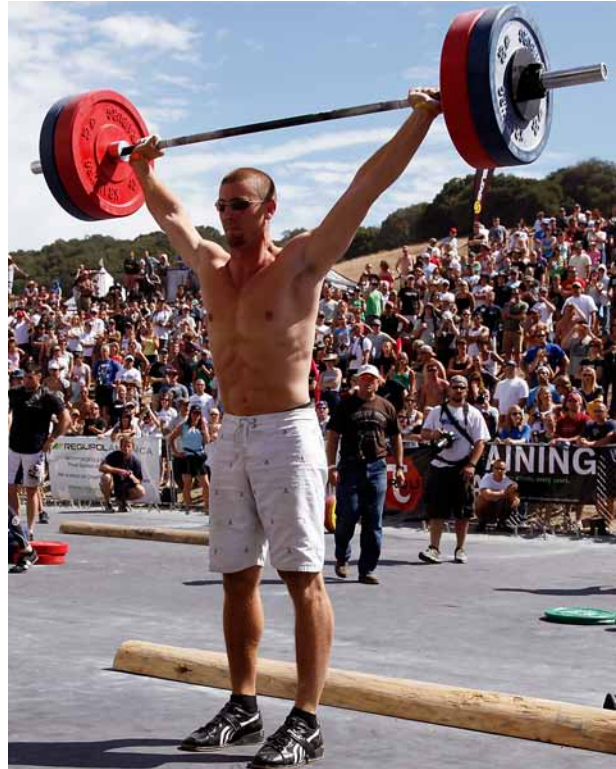
The initial stage of the movement, breaking the bar off the floor, is basically a deadlift. This must be done in a smooth, controlled fashion. The tendency of most beginners is to jerk the bar upward, using their arms, in hopes of getting a jump-start on the exercise. That doesn't work at all and usually ends up sending the bar running forward, which spells disaster for the finish. And when the arms are bent prematurely, the back tends to round, once again causing the bar to move too far out front for you to have a successful finish.

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When the bar passes mid-thigh, drive your hips forward aggressively and—with your arms still straight—shrug your traps. All the while, the bar must be close to your body. Make sure you don't punch the bar away from your body when you drive your hips forward. Many athletes pick up this habit. It's fine until the weights get heavy, but then it knocks the bar out of the correct positioning to finish strongly. After the bar passes your navel, bend your arms explosively and your biceps and brachioradialis will punch the bar upward even higher. The final touch is to extend high on your toes and elevate the bar a couple more inches. These final inches are often critical to making the lift cleanly.

The power snatch is a long pulling motion, so it's absolutely essential that the bar stays close to your body until it passes your head. If it moves away there's little you can do to correct the error without taking a step forward, and you don't want to do that because you will not be able to take a step during the full snatches.

It's also important to learn how to drive your elbows up and out, rather than back at the very conclusion of the



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At lockout, the bar should sit right over the back of your skull. With the bar overhead, you should push up against it and try to stretch it apart. Passive shoulders will result in unstable positions.

pull. Remember, once your elbows rotate backward, you no longer have any upward thrust and have to depend on momentum or pure shoulder strength to fix the bar properly over your head. Conversely, when you keep your elbows up and out, your powerful traps can assist you with the finish.

Lowering the Bar and Foot Position

The lockout is a coordinated movement that gets better with practice. As the bar climbs past your head, bend your knees slightly and dip under the bar. Don't just catch the bar overhead—push up against it. This will help you place it exactly where you want it to be and control it more readily. If you find that you're catching the bar with bent arms, reduce the weight until you're able to lock it out with your arms straight. This is most important because you're not going to be able to hold a full snatch with bent arms—at least not any attempt with a heavy poundage.

While holding the bar overhead, extend pressure against it and think about stretching it apart as well.



Staff/CrossFit Journal

The overhead squat is a critical part of the snatch. It will help you find the correct line of travel for the bar and improve your stability.

Once the bar is locked out overhead, fix it in that spot atop the imaginary line running from the back of your head. Don't let it hang too far out front or push it way back over your head. This might be all right for a light power snatch, but it will not work with heavy weights or with any amount of weight in a full snatch. The bar will just fall to the floor in either case.

While holding the bar overhead, extend pressure against it and think about stretching it apart as well. This helps to strengthen the position and will prove to be most valuable as you move on to full snatches. It is most important to lower the bar back to the floor in a controlled fashion. Allowing it to fall to the floor unimpeded is not a good idea. The fast-falling weight will invariably cause the athlete's back to round excessively and can result in any injury. The bar should be lowered in two steps: first from lockout to waist. Bend your knees and cushion the bar at your waist. Then, with a very flat back, ease the bar to the floor.

Think of a power snatch as a whip. The bar will come off the floor deliberately in a perfect line, pick up speed through the middle, and be no more than a blur at the top. In the final pulling position, the athlete should be high on his toes with an erect torso, the bar tucked into the body and the elbows up and out.

Some coaches feel it's best not to move the feet during a power snatch, believing this forces the athlete to pull longer. Others want their lifters to skip-jump at the very end of the pull as this movement is closer to what transpires in a full snatch. I teach my athletes not to move their feet while they're learning to do power snatches as it's yet another thing to think about in an already complicated movement. Once they master the lift, they can begin skip-jumping.

Squeeze out of the bottom of an overhead squat in a controlled manner. When you try to explode upward, you will almost always drive the bar out of the proper line.

Power snatches are high-skill movements, so stay with lower reps. A couple of sets of fives will serve as a warm-up, then just do threes. Add weight as you become more proficient, but make sure your form is always good. If the lift becomes sloppy, lower the weight. You don't want to build any technique mistakes into this lift because they will carry over to the full snatches.

Overhead Squats

Overhead squats are rather easy to do once your shoulders are flexible enough to hold the weight in the proper position. While learning this exercise, simply power-s snatch the weight, fix it precisely overhead, then go into a deep squat. You'll learn rather quickly that this form of squatting is very different from back or front squats. The bar must travel in a tight up-and-down line. If the bar moves too far forward or back, you will not be able to control it and will have to dump the weight.

Keep in mind that everyone ends up dropping a bar while learning this movement. It's no big deal, but make sure you just let the bar go when it's out of control. That's why it's so important to keep your arms locked tightly during the execution of the overhead squats. Should it run out of the correct line, merely push it away from your body,

After you power-snatch a weight or have two training mates assist you in getting the bar overhead, move your feet a bit wider so you'll be able to go into a full squat. Once your feet are set, push up against the bar forcefully while making sure it's positioned perfectly in a line directly over the back of your head. Then pull yourself down into a deep squat. Don't lower yourself slowly as this will invariably cause you to lean forward in the middle, and the bar will come tumbling down. When you get to the bottom, sit there for a second or two, staying tight all the while. This long pause will let you feel how a full snatch will feel, and it will also make the bottom position much stronger—a definite plus.

Squeeze out of the bottom in a controlled manner. When you try to explode upward, you will almost always drive the bar out of the proper line. Overhead squats must be done deliberately, and everyone finds that after the first difficult session their middle and upper backs get extremely sore from this new method of squatting. Do these for triples. I should note that even if you're not interested in moving on to full snatches, overhead squats are an excellent way to work all the groups in your shoulders, back, hips and legs in a different manner than any other exercise.

The Drill

Spend a month or six weeks mastering the power snatch and overhead squat, at which point you'll be ready to learn how to do full snatches. In my article Learning How to Do Full Cleans (CrossFit Journal, Nov. 18, 2009), I recommended using the three-step exercise I call the Drill, which I picked up from Morris Weissbrot, the Olympic-lifting coach for the Lost Battalion Weightlifting Club in New York City.

I also use the Drill when I'm teaching an athlete how to do full snatches. The exercise consists of a power snatch followed by an overhead squat, a hang snatch plus an overhead squat, then a full snatch. The first segment teaches you to pull long and hard at the top, the second teaches you to move quickly into the bottom position, and the third lets you know just how it feels to do a full snatch.

Use a hook grip because a conventional grip will begin to slip after the first or second phase of the Drill. The first step is merely combining the two exercises you've already been doing, but with a slight twist. Because your feet need to be wider for the overhead squat than the power snatch, you need to start skip-jumping at the end of the pull. It will, of course, take practice to learn just how far to skip-jump your feet so they're in the ideal placement for you to overhead squat. I have my athletes mark where their feet need to land with a piece of chalk until they have that movement down pat. And think about slamming your feet into the floor when you skip-jump. This will provide you with a more solid foundation from which to squat.

As soon as you give the bar that final, strong snap, you must move to the bottom position and pull the weight down with you. ... Stretch the bar and exert pressure up against it rather than merely holding it overhead.

Stand up and lower the bar to your waist. Take a moment to reset your feet to their strongest pulling position. Now you're ready for the second phase of the Drill. Make sure your back is tight and flat and your frontal deltoids are out in front of the bar. Lower the bar to mid-thigh, then pull it as high as you can. Your line of pull has to be exactly the same as when you power snatch. Many lean too far backward, letting the bar rest on their thighs, but this will cause the bar to drive you back, and you'll end up on your butt. Be prepared to fail. No one has ever learned the Drill without being knocked around some. It's like riding a bike: falling is part of the process. But learn from your mistakes and you'll come out just fine.

Snatches ... (continued)



Staff/CrossFit Journal

The power snatch is the first part of the Drill. Note the consistent back angle during the first pull, the full extension at the top of the pull and the aggressive overhead lockout with the shoulders pushed up into the ears.

Try to fully extend on the hang snatch. That will give you time to jump into the bottom, and if you finish your pull with your torso fully erect, you'll be able to hit the bottom in that same correct position. The second phase teaches you timing, a critical aspect of the snatch. As soon as you give the bar that final, strong snap, you must move to the bottom position and pull the weight down with you. Some of the top lifters are able to let the bar crash down and still control it. However, they are the exceptions and not the rule. Stretch the bar and exert pressure up against it rather than merely holding it overhead. This second move has to be done in the blinking of any eye. It is the most difficult of the three steps but also the most beneficial. Once you master the hang snatch, the full snatch is a snap.

The pull sequence on the hang snatch has to be perfect: traps, then arms, with the elbows staying up and out with the bar tucked in close. At the end of the pull, you should be high on your toes, just as in a power snatch. From that extended position, you must explode down into a deep squat while simultaneously locking out the bar. Sounds tough? It is, but it's the key to learning the full movement and has been done by thousands of athletes, so there's no reason why you can't do it as well,

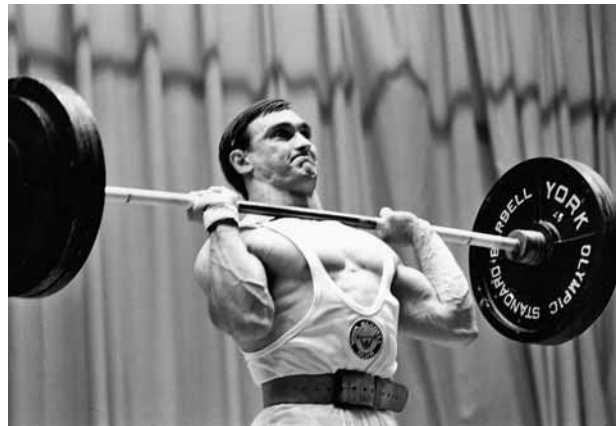
Stand up and place the bar back on the floor. Reset your feet and make sure your back is flat and the bar is in front of your shoulders, now you're ready for the final set. If you have learned how to do the hang phase correctly, the last step is rather easy. Pull the bar exactly as if you're going to power-snatch it. Once you're fully extended, jump into the deep bottom position. You've done a full snatch.

Final Tips

Athletes make the same two mistakes on the hang and full snatches: they fail to extend fully and they do not go into a deep squat. That's why it's called the Drill. You must do the three-step exercise over and over until everything falls in place and that third segment is done perfectly. Use a poundage that is demanding enough that it makes you pay close attention and work hard but not so heavy that you are using faulty technique. In some cases, a slightly heavier weight makes the Drill easier to do than a lighter one.

If you have followed my advice on learning cleans and taken the time to learn how to snatch, you're now ready to take part in one of the greatest sports of all: Olympic weightlifting.

Don't be concerned about how much you can lift or whether you'll win a medal; enter a competition. In a competition, you will learn from watching others, and the electric atmosphere will inspire you to lift a great deal more than you thought you would. Or less. Either way, you will add to your knowledge bank, and this will help you get stronger and become a better athlete in any sports endeavor. The two quick lifts are great for building functional strength that can be utilized in a wide range of athletic activities, so make them a part of your strength program.



Jody Forster

About the Author

*Bill Starr coached at the 1968 Olympics in Mexico City, the 1970 World Olympic Weightlifting 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 books **The Strongest Shall Survive: Strength Training for Football** and **Defying Gravity**, which can be found at [The Aasgaard Company Bookstore](#).*