

## **STEPHEN CURRY'S WHOLE-BODY SIDEGRIP JUMP SHOT: MAX POWER, MAX CONTROL**

*By Robert Tilitz*

There are different types of sidegrip jump shots. Stephen Curry's one-of-a-kind version of the sidegrip jump shot works best at long-range whether from a standing start or off the dribble – forward or lateral. Given Curry's unequalled brilliance from long-range, the paramount question of the 3-point era is: How does Curry's sidegrip jump shot work? To find out, keep reading.

This analysis is not the first to call attention to Curry's shooting grip, the sidegrip. But it is the first to explain how and why Curry's sidegrip setup adapts both to the push power production techniques for forward-oriented pull-ups and to the pull power production techniques for laterally-oriented pull-ups. Curry's sidegrip jump shot's forehead-high shooting position for the start of the release, which is low for a whole-body jump shot, locates the sidegrip at about seven or eight o'clock on the basketball as seen from a front view. But as the sidegrip jump shot's release progresses and the shooting arm nears full extension, Curry's initial sidegrip gradually shifts toward underneath the basketball until it's completely underneath.



From left, Stephen Curry's jump shot starts with a sidegrip. As the release progresses, the shooting hand gradually shifts underneath the basketball.

Curry's sidegrip facilitates a mini reachback that locates the shooting position of his sidegrip jump shot forehead-high, a half hand length back past the front of the head and on the side of the head. Although the shooting position of Curry's sidegrip jump shot is low for a whole-body jump shot, the mini reachback does roll the shooting shoulder back far enough to activate as a primary source of whole-body athleticism and whole-body power by way of engagement with the release mechanism. The activation of the shooting shoulder defines Curry's sidegrip jump shot as a whole-body jump shot. The low start and low finish of Curry's sidegrip release play a role in its long-range specialty.

Curry's sidegrip guides the mini reachback past/above potential obstruction by the shooting shoulder during the setup of the shooting position. That's because Curry's sidegrip eliminates the stiff external rotation of the shooting hand required to locate it underneath the basketball for the out-front, horizontally extended elbow-in shooting position. By eliminating the stiff, too-low, too-far-out-front, horizontally extended elbow-in setup, Curry's sidegrip allows for a full, flexible and up-angled mini reachback that facilitates the rollback, engagement and activation of the shooting shoulder for whole-body athleticism and whole-body power. Once the shooting shoulder rolls back, engages with the release mechanism and activates, the release of Curry's

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sidegrip jump shot starts with a reversal of the mini reachback. The big-muscle components of Curry's whole-body sidegrip release consist of a forward rotation of the shooting shoulder and a full extension of the shooting arm including a stretched-out forearm stroke.

Besides whole-body and long-range capabilities, Curry's sidegrip and mini reachback combination opens the door to jump shot diversity. While Curry's mini reachback is less extensive than Kobe Bryant's full-scale reachback, it is well-adapted for jump shot diversity. That's because the mini reachback locates the sidegrip jump shot's shooting position where it can transition into either a forward-oriented up-and-out straightstroke-push release or a laterally-oriented out-and-up leveraged straightstroke-pull release. To his great credit, Curry fully utilizes both options. Curry's forward-oriented and laterally-oriented pull-up capabilities add up to multi-pronged attack capability through his mastery of what are essentially two different but tactically complementary sidegrip jump shots. Yes, Curry's forward-oriented and laterally-oriented pull-ups both derive from the same sidegrip jump shot setup fundamentals. But it does not follow that mastering one automatically leads to mastering the other. In fact, judged by the present state of jumpshooting, Curry's jump shot diversity is way ahead of the curve and matched by only a few other great jumpshooters. Moreover, Curry's jump shot diversity is especially remarkable because it is performed mostly at long-range.



From left, the first two show Stephen Curry shooting forward-oriented straight-up jump shots, and the second two show Curry shooting laterally-oriented fallaway jump shots.

The activation of the rolled back shooting shoulder resulting from its engagement with the release mechanism provides Curry's sidegrip jump shot with a major source of whole-body athleticism and whole-body power. The mini reachback and the rollback of the shooting shoulder streamline the shooting stance of Curry's sidegrip jump shot by setting up its shooting position back within the scope of the body. The forward rotation of the shooting shoulder during Curry's release is the dynamic that channels the athleticism and the power of the jump of the jump shot into the release of the jump shot. The forward rotation of the shooting shoulder during Curry's release is also a primary power source both for the release and for the rotation of the square-in-the-air jump that many strongside pull-up jump shots require and all could use.

The low jump of Curry's sidegrip jump shot does not match his sidegrip jump shot's otherwise high-level of athleticism. The low jump is imposed on Curry's sidegrip jump shot by its low



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shooting position, which cuts short the arm action that helps to power the jump of the jump shot while it is raising the basketball to the shooting position. But it turns out that Curry's low jump, which is often not much more than a solid push off the ground, is actually a good fit for the long-range pull-up jump shot. That's because a low jump requires less physical effort than the all-out jump that is required to beat defenders at mid-range. A low jump allows Curry to expend more effort on the release, which helps at long-range where the precision and power of the release take precedence over the height of the jump. Less physical effort for a low jump is also less disruptive of the release. Curry still gets plenty of leg power from his low jump because, much like a shot putter, he accesses the most powerful stage of the jump, which is the initial push off the ground, for shoot-on-the-rise supplementary power for the release. While not super-athletic, the low jump of Curry's sidegrip jump shot actually enhances Curry's ability to shoot his sidegrip jump shot off the dribble from long-range, which is super-athletic.

The low jump of Curry's sidegrip jump shot understandably raises the question of whether his trademark long-range jumpshooting game is unathletic. The answer is a resounding no. That's because the low but vigorous jump of Curry's sidegrip jump shot is sufficient to harness the horizontal momentum of a preceding move or run-up by redirecting it upward, which is a vital, though unrecognized, role of the jump of the jump shot. Certainly, most basketball fans have seen Curry use his outstanding ballhandling and quickness to create separation from defenders at long-range and then instantaneously transition into his sidegrip jump shot. As such, Curry's long-range jumpshooting game is as athletic as anybody else's jumpshooting game at any distance.



The low jump of Stephen Curry's sidegrip jump shot provides near-direct access to the most powerful stage of the jump, the initial push off the ground, as a shoot-on-the-rise supplementary power source for the release.

Besides providing fast and easy access to whole-body jump shot power production techniques through its setup structure, the sidegrip is itself a primary power source for Curry's sidegrip jump shot. That's a major promotion for a shooting grip, but Curry's sidegrip earns it, lives up to it and puts it to good use.

Curry's sidegrip jump shot and the reachup jump shot are the two whole-body jump shots that regularly make use of the shooting hand as a primary power source. Curry's sidegrip sets up as a

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whole-hand shooting grip, which is the most powerful of all shooting grips because it maximizes the shooting hand brush of the basketball during the release. The whole-hand grip hand action brushes the basketball with the entire palmside surface area of the shooting hand during the release, which adds significant power to Curry's sidegrip jump shot. Think of it as revved up hand action. By comparison, the whole-body jump shots typically set up with an underneath bent-back half-hand shooting grip. Both whole-hand grip and half-hand grip hand action are whole-body jump shot techniques. The big difference between the two is that the whole-hand grip version is more powerful. Besides increasing the power of Curry's sidegrip release, the whole-hand shooting grip's more extensive brush of the basketball also enhances long-range accuracy and touch. The two-hand-set-shot-derived fingertips shooting grip is a non-starter for the modern jump shot. The fingertips and the fingerpads are too small and too weak to power and to control the basketball by themselves during the jump shot, especially at long-range.



Stephen Curry's revved up whole-hand grip hand action tops off his release.

Curry's sidegrip jump shot does, however, have a few built-in technical problems. The most serious are its low jump and its immediately following low-starting and low-finishing release. Both problems stem from the sidegrip jump shot's low-for-a-whole-body-jump-shot forehead-high shooting position. The forehead-high shooting position cuts short the arm action that helps to power the jump of the jump shot while it is raising the basketball to the shooting position. And the forehead-high shooting position makes for a low-starting and a low-finishing release, full extension notwithstanding. These technical problems limit Curry's ability to attack with his sidegrip jump shot at mid-range. That hurts Curry's point guard game because he is unable to impose a disruptive threat with a strongside penetration jump shot that facilitates operating and dominating from the middle of the defense.

Curry does, however, significantly compensate for his point guard penetration pull-up deficiency with a workaround that includes his total package of superpowers. Front and center, of course, is Curry's nonpareil long-range capability. But equally important to the workaround is Curry's as yet unmentioned elite ballhandling, cat-quick stop-and-go drives, assortment of deft layup deliveries and slick passing. First, Curry creates gaps in the defense by forcing it to extend to the max to counter his boundless long-range threat. Then Curry attacks the gaps in the defense with his superb drive-and-dish game.

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But don't sell Curry short at mid-range. Unlike most players who are known as 3-point specialists, Curry does shoot an excellent mid-range pull-up jump shot. Curry sets up his mid-range pull-up jump shot with a mini reachback, same as he does at long-range. At mid-range, Curry's mini reachback rolls back and activates the shooting shoulder by way of engaging it with the release mechanism, same as his mini reachback does at long-range. In term of performance, Curry's mid-range sidegrip pull-up jump shot results in the same strongside, off-the-dribble, whole-body pull-up capability as that of his long-range sidegrip pull-up jump shot. Although Curry's strongside mid-range sidegrip pull-up jump shot might not have dominating and disruptive middle-of-the-defense attack capability because of its low-starting and low-finishing release and its low jump, it is nevertheless a polished and a deadly piece of work.

Curry's jump shot genius, however, is much more about his long-range 3-point game than his mid-range game. Unlike the great majority of 3-point specialists who mostly shoot stationary standing-start semi-jump shots, that is not Curry. Although his standing-start 3-point shot is as good as it gets, Curry's true calling card is long-range, off-the-dribble, attack-capable pull-up jumpshooting at a level of excellence and diversity unrivaled in the history of basketball. Curry can put on a show of overwhelming shock and awe that includes strongside and weakside, forward and lateral, straight up and falling away and stepping back long-range pull-up jump shots almost on demand. So give the man his due. Curry is by far the best at what he does.

There is one last question to be answered about Curry's long-range jumpshooting brilliance. Although there is a strong argument for declaring Curry the greatest long-range jumpshooter in the history of basketball, what about dropping the qualifier and proclaiming Curry the greatest jumpshooter in the history of basketball? Curry has of course shot himself into the discussion. No doubt Curry would have many supporters. Yet despite yielding to no one in admiration and respect for Curry's long-range jumpshooting ability, the opinion here is that the greatest jumpshooter in the history of basketball must be able to dominate the defense from mid-range where the shooting percentages are higher, where jump shot opportunities are more plentiful and where the benefits to teamwork are greater. And that jumpshooter, the greatest in the history of basketball, is not Stephen Curry.