Part 5 of The Hitting Spectrum Series

The Box

A Personalized Prescription for Where Every Hitter Should Stand

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MLB & MiLB data: baseballsavant.mlb.com | Stance data: baseballsavant.mlb.com/visuals/batting-stance

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Every piece in this series has arrived at the same place.

The Contact Cliff hitter needs to move forward. The Steeps hitter needs to address his angle, and in some cases move back marginally. This Is The Place hitter needs to stay where he is and protect his mechanical efficiency. The player bouncing between Triple-A and the majors needs a diagnosis before he receives another prescription.

All of those recommendations share a common thread: where a hitter stands in the batter's box is the one spatial variable that affects everything else. It changes pitch travel distance. It changes breaking ball movement. It changes how much time a hitter's hands have to steer or commit. It changes whether a hitter is swinging at the pitch the pitcher threw or the pitch it became by the time it arrived.

And for the entire history of the sport, nobody has told a hitter precisely where to stand based on his specific mechanical profile.

Until now.

Two Dimensions, Two Algorithms

The batter's box has two meaningful dimensions. Vertical position, how deep the hitter stands from front to back, and horizontal position, how far the hitter stands from home plate.

Both dimensions matter. Both are measurable. Both are currently left to personal preference in essentially every development program in baseball.

Vertical position is the primary lever for the Contact Cliff and Steeps interventions. Depth in the box determines how much time a pitch has to travel, to move, and to give a hitter's hands the runway to override his mechanics. A Contact Cliff hitter standing deep is maximizing the runway that enables barrel manipulation. Moving him forward removes it. A Steeps hitter standing too deep gives breaking balls maximum time to drop below his swing plane. Moving him marginally forward compresses that window.

Horizontal position determines plate coverage, inside pitch vulnerability, and the relationship between a hitter's arm extension and the strike zone. It interacts with bat length in a specific way: a longer bat physically extends a hitter's reach, which means standing further from the plate while maintaining the same contact point is possible with more lumber. A shorter bat requires standing

closer to achieve equivalent plate coverage.

The two-dimensional box position algorithm developed in this series uses both dimensions simultaneously for the first time.

The Vertical Prescription

The vertical recommendation is driven by three inputs.

Contact Cliff Score. A hitter scoring above 50 receives a six-inch forward adjustment. Above 35, four inches forward. Above 20, two inches forward. A clean score below 20 means stay where he is unless the Steeps Score creates a modifier.

Steeps Score modifier. A hitter with a Steeps Score above 60 and a low Contact Cliff Score receives a one to two inch backward adjustment. More time helps a Steeps hitter recognize pitch type and avoid committing his steep plane to a pitch that will drop beneath it. This is the only case where moving back is recommended. It is the minority case.

Four-year trend modifier. A hitter already moving forward consistently (like Judge, Schwarber, and Gelof) has a reduced urgency adjustment because the direction is already correct. A hitter who drifted backward significantly (like Kwan's 6.65-inch reversal in 2026) receives the full adjustment without reduction because the trend has compounded the problem.

The result is a personalized forward or backward recommendation in inches, starting from the hitter's current documented position in the Baseball Savant stance data.

Key 2026 vertical recommendations:

Luis Arraez: Forward 6 inches (from Y=34.3 to Y=28.3). Four years of standing deepest in baseball while his contact point against slow pitches grew from 37.96 to 40.78 inches confirms the mechanism is fully active.

Steven Kwan: Forward 6 inches (from Y=29.5 to Y=23.5). He spent three years moving forward before reversing 6.65 inches in 2026. The algorithm is asking him to return past his 2025 position.

Kevin McGonigle: Forward 4 inches (from Y=28.9 to Y=24.9). His Contact Cliff Score of 46.6 in year one of his career is the preventive case. Move him forward before the habit calcifies.

Rhys Hoskins: Back 1 inch (from Y=30.6 to Y=31.6). His Steeps Score of 50.0 and low Contact Cliff Score identify him as the rare case where slightly more time improves outcomes. He needs to recognize the offspeed earlier, not be forced to commit faster.

Jackson Chourio: Stay (Y=25.4). This Is The Place hitter in the most mechanically efficient position in baseball does not need to change. The algorithm's job here is to confirm rather than prescribe.

Aaron Judge: Back 2 inches (from Y=25.3 to Y=27.3). His Steeps Score of 60.5 generates the backward recommendation despite elite production. He is managing his steep plane through

extraordinary tools. A marginal positional adjustment may reduce the offspeed vulnerability without disrupting what is working.

The Horizontal Prescription

The horizontal recommendation is driven by four inputs working together.

Contact X position. Statcast measures the lateral distance between the ball and the batter's center of mass at contact. A hitter whose contact X is significantly above league average (36.74 inches) is making contact further from his body than typical, suggesting good extension and the ability to stand further from the plate. A hitter whose contact X is below average is being jammed more frequently, suggesting standing closer would reduce that vulnerability.

Bat length. Every inch of bat length above the MLB average of 33.5 inches allows approximately a half-inch of additional distance from the plate while maintaining equivalent plate coverage. A hitter using a 34.5-inch bat can stand one additional half-inch from the plate compared to a league-average bat. This seems small but at the margins of the strike zone it creates meaningful differences in inside pitch coverage.

Attack angle. Steeps hitters need to be slightly closer to the plate to ensure their steep swing path covers the inner half before the pitch can jam them. A hitter with an attack angle 5 degrees above league average receives a modest closer adjustment.

Bat weight modifier. Heavier bats shorten the effective swing arc slightly, which suggests standing marginally closer to maintain plate coverage. This is the most theoretical component of the horizontal algorithm and carries the least empirical weight of the four inputs.

Key 2026 horizontal recommendations:

Arraez: Closer 0.6 inches (from X=26.1 to X=25.5). His contact X of 34.8 inches is below league average, confirming he is reaching across the plate more than optimal. Standing slightly closer compensates.

Kwan: Closer 1.2 inches (from X=23.0 to X=21.8). His contact X of 32.7 is well below average with a narrow 8.4-inch foot separation that may be contributing to his reach. Standing closer addresses the lateral extension.

Chourio: Further 0.9 inches (from X=31.6 to X=32.5). His contact X of 39.8 inches confirms elite extension. He can afford to stand further from the plate and still cover the zone.

Judge: Further 1.1 inches (from X=33.9 to X=35.0). His contact X of 41.6 inches is among the highest in baseball. He is making contact further from his body than almost any hitter in the game. Standing further from the plate matches his natural contact pattern.

The Bat Length Variable

The bat length input is the most practically novel component of the algorithm. No existing public framework adjusts positioning recommendations based on equipment choice.

The logic is straightforward. A 34-inch bat physically extends a hitter's reach by half an inch compared to a 33-inch bat. That half-inch of reach translates to the ability to stand half an inch further from the plate while maintaining identical plate coverage on the outer edge of the strike zone.

This matters most for hitters near the edges of the horizontal recommendation range. A hitter whose contact X suggests he can stand 2 inches further from the plate can stand 2.5 inches further if he switches from a 33-inch to a 34-inch bat. A hitter being jammed consistently might find that switching to a shorter bat while also adjusting his horizontal position addresses both the equipment and the positioning simultaneously.

The algorithm outputs three columns: recommended X position with a 32-inch bat, a 33.5-inch bat (MLB average), and a 34-inch bat. The difference between those recommendations gives a coach and hitter a concrete sense of how equipment choice interacts with positioning.

Why This Has Never Been Done Before

The batter's box has been treated as a preference since the sport began. Hitters find a position that feels comfortable, coaches make occasional adjustments based on what they observe visually, and the stance data that has been publicly available at Baseball Savant since Statcast added it sits largely unused as a prescriptive tool.

Three reasons explain the gap.

The first is that the diagnostic framework did not exist. Without naming the Contact Cliff and The Steeps as specific failure modes, it was impossible to build a positioning prescription around them. The stance data existed. The mechanism it was supposed to address had no name.

The second is that box position has been considered a secondary concern behind swing mechanics. Coaches working on launch angle, attack angle, bat path, and load timing are working on the swing itself. Where the hitter stands has been treated as context rather than cause. This series argues the opposite: positioning is the environmental constraint that either enables or prevents the mechanical problems from developing.

The third is that the horizontal dimension has been almost entirely unexplored analytically. The vertical dimension at least gets discussed in the context of moving up or back against specific pitchers. The horizontal dimension, how far a hitter stands from the plate and how that interacts with bat length and arm extension, has essentially no analytical literature.

The algorithm built in this series addresses both dimensions simultaneously for the first time using publicly available inputs that every organization already has.

The Prescription Is the Beginning

A personalized box position recommendation is not the end of the intervention. It is the starting point.

For a Contact Cliff hitter, moving forward is the environmental constraint that forces commitment. But the neuromuscular habit does not disappear because the feet moved. Polanco moved forward 6.34 inches and still showed cliff fingerprints because the behavioral drift had already calcified. The position change works best as prevention or as an early intervention before the habit is fully formed. When combined with explicit coaching on swing commitment and a deliberate acknowledgment that the barrel manipulation is happening subconsciously, the positioning change has context that makes it actionable rather than just spatial.

For a Steeps hitter, the positioning adjustment is secondary to the swing plane correction. Moving back marginally helps with offspeed recognition. But the attack angle itself needs to flatten. That is a mechanical intervention that the positioning change supports rather than replaces.

For the This Is The Place hitter, the recommendation is to stay and protect. Understand where the current position sits on the two-dimensional map, understand what the Contact Cliff and Steeps scores say about the trajectory, and monitor for drift. The algorithm functions as a maintenance check as much as a corrective prescription.

The box is four feet wide and six feet deep. Twenty-four square feet. The sport has never built a systematic framework for where within those twenty-four square feet a specific hitter with a specific mechanical profile and a specific bat length should stand.

Now it has one.

The Complete Framework

Five pieces. One argument.

The Contact Cliff is what happens when elite contact skill becomes a liability. The hands learn they do not need to commit. The swing decelerates. The power drains. The cliff approaches.

The Steeps is what happens when elite power intent becomes too vertical to sustain. The swing plane climbs. The hole beneath the hands deepens. The offspeed wins.

This Is The Place is where neither failure mode has taken hold. Committed swing, controlled plane, production translating. The most sustainable hitter profile in baseball, measured for the first time.

The Development Gap is what happens when players cycle through the system with undiagnosed failure modes while coaches work on the visible symptoms. The inputs to diagnose both problems exist in the organizational data. The framework to apply them now exists here.

The Box is the prescription. Two dimensions. Four inputs each. One personalized recommendation that tells a hitter not where it feels comfortable to stand, but where the data says he should.

The sport measures exit velocity to the decimal. It tracks spin rate, attack angle, bat speed, launch angle, and contact point. It has Hawk-Eye cameras capturing 300 frames per second and full skeletal body tracking on every hitter on every pitch.

And until this series, it had never asked: given all of that, where should this specific hitter put his feet?

Now it has an answer.