better than a layup

Challenging Basketball's Conventional Wisdom

Stack Offense Q & A

A Quick Primer on Gene Sullivan's Isolation Offense

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Author's Note

In response to a series of posts on the decline of scoring in college basketball and my attempt to trace the reasons for this disturbing trend by probing Austin Carr and Collis Jones' record-setting performance in the early 1970's, several readers requested information on the Stack or Isolation offense.

While I intend to write a comprehensive and hopefully polished piece on this unique offense and the man who developed it, I decided that a "quick and dirty" overview in Q & A format would prove helpful to those who follow my blog.

In the near future, I will compose a more comprehensive treatment of the subject and will post it at *betterthanalayup.com*.

-- Mark S. Seeberg
June 26, 2015

Who was Gene Sullivan?

Outside of Chicago basketball circles, few people know who Gene Sullivan was or appreciate his influence on college basketball. He achieved great success but labored in relative obscurity. He is most frequently remembered as the coach linked to two of the highest scorers in NCAA history – Notre Dame's Austin Carr and Loyola Chicago's Alfredrick Hughes, and for a succession of feuds with the NCAA over tournament selection, and justice for red-shirted freshmen and for schools not afraid to schedule tough games "on the road." Among his more ardent followers, though, Sullivan is remembered as "an eccentric genius."

Sullivan served as the head basketball coach at Loyola Academy between 1956 - 67, then as the top assistant at Notre Dame University during the Austin Carr era, followed by successful stints as athletic director at Chicago's De Paul and Loyola universities, and ended his coaching career as the head coach at Loyola Chicago. During his thirty-four years in high school and college athletics, Sullivan pioneered a unique matching zone defense (http://betterthanalayup.com/wp-content/uploads/The-Match-Up-Zone-Part-1.pdf) and the stack, or as he called it, the "isolation offense."

What is the Stack offense?

In its simplest form, it's an isolation scheme featuring two players "stacked," one on top of the other along the lane, near or on the block, with a point guard aligned at the top of the key. The remaining players assume other positions across the floor including forming their own stack on the opposite of the lane. In some ways the offense resembles today's Motion-Blocker attack, but without set plays and multiple ball reversals. It relies solely on read-and-react, freelance movement, the players making all of the decisions.
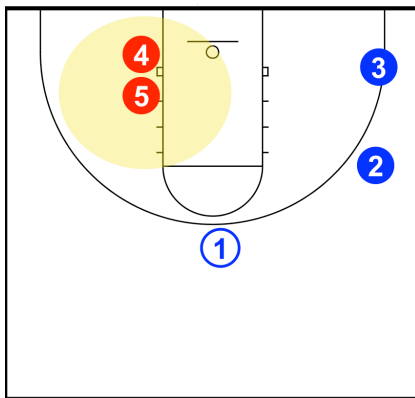
The aim of the Stack offense is to get the ball to a player who is in a strong operating position with a single entry pass. That is, to a player who is an immediate offensive threat in a high percentage area – relatively close to the basket, prepared to shoot with his dribble live, and with room to maneuver if his shot is contested. The ball's close proximity to the basket dramatically cuts the defenders' reaction time, creating simple reads for both the ball handler and his screening partner. It's quick-hitting, two-on-two basketball at its finest.

How did Sullivan develop the idea of the Stack offense?

The origins of the offense can be traced to two events and Sullivan's reaction to each: first, the emergence of the jump shot in the 1950's; secondly, his attendance at the 1962-63 NCAA Championship in Louisville.

Sullivan believed that the development of the jump shot and its eventual widespread use fundamentally changed the nature of basketball. *"The development of the jump shot has given the offensive player an explosive weapon. The quick release combined with the height attained has made it necessary for the defensive player to play much tighter than what was previously needed. The defender's aggressiveness makes him vulnerable to the fake and drive and in particular to the lethal pull-up jumper. This makes it imperative that the individual defender have help available when he out-maneuvered as a result of his aggressiveness or his opponent's greater quickness."*

In response to this reality, Sullivan looked beyond the game's traditional sets and systems for an offensive attack that specifically exploited the advantages of the modern jump shot. He found the essential ingredients while watching Cincinnati coach Ed Jucker's "Swing and Go" offense in action during the 1962-63 NCAA Final Four weekend.

When he took over the head coaching reins at Cincinnati, Ed Jucker intended to replace the Bearcats' run-and-gun offense with a more deliberate half court attack that stressed high percentage shots. He wanted an offense that operated from the center of the cylinder to the foul line, an area circumscribed by an arc of 13 feet, 9 inches.

Jucker found the double screen he so often saw in NBA games very interesting – not the screen or pick itself – but the "scraping action" of the cutter moving without the ball and rubbing his defender off the stationary screeners to gain separation. This gave him an idea he called the "swing and go." He persuaded his All-American forward, Ron Bonham, "that 15 well-selected shots could be as persuasive as 25 random ones."

Starting with a traditional 2-3 alignment, Jucker repositioned Bonham nearer the basket – along the lane, near the block – several feet behind the pivot man, George Wilson.
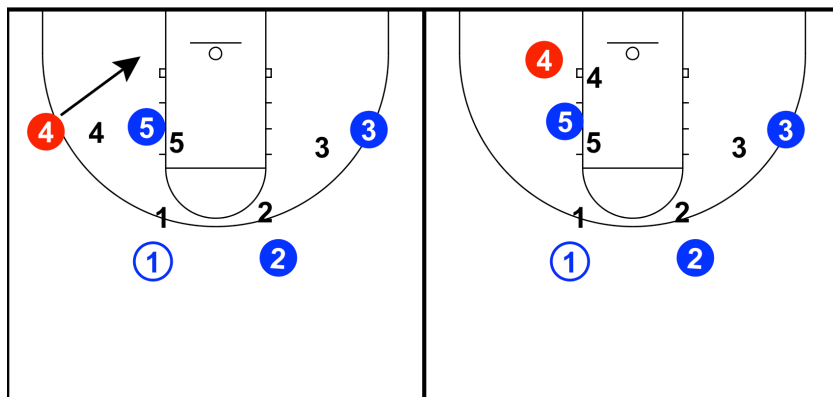
This forced Bonham's defender into a difficult defensive situation. Bonham's first move was always *inside and up the lane*. Correspondingly, his defender was forced to play *higher* to prevent Bonham from catching a pass inside the lane, near the basket.
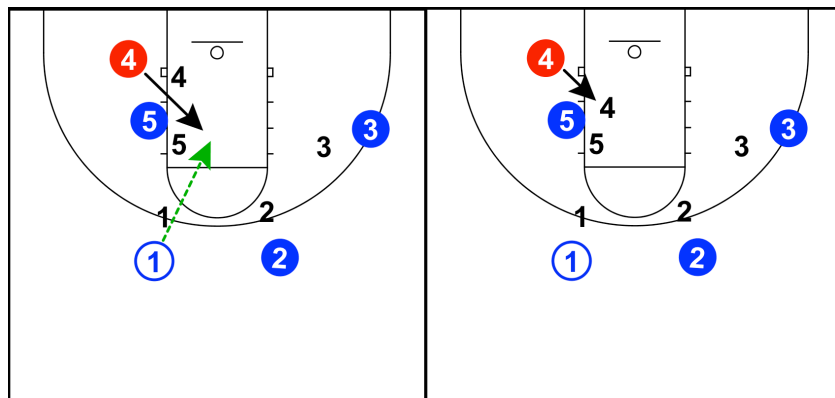
However, in this position the defender was susceptible to be being rubbed or scrapped off the pivot man if Bonham changed his path, *swinging around* the pivot. Bonham could now catch the ball unguarded 12 feet from the basket with his dribble still live. The two defenders were forced to give up a relatively easy jumper or switch, causing a likely mismatch. Even if Bonham's defender managed to fight over the top, he had little or no cushion left and was vulnerable to a shot fake and drive, or was likely to get picket off a second time by Wilson, thus setting up a classic pick and roll.
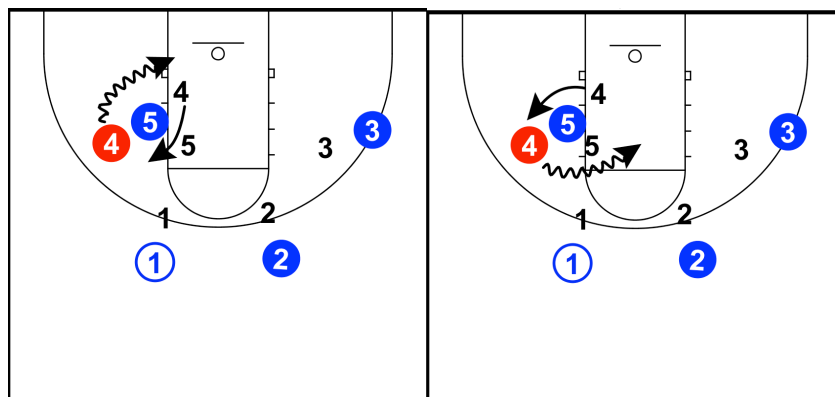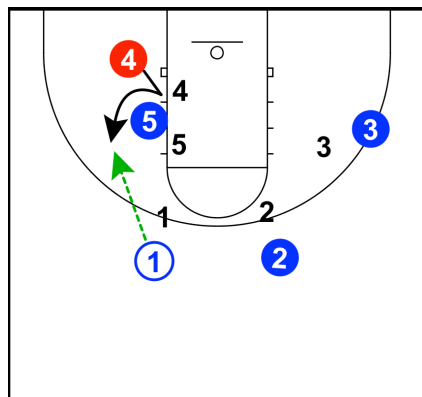

Watching these maneuvers unfold during the championship weekend gave Sullivan a clue for melding Jucker's scheme with his own idea for effective offense – ***the concept of isolation***.

What did Sullivan do?

Four things.

First, he shifted from a two-guard to one-guard alignment. This placed the ball at the point, in the middle of the floor, eliminating or at least blurring the distinction between the "help side" and "ball side."
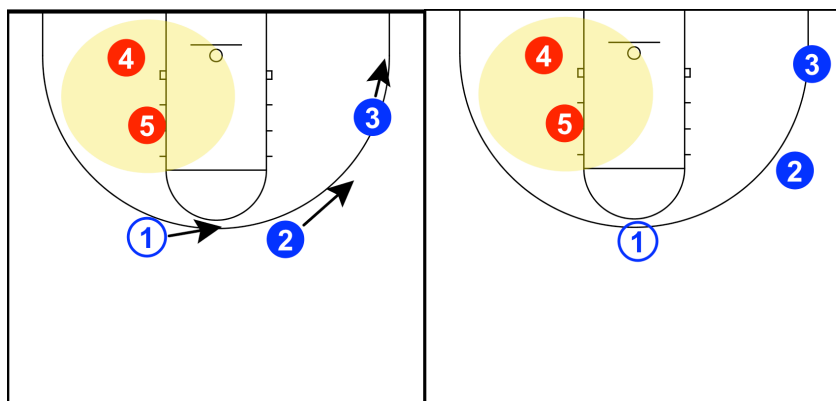
Second, he moved his power forward directly behind the center so that their bodies were literally stacked, one against the other, near the block. If circumstances required, they could move their stack up the lane or even separate from one another, but initially, they were stacked tightly together.
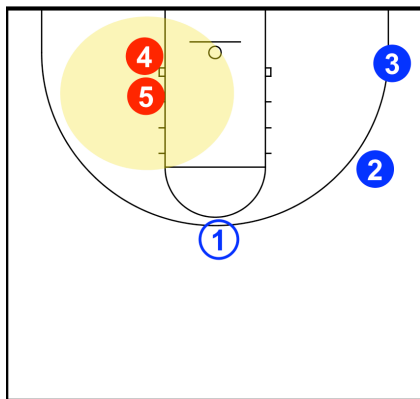
Third, he devised four fundamental, easily repeatable "stack moves" in response to the most likely defensive scenarios. These moves formed complimentary pairs – "Roll" and "Pull," and "In" and "Out." (Later, several variations and combinations of these basic maneuvers evolved.) These paired maneuvers gave the offense great flexibility for as the defense adjusted to stop one move they became vulnerable to the other. Moreover, while the offense relied on the players' read-and-react, freelance movement, the coach on the sideline could easily spot the emerging defensive tendencies and instruct his players accordingly, much like a football line coach changing his linemen's blocking assignments.

Finally, Sullivan moved his remaining two players "out of the way" into a variety of positions depending on their own unique strengths and weaknesses, or the evolving circumstances of the particular game. By varying his offensive alignment, he could keep the offside defenders busy or place them in vulnerable positions, opening up new points of attack. In every instance, each formation or alignment attempted to *isolate the defenders*, making it difficult, if not impossible, for them to help one another with hedges, traps, and rotations. With the offensive action occurring so close to the basket, any attempt by an offside defender to provide "help defense" would leave him vulnerable.

The end result was the "Isolation Offense." In Sullivan's words: *"To isolate means **to set apart from others**. This refers to both the offensive player and his defender. Practically speaking it means to give the offensive player room to maneuver for the pull-up jumper while at the same time making it difficult for the defense to help the isolated defender. This is the aim of the Isolation Offense."*

### Can you give some examples of the various formations or alignments?

When Sullivan first unveiled his Isolation offense during the 1963-64 Chicago Catholic League season, he used only four alignments. Later his assistants added others to the mix and created a system of lexicon for the offense. Here are Sullivan's initial alignments.
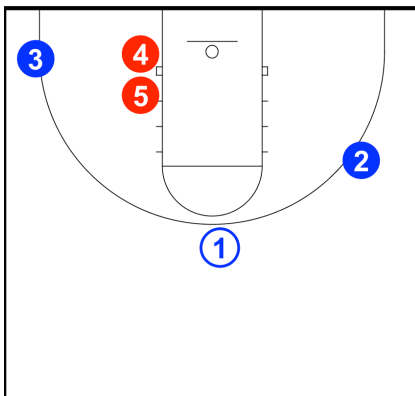

Open

Creates room for quick guards to operate on the open side of the floor. 1 and 2 can play a pick/roll, give-and-go, back-door style of attack. 3 adjusts his movements accordingly.

4 and 5 run the stack maneuvers (Roll / In).
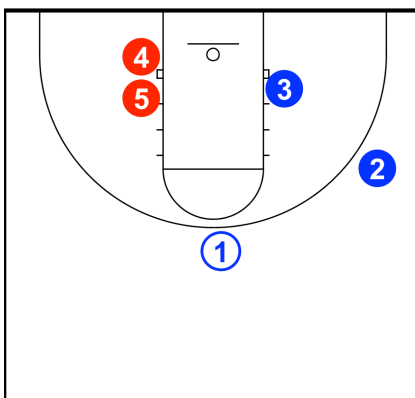
Closed

2 and 3 use pin downs and high-low maneuvers while the stack men can now use their perimeter stack moves – Pull and Out – as well as their interior moves, Roll and In.
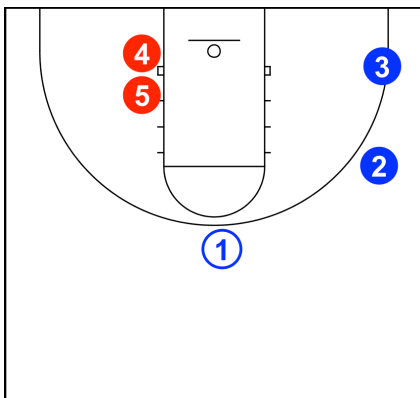
Closed Out

Further isolates the stack defenders accommodating a two-man game with the most potent offensive players in the stack.

1, 2, and 3 can run dribble-drive and Princeton movements. Facilitates today's 3-point shot.
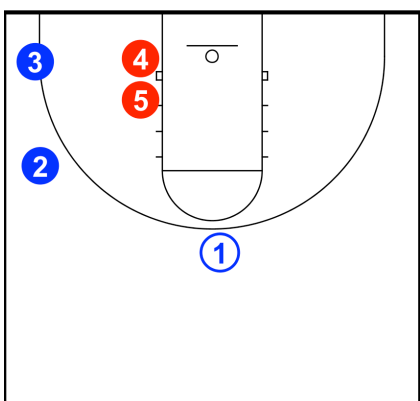
Overload

Places the defensive point in a highly vulnerable position. Essentially the offense plays a three-man game. Especially useful at the end of the game when you want to attack the rim and get fouled and begin racking up easy free throws.

What about the "Double Stack"? When did Sullivan start using it?

Not until he became Johnny Dee's top assistant at Notre Dame University. During the summer of 1969, Dee and Sullivan coached a team of Midwest all-stars against the touring Soviet National team. They unveiled the Double Stack at that time, splitting a two-game series with the Olympic gold medalists.

During the next two seasons, they used the Double Stack almost exclusively, placing their two most potent offensive players – Austin Carr and Collis Jones – on opposite sides of the lane. This forced opponents to guard a wide perimeter making it difficult for them to get offside help or to double team. The formation placed emphasis on the point, wing, and middle – a frontal rather than a flank attack, the wing rather than corner, the inside rather than outside.

In the NCAA tournament, though, Dee and Sullivan employed a *single stack* featuring Carr and Jones aligned
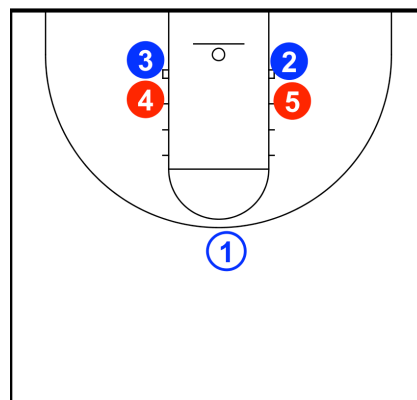
together on the left block, their teammates in position on the *other side of the floor*, at the wing and corner in the **Closed Out** formation. Essentially, they played a two-man game.
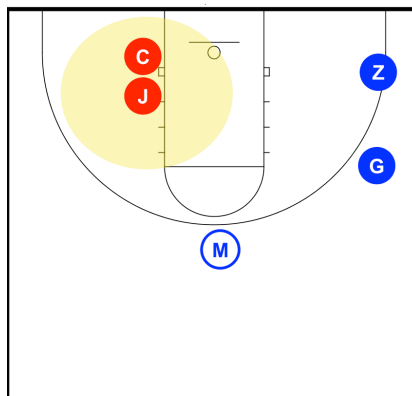
The result? Over the course of six games spanning two consecutive NCAA tournaments, Carr and Jones combined for 423 points, shooting 50% from the field and averaging 71 points per game. (For an in-depth statistical analysis, see http://betterthanalayup.com/the-blind-men-and-the-elephant/#more-376)

At the time, what did opposing coaches say about the Stack Offense?

Al McGuire, Marquette: *"It posed more defensive problems than any attack we encountered. It gives great percentage shots, provides fine inside rebounding, and causes mismatches."*

Joe B. Hall, Kentucky: *"It presented defensive problems that were almost impossible to handle with straight man defense. It exploited picks, two-on-two situations, and isolations. We were impressed and experimented with it in our freshman program."*

Harvey Schmidt, Illinois: *"It presented a constant defensive problem for us. It certainly has some built-in answers for pressure defenses."*

Don Donoher, Dayton: *"It is almost sure to fit any type of personnel. After playing against it we made plans to add it to our attack. Our players like it!"*

Frank McGuire, South Carolina: *"It immediately caused a problem in our game plan. Rather than play into their hands by playing our preferred man-to-man, it forced us to play zone."*

John Wooden, whose 1970-71 UCLA team suffered its only defeat against ND in yet another championship run, made no comment except to say that he "never imagined that one player could score so many points against our defense."

Can you explain the Stack moves?

As noted above, Sullivan devised four fundamental, easily repeatable "stack moves" in response to the most likely defensive scenarios. These moves formed complimentary pairs – "Roll" and "Pull," and "In" and "Out." In quick succession here they are:
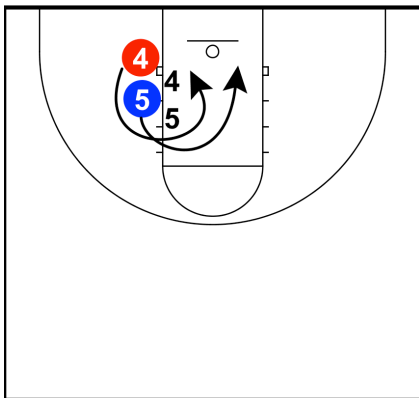
Roll

The 4-man rolls tightly around the 5-man looking for the ball. If his defender follows him, he will get "scraped off" by his own topside teammate. More importantly, the defender's trailing action will, in turn, screen his defensive teammate, leaving the 5-man free in the lane when he executes the second roll.
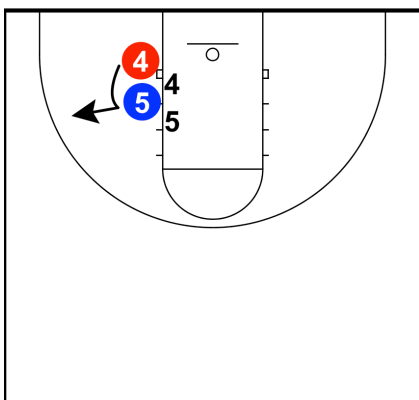
Pull

If the 4-man's defender refuses to roll with him, instead, cheating up the lane to meet the rolling action, then the 4-man "pulls" to the wing, setting up the classic Swing & Go action. Interestingly, Sullivan first called this move "Shot" to emphasize the immediate midrange jumper that it created.
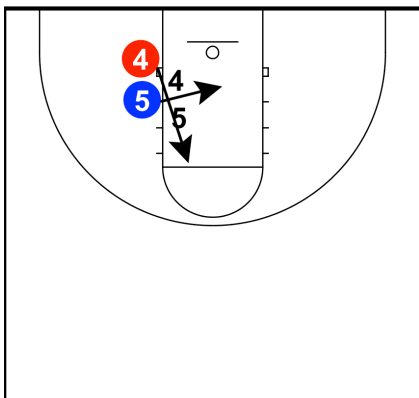
In

Sullivan's favorite move. The 5-man, his back squared to the baseline and his inside arm extended into the lane, *slides* between the two defenders. The 4-man breaks sharply into the lane off of the 5-man's trailing foot. If the defenders switch, the 5-man is wide open at the rim.
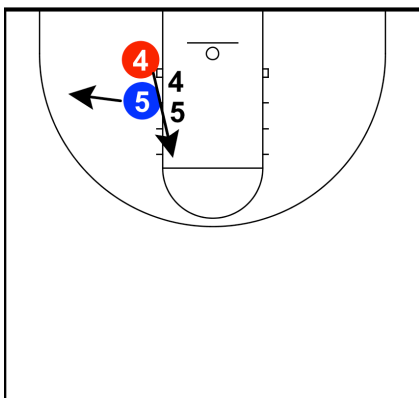
Out

The reverse of "In" to take advantage of the 5-man's defender when he loosens up and sags into the lane so that his teammate can contest "In." When this happens, the 5-man simply steps out in a fading motion while the 4-man steps sharply up the lane to screen the 5-man's defender.

These four basic moves gave way to two additional maneuvers to counter specific defensive adjustments.
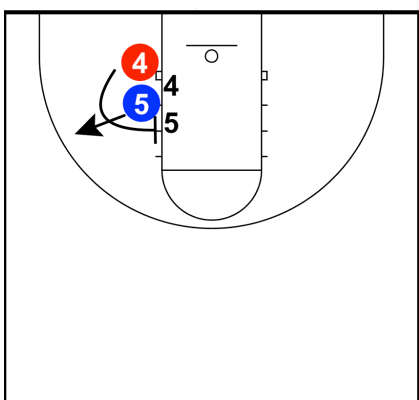
Rout

"Rout" = a combination of Roll and Out. The 4-man picks off the top man's defender who then "pulls" (or fades) to the wing
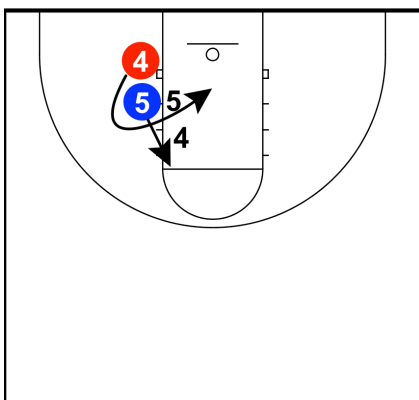
Rex

"Rex" = Roll Exchange (the bottom man rolls between the defenders thus exchanging spots with the top man and, in the process, creating "In." This is useful when 4's defensive man has moved all the way to the top of the stack in an attempt to prevent Roll and Pull.

Do you have video of the offense in action?

Very little video of Sullivan's original stack offense survives. However, here is a six-minute clip of Austin Carr's 61-point, record-setting NCAA tournament performance that I have shared before.

http://www.youtube.com/watch?v=ULXHcoutilw

If you mentally skip the points he scores in transition and from the free throw line, you will get a feel for the power and simplicity of attack. In particular, watch the first six scores:

1. Roll: You can't see the play unfold in its entirety because of the camera angle but here's what happens: (a) Instead of starting at the bottom of the stack where he was usually positioned, Carr is on the top with his teammate, Collis Jones, stacked behind him; (b) Jones "rolls" around Carr and as his defender chases him, the defender picks off Carr's man. As he does so, Carr rolls behind Jones and receives a pass for an immediate score.

2. Pull: Now Carr is on the bottom of the stack on the other side of the floor. He begins to roll around the top man but then "pulls'" to wing where he receives a pass, drives to the baseline and makes a short pull-up jump shot. It's difficult to see the whole play develop but when Carr begins to roll, his defender goes up the lane to meet him, thus escaping the screen that the "rolling" motion creates, but when he does, Carr immediately stops his rolling motion and "pulls" to the wing. Once again the defender is screened off, this time in a different manner.

3. Transition basket

4. Pull

5. In. Fouled on missed shot.

6. Pull

As the film advances you will also see **"Rout"** and various sequences in which the ball is passed to the opposite wing who, in turn, passes inside to Carr who has used the congestion of the stack to slip his defender.

What about ball reversals?

Like Ed Jucker, Sullivan favored simplicity. The Stack was designed to generate a high quality shot with a single entry pass. If more passes were required, then he was content but he didn't count passes or insist on multiple reversals to "move the defense." The defensive players were already isolated from one another and vulnerable to simple two-on-two freelance movement. To Sullivan's way of thinking, what more could a coach do? He believed that no matter how controlled or patterned a team attempted to be, the offensive scheme would inevitably break down requiring the attackers to improvise. For Sullivan, an offense that could create such a situation early in a possession was more effective than one that unnecessarily complicated matters and increased the chance of

turnover.

In the early stages of a game he wanted to enter the ball from the point to the stacked players **on** or **in the lane** so he emphasized those stack moves that created **interior** movement, "Roll" and "In." Ideally, he wanted his point guard to bring the ball directly to the top of the key and to make the immediate entry pass… but, if the timing wasn't just right and the ball couldn't be delivered promptly, then the stack players simply moved back to their stack positions and the point man passed to a teammate on the other side of the floor. Then, the ball would be reversed back to the point and the sequence would begin again.

Sullivan's reason for emphasizing the interior stack moves early in the game was to force the defense to guard the lane so religiously that eventually they were not able to cover passes to the short midrange area. They became very susceptible to quick "catch and shoot" maneuvers. And when they rushed to cover those situations, quick players like Austin Carr burned them with pull-up jumpers and drives to the basket.

In summary, then, what are the strengths of the offense?

The advantage of the offense is **immediate penetration**, placing tremendous pressure on the interior of the defense. Moreover, the various attack formations create versatility allowing the coach to place particular defensive players in positions of relative weakness, or correspondingly, to "mask" the weaknesses of his own players. Regardless of formation, the system isolates the defenders from one another, making it very difficult for them to help, rotate, and double-team.

While a traditional attack like the Princeton offense works from the *outside-in*, Sullivan's Stack works from the *inside-out*. Because at least two of the offensive players are stacked near the basket, the defenders are forced to guard them closely, thus surrendering their reaction time. The stacked attackers must be guarded closely even if they are relatively poor players because they are an immediate offensive threat due to their proximity to the basket. If coached to properly time their stack maneuvers, one or both players will almost always get open to receive a pass relatively close to the basket.

Sullivan summarized the strengths of his offense with following bullets:

• Simplicity – minimum of ball handling necessary to get a good shot

• Quick hitting – no unnecessary delay; blends with break and pressure defense

• Flexibility – capable of easy modification to diversify attack; ends controversy over whether an offense should fit the players or the players the offense as it accommodates both theories

• Continuity – continuous succession of action; the basic maneuvers are easily repeated

• Adaptability – able to adjust to changing personnel and situations without difficulty; similarity in

the skills and responsibilities for all positions

• Freelance opportunities – facilitates individual moves; get players the ball in a good operating position; they take it from there

• Court balance – rebound opportunities and defensive protection

• Frontal attack – spreads the defense

And its weaknesses?

The major weakness of the offense — like all offenses — is timing. If you have a weak point guard or face a defense that disrupts the timing of the entry pass from point to stack, then the stack become useless. Drilling to insure good timing and finding ways to compensate for a weak guard play are very important.

Does the three-point shot improve the offense or make it obsolete?

The Stack doesn't prevent you from shooting three-pointers in transition or from using the various isolation formations to generate threes within the half-court game. In fact, the players in the stack create an immediate inside threat that must be contested and therefore open the floor for the perimeter players to drive and pitch to teammates beyond the three-point arc. It's a win-win situation.