

Supporting narrated video (NV) demonstrations, high-speed video (HSV) clips, technical proofs (TP), and all past articles are available online at [drdavepoolinfo.com](http://drdavepoolinfo.com). Reference numbers used in the articles help you locate the resources on the website.

A split hit is when the cue ball (CB) is very close to hitting two object balls (OBs) at the same time. Do you know how to judge these shots to determine which ball is hit first? Often, it is important to be able to do this so you can determine if the shot is a foul or not. In online video [NV L.124](#), I cover basic principles that help you judge split hits with complete confidence and accuracy. I'll summarize the highlights below, but you might want to watch the video first to get the full benefit of the discussion.

The video starts with four split-hit-call examples from recent pro tournament matches (see **Image 1**). Play the role of referee and decide if you agree with the calls when you watch the video. I hope you disagree with some or all of them, because each of the four calls was most definitely incorrect! Even top pro referees make mistakes at times. Hopefully, after watching the entire video, you will be convinced beyond a shred of doubt why the calls were bad.



Yapp shot in 2026 8-Ball Championship



Capito shot in 2025 Hanoi Open



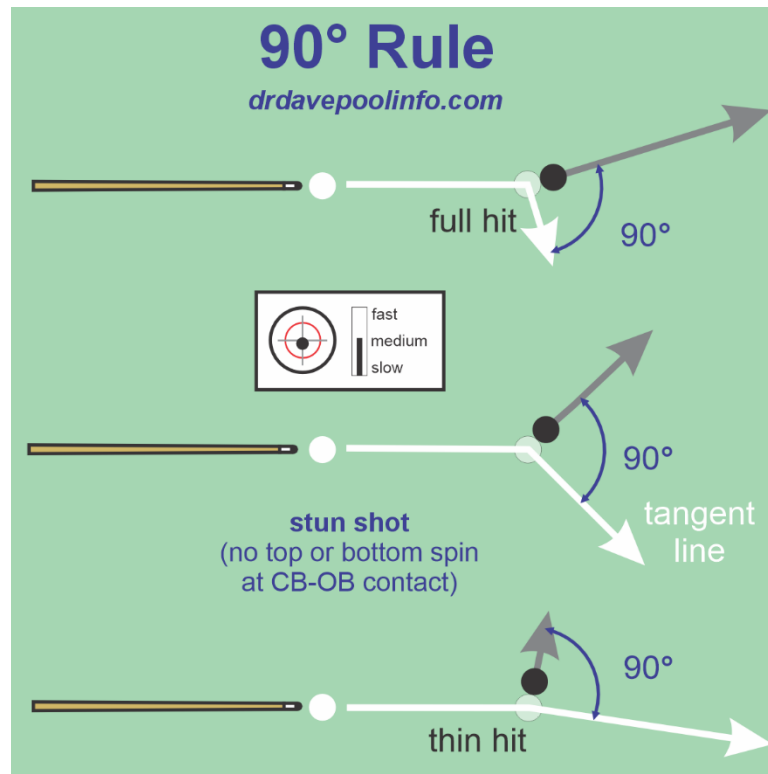
Nguyen shot in 2024 Hanoi Open



Kun Lin shot in 2022 World 8-Ball Championship

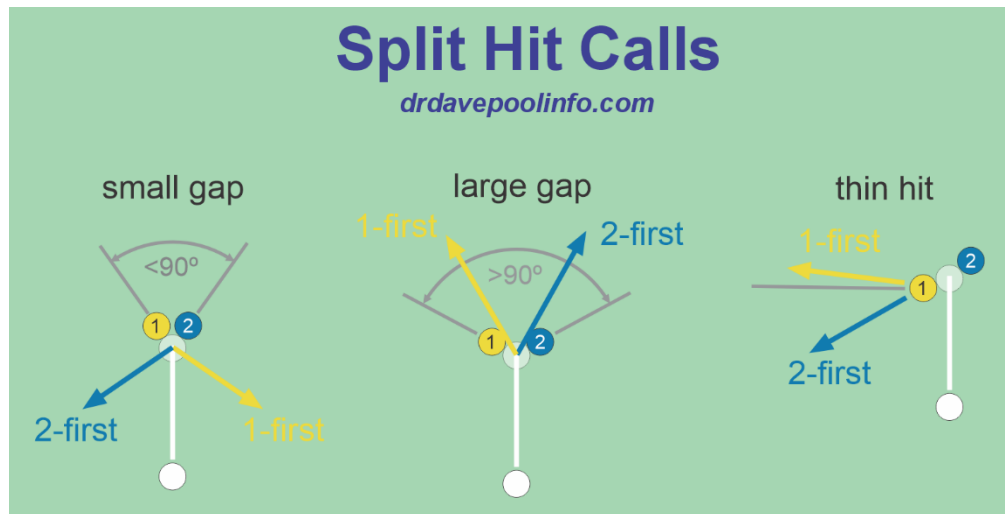
**Image 1 Recent Pro Split Hit Calls**

To judge all types of split-hit shots, all you really need to understand is the concept of a tangent line (see **Image 2**). When one ball hits another, the two balls initially separate at 90°. The direction the first ball heads off the 2nd ball is called the stun line or tangent line.



**Image 2** 90° Rule

**Image 3** provides a good overview of how to detect which ball is hit first for three important categories of shots. When there is a small gap between the OBs (see the left side of Image 3), if the CB hits the 1-ball first it will head toward the 2 along the tangent line off the 1. And when the CB hits the 2, it will head in the tangent line direction off the 2 to the right. And if the CB instead hits the 2-ball first, it will head toward the 1 along the tangent line off the 2. And then it will head off the tangent line of the 1 to the left. When watching shots like this live (and even sometimes during video review), you usually can't see directly which ball is hit first, but the CB motion provides conclusive proof. If the CB goes to the right, the 1 was hit first; and if the CB goes to the left, the 2 was hit first.



**Image 3 Split Hit Summary**

It may seem possible for the CB to hit two OBs at the same time, but practically speaking, it is not. To try to show this in the video, I did my best to aim for a simultaneous hit of two frozen balls. I decided to use backspin so if I hit both balls at the same time, the CB would draw back perfectly straight. Check out all my attempts in the video. Better yet, try the shot a bunch of times yourself to see if you can get the CB to come straight back. You might be surprised by how difficult it is. You might also learn some things about your fundamentals. If the CB goes in one direction a lot more than the other, you probably have a problem with vision center alignment or aim, or your stroke is not straight.

I stopped after 68 attempts, when I was able to bring the CB back very straight. (It was almost 67, which I'm sure the young viewers out there would have liked.) If you watch the video, you will notice that the CB moved a lot to the right or left with most of the shots, but it did come back straighter for some of them. These are the ones that were really close. With these, the CB hit the 2nd ball while it was still in contact with the 1st. These aren't true simultaneous hits, but they do involve overlapping contact. This is very difficult to do on purpose; but if you hit enough shots, aiming and stroking as carefully as possible, eventually it will happen. But you will usually still know for sure which ball was hit first since the CB is unlikely to come back perfectly straight.

In the video, I filmed the hits with both regular-speed and slow-motion video. Even with an expensive super-fast high-speed video camera, it might be difficult to see directly which ball is hit first. With one of the near simultaneous hits in the video, I show the video frame just before the hit, where neither ball has moved yet, and the very next frame where both balls are moving. You might think this means the balls were hit exactly at the same time, but this is incorrect. Ball contacts can be happening between the video frames (even with high-speed video). Video cameras just can't take pictures fast enough to capture near split-hits. But the fact that the CB moves to the right or left after the hit provides conclusive proof which ball is hit first. Examples of both types of hits are shown in the video.

With the 68th shot in the video, I came very close to simultaneous contact. Honestly, I was very shocked by this because it requires a good hit and lots of luck ("I Got Lucky"). I could have hit 1000 shots and not had one come back as straight as it did. In a situation like this where the CB motion does not clearly indicate which ball was hit first, no foul can be called since the benefit of the doubt goes to the shooter. Again, try it to see how many shots you need to get straight-back draw. You could get lucky and do it on the first try, but I would be betting against you, even if you were Efren.

When there is a large gap between the two OBs (see the middle of Image 3), the tangent-line principle still applies and motion of the CB again clearly indicates which ball was hit first. If the 1 is hit first, the CB comes off the tangent line of the 2 and heads to the left. And if the 2 is hit first, the CB comes off the tangent line of the 1 and heads to the right. If you manage to hit the 2nd ball while the CB is still in contact with the 1st ball,

the CB can head anywhere between the expected tangent-line directions. The video shows an example. In these rare situations, where the CB direction does not clearly indicate which ball is hit first, the benefit of the doubt goes to the shooter, and a legal hit is assumed.

An interesting situation is where the hit on the first ball is very thin (see the right side of Image 3). If you expect a thin hit on the first ball might be likely, it is usually better to focus on the motion of the first ball to determine which ball is hit first. With the thinnest hit possible, the 1 would head perpendicular to the CB direction. If the 1 goes forward of this line, it must have been hit first. But if the CB misses the 1 and hits the 2 first, the CB would carom off the 2 and back-cut the 1. CB motion does not always indicate which ball was hit first with thin hits like this, as demonstrated in the video. Again, that's why it is best to focus on the motion of the first ball. If it goes forward, it was hit first; and if it goes backward, it was hit second.

Now, it is possible to judge the shot incorrectly if the hit is really thin. As shown in the video, the 1 can be hit so thin that after the CB hits the 1 and the 2, it can hit the 1 again. In this case, the 1 can be back-cut with a 1-first hit. If you had access to slow-motion video replay with enough frames to show the action of the shot, you could call the 1-first hit in a situation like this. Otherwise, you would need to call a 2-first hit based on the 1-ball being back-cut.

Online video [NV L.124](#) analyses each of the bad calls made in recent pro tournament matches (see Image 1), so be sure to watch it so you can see how the theory can be easily applied to make the correct calls (and to know when a bad call is made). Again, when judging split hit shots, you cannot usually see directly which ball is hit first, because the contacts happen too quickly. But if you know basic split-hit principles, you can confidently determine which ball was hit first based on how the CB or the first OB moves.

Good luck with your game,  
Dr. Dave



[NV L.124](#) – How to Judge SPLIT HITS ... Everything You Need to Know

PS:

- I know other authors and I tend to use lots of terminology, and I know not all readers are totally familiar with these terms. If you ever come across a word or phrase you do not fully understand, please refer to the [online glossary](#) at [drdavepoolinfo.com](#).

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