## Golf Croquet Rules Double Taps & Crushes

While most players are aware of the existence of "double taps" and "crushes" in Golf Croquet, many are often unaware of exactly what these rules mean and how referees apply them.

Three of sub-clauses of Rule 13(a) apply:

- Rule 13(a)(6), which reads "It is a fault if, in striking, the striker "double taps" the striker's ball by striking it more than once in the same stroke or allows the striker's ball to retouch the mallet;
- Rule 13(a)(7), which deals with the "crush", and reads "It is a fault if, in striking, the striker causes the striker's ball to touch a hoop or the peg while still in contact with the mallet."
- Rule 13(a)(8), which covers what is now known as the "ball crush, and reads" It is a fault if, in striking, the striker causes the striker's ball while still in contact with the mallet, to touch another ball, unless the balls were in contact before the stroke."

When two balls are close and the striker's ball is played to contact the other ball, then either a double tap or a ball crush is possible.

When the striker's ball is played along the line joining the centres of the two balls (ie. straight on), the striker's ball will, when it contacts the other ball, transfer its kinetic energy to the other ball and stop. If the stroke was played without follow through (ie. as a stun shot) then there is little likelihood of a double tap but if the stroke was played with follow though, then, dependent on the separation of the two balls, there is the possibility of the mallet hitting the striker's ball again (a double tap) after it stops. A stun shot, played with 2.5 cm (1") separation may, dependent on the skill of the player, be a clean stroke. On the other hand, a stroke played with power and full follow through may result in a "double tap" even though there may have been 25–30 cm (10-12") separation between the balls.

The time honoured way of avoiding a double tap is, as the separation decreases to play the striker's ball at an angle to the line joining the centres of the two balls - the closer the balls, the greater the angle. As the angle increases, the kinetic energy transferred from the striker's ball to the object ball decreases and the loss of momentum by the striker's ball also decreases, allowing it to move ahead of the mallet, even if the stroke is played with follow through, thus avoiding the "double tap". This works until the balls are very close, at which point Rule 13(a)(8) rears its ugly head.

Rule 13(a)(8) was introduced in the 2007 edition of the Rules and has been little understood by players and some referees. The work of Prof Stan Hall (published in "When a Mallet Strikes a Ball" - ACA Gazette 1994 Vol 1 No 1) shows that the striker's ball, when struck, clings to the mallet face for a measurable time and distance. The time and distance for which the ball clings to the mallet face varies with the power with which the stroke is played, and simply put, is 2mm for a soft stroke and 4 mm for a hard stroke, when the mallet is held with the shaft vertical. A shaft inclined forwards will increase these distances.

Therefore, as the separation of the balls decreases and the angle at which the striker's ball increases, there comes a point where there is definitely not a "double tap" but there is contact between the striker's ball, while it is still clinging to the mallet face, and the other ball. This is the "ball crush", a fault under Rule 13(a)(8).

The other "crush" comes under Rule 13(a)(7) and is identical to the Rule 13(a)(8) except "a hoop or the peg" are substituted for "another ball". The considerations in avoiding a "ball crush" also apply here. Note that while Rule 13(a)(8) has the disclaimer of "....unless the balls were in contact before to the stroke" this rule does not. However, Rule 13(a)(9) allows us to play a ball that is in contact with a hoop or the peg and not be penalised, as long as we strike it in a direction away from the hoop or peg.

"All very well," you say, "but how does the referee determine if I have faulted and if so, which fault?"

Referees in Charge should be there as soon as a stroke involving the striker's ball close to another ball, a hoop or the peg is likely to be played. Supervisory Referees or Referees on Call should be called to allow them to observe the stroke being played.

As part of their preparations, the referee will determine the separation between the striker's ball and the other ball, hoop or peg, and may ask the striker's intentions, expecting to be told the direction of swing, the power of the stroke and whether it will be played as a stun shot or with follow through. They may then decide to mark the balls – this is not because they think that the player may cause a fault but because the player or the opponent (whoever called the referee) thinks that there is the possibility of the stroke resulting in a fault. The referee will then take their position and tell the striker that they are ready for the stroke to be played. The referee will observe the stroke (direction of swing, power and follow through, if any) and the consequences (direction and distance of each ball).

If the stroke was played as a stun shot to avoid a double tap, then the referee would expect both balls to travel in the same direction, with the striker's ball travelling very little further that the original position of the other ball. A ratio of travel distance of the striker's ball to travel distance of the other ball of 1:8 would be expected and a ratio smaller than this would cause the referee to assess the stroke as a double tap. As the angle of play-off of the stroke increases to avoid the double tap, so the referee can expect the striker's ball to travel at a greater angle to the direction of travel of the other ball and to travel a greater distance, with ratio of distance of travel of the striker's ball to the distance of travel of the other ball decreasing to the point where at an angle of 85° the ratio may be 20:1.

The players have the right to expect the referee to audibly rule on the stroke. Obviously, a fault will be called as such, but a clean stroke should also be acknowledged. I personally say: "Clean stroke" and if a hoop has been scored in the turn, then I also call that and the score, for example "Clean stroke, hoop to Blue, 6 - 5."

The best way to avoid a double tap or ball crush when the separation is small? Play so that the striker's ball does not contact the other ball at all. Or just touch your ball and leave your opponent with the same dilemma!