



Double Taps (Multiple Ball Contacts)

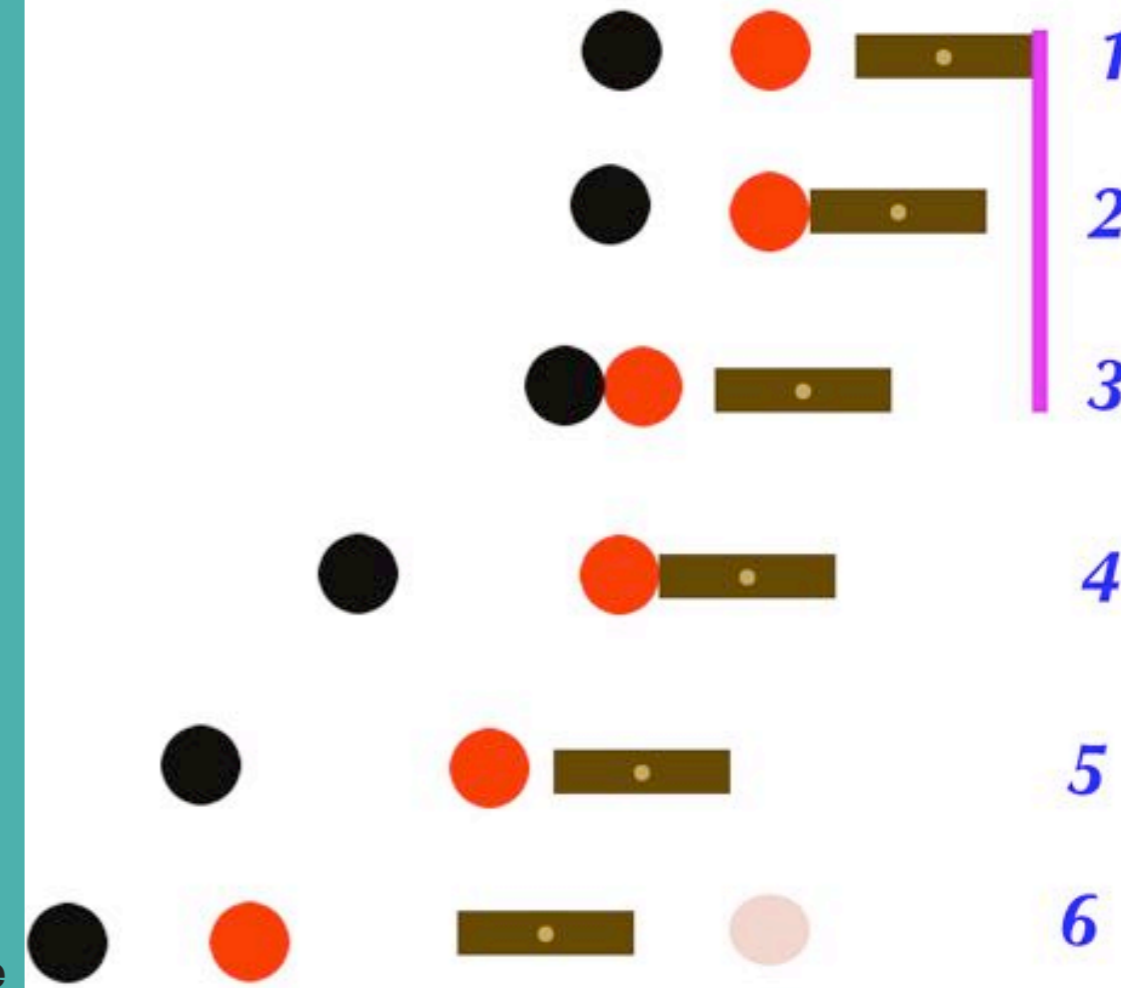
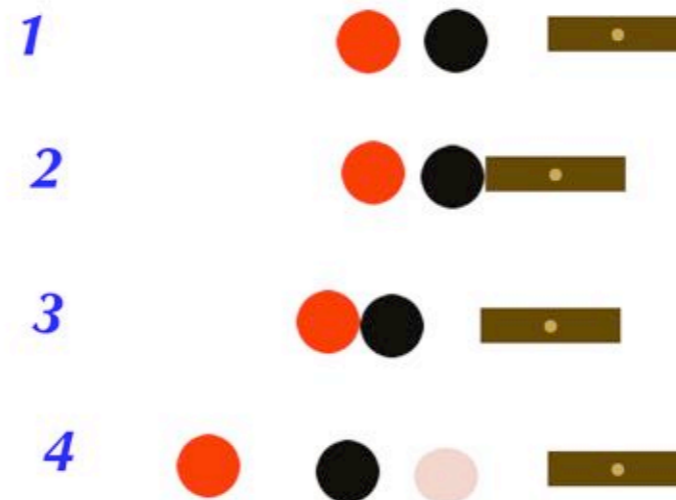
<http://www.youtube.com/watch?v=gyoulOPO740>

It is a fault to allow the mallet to contact the strikers ball more than once, unless it is the result of a roquet.

Left Panel:
Normal stroke, balls move once struck.

Right Panel
DT Fault, in (fig 2) and again in (Fig 4) the mallet is in contact with the ball.

Law 28a8.



http://www.youtube.com/watch?v=8PT_mwTxLe8

- t- 32 sec, one shot = Clean since no double tap, second sound the mallet striking the wire of the Hoop!
- t= 1:18. Indoor carpet shots, 2 shots 1 double, even treble tap, second bevel edge shot all hampered strokes
- real and then proved slow motion.

Double Taps (DT) (Law 28a8)

Prior to the era of high speed cameras, a sandwiched piece of carbon paper and plain paper on the face of a mallet striking a ball (especially a roll), provided evidence of multiple contacts. DT's are easily heard, video recorded and decided according to the sound heard conveying two distinct sounds made by the mallet and SB striking an obstacle (ground, another ball, hoop or peg) and rebounding BACK into the continued forward direction of the mallet.

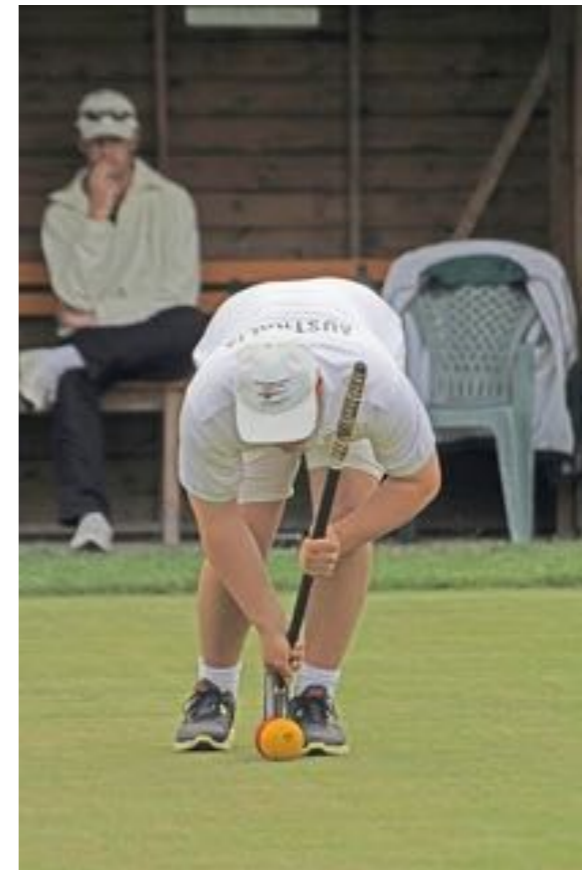
Continued scraping and contact of mallet on the ball in the croquet stroke, plainly indicated by hearing a buzz or knocking in for example a poorly executed roll shot, breaks Law [28.7(a) 7(a)]. This occurs when prolonged mallet contact causes an indistinct sound. However it must currently be visible, in a croquet stroke to the naked eye and so will often not be detected.

Commonly players and officials accept a roll shot is played where the mallet follows through both balls, at an oblique follow through stroke. A stroke that pushes or pulls the SB is not only unnecessary, but rarely is an advantage to a player. Note that a push can only be committed once the balls part contact, Law [28.7a].

One may also not see a double tap, unless pictures are reproduced, but one may be inferred, especially in scatter shots, where the balls are separated by a few millimeters - by definition a DT must have occurred.

Referee regulation 2c, ruling on a past incident that is in dispute:

A referee may not act upon a fault which they, or a alternate reliable referee had not witnessed (as defined in [Reg 2]). If an adversary is accused of committing a double tap and the referee is called in after the event, the referee's must resolve the dispute. Another option is to remain on the lawn, as a referee in charge or ask that the referee of the tournament appoint a referee in charge. Once in that position the referee will be able to witness subsequent strokes.



Robert Fletcher (Australia) in 14th World Championships Final, Paddy Chapman (New Zealand) looks on in the background, 2013

Three Aggressive Hoop Shots

Real Time Only:

<http://www.youtube.com/watch?v=ToH4GJv1sGQ>

<http://www.youtube.com/watch?v=itj9I1n-6M0>

URL & Date: BK, Ballymd August 2013 -1U-6M0	Ball Colour: SB	CB	U Tube Time	Real t Call	Slomo Call	Fault type & Consequence	INDEX Manual	Comment
1	Yw	-	0:00	Fault, DT	DT	DT		Ball on hoop leg, mallet angled
2	Bw	-	0:39	Fault, DT	DT	DT		Ball on leg, mallet into l leg sound and Dt first
3	Bw	-	1:20	? Clean	Clean	Clean		Ball clear, then mallet to TR leg hoop
TIME Clip			2:02					

<http://www.youtube.com/watch?v=itj9I1n-6M0>

Real Time and Slow Motion

URL & Date: BK	U Tube Time	SB Ball Colour	CB Ball Colour	Real t Call	Slomo Call	Fault type & Consequence	INDEX Manual	Comment
1	0:00	-Bw	Yw	DT	DT	Fault, DT EOT, oppo replaceballs?		All examples STATIC of SB<4mm to CB
2	0:45	Yw	-Bw	DT	DT	Fault, DT EOT, oppo replaceballs?		
3	1:05	-Bw	Yw	DT	DT	Fault, DT EOT, oppo replaceballs?		
4	1:28	Yw	-Bw	DT	DT			
5	1:55	-Bw	Yw	DT	Y			

Balls at close distance

<http://www.youtube.com/watch?v=mQ4JpDEan8E>

ALL these 5 above examples (from clip...DEan8E); do not require slowmotion cameras. Whatever they sound, look the SB is 2-6 mm appart from the SB, and will ALWAYS be a DT.

<http://www.youtube.com/watch?v=KagK0dXyBQ0>

SB	End m	CB	End m	Y = SB-CB separation
Start θ mm CB-SB ratio END		Start		Gap Estimate
1:6	1	All +92	6	92 1 ball
01:6.3	1.2	All +92	7.5	92
1:6.11	0.9	All +92	5.5	92
1:25	0.4	All +46	10	46 1/2 ball, 3f
1:30.2	0.3	All +46	9.6	46
1:30	0.2	All +46	6	46
1:17.5	0.2	All +46	3.5	46
1:50	0.05	+20	2.5	20 1/4 ball, 2f
1:29	.75	+20	2.0	20 DT
1:50	0.05	+20	2.5	20 DT
1:11	0.18	+20	2.0	20 DT
1:2	1	+10	2	10 Bad DT 1finger
1:120	.05	+10	1	10 DT
1:1.5	0.8	+10	1.2	10 DT
1:1.2	1	+10	2.2	10 Bad DT

Fig 3.1.1

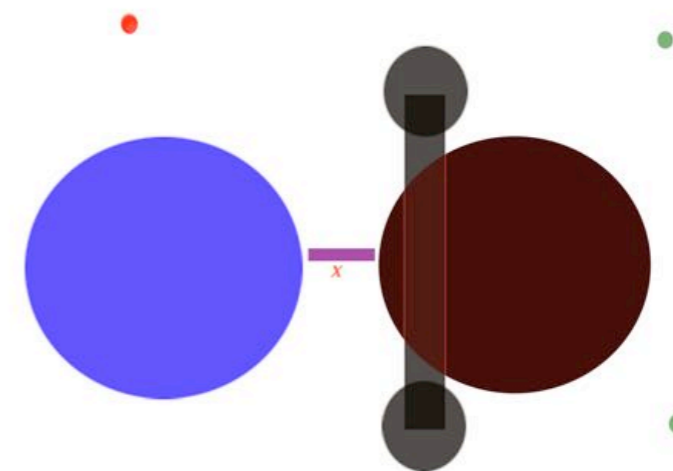


Table and Fig 3.1

This experiment ensured the black mallet was arrested by block of wood at the playing end of the hoop. A standard gap (X distance) was marked for reproduction in all strokes played. A variable gap (Y distance) between the SB- Red and CB-Yellow at the beginning of the stroke was measured and videotaped, as well as the final resting position of the balls after stroke played.

Increasing the strength of the stroke resulted in the balls ended further apart, and a RATIO (first column) calculated. This alone was unreliable in predicting a DT fault.

High speed video's showed very clearly when a DT began to consistently appear, where the wood contacted the ball against the SB causing it to stop and bounce back again making contact with the block - this distance was 18-20mm or 1/4 ball diameter, [or one finger breadth] between balls.

The FURTHER (Fig 3.1.2 above), the SB is back from the hoop (X distance) the worse this DT fault becomes, as shown by the black ball above.

