

No dimples

Some time ago an article was published in the French golf magazine 'Golf Européen' (March 2013), which explained the function and the importance of dimples on a golf ball. It was Rory McIlroy, one of the leading professionals in the world, who wanted to see how far he could hit a golf ball without dimples. Rory hits a normal dimpled ball on average almost 300 metres when using his driver.

When hitting a golf ball without any dimples, he did not succeed in hitting the ball any further than 125 metres, although he used his sophisticated driver. The dimples indeed have a significant effect on distance and the flight characteristics.

It has been found that less than 300 dimples are too few and more than 500 dimples are too many. Most modern golf balls have between 350 and 450 dimples.

It is of interest to have a look at the balls used in the long gone past in the games of colf, crosse, golf and mail.



*Dimples make the difference.
A dimpled ball can be hit more
than twice as far as a smooth
ball. –
www.realgolflovers.com*

Colf balls

Originally colf balls were made of boxwood and had a smooth surface without dimples or other irregularities. Trials have shown that with such a ball distances could be achieved from 50 up to 75 metres (Annemarieke Willemsen ‘Van allen Spele’ in ‘Madoc, Tijdschrift over de Middeleeuwen’ [Magazine on the Middle Ages], 1996). The clubs with which the wooden ball was hit were heavy and rather crude pieces of equipment.

In the course of the 16th and 17th centuries leather balls filled with cow hair came into play. Because of the seams (stitches) on the balls it could well be that the performance of such balls concerning distance and flight trajectories was far better than that of the smooth wooden balls. We suppose that the ‘hairies’ were also significantly more expensive and that the majority of the common players continued to play with ‘woodies’. In the poem ‘s Amsterdammers winter’ from Six of Chandelier (see chapter ‘Cleeks, klinks and tally sticks’ in this book) the use of feathery balls is mentioned.

We have not yet found out who made these balls and why people were using such expensive balls on the ice where distance was of little importance.



Boxwood ball from the 16th century found in the Netherlandish town of Delft. Due to the smooth surface of the boxwood, colf ball players could not hit the ball any further than 75 metres. – Museum Boymans van Beuningen, Rotterdam, The Netherlands

Golf balls

With the exception of some opponents, it is generally accepted that at the earliest beginnings of Scottish golf, boxwood balls with a smooth surface were used. The shrubs of the ‘*buxus sempervirens*’ were widely available in the region of the Firth of Forth. Because the earliest golfers played with rather crude clubs, we could conclude that golfers like colvers could not hit their wooden ball much further than 75 metres.

It was only after the invention of the gutta percha ball that golfers and ball makers realised that when the smooth surface of the ball was ‘roughened up’, the flight characteristics and thus distances achieved improved up to 175 metres. We suppose that golfers as well as colvers were probably not aware that the beneficial consequences, were due to the stitches on the leather ball.

They probably enjoyed the straighter and longer distances they achieved with the hairies and the featheries (roughly 150 metres) without understanding that the stitches played a significant role in the performance of these balls.

The difference in performance between hairy balls and feathery balls we do not know. It could well be that the feathery was much harder than the hairy and therefore could be hit further. The tension on the stitches of the feathery was therefore stronger than on the softer hairy and consequently could break more easily. We expect that the ‘survival time’ during play was much shorter.

One gets the impression that golfers and colvers had no idea that the seams on the feathery and ‘hairy’ ball were responsible for the increased distance and a far better flight trajectory; they just enjoyed hitting ‘far and sure’. – www.ebay.com



Crosse balls

It is a known fact that the crosseurs in Belgium and France used boxwood balls to play their game of crosse in the early days. It is remarkable that the crosseurs could hit the boxwood ball, the so-called ‘choulette’, more than 100 metres with the initial crosse club. By the end of the 19th century the world record was 134 metres achieved during a ‘longest drive contest’ in Maubeuge. Why could crosseurs hit their wooden ball with the traditional crosse club (crosse à brochon) as far as McIlroy could with his ‘dimple-less’ golf ball and his sophisticated driver?

The main reason is that the choulettes had a kind of ‘dimple’-pattern or other irregularities purposely cut into the surface of the wooden ball. They discovered hundreds of years ago the advantage of having such irregularities on the surface of the balls.

Initially the choulettes had an ellipsoid shape and were turned on a lathe. Several shallow lines were cut in the smooth surface or a series of ridges were turned on the ball. Another system of ‘roughening up’ the smooth choulette was to cut a large series of shallow cavities in the ball with a knife. Several balls we have seen were equipped with 150 to 200 of such hand-made ‘dimples’.

It is not known whether the ellipsoid shape of the choulette had specific consequences for distance or the flight characteristics.

NB When at a later stage crosseurs started to use pressed wood, they could achieve distances of more than 125 metres. With the successors of the pressed wooden ball, the celluloid ball(1930s) and the nylon ball (1950s) the average

distances increased up to 200 metres, both having hand-cut ‘dimples’.



Crosseurs made dimples, lines or ridges in or on the ‘choulettes’ already hundreds of years ago to improve distance and flight characteristics. It is not clear what effect the ellipsoid shape had on the performance of these balls.

Mail balls

Balls used in the game of mail were made of the roots of the box tree or hazelnut. The ‘palemardiers’ (club and ball makers and professionals) manipulated the ‘knotty’ piece of wood in such a way that the centre of gravity was as much as possible in the centre of the ball. The ball was carefully battered with a stone to roughen up the surface of the ball somewhat. In general the ball should have a rather low trajectory, the roll of the ball being as important for distance as the actual flight.

The information about the distances achieved with such balls differs from between 125 to over 200 metres.

The mail players normally preferred a low flight trajectory to avoid out of bounds shots on the very narrow courts. Therefore the flight of the ball was rather short while the ‘bounces’ were long. The distances achieved were dependant on the kind of surface and the condition of the mail court.

The mail balls had a rather smooth surface. Dimples were not required. The ball should have a low flight trajectory on the extremely narrow court. The roll of the ball on the hard surface was as important to achieve maximum distance. – Photo by Philippe Estang



