

The Evolution of the Golf Ball

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The Evolution of the Golf Ball

The very first golf balls were wooden, and then came the feathery, which consisted of chicken and goose feathers stuffed into a sewn leather pouch and pounded into a round shape with a hammer.

Could you imagine hitting such a ball with today's equipment?

It would probably explode like these exploding balls you get. On the other hand, if you have one of these balls, and in good condition, it could fetch as much as £20,000.

Not to mention the many problems the feathery created during play, as it would go out of shape easily, and have to be beaten back into shape. Production was very slow because it took ages to make one of these "master pieces."

The next development in golf balls came with the gutta-percha (later called the "guttie"), the first time rubber was used in a golf ball. It was moulded from a single piece of rubber material leaving a seam running around the ball, very much like today's two piece construction. They proved to be to very durable and strangely enough performed better than when cut by a thinned shot with an iron.

Varying patterns (square, triangles and rings) were applied by hand to the surface of the ball, but soon afterwards the moulds used were made with the varying patterns. These dimple patterns where actually "pimples."

They were left to cool and harden for 6 months to mature before being used. This may not have proved to be a good production choice, but there were not that many golfers as there are now.

Continual development and innovations in ball flight took place and all were mostly based from the “Gutty” ball.

Another major revolution was about to happen in ball design with the introduction of the Haskell rubber wound ball in the USA in 1898. This was the first time rubber threads were wound around a smaller solid core and then covered with a gutta- percha cover and its varying “pimple” patterns. I guess you could say that this was the birth of the two piece ball.

Greater distances were reported with a wound rubber Haskell ball but they were not accurate. It was discovered by pure accident that the Haskell ball when mixed with old gutty balls could be remade and this actually enhanced the distance of the ball.

It was also discovered that the paint applied to the cover of the original Haskell ball was applied too thickly making the ball flight erratic with a tendency to hook. At first the markings were made deeper to accommodate the extra layers of paint, but this only made the flight worse. Eventually they settled to keep the previous cover and use less paint to mark the ball, giving it less resistance in the air. With the remade balls, the composition of the inner material was compact making it perform better.

This never came without hassles though, as the remade Haskell balls with

the gutta cover were prone to crack either in production or in play.

Golfers everywhere enjoyed the wound ball and the newer versions till as late as 2001 when wound rubber balls were phased out to make way for new technology and the advancing development of solid piece balls.

The advancement of technology by various manufacturers soon became a source of controversy and discussion therefore the R & A and the USGA set to regulate the golf ball and their performance.

This gave rise to Rule 5, appendix III in the Rules of Golf book. The main limitations imposed on golf balls by these two governing bodies were as follows: the weight, diameter size of the golf ball and the initial velocity of the ball cannot exceed 173 mph when it is measured on their apparatus. The overall distance standard (combined roll and carry) is 275 yards under specific conditions.

Golf ball manufacturing today has become a science. Companies are employing aircraft engineers to design and develop their golf balls. Since it is all to do with flight, it makes sense to have these qualified persons on board. There are some thoughts that are foremost in minds of most ball manufacturers, and that is to produce a ball that can fly further, spin better, and be reasonably priced.

What is the idea behind modern golf ball design?

To put it into a nutshell the idea is to produce balls that have less spin off the driver face and more spin and control with the other clubs. But it is a little more complicated than that.

What's inside a golf ball?

Variations of rubber formulations called polybutadiene, make up the inner core of most golf balls on the market today (up to 5 layers now). The covers are made of chemicals called ionomers, and the two commercially known rubbers or plastics that are used, are Surlyn and Polyurethane. (or just urethane)

The number of layers used and their compositions in the inside of the ball helps manufacturers come up with different ball characteristics.

We often talk about compression in a ball. In a low compression ball for instance you would not be able to tell whether it is a high or low spinning ball because each manufacturer has different scales of compression, (there is no industry standard). The only way you will be able to feel the compression is to hit full shots. It will either feel hard or soft or somewhere in between.

The core has a lot to do with the feel of the ball off the clubface. If you were to take a very soft core and put a soft cover or a hard cover on it you would have two balls with perhaps similar compressions but they would both play very differently.

A low compression ball can give you low spin and lots of speed off the clubface, and a softer feel. This is exactly what the Diablo ball from Callaway gives you.

A high compression ball gives you high spin and less speed off the clubface.

The core

The core is the engine of the ball and determines the way the ball performs on full shots and the driver, the bigger the core the faster the ball will come off the club face.

The thinner you make the cover the bigger you can make the core. The compression of the core determines the balls performance. It is these combinations that are continually being investigated to come up with specific specs for various swing and playing characteristics.

Ever wonder why golf balls have dimples?

Well, in simple terms to create lift, but there is a lot more to it than just getting the ball up into the air. Callaway discovered that hex dimples minimized the flat area between the dimples and helped to increase the aerodynamic performance of the ball. It is just a question of maximizing the surface conditions of the ball for various ball flights desired.

Two Piece Construction and Multilayer-Technology

This refers to the numbers of layers used in a golf ball. The most popular balls on the market are two-piece balls. They have a solid core with a Surlyn or Urethane cover. With the emphasis being on more distance for most golfers, they have a solid feel off the clubface allowing for less side spin and more accuracy, but less feel around the greens. (this is not entirely true, because some feel very soft around the greens)

Manufacturers have come up with many combinations by changing the core and cover materials giving you a variety of feel and distance balls

and some in between. Some balls have lower and higher trajectories, which is influenced by their dimple patterns.

If you are looking for more distance and are a slow swinger two piece balls may be a good option. Competition is fierce and a new discovery of softening up the covers allow players to get a little more control in their short game, especially around the greens.

Two balls that come to mind here are the Srixon AD333 and the soft feel and the Diablo from Callaway which are very competitively priced. I have personal experience with the Srixon AD333 and soft feel.

(not because they sponsor me but I wanted to try the whole range to get a better idea of what all the different balls feel like in play.)

It is an amazingly soft ball in all the departments, long game and short game and the price is right for any golfer wanting control and to maximize their distance.

Multilayer Technology

Obviously these balls (up to five layers) are more expensive than the two piece construction.

Each layer delivers a different characteristic to the ball. The core is soft giving more speed from the driver face. The core is surrounded by a hard mantle with a thin soft cover increasing spin with short irons, but is too thin to influence the launch angle of the driver but helps influence spin from a wedge shot. This helps the better player control spin with every club in his bag.

Taylor made has made huge strides in their development and have produced the first ever five piece golf ball. Each layer promotes improved performance for the driver, long irons, mid irons, short irons and wedges and obviously favours the better players.

However, most manufacturers are focusing on mid range balls, which still produce excellent results and are affordable to the average golfer. This includes the Nike Vapour Speed, Callaway's HX range, Titleist NXT, Taylor Made TP, and the Bridgestone e series.

What ball is right for you?

Only you can answer this question, and the best way to find the right ball for you, is to test them out yourself. You only need to buy a sleeve to give a ball a fair trial. Hit them with the driver and see how they feel around the greens. This will tell you what to choose.

What can you afford?

Bear in mind of course that cost is the first consideration when choosing a ball. If you a recreational weekend golfer then the cheapest 2 piece ball is for you and here you have a few to choose from. Just to name a few: pinnacle gold, pinnacle dimension, srixon distance, and callaway warbird.

Still in the lower price category but cost more than ones I have mentioned above are: nike power distance, long, soft, and high, crush, and Karma, srixon soft feel, AD333 and soft feel lady. Callaway Diablo and solaire, and the Titleist NXT.

Moving onto the 3 piece collection there are just as many to choose from:

Taylor made burner TP, Callaway HX hot, Bridgestone e (3 models).
Titleist NXT tour, Nike One vapour speed.

More 3 piece balls can be found in the upper price bracket together with the 4 piece balls. These include: Nike one tour D, Titleist Pro V1 AND V1x, Srixon Z Star, Z Star x, and the yellow Z star.

The other most expensive 4 piece balls are the Nike One tour and the Callaway Tour i(s) and i(z) with the Taylor Made Penta being the most expensive ball in the 5 piece category.

It is all about being able to compress the ball against the clubface to maximise your distance capability, and the best way to measure your ability is to find out what your club head speed is at impact. Slower swingers will be better off with using low compression golf balls and faster club head speeds will be better off with a higher compression ball to maximize their distance.

The best way to find the correct ball for you is to try a few different brands out during play. The proof will always be in the pudding.