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THE SECRET OF GOLF
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If you love playing golf or know someone who does, then I would urge you to read this short book and forward it to your family and friends who do. It contains information that will completely change your enjoyment of the game and enable you to take serious steps to reaching your potential.

Some DST Golf milestones since we launched in January 2015.

• More than 240 PGA & European Tour Players including 30 Major Winners choose to train with DST Clubs
• DST Users have registered 44 Wins on the PGA & European Tours since starting to incorporate DST clubs into their training sessions.
• Used by the World’s Best Ball Striker and 18 of the Top 25 players in the Official World Golf Rankings
• More than 70 of the Top 100 Swing Coaches in the US teach with DST Clubs so far!
• Approved by the PGA’s of Europe

If you play golf and want to improve, you must read this book!

When you strip the golf swing down to its core objectives, all golfers irrespective of their ability, right from the best players in the world, down to a golfer holding a club for the first time are only trying to do two simple things.

1. Generate club head speed
2. Maintain control over the club face until after the ball has been struck

That’s it!

Naturally, generating club head speed depends upon the athleticism, power and suppleness of the individual golfer, which I can’t help the golfer with, but the more important of these two points is maintaining control over the club face until after the ball has been struck and that’s physics, pure and simple! This is an area DST Golf specialises in, “DST” stands for Delayed Strike Technology, a technology I have developed to help golfers understand and more importantly actually feel how to achieve this critical yet elusive movement and position through impact.

Understanding the Optimal Impact Position. The position which we need to reach to control the clubface through impact is something that every golfer on the planet should, at the very least, be aware of and at best spend their practice time perfecting. Because trying to play the game that we all know and love without this critical information is akin to wilfully banging your head against a wall!

You could have a great looking swing but unless you are in control of the club face through impact your time on the course will be more than a little frustrating, but I suppose there maybe some solace to be taken from the fact you can “look good” while playing badly!

Let’s face it, the ball doesn’t know or even care what position you reach at the top of the backswing, so why do we place so much emphasis on reaching certain positions at various points in the backswing and downswing when we ignore the only critical position, the position we reach when the club face transfers its direction and energy to the ball at impact! When we know where we need to be at impact we can work backwards from that point and its amazing how other desirable positions just fall into place.

I do recognise and accept that there is a neutral plane on which swinging the club is easiest, and the more a player’s swing veers away from this ideal plane, then the more they will need to incorporate a counter manoeuvre to bring the club back towards this plane in order to hit the ball.

However, it is by no means necessary to have a swing which is perfectly on plane. If you were to study the swings of the best ball strikers in history, you will soon discover they all had wonderfully individual movements that delivered the club head to the ball in a variety of different ways. They all worked out a way to do this that felt natural to them as individuals, given their own grip, stance, alignment, ball position and posture. However, they all shared one common denominator. They all reached the same position at impact, “The Optimal Impact Position”.

I have called it the “Optimal” impact position as it is the only position in which you can physically be in control of the clubface consistently through impact.

So, to play golf and not know where the Optimal Impact Position is, is rather like setting off on a road trip without knowing where your destination is. It will be an interesting journey but you will probably end up at a different destination each time! They say that
even a blind chicken finds corn, occasionally! As does the hapless golfer who occasionally hits a good shot but doesn’t understand why!

Homer Kelley, the author of the Golfing Machine back in 1969 was an inspired engineer who made it his life’s goal to completely understand the golf swing which he wrote about in his book in great detail, but he summed it up best in one sentence when he said: “The secret of golf is sustaining the Line of Compression”. And he was 100% correct! Sadly, the way he chose to convey this information wasn’t easy to understand for the average golfer. So I have dedicated the last four years of my life to coming up with a way of explaining how to distinguish between a non-optimal impact position and an optimal impact position, where the player sustains the line of compression and controls the club face through impact. I have also invented a series of clubs that force a golfer to feel this movement and position so that they can Locate, Train and Perfect golf’s critical impact position.

So here goes! In a golf swing we rotate around our spine but the center of the club head arc is the lead shoulder, and the main lever in a golf swing is comprised of the lead arm and the club shaft. In order to reach the Optimal Impact Position and control the club face until after the ball has been struck, all the golfer needs to do is reach impact with their Main Lever ahead of the Line of Tension. You can see in Image 1 on the page below the main lever is the red line.

To understand the Line of Tension imagine drawing a straight line from the Lead Shoulder, to the Club Face, (the green line shown in image 1). In other words, the Line of Tension is a straight line that connects one end of the main lever to the other.

When the hands stay ahead of the Line of Tension until after impact, that’s it, that is the SECRET OF GOLF. That is how to “Sustain the Line of Compression” and control the club face until after the ball has been struck. When you achieve this position, your body will naturally position itself to support this arm and hand position. For instance, you will notice having the majority of your weight on your lead foot, you will also have rotated your body towards the target so your shoulders and hips are open to the target line.
When a golfer strikes the ball with their Main Lever (hands) in front of the Line of Tension its just a like a car pulling a trailer in a forward gear. The trailer will follow the car and remain perfectly under control.
However, if a golfer reaches an impact position with the Main Lever (hands) behind the Line of Tension (Image 2) it would be like putting the car in a reverse gear. Suddenly, controlling the trailer becomes hyper sensitive and is very difficult to control. So the golfer will lose control of the club face before they have struck the ball, making it almost impossible to play consistently good golf.

So to be a consistently better ball striker all you need to do is ensure that your main lever reaches its point of full extension, a position in which the club shaft and lead arm are aligned with the lead shoulder after impact, not before! So now we’re aware of the physics of controlling the main lever and how to distinguish between an
optimal versus a non-optimal impact position. Let’s understand how we can make reaching this Optimal Impact Position as simple and as consistent as possible.

The vast majority of golfers do not understand where the Optimal Impact Position is or why it is so important. So if you have no concept of where the optimal impact position actually is, how can you be expected to reach it consistently? The answer is most golfers don’t.

Sadly, this problem is compounded by the fact that most golfers fall victim to golf’s most damaging element. Which unfortunately happens to be one of the most intuitive for golfers to do, this is to align the club shaft with their eye line at address. When a player does this it means the club shaft is leaning minutely away from the target (with longer clubs) or at best the shaft is straight up and down (with shorter irons).

When a golfer starts from this understandable but illogical position it pre-sets obstacles that the golfer needs to overcome in the backswing and downswing, before they even start their takeaway! This is because the player starts with a concave lead wrist which creates a negative lag angle which the player has to get rid of in the backswing.
But what is even more unfortunate is that without knowing where the Optimal Impact Position actually is the majority of golfers logically assume they should simply return the club to the same position at impact as they were in at address. This leads to a domino like sequence of movements ending in disaster! In order to re-obtain the same hand position at impact the golfer has to contort themselves into an awkward body position which forces them to lose their balance with their weight falling onto their back foot (see figure 2 again). Their rhythm is lost because the player is forced to cast the club (flip their wrists) in the downswing, this movement throws away most of the stored power prior to impact, which means the players main lever reaches full extension before the ball has been struck. In combination with the weight staying on the back foot in the downswing and the main lever reaching full extension prior to impact the golfers low point of the club head arc (typically the ‘divot’) will be before the ball, or at best at the ball. This is a big problem that typically leads to one of only two outcomes, a fat or a thinned shot.

So, to sum up this woeful but typical scenario, the player loses balance, rhythm, power and control of the club face before the club head makes contact with the ball! Not a desirable outcome. It would be similar to a javelin thrower attempting to throw with their weight staying on their back foot, with no forward momentum! Not an athletic or a natural move.

So, by a golfer not understanding where the Optimal Impact Position actually is located, it prevents the player from transferring their weight onto their lead foot and having a chance of reaching the optimal impact position.

The notable point to remember here is that wherever the golfer’s point of full extension actually is, once the main lever has reached this point, body rotation temporarily stalls and recoils before continuing. If the golfer reaches full extension before impact their body rotation stalls and they are forced to save a bad swing using their hands and wrists, which is never a reliable or a satisfying feeling. Whether you are a golfer or a baseball player, in order to be in control at the point of impact and transfer maximum power into the ball, the body has to continue to rotate through and passed impact to maintain tension in the main lever. So a main lever which has not reached its point of full extension at impact remains under control.
Sadly, almost all club golfers reach an impact position like this with all of the clubs in their bag. In fact, it’s intuitive to lean back and flick your wrists in an attempt to get the club head under the ball which adds loft to the club face in an attempt to help or scoop the ball into the air. However, the urge to help the ball get aloft is prevalent even amongst elite players in their longer irons and woods.

The reason why better players occasionally still fall foul of this situation is not due to their lack of knowledge it is because of physics! The longer the club, the longer the main lever becomes. The longer the main lever becomes the greater the speed it moves at because of centrifugal laws, which in turn increases the mass of the main lever that the player has to support in order to reach the optimal impact position. If a player doesn’t have enough weight transferred onto their lead side in the downswing to counter balance the mass of this longer lever it will force the player to release the lag angle in their main lever prior to impact in order to maintain their balance and we know what happens when the main lever reaches its point of full extension prior to impact… you lose control of the club face!
How many times have you hit a driver and feel as if you have swung the club into a balanced finish compared to feeling like you are struggling to maintain your balance with your weight falling backwards?

So, the game of golf is counter intuitive because ideally we want to strike the ball with a descending blow and trust in the designers who have built loft in varying degrees into the clubs that we use to get the ball airborne. Instead of us trying to scoop the ball up into the air by getting behind and under it!

Naturally, some of you may be thinking that, you need to hit the driver with an upward angle of attack! If that is your preference that’s fine, you achieve this by moving your ball position a fraction further forwards than your normal ball position with a driver. Don’t be tempted to keep your standard driver ball position, lean back and flip your wrists! This spells trouble because you will be playing army golf very quickly. Left, right, left, right etc.

So the problem is not the club. The problem is, golfers don’t know “HOW TO” use their clubs correctly!

Even if a player started from an address position with the shaft aligned with their eye line but returned to the Optimal Impact Position they would build in a lot of unnecessary movement into their swing. This movement demands great timing if the player is to successfully synchronize their weight transfer, body rotation with their arm and hand swing in order to pivot correctly and reach the Optimal Impact Position. This ultimately means the swing becomes more complicated with more movements than is necessary making the swing much harder to repeat consistently.

This is why the vast majority of golfers struggle to maintain control over the club face through impact.
However, some golfers have ingrained this address position so firmly into their swing that changing it will be prohibitively difficult and awkward. If you are one of these players, that is fine, as long as you understand that you have a lot of movement to undertake to reach the Optimal Impact Position. You can see in the image above the combination of the red shaded area and the green shaded area is the distance your arms and hands need to move to get the Main Lever in front of the Line of Tension.
To use a DIY analogy, you wouldn’t consider hammering in a nail starting from the position on the left because you would have to re-route the hammer in order to get it re-aligned with the nail. Naturally, what you would do is to align the shaft of the hammer to be 90 degrees to the nail to begin with, otherwise you would get a black and blue thumb! The same logic applies to the golf swing. It’s best to preset the position you want to reach at impact before you start the swing.

What’s interesting is that a large majority of the best ball strikers in history did exactly this, by ‘pre-setting their impact position at address. From the great Jack Nicklaus, Arnold Palmer and Lee Trevino, right through to the modern day great ball strikers, Rory McIlroy, Henrik Stenson, Justin Rose and Dustin Johnson, and the list goes on. What’s worth mentioning as a separate point here is that if a player doesn’t consciously start by pre-setting impact at address then a lot of very successful tour players use a forward hand press to trigger their takeaway movement, the best example of this was Gary Player who simulated impact not only with his forward hand press but he also kicked his trail knee forwards to further pre-set the position he wanted to return to at impact.

They all understand that when they reduce their required movements in the backswing and downswing to a minimum they can reach the Optimal Impact Position where the Main Lever is in front of the Line of Tension more consistently, improving their ball striking, control and accuracy.

The good news is, we can correct the single most damaging element in the golf swing instantly and when it’s understood, it’s like having a blindfold removed and discovering a new lease of life. When fixed, you will have a simpler more consistent swing. But here’s
the best bit, you only have to **change your address position** to begin to feel a big change, and once done, you will experience a torrent of cascading positive knock on effects in your game which will enable you to tap into your latent ability. All of the things that you strive so hard to obtain will suddenly make sense and fall into place. A few examples of this will be, you’ll notice using your body weight and larger muscles rather than faster less consistent wrist and hands muscles. Your weight shift onto your lead side and pivot through impact will be more stable meaning your balance and rhythm will improve. Synchronizing your downswing weight transfer, body rotation with your arm and hand swing. In other words, you will unleash the benefits and natural power like a domino effect which in sport science parlance is called the kinematic chain!

To put it another way you will have a Swinging motion where the ball just gets in the way of a moving club head instead of a hitting motion where the ball is the target. So in essence things will start happening to your swing that just make sense.

So the solution is to pre-set your arms and hands into the impact position at address! **By aligning the shaft of the club with the Center of the Club Head Arc, your lead shoulder.** Naturally, you keep your standard ball position for each of the clubs in the bag. Then just pull the trigger, with only one thought in mind! Return the handle of the club to the same position that you started from at address. When you return the handle at impact to the same position as it was in at address, your main lever will be ahead of the Line of Tension. The reason for this is that your brain will calculate that you need to maintain your balance so your body will need to counterweight the motion and weight of your arms and club swinging with it’s centrifugal force. This means you will develop varying degrees of upper body tilt away from the target depending upon the club you are swinging. The longer the club the more upper body tilt you will have. This in turn moves your lead shoulder up and away from the target, resulting in the hands being slightly ahead of the Line of Tension at impact. This makes it dead simple for the golfer, just re-obtain the same hand position that you had pre-set at address!
To re-assure you that this is sound thinking, Jack Nicklaus the most successful golfer of all time wrote these two passages in his book “Golf My Way” about his address and impact positions.

“Remember that in your address position you are attempting to mirror your impact position, for all normal shots I establish this impact geometry at address. Because my left shoulder is always closer to the target than the ball, I simply set up with my left arm and the club forming a straight line”. He went on to say “Striking the ball with the hands slightly ahead of the ball is fundamental to solid shot making”.

As Jack Nicklaus stated in his own words this applies to all normal shots. In fact, the only shots in golf where the player needs to manipulate the loft on the club face on purpose is for a flop shot or splash shot out of a bunker, where the player wants to purposefully release the club early and utilize the bounce on the sole of the club.
A word of caution, when you pre-set your impact position at address, by moving your hands forwards, and aligning the shaft with your lead shoulder be careful not to fan the club face open! The club face should remain square to your target line but with the club face de-lofted. You can identify the optimal address and impact position on DST clubs with the Hand Position Alignment Marker (HPAM), a groove which runs down and across the front of the hosel.

Align the Hand Position Alignment Marker with the lead groove, you will notice in order to achieve this you have to lean the shaft of the club forwards, so that it points towards your lead shoulder. Ensure that the lead groove is square to your selected target. Once you have aligned both lines with your eye line, you will have successfully located the Optimal Position to return the club back to at impact.

To give a brief example, a design loft on a standard 6 iron is 30 degrees, but the average dynamic loft at impact of top tour players using a 6 iron is 20 degrees. In other words, they have 10 degrees of forward shaft lean! This is a contributing factor to them hitting the ball so far! (for those of you who are launch monitor fans, “shaft lean” is not to be confused with “Angle of Attack”. For example, with a driver for those long drive enthusiasts, its possible to have a 5 degree upward angle of attack with 0 degrees shaft lean!)
One last point which is needs clarifying is the concept of how shaft lean changes with different clubs in the bag. I get asked quite frequently “am I supposed to have forward shaft lean with my driver?” The answer is, no matter what ball position philosophy you adhere to, “static or progressive” you should always align the shaft of the club at address with your lead shoulder. In the large majority of cases players have more shaft lean with shorter clubs than they do with longer clubs. This is because shorter clubs tend to be played with a ball position more central in the stance and longer clubs further towards the lead heel.

But do not be tempted to over analyze this element, because the over-riding point is to remember that no matter what your ball position preferences are with whatever club you are using, you must reach an impact position with your main lever ahead of the Line of Tension.

So, the core message is, **in order to realize the secret of golf and reach impact with the Main Lever in front of the Line of Tension, it helps to Pre-set Impact at Address.**

I trust you will enjoy putting the information in these pages into action. Good luck with your game.

Bertie Cordle
DST Golf
www.dstgolf.com
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Below is a collection of images which show players in a variety of address and impact positions with wedges and Drivers to help you see how the Line of Tension and the Main Lever change as the ball position changes.
Non-Optimal Address Position Wedge

The most damaging element in golf is aligning the shaft with your eye line at address. This creates a negative lag angle behind the lead wrist, shown in red shading which has to be removed by the player during the backswing and downswing, while the club is moving. Creating unnecessary movements which rely on the player synchronizing the timing of their weight transfer, with their body rotation and arm and hand swing.

Lead Shoulder Center of the Club Head Arc
Sadly, the vast majority of golfers set up with the shaft of the club aligned with their eye line at address and either through not knowing where the Optimal Impact Position is or through making a calculated but ill-informed guess they return the club to the same position at impact. Resulting in the Main Lever being behind the Line of Tension at impact and the low point of the Club Head Arc being behind or at the ball.

You can see the amount of negative lag angle shown in red shading that the player has to remove and the amount of positive lag angle in green shading. If a player were to start from a position with the shaft aligned with the eye line at address and reach the Optimal Impact Position. You can see there is a lot of movement that the player has to undertake and time perfectly in order to reach the Optimal Impact Position consistently.
By aligning the shaft of the club with the center of the Club Head Arc, at address the player optimizes their swing by stripping out any unnecessary movements, and maximizing the chance of returning the club to a similar position through impact. An additional benefit from this set up position is that the player will have a one piece takeaway. Lastly the low point of the players Club Head Arc will be on the target side of the ball ensuring a ball then turf strike.

The Secret of Golf is to reach an impact position where the hands are in front of the Line of Tension.
Non-Optimal Address Position Driver

The most damaging element in golf is aligning the shaft with your eye line at address. This creates a negative lag angle behind the lead wrist, shown in red shading which has to be removed by the player during the backswing and downswing, while the club is moving. Creating unnecessary movements which rely on the player synchronizing the timing of their weight transfer, with their body rotation and arm and hand swing.
Sadly, the vast majority of golfers set up with the shaft of the club aligned with their eye line at address and either through not knowing where the Optimal Impact Position is or through making a calculated but ill informed guess they return the club to the same position at impact. Resulting in the Man Lover being behind the line of tension at impact.

Too much movement to execute consistently.

You can see the amount of negative leg angle shown in red shading that the player has to remove and the amount of positive leg angle in green shading. If a player were to start from a position with the shaft aligned with the eye line at address and reach the Optimal Impact Position, you can see there is a lot of movement that the player has to undertake and time perfectly in order to reach the Optimal Impact Position consistently.
Optimal Address Position
Driver

Optimal Impact Position
Driver

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